FLORA OF CANNANORE

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BOTANICAL SURVEY OF INDIA
FOREWORD

Botanical Survey of India is actively engaged in the preparation of the Flora of India under different series of which the 'District Floras' form one category. Flora of Cannanore is one such contribution dealing with the plants of one of the northern districts of the state of Kerala.

Lying in the south-western part of our country, Kerala supports a luxuriant flora, including many endemic elements. The flora of 'The Malabar region', the northern part of this state, has attracted the attention of many from the West, even from very ancient times, obviously for the rich source of spices. In fact, one of the pioneer works on Indian Botany, namely Hortus Malabaricus (van Rheede, 1678-1703) is based on the plants of this region. However, our knowledge on the plant resources of this state still remains inadequate and incomplete. Realizing the urgent need for a detailed floristic account of this state, Botanical Survey of India has been concentrating on intensive botanical studies here, so that several District Floras, leading ultimately to a comprehensive State Flora can be prepared. The present work is the result of such a detailed study undertaken in the Cannanore district of the state.

From the topographic point of view the area consists of three natural divisions, the coastal lowlands, the central midlands and the highlands on the extreme east with an altitudinal range from sea level to more than 1600 m above m.s.l. This varied topography associated with soil and climatic factors provide an ideal condition for a rich flora. The present work, in addition to obtaining a detailed knowledge of the plant resources of the district has resulted in the rediscovery of some very rare plants and also provides additional information on the distribution of many other plants.

I do hope that the authors' study of this region would be very interesting for students, scientists, conservationists and industrial houses dealing with plant resources as raw materials. I am sure that the authors would welcome any suggestions for the improvement of the publication in its future editions.

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INTRODUCTION

SITUATION AND TOPOGRAPHY

Cannanore is the second among the northernmost districts of Kerala State. It lies between 11° 40' and 12° 3' N latitude and 75° 11' and 76° 06' E longitude and is bounded on the north by Kasaragod district of Kerala State, on the east by Karakalakarnataka State, on the south by Calicut and Wynad districts of Kerala State and on the west by the Arabian Sea. North Wynad taluk of the district now forms part of the newly created Wynad district. However, as this area was also taken along with the other areas of the present Cannanore district as a single unit for explorations and study, plants of this area are also included in this flora. The total area under the present study is about 3670 sq. km.

This region consists of three natural divisions, the Lowlands bordering on the sea coast, the Midlands east of the Lowlands and the Highlands on the extreme east. These divisions form nearly parallel belts varying in width, running along the entire length of the area and merging into each other. The mountain ranges of the Highlands are in continuation to the Western Ghats from the Mysore Plateau. North Wynad area has a number of hills which give it a wild and mountainous appearance. The highest point of this region is 'Baraswaramala', which rises up to 2051 m above the sea level. Some of the other important high hills are 'Brahmagiri' (1608 m) and 'Theerthandamala' (1050 m).

The principal rivers of this area are Valapattanam, Anjarakandi, Ponnayam, Mahe, Kuppam and Kabbini with their tributaries flowing all over the area and have their origin in Western Ghats. All the rivers flow towards west except for Kabbinni which turns towards east and also forms the boundary of the states of Karnataka and Kerala.

GEOLOGY AND SOIL

The rock bed is of gneiss. The main constituents are quartz, garnet, hornblende and mica. The soil of the main ridge is a ferruginous red sandy-loam, generally 3 to 4.5 m deep. On the plateau, the soil is rich clayey-loam, generally 0.75 to 2.5 m deep with red gravelly or yellowish clayey sub-soil layer of considerable depth. Laterite is developed along the coastal areas of this region. Under tall trees and in shady places humus is encountered. Near streams the soil is of sandy type. In poorer forests, soil tends to be gravelly.
CLIMATE

The climate is moderate and conducive to the formation of a rich tropical vegetation. The average temperature at the foot of the ghats is between 21°C and 39°C, while on the plateau, it is between 15°C and 32°C. March, April and May are the hottest months and average temperature during these months vary from 25°C to 33°C. During the cold season, i.e. the months of December and January, the average temperature varies from 16°C to 22°C.

The south-west monsoon brings the greater part of the total rainfall and the average annual rainfall in the district is about 350 cm. The heaviest rainfall occurs in July and August. The rainfall gradually increases from coastal region to the Western Ghats. The highest annual rainfall recorded in the district is from Irikkur near the Western Ghats (400 cm). At Mamandody in the south-east corner, the annual rainfall is around 285 cm. The north-east monsoon brings some rain in October and November. The monthly mean humidity percentage varies from 72-91. The maximum is observed during the months of July and August.

Strong winds start about the beginning of November and ends by April. During this period, there is a tendency for forest fires to spread.

PREVIOUS WORK

Available records show that a few sporadic collections have been made from Wynad area during the last century by botanists like Beddome and Lawson. Most of these collections are housed in MH, CAL and K and have been included by Gamble and Fischer in their Flora of the Presidency of Madras. Based on these materials, they have also erected a few new taxa, which are published in different issues of Key Bulletin. Before the reorganisation of the present Botanical Survey of India, Chetan Jacob, Gopal Rao and Rangachari, then attached to the Madras Herbarium, have made some collections here. After the reorganization of the Botanical Survey of India, Ellis explored Chandanathode (a part of Periyar R.F.) intensively during 1965-67. In 1977, a few student collectors made some stray collections around Tirunalli, Periyar and Begur and these specimens are deposited in the Herbarium of the Presidency college, Madras (PCM).

There is no comprehensive published account on the Flora of Kannur district or Kerala State. The first among the published books on the botany of this area is the monumental pre-Linnaean work, namely, van Rheede's Hortus Indicus Malabaricus (1678-1703). This book is...
of great importance as it formed the main source for descriptions, figures and binomials of many Indian plants for Linnaeus. The Forest Trees of Travancore by T.F. Burkill (1908) and The Flowering Plants of Travancore by Rama Rao (1914) published at the turn of this century are also noteworthy contributions. However, these two works cover only the southern districts of the present Kerala. Recently, Manilal & Sivarajan (1982) published their Flora of Calicut (The Flowering Plants of Greater Calicut Area Consisting the Western Sectors of Calicut and Malappuram Districts), probably the first major contribution to the Flora of the northern Malabar part of Kerala. Among other works of consequence in the botany of Malabar to which the present area also belongs are the papers entitled, 'A contribution to the flora of Pulgat district, Kerala' by Vajravelu, Joseph and Chandra Sekaran (1968) and 'Studies on the vascular flora of Sultan's Battery and Chedeth forest ranges, Kozhikode district, Kerala' by Ellis, Swaminathan & Chandrasekhar (1968). It is needless to mention that the monumental works, the Flora of British India by J.D. Hooker (1872-1897) and the Flora of the Presidency of Madras by Gamble (and Fischer 1915-1936) cover the whole state of Kerala but the information available in these works are incomplete. Ror's (1960) book Grasses of Burma, Ceylon, India and Pakistan deals with plants of this area also.

PRESENT WORK

FIELD WORK

Thirteen exploration trips, each of 15 to 20 days' duration, were undertaken in different seasons during the period of study of more than 5 years. During the field trips, every species was collected in flowering and fruited stages and detailed field notes were taken on the spot. Special care was paid to gather data pertaining to habit, habitat, association with other species and in general to features like colour of flowers, fruits, smell, hairiness of the plant and other relevant details which cannot be deduced from the examination of herbarium specimens. In addition, local people were contacted to get the vernacular names of the plants and local uses if any. After repeated collections of a particular plant, additional details of the plant, if any, were noted in the field books. Further, every attempt was made to study the flowering and fruiting time of each species, its relative abundance and distribution. Each specimen was carefully examined in fresh condition, checked with descriptions given by Gamble and Fischer in the Flora of the Presidency of Madras and a provisional determination was made. The specimens were then poisoned in a saturated solution of mercuric chloride in alcohol. Further process of pressing, mounting and labelling were done following the instructions given by Santapau (1955), Fosberg & Sachet (1965) and Jain & Rao (1977).
HERBARIUM WORK

Identifications were confirmed after further critical studies with reference to authentic or type materials available in MH and CAL. Expert opinion from the Herbarium of Royal Botanic Garden, Kew (K) and Rijksherbarium, Leiden (L) was sought in some cases which could not be identified either at MH or CAL. Old collections from the area available in MH, CAI, and the Herbarium of the Presidency College, Madras were also studied. J.D. Hooker's _Flora of British India_ and various other regional floras of India and other countries and the available monographs and revisions were also consulted in this connection.

PLAN OF THE FLORA

The arrangement of families followed in the present work, in general, is as in Gamble’s (and Fischer’s) _Flora of the Presidency of Madras_ which is about the same as that of J.D. Hooker in _The Flora of British India_. However, in a number of cases the circumscription of families had to be restricted following modern concepts of family delimitation.

Dichotomous keys have been provided to the families, genera and species of Spermatophytes occurring in the area. These are artificial and as far as possible are based on exomorphic characters which may easily be made use of without much recourse to microscopic dissections and relate only to the plants enumerated in this Flora. The genera under a family and species within a genus are arranged in alphabetic order. A brief description for each species has been given based on the present collections and those of the previous workers from the area. The data pertaining to phenology, distribution and relative abundance are also based on the observations made during the present study. Localities from where collections are available are also indicated. Brief notes have been provided to indicate or explain relevant points wherever such notes were found to be essential.

In the nomenclatural part, what has been considered as the correct name of the species is given first. The original citation for the correct name is followed by those of the _Flora of British India_ by J.D. Hooker, and the _Flora of the Presidency of Madras_ by Gamble (and Fischer). Monographic or revisionary works have been cited only if such works include any new information regarding nomenclature, identity or similar other matters. Reference to a published illustration is given at the end, wherever such an illustration is available. In the case of combinations, the basionyms with their original citations are also given. Strict chronology in citations has not been maintained. Where known, the local Malayalam
names are given at the end of the citations. Only such names which could be confirmed from reliable local sources have been included.

GENERAL PATTERN OF FLORISTIC COMPOSITION

COASTAL REGION

The coastal region consists of estuarine and strand vegetation (Rao & Sastry, 1972, 1974a, b). Some of the constituent species of estuarine vegetation are Acantius ilicifolius, Avicennia officinalis, Cerbera odollam, Clerodendrum inerme, Cyperus javanicus, Duris trifoliata, Excoecaria agallocha, Scavola sericea, Sphenoclea zeylanica and Xyris indica. The fern Acrostichum aureum, a member of the Polypodiaceae is abundant along the banks of backwaters.


MIDLAND REGION

This is the most densely populated area and due to this, most of the natural vegetation has been replaced by plantations and paddy fields. It covers more or less the major part of the area presenting an undulating topography, gradually ascending and merging with the slopes of the Western Ghats. The natural flora of this area is that of moist deciduous forests consisting of a mixture of evergreen and deciduous elements. Some of the dominant trees of this region are: Albizia odoratissima, Alnus scholaris, Anacardium occidentale, Artocarpus hirsutus, Bridelia stipularis, Macaranga peliata, Mallotus philippensis, Terminalia crenulata and Trema orientalis. Conspicuous among the shrubs and small trees are Cycas circinalis, Clerodendrum viscosum, Erythrina lepidea, Vitex negundo and Wrightia tinctoria.

The ground layer consists of a variety of annuals and geophytes. Chromolaena odorata is dominant among them. Acrocephalus hispidus, Ageratum conyoides, Antomeles indica, Canescera difusa, Clerodendrum serratum, Crotalaria pallida, Desmodium triflorum, Hedystis spp., Hypotis muealea, Indigofera tinctoria, Jatropha curcas, Leucas indica, Mimosa
pudica, Naregamia alata, Rangia parviflora, Spermacoce ocymoides and Stachysarphaea jamaicensis are also common.

Climbers and epiphytes are few. Calycopterus floribunda, Pothis scandens, Smilax zeeliana and Uvaria narum are common. Bulbophyllum melicherrum, Cottonia penduncularis, Dendrobium nanum, Pholidota Pallida and Vanda testacea and the fern Drynaria quercifolia are the common epiphytes. Loranthus spp. are of common occurrence as stem parasites.

The plain and moist western parts are very rich in fresh water and marshy plants. Some of such common and conspicuous plants are Cyperus spp., Eichhornia crassipes, Eusteralis deccanensis, Embristylis spp., Hydrophyila auriculata, Monochoria vaginalis, Nymphaea nouchali, N. pubescens, Nymphoides hydrophyila, Rotala densiflora, R. macrandra, R. rosca and R. ravindjilla.

MOUNTAINOUS REGION

According to Champion and Seth (1967), the following types of forests occur in this district: 1. Tropical evergreen type, 2. Tropical semievergreen type and 3. Tropical moist deciduous type. Recently Chandrasekharan (1962) studied the forests of Kerala and recognized two types viz. a. Climax type and b. Secondary type.

The accounts on the vegetation of the mountainous zone is dealt with here under the following heads:

1. The moist deciduous type, 2. The semievergreen type, 3. The evergreen type, 4. The sholas, 5. The grasslands and 6. Plantations. These types, however, merge along their common boundaries so that it is not possible to fix their limits rigidly.

The moist deciduous type

This type of forest is found in regions from the plains and foot hills to 800 m in Wyanad plateau which experiences an annual rainfall of 200 to 300 cm. During February to May, the trees become more or less deciduous but the forests never become deciduous in toto. This type gradually merges with the evergreen type through the semievergreen type. This is seen in certain parts of Tulpatty, Davoli, Degur, Kanoth and Nedumphail. Many dry deciduous trees of lower elevations and evergreen trees of higher elevations intrude into this zone. Due to the yield of valuable timber, these forests have been extensively exploited and consequently greatly disturbed. Most of the areas of this type of forest are now in
secondary succession. Stratification is evident in this type of forest. The major plant species of this type of forests are:

Top Storey

Albizia amara, A. odoratisima, A. procera, Anogeissus latifolia, Chukrasia tabularis, Dalbergia latifolia, Haldina cordifolia, Ficus racemosa (near streams), Lagerstroemia microcarpa, L. speciosa, Mangifera indica (near streams), Mitragyna parvifolia, Pongamia pinnata (near streams), Pierocarpus marsupium, Tecoma grandis, Terminalia arjuna, T. bellirica, T. crepidata, T. paniculata, Vitex villosa, etc. constitute the upper canopy.

Second Storey

This storey is composed of species like Bridelia stipularis, Butea monosperma, Callicarpa tomentosa, Cassia fistula, Cipadessa baccifera, Dalbergia sissoo, Emblica officinalis, Grewia tilifolia, Gmelina arborea, Kedia calycina, Schrebera swietenioides, Trema orientalis, Wrightia tinctoria, Trewia nudiflora (near streams). Bombus arundinaceae occurs in patches amongst the above species.

Undergrowth

The herbaceous vegetation is less profuse and includes species like Asclepias curassavica (near streams), Baliospermum montanum, Cassia sp., Desmodium spp., Chromolaena odorata, Cynoglossum zeelandicum, Gomphrena haeystanum, Lantana camara var. aculeata, Polygonum spp. (near streams), Phaulopsis dorriifora, Trichodesma zeelandicum, Stachytarpheta jamaicensis, Rauwolfia serpentina and K. urraphylla.

Some of the climbing shrubs and twiners are Asparagus gonocladus, Cardiospermum halicacabum, Gynatia temosifolia, Dalbergia nobilis, Dioscorea spp., Gloriosa superba, Hemidesmus indicus, Ipomoea spp., Jasminum azoricum and Merremia vitifolia.

Semievergreen forest type

This is intermediate between the moist deciduous and wet evergreen forests. So, it is a heterogeneous mixture of these two major types, encountered from plains to ghats and particularly on hill slopes. Parts of Kannoth R.F., Nedumpoyil, Chandanathude, Hilldale and Tirumalli R.F. possess this type of forests.
Top storey

The dominant species are: *Artocarpus hirsutus*, *Dimocarpus longan*, *Elaeocarpus tuberculatus*, *Hopea parviflora*, *H. ponga*, *Lagerstroemia microcarpa*, *Mangifera indica*, *Otonephelium stipulaceum*, *Sterculia guttata*, *Terminalia paniculata*, *Vateria indica* and *Xylium xilocarpa*.

Second storey

*Aporosa lindleyana*, *Bischofia javonica*, *Cinnamomum spp.*, *Dillenia pentagyna*, *Elaeocarpus serratus*, *Hydnocarpus pentandra*, *Mallotus philippensis*, *Menecylon spp.*, *Saraca asoca* and *Xanthophyllum flavescens* are the constituents of this layer.

Undergrowth

The undergrowth consists of *Antidesma spp.*, *Barteria courtoisiana*, *Capsicum spp.*, *Ixora spp.*, *Leca asiatica*, *Geophila repens*, *Gynostachya schriffigum*, *Mussaenda bellika*, *Nigrianthus spp.*, *Phyllanthus spp.*, *Psychotria dalzellii* and *Pavetta zeylanica*.

Climbers

Climbers and lianas are common in this type of forest and include *Abrus pulchellus*, *Aristolochia spp.*, *Calycoperis floribunda*, *Combretum latifolium*, *Entada rheedia*, *Gymnema sylvestre*, *Ichnocarpus frutescens*, *Ipomoea spp.*, *Jasminum rotundifolium*, *Mousseva spicata*, *Myxopyrum serratum*, *Pothos scandens*, *Reussania indica*, *Salacia fruticosa* and *Uvaria narinii*.

Evergreen type

This type of forest is the climax of the tropical rain forest formation and is usually met with above an altitude of 500 m in this district. The tropical rain forest formations are characterized by a luxuriant growth of evergreen trees of different sizes and shapes arranged in several tiers or storeys. These forests are characterized by a high proportion of *Musa nouchali*, *Palaquium ellipticum* and *Cullenia exarillata*. This is termed as *Musa Palaquium - Cullenia* type. The distribution of these species is governed mainly by altitude and edaphic factors. These forests are common around the hills and valleys of Chandamathode, Kotiriyoor, Paneth, Periya and Tirumalli. The tropical rain forests are characterized by multi-storeyed canopies of vegetation and the various synusiae according to Richards (1952) are: 1. Trees and shrubs, 2. Herbs, 3. Climbers,
4. Strumilos and 5. Epiphytes. Some of the features characteristic of this type are the presence of tall trees with prominent buttresses, occurrence of lianas, canes and epiphytes and the development of cannibory. The ground layer and trees themselves are carpeted with mosses, ferns, orchids and lichens.

The vegetation of the tropical rainforest of this area can be divided on the basis of height of the plants occurring into: a. Top storey or emergent layer (25 to 40 m); b. Second storey or codominant layer (15 to 25 m); c. Understorey or subcanopy layer (3 to 10 m); d. Undergrowth or ground layer. The storeyed nature of these dense dark forests is rather difficult to discern, as the tall trees with their close canopy cover and stifle the shorter trees. There is a bewildering wealth of species in these forests, not all of them being common to all these areas.

Top storey

The tallest trees are *Ariocarpus hisatus*, *Bischofia javanica*, *Callia exarillata*, *Dillenia bracteata*, *Dimocarpus longan*, *Drypetes macrophylla*, *Epiphyllum mallophorium*, *Elaeocarpus tuberculatus*, *Garcinia gummi-gutta*, *G. marillia*, *Gordonia obata*, *Rheedia ascendens*, *Mangifera indica*, *Myristica dactyloidea*, *Palmaeum ellipticum*, *Reinwardtia indica* and *Vateria indica*. These are usually covered with epiphytic orchids, aroids and ferns.

Second storey

This layer comprises medium sized trees which adapt themselves to the more shady conditions. Of these, the most characteristic are the following: *Ariocarpus fraxinifolius*, *Baccaurea courtallensis*, *Cinnamomum* spp., *Diospyros paniculata*, *Elaeocarpus glandulosus*, *Harpullia arbores*, *Hedigania ferruginea*, *Humboldtia brunonis*, *Lophoptera wightianum*, *Meliosma simplicifolia*, *Oxynema stipulaceum*, *Persea macrocarpa*, *Sepedina laurifolia*, *Syzygium cumini*, *Toona ciliata* and *Turpinia malabarica*. Bamboo also appear mainly as *Chamelaena bracke* along the larger streams but occasionally spread over the slopes also. A few palms like *Carvota arenis*, *Arenga wightii* and *Pinanga dicksonii* are also conspicuous.

Understorey

Innumerable woody shrubs and small trees such as *Agrostisachna meeholdii*, *Allophylus distachys*, *Antidesma menagui*, *Colebrookea oppositifolia*, *Ixora elongata*, *Memecylon heymonii*, *Madhuca neriifolia*, *Mallotus tetrocarpus*, *Olea dcapea*, *Psychotria nudiflora*, *P. nigra*, *Xanthophyllum flavescens*, etc. form this layer.
Ground story

The vegetation, where light can penetrate, is thickly formed by a dense carpet of herbs and shrubs including ferns. Some of the important herbs are: Begonia malabarica, Clausena heptaphylla, Elatostema lineolatum, Girardinia diversifolia, Ophiorrhiza spp., Scutellaria violacea and Thottea siquiosa. During the monsoon, a number of species of Zoneria, Impatiens and members of the Gesneriaceae make their appearance. Of the rhizomatous monocotyledons which are also conspicuous, Curcula spp., Boesenbergia pulcherrima, Costus speciosus, Globba ophioglossa, Schumannianthus virgatus and Zingiber spp. are important.

Ferns are very common, the most conspicuous and elegant of them being the tree fern Cyathea gigantea and another large and handsome one is Angiopteris evecta. Most of the other ferns are polypodiaceous.

Some of the undershrubs which have been collected from these forests include Acetalia secundiflora, Barleria couratilica, Crotalaria spp., Flemingia spp., Justicia santapauli, Melanthesa spp., Munronia pienata, Ophiopogon intermedius, Ophiorrhiza spp., Psychotria spp., Saprosma spp. and Tarenna spp.

Climbers

Some of the numerous lianas intertwining the trees are Adenia wrightiana, Allophyllus conamicus var. lanceolatus, Artabotrys zeylanica, Cissus spp., Derris brevispes, Dunsia villosa, Entada rheedii, Erythrophalum populifolium, Moulhna spicata, Musana kirsuta, Paramignya armata, Naravelia zeylanica, Salacia beddomei, Sarcostigma kleinii, Shuteria vestita, Vigna spp., Toddalia asiatica and Thunbergia mysorensis.

Epiphytes

The epiphytic plants like Aeschynanthus perrottetii, Hoya spp., often with beautiful bunches of star like flowers, Peperomia spp., Pothos semident and Remusatia vivipara, are frequent. The most conspicuous epiphytic elements, however, are the orchids, ferns and fern-allies. Amongst orchids Dendrobium spp., predominate. Few of the other epiphytic orchids are Acampe ochracea, Bulbophyllum tremulum, Cattawia penduliflora, Cymbidium alifolium, Oberonia spp., Phalaenopsis decumbens, P. mysorensis, Pholidota pallida, Podochilus malabaricus, Polystachya flavensens and Sinhoreia lanceolata. Some of the terrestrial orchids met within the above type of
forests are Calanthe massee, Eulophia nuda, Habenaria multiculata and Tropidia angulosa.

Parasites

Root parasites like Aeginetia indica, Siriga spp. and Dodonaea fungosa var. indica are found. Stem parasites of members of Loranthaceae are not uncommon.

Saprophytes

Amongst interesting saprophytes, mention may be made of Aphyllochis prinii and Epipogium roseum. The insectivorous plants collected from this district are Drosera burmannii and Utricularia spp.

Rheophytes

Rheophytes form an interesting ecosystem by themselves and are well represented. Along the banks of streams dense thickets of Ochlandra and Pandanus are common and grow in close association with Homononia riparia, Livodenum flexuosum and L. microphyllum. Trees such as Hydrocarpus pentandra, Hopea panga, Lophopetalium wightianum, Madhuca nitelifolia, Mangifera indica, Poeciloneuron indicum, Pongamia pinnata, Salix tetra sperma, Syzygium spp. and Valeria indica also occur along the banks of streams associated with Ardisia solanacea, Camcora spp. and Polygonum spp. Both Homononia retusa and Ranila aquatica are common along the banks of Periya river, growing in association with Cyamitis spp. and Flexoeca stenand. On rocks in the last moving streams near Kannoth, Polyphyllum stylosum, a member of Podostemaceae is encountered. Along the banks of forest streams plants like Gymnostachyum febrifugum, Hypolytrum nemorum, Lagenandra ovata and members of Zingiberaceae are common.

Sholas

The shola type of vegetation includes both tropical and subtropical genera mixed together. This type of forests is restricted to the valleys and depressions where the moisture content is high. They are isolated, compact and usually small woods composed of stunted evergreen trees and are characteristically seen along elevations above 840 m. around places like Chandanathode, Periya and Tirunalli. The main floristic composition of the sholas are Acroneichia pedunculata, Apollonia amabilis, Atlanti wightii, Allophyllus distachys, Disopyros salicifolia, Exomus rubricus,
Eurya niida, Elaeocarpus muranicus, E. serratus, Glochidion ellipticum, G. velutinum, Gordonia obtusa, Mahoea simplicifolia, Lasianghus jackii, Ligustrum robustum subsp. walkeri, Litsea hirsutina, L. oleoides, Microtropis stockei, Prunus ceylanica, Schefflera racemosa, S. venulosa, S. wallichiana, Symlocos cochinchinensis and S. foliosa. Some of the semi-parasites like Dendrophytne falcata, Helixanthera wallichiana, Macrosolen parasiticus, Taxillus amnemus, Tolypanthus lugenifer and Viscum ungulatum are common on the branches of trees. The straggling species of Fagraea occultica, Garcinia ovata and Fagraea koloa are also found. Some of the species of stelar marins are Debregeasia longifolia, Laportea crenulata, Mnesia indica, Nilgiranthus asper, Nothopegia spp., Syzygium tamihidensis, Vernonia arborea and Turpinia malabarica.

Grasslands

The grasslands usually occur at the top of the hills and the trees on these grassy slopes are stunted and leaves are smaller in size compared with those of evergreen forests. Some of the important species of grasses found are Arundinella setosa, Chrysopogon haeckeli, Eulalia trifida, Javanella griffithiana and Themeda spp. The following species are commonly interspersed with grasses: Curcuma nolhernessis, Euphorbia rothiana, Exacum bicolor, Hypericum mysorensis, Habenaria longicornicate, Justicia nolhernessis, Knoxia mollis, Laggera alata, Leucas vesicula, Murrania tanagmosa, Peristylis sprattii and Swerita latif. Along the hill tops Phoenix humilis var. pedunculata grows in a scattered manner.

Plantations

Apart from the above mentioned types of forests, forest plantations occupy a major part of the area. The important types of such plantations are: Teak, softwood, Rose wood, Balsa, Bamboos, Eucalyptus, Mahogany and mixed plantations.

INTRODUCED ELEMENTS IN THE FLORA

The flora of India as a whole has been enriched by the intrusive elements from other parts of Asia, Europe, Tropical Africa, etc. A number of species got introduced from Tropical America and Australia also. Many of them have by now, established and naturalized in this country.

The tropical Asiatic elements of our flora have largely Indo-Chinese and Malayan affinities. Some of the common and striking examples of
the tropical Asiatic elements in the district are species of *Goniothalamus*, *Gymnobodium*, *Haldina*, *Kroxia*, *Lasianthus*, *Myristica*, *Hedyotis*, *Saraca* and *Uvaria*.

Examples for the tropical African and Madagascarean elements found in this area are: *Acacia* spp., *Blepharis* spp., *Cassarum* spp., *Geissasperma cristatum*, *Karanka* *pimpinella*, *Podalium* *maxim*, *Pseudarthria* *vicida* and *Ricinus communis*.

Some of the pleistocene relics commonly found on the hills of Western Ghats and occurring within this district also are: species of *Arizema*, *Clematis*, *Cellis*, *Excem*, *Juncus* and *Swertia*.

American elements are represented by cultivated species of *Anacardium*, *Anona*, *Capsicum*, *Hevea*, *Manihot*, etc. and some of the very common migrants are: *Anthericum hirsutum*, *Acoestera rubra*, *Ageratum conyzoides*, *Alternanthera punctata*, *Casia* *occidentalis*, *C. sophera*, *C. toro*, *Catharanthus roseus*, *Crassocephalum crepidioides*. *Croton bompalandianus*, *Datura metel*, *Echiornis* *crassipes*, *Giricidia sepium*, *Lantana camara* var. *aculeata*, *Mimosa pudica*, *M. invisa* var. *inermis*, *Passiflora foetida*, *Peperomia pellucida*, *Scoparia dulcis*, *Syndrella nodiflora*, *Tridax procumbens*, *Thevetia peruviana* and *Turnera ulmifolia*.

**CROPS AND SIMILAR ECONOMICALLY IMPORTANT PLANTS**

The major cereals like *Oryza sativa* and *Eleusine coracana* are cultivated. Among the pulses * Cajanus cajan*, *Cicer arietinum* and *Vigna mungo* deserve mention.

The chief vegetables and fruits grown are *Amorpha* *poezophilus*, *Anacardium occidentale*, *Citrus* spp., *Citrullus lanatus*, *Colocasia esculenta*, *Lobelia purpurea*, *Mangifera indica*, *Manihot esculenta*, *Musa* spp., *Artocarpus heterophyllus* etc.

The plantation crops such as *Coffea arabica*, *C. robusta*, *Hevea brasiliensis*, *Thea chinensis* and *Theobroma coca* are largely cultivated. Some of the condiments and spices like *Cinnamomum verum*, *Cuminum longa*, *Eleotris cardamomum*, *Piper nigrum* and *Zingiber officinale* are also cultivated.

The other economically important plants like *Areca catechu*, *Cocos nucifera*, *Nicotiana tabacum* and *Saccharum officinarum* also deserve mention.
Some of the principal timber trees occurring in this area are: *Anogeissus latifolia, Dalbergia latifolia, D. sisso, Haldina cordifolia, Hopea parviflora, Mesua nagassarum, Pterocarpus marsupium, Tectona grandis, Terminalia arjuna, T. tomentosa, Toona ciliata, Valeria indica and Xydia xylocarpa.*

**MEDICINAL PLANTS**

The vegetation of this area abounds in many valuable medicinally important plants such as *Acacia sissa, Alstonia scholaris, Andrographis paniculata, Aristolochia indica, Artemisia nilagirica, Butea monosperma, Bixa orellana, Balsamum montanum, Cardiospermum halicacabum, Cassia fistula, Catharanthus spinosa, Calotropis procera, Cinnamomum verum, Cynula peltata, Datura metel, Dioscorea spp., Emblica officinalis, Gloriosa superba, Gmelina arborea, Helicteres isora, Hemidesmus indicus, Holarrhena pubescens, Hygrophila auriculata, Justicia adhatoda, Madhuca nesifolia, Mallotus philippensis, Mesua nagassarum, Piper longum, P. nigrum, Plumbago zeylanica, Pterocarpus marsupium, Rauwolfia serpentina, Ricinus communis, Raurea minor, Rubia cordifolia, Santalum album, Smilax zeylanica, Solanum spp., Stephania japonica, Stereospermum calais, Syzygium cumini, Terminalia spp., Trema orientalis, Vitex negundo, Wattakaka volubilis, Wrightia tinctoria and members of Zingiberaceae.

**NEW DISTRIBUTIONAL RECORDS**

The following plants collected from the district form new records for India, South India or Kerala:

I. For India
   *Stemodia verticillata* (Mill.) Hassl. (Scrophulariaceae)

II. For South India (Additions to the Flora of the Presidency of Madras)
   *Dendrobium crepidatum* Lindl. (Orchidaceae)
   *Fragrantia zeylanica* Nees & Mey. (Poaceae)
   *Ischaemum zeylanicum* Bor (Poaceae)
   *Panicum humidorum* Buch.-Ham. ex Hook. f.
   *Typhoidra daizei* Hook. f. (Achelidiaceae)

III. For Kerala

The following species known earlier from the areas indicated below have been recorded for the first time from Kerala during the present study:
A. Plants from Southern Ghats

*Anomum muricatum* Bedd. 
(*ZINGIBERACEAE*)

*Cynocephalus cerifolius* Rola Rao & Kammathy 
(*COMMELINACEAE*)

*Elatastrum lineolatum* Wight var. *tenax* Henry 
(*URTICACEAE*)

*Glycosmis maracarpa* Wight 
(*RUSSIANACEAE*)

*Hippa rosa* (Bedd.) Slooten 
(*PITEROIDACEAE*)

*Sanskia beddomei* Gamble 
(*HIPPURIDACEAE*)

B. Plants from Nilgiris

*Glycyphalanthus grandis* Bedd. 
(*CELASTRACEAE*)

*Gynothalamus wynnandensis* Bedd. 
(*AMARANTHACEAE*)

*Inga millenii* Arn. 
(*BALSAMINACEAE*)

*Orthosiphon rubioides* Benth. var. *hohenackeri* Hook. f. 
(*LAMIACEAE*)

*Plectranthus sessilis* (Nees) Bremek. 
(*Acanthaceae*)

*Syzygium tamilehadi* Radhak. & Chitr. 
(*MYRTACEAE*)

C. Plants from Karnataka

*Capparis cleghornii* Dunn 
(*CAPPARACEAE*)

*Diospyros saleanae* Kosterm. 
(*EBEFACEAE*)

*Eusteraulis gracilis* (Nair) Preigrah 
(*LAMIACEAE*)

*Hugonia bellii* Sedgw. 
(*LILIACEAE*)

*Pongolania cinnamomea* (Sf. Prei.) Veld. var. *sinbrutrum* (Bot) Veld. 
(*POACEAE*)

*Phalemitis myrmecis* Sald. 
(*ORCHIDACEAE*)

*Swertia haddii* (Wight ex Clarke) Burk. 
(*GENTIANACEAE*)

*Vernonia ulicifolia* Drumm. & Hutch. 
(*ASTERACEAE*)

D. Plants from Northern Circuits, Dooon & Casmir

*Antidesma bunius* (L.) Spr. 
(*EUPHORBIAEAE*)

*Brephimorpha rense* (Vahl) Roth 
(*ACANTHACEAE*)

*Eucalothamnus spiralis* (Rothb.) Ronen. & Schult. 
(*CYNARAEEAE*)

*Entostema canescens* Wight 
(*URSIACEAE*)

*Eucalyptus tetradactyla* (Lamb.) Huchlin, ex Steud. 
(*POACEAE*)
Hemidermus indicus (L.) R.Br. var. pubescens (Wight & Arn.) Hook. f. (Asclepiadaceae)
Hemigraphis latebrosa (Heyne ex Roth) Nees (Acanthaceae)
H. venosa Clarke (Acanthaceae)
Homomia renua (Grah. ex Wight) Mueell.-Arg. (Euphorbiaceae)
Leucas urticifolia (Vahl) R. Br. (Lamiaceae)
Ormocarpum sennoides (Willd.) DC. (Fabaceae)
Nesaea brevipes Koehne (Lythraceae)
Pisonia aculeata L. (Chlorophoraceae)
Schrebera spicatioides Roxb. (Onagraceae)
Symphorone inroclataum Roxb. (Verbenaceae)

E. Plants from North-East India and Andhra Pradesh

Ficus auriculata Lour. (Moraceae)

F. Plants from Southern Ghats and Karnataka

Cryptocarya beddomei Gamble (Lauraceae)
Impatiens dasy sperma Wight (Balsaminaceae)
Habenaria multicaudata Sedgw. (Orchidaceae)
Miquelia dentata Bedd. (Icacinaceae)
Trogidia angulata (Lindl.) Bl. (Orchidaceae)

G. Plants from Southern Ghats and Nilgiris

Ceropegia elegans Wall. (Asclepiadaceae)
Epithema carnosum Benth. var. hispida Clarke (Cusniaceae)
Fimbriatifolia eragrostis (Nees) Hance (Cyperaceae)
Gyrostigma montana Hook. f. var. pustilosa Hook. f. (Asclepiadaceae)
Nilgirianthus urceolaris (Gamble) Bentcck. (Acanthaceae)
Sageretia khamusa Broun. (Rhamnaceae)

Plants from Karnataka and HNilgiris.

Justicia nilgherrensis (Nees) Wall. ex T. And. (Acanthaceae)
Memecylon talbotianum Brandis  
(MELASTOMATACEAE)

Murdannia lanuginosa (Wall. ex Clarks) Brueckn.  
(COMMELINACEAE)

I. Plant from East-Coast

Satropa tanjorensis Ellis & Saxoja  
(EUPHORBIACEAE)

ENDEMIC PLANTS

According to Nayar (1982), the endemic angiosperms of Peninsular India consist of about 56 genera distributed over 25 families. Out of these 15 species belonging to 12 genera spread over 10 families could be collected from the study area. These are:

Anaphyllum wightii Schott

Bispharistemma membranifolia (Miq.) Ding Hou

Indobanalia thyrsiflora (Moq.) Henry & Roy

Jerdonia indica Wight

Meteoromyrtus wynaadensis (Bedd.) Gamble

Molluva speata (Dalz.) Nicolson

Nileirianthus esper Sant.

N. keymannus (Nees) Bremek.

N. neilgherrensis (Bedd.) Bremek.

N. urucolaris (Gamble) Bremek.

Oceinyphrium siyulaicum (Bedd.) Radlk.

Phlebophyllum lawsonii (Gamble) Bremek.

Picocaulus sessilis (Nees) Bremek.

Poeoconeuron indicum Bedd.

Smithsonia straminea Sald.

According to Blasco (1971), there are 5 phytogeographic subregions in the portion of the Western Ghats coming within the area of the erstwhile Presidency of Madras. According to him, the number of endemic species of dicotyledons restricted to each of these phytogeographic subregions are as given below:

Wynd and Coorg — Bezbudengir  
12

Nilgiris  
101
Anaimalais 21
Travancore 92
Palnis (Puneys) 32

Out of these 12 endemic species reported from Wynad — Coorg — Bababudangiri subregion, the following plants were collected from the study area:

*Goniothalamus wynaadensis* Bedd.
*Gynostachyum latifolium* And. var. *decurrens* Gamble
*Isora lawsonii* Gamble
*Mammea icon *lawsonii* Gamble
*Metaseomymrtus wynaadensis* (Bedd.) Gamble
*Phosanthus malabaricus* Bedd.

During the present work, a number of endemic plants said to be restricted to other phytogeographic subregions could also be collected from the present area which comes under Wynad — Coorg — Bababudangiri subregion. These are:

*Acanthodaphne malabarica* Balakr.
*A. tachilingamii* Gamble
*Allophylus distachys* Radlk.
*Cinnamomum riparium* Gamble
*C. travanoricum* Gamble
*Derris benihuntii* (Thw.) Thw.
*Gluta travanoricca* Bedd.
*Hopta icon *erosa* (Bedd.) Stooten
*Humboldtia brunonis* Wall.
*Litsea beddomi* Hook. f.
*L. coriacea* (Heyne ex Meissn.) Hook. f.
*Loesneriella bourdillonii* (Gamble) Raju
*Melogynae tamarowii* (Dunn) Gandhi
*Nothopegia travanoricca* Bedd.
*Oropea erythrocarpa* Bedd.
*O. wilflora* Hook. f. & Thoms.
*Osteoeida wynaadensis* Clarke
*Spathalobus purpureus* Benth. ex Baker.
Syzygium mundagam (Gamble) Chitr
Turraea vilosa Benn.

RELOCATION OF PLANTS

The intensive exploration carried out during the present work has resulted in relocating some species known earlier only from the type or other very old collections. These are:

1. Cinnamomum riparium Gamble (Lauraceae)

   This species was described by Gamble based on the collections of Roudillon (1895) and Barber (1901—1903) from the banks of Periyar river near Malayattur in North Travancore, Kerala and Uthumpanparai, Anaimalais, Coimbatore Dist. Tamil Nadu respectively. It has been relocated during the present study after a lapse of eight decades from a new locality.

2. Crotalaria bidie Gamble (Papaceae)

   Gamble described this species based on the collections of Bidie (1873) and Barber (1903) from Nilgiri Hills, Tamil Nadu and Neddikarna to Nedimballi, South Wynad, Kerala respectively.

3. Crotalaria clarkii Gamble (Papaceae)

   This species was described by Gamble based on his own collections and those of Boulenger, Bourke, Clarke, Lawson and Wight, all from Tamil Nadu. The present collection after a lapse of 10 decades from a different locality indicates the possibility of its occurrence in specialized niches of other areas as well in the Western Ghats.

4. Iaora lawsonii Gamble (Rubiaceae)

   Gamble described this species based on the collections of Wight and Lawson (1884) from Coorg, Karnataka and Mananadodd, Kerala. It has now been collected after a lapse of nearly 10 decades.

5. Memecylon lawsonii Gamble (Musaceae)

   This species was collected earlier by Lawson (1884) from South-east Wynad, Kerala. The present collection made is after the lapse of a century.
6. *Meteoromyrtus wynaadensis* (Bedd.) Gamble (*Myrtaceae*)

The availability of only a single sheet of this species in MH indicates that it is an extremely rare plant. The plant was relocated after a lapse of over a century.

7. *Phaeantius melaharicus* Bedd. (*Annonaceae*)

The availability of only the type sheet in the MH shows its rarity. The present collection is after a lapse of over a century.

8. *Philaeophyllum lawsonii* (Gamble) Buxb. (*Acanthaceae*)

Gamble described this species based on the collections of Lawson (1884), Barber (1903) and Bourdillon (1889) from Sispara, Wynad and Permade respectively and his own collections from Sispara. The plant could be relocated during the present study.

9. *Salacia beddomei* Gamble (*Ippocrateaceae*)

The availability of only the very old type collected from Anamala in MH shows that it is an extremely rare plant. The present collection from a place far away from the type locality indicates the possibility of its occurrence in specialized niches of other areas as well in the Western Ghats.

ENDANGERED OR THREATENED PLANTS

According to Subramanyam & Sreenadhavan (1970), Henry et al. (1980), Jaina & Sastry (1980), Singh & Raghavaa (1983) and Vajravelu & Daniel (1983) the following plants which are occurring in this district, are also considered endangered or threatened species:

FLORA OF CANNANORE


**AFFINITY WITH THE FLORA OF SRI LANKA**


**SALIENT STATISTICS ON THE FLORA**

This account on the flora of Cannanore district is chiefly concerned with flowering plants, with 1132 species in 658 genera and 137 families among the angiosperms. (Table 1).

**TABLE—1. GENERAL SURVEY**

<table>
<thead>
<tr>
<th></th>
<th>Genera</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monocots</td>
<td>136</td>
<td>257</td>
</tr>
<tr>
<td>Dicots</td>
<td>522</td>
<td>875</td>
</tr>
<tr>
<td>Total</td>
<td>658</td>
<td>1132</td>
</tr>
</tbody>
</table>

The ten dominant families in the present flora with their respective genera and species are listed below in Table 2. A comparison of this sequence
with those given by Hooker (1904) for Flora of British India, Fischer (1935) for Flora of the Presidency of Madras and Cooke (1908) for the Flora of the Presidency of Bombay as given in table 3 indicates interesting similarities as well as dissimilarities. There is a general resemblance of the Flora of these areas, as far as the ten dominant families are concerned, although the number of species and positions vary in the different areas. The family Fabaceae *sensu lato* and Poaceae occupy the same position in the present area and Madras and Bombay Presidencies and find second and third places in the Flora of India.

### Table 2. The Largest Families of the Area

<table>
<thead>
<tr>
<th>Family</th>
<th>Genera</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fabaceae (<em>sensu lato</em>)</td>
<td>48</td>
<td>123</td>
</tr>
<tr>
<td>Poaceae</td>
<td>45</td>
<td>80</td>
</tr>
<tr>
<td>Rubiaceae</td>
<td>28</td>
<td>71</td>
</tr>
<tr>
<td>Euphorbiaceae</td>
<td>31</td>
<td>60</td>
</tr>
<tr>
<td>Cyperaceae</td>
<td>12</td>
<td>53</td>
</tr>
<tr>
<td>Acanthaceae</td>
<td>27</td>
<td>52</td>
</tr>
<tr>
<td>Asteraceae</td>
<td>31</td>
<td>48</td>
</tr>
<tr>
<td>Orchidaceae</td>
<td>35</td>
<td>41</td>
</tr>
<tr>
<td>Ulricaceae (<em>sensu lato</em>)</td>
<td>16</td>
<td>11</td>
</tr>
<tr>
<td>Lamiaceae</td>
<td>13</td>
<td>30</td>
</tr>
</tbody>
</table>

Cynnosperms are represented by 2 species belonging to 2 genera and 2 families.
<table>
<thead>
<tr>
<th>Cannanore Dist.</th>
<th>Bombay Presidency</th>
<th>Madras Presidency</th>
<th>British India</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fabaceae</td>
<td>Leguminosae</td>
<td>Leguminosae</td>
<td>Orchidaceae</td>
</tr>
<tr>
<td>(sensu lato)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poaceae</td>
<td>Gramineae</td>
<td>Gramineae</td>
<td>Leguminosae</td>
</tr>
<tr>
<td>Rubiaceae</td>
<td>Acanthaceae</td>
<td>Rubiaceae</td>
<td>Gramineae</td>
</tr>
<tr>
<td>Euphorbiaceae</td>
<td>Compositae</td>
<td>Acanthaceae</td>
<td>Rubiaceae</td>
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<td>Cyperaceae</td>
<td>Euphorbiaceae</td>
<td>Euphorbiaceae</td>
<td>Euphorbiaceae</td>
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<td>Asteraceae</td>
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<td>Compositae</td>
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<tr>
<td>Orchidaceae</td>
<td>Orchidaceae</td>
<td>Cyperaceae</td>
<td>Cyperaceae</td>
</tr>
<tr>
<td>Urticaceae</td>
<td>Malvaceae</td>
<td>Labiatae</td>
<td>Labiatae</td>
</tr>
<tr>
<td>(sensu lato)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lamiaceae</td>
<td>Convolvulaceae</td>
<td>Asclepiadaceae</td>
<td>Urticaceae</td>
</tr>
</tbody>
</table>
SYSTEMATIC TREATMENT

KEY TO FAMILIES

1a. Ovules enclosed in carpels crowned by style and stigma:

2a. Stems with central pith or surrounded by concentric rings of woody tissue; venation usually reticulate; flowers usually 4-5 merous; cotyledons 2:

3a. Perianth biseriate or multiseriate:

4a. Petals free:

5a. Sepals free; ovary superior or immersed in a disc:

6a. Sepals imbricate in bud, hardly valvate, free:

7a. Stamens many:

8a. Aquatic plants with root-stock

8b. Terrestrial plants without root-stock:

9a. Fruits enveloped by thickened fleshy calyx

9b. Fruits not as above:

10a. Stamens attached to the bases of petals

10b. Stamens not as above:

11a. Carpels free

11b. Carpels united:

12a. Placentas free central; prostrate fleshy herbs

12b. Placentas not free central; plants otherwise:

13a. Leaves opposite or whorled:

14a. Trees with resinous juice

14b. Herbs or shrubs without resinous juice

15b. Leaves alternate:

15a. Fruits prickly

15b. Fruits smooth

7b. Stamens 10 or less:

16a. Climbing herbs; flowers unisexual, dioecious, trimerous

16b. Non-climbing herbs; flowers usually bisexual

NYMPHAEACEAE 5
DILLENIACEAE 2
THYMEAE 16
RANUNCULACEAE 1
PORTULACACEAE 13
HYPERICACEAE 14
BIGNONIACEAE 9
CAPPARACEAE 7
MENISPERMACEAE 4
16b. Erect or prostrate herbs or shrubs or trees; flowers usually bisexual; rarely polygamous; flowers 4 or 5-merous:

17a. Petals 4; stamens 6
17b. Petals 5; stamens as many as or twice the petals:

18a. Ovary 1-celled; sepals persistent:
19a. Trees; stamens 8
19b. Herbs; stamens 3—5:

20a. petals unequal
20b. petals equal

18b. Ovary 2—many celled; sepals usually deciduous, rarely persistent:
21a. Flowers regular or nearly regular:
22a. styles single
22b. styles 2—6:

23a. Shrubs climbing by spiral hooks
23b. Not as above:

24a. Prostrate or erect herbs
24b. Erect shrubs, trees or twisters

21b. Flowers irregular:
25a. Flowers spurred
25b. Flowers not spurred

55. Sepals valvate; more or less united at base:

26a. Flowers 3—merous
26b. Flowers 4—5—merous:

27a. Placentae parietal
27b. Placentae not parietal:

28a. Stamens monadelphous:
29a. Anthers 1-loculed:
30a. Carpels many; separating from axis at maturity
30b. Carpels 2—5; not detaching from axis at maturity

29b. Anthers 2-loculed:
31a. Filaments united at base
31b. Filaments united up to the top
28b. Stamens free or polyadelphous:

32a. Tendrils present; inflorescence leaf opposed

Vitaceae 38

32b. Tendrils absent; inflorescence axillary or terminal:

33a. Leaves pellicid gland-dotted

Rutaceae 27

33b. Leaves not as above:

34a. Leaves simple:

35a. Petals laciniate or lacerate

Fagaceae 22

35b. Petals not laciniate:

36a. Sepals persistent in fruits, often accrescent

Diptero carpaceae 17

36b. Sepals deciduous; when persistent not accrescent:

37a. Leaves opposite

Mali gnumeae 24

37b. Leaves alternate:

38a. Stamens numerous

Tiliaceae 21

38b. Stamens less than 10:

39a. Leaves with 2 glands at base

Simaroubaceae 28

39b. Leaves without such glands:

40a. Stamens alternate with petals:

41a. Petals 2- lobed

Dichapetalaceae 31

41b. Petals entire:

42a. Plants with resinous juice

Anacardiaceae 43

42b. Plants without resinous juice:

43a. Ovary 1-celled

Icacinaceae 34

43b. Ovary 4-5- celled:

44a. Stamens 3

Hippocrataceae 36

44b. Stamens 4-5

Celastraceae 35

40b. Stamens opposite to petals:

45a. Stipular spines present

Rhamnaceae 37

45b. Stipular spines absent:

46a. Petals valvate:

47a. Petals cucullate

Rhamnaceae 37

47b. Petals not cucullate:

48a. Climbers with tendrils

Olacaceae 32

48b. Climbers without tendrils

Opiliaceae 33

46b. Petals imbricate

Sapotaceae 42
34b. Leaves compound.

49a. Plants with resinous juice

49b. Plants not as above:

50a. Leaves with sheathing stipules

50b. Leaves without sheathing stipules:

51a. Fruits winged

51b. Fruits not winged:

52a. Fruit a capsule

52b. Fruit a drupe

53b. Sepals united; gynoecium usually enclosed in the calyx tube or inferior, not immersed in a disk:

33a. Fruit a legume or lomentum:

54a. Corolla papilionaceous

54b. Corolla not papilionaceous:

55a. Flowers in racemes or panicles; petals imbricate or none

55b. Flowers in globose or elongate spikes; petals valvate

56. Stamens many:

57a. Leaves stipulate

57b. Leaves entire:

58a. Leaves gland-dotted

58b. Leaves not gland-dotted

59. Stamens 5-12:

60a. Gynoecium inferior or semi-inferior:

60a. Flowers in simple or compound umbels:

61a. Herbs

61b. Scandent or erect shrubs or vines:

62b. Flowers bisexual:

63a. Terrestrial plants:

64a. Tendrils present; leaves not succulent

64b. Tendrils absent; leaves succulent

65b. Aquatic plants

66. Flowers unisexual:
65a. Connective prolonged and 
appendaged or tubercled  
65b. Connective not as above:

66a. Petals wrinkled  
66b. Petals not as above:

57a. Ovules always more 
than 1 in each cell. 

68a. Ovules numerous in each cell; not pendulous 
68b. Ovules 2-5 in each cell; 
pendulous:

69a. Ovary i- or 3-nucled  
69b. Ovary 2-6-nucled

67b. Ovule I in each cell

59b. Gynoecium superior:

70a. Plants insectivorous  
70b. Plants not insectivorous:

71a. Tendrils present  
71b. Tendrils absent:

72a. Fruits circumscribed  
72b. Fruits not as above:

73a. Fruits follicular:

74a. Herbs; leaves fleshy  
74b. Climbing shrubs; leaves not fleshy

73b. Fruits capsular:

75a. Placenta parietal; seeds arillate  
75b. Placenta axile; seeds not arillate

4a. Petals united, at least at the base:

76a. Ovary superior:

77a. parasitic herbs  
77b. Nonparasitic herbs; shrubs or trees:

78a. Plants with milky sap:

79a. Stamens united laterally; 
gynostegium present  
79b. Stamens free; gynostegium absent:

80a. Leaves opposite or whorled  
80b. Leaves alternate

78b. Plants without milky sap:

81a. Plants insectivorous, traps present  
81b. Plants insectivorous, traps absent
81b. Plants not insectivorous, traps absent:

82a. Floating herbs with flowers
     terminating apparent pedicels
     Plantaginaceae 83

82b. Plants not as above:

83a. Leaves all alternate:

84a. Flowers unisexual
     Euphorbiaceae 76

84b. Flowers bisexual

85a. Calyx covered with stalked glands
     Plumbaginaceae 73

85b. Calyx without such glands:

86a. Leaves gland-dotted
     Myrsinaceae 74

86b. Leaves not gland-dotted:

87a. Prostrate or climbing herbs or scandent shrubs; stamens subequal
     Convolvulaceae 86

87b. Erect herbs or shrubs or trees; stamens equal:

88a. Ovules many in each cell:

89a. Corolla-lobes imbricate; styles 2
     Hydrophyllaceae 84

89b. Corolla-lobes plicate; style single
     Solanaceae 87

88b. Ovules 1-2 in each cell
     Boraginaceae 85

83b. Leaves opposite, whorled or opposite and alternate on the same plant:

90a. Flowers regular or subregular:

91a. Stamens only 2
     Oleaceae 78

91b. Stamens more than 2:

92a. Stipules absent
     Gentianaceae 82

92b. Stipules present or reduced to a transverse line
     Loganiaceae 81

90b. Flowers irregular:

93a. Bracts conspicuous
     Acanthaceae 94

93b. Bracts inconspicuous, minute or absent:

94a. Ovules many in each cell:

95a. Leaves compound
     Ericaceae 82

95b. Leaves simple:

96a. Placentation parietal
     Cuscutaceae 91

96b. Placentation not parietal:

97a. Plants viscid pubescent;
     seeds not albuminous
     Pedaliaceae 93

97b. Plants not viscid pubescent;
     seeds albuminous
     Scrophulariaceae 88
94b. Ovules 1-4 in each cell:
98a. Fruits spinosus
98b. Fruits not spinous:
  99a. Ovary entire; style terminal:
  100a. Terrestrial plants
  100b. Halophytes in waterlogged areas
  59b. Ovary 4-lobed; styles gyrobasidic

76b. Ovary inferior:
101a. Leaves with inter or intra-petiolar stipules
101b. Leaves without such stipules:
  102a. Flowers in heads; involucral bracts present
  102b. Flowers not in heads; involucral bracts absent:
  103a. Corolla split open on one side
  103b. Corolla not as above:
  104a. Flowers regular:
   105a. Stamens as many as petals
   105b. Stamens many
  104b. Flowers irregular
3b. Perianth uniseriate or absent:
106a. Ovary superior:
  107a. Aquatic plants
107b. Terrestrial plants:
   108a. Stipules ochraceous
   108b. Stipules when present, not ochraceous:
   109a. Perianth present:
   110a. Flowers bisexual:
    111a. Leaves with silvery or stellate scales beneath
    111b. Leaves without such scales:
    112a. Anthers dehiscing by
     2 or 4 unopened lids
    112b. Anthers not dehiscing by lids:
    113a. Trees
    113b. Herbs or scendent shrubs:
    114a. Perianth corolline
    114b. Perianth calyceine:
     115a. Perianth and bracts scarious;
      staminal filaments connate

115b. Perianth and bracts not scarious; staminal filaments free

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116b. Flowers unisexual:

117a. Parasitic herbs

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117b. Nonparasitic shrubs or trees

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118a. Leafy herbs, shrubs or trees:

119a. Ovary 1-loculed:

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119b. Ovary 3-loculed:

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109b. Perianth absent:

123a. Inflorescence a cystidiun

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123b. Inflorescence not as above:

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124a. Erect, climbing or scandent herbs

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124b. Erect shrubs or trees:

125a. Flowers in cacti

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125b. Flowers not in cacti

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106b. Ovary inferior:

126a. Parasitic plants:

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127a. Semiparasitic herbs or shrubs growing on the stem of the host

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127b. Terrestrial shrubs or small trees, often root parasites

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26a. Stems without a sexual path, woody portion in scattered bundles; flowers usually 3-merous, venation usually striate; cotyledon 1:

128a. Flowers in the axils of glumaceous bracts; glumes imbricate, in spikelets or heads:
129a. Perianth segments petaloid, 3, yellow  
129b. Perianth segments not petaloid, but reduced or abortive

130a. Inflorescence a solitary head on spirally ribbed peduncle

130b. Inflorescence not as above:

131a. Ovules many

131b. Ovules solitary:

132a. Culms usually triangular, leaves 3-ranked; anthers basifixed, stigmas not feathery

132b. Culms usually cylindrical, leaves 2-ranked; anthers versatile; stigmas feathery

133a. Perianth present:

134a. Flowers bisexual:

135a. Perianth distinguishable into two heteromorphic series; the outer series sepaloid:

136a. Ovary superior:

137a. Pistils 1 or more

137b. Pistils solitary

138b. Ovary inferior:

139a. Petiole pubescent

139b. Petiole not pubescent

139b. Perianth segments of the same colour, all six of them or all but one resembling each other in form:

139a. Ovary superior:

140a. Plant aquatic

140b. Plant terrestrial

140b. Ovary inferior:

141a. Flowers actinomorphic:

142a. Ovules many, 2-seriate on the inner angles of each cell

129a. Xyridaceae 130

130a. Brocatellaceae 137

131a. Iowaceae 133

132a. Cyperaceae 129

133a. Poaceae 130

135a. Aristolochiaceae 136

136a. Commelinaceae 131

136b. Boraginaceae 126

136b. Zygophyllaceae 125

139a. Pontederiaceae 129

140b. Liliaceae 126

141a. Hypoxidaceae 126
142b. Ovules 2 to several in each cell, not 2-seriate

141b. Flowers monomorphic

134b. Flowers unisexual:

143a. Plants aquatic

143b. Plants terrestrial:

144a. Trees or weak shrubs

144b. Climbers

135b. Perianth absent:

145a. Leaves spirally arranged, spinulose

145b. Leaves not spirally arranged; not spinulose

10b. Ovules naked; not enclosed in carpels:

146a. Climbers; leaves simple

146b. Shrubs or trees; leaves pinnate

Haemodoraceae 125
Orobanchaceae 123
Hydrocharitaceae 121
Amphilaccae 133
Thysanocarpaceae 127
Pandanales 134
Arales 125
Onagraceae 120
Cycadales 129
I. RANUNCULACEAE

1a. Tendrils present
   Naravelia 2

1b. Tendrils absent
   Clematis 1

1. Clematis L.


   Climbing shrubs. Leaves imparipinnate; leaflets up to 5 x 2 cm, ovate or lanceolate, acute, glabrous above, pubescent beneath. Flowers c. 1 cm long, yellow, in axillary cymose panicles.

   *Fl.:* November—December.

   Occasional in moist deciduous forests in gahats, c. 800 m; Tollypetty.


   Climbing shrubs. Leaves s-toldiate, the terminal leaflet modified into a 3-fid tendril; leaflets up to 15 x 9 cm, broadly obovate, acuminate, glabrous above, pubescent beneath. Flowers c. 3 cm long, purplish white, in axillary and terminal panicles.

   Occasional in evergreen and moist deciduous forests, c. 500—800 m; Ambayachode, Tollypetty.
2. DILLENIACEAE

DILLENIA

1a. Flowers 3-6 cm across, in racemes; sepals silky  
D. braeckei 1

1b. Flowers less than 1 cm or more than 6 cm across,  
solitary or fascicled, sepals glabrous:

2a. Flowers solitary, white  
D. indica 2

2b. Flowers clustered, yellow  
D. pentagyna 3

1. Dillenia braeckei Wight, Ic. t. 338. 1840 ('braeckei'); Hook. f. &  
Roxb.; Dunn in Gamble, Fl. Pres. Madr. 7. 1915 (Repr. ed. 1: 5. 1957);  
Majumdar in Pasc. Fl. Ind. 2: 6. 1979

Evergreen trees up to 20 m tall. Leaves up to 23 x 9 cm, hirsute,  
narrowed at base, apex obtuse to retuse. Fruits c. 3 cm across, glabrous,  
enclosed in thickened fleshy sepals.

Fl. & Fr.: November — June.

Scattered in evergreen forests in ghats, c. 800 m; on way to Periya.

Gamble, Fl. Pres. Madr. 7. 1915 (Repr. ed. 1: 5. 1957); Majumdar in  
Lond. 1: 200. 1791, nom. illegit.; Wight, Ic. t. 823. 1844-45. 'Sydita'.

Evergreen trees up to 25 m tall. Leaves up to 40 x 15 cm, glabrous  
above, strigose on nerves beneath. Flowers pendulant. Fruits c. 2.5 cm across,  
yellowish-green, enclosed in sepals.

Fl. & Fr.: May — February.

Rare; in evergreen forests, often along streams, c. 250—800 m;  
Chandamathode, Kannoth R.F.

f. & Thoms. in Hook. f. Fl. Brit. Ind. 1: 38. 1872; Dunn in Gamble, Fl.  
'Kodupunnu'.

'R. K. D.  
Kodupunn'}
Deciduous trees up to 20 m tall. Leaves up to 50 x 20 cm, narrowed at base, acute, densely hairy beneath when young, glabrous when old. Flowers 2-7, on short shoots. Fruits c. 3.5 cm across, subglobose, yellow with fleshy sepals.

Fl. & Fr.: June—November.

Common; in moist deciduous forests, c. 150 m; Kannoth R.F.

3. ANNONACEAE

1a. Anther cells concealed by the overlapping connectives:

2a. Petals imbricate in bud

2b. Petals valvate or open in bud:

3a. Inner petals similar to the outer:

4a. Petals connivent at the concave base

4b. Petals flat, spreading from base:

5a. Flowers sessile

5b. Flowers pedunculate:

6a. Climbers

6b. Trees

3b. Inner petals dissimilar to the outer:

7a. Inner petals without claw

7b. Inner petals with claw

1b. Anther cells not concealed by the overlapping connectives:

8a. Outer petals shorter than the inner

8b. Outer petals longer than the inner

1. ARTABOTrys R. Br.


Climbing shrubs. Leaves up to 16 x 5.5 cm, ovate-oblong, acute, glabrous. Flowers up to 3 cm across, solitary, on woody hooked, flattened, leaf-opposed peduncles. Berries ovoid, mucronate, sessile.
Fr. & Fr.: February — April.

Occasional; in evergreen forests; c. 250 m; Nedumpoyil.

2. Desmos lawii


Climbing shrubs. Leaves up to 12 x 3 cm, oblanceolate, acute to acuminate, cuneate at base, glabrous. Fruits c. 4 cm across, constricted between the seeds.

Fr.: November—December.

Sorces; once collected from an evergreen forest, c. 500 m; on way to Panoth.


1a. Leaves with prominent nerves on both sides; outer petals clawed, hooded and oblong without conspicuous venation

G. cardiopetalus 1

1b. Leaves with prominent nerves beneath; outer petals not hooded, ovate with conspicuous venation

G. wynaadensis 2


Shrubs up to 3.5 m tall. Leaves up to 20 x 7 cm, ovate or oblong, cuneate at base,acute, coriaceous and shining. Flowers c. 2.5 cm across, solitary, supra-cauline, pale green. Fruitlets c. 2.5 cm long, oblong, glabrous, compressed.

Fr. & Fr.: April — August.

Occasional; in dense evergreen forests in ghats; c. 500 m; Ambayathode, Panoth.

Shrubs up to 4 m tall. Leaves up to 34 × 7.5 cm, obovate-oblong or oblong-lanceolate, cuneate at base, acuminate, coriaceous. Flowers c. 2.5 cm across, solitary, extra-axillary, pale greenish-yellow.

Fl.: August - December.

Occasional; in dense evergreen forests in ghats, c. 250-800 m; Ambayathode, Nadumpoyil, Tirunalli.


1a. Carpels soft, velvety

1b. Carpels solid, glabrate


Small trees up to 5 m tall. Leaves up to 12 × 5 cm, elliptic-lanceolate, rounded at base, acuminate, glabrous above, pubescent beneath. Carpels c. 2.5 cm across, ovoid or obovoid, pointed, slightly torulose.

Fl.: April - May.

Source, in evergreen forests, c. 300 m; Chandanathode.


Small trees up to 5 m tall. Leaves up to 16 × 5 cm, oblong-lanceolate, acute at acuminate, cuneate at base, glabrous above, sparsely pubescent beneath. Flowers c. 2.5 cm across, solitary, leaf-opposed. Fruits c. 3 cm across, constricted between the seeds.

Fl. & Fr.: January - August.

Common; in evergreen forests as an undergrowth, c. 500 m; Ambayathode, Panoth.
5. **Mimosa leachii** ex A. DC.


Small trees up to 5 m tall. Leaves up to 9 × 3.5 cm, elliptic-lanceolate, obtuse or acute, subcordate at base, glabrous above, fuscous-pubescent beneath. Carpels c. 2 × 2 cm, ovoid or obovoid, glabrous, shining.

_Fr._: March April.

Scarse; in dense evergreen forests above 800 m in ghats; on way to Brahmagiri.

6. **Oropea** Bl.

1a. Branchlets glabrous  
1b. Branchlets softly pubescent


Small trees up to 5 m tall. Leaves up to 15 × 4.3 cm, oblong, abruptly acuminate, glabrous above, pubescent beneath. Flowers small, tomentose, axillary or supra-axillary.

_Fl._: March April.

Rare; once collected from dense evergreen forests above 500 m in ghats; Panath.


Small trees up to 5 m tall. Leaves up to 13 × 4 cm, ovate or oblong-elliptic, narrowed at base, obtusely acuminate, glabrous. Flowers c. 1.5 cm across, sparsely pubescent. Carpels c. 1.5 × 1.3 cm across, smooth, glabrous.

_Fl._ & _Fr._: February May.
Occasional; in evergreen forests in ghats, c. 800 m; Chandanathode.

7. PHANEANTHUS Hook. f. & Thoms.


Small trees up to 5 m tall. Leaves c. 17 x 4.8 cm, oblong-lanceolate, acute-acuminate, subcorcate at base, glabrous, coriaceous. Flowers 2.5 cm across, axillary, solitary, pale greenish-yellow.

Fl.: March June.

Only the type material is available in MH. The collection during the present study is the next one, after more than a century; Panoth.

9. POLYALTIA Bl.


Evergreen trees up to 25 m tall. Leaves up to 21 x 6 cm, oblong-lanceolate, acute to acuminate, glabrous, cuneate at base. Flowers c. 2 cm across, yellow, solitary, axillary. Carpels c. 4 x 1.5 cm, ovoid, glabrous.

Fl. & Fr.: February October.

Common; in evergreen forests, c. 800 m; on way to Kannoth.

9. UVARIA L.

Scandent shrubs. Leaves up to $15 \times 5$ cm, oblong-lanceolate, acute. Flowers c. 2 cm across, red, solitary, terminal. Fruits c. 9 cm across; carpels many seeded, slightly torulose, glabrous.

Fl. & Fr.: November June.

Common; near bushes in plains.

Amona reticulata L. (Bull's Heart) is cultivated for its fruits.

4. MENISPERMACEAE

1a. Inflorescence arising from leaf axils:
   2a. Sepals free
   2b. Sepals connate

1b. Inflorescence arising directly from old stem

   1. CYCLEA AM. ex Wight

1a. Calyx globose; lobes 4-8
   C. peltata 2

1b. Calyx campanulate; lobes 4-5
   C. arnottii 1


   Climbing shrubs. Leaves up to 9.5 x 4 cm, deltoid or ovate, truncate at base, unequal, cordate, glabrous above, glaucous beneath. Male flowers small, in axillary panicles.

Fl.: April May.

Occasional; in evergreen forests in ghats, c. 500 m; Ambayathode.


Fl.: November March.
FLORA OF CANNANORE

Common; in plains; Kakkiyagad, Tellicherry.

2. DIPLOCLISMA MUCOS


Woody climbers. Leaves up to 13.5 × 8.5 cm, round or reniform, truncate or cordate at base, mucronate, glabrous above, glaucous beneath. Flowers yellow, in drooping panicles up to 25 cm. Drupes obovate-oblong, compressed, dorsally keeled and tubercled.

Fl. & Fr.: February March.

Occasional, along banks of rivers, 250-800 m; Chandanathode, Odanthode.

3. STEPHANIA LOUT.

1a. Leaves entire

1b. Leaves not entire

S. japonica 1

S. wightii 2


Climbing shrubs. Leaves up to 7.5 × 6.5 cm, peltate, ovate or subdeltoid, truncate at base, acute to acuminate, mucronate, glabrous on both sides, glaucous beneath. Male flowers c. 0.5 cm, in axillary umbels.

Fl.: March April.

Occasional; in moist deciduous forests: on way to Brahmagiri.

Foreman (i.c.) considers Stephania forsteri (DC.) A. Gray, S. hernandifolia (Wild.) Walp. and S. japonica (Thunb.) Miers, treated as distinct species by Diels (i.c.) to be different only at the varietal level as the distinctness
is based only on the nature of indumentum on the lower surface of the leaves and inflorescence. He adopted the earliest name *S. japonica* (Thunb.) Miers for the combined species and recognised three varieties under it. The present collection shows glabrous condition and as such belongs to var. *japonica*.


Climbing shrubs. Leaves up to 4 x 4.5 cm, peltate, subdeltoid, truncate at base, acute to acuminate, glabrous above, glaucous beneath. Male flowers small, in solitary axillary stalked heads.

*Fl.*: April May.

Occasional; along the margins of evergreen forests, c. 800 m; Clu-danimadhoe.

5. NYMPHAEACEAE

**NYMPHAEA L. nom. cons.**

1a. Leaves glabrous on both sides

1b. Leaves glabrous above, densely pubescent beneath

* N. nouchali 1

* N. pubescens 2


Aquatic perennial herbs. Flowers up to 10 cm across, white

*Fl.*: March November.

Common; in ponds and pools in plains.

Aquatic perennial herbs. Flowers up to 7.5 cm across, pale rose.

_Fl._: November December.

Common; in ponds and pools in plains.

6. BRASSICACEAE (*nom. alt.* Cruciferae)

1a. Flowers yellow; pods cylindric

1b. Flowers white; pods teatate

2. *Rorippa* 2

1. *Cardamine* L.


Erect herbs up to 30 cm tall. Leaves up to 7 × 5 cm, 5-7- foliolate, leaflets orbicular ovate, toothed and angled. Flowers c. 0.5 cm long, in terminal racemes.

_Fl._: November December.

Occasional; in open moist situations in ghats, c. 300 m; on way to Tirunalli.


Erect herbs up to 30 cm tall. Leaves up to 5 × 2 cm, ovate-lanceolate, runcinate-dentate; lower ones inciso-pinnatifid. Flowers c. 0.4 cm long, in terminal racemes. Pods 2-3 cm long, slightly curved.

_Fl._ & _Fr._: March April.

Begur, Manantoddy
7. CAPPARACEAE

1a. Herbs; fruits capsules  
Cleome 2

1b. Shrubs or trees; fruits berries:

2a. Armed climbing shrubs; leaves 1-foliolate  
Capparis 1

2b. unarmed trees; leaves 3-foliolate  
Cretoclin 3

1. CAPPARIS L.


Climbing shrubs. Leaves up to 11 x 5 cm, ovate to lanceolate, acute, mucronate, acuminate at base, glabrous. Flowers up to 5 cm long, white, solitary, axillary.

Fl.: April May.

Occasional; along the margins of semi-evergreen forests; to 800 m; Chendamangalam.

2. CLEOME (L.) DC.

1a. Leaves 1-foliolate  
C. monophylla 1

1b. Leaves 3-7-foliolate:

2a. Flowers yellow  
C. viscosa 2

2b. Flowers pink  
C. speciosa


Erect herbs up to 30 cm tall; branches pubescent. Leaves up to 3.5 x 1 cm, oblong-lanceolate, truncate at base. Flowers c. 1.5 cm long. Capsules c. 8 x 0.3 cm, subcylindrical, pointed, striate, clothed with short hairs.

Fl. & Fr.: June July.

Common; in wastelands, c. 800 m; Toli petry.

Erect viscid - pubescent herbs up to 40 cm tall.

*Pl. & Fr.*: March - July.

Common weed along roadsides and wastelands; Kakkayangad, Koothuparamba.

*Cleome speciosa* Rafin. is cultivated in gardens as an ornamental.

3. **CRATEVA** L.


Trees up to 10 m tall. Leaves up to 15.5 x 5.5 cm, 3-foliate; leaflets ovato-lanceolate, acute or acuminate, attenuate at base. Flowers up to 7.5 cm long, pale yellow with pink tinge, in terminal corymbs.

*Pl.*: March - April.

Common; along banks of streams in moist deciduous forests, c. 200-800 m; Bejai, Kannur.

8. **VIOLACEAE**

**HYBANTHUS** Jacq. *nom. cons.*

BIXACEAE


Evergreen shrubs up to 4 m tall. Leaves up to 20 × 13 cm, cordate to ovate, base subcordate, acuminate, glabrous on both sides. Flowers c. 3 cm across, white, in terminal panicles. Capsules c. 2 × 1.5 cm, ovoid or subglobose, reddish-brown.

Fl. & Fr.: June November.

Common: in open wastelands; Taliparamba.

10. FLACOURTIACEAE

1a. Armed plants:

2a. Flowers bisexual

1b. Unarmed plants:

3a. Fruits 3-8-seeded

3b. Fruits 1-seeded

1b. Unarmed plants:

4a. Fruit a capsule

4b. Fruit a berry

1. CASBARIA Jacq.

1a. Leaves glabrous

1b. Leaves softly villous

Small trees up to 5 m tall. Leaves up to 21 x 3 cm, elliptic-oblong, subacutate or shortly acuminated at apex, tapering at base. Flowers c. 0.3 cm long, in axillary fascicles. Fruits c. 2.5 x 1 cm, ellipsoid, orange-yellow when old, glabrous.

*Fl. & Fr.*: March - May.

Common; in evergreen forests in ghats, c. 1050 m; Teerthandamala, on way to Brahmagiri.


Small trees with villous branches up to 5 m tall. Leaves up to 20 x 6.5 cm, oblong-obovate, sharply acuminate, cuneate at base, sparsely tomentose on both sides. Flowers c. 0.5 across, sparsely pubescent, in axillary clusters.

*Fl.*: August - December.

Occasional; in dense evergreen forests in ghats, c. 800 m; Panoth. One of the endemic species of Nilgiri-Wynad area.

2. *Flacourtia* (Comm.) L' Herit.


Small trees up to 6 m tall; spines axillary. Leaves up to 8.5 x 3.5 cm, obovate, obtuse, cuneate, glabrous, crenate to serrate. Male flowers up to 6.8 cm long, in short branched racemes. Drupes globose, c. 0.7 cm across, glabrous.

*Fl. & Fr.*: August - September.
Occasional in moist deciduous forests in ghats; c. 800 m; Begur.

3. **Hydnocarpus Gaertn.**


Fair trees up to 15 m tall. Leaves up to 19 x 1 cm, ovate, oblong or lanceolate, acuminate, acute, glabrous. Male flowers c. 0.7 cm across, dirty white, tinged with green. Berry globose or obvoid.

**Fl. & Fr.** : December - July.

Fairly common; along banks of streams in ghats, c. 150-800 m; Begur; Kannoth.

4. **Sceloma Schreib.** nom. cons.


Small trees up to 5 m tall. Leaves up to 13 x 4 cm, ovate, acute, narrowed at base, glabrous, crenate. Berries c. 1 x 1 cm, ovoid or globose, pointed, glabrous, shining.

**Fr.** : June - July.

Common; in moist deciduous forests in ghats, c. 800 m; Mananthaddy.

5. **Xylosma R. & G. Forst.** nom. cons.

FLORA OF CANNANAOERE

Small trees up to 7.5 m tall. Leaves up to 10 × 4.5 cm, ovate, obuse or acute, crenate, glabrous, coriaceous, shining above, cordate at base. Berries globose, c. 2.5 cm across, black.

Fr.: June July.

Occasional; in evergreen forests in ghats, c. 800 m; Chandanathode.

11. XANTHOPHYLLACEAE

Xanthophyllum Roxb. nom. cons


Small trees up to 5 m tall. Leaves up to 16 × 5.7 cm, oblong-lanceolate, acute to acuminate, crenate at base, coriaceous. Flowers c. 1.5 cm long, white, samaroid carpels c. 2 cm across, glabrous.

Fl. & Fr.: March June.

Fairly common as an undergrowth in evergreen forests, 200-800 m; Chandanathode, Kannoth, Manantoddy, Tionall.

12. CARYOPHYLLACEAE

1a. Erect herbs

1b. Prostrate herbs:

2a. Leaves oblanceolate, spathulate

2b. Leaves orbicular

1. Drymaria Willd. ex Roem. & Schult.


Leaves up to 2 × 1.5 cm, orbicular, apiculate, subcordate at base, glabrous. Flowers c. 0.4 cm long, white, glandular-puberulous, in axillary or terminal cymes. Capsules c. 0.5 cm, 3-valved, linear-oblong.
Fl. & Fr.: February November.

Fairly common; in moist situations, c. 800 m; Regur, Chandanathode, Tirunalli.

2. Polycarpaea Lam. nom. cons.


Leaves c. 1.1 x 0.1 cm, linear, mucronate; stipules fimbriate, scarious. Flowers c. 0.3 cm long, silvery white, in dense terminal cymes. Capsules very small, 5-valved.

Fl. & Fr.: August November.

Fairly common; on sandy soil in plains; Cannanore.

3. Polycarpum Loefl. ex L.


Leaves c. 0.8 x 0.2 cm, spathulate. Flowers c. 0.7 cm long, pink, in axillary and terminal cymes. Petals smaller than sepals.

Fl. & Fr.: May June.

Common; on banks of rivers, c. 825 m; Manamoddy.

13. Portulacaceae

Portulaca L.

Prostrate, succulent herbs. Flowers yellow, in terminal heads.

Fl. & Fr.: March June.

Common; in moist situations in plains.

14. HYPERICACEAE

Hypnum L.

1a. Erect or procumbent herbs; flowers c.0.5 cm across

1b. Erect shrubs; flowers c.3 cm across


Leaves c.1.3 × 0.5 cm, elliptic or oblong-lanceolate, cordate, amplexicaul to cuneate at base, acute, glabrous. Flowers yellow, in terminal, dichasia cymes. Capsules c.0.3 cm, globose, glabrous.

Fl. & Fr.: February June.

Common; in rice fields, ditches and margins of streams, c. 800 m; Chandanathode, Manantoddy.


Leaves up to 4 × 1 cm, lanceolate, narrowly cuneate-amplexicaul, acuminate, glabrous. Flowers yellow, axillary, in cymose panicles.

Fl.: April May.

Occasional; in grasslands, c. 1000 m; Brahmagiri.

15. CLUSIACEAE (com. alt. Clusiiflora)

1a. Veins of leaves often close, but never all equal and parallel

1b. Veins of leaves very close and parallel:
2a. Style 1; stigma petalate:  
3a. Flowers in racemes  
3b. Flowers solitary or in pairs  
2b. Styles 2; stigma acute

1. **Calophyllum L.**


Trees up to 5 m tall. Leaves up to 15 x 9 cm, elliptic. Flowers up to 2.5 cm across. Drupe c. 2 cm across, yellow when ripe.

*Fl. & Fr.:* December—January.

Common; in plains near seashore.

2. **Garcinia L.**

1a. Fruits more than 2.5 cm across; ovoid  
1b. Fruits less than 2.5 cm across; globose


Trees up to 20 m tall. Leaves up to 10 x 4 cm, elliptic-oblong, shortly acute to obtuse at apex, cuneate at base. Berries up to 2 x 1.5 cm.

*Fr.:* April—May.

Common; along banks of streams in evergreen forests, c. 800 m: Chardanathode, Manantoddy.
Kostermans (l.c.) has shown that *Garcinia cambogia* (Gaertn.) Desr. is synonymous to *Garcinia gummi-gutta* (L.) Robs. He has also lectotypified it on 'Codampalli' Rheed. Hor. Malab. 1 : 41. t. 24. 1678.


Trees up to 15 m tall. Leaves up to 13.5 x 5 cm, elliptic-ovate or obovate, sub-epand, glabrous, acuminate at apex, acute at base. Berries up to 3 x 2.5 cm, globose, smooth, axillary, solitary.

*Fr.*: May—August.

Common; along banks of streams in evergreen forests, c. 500 m; Panorta.

3. *Mesua* L.


Large trees up to 25 m tall. Leaves up to 13.5 x 4 cm, oblong-lanceolate, acuminate at apex, rounded to attenuate at base, glaucous beneath. Flowers up to 7 cm across, terminal or axillary. Berries ovoid, 5 cm long, woody.

*Fl.* & *Fr.*: March—August.

Common; in evergreen forests along banks of streams, c. 800 m; Chandanathodi.

According to Kostermans (l.c.) the common Indian *Naka sampige* is *Mesua naga* (Burm. f.) Kosterm. based on *Calophyllum naga* (Burm. f.)


Large trees up to 25 m tall. Leaves up to 14 x 5 cm, elliptic-oblong, acuminate-cuspidate, cuneate at base. Flowers pale yellow, in terminal panicles.

*Fl.*: March—April.

Occasional; in evergreen forests in ghats, c. 800 m; Chandanathode. One of the endemic genera of Peninsular India.

16. THEACEAE

1a. Shrubs; flowers up to 0.5 cm across
1b. Trees; flowers 2-5 cm across


Tall shrubs, up to 2.5 m. Leaves up to 9 x 3 cm, oblong-lanceolate, tapering at both ends, glabrous, crenate-serrate. Flowers white, in axillary fascicle. Berries c. 0.5 cm across, ovoid, glabrous, tipped with persistent style.

*Fl.* & *Fr.*: June—December.

Common; in shila forests in ghats, c. 840 m; Chandanathode.

2. *Gordonia* Ellis nom. cons.


Evergreen trees up to 25 m tall. Leaves up to 10 x 3.5 cm, oblong-lanceolate, base narrowed, emarginate or obtuse, glabrous, crenate. Flowers c. 2.5 cm across, solitary, golden yellow and usually towards the ends of branches.
Flora of Cannamore

Fl.: April—May.

Frequent in sholas and evergreen forests, c. 800 m; Chandalathode, Tirunalli.

17. DIPTEROCARPACEAE

1a. Bases of the inner sepals nearly hidden by the outer in flower and fruit

1b. Bases of the inner sepals equally exposed in flower and fruit

1. HOPEA Roxb. nom. cons.

1a. Acrecent sepals longer than the fruit:

2a. Panicles tomentose; petals glabrous

2b. Panicles glabrous; petals pubescent

1b. Acrecent sepals shorter than the fruit

H. parviflora 2

H. ponge 3

H. cerosa 1


Large trees up to 25 m tall. Leaves up to 15 x 6 cm, oblong, obtuse and emarginate, rounded or subcordate, often unequal at base, glabrous. Nuts oblong, c. 3.5 cm long. Acrecent calyx lobes truncate, smooth or subcorporate.

Fr.: December—January.

Occasional; in evergreen forests, c. 600 m; on way to Kannoth.


Large evergreen trees up to 25 m tall. Leaves up to 9 x 4 cm, oblanceolate, acuminate at apex, obtuse at base. Flowers c. 0.4 cm long, in unilateral, paniculate, pubescent racemes.

Fl.: April—May.

Common; in evergreen forests, c. 200 m; Kannoth.

Large evergreen trees up to 20 m. Leaves up to 18 x 8 cm, ovate-oblong, subacute, rounded at base. Flowers pale pink, in axillary panicles. Nuts c 1.2 cm long, ovoid; accrescent calyx lobes up to 7 x 1.8 cm, oblong-obovate, crimson.

*Fl.* & *Fr.*: December—August.

Occasional; in semi-evergreen forests, c. 150 m; Kannoth.

*Artocarpus ponga* Denest. is typified by Rheed. Hort. Malab. 4: t. 35 and is conspecific with *Hopea wightiana* Wall. ex Wight & Arn.

2. **Vateria** L.


Large evergreen trees up to 25 m tall. Leaves up to 24 x 9.5 cm, elliptic-oblong, shortly pointed, rounded at base. Flowers c. 2 cm across, white, in lax terminal panicles up to 20 cm long.

*Fl.*: August—November.

Common; in evergreen forests near banks of streams, 200—850 m; Kannoth.

18. **MALVACEAE**

1a. Styles branched:

2a. Trees; flowers polygamous

**Kytia** 4

2b. Shrubs or herbs; flowers bisexual:

3a. Stylar branches as many as carpels:

4a. Flowers with epicalyx

**Malnatiace** 5

4b. Flowers without epicalyx:
5a. Ovules 2 or more per locule
5b. Ovules 1 per locule

3b. Stylar branches twice as many as carpels:
6a. Leaves always with a nectary on the midrib beneath; fruit a schizocarp
6b. Leaves devoid of nectary on the midrib beneath; fruit a capsule:

7a. Calyx equally 5-lobed
7b. Calyx spathaceous

1b. Styles unbranched

1. **Abelmoschus** Medic.

1a. Epicalyx segments connate at base; as long as or longer than the capsule
1b. Epicalyx segments free; much shorter than the capsule


Undershubs up to 1 m tall. Leaves c. 15 x 11 cm, orbicular, 5-7-lobed, cordate at base. Flowers axillary, solitary. Petals up to 8 cm long, obovate, bright yellow, dark purple at base.

*Fl.*: November—March.

Common in semievergreen forests in ghats, 250—900 m; Brahmagiri, Kannoth.


Undershubs up to 2 m tall, branchlets with prickles. Leaves up to 25 x 15 cm, orbicular, 3-5-lobed, hastate at base. Flowers axillary or terminal, solitary, up to 6.5 cm long. Capsules c. 8 x 2.5 cm, oblong-ovoid, densely trilobed.
FI. & Fr.: November—February.

Fairly common in semi-evergreen forests in ghats, c. 200 m; Ambayathode, Kannoth.

2. ABUTILON Mill.


Undershrubs up to 1.5 m tall. Leaves up to 5 x 2.5 cm, ovate, acuminate, cordate at base, crenate, sparsely pubescent above and densely tomentose beneath. Flowers axillary, solitary, c. 3 cm across, yellow, schizocarps c. 1.5 cm across, minutely puberulous.

Fl. & Fr.: February—March.

Common; in moist deciduous forests in ghats, c. 800 m; Begur, Tirunalli.

3. HIBISCUS L. nom. cons.

1a. Stem, petioles and pedicels with prickles:
   2a. Stipules linear
   2b. Stipules semisagittate

1b. Stem, petioles and pedicels without prickles:
   3a. Epicalyx segments extremely small, caducous
   3b. Epicalyx segments well developed, persistent


Prickly trailing undershrubs. Leaves 3-5-lobed, up to 11.5 x 8 cm, crenate-serrate, sparsely hairy above and densely hairy beneath. Flowers solitary, up to 5.5 cm long, yellow. Capsules c. 6.5 cm long, oblong, bristly hairy.
FLORA OF CANNANORE

Fl. & Fr.: February—March.

Common; along the margins of moist deciduous forests, 200—800 m; Kannoth, Mananthody.

Based on a study of the types, Paul & Nayar (i.e.) concluded that H. furcatus of Wildl. (1800) and that of Roxb. ex DC. (1824) are two distinct species. As the second H. furcatus is a latter homonym they adopted the next available legitimate name H. aculeatus Roxb. for it.


Erect herbs up to 0.6 m tall. Leaves entire to 3-5-lobed, up to 9.5 x 4 cm, serrate to crenate, sparsely pubescent on both sides. Flowers c. 2 cm across, white. Capsules up to 1.5 cm long, ovoid.

Fl. & Fr.: February—June.

Common; in moist deciduous forests in ghats, c. 800 m; Bavcli, Tolpetty.


Undershubs up to 1.5 m tall. Leaves entire to 3-5-lobed, up to 20 x 7.5 cm, acute to acuminate, serrate to dentate, densely tomentose on both sides. Flowers axillary, solitary, c. 6.5 cm long. Capsules obvoid, c. 2 cm long, densely hairy.

Fl. & Fr.: November—December.

Occasional; in semi-evergreen forests in ghats, c. 500 m; Ambayathode.

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Climbing shrubs. Leaves 3-5-lobed, crenate-serrate, sparsely hirsute on both sides. Flowers axillary, solitary, c. 3.5 cm across, yellow with purple base. Capsules up to 2 cm, ovoid, bristly hairy.

Fl. & Fr.: November—December.

Common; in piaias; Cannanore.

4. KYDIA Roxb.


Trees up to 10 m tall. Leaves up to 8 x 6 cm, ovate-orbicular. Flowers c. 1 cm across, white, in axillary or terminal, tomentose panicles.

Fl.: November—December.

Common; in moist deciduous forest, c. 800 m; Tolpetty.

5. MALVASTRUM Gey nom. cons.


Undershrubs up to 0.75 m. Leaves up to 8.5 x 4.5 cm, ovate to oblong. Flowers solitary, axillary, yellow. Schizocarp glabrous.

Fl. & Fr.: June—July.

Common as an undergrowth in open areas along margins of moist deciduous forests, c. 800 m: Haveli.

6. SIDA L.

1a. Prostrate herbs; stems rooting at nodes

S. beelom 2

1b. Erect herbs or undershrubs:
2a. Styles and mericarps 5, leaves palmatiparous.

2b. Styles and mericarps 5-10, leaves pinnatifid.

3a. Stipules of each pair similar:

4a. Leaves tomentose, pedicels jointed above the middle

4b. Leaves glabrous, pedicels jointed below the middle

S. acuta


Leaves up to 3.5 x 1.5 cm, ovate to linear, serrate, cuneate, subcordate at base. Flowers axillary, solitary, yellow. Schizocarps c. 0.5 cm across, glabrous.

Fl. & Fr.: February—May.

A common weed of open wastelands; Aralam, Chandanathode, Tolpetty.


Leaves up to 5 x 3 cm, ovate, acuminate, cordate at base, distinctly crenate-serrate. Flowers axillary, solitary, yellow. Schizocarps c. 0.7 x 0.5 cm, glabrous.

Fl. & Fr.: November—January.

A common weed of open wastelands; Kannoth, Panur.


Erect herbs up to 50 cm; branchlets tomentose. Leaves up to 6 x 2.5 cm, ovate, acute, cordate at base, crenate-serrate. Flowers axillary, solitary, yellow, c. 1.5 cm across. Schizocarps c. 1 cm across, puberulous.

Fl. & Fr.: November—December.

A common weed in wastelands in plains; Cannanore, Muzhappplangad.

Erect undershrubs up to 1.5 m tall. Leaves c. 5 x 3.5 cm, ovate, cordate at base, acuminate, densely hisrate on both sides. Flowers c. 1.2 cm across, axillary, solitary, yellow. Mericarps c. 0.3 cm long.

Fl. & Fr.: February—March.

Occasional; along margins of secondary forests, c. 150 m; Kannoth.


Ascending undershrubs up to 30 cm. Leaves c. 7 x 2.5 cm, shortly obovate to cuneate, acute to acuminate at base, truncate or retuse at apex. Flowers c. 2.5 cm across, axillary, solitary, yellow. Mericarps trigonous glabrous, c. 0.3 cm long.

Fl. & Fr.: November—December.

Occasional; in open wastelands, c. 200 m; Kannoth.

7. Thespesia Soland. ex Correa nom. cons.

1a. Fruit usually indehiscent, leaves not lobed

T. papillosa 2

1b. Fruit a dentate capsule; leaves usually 3-5-lobed

T. lamesha 1


Erect shrubs up to 2 m tall; branchlets tomentose with minute scabrate hairs. Leaves up to 10 x 7.5 cm, ovate, acute, cordate at base. Flowers solitary, axillary, c. 7 cm across; yellow with purple base. Capsules ovoid c. 2.5 cm, glabrescent.

Fl. & Fr.: November—January.
Occasionally in moist deciduous forests as an undergrowth; Chembukkuvar, Tolkerv.

Borssum (i.e.) remarks, "In Thespesia it occupies a special position which I have recognized by giving sectional status". The habit and the presence of nectary on the midrib, the shape of the stipules and the dehiscent capsule are remarkable features of this species.


Small tree up to 10 m tall. Leaves up to 13 x 11.5 cm, ovate, cordate at base, entire. Flowers axillary, solitary. Petals 13 cm long, yellow with red rings.

*Fl.*: March—June.

Common as roadside trees; Kuthaparumba.

8. *URENA L.*


1a. Leaves unlobed; epicalyx cupular in fruit

1b. Leaves deeply lobed; epicalyx spreading or reflexed in fruit

*subsp. loba*ta

*subsp. sinuata*

Annual erect herb up to 0.5 m. Leaves up to 7 x 10 cm, distinctly sinuate, acute at apex, truncate. Flowers c. 1.7 cm across, pink.

*Fl.* & *Fr.*: November—December.

A common weed in plains; Cannanore.


Erect undershrubs up to 1.5 m tall. Leaves up to 13 x 0.5 cm, densely glaucous beneath, deeply palmately lobed, each lobe further segmented. Flowers c. 1.5 cm across, pink.
Fl. & Fr.: November—January.

Common as an undergrowth in secondary forests, c. 120 m, Kannur.

19. BOMBACACEAE

1a. Leaves simple:
   2a. Flowers arising directly from the stem
       Cullenia 2
   2b. Flowers arising from the axils of leaves
       Ochroma

1b. Leaves compound:
   3a. Flowers red
       Bombax 1
   3b. Flowers pale yellow
       Cullenia

1. BOMBAX L.


Large deciduous trees up to 20 m tall. Leaves digitately 5-7-foliolate. Flowers up to 10 cm long, red, fleshy, solitary or 1—3 together; calyx densely villous within. Capsules ellipsoid.

Fl.: February—March.

In wastelands and forests, often cultivated on a large scale by the forest department.

2. CULLENIA Wight


Tall evergreen trees up to 20 m tall. Leaves up to 18.5 × 6 cm, oblong- lanceolate, cuneate at base, acute to acuminate. Flowers c. 4 cm long, brownish-white, in fascicles.

Fl.: November—December.
Common in evergreen forests, c. 800 m; Chandanathode.

_Ceiba pentandra_ (L.) Gaertn. is commonly cultivated for 'Silk cotton'.

_Ochroma pyramidale_ (Cav. ex Lam.) Urban, is at times cultivated by the forest department.

**STERCULIACEAE**

1a. Flowers unisexual or polygamons; petals 0
   1b. Flowers bisexual; petals present:
      2a. Staminial tube adnate to gynophore:
         3a. Fruits spirally twisted follicles
         3b. Fruits not spirally twisted but septicidally 5-valved capsules
      2b. Staminial tube distinct from carnel:
         4a. Petals didymous; fertile stamens 10
         4b. Petals macrescent; fertile stamens 5:
            5a. Styles 5
            5b. Style 1

1. _Helicteres_ L.

_Helicteres isora_ L. Sp. Pl. 963. 1753; Mast. in Hook. f., Fl. Brit. Ind. 1: 265. 1879; Dunn in Gamble, Fl. Pres. Madr. 107. 1915 (Repr. ed. 1: 77. 1957); Wright, 1e. t. 150. 1839. 'Vasampiri'.

Small trees up to 5 m tall. Leaves up to 14 x 8 cm, obovate, abruptly acuminate, cordate at base, crenate-serrate, tomentose on both sides. Flowers c. 4.5 cm long, red. Follicles 5—10 cm long, stellate-tomentose.

_Fl. & Fr._: November—December.

Common in moist deciduous forests, c. 800 m; Begur, Toipetty.

A pretty tree when in bloom and the curiously spirally twisted fruits attract attention in the field.
2. LEPTONYCHIA Turcz.


Small trees up to 7.5 m tall. Leaves up to 16.5 x 4 cm, abaxiolarly, acuminate, narrowed at base, glabrous. Flowers c. 1.5 cm, greenish-white, axillary, solitary. Capsules c. 3 x 2 cm, subglobose, 2-valved, tubercled.

Fl. & Fr.: March–August.

Occasional in dense evergreen forests, c. 500 m, Panath.

3. MELOCHIA L.


Erect herbs up to 75 cm tall. Leaves up to 7 x 1.7 cm, variable, ovate-oblong, acute, base truncate, glabrous on both sides. Flowers c. 0.5 cm across, pink. Capsules c. 0.5 cm across, depressed-globose, hispid.

Fl. & Fr.: November–December.

A common weed in plains, Panath.

4. PTEROSPERMUM Schreb. nom cons.


Trees up to 15 m tall. Leaves up to 25 x 15 cm, glabrescent above, rusty pilose beneath. Capsules 10-12 cm long, woody, subovate oblong, 5-angled, brown.

Fr.: August–September.

Occasional in evergreen forests, c. 300 m, Panath.
5. Sterculia L.


Trees up to 10 m tall. Leaves up to 24 x 16 cm, ovate-oblanceolate, acuminate, subcordate at base, glabrous above, stellately pubescent beneath. Male flowers c. 2 cm across, densely fulvous, in racemes up to 15 cm long.

Fl.: November to December.

Occasional: in evergreen forests. c. 500 m. Periva.

6. Waltheria L.


Woody undershrubs up to 1 m tall. Branches densely tomentose. Leaves up to 4.5 x 1.8 cm, ovate, obtuse, subcordate at base, softly pubescent on both sides. Flowers c. 0.5 cm across, yellow, in axillary heads.

Fl.: March.

Common in plains, Tellicherry.

21. Tiliaceae

1a. Fruits echinate

Trinifolium 3

1b. Fruits not echinate:

2a. Stigma lobed; fruits drupaceous

Grewia 2

2b. Stigma unlobed; fruits capsular

Corchorus 1

1. Corchorus L.

in Gamble, Fl. Pres. Madr. 121. 1915 (Repr. ed. 1: 86. 1957); Wight, Jc. 1: 739. 1844.

Undershrubs up to 0.75 m tall. Leaves up to 9.5 × 3.5 cm, ovate, acute, rounded at base, glabrous. Flowers c. 0.6 cm long, yellow, 1-3 together in leaf-opposed cymes.

_Fl._: November December.

Common weed in plains; Aralam, Taliparamba.

2. *Grewia* L.

1a. Fruits 2-4 lobed:

2a. Fruits with 4 lobes:

3a. Leaves densely pubescent beneath

*G. tomentosa* 3

3b. Leaves glabrous

*G. umbellata* 6

2b. Fruits with 2 lobes:

4a. Trees

5a. Peduncles 3 times longer than the pedicels; twigs glabrous

*G. glabra* 2

5b. Peduncles almost equaling the pedicels; twigs pubescent

*G. barbata* 4

1b. Fruits not lobed

*G. nervosa* 4


Small trees up to 5 m tall. Leaves up to 11 × 3 cm, linear to ovate-lanceolate, acute, subcordate at base, glabrous on both sides. Flowers pale yellow, c. 2 cm long. Drupes c. 1.5 × 0.8 cm, black, glabrous.

_Fl. & Fr._: November December.

Occasional; along margins of moist deciduous forests, c. 900 m; Toletty.

Small trees up to 5 m tall. Leaves up to 15 × 4.5 m, oblong-lanceolate, acuminate, acute at base. Flowers c. 2 cm long, pale yellow, in axillary, umbellate cymes. Drupes c. 1.5 cm across.

Fl. & Fr.: December - January.

Common; along fringes of evergreen forests, c. 500 m; Chandaanathode.


Shrubs. Leaves up to 11.5 × 6.5 cm, elliptic-lanceolate, acuminate, subcordate at base. Flowers c. 2 cm across, yellow, in umbels.

Fl. & Fr.: March - May.

Common; along the margins of evergreen forests, c. 800 m; Brahmagiri.


Small trees up to 3.5 cm tall. Leaves up to 18.5 × 6 cm, oblong, acute, subcordate at base, glabrous. Flowers c. 2.5 cm across, yellow, in terminal panicles up to 15 cm long.

Fl.: November - December

Common in plains; Cannanore.


Leaves up to 15 × 7 cm, ovate, sharply acuminate, cordate and unequal at base, subglabrous on both sides. Flowers c. 1.5 cm long, yellow, in umbels. Drupes c. 0.8 cm across.

Fl. & Fr.: March - June.
Common; in moist deciduous forests in ghats, c. 800 m; Bager, Periya, Tirumalill.


Scandent shrubs. Leaves up to 13 x 5 cm, oblong, acuminate, rounded at base. Flowers pale yellow, in umbellate cymes. Drupes c. 2 cm broad, stellately hairy.

*Fl. & Fr.: June - August.*

Common; in moist deciduous forests, c. 800 m; Periya.

3. **Triumfetta L.**

1a. Leaves simple; capsules hispid
1b. Leaves lobed; capsules glabrous


Erect herbs up to 0.75 cm tall. Leaves up to 13 x 4.5 cm, elliptic-acuminate, subcordate at base, stellately hairy. Flowers c. 2 cm long, yellow. Capsules c. 1.2 cm across, globose.

*Fl. & Fr.: November - February.*

Common as an undergrowth in evergreen forests, c. 800 m; on way to Tirumalill.


Woody undershrubs up to 1 m tall. Leaves up to 8 x 3.5 cm, variable, broadly ovate, lower leaves 3-5 lobed, upper one entire; pubescent on both sides. Flowers yellow. Capsules c. 0.5 cm long, globose, bristled.

*Fl. & Fr.: November - January.*
Common weed in open wastelands in plains; Ambayathode, Kuthuparamba.

22. ELAEOCARPACEAE

Elaeocarpus L.

1a. Athers terminated by a long awn:
   2a. Leaves obovate                      E. tuberculatus 4
   2b. Leaves ovate-lanceolate            E. maruni 2

1b. Athers not terminated by a long awn:
   3a. Athers filiate on the longer valve E. concinnus 3
   3b. Athers not filiate on the longer valve E. gymnandrus 5


Trees up to 15 m tall. Leaves up to 18 x 7 cm, broadly elliptic, acute, glabrous on both sides, shining. Flowers c. 1.5 cm across. Drupes c. 4 x 2 cm, oblong, narrowed at both ends, glabrous.

Fl. & Fr.: May November.

Fairly common; along banks of streams in evergreen forests, 250-300 m; Chembukkavu, Nedumpoyil, Tirunelli.


Trees up to 15 m tall, Leaves up to 14.5 x 4.5 cm, ovate-lanceolate, bluntly long acuminate at apex, rounded at base, glabrous on both sides. Flowers c. 3.5 cm across, in racemes up to 10 cm long.

Fl.: July August.

Occasional; in evergreen forests, c 800 m; Chandanathode.

Trees up to 10 m tall. Leaves c. 15 × 6 cm, elliptic-obovate, obtuse, glabrous above, slightly pubescent beneath. Flowers c. 2.5 cm across. Drupes c. 2.5 cm long, oblong, narrowed at base, bluntly pointed at apex.

**Fl. & Fr.**: June July.

Occasional; in evergreen forests, c. 250 m; Kanoth.


Evergreen trees up to 15 m tall. Leaves up to 18.5 × 10 cm, obovate, obtuse at apex, rounded at base, glabrous above, ferruginous pubescent beneath. Flowers c. 3 cm across. Drupes c. 2.5 cm long, oblong, glabrous, tubercled.

**Fl. & Fr.**: December July.

Fairly common; along streams in evergreen forests, c. 800 m; Chandanathode, Tirunalli, Telpetty.

23 LINACEAE

**Hugonia L.**

1a. Leaves glabrous, entire

1b. Leaves ferruginous-tomentose, crenate


Climbing shrubs. Leaves up to 18.5 × 6 cm, elliptic-lanceolate, acute to acuminate. Berries c. 1.5 cm across, brown, globose, glabrous.

**Fl.**: March April.

Rare; once collected from dense evergreen forests, c. 500 m; Panoth.

Scandent shrubs with hooks. Leaves c. 6 × 2.5 cm, elliptic-obovate, subacutae. Drupes c. 1.5 cm across, globose, fleshy.

*Fr.*: March April.

Common in plains; near Ezhimala.

24. MALPIGHIACEAE

1a. Styles 1; calycine glands single, petals clawed

1b. Styles 3; calycine glands 0; petals not clawed

1. *ASPIDOPTERYS* Juss.


Climbing shrubs. Leaves up to 10 × 4.5 cm, elliptic-lanceolate, obtusely acuminate, glabrous, margins repand. Flowers small, in long-pedicelled umbelliform racemes.

*Fl.*: April May.

Rare; once collected from evergreen forests, c. 800 m; on way to Kannur.

2. *HIPPTAGE* Gaertn.


Climbing shrubs. Leaves up to 14 × 7.5 cm, elliptic-oblong, acute. Flowers c. 2 cm across, white, fragrant, in racemes. Samaras 2-3-winged, up to 4 cm long (when young).
Fl. & Fr.: February May.

Common in moist deciduous forests, 250 750 m; Nadumoya, Tirunall.

25 OXALIDACEAE

1a. Prostrate herbs; leaves 3-foliolate

1b. Erect herbs; leaves abruptly pinnate

Biphytum DC.

1a. Sepals as long as or shorter than the capsule

1b. Sepals much longer than the capsule:

2a. Leaves 15-12-foliolate

2b. Leaves 12-30-foliolate


Herbs up to 25 cm tall. Leaves c. 7 cm long. Flowers yellow, in small umbels.

Fl. & Fr.: February March.

Common; in moist shady places, c. 200 m; Aralam.


Herbs up to 20 cm tall. Leaflets 8-10 pairs.

Fl. & Fr.: July - November.

Occasional; in shady places, c. 200 m; K annoth.

Herbs up to 15 cm tall. Leaves c. 4 cm long. Flowers yellow. Capsules c. 7 mm long, ellipsoid, apiculate.

Fl. & Fr.: November December.

Common; in moist shady places, 50-800 m; Cannanore, Chandanathode.

2. Oxalis L.


Creeping pubescent herbs, rooting at nodes. Leaflets up to 1.5 x 1 cm, obcordate. Flowers yellow, solitary or in axillary umbels. Capsules up to 2.5 cm long.

Fairly common; in moist situations; Chandanathode, Mananroddy, Telpetty.

26. BALSAMINACEAE

Impatiens L.

1a. Perennial herbs; leaves radical:

2a. Flowers sparsely:

2b. Flowers spurred:

3a. Wings 2-partite

3b. Wings 3-partite

1b. Annual herbs; leaves cauline:

4a. Sepals linear or linear-lanceolate:

5a. Spurs as long as or longer than flowers:

6a. Stem stiff, simple:

7a. Spur incurved

7b. Spur straight

6b. Stem slender, flaccid, branched

5b. Spurs shorter than flowers or 0

4b. Sepals ovate or ovate-lanceolate:
8a. Leaves opposite or whorled  
8b. Leaves alternate:
   9a. Flowers sparsely  
   9b. Flowers spurred


   Perennial herbs; scape up to 25 cm long. Leaves variable, subtomentose, pubescent, glabrous, crenate, base subcordate. Flowers c. 2 cm long, pink, in racemes.

   Fl.: August.

   Fairly common; on wet rocks in dense evergreen forests, c. 700 m; Chandanathode.

I. fusciculata Lam. Encycl. 1: 359. 1783; Wight, t. 748. 1844.

   Herbs up to 30 cm tall. Leaves very variable, linear-oblong or obovate, more or less hairy on upper surface, silver-grey beneath. Flowers c. 1.5 cm long, rose-purple. Capsules ellipsoid, tapering at both ends.

   Fl. & Fr.: June July.

   Common; in moist places, c. 800 m; Chandanathode, Kannavam.


   Small slender herbs up to 12 cm tall. Leaves orbicular-oblong or broadly ovate, crenate, glabrous. Flowers c. 2 cm, pale pink, 3-6 together.

   Fl.: August.

   Occasional; on tree trunks, c. 1000 m; Theerthandaia.

Herbs up to 25 cm tall. Leaves up to 11.5 x 3.5 cm, elliptic-lanceolate, serrate or crenate-serrate, auricate-acuminate. Flowers up to 3.5 cm long, rose-purple; spur c. 2 cm long.

*Fl. & Fr.*: November December.

Occasional; in moist situations in plants; Taliparamba.


Herbs up to 20 cm tall. Leaves ovate-lanceolate, glabrous above, glaucous beneath, acute. Flowers c. 3.5 cm long, rose-purple.

*Fl. & Fr.*: June - November.

Common; in damp moist situations in ghat, c. 200 m; Kannoth.


Erect herbs up to 40 cm tall. Leaves c. 13 x 4 cm, ovate-oblong, acute, cuneate at base, glabrous. Flowers c. 3.5 cm long, pink. Capsules c. 2.5 cm long, oblong, pointed, glabrous.

*Fl. & Fr.*: July November.

Common; along margins of evergreen forests, c. 800 m; Kannoth R.F.


Slender, much branched herbs up to 25 cm tall. Leaves linear-lanceolate, remotely serrate, sparsely pubescent above, pale beneath. Capsules c. 2.8 cm, ellipsoid, shortly pointed, turgid in the middle.
Fl. & Fr.: November - December.

Common; in grasslands in ghats, c. 875 m; Theerthumadams.


Leaves up to 5 x 3 cm, elliptic-lanceolate or obovate, acute or obtuse, distinctly serrulate, sparsely pubescent above, glaucescent beneath. Flowers c. 2 cm long, purple. Capsules c. 3 cm long, narrow, fusiform.

Fl. & Fr.: July - November.

Fairly common; in damp situations from plains to ghats; Tellicherry, Tolpetty.


Herbs up to 30 cm tall. Leaves elliptic-lanceolate or obovate, serrate, sparsely pubescent above, glabrous beneath. Flowers c. 3 cm long, rose coloured, axillary.

Fl.: November - December.

Scarce; along the edges of moist deciduous forests, c. 800 m; Tolpetty.


Scapes up to 25 cm tall. Leaves variable, suborbicular, obtuse, glabrous, crenate, base subcordate. Flowers c. 3.5 cm long, pink, in racemes.

Fl.: August - September.

Common; on wet rocks in dense evergreen forests, c. 700 m; on way to Chandanathode.
27. RUTACEAE

1a. Fruits dehiscent

1b. Fruits indehiscent:

2a. Flowers polygamous:

3a. Stamens 2-5

3b. Stamens 8

2b. Flowers bisexual:

4a. Armed plants:

5a. Leaves 3-8-foliolate:

6a. Calyx 4-5-lobed

6b. Calyx cuneal or obscurely lobed

5b. Leaves 1-foliolate:

7a. Climbers

7b. Erect shrubs

4b. Unarmed plants:

8a. Style persistent

8b. Style deciduous

1. ACRONYCHIA J.R. & G. Forst. non cons.


Trees up to 7.5 m tall. Leaves 1-foliolate, up to 14 x 6 cm, oblong-ovobolate, acute. Flowers white, up to 1 cm long, in terminal or axillary stout corymb, up to 9 cm long. Drupes subglobose, up to 1.5 x 0.5 cm, apiculate, glabrous.

Fl. & Fr.: March - November.

Common; near streams in evergreen forests, c. 800 m; Chandanathode.

2. ATLANTIA COTEA non cons.


Shrubs up to 1.5 m tall; branches glabrous. Leaves alternate, up to 13 × 5.5 cm, elliptico-oblong, cuneate. Flowers white, in axillary racemes. Fruits up to 4.5 × 2.5 cm, globose or ovoid.

Fl. & Fr.: November August.

Common; in shola forests, c. 900 m; on way to Brahmagiri.

3. CLAUSENA BURM.f.

1a. Leaflets rhomboid, oblique, nearly black when dry, reticulation obscure

C. indica 2

1b. Leaflets lanceolate to obovate, yellowish when dry, reticulation conspicuous

C. heptaphylla 1


Evergreen shrubs up to 3.5 m tall. Leaves 7-9-foliolate, up to 40 cm long; leaflets up to 16 × 5 cm, lanceolate to obovate, crenulate. Flowers white, in axillary cymose panicles. Fruits up to 1.5 cm across, globose or ovoid.

Fl. & Fr.: November July.

Common; in dense evergreen forests, c. 800 m; Chandanathode.


Small trees up to 7.5 m tall. Leaves 7-9-foliolate; leaflets up to 9 × 3.3 cm, membranous, oblique. Flowers small, in terminal cymose panicles, up to 4 cm long.

Fl.: June August.

Rare; in evergreen forests, c. 500 m; Panoth.
4 Flora A. R. & G. Forst.


Unarmed tree up to 15 m tall. Leaves 3-foliolate; leaflets obovate or lanceolate. Flowers small, in axillary paniculate cymes.

Fl. & Fr.: November - June.

Common; in evergreen and semievergreen forests; Titusali.

5. Glycosmis Correa

1a. Ovary glabrous, flowers in panicellae; G. moritiana

2a. Ovary hastate, stalked

2b. Ovary ovoid, sessile

1b. Ovary minutely papillate; flowers in racemes or spikes

G. arborea

G. macrocarpa


Small trees up to 3.5 m tall. Leaves 3-5-foliolate; leaflets up to 16 x 8.5 cm, ovate or elliptic, obtuse or subacute. Flowers white, in axillary panicles. Fruits subglobose, white, pulpy.

Fl. & Fr.: July - November.

Common as an undergrowth in moist deciduous forests, c. 800 m; Tolpetty.

Shrubs up to 1 m tall. Leaves 3-5-foliolate; leaflets up to 23 × 8.5 cm, oblong or elliptic-lanceolate, obtusely acuminate, cuneate. Flowers white, in terminal or axillary panicles, up to 7 cm long. Fruits up to 1.5 × 1 cm, subglobose, constricted at base, smooth.

Fl. & Fr.: March - June.

Occasional; in dense evergreen forests as an undergrowth, 500-800 m; Chandanathode, Nedumpoyil.


 Erect shrubs up to 3.5 m tall. Leaves 5-foliolate; leaflets up to 16 × 5.5 cm, ovate or elliptic. Flowers white, in axillary panicles. Fruits white, subglobose, pulpy.

Fl. & Fr.: February - March.

Common; in moist deciduous forests, c. 800 m; Begur.


 Scandent shrubs. Leaves 3-foliolate; leaflets up to 10.5 × 6 cm, elliptic-oblong, shortly obtusely acuminate, glabrous, cuneate at base. Fruits c. 3 cm across, ellipsoid, pitted.

Fr.: June - July.

Rare; in evergreen forests above 1040 m; Theerthur damalas.


Small trees up to 5 m tall. Leaves 3-5-foliolate, each up to 6.5 × 3 cm, trapezoid-ovate, obtuse, notched at tip, cuneate at base, glabrous. Fruits c. 2 cm across, globose, glabrous.

Fr.: July December.

Occasional; in moist deciduous forests in low altitudes; Kannur: R.F.

8. Paramignya Wight


Leaves up to 10 × 4 cm, ovate or ovate-lanceolate, rounded at base, acuminate. Fruits c. 1 cm across, subglobose, compressed, glabrous.

Fr.: February March.

Rare; once collected in evergreen forests above 900 m; Theett-hundamala.


Scandent shrubs armed with recurved prickles. Leaves 3-foliolate, leaflets up to 9 × 4 cm, elliptic-lanceolate or obovate, slightly crenulate. Berries c. 1 cm across, globose, glabrous.

Fr.: July August.

Occasional; along margins of evergreen forests, c. 800 m; Chanda-nathode.
28. SIMAROUBACEAE

Samadera Gaertn. nom. cons.


Trees up to 7.5 m tall. Leaves c. 24 × 7.5 cm, elliptic-oblong, acute, cuneate at base, shining. Flowers pale greenish-yellow. Drupes c. 4.5 × 3 cm, oblong-ovate, compressed, with narrow wings.

Fl. & Fr.: April May.

Common: in moist deciduous forests. 250-800 m; Kannaath, Periya.

Allanthus tripaphya (Dennst.) Alston is commonly cultivated by the forest department.

29. BURSERACEAE

Garuga Roxb.


Trees up to 12 m tall. Leaves 13-21-foliolate; leaflets up to 9.5 × 2.4 cm, lanceolate or ovate, oblique at base, acuminate, crenate. Drupes c. 3 cm long, subglobose, rugose, in panicles.

Fr.: May June.

Occasional; in moist deciduous forests, c. 800 m; Tolpetty.

30. MELIACEAE

1a. Seeds with wings:

2a. Winged on both sides

2b. Winged on one side only

Toona

Chukrasia
1b. Seeds without wings:
3a. Seeds albuminous:
4a. Leaves simple

4b. Leaves compound:
5a. Common petiole winged

5b. Common petiole not winged:
6a. Leaves pinnate:

7a. Flowers less than 1 cm long

7b. Flowers more than 2 cm long

6b. Leaves bipinnate

3b. Seeds exalbuminous:
8a. Anthers included:

9a. Fruits berries

9b. Fruits capsules

8b. Anthers exserted

1. **Aglaja** Lour. nom. cons.

1a. Seeds arilate:

2a. Leaves 1-foliolate

A. *simplicifolia* 2

2b. Leaves 3-5-foliolate

A. *indica* 4

1b. Seeds exarilate

A. *taminifolius* 3


Small trees up to 3.5 m tall. Leaflets up to 15 x 9.5 cm, elliptic, obtuse, cuneate at base, glabrous. Capsules c. 6 x 3 cm, ellipsoid, ovoid, beaked, stellately pubescent.

*Fr.*: May June.

Common; in evergreen forests, c. 800 m; Tirimalli.

Small tree up to 15 m tall. Leaves up to 30 × 10 cm, elliptic, sub-acuminate, glabrous. Flowers c. 0.5 cm long. Capsules c. 4 × 4 cm, ellipsoidal-ovoid, covered with stellate-tomentose hairs.

Fl. & Fr.: July December.

Fairly common; in evergreen forests, c. 800 m; Chandanathode


Evergreen trees up to 15 m tall. Leaves pinnate, leaflets 5-8, each up to 13 × 5.5 cm, obovate, acute, narrowed at base, glabrous above, lepидate beneath. Capsules up to 3 cm long, subglobose or obovoid, coriaceous, 3-5-valved.

Fr.: June July.

Occasional; in evergreen forests, c. 800 m; Chandanathode

2. *Chukrasia* Juss.


Deciduous trees up to 25 m tall. Leaves pinnate; leaflets 5-8 pairs, each up to 15 × 7 cm, ovate or ovate-oblong, acuminate, glabrous above, densely pubescent beneath, base inequilateral. Capsules up to 6 cm long, obovoid, glabrous.

Fr.: June August.

Common; in moist deciduous forests, c. 800 m; Begur.

3. *Cipadesia* Bl.

Shrubs up to 3.5 m tall. Leaves imparipinnate, 11-13-foliate; leaflets up to 12.5 × 3.8 cm, elliptic-lanceolate, acute at both ends, glabrous except the nerves which are hairy. Flowers c. 0.7 cm long, white. Drupes c. 0.5 cm across, ovoid or ellipsoid, smooth.

_Fl. & Fr._: November July.

Common as an undergrowth in moist deciduous forests, c. 800 m; Belehi, Tirunalli, Toipurty.

4. **MELIA L.**


Trees up to 15 m tall. Leaves bipinnate; leaflets up to 7 × 4 cm, ovate or lanceolate, acuminate, inequilateral at base, glabrous. Drupes c. 2.5 × 1.5 cm, ellipsoid, smooth, yellow when ripe.

_Fr._: November December.

Occasional; in semievergreen forests at low altitudes; Kannoth.

5. **MUNRONIA Wight**


Undershrubs up to 75 cm tall. Leaflets up to 9.5 × 3 cm, opposite or subopposite, lanceolate or ovate, crenate-serrate, sparsely pubescent on both sides. Flowers up to 4 cm long, in axillary cymes.

_Fl._: March April.

Common undergrowth in evergreen forests, c. 500 m; on way to Chandamkhode.
6. **Naregamia** Wight & Arn. nom. cons.


Erect woody herbs up to 25 cm tall. Leaves 3-foliate; leaflets up to 3 x 1.2 cm, elliptic or ovate, obtuse, cuneate at base. Flowers white, up to 4.5 cm long, solitary, axillary. Capsules ovoid-globose, c. 0.7 cm across, trigonous, 3-valved.

*Fl & Fr.:* July November.

Fairly common; on the lateritic slopes in plains; Kannoth, Karimbam.

7. **Reinwardtiodendron** Koord.


Evergreen trees up to 15 m tall. Leaves imparipinnate; leaflets 3-5, each up to 14 x 4.5 cm, elliptic-lanceolate, acuminate, acute at base, sub-equal, glabrous. Flowers c. 0.2 cm long, in axillary panicles.

*Fl.:* April May.

Occasional; in dense evergreen forests, c. 500 m; Panoth.


8. **Toona** (Endl.) Roem.

Evergreen trees up to 20 m tall. Leaves imparipinnate. Flowers c. 0.5 cm long, white, scented in terminal panicles. Capsules c. 3.5 x 2 cm, oblong, 5-valved.

**Fl. & Fr.:** December August.

Occasional; in evergreen forests. c. 500 m; Kannoth, Panoth.

9. **Trichilia Br. nom. cons.**


Trees up to 7.5 m tall. Leaves imparipinnate; leaflets 4-6 pairs, each up to 16 x 7.5 cm, ovate-oblong, oblong-lanceolate, acuminate, glabrous above, glaucous beneath. Flowers c. 0.7 cm long, greenish-yellow on corymbose branches of panicles. Capsules c. 1.5 cm long, globose, brownish-red.

**Fl. & Fr.:** December July.

Common; in evergreen forests. c. 800 m; Chandanathode, Panoth.

10. **TURRABA L.**


Climbing shrubs. Leaves up to 13 x 5.5 cm, ovate, acuminate, acute at base, moderately pubescent on both sides. Flowers up to 7 cm long, pale yellow, solitary, axillary. Capsules c. 1 cm across, subglobose, glabrous.

**Fl. & Fr.:** January November.

Common; in dense evergreen forests, c. 500 m; Chembukkavu, on way to Panoth.
31. DICAPETALACEAE

Dichapetalum Thouars


Small trees up to 7.5 m tall. Leaves up to 15 × 5.5 cm, elliptic, oblong-elliptic, acuminate, acute at base, glabrous. Flowers c. 0.7 cm across. Drupes c. 1 × 1.5 cm, oblong or obovate, crustaceous, didymous, compressed, pubescent.

Fl. & Fr.: April - July,

Common; in evergreen forests, c. 800 m; Nedumpoyil, Panoth, Tirunalli.

32. OLACACEAE

Erythrophalum Bl.


Climbing shrubs with tendrils. Leaves up to 15 × 10 cm, ovate, acuminate at apex, rounded and subpetate at base, shining above, glaucous beneath. Flowers c. 3 cm long, greenish-yellow. Drupes c. 3.5 × 1 cm, oblong-ovoid, glabrous, yellow turning reddish when mature.

Fl. & Fr.: February - March,

Fairly common; along margins of evergreen forests, c. 800 m; Chandanathode.

33. OPILIACEAE

Casenova Juss. nom. cons.

Climbing shrubs armed with spines. Leaves up to 12 × 4 cm, ovate-lanceolate, acuminate, rounded at base, glabrous on both sides. Flowers c. 0.4 cm across, yellowish-green. Drupes c. 1 cm long, ovoid, orange-red, glabrous.

*Fl. & Fr.*: November February.

Common: along margins of moist deciduous forests, c. 200 m: Kannoth.

34. **RACINOIDEAE**

1a. Trees or erect shrubs:

2a. Petals connate

2b. Petals free

3a. Climbing shrubs:

3a. Leaves palminederved, dentate; flowers in pendulous spikes *Sarcostigma* 4

3b. Leaves simple, entire; reticulate; flowers in subcapitate heads *Miquelia* 2

1. **Gomphandra** Wall. ex Lindl.


Erect shrubs up to 3.5 m tall. Leaves up to 15 × 6.2 cm, variable from broadly elliptic-oblong to narrow-lanceolate, acuminate, glabrous. Male flowers c. 0.5 cm long. Drupes c. 2.5 × 1 cm, oblong, glabrous.

*Fl. & Fr.*: March December.

Common in evergreen forests, c. 800 m: Ambayathode, Chandana-thode, Panath.

2. **Miquelia** Meissn. *nom. cons.*

Climbing shrubs. Leaves up to 12 × 6 cm, ovate-oblong, acuminate at apex, membranous, glabrous. Drupes compressed, oblong.

Fr.: October November.

Rare; once collected from the margins of evergreen forests above 825 m, Chandanathode.

3. NOTHAPODYTES Bl.


Small trees up to 2.5 m tall. Leaves up to 11 × 8 cm, ovate-oblong, acute to acuminate, rounded at base, glabrous above, sparsely pubescent beneath. Flowers c. 0.5 cm long, pale yellow, in terminal, corymbose cymes.

Fl.: July August.

Occasional in shola forests, 900 m; Chandanathode.

According to Sleumer (l.c.) the genus Mopsea Jacq. is restricted to the Neotropics.

4. SARCOSTIGMA Wight & Am.


Climbing shrubs. Leaves up to 21.5 × 7.5 cm, oblong-lanceolate, acute, glabrous, shining, acute at base. Male flowers c. 0.2 cm long. Drupes c. 3.5 × 1.5 cm, oblong, bright orange-red, rugose.

Fl. & Fr.: July - December.
Common in evergreen forests, 200-500 m; Kannoth, on way to Panoth.

35. CELASTRACEAE

1a. Erect shrubs or trees; leaves opposite:

2a. Disc conspicuous; flowers peduncled; petals free:

3a. Peduncles much shorter than leaves; flowers rarely 2 cm across:

4a. Petals limbriate; flowers up to 1.5 cm across
   *Euphymes* 2

4b. Petals lamellate; flowers above 1.5 cm across
   *Lophopetalum* 4

3b. Peduncles longer than leaves; flowers 2-5 cm across
   *Glyptopetalum* 3

2b. Disc absent; flowers in sessile clusters; petals slightly united at base
   *Microtropis* 5

1b. Scandent shrubs; leaves alternate
   *Celastrus* 1

1 **Celastrus L.**


Leaves up to 10 x 4.5 cm, ovate or ovate-oblong, glabrous, acuminate, cuneate at base. Flowers white, in terminal panicles up to 15 cm. Capsules c. 1.5 cm across, yellow, ovoid, glabrous.

*Fl. & Fr.:* November December.

Occasional along margins of semievergreen forests, c. 800m; Chanda-nathode, on way to Kannoth.

2. *Euonymus L.*


Small trees up to 5 m tall. Leaves up to 12 x 5 cm, oblong-lanceolate, subcoriaceous, acute, cuneate at base. Flowers reddish-brown with white limbriate margins, in axillary dichasial cymes. Capsules c. 3.5 cm long, obovoid-clavate, lobed and angled.
Common; in evergreen forests, c. 800 m; Brahmagiri, Tirunalli.

3. **Glyptostelium** Thw.


Small trees up to 5 m tall. Leaves up to 15 × 6 cm, elliptic-oblong, acuminate, cuneate at base. Flowers pale yellow, in axillary cymes, up to 13 cm long. Capsules c. 2 cm across, subglobose, glabrous.

*Fl. & Fr.*: February - June.

Rare; in evergreen forests, c. 875 m; Chandanathode.

4. **Lophostelium** Wight & Arn.


Tall spreading trees up to 20 m tall. Leaves up to 24.5 × 8 cm, narrowly oblong, thinly acuminate, rounded at base. Flowers reddish yellow, in axillary or terminal panicled cymes.

*Fl.*: December - March.

Common; in evergreen forests near streams, 150-800 m; Chandanathode, Kannoth.

5. **Microtropis** Wall. ex Meissn. *nom. cons.*


Erect shrubs up to 2.5 m tall. Leaves up to 13.5 × 6 cm, elliptic or oblanceolate, coriaceous. Flowers c. 1 cm across, white, axillary. Capsules c. 1.5 cm long, oblong, smooth.

*Fl. & Fr.*: February - July.
Occasional; in evergreen forests, most often along banks of streams, c. 800 m; Chandanathode.

36. HIPPOCRATEACEAE

1a. Fruit a berry

1b. Fruit follicular:

2a. Leaves acuminate; flowers c. 0.5 cm across

2b. Leaves acute; flowers 0.8–1.00 cm across

1. LOESNERIELLA A.C. Smith

1a. Petals orbicular

L. arnottiana 1

1b. Petals triangular lanceolate

L. bourdillonii 2


Climbing shrubs. Leaves up to 11 x 5 cm, ovate-oblong, acuminate at apex, concave at base, margins slightly repand. Flowers c. 1 cm across, white, in axillary panicles.

Fl.: February March.

Common in shady places; Aralam, Kannoth.


Climbing shrubs. Leaves up to 10 x 6 cm, elliptic-oblong, rounded at both ends, glabrous, shining. Flowers pale greenish-yellow, in axillary pedunculate cymes.

Fl.: March.

Rare; in shady places in evergreen forests, c. 500 m; Panoth.

2. REISSANTIA Halle

Reissantia indica (Willd.) Halle in Mem. Inst. Frnch. Afrique Noire n.64. 75. 1962; Ding Hou in Blumea 12 : 33. 1963. Hippocratea indica
Climbing shrubs. Leaves up to $9 \times 4.5$ cm, elliptic-acute, narrowed at base. Flowers pale yellow, in axillary corymbose branches of panicles.

**Fl.:** March - April.

Occasional; in moist deciduous forests; Nedumpoyil.

3. **SALACIA L.**

1a. Flowers in fascicles

1b. Flowers not in fascicles

*S. beddomei* 1
*S. fruticosa* 2


Woody climbers. Leaves up to $13 \times 5$ cm, elliptic-oblong, acute at apex, cuneate at base. Flowers c. 1 cm long, in axillary clusters. Berries c. 3 cm across, depressed-globose or globose, unberced, glabrous.

**Fl. & Fr.:** March - August.

Common in shades in evergreen forests, c. 800 m; Chathanthode.


Woody climbers. Leaves up to $9.5 \times 4$ cm, ovate, obtusely acuminate, cuneate at base. Flowers c. 0.5 cm across, pale yellow, in axillary cymes. Berries c. $2.5 \times 2$ cm, globose or subglobose.

**Fl. & Fr.:** February - August.

Common in shade in semievergreen forests; Aralam, Chathanthode.

37. **RHAMNACEAE**

1a. Plants with tendrils

1b. Plants without tendrils:
2a. Leaves palmately veined
2b. Leaves pinnately veined:
   3a. Flowers sessile
   3b. Flowers pedicelled

1. **GOUANIA** Jacq.


   Climbing shrubs. Leaves up to 10 × 5.5 cm, elliptic-ovate, acute, subcordate at base, glabrous. Flowers greenish-white, in axillary, pubescent panicles. Drupes c. 0.5 × 0.8 cm, 3-angled, glabrous, shining.

   Rare; once collected from margins of evergreen forests, c. 800 m; Chandanathode.

2. **SAGERETIA** Brongn.


   Straggling shrubs. Leaves up to 13 × 5 cm, elliptic-oblong, shortly acuminate. Flowers c. 0.2 cm long, puberulous, in terminal and axillary panicles.

   **Fl. & Fr.** August December

   Occasional; along margins of evergreen forests c. 900 m; Chandanathode.

3. **VENTILAGO** Gaertn.

   1a. Flowers in panicles; disc glabrous
   1b. Flowers in axillary fascicles; disc slightly villous


Climbers. Leaves up to 12 × 3.5 cm, lanceolate, acute, base oblique, shining. Flowers c. 0.5 cm long, in axillary fascicles.

Fl.: January February.

Rare; once collected from evergreen forests above 500 m in ghats; Ambayathode.

Banerjee & Mukherjee (l.c.) while revising the genus Smythea Seem. ex A. Gray transferred the species from Ventilago to Smythea as S. bombaiensis (Dalz.) Banerjee & Mukherjee based on characters of fruits. Oza (l.c.) opines that “there should not be any confusion whatsoever in the identity of V. bombaiensis Dalz. The generic transfer case of 1970 in Indian For. 96 : 214, with regard to Smythea bombaiensis (Dalz.) S.P. Bhat et P.K. Mukh. should be relegated to the synonymy of a distinct taxon V. bombaiensis Dalz.” Oza’s view is followed here.


Climbing shrubs. Leaves up to 7× 3 cm, oblong-lanceolate, long-acuminate, cuneate at base. Flowers c. 0.4 cm across, in terminal golden pubescent panicles.

Fl.: January February.

Rare; once collected in semievergreen forests, c. 250 m; Chembukkavu.

4. Ziziphus Mill.

1a. Flowers with petals:

2a. Styles 2:

3a. Plants with recurved and straight spines  Z. nummularia  1

3b. Plants with only recurved spines  Z. aeroplana  2

2b. Styles 3

4. Z. xylophyus  4

1b. Flowers without petals  Z. rugosa  3

Climbing shrubs. Leaves up to 3.5 × 1.5 cm, orbicular or ovate, acute, sparsely tomentose above, densely tomentose beneath. Flowers c. 0.6 cm long, greenish-yellow, in axillary, sessile, pubescent cymes.

*Fl.*: August September.

Occasional near villages in plains; Panur.


Scandent shrubs. Leaves up to 6.5 × 3.5 cm, ovate or ovate-lanceolate, acute, oblique at base, glabrous above and with appressed rufous hairs beneath. Drupes c. 0.7 cm across, globose or obovoid, black when ripe.

*Fr.*: November February.

Common in moist deciduous forests, c. 800 m; Begur, Tolpetty.


Climbing shrubs. Leaves up to 7.5 × 4 cm, elliptic or orbicular, shortly acuminate,cordate at base, glabrous above, fulvous-tomentose beneath. Flowers c. 0.4 cm across. Drupes globose or pyriform, white when ripe.

*Fl.* & *Fr.*: November April.

Common; in moist deciduous forests; Begur, Tolpetty.


Straggling shrubs. Leaves up to 7.5 x 4.5 cm, elliptic-oblanceolate or suborbicular, mucronate, cordate at base, glabrous above, pale yellow hairy beneath. Flowers greenish-yellow, in dense pubescent, paniculate cymes.

_Fl._: May - June.

Occasional; in moist deciduous forests; c. 800 m; Baveli.

38. VIACEAE

1a. Filaments thickened in middle

1b. Filaments not thickened in middle:

2a. Leaves simple:

3a. Flowers pentameras; inflorescence with tendrils on peduncle
   _Ampelocissus_ 1

3b. Flowers tetrameras; inflorescence without tendrils on peduncle
   _Cissus_ 3

2b. Leaves compound:

4a. Flowers unisexual; stigma conspicuous, 4-lobed
   _Tetraphis_ 5

4b. Flowers bisexual; stigma inconspicuous, not 4-lobed
   _Cayratia_ 2

1 _Ampelocissus_ Planch. _nom. cons._


Climbing shrubs. Leaves up to 10 x 5 cm, orbicular or cordate, 3-7-lobed, serrate, glabrous. Flowers small, reddish-brown, in thyrsoid cymes.

_Fl._: May - June.

Rare; in shade near streams in evergreen forests; Kunnath.

2. _Cayratia_ Juss. _nom. cons._

1a. Leaves 3-foliolate

1b. Leaves 3-7-foliolate:

_C. mollisalma_ 1
2a. Leaflets glabrous \textit{C. tenusfolia} 3
2b. Leaflets pubescent \textit{C. pedata} 2


Slender, softly villous climbers. Leaflets up to 13 × 6 cm, oblong-ovate, irregularly serrate, shortly acuminate, truncate at base. Berries c. 1 cm across, globose, fleshy, greenish-white.

\textit{Fl.}: May June.

Common; in moist deciduous forests, c. 825 m; on way to Brahmagiri.


Large slender climbers. Leaves pedately 7-9-foliolate; leaflets up to 10 × 3.5 cm, oblong-lanceolate, acuminate at apex, somewhat oblique at base, hirsute on both sides. Flowers white, in axillary, shortly pedunculate corymbose cymes.

\textit{Fl.}: June July.

Occasional; in semievergreen forests, c. 800 m; Chandanathode.


Slender scendent climbers. Leaflets up to 5 × 1.7 cm, lanceolate, acuminate, mucronate, cuneate at base. Flowers c. 0.3 cm long, white, in dichotomously branched divaricate cymes.

\textit{Fl.}: November - December.

Occasional; in shade, in evergreen forests, c. 500 m; Ambayathode.
3. Cissus L.

1a. Branchlets subangular or 4-winged:

2a. Leaves green with pink blotch above and purple beneath  
*C. discolor* 1

2b. Leaves green  
*C. glyptocarpa* 3

1b. Branchlets terete:

3a. Leaves green when dry  
*C. repens* 4

3b. Leaves black when dry  
*C. glauca* 2


Scandent herbs. Leaves up to 8 × 3 cm, ovate-oblong, acuminate, cordate at base. Flowers c. 0.5 cm long, white, in umbellate cymes.

*Fl.*: August September.

Common in semi-evergreen forests, c. 800 m; Ambayathode.


Climbers with glaucous stems. Leaves up to 14 × 11.5 cm, orbicular, acuminate, deeply cordate at base. Flowers small, green, in leaf-opposed cymes. Berries c. 1.5 cm across, pyriform, glabrous.

*Fl.* & *Fr.*: November December.

Common; in semi-evergreen forests, c. 200 m; Kallanoth.


Slender, climbing shrubs. Leaves up to 10 × 5 cm, ovate, shortly acuminate, truncate-cordate at base. Fruits c. 1 cm long, pyriform, glabrous.

*Fr.*: October - November.
Common; in evergreen forests, c. 600 m; on way to Kannoth.


Trailing shrubs. Leaves up to 11 × 5.5 cm, ovate, acuminate, cordate at base. Berries c. 0.4 cm long, pyriform, glabrous.

Fl.: November December.

Occasional; in semievergreen forests, c. 250 m; Kannoth.

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4. **PURIA N.C. Nair**


Climbing shrubs. Leaves up to 13 × 5.5 cm, 3-partite, cordate at base. Flowers small, in subumbellate divaricate cymes. Berries c. 0.7 cm across, obovoid, glabrous.

Fl. & Fr.: June August.

Occasional in semievergreen forests above 250 m in ghats; on way to Kannoth.

N.C Nair (f.c.) erected this monotypic genus based on evidences from external morphology and embryology. Longer plicate and spiral micropylar canal, absence of extra-micropylar protrusion of the embryosac, a marinated disc and the filaments with a thickened middle portion are some of the distinguishing characters given by him to separate it from *Cissus* L.

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5. **TETRASIGMA Planch.**

1a. Stems tuberculate:

2a. Uppermost leaves 5-foliolate; leaflets acuminate, crenate on margins

   *T. sulcatum* 3

2b. Uppermost leaves usually 3-foliolate; leaflets acute, serrate on margins

   *T. leucoxystophyllum* 2

1b. Stems not tuberculate

   *T. canarensis* 1

Climbing shrubs. Leaves 3-foliolate, leaflets up to 9 × 4.2 cm, elliptic-ovate or lanceolate, shortly acuminate, oblique at base. Berries c. 1 cm across, globose, smooth, yellow when young and red and ripe.

*Fr.*: August - September.

Occasional; in shades in evergreen forests, c. 500 m; Panthi.


Woody scandent shrubs. Leaves pedately 5-foliolate; leaflets up to 11 × 5 cm, oblong-lanceolate, acuminate, conuate at base. Berries c. 1 cm across, globose, glabrous.

*Fr.*: November - December.

Occasional, once collected from evergreen forests, c. 800 m, on way to Panthi.

*Cissus leucostaphyla* Dennst. is the earliest name for this species which is based on *Rheede*, Hort. Malab. 7 : t.8.


Large climbers. Leaves pedately 5-foliolate; leaflets up to 15 × 7 cm, oblong-lanceolate, acuminate, isomeric, at base. Berries c. 1.5 cm across, globose or ovoid, glabrous.

*Fr.*: July - August.

Occasional; in evergreen forests, c. 800 m; Tolpetty.
39. LEEACEAE

Leea Royen ex L.

1a. Leaves 1-pinnate  

L. asiatica 1

1b. Leaves 2-3- pinnate:

2a. Leaflets glabrous; fruits black-purple  

L. indica 2

2b. Leaflets sparsely pubescent; fruits black  

L. macrophylla 3


Undershrubs up to 0.75 m tall. Leaves 5-7-foliolate; leaflets up to 17.5 × 8 cm, oblong, acute-acuminate, truncate, cordate. Flowers greenish-white, c. 0.5 cm long. Berries c. 0.7 cm across, depressed-globose, glabrous.

Fl. & Fr.: March - November.

Common; in evergreen forests, c. 800 m; Chandanathode.


 Erect shrubs up to 5 m tall. Leaves 5-7-foliolate, leaflets up to 17 × 5 cm, oblong or elliptic-oblong, acuminate at apex, cuneate at base. Flowers c. 0.3 cm long, white. Berries c. 0.7 cm across, depressed-globose, smooth.

Fl. & Fr.: November - February.

Common; in evergreen forests, 500-800 m; Ambayahiode, Chandanathode.

Large shrubs up to 3 m tall. Leaves 2-3- pinnate, each pinna with 5-7 leaflets, each up to 17.5 \( \times \) 8 cm, ovate-oblong, acuminate, rounded or sub-serrate at base, sparsely pubescent on both sides. Flowers c. 0.5 cm long, greenish-white, in corymbose cymes.

*Fl.*: November December.

Occasional; in evergreen forests, c. 500 m; Kannotti.

40. **STAPHYLEACEAE**

**TURPINIA** Vent. nom. cons.

1a. Disc deeply lobed; filaments glabrous  
1b. Disc ovately crenate; filaments shortly villous


Trees up to 10 m tall. Leaves imparipinnate, 3-7-foliolate; leaflets up to 13 \( \times \) 7.5 cm, lanceolate, abruptly obtuse, acuminate, cuneate at base. Flowers c. 0.3 cm long, white. Berries c. 2.5 cm across, subglobose.

*Fl.* & *Fr.*: June December.

Occasional; in evergreen forests, 500-800 m; Ambryathode, Chandamahade.


Trees up to 5 m tall. Leaves imparipinnate, 3 foliolate; leaflets up to 10 \( \times \) 4 cm, lanceolate, long acuminate, cuneate at base. Flowers c. 0.3 cm long, white, in axillary panicles.
Flora of Cannanore

Fl.: August September.

Occasional; in evergreen forests, c. 300 m; Chandanathode.

41. SAPINDACEAE

1a. Climbing herbs

1b. Erect or climbing shrubs or trees:

2a. Flowers zygomorphic:

3a. Leaves ternately compound

3b. Leaves pinnately compound

2b. Flowers actinomorphic:

4a. Fruit a capsule

4b. Fruit not a capsule:

5a. Lowest pair of leaflets smaller than others and stipuliform

5b. Lowest pair of leaflets similar to others:

6a. Rhachis winged

6b. Rhachis not winged:

7a. Petals present:

8a. Drupes smooth

8b. Drupes tubercled

7b. Petals absent

1. ALLOPHYLUS L.

1a. Leaves glabrous:

2a. Racemes unbranched

2b. Racemes branched

1b. Leaves tomentose:

3a. Racemes unbranched; petals somewhat declinate

3b. Racemes branched; petals not declinate


Small trees c. 3.5 m tall. Leaflets up to 11 × 6 cm, ovate or elliptic-ovate or rhomboid ovate, acute at apex, cuneate at base, sparsely tomentose above and silvery tomentose beneath. Flowers c. 0.3 cm across; inflorescence often branched, up to 16 cm long. Fruits c. 0.4 cm in diameter, globose, glabrous.

*Fl. & Fr.*: March December.

Common; in moist deciduous forests, c. 600 m; Chandanathode, Kannur.


Woody climbers. Leaflets up to 17 × 6.5 cm, lanceolate or oblong-lanceolate, obtusely acuminate at apex, cuneate at base. Flowers white. Fruits c. 0.7 cm across, glabrous, subglobose, in axillary fascicles.

*Fl. & Fr.*: March August.

Occasional; in stade in evergreen forests, c. 500 m; Ambayathode, Brachmagiri.


Evergreen shrubs up to 2.5 m tall. Leaflets up to 25 × 10 cm, ovate-lanceolate, shortly acuminate, glabrous, shining, remotely serrate-dentate; lateral leaflets shorter, very unequal at base; petioles up to 2 cm long. Flowers greenish-yellow, in axillary or terminal racemes, up to 15 cm long.

*Fl. & Fr.*: November - March.

Occasional; in dense evergreen forests as an undergrowth, c. 800 m; Chandanathode.

Climbing shrubs. Leaflets up to 17 × 6 cm, ovate or broadly elliptic-ovate or rhomboidal-ovate, acuminate or acute, cuneate, greyish-tomentose beneath. Flowers c. 0.2 cm across, white, in axillary racemes. Fruits c. 0.6 cm across, subglobose, red when ripe.

Fl. & Fr.: July - December.

Occasional in semi-evergreen forests, c. 150 m; Kannoth R.F.

2. Cardiospermum L.


Leaves alternate, biternate; leaflets inciso-dentate, sparsely pubescent, acute to acuminate. Flowers white, in 3-7-flowered axillary cymes, up to 5 cm long. Capsule subglobose or broadly pyriform, c. 2 cm wide, pubescent.

Fl. & Fr.: November - February.

In open areas and margins of moist deciduous forests; Manantoddy, Tellicherry, Tolpetty.

3. Dimocarpus Lour.


Evergreen trees up to 20 m tall. Leaves paripinnate; leaflets up to 20 × 7 cm, in 3-4 pairs, ovate-lanceolate, subobtuse, rounded, shining
above, glaucous beneath. Flowers white, c. 0.5 cm long, in axillary panicles. Fruits c. 1.5 \times 0.5 cm, globose, tubercled, red.

*Fl. & Fr.*: February March.

Fairly common; in evergreen forests, c. 800 m; Chandanathode, Nadasuyil.

4. *FILICICUM Thw. ex Benth. & Hook. f.*


Trees up to 6 m tall. Leaves up to 16 cm long, alternate, subcoriaceous, imparipinnate; leaflets 6-8 pairs, up to 10 \times 2.8 cm. Flowers white, in axillary panicles. Fruits 1-2-celled fleshy drupes.

*Fl. & Fr.*: October December.

Rare; in evergreen forests, 500-800 m; on way to Kannoth.

An attractive tree with bright green, fern-like leaves and prominently winged rachis.

5. *Harpullia Roxb.*


Evergreen trees up to 20 m tall. Leaves up to 25 cm long, imparipinnate; leaflets 4-5 pairs, up to 15 \times 4 cm, alternate, obovate-elliptic, acuminate, base oblique. Capsules inflated, 2-lobed, loculicidally 2-valved, orange-scarlet, up to 4 \times 5 cm, 4-seeded.

*Fr.*: August September.

Occasional; in evergreen forests, c. 500 m; on way to Kannoth.
6. Lepisanthes Bl.

1a. Leaves pinnate

L. tetrphylla  2

1b. Leaves imparipinnate

L. erecta  1


Erect shrubs up to 2.5 m tall. Leaves 7-9-foliolate; leaflets each up to 17 x 5.5 cm, oblong-lanceolate, sharply acuminate, oblique at base. Drupes c. 2.5 x 1.2 cm, ellipsoid, yellow, tormentose.

Fl.: November December

Rare; once collected from evergreen forests, c. 500 m; Nedumpoyil.


Small trees up to 5 m tall. Leaves up to 23 cm long; leaflets 3-4-paired, each up to 25 x 8 cm long, the lowest pair much smaller, c. 6 x 2.5 cm, elliptic-oblong, obtuse, rounded at base. Flowers white, in terminal yellow pubescent racemes. Fruits 3-celled, 3-sided, yellow velvety, up to 1.7 cm across.

Fl. & Fl.: November March.

Occasional; in evergreen forests, c. 800 m; Chandanathode.

7. Otonephelium Radlk.

Evergreen trees up to 20 m tall. Leaves pinnate; leaflets up to 15 × 6 cm, in 3 pairs; upper pairs elliptic-oblanceolate, subacute at both ends, glaucous beneath; lower pair unequally reniform, up to 2 × 1.5 cm. Calyx deeply lobed, villous. Petals 0. Fruits ellipsoid, densely echinate, up to 2.5 × 1.5 cm.

Fl. & Fr.: February - August.

Fairly common; in evergreen forests, c. 950 m; Theerthandamala.

8. SAPINDUS L.


Trees up to 20 m tall. Leaves pinnate, up to 13 cm long; leaflets 3-4 pairs, each up to 15 × 5 cm, elliptic-lanceolate, acuminate, shining, glabrous. Fruits fleshy, combined drupes, up to 3.5 cm across, black when dry.

Fr.: February - March.

Common; in evergreen and moist deciduous forests; Kannoth, Tirunall.

Hiern (i.e.) treats S. laurifolia Vahl and S. emarginata Vahl as synonyms under S. trifoliata L., but Gamble (i.e.) and Santapau (Fl. Khandala ed. 3, 49. 1967) treat all these as distinct species.

9. SCHLEICHERA Willd. nom. cons.


Large trees up to 25 m tall. Leaves abruptly pinnate, 4-8-foliolate; leaflets up to 17 × 6.5 cm, obovate or oblong-lanceolate, obtuse, rounded at base. Fruits c. 2 × 1 cm, ovoid, pointed, echinate, glabrous.
FLORA OF CANNANORE

Fr.: May August.

Common in moist deciduous forests; Begur R.F., Trisselari.

42. SABIACEAE

MELIOSMA Bl.

1a. Leaves simple; alternate

M. simplicifolia subsp.

1b. Leaves pinnate; opposite or subopposite

M. pinnata subsp.

1

1. Meliosma pinnata (Roxb.) Walp. subsp. arnotiana (Wight)


Evergreen trees up to 25 m tall. Leaves 9-15- foliolar; leaflets up to 13 x 3.5 cm, elliptic-oblong or ovate or ovate-oblong, cuspidate, truncate at base, sparsely pubescent on both sides. Flowers small, pale yellow. Fruits c. 0.4 cm across, globose, smooth.

Fl. & Fr.: April July.

Occasional; in dense evergreen forests, 500-800 m; Panath, on way to Periya.


Evergreen trees up to 20 m tall. Leaves up to 34 x 12 cm, obovate or oblanceolate, acute, cuneate at base, chartaceous. Flowers white, small, in terminal panicles up to 25 cm long. Fruits 1-seeded, drupes c. 0.5 cm across, reticulation prominent.

Fl. & Fr.: November June.

Common on banks of streams in evergreen forests, c. 800 m; Chandanathode.
43. ANACARDIACEAE

1a. Carpels 1:

2a. Leaves simple:

3a. Stamens 1-3 fertile:

4a. Leaves oblong-lanceolate; stamens only one fertile

4b. Leaves spatulate; stamens 3 fertile

3b. Stamens 8-10 fertile

2b. Leaves pinnate:

5a. Leaves with 8-10 pairs of nerves; and with an intramarginal nerve

5b. Leaves with 5-8 pairs of nerves; and without an intramarginal nerve

1b. Carpels 4:

6a. Stamens 5-6; styles 3

6b. Stamens 4 only; style 1

1. GLUTA Bodd.


Large trees up to 30 m tall. Leaves up to 11 x 4 cm, obovate-oblong, rounded at the apex, cuneate at base. Flowers c. 1 cm long, cream coloured, in much branched panicles.

Fl.: August September.

Occasional; in evergreen forests; Vattapoyil.

2. HOLIGARNA Buch.-Ham. ex Roxb. nom. cons.

1a. Leaves glabrous beneath

1b. Leaves rusty-pubescent beneath

FLORA OF CANNANORE

Large trees up to 20 m tall. Leaves up to 22 × 6 cm, obovate to oblanceolate, obtuse, cuneate at base. Flowers c. 0.5 cm long, in panicles up to 20 cm. Drupes c. 3.5 × 2 cm, obliquely ovoid, glabrous.

Fl. & Fr.: February August.

Common; along banks of streams, c. 150 m; Kannonth R.F.


Large trees up to 20 m tall. Leaves up to 45 × 10.5 cm, obovate, emarginate, cuneate at base. Flowers c. 0.75 cm long, in terminal racemes.

Fl.: April May.

Common; in evergreen forests, c. 500 m; on way to Kannonth.


Deciduous trees up to 15 m tall. Leaves imparipinnate, 6-11-foliolate; leaflets up to 11 × 4.5 cm, ovate-oblong, acuminate, rounded at base. Drupes c. 1 cm long, reniform, compressed, red.

Fr.: April May.

Occasional; in semi- evergreen forests, c. 800 m; on way to Kannonth.

4. Mangifera L.

Large trees up to 25 m tall. Leaves up to 21 × 5 cm, oblong-lanceolate, acute, cuneate at base. Drupes fleshy.

Fr.: April - May.

Common; along banks of streams in all types of forests; Periyar.


1a. Leaves and branchlets rusty-villosus ............................................ *N. travancotica* 5

1b. Leaves and branchlets glabrous:

2a. Terminal branchlets pubescent:

3a. Petioles stout; nerves 12-15 pairs ............................................. *N. colebrookiana* 2

3b. Petioles slender; nerves 15-25 pairs ........................................... *N. hayneana* 3

2b. Terminal branchlets glabrous:

4a. Petioles twisted; nerves distinct .................................................... *N. racemosa* 4

4b. Petioles straight; nerves obscure ................................................. *N. beddomei* 1


Small trees up to 3.5 m tall. Leaves up to 11 × 3.8 cm, lanceolate, acuminate or cuneate, cuneate at base. Flowers c. 0.5 cm across, white, in racemes up to 4 cm long. Berries c. 0.5 cm across, apiculate, glabrous, striate.

Fl. & Fr.; March - August.

Common; in shades of dense evergreen forests, c. 800 m; on way to Brahmagiri, Chandanathode, Nedumpoyil.


Small trees up to 5 m tall. Leaves up to 10 × 2.5 cm, obovate, shortly apiculate, attenuate at base. Flowers c. 0.2 cm long, in axillary racemes c. 4.5 cm long.
FLORA OF CANNANORE

FL.: March April.

Rare; once collected from dense evergreen forests, c. 375 m; Theerthamula.


Small trees up to 5 m tall. Leaves up to 13.5 × 4 cm, elliptic-lanceolate, obtuse or acute, acute at base. Flowers in axillary or terminal racemes. Drupes c. 0.6 cm across.

Fr.: May June.

Rare; once collected from evergreen forests above 800 m; on way to Brahmagiri.


Small trees up to 5 m tall. Leaves up to 12 × 3.5 cm, oblong-lanceolate, acuminate, acute at base. Flowers c. 0.2 cm long, white, in racemes c. 3 cm long.

FL.: May June.

Rare; once collected along the banks of streams above 800 m in ghats; on way to Brahmagiri.


Small trees up to 3.5 m tall. Leaves up to 18 × 5 cm, elliptic-lanceolate, acuminate at apex, cuneate at base. Flowers c. 0.5 cm long, in axillary racemes.

FL.: August November.

Common; in shades along banks of streams, 500-800 m; Channanathode, on way to Kannoth.
6. **Solenocarpus L.**


*Tree* up to 15 m tall. Leaves imparipinnate, 9-11-foliolate; leaflets up to 6 x 2.5 cm, oblong, acuminate, oblique at base. Drupes c. 1 cm long, obliquely oblong, glabrous.

*Fl.*, *Fr.*: June - July.

Occasional; in evergreen forests, c. 800 m; on way to Periya.

*Anacardium occidentale* L. (*Cashew nut*) is largely cultivated.

44. **CONNARACEAE**

1a. Calyx accrescent in fruits; follicles semite	*Roureia* 2

1b. Calyx not accrescent in fruits; follicles stipitate	*Connaropsis* 1

1. **Connaropsis L.**


Woody climbing shrubs. Leaves imparipinnate, 5-foliolate; leaflets up to 14 x 9 cm, elliptic-ovate, obtusely pointed, rounded or cuneate at base. Flowers c. 1.5 cm long, yellow, thinly rusty-pubescent, in axillary panicles. Follicles c. 6 x 2 cm, oblique, compressed, slightly pointed at apex.

*Fl.* & *Fr.*: December - April.

Occasional; in evergreen forests, 800 m; Chandanathode.

2. **Roureia Aubl. nom. cons.**


Climbing shrubs. Leaves imparipinnate; leaflets up to 7.5 x 3 cm, elliptic or lanceolate, caudate-acuminate, rounded at base, shining above. Follicles c. 2 cm long, conical-ovoid, falcately curved, tapering to a point, chestnut-brown in colour.

*Fr.*: December June.

Common; along banks of streams in ghats at lower altitudes; Kannoth K.P.

45. FABACEAE (*nom. alt.* Papilionaceae)

1a. Trees:

2a. Leaves simple:

3a. Standard much exceeding other petals; fruits 3-8-seeded

   *Erythrina* 16

3b. Standard equaling other petals; fruits 1-seeded

   *Butea* 5

2b. Leaves 3 or more foliolate:

4a. Leaflets alternate:

   5a. Pods suborbicular; flowers yellow

   *Pterocarpus* 25

   5b. Pods oblong or linear; flowers white

   *Dalbergia* 10

4b. Leaflets opposite

   *Pongamia* 23

1b. Herbs, undershrubs or shrubs; erect or twining:

6a. Stamens in two bundles of 5 each:

7a. Climbing shrubs

7b. Erect herbs, undershrubs or shrubs:

8a. Calyx 2-lipped:

   9a. Pods twisted, enclosed in calyx

   *Santihina* 29

   9b. Pods not twisted, exserted from calyx

   *Aeschynomene* 2

8b. Calyx not 2-lipped

6b. Stamens in one bundle or in two bundles of 9 and 1:

10a. Leaves even-pinnate:

11a. Climbing shrubs; leaflets many pairs

   *Abrus* 1
11b. Erect or diffuse herbs; leaflets 1-2 pairs:

12a. Leaves 2-foliate

12b. Leaves 4-foliate

10b. Leaves simple, digitate or odd-pinnate:

13a. Vegetation striate

13b. Venation not striate:

14a. Stamens monadelphous:

15a. Pods jointed

15b. Pods not jointed:

16a. Pods with a distinct rib on each valve near dorsal suture

16b. Pods without such ribs:

17a. Climbers:

18a. Anthers dimorphic

18b. Anthers not dimorphic:

19a. Pods winged

19b. Pods not winged:

20a. Nodes of racemes swollen

20b. Nodes of racemes not swollen

17b. Erect herbs or undershrubs

14b. Stamens diadelphous:

21a. Fruit aomentum of one seeded joints:

22a. Joints of pods folded within calyx

22b. Joints of pods not folded within calyx:

23a. Joints of pods turgid

23b. Joints of pods not turgid

21b. Fruits not as above:

24a. Calyx spurred

24b. Calyx not spurred:

25a. Erect herbs or shrubs:

26a. Stamens basifixed or absent:

27a. Pods depressed between seeds

27b. Pods not depressed between seeds:

28a. Leaves gland-dotted beneath
28b. Leaves not gland-dotted beneath:
   29a. Calyx 5-lobed
   29b. Calyx not 5-lobed

26b. Hairs centrifixed

25b. Herbaceous or woody climbers:
   30a. Style bearded below stigmas:
      31a. Pods suberete, up to 0.8 cm broad:
         32a. Stylar hairs at apex
         32b. Stylar hairs lateral
      31b. Pods flat, more than 1 cm broad
   30b. Styles not bearded below stigmas:
      33a. Pods 1-seeded:
         34a. Corolla much exerted from calyx:
            35a. Pods glabrous
            35b. Pods covered with bristles
         34b. Corolla inserted within calyx
      33b. Pods 2 or more seeded:
         36a. Leaves gland-dotted beneath:
            37a. Seeds prominently strophiolate; pods depressed outside between seeds
            37b. Seeds scarcely strophiolate; pods not depressed outside between seeds
         36b. Leaves not gland-dotted beneath:
            38a. Calyx obliquely truncate, teeth indistinct
            38b. Calyx not truncate, teeth distinct:
               39a. Flowers white
               39b. Flowers blue; purple or red:
                  40a. Bracts and stipules persistent, conspicuous, striate
                  40b. Bracts deciduous; stipules deciduous or inconspicuous; not striate:
                     41a. Flowers blue
                     41b. Flowers purple

Pseudarthria 24
Pyenospora 27
Indigofera 17
Dolichos 13
Vigna 34
Labbab 18
Spatholobus 30
Mucuna 19
Paracalyx 22
Damasia 14
Neonotonia 20
Shuteria 28
Calopogonium 6
Mucuna 19
1. **Abrus Adams**


Wiry, glabrous climbers. Leaflets up to 3.5 x 1.5 cm, oblong, obtuse or retuse. Flowers rose or white, in many-flowered, axillary racemes, up to 12 cm long. Pods up to 6 x 1.2 cm, flat, incurved; seeds 8-12.

*Fl. & Fr.:* November - February.

Frequent; in semi-evergreen forests and bushes; Kannur, Mudappulangad.

2. **Aeschynomene L.**


Erect. annual herbs up to 75 cm tall; branches glabrous. Leaves odd-pinnate, 50-60-foliolate; leaflets up to 0.7 x 0.15 cm, linear or oblong, obtuse. Flowers yellow in 1-4-flowered axillary racemes. Pods up to 3 cm long, linear, straight or curved with 4-6 joints.

*Fl. & Fr.:* May—June.

Common; in moist situations along fringes of moist deciduous forests; Bavel.

3. **Alysicarpus Desv. nom. cons.**

1a. Leaves 3-foliolate

1b. Leaves 1-foliolate:

2a. Calyx shorter or only slightly longer than first joint of pod

2b. Calyx much longer than first joint of pod

Suffrutescent herbs up to 50 cm tall. Leaves up to 2 x 3 cm, variable, elliptic or orbicular or lanceolate, acuminate. Flowers pink, up to 0.6 cm long, in terminal racemes. Pods up to 1.5 cm long, smooth, turgid, 5-6-jointed.

*Fl. & Fr.*: November—December.

Common; in open grasslands in moist deciduous forests; Tolpetty.


Erect annual herbs up to 75 cm tall; branches brown pubescent. Leaflets up to 4 x 1.7 cm, oblong, subacute, cordate. Flowers in terminal racemes, up to 15 cm long. Pods c. 1.4 cm long, glabrous, 3-5-jointed.

*Fl. & Fr.:* October—December.

Occasional; in grasslands in moist deciduous forests, c. 800 m; Chandanathode.


Suffrutescent herbs up to 60 cm tall; branches glabrous. Leaves up to 2.5 x 1.5 cm, variable, elliptic or oblong-lanceolate, retuse or obtuse. Flowers purple, up to 0.6 cm long, in terminal racemes up to 5 cm long. Pods up to 1.5 cm long, cylindrical, rugose, puberulent, 4-6-jointed.

*Fl. & Fr.:* November—December.

Common; in open wastelands in plains; Cannanore, Kuthuparamba, Tellicherry.


1a. Erect shrubs

1b. Climbing shrubs:

2a. Racemes more than 10 cm long  

2b. Racemes less than 10 cm long:
3a. Pods more than 2.5 cm long
3b. Pods less than 7.5 cm long


Leaves 3-foliolate; leaflets c. 3 x 2.5 cm, obovate, obtuse, glabrous above, grey-canescient beneath. Flowers yellow. Pods c. 3 cm long, oblong, thinly white-hoary.

*Fl. & Fr.*: March—April.

Occasional; along margins of moist deciduous forests, c. 800 m; Baveli.


Leaves 3-foliolate; leaflets up to 6 x 6 cm, obovate, angulate, broadly rounded, sparingly pubescent above. Flowers yellow, up to 1.5 cm long, in axillary racemes up to 18 cm long.

*Fl.*: December—January.

Rare; once collected from an evergreen forest above 500 m in ghats; Ambayathode.


Branches appressed with white hairs. Leaves 3-foliolate; leaflets 2-3 x 1 cm, obovate-oblong, subacute, cuneate, pilose above, pubescent beneath. Flowers yellow, up to 1.5 cm long, axillary, solitary. Pods up to 2 x 0.6 cm, oblong, grey-silky pubescent, 2-3-seeded.

*Fl. & Fr.*: November—March.

Common near grasslands in semievergreen forests, c. 850 m; Theerthandamala.

Stem grey-pubescent. Leaves trifoliolate; leaflets c. 2.5 x 1.3 cm, obtuse, pilose above, densely pubescent beneath. Flowers in axillary pubescent racemes. Pods up to 2 x 0.6 cm, oblong, straight, covered with spreading brown hairs.

*Fl.*: November—December.

Common; in moist deciduous forests; Baveh.

5. *Butea Roxb. ex Willd. nom. cons.*


Deciduous trees up to 12 m tall. Leaves up to 33 x 20 cm; broadly obovate. Flowers bright, orange-red, up to 6 cm long, in axillary racemes. Pods falcate-oblong, compressed, argentous-tomentose.

*Fl.* & *Fr.*: March—April.

Frequent in moist deciduous forests; Begur.


Climbers; stem densely brown pilose. Leaflets up to 8 x 4.5 cm, elliptic, obtuse or slightly apiculate. Flowers pale blue, in axillary racemes. Pods up to 3 x 0.3 cm, narrowly oblong, septate, very densely brown pilose, 5-6-seeded.

*Fl.* & *Fr.*: February—July.
Common in plains near cultivated fields; Kannoth, on way to Panath.

An introduced weed, native of Tropical America and getting naturalised.

7. **Canavalia** DC. **nom. cons.**

1a. Climbing herbs; leaflets oblanceolate  

1b. Prostrate herbs; leaflets orbicular  


Leaflets up to 5 x 4.5 cm, obusate or retuse, coriaceous. Flowers c. 3 cm long, pink, in axillary racemes, up to 26 cm long.

*Fl.:* August—September.

Common in coastal regions; Cannanore.


Leaflets up to 12 x 9 cm, acute, coriaceous. Flowers c. 3 cm long, lilac, in axillary racemes up to 35 cm long.

*Fl.:* November—December.

Common; along streams in open areas, c. 825 m; Tirunall.

8. **Centrosema** (DC.) Benth.


A perennial creeper. Leaflets 5-7 x 1.5-4 cm, elliptic or oblong ovate, shortly acuminate, mucronate, sparsely pubescent on both sides. Flowers pink-mauve, up to 1.5 cm long, 2-3, in axillary racemes. Pods up to 8 x 0.5 cm, linear, glabrous, acuminate, ridged along both sutures.
Fl. & Fr.: Almost throughout the year.

Fairly common on bushes in plains; Kuthuparamba, Taliparamba.

_Centrosema_ (DC.) Benth. is a New World genus and is of recent introduction.

9. _Crotalaria_ L.

1a. Prostrate herbs

2a. Pods pubescent

2b. Pods glabrous

1b. Erect herbs or undershrubs:

3a. Leaves digitately compound:

4a. Leaves 3-foliolate:

5a. Pods up to 2 cm long

5b. Pods more than 2 cm long

4b. Leaves 5-foliolate

3b. Leaves simple:

6a. Flowers more than 4 cm long

6b. Flowers less than 4 cm long:

7a. Pods glabrous:

8a. Flowers in umbels

8b. Flowers in racemes or heads:

9a. In racemes

9b. In capitulate heads

7b. Pods sparsely pubescent:

10a. Stipules winged

10b. Stipules not winged:

11a. Stipules semilunate:

12a. Stems terete; flowers pale blue

12b. Stems angular; flowers yellow

11b. Stipules lanceolate


Erect herbs up to 50 cm tall. Leaves up to 2 x 0.8 cm, linear-oblong, pubescent on both sides. Flowers up to 1 cm long, yellow. Pods up to 5 cm long, oblong, 8-10-seeded.

Fl. & Fr.: April—August.

Common; in open grasslands in evergreen forests, c. 840 m; Chandanathode.


Erect undershrubs up to 75 cm tall. Leaves c. 5 x 0.5 cm, linear-lanceolate, ferruginous tomentose on both surfaces, mucronate, cuneate at base. Flowers up to 3 cm long, yellow. Pods c. 3 cm long, oblong with spreading silky hairs.

Fl. & Fr.: March—April.

Rare; once collected from evergreen forests, c. 800 m; on way to Brahmagiri.


Annual, erect herbs up to 35 cm tall; branches with sparsely appressed hairs. Leaves up to 6 x 3 cm, simple, obovate, subacute, mucronate, glabrous above, densely pubescent beneath. Pods up to 0.6 cm long, oblong, as long as calyx.

Fr.: November—December.

Common as an undergrowth in moist deciduous forests, c. 800 m; Tolpetty.


Procumbent herbs up to 40 cm long; branches sparsely pubescent. Leaves 3-4 x 1-2 cm, variable, simple, round-oblong or elliptic, obtuse or mucronate, cuneate. Flowers yellow, up to 1.3 cm long in terminal or axillary racemes, 4-6-flowered, up to 9 cm long. Pods up to 1.5 cm long, oblong, 10-12-seeded.
Fl. & Fr.: November—December.

Common as an undergrowth in moist deciduous forests; Begur, Kannoth.


Erect undershrubs, up to 1 m tall; branches angled, sparsely hairy. Leaves up to 15 x 6 cm, elliptic-ovate or oblong, acute, cuneate, glabrous above, sparsely puberulous beneath. Flowers up to 4 cm long, in terminal or axillary, 10-15-flowered racemes. Pods up to 4 cm long, oblong, 10-12-seeded.

Fl. & Fr.: November—February.

Common as an undergrowth in semievergreen forests, 250-800 m; Kannoth, Tirunalli.

The colour of the standard petal seems to vary. Cooke (Fl. Pres. Bomb. 1: 320. 1958) described it as pale yellow to white. Gamble (l.c.) mentions it as blue, pale yellow or white. Plants from the area exhibit blue colour.


Erect undershrubs, up to 1 m tall; branches sparsely hairy. Leaves up to 13 x 1.5 cm, linear to oblong, obtuse, apiculate, acute at base, glabrescent above, pubescent beneath. Flowers bright yellow, in terminal racemes up to 35 cm long.

Fl.: November—December.

Common as an undergrowth in moist deciduous forests; Tolpetty.


Erect undershrubs, up to 1 m tall; branches sparsely hairy. Leaflets up to 3 x 1 cm, obovate-oblong, obtuse or retuse, cuneate, sparsely pubescent on both sides. Flowers yellow, up to 2 cm long, in terminal racemes.
up to 4.5 cm long. Pods oblong, acute, beaked at apex, pilose, 8-10-seeded.

*Fl. & Fr.*: November—February.

Common as an undergrowth in moist deciduous forests; Chandanathode, Poriya, Tolpetty.


Erect annual herbs up to 40 cm tall; branches glabrous or densely pubescent. Leaves c. 3 x 0.8 cm, obtuse or mucronate, cuneate, densely pubescent on both sides or glabrous. Pods c. 0.7 cm long, globose-ovoid, 8-10-seeded.

*Fr.*: August November.

Common as an undergrowth in moist deciduous forests and as a weed in wastelands in coastal areas; Chandanathode, Muzhappugad, Panur.


1a. Leaflets elliptic with widest point 0.45–0.6 of the length from base to apex, mostly 6–13 cm long, acute or rounded at apex var. *pallida*

1b. Leaflets elliptic-ovate to obovate with widest point 0.6–0.8 of the length from base to apex, mostly 5–7 cm long, rounded or retuse at apex var. *obovata*

var. *pallida*

Erect undershrubs, up to 1 m tall; branches puberulous. Leaflets 5–10 x 2–4.5 cm, ovate or oblong-ovate, acute, cuneate. Flowers yellow, purple-striped, up to 2 cm long, in terminal 30–40-flowered racemes, up to 15 cm long. Pods oblong, cylindrical 20–39-seeded.

*Fl. & Fr.*: November—April.

Fairly common as an undergrowth in all types of forests; Maranathody, Tolpetty.
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Leaflets c. 7 x 3 cm. Flowers c. 1.5 cm long, yellow, in lax racemes.

Fl. & Fr.: November—February.

Fairly common in open wastelands at lower altitudes: Cannanore, Kuthuparamba.


Herbs up to 25 cm long; branches hairy. Leaves up to 3.3 x 1.2 cm, obovate-oblong, obtuse, oblique at base, silky pubescent on both sides. Flowers yellow, in terminal or axillary, 2-4-flowered racemes, up to 9 cm long. Pods up to 1.5 cm long, linear-oblong, 12-15-seeded.

Fl. & Fr.: November—December.

Occasional; as an undergrowth in moist deciduous forests; Baveli.

Gamble (l.c.) mentions it to be scarce in the Deccan and West Coast. Locally abundant in this district.


Erect herbs up to 50 cm tall. Leaflets up to 7 x 1.5 cm, linear-oblong or narrowly oblanceolate, glabrous on both sides. Flowers up to 2.5 cm long in terminal racemes.

Fl.: November.

Fairly common on bunds of rice fields, c. 825 m; Tolpetty.


Erect undershrubs up to 1 m tall; branches appressedly pubescent. Leaves up to 13 x 4 cm, oblanceolate-oblong, glabrous above, glabrescent
beneath and glaucous. Flowers yellow, up to 2 cm long; racemes terminal or axillary. Pods up to 4.5 cm long, oblong, cylindrical, slightly broader upwards, 15-20-seeded.

Pl. & Fr.: October—December.

Common as an undergrowth in semievergreen forests, Ambayathode, Kannoth.


Erect herbs, up to 75 cm tall. Leaves up to 10 x 6.5 cm, ovate-rhomboid or ovate-deltoid, obuse. Flowers up to 1.5 cm long, in terminal racemes up to 15 cm long. Pods up to 4 cm long, oblong, 10-12-seeded.

Pl. & Fr.: August—November.

Common; in sandy coastal areas; Cannanore.

The colour of the flowers seems to vary. Gamble (l.c.) mentions it as blue or sometimes white. Cooke (Fl. Pres. Bomb. 1: 319. 1958) describes it as bluish-purple and white, rarely entirely white, while collections from the area have yellow flowers.


1a. Climbing shrubs

1b. Deciduous trees:

2a. Leaflets obtuse to emarginate; pods obverse at apex

D. latifolia

2b. Leaflets acute; pods acute at apex

D. sissooides


Leaves odd-pinnate, leaflets 5-7, up to 7 x 3 cm, cuneate, sub-coriaceous, emarginate, cuneate, glabrous. Flowers in axillary panicles, up to 5 cm long.

Fr.: November—December.
Common; in moist deciduous forests, c. 800 m; Tolpetty.

'Rose wood' — a valuable timber tree.


Leaves odd-pinnate; leaflets 5-7, up to 8 x 1.2 cm, obovate or suborbicular, acute, cuneate, glaucous beneath. Flowers up to 1.5 cm long, yellowish-white, in lax axillary panicles. Pods up to 10 cm long, linear-lanceolate, winged, 3-4-seeded.

Fl. & Fr.: April—November.

Fairly common; in moist deciduous forests, c. 800 m; Begur, Titunalli, Tolpetty.


Leaves odd-pinnate; leaflets 9-11, up to 3 x 1.5 cm, obovate or ovate-oblong, obtuse, mucronulate, subcoriaceous. Flowers up to 0.7 cm long, in axillary or terminal panicles, up to 10 cm long. Pods up to 4 cm long, linear-lanceolate, glabrous, winged, 1-2-seeded.

Fl. & Fr.: February—April.

Fairly common; in moist deciduous forests, c. 800 m; Begur, Tolpetty.

11. Derris Lour. nom. cons.

1a. Pods winged on dorsal suture

1b. Pods winged on dorsal and ventral sutures:

2a. Pods widely oblong, tomentum of pods blackish-brown

2b. Pods ovate to oblong, tomentum of pods reddish-brown


Climbing shrubs. Leaves 5-7-foliolate; leaflets up to 11.5 x 5 cm, elliptic-ovate, obtusely acuminate, shining above, coriaceous. Pods up to 5 x 1.3 cm, ferruginous-tomentose, apex obtuse, slightly hooked.

Fr.: August.

Rare; once collected from an evergreen forest, c. 250 m; Kannur.


Climbing shrubs. Leaves 5-7-foliolate; leaflets up to 9 x 4.5 cm, elliptic to oblong, rounded at base, obtusely acuminate, subcoriaceous, shining above. Flowers c. 1.5 cm long in axillary panicles.

Fl. & Fr.: March—August.

Scarce; in semievergreen forests, c. 250 m; Aralam.


Climbing shrubs. Leaves 3-5-foliolate; leaflets up to 11 x 4.5 cm, ovate, acuminate, subcoriaceous. Flowers c. 1.5 cm long, rose, in axillary racemes. Pods c. 3.5 x 2.5 cm, flat, obtuse at both ends, glabrous.

Fl. & Fr.: February—June.

Common along banks of backwaters in plains; Tellicherry.

12. **Desmodium** Desv. *nom. cons.*

1a. Trailing herbs:

2a. Pods up to 1.5 cm long  

* D. *triflorum* 9
2b. Pods more than 2 cm long

D. heterophyllum 3

1b. Erect herbs or undershrubs:

3a. Leaves unifoliolate:

4a. Petioles winged

D. triquetrum 10

4b. Petioles not winged

D. gageicoleum 1

3b. Leaves 3-foliolate:

5a. Bracts concealing flowers; orbicular

D. pulchellum 6

5b. Bracts not concealing flowers; not orbicular:

6a. Lateral leaflets comparatively very small

D. motorium 5

6b. Lateral leaflets not as above:

7a. Flowers in elongated racemes:

8a. Stamens monadelphous

D. repandum 7

8b. Stamens diadelphous:

9a. Pods indehiscent

D. laxiflorum 4

9b. Pods dehiscent

D. heterocarpon 2

7b. Flowers in short axillary umbels

D. triangularis 8


Erect undershrubs, up to 1.5 m tall; branches sparsely pubescent. Leaves up to 10 x 3.5 cm, oblong-lanceolate, acute. Pods up to 2 cm long, falcate, 5-7-jointed, joints roundish, slightly pubescent with hooked hairs, constricted on ventral suture.

Fr.: November—December.

Common; an undergrowth in moist deciduous forests, Totoetty.

Erect undershrubs, up to 1 m tall; branches appressed hairy. Leaflets up to 4 x 2.5 cm, oblong or obovate-oblong, rounded, mucronate or obtuse. Flowers up to 0.5 cm long. Pods up to 2 cm long, 4-7-jointed, with raised ridulations, constricted or lower suture.

*Fl. & Fr.*: Almost throughout the year.

Common; an undergrowth in all types of forests; Aralam, Chandanathode, Kannoth.


Herb, up to 40 cm long; branches appressed with white hairs. Leaflets up to 2.5 x 1 cm, elliptic-obovate, mucronate, truncate. Flowers up to 1.5 cm long, solitary or in loose racemes. Pods 3-4-jointed, dorsal suture continuous, ventral constricted, glabrous.

*Fl. & Fr.*: August—November.

Fairly common in open grasslands in plains and moist deciduous forests; Cannanore, Chandanathode, Kannoth, Muzhappilangad.

Hochreutiner (in Candollea 2: 396. 1926) following Wight & Arnott *l.c.* states that *Desmodium heterophyllum* (Willd.) DC. and *D. triflorum* (L.) DC. represent only large (var. *majus*) and small (var. *minor*) forms respectively of one and the same species. But according to Meeuwen, *l.c.* the pods of *D. heterophyllum* have both hooked and few straight hairs and those of *D. triflorum* have only hooked hairs. He considers these as two quite distinct and perfectly good species.

Pubescent undershrubs, up to 50 cm tall. Leaflets up to 15 x 8 cm, ovate or ovate-lanceolate. Flowers c. 0.5 cm long, pale blue, in racemes. Pods up to 3.5 cm long, segments constricted on both sutures, 3-7-jointed.

_Fl. & Fr._: March—November.

Common; an undergrowth in moist deciduous forests; Begur, Kannoth, Tolpetty.


Erect undershrubs, up to 75 cm tall. Leaflets up to 5.5 x 3 cm, narrowly oblong or oblong-lanceolate, retuse; lateral ones very small, broadly linear or oblanceolate. Flowers c. 0.7 cm long, in terminal or axillary panicles. Pods up to 4 cm long, falcate, indistinctly jointed, slightly indented, 9-11-seeded.

_Fl. & Fr._: November—December.

Common; an undergrowth in moist deciduous forests; Baveli, Tolpetty.

Ohashi (in Ginkgoana 1: 46. 1973) treated this species under _Cardiocephala_ Hassk. based on the characters of pods such as non-jointed, not reticulate-veined, dehiscing along the lower suture etc.


Undershrubs, up to 1.5 m tall: branches appressed hairy. Leaflets up to 9 x 4 cm, oblong or lanceolate, obtuse or subacute, margins undulate. Flowers pale yellow, in clusters of 2-5. Pods c. 0.9 cm long, 1-2-jointed, glabrous, reticulate with apiculate tip.

_Fl. & Fr._: October—December.

Common; an undergrowth in moist deciduous forests; Begur.
Ohashi (in Ginkgoana 1: 276, 1973) included this species in *Phylocladum* Desv. based on the characters such as foliaceous bracts and the terminal leaflets not enclosing a fascicle of flowers.


Much branched pubescent herbs, up to 75 cm. Leaflets up to 6.5 x 4.5 cm, broadly ovate-rhomboid, acute, margins repand. Flowers up to 1 cm long, pale purple. Pods up to 2 cm long, 4-6-jointed, rhomboid, hairy.

*Fl. & Fr.*: November—December.

Common; an undergrowth in moist deciduous forests; Tolpetty.


Erect undershrubs, up to 2 m tall; terminal branchlets covered with white pubescence. Leaflets up to 8 x 3.5 cm, ovoate-obovate, acute to acuminate. Flowers up to 0.8 cm long. Pods up to 1.5 cm long, slightly curved, 4-6-jointed, constricted on both sutures, densely covered with hairs.

*Fl. & Fr.*: November—December.

Common; an undergrowth in moist deciduous forests; on way to Panath.

Ohashi (in Ginkgoana 1: 11, 1973) treated this species under the genus *Deodorabolium* (Wight & Arn.) Benth. based on characters like simple, axillary, densely flowered short racemose or subumbellate inflorescence; solitary flowers on the rachis; unimorphic bracts (only primary bracts unimorphic) and large and distinct bracteoles.


Herbs, up to 30 cm long, rooting at nodes. Leaves 3-foliolate; leaflets c. 1.5 x 1.4 cm, obovate, emarginate or retuse, cuneate. Flowers bluish-purple, c. 0.4 cm long in racemes. Pods jointed, constricted on ventral suture.

\( Fl. \ & Fr. \): February—November.

Fairly common; in open grasslands in moist deciduous forests; Kannoth, on way to Panoth, Tolpetty.


Erect shrubs, up to 1 m tall; branches triquetrous, sparsely pubescent. Leaves up to 13 x 5 cm, oblong to lanceolate, acute. Flowers c. 0.7 cm long, in racemes, up to 30 cm long. Pods up to 3 x 0.6 cm, jointed, somewhat curved, white hairy on both sutures, ventral suture constricted.

\( Fl. \ & Fr. \): October—December.

Common; an undergrowth in semi-evergreen and moist deciduous forests; Kannoth, Tolpetty.

Ohashi (in Ginkgoana 1: 250. 1973) erected a new genus \( Tadenhagi \). Ohashi based on more or less broadly winged petioles and unifoliolate leaves to accommodate this and allied species.

13. \( Dolichos \) L.


Perennial twining herbs. Leaves 3-foliolate; leaflets up to 6 x 4 cm, rhomboid or ovate, acute. Flowers c. 1.2 cm long, in axillary racemes. Pods c. 5 x 0.8 cm, flat, linear or oblong, slightly recurved.

\( Fl. \ & Fr. \): November—December.
Common in moist deciduous forests, Tirunallil, Tolpetty.

14. Dumasia DC.


Twining slender shrubs. Leaves 3-foliolate; leaflets up to 8 x 4.5 cm, ovate, subobtuse, apiculate, glabrous above, hairy beneath. Flowers c. 2.5 cm long, yellow. Pods c. 3.5 cm long, linear, straight, torulose, velvety.

Fl. & Fr.: October—April.

Occasional; in evergreen forests. c. 600 m; Chandanathode.

15. Dunbaria Wight & Arn.


Climbing shrubs; stems glabrescent. Leaves 3-foliolate; leaflets up to 9 x 5 cm, obovate-oblong, cuspidate, strigose hairy on both surfaces. Flowers yellow, c. 2 cm long, in 3-4-flowered axillary racemes.

Fl.: November—December.

Occasional; in moist deciduous forests. c. 800 m; Begur.

1b. Erythrina L.

1a. Armed trees

E. indica 1

1b. Unarmed trees

E. subumbrosa 2

Deciduous trees, up to 5 m tall. Leaflets up to 10 x 13 cm, subrotund, cuspidate, glabrous. Flowers bright red, up to 5 cm long, in terminal racemes, up to 20 cm long.

Fl.: March—April.

Commonly grown as a hedge plant, sometimes found to run wild; Nedumpoyil.


Evergreen trees up to 5 m tall. Leaflets up to 13 x 11 cm, membranous, broadly ovate-rhomboid, acute, truncate. Pods up to 10 cm long, flat, broader and empty at base 3-4-seeded at apex, in terminal racemes, up to 17 cm long.

Fl. & Fr.: February—March.

Fairly common near evergreen forests and used for fencing in tea estates; on way to Kannonth.

17. *Flemingia* Roxb. ex Ait. nom. cons.

1a. Leaves 1-foliolate:

2a. Branches terete; corolla white  
2b. Branches angular; corolla purple  

1b. Leaves digitately 3-foliolate:

3a. Stems angular; leaflets glabrous except on nerves beneath  
3b. Stems terete; leaflets pubescent or tomentose beneath:

4a. Sepals with yellow glands; pods glandular  
4b. Sepals with red glands; pods not glandular  

Erect shrubs, up to 1 m tall. Leaves up to 10 x 4.5 cm, ovate to oblong, acute, sparsely pubescent beneath with brown glands. Pods c. 0.8 cm long, oblong, turgescent, sparsely pubescent, 2-seeded.

Fl.: November—December.

Once collected from an undergrowth in evergreen forests, c. 840 m; Brahmagiri.


Erect woody shrubs, up to 1.5 m tall. Young branches appressed with pubescent hairs. Leaflets up to 16 x 6 cm, lanceolate or oblong-obovate, acuminate, cuneate. Flowers c. 0.8 cm long, white, in axillary or terminal racemes. Pods c. 1 cm long, oblong, slightly beaked, tomentose, 2-seeded.

Fl. & Fl.: February—March.

Common; an undergrowth in moist deciduous and semievergreen forests, 800 m; Brahmagiri.


Erect undershrubs, up to 75 cm tall; younger parts tomentose. Leaflets up to 6 x 3 cm, oblanceolate-oblong, obtuse, grey silky pubescent beneath. Flowers c. 1 cm long, fink, in axillary racemes, up to 2.5 cm long.

Fl.: November—December.

Common; an undergrowth in evergreen forests; Brahmagiri.


Erect shrubs, up to 1 m tall. Leaves up to 13 x 3 cm, ovate to oblong, acute, sparsely pubescent beneath with yellow glands. Flowers c. 0.8 cm long, white, in axillary or terminal racemes.
**Flora of Cannanore**

*Fl.*: February—March.

Common; an undergrowth in moist deciduous forests; Begur.


Erect shrubs up to 75 cm tall; branches pubescent. Leaflets up to 5 x 3.3 cm, oblanceolate-oblong, obtuse, cuneate, tomentose beneath. Flowers c. 1 cm long, purple, in axillary racemes. Pods up to 1.2 cm long, oblong, tomentose, 2-seeded.

*Fl.*: February—March.

Common; an undergrowth in moist deciduous forests; Chandanathode.


Annual, trailing herbs, up to 35 cm long. Leaflets c. 1 x 0.5 cm, obovate, emarginate. Flowers purple, c. 0.5 cm long, in terminal racemes, up to 3.5 cm long; bracts reniform, imbricate, c. 1 cm broad, ciliate with yellow bristles. Pods c. 0.3 cm long, glabrous, 1-2-jointed.

*Fl.* & *Fr.*: November—December.

Common; in moist rice fields in plains; Kannoth, Panoth, Tellicherry.

The beautiful long ciliate imbricate bracts are quite characteristic of this species.

17. *Indigofera* L.

1a. Leaflets 3 or 5:

2a. Leaves 3-foliate

2b. Leaves 5-foliate

1b. Leaflets more than 5:

*b.* *prostrata* 5

*b.* *glabra* 2
3a. Pods 2-seeded

3b. Pods more than 2-seeded:

4a. Pods cylindric

4b. Pods 4-flowered:

5a. Pods tortulose

5b. Pods not tortulose:

6a. Lateral leaflets opposite; pods densely pubescent

6b. Lateral leaflets alternate; pods thinly hairy


Erect shrubs, up to 1 m tall; branches appressed with thin silky hairs. Leaves 4-7 cm long, pinnate; leaflets 9-11, alternate, up to 3 x 1.2 cm, sparsely hirsute on both sides. Pods up to 3.5 cm, 4-6-seeded.

Fr.: March—April.

Rare; once collected as an undergrowth in evergreen forests, c. 500 m; Nedumponyil


Procumbent, annual herbs, up to 40 cm long; leaflets 1 cm long, obovate, obtuse. Flowers c. 0.2 cm long, red, in axillary 3-5-flowered racemes up to 2 cm long. Pods up to 1.7 cm long, subcylindric, slender, 10-12-seeded.

Fl. & Fr.: November—December.

Common in plains; Muzhappilangad.


Erect herbs, up to 30 cm tall. Leaves 5 to 11-foliolate, up to 4 cm long; leaflets c. 2 x 1 cm. Flowers c. 0.6 cm long, pink, in axillary racemes. Pods c. 1.5 x 0.2 cm.
Fl. & Fr.: November—December.

Fairly common; in wastelands in plains; Tellucherry.


Trailing herbs, up to 40 cm long. Leaves pinnate, c. 1.5 cm long; leaflets 7–9, up to 0.8 x 0.4 cm, obovate, appressed hairy on both surfaces. Flowers c. 0.3 cm long, pale red, in axillary racemes. Pods c. 0.4 cm long, subovoid, sparsely hairy when young.

Fl. & Fr.: August—September.

Common; in wastelands near seashore; Cannanore.


Procumbent herbs, up to 25 cm long. Leaflets up to 1 x 0.4 cm, obovate, mucronate, glabrous above, pubescent beneath, with glandular dots. Pods c. 1.5 cm, straight, deflexed, glabrescent, 6-8-seeded, in axillary racemes.

Fr.: November—December.

Occasional; in open grasslands in moist deciduous forests; Tolpetty.


Annual procumbent herbs, up to 75 cm long; branches appressed with a few hairs. Leaves 2-5 cm long, pinnate; leaflets up to 2.5 x 1 cm oblanceolate to obovate, appressed hirsute on both surfaces. Flowers c. 0.4 cm long, purple, in axillary racemes up to 6 cm long. Pods up to 2.7 cm long, linear, glabrescent, 7-9-seeded.

Fl. & Fr.: May—November.
Common; in open grasslands in moist deciduous forests, c. 800 m; Baveli, Tolpetty.


Undershubs up to 75 cm tall; branches appressed with grey hairs. Leaves 6-8 cm long, pinnate; leaflets 9-13, alternate, up to 3 × 1 cm. Pods up to 2 cm long, straight, glabrous, 8-10-seeded.

Common; an undergrowth in moist deciduous forests, c. 850 m; Baveli, Tolpetty.

18. Lablab Adams.


Climbing shrubs. Leaves 3-foliolate; leaflets up to 12 × 8 cm, rhomboid or ovate, acute to acuminate, glabrous. Flowers up to 1.5 cm long, purplish blue, in axillary racemes. Pods up to 6 × 2 cm, cylindrical, tip slightly curved.

Fl. & Fr.: October December.

Cultivated; at times running wild; Tolpetty.


1a. Plants perennial; fruits 1-seeded

M. monosperma 2

1b. Plants annual; fruits 5-6-seeded:

1a. Flowers 4 cm long

M. hirsuta 1

2b. Flowers less than 2.5 cm long

M. pudica 3

Climbers; branches slender, densely covered with ferruginous silky hairs. Leaflets up to 15 × 9 cm, ovate-rhomboid, membranous, densely golden silky tomentose beneath. Flowers purplish, in axillary 15-25-flowered racemes, up to 20 cm long.

Fl.: December — March.

Common; in evergreen forests, c. 500 m; on way to Kannath, Nedumpoyil


Woody climbers. Branchlets glabrous. Leaves 3-foliolate; leaflets up to 12 × 8 cm, ovate-rhomboid, membranous, cuspidate, base acute. Pods up to 8 × 7 cm, broadly winged along sutures, flattened, covered with deciduous brownish irritating bristles.

Fr.: March — April.

Common along banks of streams in moist deciduous forests, c. 800 m; Begur.


Climbers; branchlets sparsely pubescent. Leaves 3-foliolate. Leaflets up to 6 × 3.5 cm, ovate-rhomboid, shortly cuspidate, membranous, grey silky pubescent beneath. Flowers up to 3.5 cm long, purple, in 3-5-flowered axillary racemes up to 3 cm long.

Fl.: November — December.

Occasional; in secondary forests at lower altitudes near seashore; Ezhimala.

20. **Neodonta** Lackey


Perennial climbing shrubs; stems pubescent. Leaflets up to 9 × 3 cm, ovate, acute, sparsely silky-strigose on both surfaces. Flowers c. 0.5 cm long, pale red, in dense axillary racemes, up to 17 cm. Pods up to 3 cm long, linear, hairy, transversely septate; seeds 3-5.

Fl. & Fr.: November - December.

Common; in moist deciduous forests, c. 800 m; Begur.


 Erect much branched shrubs up to 2.5 m tall. Leaves 9-11-foliolate; leaflets up to 2.5 × 1.2 cm, oblong, obtuse, glabrous. Flowers c. 1.5 cm long, pale yellow, in axillary racemes. Pods c. 3 cm long, prickly warty, with 2-4 distant joints.

Fl. & Fr.: April - July.

Rare; once collected from semievergreen forests, c. 150 m; Kannoth R.F.

22. Paracalyx Ali


Twining woody climbers. Leaves 3-foliolate; leaflets up to 6 × 3.5 cm, rhomboid ovate, acuminate, densely pubescent beneath, hirture above. Flowers yellow, c. 1.7 cm long, in axillary racemes, up to 7 cm long. Pods oblique, oblong, enclosed in calyx.
Fl. & Fr.: February May.

Fairly common; in moist deciduous forests, c. 800 m, Begur, Tolpetty.

23. Pongamia Vent. nom. cons.


Trees, up to 10 m high. Leaves imparipinnate; leaflets c. 10 × 5 cm, ovate-oblong, shortly acuminate, acute at base. Flowers up to 2 cm long, pinkish-white, in axillary racemes. Pods up to 6 × 3 cm, obliquely, oblong, compressed.

Fl. & Fr.: June—July.

Common along banks of streams in moist deciduous forests; Tolpetty. Bennett I.c. (1971) considers the distinguishing characters between Pongamia Vent. and Derris Lour. to be inadequate to keep the two genera distinct. He reduced Pongamia as a section under Derris. However, the current taxonomic opinion, (Thotthagiri, I.c. and Verdcourt, I.c.) is in favour of treating Pongamia Vent. as distinct from Derris Lour. Sometimes, flowers get transformed into globose galls which might be mistaken for fruits.


Erect undershrubs up to 75 cm tall. Leaves 3-foliolate; leaflets up to 7.5 × 5.5 cm, rhomboid-ovate, hairy above, densely silky beneath. Pods 2 × 0.5 cm, linear-oblong, flattened, very sticky.

Fr.: November December.
Common as an undergrowth in moist deciduous forests, c. 200 m; Kannavam, Taliparamba.


Large trees up to 25 m tall. Leaves 5-7-foliolate; leaflets up to 10 × 5 cm, oblong. Pods c. 3 cm across, suborbicular, winged, glabrous.

Fr.: November — December.

Common; in moist deciduous forests, c. 800 m; Tirunalli.

26. Pueraria DC.

1a. Leafy when in bloom  P. phaeoloides 1
1b. Leafless when in bloom  P. tuberosa 2


Climbing herbs; branches densely pilose. Leaves 3-foliolate; leaflets up to 15 × 12 cm, broadly rhomboid-ovate, cuneate, subacute, silky pubescent on both surfaces. Flowers purple, up to 1.7 cm long, in axillary racemes, up to 30 cm long. Pods up to 15 cm long, linear, slender, beaked, appressed with brown hairs.

Fr. & Fr.: February — March.

Probably cultivated; commonly found along margins of cultivated lands; Aralam, Nedumpoyil.

Perennial climbers; branchlets glabrous. Flowers purple, up to 1.3 cm long, in axillary racemes up to 40 cm long. Pods c. 3 × 0.8 cm, linear, covered with dense brown hairs.

Fl. & Fr.: March — April.

Occasional; in moist deciduous forests, c. 800 m; Begur R.F., Tolpetty.

27. Pycnospora R.Br. ex Wight & Arn.


Trailing herbs, up to 75 cm long. Leaves 3-foliolate; leaflets c. 2.5 × 1.5 cm, obovate, obtuse, cuneate, glabrous above, pubescent beneath. Pods up to 1 cm long, oblong, turgid, hirsute, black when mature.

Fr.: November — December.

Common; in open grasslands in evergreen forests, c. 500-850; Kannoth, Chandanathode.


Climbing herbs; branches pubescent. Leaves 3-foliolate; leaflets up to 5 × 4 cm long, elliptic-ovate, hirsute on both surfaces, mucronate, obtuse at base. Flowers c. 0.8 cm long, purplish, in axillary racemes up to 8 cm long. Pods up to 4.5 cm long, linear, flat, compressed, septate, hirsute, recurved.

Fl. & Fr.: February — May.

Common in evergreen forests, c. 500 m; on way to Brahmagiri, on way to Kannoth, Chandanathode.
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29. **Smithia Ait. nom. cons.**

1a. Stems with bristles  
   *S. setulosa* 3

1b. Stems without bristles:

2a. Leaflets up to 7 pairs  
   *S. conferta* 1

2b. Leaflets more than 7 pairs  
   *S. sensitiva* 2


Erect herbs up to 50 cm tall. Leaflets up to 1 cm long, oblanceolate, membranous, margins and midrib covered with bristles. Flowers c. 1.3 cm long, yellow, 1-3, in axillary racemes. Pods c. 1.5 cm long, 3-4-jointed.

*Fl. & Fr.*: Almost throughout the year.

Common; along streams in evergreen forests, c. 500 m; Arunappara, Tooppetty.

Gamble i.e. considers *S. geminiflora* Roth and *S. conferta* Sm. as distinct species. However, the characters on which Gamble has separated them overlap.


Diffuse herbs up to 50 cm long. Leaflets 16-24, up to 0.6 cm long, oblanceolate, mucronate, midrib and margins bristly beneath. Flowers yellow, 1-5 together in axillary racemes. Pods c. 1.5 cm long, 4-6-jointed.

*Fl. & Fr.*: November - December.

Common; in moist localities in plains; Elangad.


Erect, much branched herbs up to 1 m tall. Leaflets 12-16, up to 3 cm long, margins covered with bristles. Flowers yellow, up to 1.3 cm
long, 1-12 together in terminal panicles up to 30 cm long. Pods small, 10-12-jointed.

Fl. & Fr.: October December.

Common; on rocky slopes in the midst of grasslands, c. 850 m; Chandanathode.

30. Spatholobus Hasek.


Large climbing shrubs. Leaves 3-foliolate; leaflets up to 10 × 5 cm, oblong-elliptic, shortly acuminate, base rounded, glabrous on both surfaces. Pods up to 10 × 2 cm, broadly linear, often falcate, glabrous.

Fr.: April - May.

Rare; once collected from evergreen forests, c. 800 m; on way to Kannoth.


1a. Racemes axillary:

2a. Pods less than 5 cm long

*T. linctoria* 4

2b. Pods more than 5 cm long

*T. purpurascens* 3

1b. Racemes extra-axillary:

3a. Flowers pale yellow

*T. hookeriana* 1

3b. Flowers purple

*T. purpurascens* 3


Perennial herbs up to 75 cm tall. Leaves pinnate; leaflets 17-19, each up to 2.5 × 0.8 cm, oblanceolate, mucronate. Flowers c. 0.7 cm long, pale yellow. Pods up to 3 cm long, linear, slightly curved at tip, clothed with persistent silky hairs.

Fl. & Fr.: November December.

Common; in wastelands in plains; Cannanore.

Erect undershrubs up to 75 cm tall. Leaves pinnate, 5-9-foliate; leaflets elliptic-oblong, mucronate, glabrous above, silky pubescent beneath. Pods c. 6.5 cm long, linear, mucronate, slightly curved at apex.

*Fr.*: March — April.

Occasional; once collected from a grassland in khuts. c. 800 m; Chandanathode.


Perennial erect or decumbent herbs up to 75 cm tall. Leaves pinnate; leaflets 11-15, mucronate. Flowers purplish, up to c. 0.8 cm long. Pods up to 3 cm long, somewhat curved, glabrous.

*Fl.* & *Fr.*: June — January.

A common weed in wastelands in plains; Cannanore, Pappinisseri, Tellicherry.


Undershrubs up to 75 cm tall. Leaves pinnate; leaflets 7-13, elliptic-oblong, mucronate. Flowers c. 1.5 cm long, pink. Pods c. 2.5 cm long, slightly curved at apex.

*Fl.* & *Fr.*: November — December.

Fairly common in grasslands; Chandanathode.

32. **Theramnus Sw.**

1a. Pods glabrous

1b. Pods villous with tawny hairs

* T. labiata 1

* T. mollis 2

Twining herbs; branches appressed hairy. Leaves 3-foliolate; leaflets up to 5 × 2.5 cm, rounded-elliptic, rounded or emarginate. Flowers pale red in axillary racemes, up to 8 cm long. Pods up to 4 × 0.4 cm, linear, recurved, glabrous.

*Fl. & Fr.*: November February.

Occasional; in semievergreen forests, c. 300 m; Ambayathode, Chandanathode, Kannoth.


Twining herbs; stems hairy. Leaves 3-foliolate; leaflets up to 12 × 4.5 cm, ovate-lanceolate, acute, subcoriaceous, densely pubescent beneath. Flowers purplish blue in few-flowered axillary racemes up to 5 cm long. Pods c. 2.5 × 0.5 cm, linear, recurved, clothed with spreading hairs.

*Fl. & Fr.*: January - November.

Frequent; in evergreen forests, c. 800 m; Bogur.

33. *Uraria* Desv.

1a. Pods 2-jointed

1b. Pods 4-6-jointed

---


Erect, much branched pubescent herbs up to 2 m tall. Leaves 3-foliolate; leaflets up to 5 cm long, rounded, obtuse or emarginate at apex.
Flowers c. 0.5 cm long, purple, in terminal racemes, up to 20 cm long. Pods 2-jointed, covered by dense hairs.

Fl. & Fr.: November—December.

Common; on rocky slopes of moist deciduous forests, c. 800 m; Kannamth, on way to Panth. 


Much branched pubescent shrubs, up to 1 m tall. Leaves 3-foliolate; leaflets up to 9 x 4.5 cm, oblong, emarginate. Flowers c. 0.6 cm long, in terminal racemes, up to 30 cm long. Pods 4-6-jointed, minutely hispid.

Fl. & Fr.: November February.

Common; an undergrowth in evergreen forests; Ambayathode.

34. Vigna Savi

1a. Flowers yellow:

2a. Leaflets sparsely pubescent

2b. Leaflets glabrous

1b. Flowers pink or purple:

3a. Calyx teeth subequal, leaflets not delioid:

4a. Calyx softly villous

4a. Calyx strigilose hiscate

3b. Calyx teeth unequal, the lowest the longest; the end one or all leaflets delioid:

5a. Leaflets glabrous, all delioid

5b. Leaflets densely villous on both sides, the end one delioid

V. umbellata 4

V. radiata 3

V. wightii 6

V. vexillata 5

V. grahamiana 1

V. pilosa 2

Woody twining herbs. Leaves 3-foliolate, each up to 5 x 3.5 cm, ovoid, acute, deltoid at base, glabrous. Flowers c. 2.5 cm, in axillary racemes.

Fl.: November—December.

Rare; once collected from an evergreen forest above 500 m in ghat; on way to Pamoh.


Twining pubescent herbs. Leaves 3-foliolate; terminal leaflet up to 21 x 6 cm, ovate-lanceolate, acute, rounded; lateral ones oblique with a few, short appressed hairs on both surfaces. Flowers purplish, up to 1.5 cm long, in axillary racemes up to 15 cm long. Pods up to 10 cm long, linear, densely clothed with brown hairs.

Fl. & Fr.: November—February.

Common; in secondary forests, c. 250 m; Kannoth, Nedumpoyil.


Twining climbers. Leaves 3-foliolate; leaflets 3 x 2 cm, ovoid, acute, deltoid at base, glabrous. Flowers c. 1 cm long, in axillary racemes.

Fl.: March—April.

Occasional in semievergreen forests, c. 600 m; Tirumulli.


A slender herbaceous twiner, clothed with spreading hairs. Leaves 3-foliolate; leaflets up to 4 x 3 cm, ovate, acute, sparsely pubescent.
on both sides. Flowers c. 1 cm long, in axillary racemes. Pods up to 6 cm long, compressed, linear, slender with slightly appressed hairs.

Fl. & Fr.: November—March.

Common in semievergreen forests, Kannoth, Tulpetty.


Twining climbers. Leaves 3-foliolate; leaflets c. 5 x 3 cm, ovate or lanceolate, acute, rounded at base. Flowers up to 3 cm long, dark purple. Pods up to 10 x 0.5 cm, linear, straight, thinly silky at first, glabrescent later.

Fl. & Fr.: March—April.

Occasional; once collected from moist deciduous forests, c. 800 m; Thanalum.


Twining climbers. Leaves 3-foliolate; leaflets up to 9.5 x 4 cm, ovate, sub-obtuse, glabrescent above, thinly silky beneath. Flowers up to 2.5 cm long. Pods up to 2.5 cm long, linear, straight, clothed with brown hairs.

Fl. & Fr.: March—November.

Common; in moist deciduous forests, c. 800 m; Tirunallil, Tulpetty.

35. *Zornia* Gmel.


Trailing herbs. Leaflets up to 1.5 x 0.5 cm, lanceolate, acute, punctate, glabrous. Flowers c. 0.8 cm long, pale yellow. Pods c. 1.3 cm long, 1-6-jointed, retrorsely scabrous with glochidiate bristles.
Fl. & Fr.: November—December.

Common: in wastelands in plains; Cannanore

Glicicidia sepium (Jacq.) Kunth ex Walp. is grown as a hedge plant.

### 46. CAESALPINIACEAE

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<td>6a. Stamens 5; toty trees</td>
<td>Acrocarpus 1</td>
</tr>
<tr>
<td>6b. Stamens 10; climbers, shrubs or small trees:</td>
<td></td>
</tr>
<tr>
<td>7a. Flowers and fruits subsessile (pedicels less than 0.5 cm)</td>
<td>Moullava 6</td>
</tr>
<tr>
<td>7b. Flowers and fruits distinctly pedicelled (pedicels more than 1 cm)</td>
<td>Caesalpinia 3</td>
</tr>
</tbody>
</table>

### 1. ACROCARPUS Wight


Erect, unarmed trees up to 25 m tall. Leaflets 9-11 pairs, each up to 11.5×4.5 cm, elliptic-lanceolate, oblique at base, acute to acuminate, glabrous. Pods up to 17×2 cm, long-stalked, thin, flat, 10-12-seeded.

Fr: December—January.

Scarce; in evergreen forests, c. 500 m; Nedumpoyil.
2. BAUHINIA L.

1a. Climbers

1b. Trees:

3a. Foliage common

3a. Leaves split up to 1/3 their length; pods less than 30 cm long

3b. Leaves split up to 1/4 their length; pods more than 30 cm long

B. phoenicea 2

B. racemosa 3

B. malabarica 1


Trees up to 5 m tall. Leaves up to 7 x 8.5 cm, broader than long, bilobed, divided about one fourth way down, glabrous above, glaucous white beneath, cordate at base. Pods up to 12 x 1.5 cm, straight, flattened, reticulate, beaked.

Fr.: November—December.

Common in moist deciduous forests, c. 825 m; Tolpetty.


Leaves up to 10 x 7 cm, cordate, coriaceous, cleft to the middle, lobes obtuse. Flowers c. 5.5 cm long, red, in axillary corymbs up to 17 cm long. Pods up to 15 x 2.5 cm, stalked, oblong, flattened, shortly pointed at apex.

Fl. & Fr.: November—December.

Common; in evergreen forests, c. 500 m; Ambayathode, Chandana-thode, Nedumpoyil.

The brick-red flowers are very attractive in the field.

Small trees up to 7.5 m tall. Leaves c. 4 × 4.5 cm, deeply cleft into rounded lobes, cordate at base. Flowers white, in terminal or leaf-opposed racemes, up to 10 cm long.

Fl.: November — December.

Common in moist deciduous forests, c. 825 m; Kannoth R.F.

*Bauhinia variegata* L. is cultivated nearby temples.

3. **Caesalpinia** L.

1a. Leaflets 4-5 pairs  

1b. Leaflets 16-20 pairs  


Climbing shrubs. Pinnae 2-5 pairs; leaflets 4-5 pairs, each up to 9 × 3.5 cm, ovate, acute, base rounded, shining above. Pods up to 9.2 × 2.7 cm, thin, flat, glabrous, faintly reticulately veined.

Fl.: August — September.

Common; in moist evergreen forests at low altitudes; Kannoth.


Climbing shrubs with prickles. Pinnae 16-20 pairs. Leaflets c. 0.5 × 0.2 cm, oblong-mucronate. Flowers up to 2.5 cm across, bright yellow, in terminal and leaf-opposed racemes.

Fl.: March — April.

Common; along margins of moist deciduous forests, c. 250 m; Kannoth.

4. **Cassia** L.

1a. Floraglands present:

2a. Glands on the petiole:
3a. Glands distinctly stalked, peltate
3b. Glands sessile:
   4a. Leaflets less than 10 pairs:
      5a. Leaflets 6-10 pairs
      5b. Leaflets 3-6 pairs:
         6a. Leaves glabrous
         6b. Leaves hispido
   4b. Leaflets more than 10 pairs:
      7a. Leaflets 16-24 pairs
      7b. Leaflets 40-60 pairs

2b. Glands on the rachis
1b. Foliar glands absent


Small trees up to 7.5 m tall. Leaflets 4-8 pairs, each up to 11 x 5 cm, ovate or ovate-oblong, acute, cuneate at base, glabrous above, silvery pubescent beneath when young. Flowers c. 5.5 cm long, yellow, in lax racemes.

*Fl.:* March — April.

Common; in moist deciduous forests, 800 m; Begur R.F.


Erect undershrub up to 0.75 m tall. Leaflets up to 6 x 2.5 cm, ovate to ovate-oblong, acute to acuminate, inequilateral at base, hirsute. Flowers c. 2.5 cm long, yellow. Pods up to 9.5 cm long, linear, compressed.

*Fl. & Fr.:* February—August.

Common; in open wastelands in ghats, c. 800 m; Begur R.F.

Erect undershrubs up to 50 cm tall. Leaflets linear, subacute, obliquely mucronate, oblique at base. Flowers c. 1.5 cm long. Pods up to 6 cm long, linear, flat, nearly straight, glabrous.

Common in grasslands, c. 800 m; Tolpetty.


Erect herbs up to 30 cm tall. Leaves pinnate, c. 4 cm long; leaflets linear, subacute, obliquely mucronate, oblique at base. Flowers c. 1.5 cm long, yellow. Pods up to 5.5 cm long, linear, flat, nearly straight, glabrous.

_Fl._ & _Fr._: November — December.

Common in grasslands in ghats, c. 800 m; Chandanathode.

According to Ohashi (in Hara, Fl. East. Himal. 143. 1966) "the Cassia mimosoides group is exceedingly polymorphic in gross morphology and much critical studies are needed".


Undershrubs up to 0.75 m tall. Leaflets up to 6.5 × 2.3 cm, ovate-lanceolate, sharply acute at apex, somewhat oblique at base. Flowers c. 2.5 cm long, yellow. Pods up to 12.5 cm long, recurved, compressed.

_Fl._ & _Fr._: March — May.

Common in open wastelands; Pappinisseri, Mannantoddy, Tolpetty.


Erect herbs up to 30 cm tall. Leaflets 10-20 pairs, each up to 2 cm long. Flowers c. 0.5 cm long, yellow. Pods c. 3.5 cm long, linear, straight or slightly curved, glabrous.

_Fl._ & _Fr._: November — December.
Common in open wastelands in plains; Tellicherry.


Undershrubs up to 0.75 m tall. Leaflets up to 4.5 × 1.3 cm, lanceolate, acuminate, rounded at base, glabrous. Flowers c. 3 cm long, yellow. Pods c. 8 × 1.7 cm, somewhat turgid, sepalate between seeds.

*Fl.*, & *Fr.*: March — November.

Common as a weed near habitations; Begur, on way to Kottiyur.


Herbs up to 0.75 m tall. Leaflets 3 pairs, each up to 5 × 2.5 cm, obovate-oblong, base somewhat oblique. Flowers c. 1.7 cm long, yellow. Pods up to 10 cm long, subtetragonal, puberulous.

*Fl.* & *Fr.*: July — November.

Common in wastelands; Cannanore, Tellicherry.

5. *Humholdtia* Vahl *nom. cons.*


Evergreen trees up to 5 m tall. Leaves abruptly pinnate; leaflets 2 pairs, each up to 17 × 5.5 cm, obovate-oblong, obtusely cuspidate at apex, glabrous on both surfaces, obliquely acute at base. Flowers c. 1.5 cm long, orange, in axillary racemes up to 30 cm long.

*Fl.*: July — November.

Common; an undergrowth in evergreen forests, c. 500 m; Ambayathode, Chandanathode.

Climbing prickly shrubs. Leaves bipinnate; leaflets 4-5 pairs, each up to 5.5 x 2.2 cm, oblong-obtuse. Flowers c. 1 cm long, orange, in terminal simple or paniculate spikes. Pods up to 8 x 2.5 cm, linear-oblong, constricted between seeds.

Fl. & Fr.: August — January.

Recently Nicolson (i.e.) has revived the generic name Moulluva Adans. as it is congeneric with Wegataa Dalz. and transferred the only species W. spicata (Dalz.) Wight (Caesalpinia spicata Dalz.) to Moulluva. Manitz (in Taxon 17 : 500. 1968) has shown the earlier name of this species viz. Almoloevenia spinosa Dennst. 1918 to be a nomen nudum.

A monotypic and endemic genus of the Western ghats.

7. Saraca L.


Trees up to 7.5 m tall. Leaves 8-12-foliolate; leaflets up to 18 x 5 cm, oblong-lanceolate, acute-acuminate, cuneate at base. Flowers c. 4 cm long, orange-scarlet, in dense axillary corymbose cyms.

Fl.: May — July.

Occasional in evergreen forests, 500-800 m; Brahmagiri, Nedumpoyil.

According to de Wilde (i.e.) Saraca indica occurs in Thailand, Malay Peninsula, Sumatra and Java and the species occurring in India is Saraca asoca (Roxb.) de Wilde.
Tamarindus indicus L. is cultivated for its fruits.

47. Mimosaceae

1a. Stamens definite (5-10) in number:
   2a. Anthers gland-crested:
      3a. Trees; flowers in globular heads
         Xylotheca 6
      3b. Climbers; flowers in elongate spikes
         Encada 3
   2b. Anthers not gland-crested
      1b. Stamens indefinite:
         4a. Stamens free
            Acacia 1
         4b. Stamens monadelphous:
            5a. Pods septate between seeds
               Samanee
            5b. Pods not septate between seeds:
               6a. Pods straight
                  Albizia 2
               6b. Pods curved
                  Pithecellobium 5

1. Acacia Mill.

1a. Flowers pedicellate:
   2a. Pods thick; stipules ovate-cordate
      A. sinuata 2
   2b. Pods thin; stipules lanceolate
      A. pennata 1
   1b. Flowers sessile
      A. torta 3


Seandent shrubs. Leaves bipinnate; pinnae 8-18 pairs, each 4.5 cm long; leaflets 40-50 pairs, slightly overlapping, small, sessile, linear, obtuse unequal-sided, base truncate. Flowers pale yellow, c. 0.7 cm long, in terminal panicles.

Fl. & Fr.: May — November.

Common in moist deciduous forests, c. 800 m; Baveli, Tulpetty.

Armed climbing shrubs. Leaves bipinnate, pinnae 4-8 pairs, up to 3 cm long; leaflets 12-25 pairs, small, linear, mucronate, unequal, truncate at base. Flowers in globose heads, 1 cm across.

Fl.: March — July.

Common in moist deciduous forests, c. 800 m; Tirunallil.


Scandent shrubs. Leaves bipinnate; pinnae 10-14 pairs; leaflets 25-40 pairs, overlapping, oblong, falcate, truncate at base. Flowers white, in terminal fascicles.

Fl. & Fr.: March — June.

Common in moist deciduous forests, c. 800 m; Kannoth R.F., Odantabode.

2. ALBIZIA DURAZZ.

1a. Pinnae 2-6 pairs; leaflets more than 0.5 cm broad:

2a. Flowers pedicelled

A. lebbeck 2

2b. Flowers sessile

A. odoratissima 3

1b. Pinnae 6-20 pairs; leaflets less than 0.5 cm broad

A. amara 1


Unarmed trees up to 20 m tall. Leaves abruptly bipinnate; leaflets linear-oblong, obtuse or subacute, glabrous above, glaucous beneath. Pods up to 13.5 × 2 cm, thin, flat, abruptly pointed, glabrous.
Fr.: July — August.

Common in moist deciduous forests, c. 800 m; Begur.


Unarmed trees up to 20 m tall. Leaves abruptly bipinnate; pinnae 4-6 pairs; leaflets 6-8 pairs, up to 3.3 × 1.8 cm, elliptic-oblong, obtuse at apex, obliquely cordate at base, appressed pubescent beneath. Flowers c. 1.5 cm long, yellowish green in globose umbellate heads.

Fl.: August — September.

Occasional near villages in plains; Kannoth.


Unarmed trees up to 20 m tall. Leaves abruptly bipinnate; pinnae 4 pairs; leaflets 8-15 pairs, each up to 2 × 0.7 cm, obliquely oblong, rounded at apex, glaucous beneath. Flowers c. 1 cm long, yellowish green, in terminal heads.

Fl.: March — May.

Common in moist deciduous forests in ghats, c. 800 m; Begur, Kannoth.


Linn. Rachis up to 17 cm. Leaflets up to 7.5 × 3.5 cm, oblong-ovate, subacute. Flowers c. 0.7 cm, white, in spikes up to 40 cm long.
**Flora of Cannanore**

*Fl.:* November — January.

Occasional in evergreen forests, c. 250 m; Kannonth.

4. **Mimosa L.**

1a. Armed plants

*M. pudica* 2

1b. Unarmed plants

*M. invisa var. inermis* 1


Erect undershrubs up to 60 cm tall. Leaves bipinnate, pinnae 3-5 pairs, 2-3.5 cm long, leaflets 10-20 pairs, overlapping. Flowers pink, in axillary globose heads. Fruits c. 3 cm long, flat, compressed, seporate between seeds, densely covered with scabrous hairs; seeds 4-5.

*Fl. & Fr.:* February — March.

An introduced weed, now naturalized in many areas; Aralam, Odanthode.


Procumbent herbs. Leaves very sensitive; pinnae 1-2 pairs; leaflets 12-20 pairs, linear-oblong. Flowers pink, up to 1 cm long, in globose heads. Pods 1-5 cm long, flat, bristly, slightly curved.

*Fl. & Fr.:* July — August.

Common in wastelands; Tolipetty.

5. **Pithecellobium Mart.**

Trees up to 5 m tall. Leaves 2-pinnate; pinnae 1-2 pairs; leaflets 6-8, up to 16 x 6 cm, elliptico-ovate, rounded at base, acuminate. Flowers c. 0.5 cm, white. Pods flat, spirally curved, glabrous.

Fl. & Fr.: March — July.

Common in evergreen forests, c. 800 m; Kannoth, on way to Brahmagiri, Chandranathode.

6. Xyla Benth.


Tall trees up to 25 m tall. Leaves 2-pinnate; leaflets 4-10, each c. 12 x 4.5 cm, oblong, acute, rounded at base, glabrous. Pods 12 x 4 cm, oblong-falcate, flat, rusty-tomentose, woody, sepaete between seeds.

Fr.: March — April.

Common in moist deciduous forests, c. 250 m; Ambuyathode, Kannoth R.F.

*Samanea saman* (Jacq.) Merr. is an avenue tree.

48. ROSACEAE

1a. Armed climbing shrubs

1b. Unarmed trees

1. *Prunus* L.

FLORA OF CANNANORE


Trees up to 7.5 m tall. Leaves c. 17 × 7 cm, elliptic-oblong, obtuse, acute or acuminate at apex, rounded at base, glabrous on both surfaces. Flowers c. 1 cm long, in racemes up to 8 cm long. Drupes c. 2 cm across, broader than long, slightly bilobed, apiculate, glabrous.

Fl. & Fr.: December — April.

Common; along banks of streams near evergreen forests, 500 - 800 m; Ambayathode, Chandanathode, Periya.

2. RUBUS L.

1a. Leaves simple, 5-lobed

1b. Leaves pinnately 5-7-foliolate

R. micropetalus 1

R. niveus 2


Shrubs up to 2.5 m tall. Leaves up to 14 × 10.5 cm, simple, ovate-lanceolate, 5-lobed, end-lobes acute, lower lobes rounded, secalrid and green, softly whitish pubescent beneath. Flowers c. 1.5 cm across, white, in terminal or axillary panicles. Drupes c. 1.5 cm across, globose, red.

Fl. & Fr.: February — June.

Common; along margins of evergreen forests, c. 825 m; Chandanathode.


Shrubs up to 2.5 m tall. Leaflets up to 6 × 4 cm, elliptic-lanceolate, acute, cuneate at base, glabrous above, white beneath. Drupes c. 1.8 × 0.7 cm, globose, black with white tomentum.

Fr.: April — May.
Rare; once collected from evergreen forests, c. 825 m; on way to Brahmagiri.

This plant with beautiful flowers is worth introducing in gardens.

49. CRASSULACEAE

Kalanchoe Adams.


Erect herbs up to 50 cm tall. Leaves obovate, acute, cuneate at base. Flowers greenish-yellow, in terminal, corymbose panicles.

Fl.: February — March.

Occasional; in rocky areas in moist deciduous forests, c. 800 m; Begur.

50. DROSERACEAE

Drosera L.


Scapigerous herbs up to 10 cm long. Leaves up to 1.5 × 0.5 cm, radical, rosulate, green or reddish with glandular hairs. Flowers white, in second racemes. Capsules 5-valved, glabrous.

Fl. & Fr.: February — March.

Common in damp places, c. 800 m; Tirunalli.

51. HALORAGACEAE

Myriophyllum L.

**Flora of Cannanore**


Aquatic herbs up to 15 cm long. Leaves c. 0.7 x 0.1 cm, linear, serrate, glabrous. Fruits c. 0.1 cm long, furrowed, with 4 cocci, sparsely pubescent.

*Fr.*: March — April.

Rare; once collected from the banks of a stream, c. 800 m; Begur.

52. RIIIZOPIIORACEAE

1a. Calyx tube with bracteoles; stamens many

Carallia 2

1b. Calyx tube without bracteoles; stamens 8

Blepharistemma 1

1. Blepharistemma Wall. ex Benth.


Trees up to 5 m tall. Leaves up to 15 x 7 cm, elliptic-oblong, acute-acuminate, attenuate at base. Flowers up to 2 cm long, white, in many flowered axillary cymes. Capsules c. 0.5 cm across, fleshy.

*Fl.* & *Fr.*: March — April.

Rare; once collected by Bourdillon in the year 1885; Telliperry.

One of the endemic genera of Peninsular India.

2. Carallia Roxb.

BOTTANICAL SURVEY OF INDIA

Tall trees up to 25 m tall. Leaves up to 10 × 6 cm, obovate, obtuse or acute at tip, cuneate at base. Flowers greenish white, small, in capitate cymes.

Fl. & Fr.: July — August.

Common; in open places in plains; Kuthuparamba.

33. COMBRETACEAE

1a. Petals present:
   2a. Calyx tube distinct
      Quisqualis
   2b. Calyx tube not distinct

1b. Petals absent:
   3a. Flowers in capitate heads
      Anogeissus 1
   3b. Flowers in racemes or spikes:
      4a. Calyx-limb persistent; straggling shrubs
         Calycoperis 2
      4b. Calyx-limb deciduous; trees
         Terminalia 4

1. Anogeissus (DC.) Guill. & Perr.


Tress up to 25 m tall. Leaves up to 10.5 × 6.5 cm, elliptic-oblong, obtuse at apex, rounded at base. Drupes c. 1 cm across, winged, compressed.

Fr.: November — December.

Occasional; in moist deciduous forests, c. 825 m; Kannoth, Tolpetty.

2. Calycoperis Lam.

Climbing shrubs. Leaves up to 12 × 5.5 cm, ovate-lanceolate or elliptic-oblong, acute or acuminate, sparsely tomentose on both surfaces. Flowers c. 2 cm long, yellowish-green, in fulvous pubescent terminal panicles.

Fl.: February — March.

Common in evergreen forests, c. 250 m; Kannoth.

3. **Combretum** Loebl. *nom. cons.*


Scandent shrubs. Leaves up to 15 × 8 cm, broadly elliptic to obovate, shortly acuminate, rounded at base. Flowers c. 1.5 cm long, pale yellow, in axillary spikes. Fruits c. 4 × 3.2 cm, oblong, 5-ridged, pale yellow when ripe, pubescent, with a crown of calyx lobes.

Fl. & Fr.: December — April.

Fairly common near streams in semievergreen forests; Kannoth.

Gamble *i.e.* reported this species only from South Cannore in West Coast. This extensive climber is very conspicuous in the field because of its winged fruits. Before falling, leaves turn red as in most members of Combretaceae.

4. **Terminalia** L.

1a. Fruits not winged (subglobose)  
1b. Fruits winged:

2a. Fruits unequally 3- winged  
2b. Fruits equally 5- winged:

3a. Fruits notched at top  
3b. Fruits usually rounded at top:

4a. Fruits glabrous  
4b. Fruits slightly pubescent

Trees up to 15 m tall. Leaves up to 13.5 × 6 cm, oblong or elliptic-oblong, obtuse, rounded or cordate at base. Drupes up to 4 × 2.5 cm, ovoid or obovoid-oblong, yellow when ripe.

*Fr.*: November — June.

Fairly common in moist deciduous forests, c. 825 m; Begur, Tolpetty.


Trees up to 25 m tall. Leaves up to 22 × 9 cm, oblong-elliptic, rounded at apex, cuneate at base. Flowers c. 0.5 cm long, pale greenish-yellow, in spikes. Drupes up to 2.5 × 2 cm, oblong, tomentose, obscurely angled when dry.

*Fl.* & *Fr.*: March — November.

Common in moist deciduous forests, c. 825 m; Begur, Kannoth, Nedumpooyil.


Trees up to 20 m tall. Leaves up to 13.5 × 5 cm, ovate-oblong or elliptic-oblong, acute to obtuse, cuneate at base. Flowers c. 0.5 cm long, dull yellow, in fulvous-pubescent terminal panicles.

*Fl.*: March — April.

Common in moist deciduous forests, c. 825 m; Begur K.F.


Trees up to 25 m tall. Leaves up to 22 × 8 cm, ovate-oblong, cuneate or acute at base. Flowers c. 0.7 cm long, pale yellow, in axillary and terminal panicles, up to 14 cm long. Drupes c. 5 × 3.5 cm, oblong-ovoid, yellow when ripe.

*Fl. & Fr.*: June—November.

Fairly common in moist deciduous forests, c. 825 m; Kannoth, Tolpetty.


Trees up to 20 m tall. Leaves up to 20 × 6.5 cm, oblong, acute, rounded or cordate at base. Flowers c. 0.3 cm in axillary and terminal panicles. Drupes c. 2.5 cm across, reddish brown, rusty-tomentose.

*Fl. & Fr.*: February—December.

Common in moist deciduous forests, c. 500 m; Elangad, Kannoth R.F.

*Quisquilla indica* L. is grown as an ornamental.

54. **MYRTACEAE**

1a. Ovary 2-celled:

2a. Calyx tube produced beyond the ovary; flowers in cymes (terminal or axillary) *Syzygium* 3

2b. Calyx tube not produced beyond the ovary; flowers solitary or supra-axillary *Meteoromyrtus* 1

1b. Ovary many-celled *Podocarpus* 2

1. **Meteoromyrtus** Gamble

Small trees up to 5 m tall. Leaves up to 8.5 × 2.5 cm, oblong-lanceolate, acuminate, glabrous. Flowers c. 2 cm long, white; petals pellucid-punctate and ciliate.

Fl.: February -- August.

Scarc; in dense evergreen forests, c. 800 m; Theerthamalada.

First collection after the type. A monotypic and endemic genus of the Western Ghats.

2. Syzygium Gaertn. nom. cons.

Merrill Pryr & (in J. Arn. Arb. 18 : 322-342. 1937) opine that majority of the Old World species of Eugenia should be placed under Syzygium Gaertn. Their arguments for separating Syzygium from Eugenia are based mainly on the structure of the seeds: Syzygium has the cotyledons separate and distinct while in Eugenia (sensu stricto) they are fused together and are mechanically inseparable; further the testa in Syzygium is adherent to the pericarp while in true Eugenia it is free from it and adherent to the cotyledons.

1a. Flowers more than 3 cm long; petals falling off free:

2a. Leaves cordate or rounded at base:

3a. Leaves lanceolate, long acuminate; calyx tube slender

S. nanonid 6

3b. Leaves elliptic-oblong, acute or obtuse; calyx tube stout

S. mundagam 5

2b. Leaves narrowed at base:

4a. Leaves elliptic or ovate

S. laurum 4

4b. Leaves linear or lanceolate

S. jambos

2b. Flowers less than 1.8 cm long; petals falling off either free or more often as a calyptra:

5a. Petals usually free

S. zeylanicum 9

5b. Petals united:

6a. Branchlets tetragonal:

7a. Leaves elliptic to obovate or orbicular; nerves distant; inflorescence branches stout

S. tamulungensis 6

7b. Leaves obovate-lanceolate; nerves closed; inflorescence branches slender

S. rubicundum 7

6b. Branchlets terete:
8a. Cymes lateral:

8b. Cymes terminal

S. caryophyllatum 1

9a. Leaves under 3 cm broad; fruits with a cup-like calyx limb

S. heyeananum 3

9b. Leaves above 3 cm broad; fruits without calyx limb

S. cumini 2


Trees up to 7.5 m tall. Leaves up to 11.5 x 5.5 cm, obovate, obtuse or emarginate, attenuate at base, glabrous. Flowers c. 0.9 cm long, white in terminal laxly trichotomous panicles of umbellules. Berries c. 0.8 cm across, black, globose.

Fl. & Fr.: April — August.

Fairly common; along banks of streams in all types of forests; Chandanathoue, Kakkayangad, Kannamavam.


Evergreen trees up to 20 m tall. Leaves up to 13 x 5 cm, elliptic-oblong or ovate, subobtuse, base narrowed, glabrous. Flowers greenish white. Berries c. 2.5 cm long, oblong or ellipsoid, black.

Fl. & Fr.: August — December.

Not common; in evergreen forests, c. 500 m; Aralam, Nedumpoyil, Tirunalli.

Small trees up to 3 m tall. Leaves up to 12 x 3 cm, oblong or elliptic, obtusely acuminate, base narrowed, glabrous. Flowers c. 1 cm long, white, in axillary cymes.

Fl.: April — May.

Rare; once collected from the bank of a stream in an evergreen forest, 800 m; Chandanathode.


Trees up to 10 m tall. Leaves up to 10.5 x 4.5 cm, bluntly acuminate at apex, glabrous. Flowers c. 3.5 cm long, crimson, in terminal corymbose cymes. Berries c. 2.5 x 1.5 cm, ovoid, glabrous.

Fl. & Fr.: February — November.

Common in evergreen forests, c. 800 m; Brahmagiri, Chandanathode, Tirunalli.


Trees up to 15 m tall. Leaves up to 23 x 8 cm, glabrous on both surfaces. Flowers c. 3.5 cm, white, in terminal corymbose cymes.

Fl.: June — July.

Occasional; along banks of streams in evergreen forests, c. 800 m; on way to Kannoth.

Trees up to 5 m tall. Leaves up to 26 × 8 cm, cordate at base, coriaceous, glabrous. Flowers c. 6 cm long, reddish, in terminal cymes.

*Fl. & Fr.:* March — April.

Common; along banks of streams in evergreen forests, 800 m; Theerthundamala.


Trees up to 7.5 m tall. Leaves up to 9 × 3.2 cm, tip caudate-acuminate, glabrous. Flowers c. 0.5 cm long, white. Young berries c. 0.5 cm across, black, globose.

*Fl. & Fr.:* April — May.

Rare; once collected from banks of a stream in evergreen forests above 800 m; Chandanathode.


Evergreen trees up to 7.5 m tall. Leaves up to 16 × 7.5 cm, coriaceous, short, obtuse-acuminate to obovate, glabrous. Flowers c. 0.4 cm, white. Berries c. 0.8 cm across, globose, pink.

*Fl. & Fr.:* February — May.

Scarce; in the shola forests, c. 1050 m; Theerthundamala.

Trees up to 7.5 m tall. Leaves up to 11.5 x 4 cm, ovate, long-acuminate, rounded at base, glabrous. Flowers small, white. Berries c. 0.3 cm across, globose, black.

Fl.: August

Rare; once collected from the banks of a stream in an evergreen forest, above 800 m; Periya.

Psychotria guayava L. and Syzygium jambos (L.) Alston are cultivated for edible fruits.

55. LECYTHIDACEAE

Cayleya Roxb. nom. cons.


Trees up to 10 m tall. Leaves up to 24 x 12.5 cm, oblong-novate, obtuse or retuse at apex, tapering towards base, glabrous. Flowers c. 5 cm across, yellowish-white. Fruits c. 4 cm across, globular, glabrous.

Fl. & Fr.: June — July.

Occasional; in moist deciduous forests, c. 800 m; Chandanathode.

56. MELASTOMATACEAE

1a. Epiphytic plants

1b. Terrestrial plants:

2a. Flowers 1-merous

2b. Flowers 4 or 5-merous:

3a. Leaves with palmate venation; ovary 1-celled; ovules few

3b. Leaves with palmate venation; ovary 4-5-celled; ovules many:

4a. Stamens equal

4b. Stamens unequal

Medinilla 1
Sonera 5
Memecylon 3
Ostebeckia 4
Melastoma 2
1. **Medinilla** Gaud.


Epiphytic shrubs. Leaves c. 3 × 2 cm, orbicular, obtuse at apex, caneate at base, glabrous. Berries c. 0.5 cm, glabrous, subcampanulate, axillary or lateral cymes.

**Fr.**: June — July.

Rare; once collected from shades of dense evergreen forests above 800 m; on way to Periyar.

2. **Melastoma** L.


Shrubs up to 2.5 m tall. Leaves up to 10.5 × 4.2 cm, elliptic-lanceolate, acute at both ends. Flowers c. 4.5 cm across, in terminal fascicles. Fruits soft, dehiscing irregularly.

**Fl. & Fr.**: July — August.

Common along banks of streams from plains to ghats; Chandanathode, Kannoth, Periyarum.

3. **Memecylon** L.

1a. Leaves petioled:

2a. Flowers sessile or very shortly pedicellate:

3a. Leaf nerves conspicuous:

4a. Leaf nerves 10-16 in number

4b. Leaf nerves 6-10 in number

3b. Leaf nerves inconspicuous

2b. Flowers pedicellate

1b. Leaves sessile

*M. heyneanum* 2  
*M. lawsonii* 3  
*M. talbotianum* 4  
*M. umbellatum* 5  
*M. depressum* 1

Er. et shrubs, up to 2.5 m tall. Leaves up to 14 × 5.5 cm, lanceolate, acute, cordate at base. Flowers c. 0.5 cm long, pale bluish-violet, in axillary clusters. Berries c. 0.5 cm across, black, globose.

*Fl. & Fr.*: March — August.

Occasional; in semi-evergreen forests, c. 825 m; en. way to Periyar.


Small trees up to 3.5 m tall. Leaves 15 × 4 cm, lanceolate, acuminate, acute at base. Flowers small, scissile. Berries 1 cm across, globose, yellow, in axillary fascicles.

*Fl. & Fr.*: December — March.

Common in evergreen forests, c. 825 m; Nedumpoyil, Panath.


Shrubs up to 2 m tall. Leaves up to 11 × 4.5 cm, elliptic-lanceolate, acute, obtuse or acute at base, glabrous. Berries c. 0.8 cm across, globose, yellow.

*Fr.*: March — May

Occasional; an undergrowth in evergreen forests, c. 500 m; Chandanathode, Nedumpoyil.

Small trees up to 7.5 m tall. Leaves up to 8 × 3.5 cm, elliptic, obtusely acuminate at apex, acute at base. Flowers blue, in axillary clusters.

Fl.: March — April.

Rare; once collected from an evergreen forest, c. 500 m; Nedumpoyil.


Small trees up to 2.5 m tall. Leaves up to 12 × 5.5 cm, ovate-elliptic, obtuse, acuminate at apex, acute or obtuse at base, subcoriaceous, shining above. Berries c. 0.7 cm across, globose, yellow.

Fr.: February — March.

Occasional; in moist deciduous forests, c. 200 m; Ezhimala, Kannoth R.F.

4. Osbeckia L.

1a. Flowers 4-merous:

2a. Petioles 1-1.5 cm long; leaves 5-nerved

    O. wymanii 3

2b. Petioles less than 1 cm long; leaves 3-nerved

    O. parcifolia 2

1b. Flowers 5-merous:

3a. Petals more than 0.5 cm long

    O. zeylanica 4

3b. Petals less than 0.5 cm long

    O. muralis 1


Annual erect herbs up to 15 cm tall. Leaves up to 2 × 1.2 cm, ovate, attenuate at base, acute, sparsely hisrate. Flowers c. 0.4 cm long, in terminal capitate heads. Capsules ribbed, c. 0.5 cm long.

Fl. & Fr.: November — December.

Common; in moist situations in plains; Taliparamba.
Based on a study of the type materials, Hansen (Ginkgoana 4: 103-104. 1977) concluded that *Osbeckia truncata* D. Don ex Wight & Arn. is a *nomen consignatum* because of the random use of the specific epithet 'truncata' for three different species of *Osbeckia*, namely *O. murialis* Naud., *O. brachystemon* Naud. and *O. cupularis* D. Don ex Wight & Arn.


Erect herbs up to 50 cm tall. Leaves 5 × 2.2 cm, ovate, truncate at base, acute, 3-5-nerved and sparsely hirsute. Flowers c. 2 cm long, purple, in terminal inflorescence. Capsules c. 0.6 cm long.

*Fl. & Fr.:* November — December.

Occasional; in moist deciduous forests; Hilldale; Kannah R.F.


Erect undershrubs up to 1 m tall. Leaves up to 9 × 3 cm, ovate, subcordate at base, acute, 5-nerved, densely hirsute above and sparsely hirsute beneath. Flowers c. 2 cm long, purple, in terminal panicules. Capsules c. 0.7 cm long, straw-coloured.

*Fl. & Fr.:* March — April.

Rare; along streams in evergreen forests, c. 800 m; Tirunalli.


Annual herbs up to 15 cm tall. Leaves up to 3 × 1.5 cm, elliptic to ovate, acute at base, 3-nerved, sparsely pubescent. Flowers c. 0.8 cm long, purple, in terminal heads. Capsules c. 0.5 cm long, ribbed.
Fl. & Fr.: November—February.

Occasional; in damp situations; Chandanathode, Irity.


1a. Caulescent herbs:
   2a. Flowers violet; capsules hemispheric *S. rheedit* 2
   2b. Flowers rose coloured; capsules narrowly funnel shaped or oblong:
      3a. Anthers with a prominent beak *S. versicolor* 3
      3b. Anthers without a prominent beak *S. kannanorensis* 1

1b. Aculeolate herbs *S. wallichii* 4


Erect herbs, 6 - 30 cm tall. Leaves ovate-lanceolate, base distinctly unequal, oblique. Racemes 4-10-flowered, axillary or terminal. Stamens 3, anthers broadly ovate, apex acute, not beaked. Capsules c. 0.5 cm long, indistinctly 6-ribbed.

Fl. & Fr.: November—December.

Rare, in evergreen forests; Chandanathode.


Erect herbs up to 15 cm tall. Leaves up to 12 x 5.5 cm, ovate-lanceolate, acute or obtuse, rounded at base, bristly hairy on both surfaces. Flowers c. 1.7 cm long, in shortly pedicelled, terminal racemes. Capsules c. 1 cm long, white, smooth, faintly ridged.

Fl. & Fr.: November—December.

Common; in shades on rocky slopes of dense evergreen forests, c. 800 m; Chandanathode, Tolpetty.

1a. Flowers in terminal racemes

1b. Flowers in axillary racemes

var. *versicolor*

Erect herbs up to 30 cm tall. Leaves up to 6 × 2 cm, ovate-lanceolate, acuminate, subcordate at base, scabrously hispid on both surfaces. Flowers c. 1.2 cm long, pink. Capsules c. 1 cm long, smooth, ridged, turbinate.

*Fl. & Fr.:* March—April.

Occasional; along margins of evergreen forest, c. 500 m; Chulamaduthode, Periyan.


*Fl. & Fr.:* February—March.

Rare; once collected from an evergreen forest; Theerthundamala.


Erect succulent herbs up to 20 cm tall. Leaves up to 21.5 × 10 cm, ovate or ovate-lanceolate, acute at apex, rounded at base, crenate hairy above, glabrous beneath. Flowers c. 1.7 cm long, pink, in terminal umbels.

*Fl.:* December—January.

Common on moist rocky slopes, c. 500 m; on way to Kannoth.

57. LYTIIRACETAE

1a. Annual herbs:

2a. Placenta in the ovary continuous with the style

*Nemesia* 3
2b. Placenta in the ovary not continuous with the style:

3a. Fruits dehiscent, opening with valves

Rotala 4

3b. Fruits indehiscent, opening irregularly

Ammannia 1

1b. Perennial shrubs or trees:

4a. Flowers 6-merous, stamens numerous

Lagerstroemia 2

4b. Flowers 4-merous, stamens definite (8 only)

Lawsonia

1. AMMANIA L.

1a. Stems quadrangular

A. auriculata 1

1b. Stems terete

A. baccifera 2


Erect herbs up to 15 cm tall. Flowers c. 0.2 cm long in axillary cymes. Capsules globose, red.

Fl. & Fr.: November — December.

Rare; once collected from rice fields; Tellicherry.

Blatter & Hallberg (i.e.) point out that the species described as A. senegalensis Lam. in the Flora of British India is A. auriculata Willd. In A. auriculata Willd. the petals are prominent, the style is almost two times the ovary and the stamens are 4, whereas in true A. senegalensis Lam. petals are absent or minute, style almost absent and stamens are 4 - 8. A. senegalensis is so far known only from Khandala (Blatter & Hallberg i.e.). Gamble (i.e.) does not mention any of these species. Recently Nair (i.e.) made the first record of A. auriculata from Kerala.


1a. Leaves narrowed at base var. baccifera

1b. Leaves cordate at base var. aegyptiaca

var. baccifera

Erect herbs up to 30 cm tall. Leaves c. 8 x 0.15 cm, linear-oblong, obtuse. Flowers c. 0.15 cm long, reddish brown. Capsules c. 0.3 cm long, depressed globose, red, in dense axillary clusters.
**Fl. & Fr.:** November — March.

Common; in plains and ghats; Begur, Tellicherry.


Erect herbs up to 25 cm tall. Leaves up to 3 × 0.8 cm, lanceolate, acute at apex. Flowers c. 0.3 cm long in dense axillary clusters. Capsules reddish, c. 0.5 cm long.

**Fl. & Fr.:** March — August.

Common; in ghats, Begur.

2. **Lagerstroemia** L.

1a. Flowers white  
   L. microcarpa  
1b. Flowers pink  
   L. speciosa


Large trees up to 25 m tall. Leaves up to 9.5 × 5 cm, elliptic-lanceolate, glabrous above, hoary-tomentose beneath. Flowers c. 0.6 cm long, in axillary or terminal panicles. Capsules c. 1.5 cm long, ellipsoid, glabrous.

**Fl. & Fr.:** November — May.

Common; in moist deciduous forests, c. 800 m; Begur, Tolpetty.


Large trees up to 20 m tall. Leaves up to 19 × 7 cm, oblong-lanceolate or elliptic, subacute, rounded at base. Flowers up to 5 cm long. Capsules ellipsoid or subglobose, c. 4 × 1.5 cm, minutely spiculate, glabrous.
Fl. & Fr.: February—March.

Common; along banks of rivers in lower elevations; c. 150 m; Aralam, Kannoth

3. NESAEA COMM.


Erect herbs, up to 25 cm tall. Leaves up to 3 × 1 cm, oblong, cordate, subamplexicaul at base, acute or obtuse at apex. Flowers small, in axillary clusters. Capsules c. 0.4 cm across, globose, glabrous, red.

Fl. & Fr.: February—March.

Rare; once collected from ghats; Tolpetty.

4. ROTALA L.

1a. Inflorescence in terminal spicate racemes; leaves orbicular; capsules 4-valved:

2a. Leaves rounded or suborbicular, shortly petioled  
R. rotundifolia 4

2b. Leaves orbicular, sessile  
R. macrandra 2

1b. Inflorescence axillary; leaves lanceolate; capsules 2-3-valved:

3a. Stamens exserted  
R. norm 3

3b. Stamens inserted  
R. densiflora 1


Erect herbs up to 10 cm tall. Leaves 1-2 × 0.3 cm, linear-lanceolate, acute, those on flowering branches much smaller. Flowers c. 0.2 cm across. Capsules c. 0.15 × 0.15 cm, globose, glabrous.

Fl. & Fr.: December—March.
Common; in moist situations along river banks; Mananthoddy.


Erect amphibious herbs up to 30 cm tall; floating stems 4-angular. Leaves variable; submerged ones linear to orbicular or ovate to orbicular. Flowers small, bright rose, in terminal branched spikes. Capsules globose, c. 0.15 cm across.

*Fl.* & *Fr.*: November—December.

Occasional; once collected from a pond, c. 825 m; Arunappara.


Erect terrestrial herbs up to 10 cm tall. Leaves c. 0.7 × 0.3 cm, linear-lanceolate, ovate. Flowers minute, axillary, solitary, 4-5-merous. Capsules c. 0.2 × 15 cm, globose, glabrous.

*Fl.* & *Fr.*: November—March.

Common; in moist situations near streams; Elangan, Tellicherry.


Erect terrestrial herbs up to 15 cm. Leaves up to 1.5 × 1.2 cm, orbicular or broadly ovate. Flowers rose-coloured, c. 0.3 cm long, in terminal racemes, up to 4 cm long.

*Fl.*: January—March.
Common; in moist situations near streams, 200-800 m; Chandanathode, Pazhassi.

*Lawsonia inermis* L. is cultivated as a hedge plant and sometimes run wild.

58. ONAGRACEAE

*Ludwigia* L.

It was pointed out by Brenan (in *Kew Bull.* 8: 163-172. 1953) that the characters by which certain authors tried to distinguish *Jussiaea* L. from *Ludwigia* L. in the past broke down. He combined the two genera and used the name *Jussiaea* for the combined genus. Hara (in *Jap. Bot.* 28: 289-294. 1953) points out the lapse in Brenan's choice because way back in 1877, Baillon merged the two generic names *Ludwigia* and *Jussiaea* published at the same time by Linnaeus (1753) under the name *Ludwigia* L. and that in accordance with the Code Baillon's choice must be retained.

1a. Capsules tomentose

1b. Capsules glabrous;

2a. Capsules 4 cm long; angled

2b. Capsules 2 cm long; terete


Erect herbs up to 30 cm tall. Leaves up to 6 x 1.3 cm, lanceolate, acuminate, tapering at base, subglaucous. Flowers c. 1 cm long, yellow. Capsules c. 2 cm long, terete, tapering towards base, crowned by disc and calyx lobes.

*Fl. & Fr.*: July—November.

Fairly common in marshy places in plains; Begur, Kannoth, Tellicherry.


Erect undershrubs. Leaves up to 5.5 × 1.5 cm. elliptic-lanceolate, acute, tapering at base, subglabrous. Flowers c. 2 cm long, yellow. Capsules c. 4 cm long, subquadangular, truncate, tapering towards base, appressed tomentose.

*Fl. & Fr.*: May—November.

Common in moist situations in ghats, c. 800 m; Manantoddy, Tolpetty.


Semiaquatic, erect herbs up to 0.75 m tall. Leaves up to 8 × 2 cm, elliptic-lanceolate, narrowed at both ends, moderately pubescent. Flowers c. 3 cm long, yellow. Capsules c. 4 cm long, obliquely 4-angled, smooth, crowned with calyx lobes.

*Fl. & Fr.*: March—April.

Occasional; in moist situations, c. 300 m; on way to Alathur.

59. TURNERACEAE

**Turnera** L.


Undershrubs up to 0.75 m tall. Leaves up to 8 × 2.3 cm, lanceolate, acute, cuneate at base. Flowers yellow, fruits c. 1 cm long.

*Fl. & Fr.*: November—March.

Common along roadsides and in wastelands in plains; Tellicherry.
60. PASSIFLORACEAE

1a. Flowers bisexual \hspace{1cm} \textit{Passiflora} \hspace{1cm} 2
1b. Flowers unisexual \hspace{1cm} \textit{Adenia} \hspace{1cm} 1

1. \textit{Adenia} \hspace{1cm} \textit{Forskål.}

1a. Leaves 3-lobed; petals attached to throat of calyx-tube \hspace{1cm} \textit{A. wightiana} \hspace{1cm} 2
1b. Leaves 3-5-lobed; petals attached to base of calyx-tube \hspace{1cm} \textit{A. hondala} \hspace{1cm} 1

1. \textit{Adenia hondala} \hspace{1cm} (Gaertn.) de Wilde in Blumea 15: 265. 1967. \hspace{1cm} \textit{Granadilla hondala} Gaertn. Fruct. 2: 480. t. 180. f. 10. 1791. \textit{Adenia palmata} \hspace{1cm} (Lam.) Engler, Bot. Jahrb. 14: 375. 1892; Wight, Ic. t. 201. 1839; Gamble, Fl. Pres. Madr. 525. 1919 (Repr. ed. 1: 371. 1957). \textit{Modecca palmata} \hspace{1cm} Lam. Encycl. 4: 209. 1797; Mast. in Hook. f. Fl. Brit. Ind. 2: 603. 1879.

Woody climbers with tendrils. Leaves palmately deeply 3-5-lobed, each up to 18 \times 12 cm; lobes oblong-lanceolate, acuminate. Flowers in axillary cymes. Capsules c. 4 \times 2.5 cm, oblong, 3-valved, shortly stalked, orange coloured.

\textit{Fr.}: April—May.

Occasional in semievergreen forests, c. 300 m; on way to Kannoth.


Woody climbers with tendrils. Leaves palmately 3-lobed; lobes oblong-lanceolate, each up to 14 \times 4.5 cm, glabrous, acuminate. Flowers in axillary cymes. Capsules c. 4 \times 4 cm, orange, shining, breaking into 3 valves.

\textit{Fr.}: November—December.

Occasional; once collected from semievergreen forests, c. 500 m; Nodumpoyil.

2. \textit{Passiflora} \hspace{1cm} \textit{L.}

Climbers with tendrils. Leaves up to 9.5 x 6 cm, ovate-cordate to ovate-lanceolate, 3-angled. Flowers white, axillary, solitary, bracts ovate, plumulifer. Berries c. 3 cm across, globose, sparsely hairy.

Fl. & fr.: November—March.

Common along margins of moist deciduous forests; Begur, Pappinissery, Tolpetty.

61. CUCURBITACEAE

1a. Petals limbiate
   Trichosanthes 7
1b. Petals not limbiate:

2a. Flowers white
   Coccinia 1
2b. Flowers yellow:

3a. Petals free (rarely connate at base):

4a. Anthers included
   Gymnopetalum 3
4b. Anthers exserted:

   5a. Tendrils unbranched
   Monardilla 4
   5b. Tendrils 2-5-branched
   Luffa

3b. Petals united into campasulate corolla:

6a. Tendrils 2-5-branched
   Diplolobium 2
6b. Tendrils unbranched:

7a. Flowers dioecious
   Solen 6
7b. Flowers monoecious:

8a. Fruits globose; smooth
   Zehneria 8
8b. Fruits ellipsoid; slightly echinate
   Mukia 5

1. COCCINIA Wight & Arn.

Slender dioecious climbers with tendrils. Leaves up to 6 × 6 cm, cordate, lobes obovate or acute. Male flowers c. 4.5 cm long, white, axillary, solitary. Fruits c. 5 × 2 cm, fusiform-ellipsoid, slightly beaked.

*Fl. & Fr.*: November—March.

Common in wastelands in plains as well as ghats; Manantoddy.

2. *Diplocyclus* (Endl.) Post & Kantae


Slender monoecious climbers with tendrils. Leaves up to 11.5 × 8 cm, deeply palmately 5-lobed, each lobe oblong-lanceolate, cordate at base, scabrid above, pale and smooth beneath. Fruits c. 1.5 cm across, globose, smooth, with stripes.

*Fl. & Fr.*: November—December.

Common in evergreen forests, c. 800 m; Kannoth, on way to Brahmagiri.

Jeffrey (*l.c.*) has shown that the Linnaean binomial *Bryonia laciniosa* was erroneously applied to this widespread Old World species. Actually it is the New World species hitherto known as *Cayaponia racemosa* (Mill.) Cogn. for which the correct name should be *Cayaponia laciniosa* (L.) DC. The Old World species is *Diplocyclus palmatus* (L.) Jeffrey.


Slender climbers with tendrils. Leaves up to 11 × 8 cm, cordate, 5-angular or 3-5-lobed; each lobe oblong, lanceolate, membranous. Flowers axillary, solitary.

*Fl.*: November—December.
Rare; once collected from the margins of evergreen forests, 800 m; on way to Kannoth.

4. Momordica L.


Slender dioecious climbers with tendrils. Leaves up to 10 x 5 cm, broadly ovate, cordate at base, glabrous, entire or more or less deeply 3-5-lobed; lobes triangular, ovate. Male flowers up to 7 cm long, yellow, solitary, axillary.

Fl.: June—July.

Occasional along margins of semi-evergreen forests, c. 500 m; Ambayathode.

5. Mukia Arn.


Slender monoecious climbers with tendrils. Leaves up to 5.5 x 4.5 cm, deltoid-ovate, scabrid on both surfaces, 5-angled, acute at apex, cordate at base. Berries c. 1 cm across, subglobose, slightly echinulate, red when ripe.

Fl. & Fr.: May—July.

Common in plains and hills; Braveli, Tellicherry.

6. Solena Lour.

FLORA OF CANNANORE


Leaves polymorphic, ovate or 3-5-angled or lobed or hastate, acute or acuminate at apex, cordate at base. Male flowers c. 0.3 cm long, whitish yellow. Female solitary. Fruits c. 2.7 cm long, oblong-ovoid, bright red when ripe.

Fl. & Fr.: December—March.

Common along margins of evergreen forests, 500—800 m; Nedumpoyil, Theerthamadakal.

Cogniaux (in DC. Monogr. Phan. 3: 605. 1881 et in Pflanzenreich 66: 104. 1906) reduced Solena Lour. to a section of Melothria L. (1753) with Zehneria Endl. (1883) under its synonymy. This view has been followed by Pax (Pflanzenfam. 4:5: 15. 1889). With the acceptance of Jeffrey's treatment of the family in Kew Bull. 15: 331. 1962. Solena Lour., Zehneria Endl., Mukta Arn. and Melothria L. are now considered distinct genera.

7. TRICHOSANTHIS L.

1a. Male racemes with large bracts

1b. Male racemes with minute bracts

T. tricuspidata 2

T. ecuamerina 1


Leaves up to 9 × 9.5 cm, broadly ovate. 5-7-lobed; each lobe c. 4.5 × 2 cm, acute, scabrid beneath, glabrous above. Female flowers in axillary racemes, up to 15 cm long; petals white.

Fr.: April—June.

Rare; once collected from evergreen forests, c. 600 m; Chaudamathaude.


1a. Leaves glabrous beneath

1b. Leaves tomentose beneath

var. tricuspidata

Leaves up to 15 × 12 cm, palmately 3-5-lobed, green above, pale beneath, scabrid above, cordate at base, lobes ovate-oblong, acute. Flowers in 5-10-flowered racemes. Fruit c. 3 cm across, globose, red with orange streaks when ripe.

Fl. & Fr.: November—May.

Occasional in semievergreen forests, 500–800 m; Kannoth, Mananthodiy.


Leaves more tomentose beneath; bracts and calyx lobes more deeply laciniate.

Fl.: December—January.

Rare; once collected from evergreen forests, c. 500 m; Kotiyur.

8. ZEHERIA Endl.


Slender monocious climbers with tendrils. Leaves up to 8 × 5 cm, broadly ovate, shortly acuminate, mucronate at apex, rounded at base, minutely scabrous above. Female flowers pale yellow, c. 0.8 cm long in subumbellate racemes. Fruits c. 0.8 cm across, globose, smooth, minutely pitted, red when ripe.
Fl. & Fr.: February—June.

Common along margins of evergreen forests, c. 800 m; Begur, Chandanathode.

*Luffa cylindrica* (L.) Roem. is cultivated.

62. BEGONIACEAE

*Begonia L.*


Succulent, much branched undershrubs, up to 75 cm tall; stems jointed. Leaves up to 25 x 9 cm, very unequally ovate-cordate, acuminate, serrate, membranous, glabrous. Flowers rose coloured, in few to many-flowered axillary, dichotomous cymes. Capsules including wings c. 2.5 cm long, wings subsqual, variable.

Fl. & Fr.: February—June.

Common in rocky crevices in evergreen forests, c. 800 m; on way to Kannoth, Theerthundamala.

63. AIZOACEAE

*Triandema L.*


Annual, prostrate, succulent herbs, up to 45 cm long. Leaves up to 2.6 x 2 cm, suborbicular to obovate, obtuse or acute. Flowers white, c. 0.3 cm long, solitary, axillary, sessile, enclosed by leaf base; stamens 10-15, unequal. Pyxidium c. 0.4 cm long, 4-5-seeded, lid up to 0.3 cm long.

Fl. & Fr.: April—June.
Fenzy (in Ann. Mus. Wien. 1: 346-356, 372. 1836) distinguished the genera *Mollugo* and *Ginus* on the basis of differences in the structure of seeds. However, Bentham & Hooker, f. (Gen. Pl. i. 857. 1867) were of the opinion that it was too insufficient a character to keep them separate. Subsequently Backer (Fl. Males. 4: 268. 1951) found Fenzy's opinion to be tenable as the differences in the seeds of *Mollugo* and *Ginus* were constant and reliable and treated the two genera separately.

1a. Leaves and sepals densely stellate-hairy

1b. Leaves and petals glabrous


Annual procumbent herbs, up to 50 cm long. Leaves up to 2.5×1 cm, orbicular to ovate-obtuse, cuneate, mucronate. Flowers c. 1 cm long, in axillary clusters. Capsules c. 0.7 cm long, subglobose or obovate, membranous, enclosed in calyx.

*Fl. & Fr.*: April—May.

Common; in open grounds, c. 800 m; Bavell.


Prostrate herbs, up to 30 cm long. Leaves in apparent whorls, up to 2.5×0.8 cm, oblanceolate or elliptic, obtuse, glabrous or slightly crispatopubescent. Flowers c. 1 cm long, white, in axillary fascicles. Capsules c. 0.5 cm long, 3-valved, subglobose.
Fl. & Fr.: June—November.

Fairly common in wastelands, Bavelli, Pazhassi, Tellicherry.

2. MOLLUGA L.


Annual erect herbs, up to 25 cm tall; branchlets glabrous. Leaves in apparent whorls, up to 3.2 × 1 cm, elliptic-lanceolate. Flowers c. 0.3 cm long, white, in leaf-opposed, corymbose branched cymes. Capsules c. 0.8 cm long, subglobose, 3-valved.

Fl. & Fr.: July—December.

Fairly common along banks of streams in plains; Aralam, on way to Mattanur, Pazhassi, Tellicherry.

65. APIACEAE (*nom. alt.* Umbelliferae)

1a. Flowers in capitulate heads

1b. Flowers in simple or compound umbels:

2a. Leaves simple:

3a. Mericarps 7-9-difched

3b. Mericarps 3-ribbed

2b. Leaves compound

I. CENTELLA L.


Trailing herbs, rooting at nodes. Leaves simple, reniform, crenate, basally 5-7-nerved, cordate at base; pedicels up to 11.5 cm long; lamina c. 2 × 3.5 cm. Flowers small, reddish-brown, in axillary umbels. Fruits c. 0.3 cm long, ovate to orbicular, with prominent ridges.
Fl. & Fr.: July—November.

Fairly common in moist situations; Tolpetty.

2. ERYNGIUM L.


Erect herbs up to 45 cm tall. Leaves up to 15x2 cm, radical, elliptic-obovate, spatulate, prominently spinous-dentate; petiole winged, sheathing. Inflorescence up to 20 cm long, in cylindric heads at the ends of the branches; bracts c. 2.5x1 cm. Cremocarps warty, glabrous.

Fl. & Fr.: February—November.

Occasional along margins of forests in ghats, c. 900 m; Chandanathode, Manamooddy.

A native of South America; now naturalized in Peninsular India.

3. HYDROCOTYLE L.


Prostrate herbs, up to 40 cm long; stems slender, rooting at nodes. Leaves up to 8x7 cm, reniform, palmately 5-9-angled, margin crenate, deeply cordate, subacute to obtuse, sparsely pubescent beneath. Flowers 10-30, in umbels up to 5 cm across. Fruits suborbicular, c. 0.1 cm long, glabrous, deep brown when dry.

Fl. & Fr.: February—July.

Fairly common along streams in evergreen forests; on way to Brahmagiri, on way to Kamuthi.

4. PAPYNODILLA L.

1a. Fruits glabrous; disc obsolete  
   P. heyneana 1

1b. Fruits papillose; disc distinct  
   P. wallichiana 2

Annual erect herbs, up to 45 cm tall. Lower leaves 3-foliolate; basal leaves up to 5 × 2 cm, ovate-lanceolate, tapering at base, acute, sharply serrate; terminal leaflets smaller. Flowers c. 0.8 cm long, white. Fruits globose, c. 0.15 cm across.

*Fl. & Fr.:* November—December.

Occasional in moist deciduous forests, c. 800 m; Begur.


Erect herbs up to 45 cm tall. Lower leaves 3-foliolate; leaflets up to 6 × 3.5 cm, ovate or ovate-lanceolate, acute, glabrous, sharply serrate, cordate at base; terminal leaflets smaller. Flowers white, small. Fruits c. 0.2 cm long, didymous, sparsely papillose.

*Fl. & Fr.:* November—December.

Rare; in grasslands, c. 1000 m; Brahmagiri.

66 ARALIACEAE

**Schefflera** J. R. & G. Forst. nom. cons.

1a. Flowers pedicellate:

2a. Trees

2b. Scandent shrubs:

3a. Leaflets 5; reticulation prominent

3b. Leaflets 9-10; reticulation not prominent

1b. Flowers sessile


Medium-sized trees up to 7.5 m tall. Leaves digitate; leaflets 6-8, each up to 18 x 6 cm, elliptic-oblong, acute or acuminate; nerves prominent beneath; petioles up to 5 cm long. Flowers sessile, c. 0.5 cm across, in stout panicles up to 10 cm long.

Fl.: February—March.

Common in evergreen forests, c. 800 m; Chandanathode.


Trees up to 10 m tall. Leaves digitate. Leaflets 5-7, radiating, each up to 13.5 x 6 cm, oblong-lanceolate, coriaceous, shortly obtuse, glaucous beneath, reticulations not conspicuous above; petioles up to 7 cm long. Flowers c. 0.5 cm across, in axillary branched panicles up to 22 cm long.

Fl. & Fr.: March—April.

Common in evergreen forests, c. 800 m; Tirumalli.


Climbing shrubs. Leaves digitate; leaflets 5, radiating, each up to 17 x 6.5 cm, obovate, shortly obtuse, coriaceous with rounded base, nerves and reticulations prominent above; petioles up to 7 cm long. Flowers c. 0.9 cm long, in terminal, branched panicles up to 30 cm long.

Fl. & Fr.: March—July.

Common; in evergreen forests, 800 m; Chandanathode, Trissaleri.

Leaves digitate; leaflets 9-10, each up to 18×6.5 cm, oblong or elliptic, coriaceous, shortly acuminate, nerves not prominently reticulate, rounded at base; in terminal, branched panicles up to 20 cm long.

*Fl. & Fr.:* March—April.

Common; in evergreen forests, 800 m; Chandanathode.

67. ALANGIACEAE

*Alangium* Lam. *nom. cons.*


Small trees up to 5 m. Leaves up to 19×7 cm, elliptic to oblanceolate, acuminate, subcordate at base, glabrous. Flowers c. 2 cm long, white. Berries c. 2×1 cm, ovoid, rusty-tomentose.

*Fl. & Fr.:* December—May.

Common; along margins of evergreen forests, 250-500 m; Ambayathode, Kannoth.

68. RUBIACEAE

1a. Ovules more than 2 in each cell (rarely solitary in some species of *Neothe*)

2a. Flowers in globose heads:

3a. Corolla lobes imbricate *Neoamarickia* 18

3b. Corolla lobes valvate:

4a. Calyx limbs 5-lobed *Haldina* 8
48. Calyx limbs truncate

2b. Flowers not in globose heads:

5a. Fruit a capsule:

6a. Corolla lobes twisted in bud, imbricate
   Wendlandia 28

6b. Corolla lobes valvate:

7a. Corolla lobes toothed on each side
   Pamelia 6

7b. Corolla lobes entire:

8a. Fruits dehiscing by apical pores:

9a. Flowers 4-merous
   Argostemma 1

9b. Flowers 5-merous
   Neuracalyx 19

8b. Fruits dehiscing laterally:

10a. Calyx teeth 4:

11a. Seeds angular or rounded
   Radiotis 9

11b. Seeds plano-convex or globose
   Nodotis 17

10b. Calyx teeth 5
   Ophiocitha 20

2b. Fruit a berry:

12a. Corolla lobes valvate
   Musaenda 16

12b. Corolla lobes twisted:

13a. Ovary 2-celled
   Catunaregam 3

13b. Ovary 1-celled
   Cestocladus 4

1b. Ovules solitary in each cell:

14a. Leaves stipulate:

15a. Radicle superior:

16a. Fruit a capsule
   Knosia 11

16b. Fruit a berry
   Canthium 2

15b. Radicle inferior:

17a. Corolla lobes twisted in bud:

18a. Flowers 4-merous:

19a. Style entire
   Pavetta 21

19b. Style bifid
   Izora 10

18b. Flowers 5-merous
   Tachnum 27

17b. Corolla lobes valvate:

23a. Ovules basai, erect, anatropous:
FLORA OF CANNANORE

21a. Calyx tube confluent

71b. Calyx tube not confluent:

22a. Style branches 2:

23a. Stipules intra-petiolae:

24a. Corolla straight

24b. Corolla curved

25b. Prostrate herbs

22b. Style branches 3-9

20b. Ovules attached to the septum, amphitropous:

26a. Ovary 3-celled; stigmas 3

26b. Ovary 2-celled; stigmas 2:

27a. Capsule dehiscence septidial at apex

27b. Capsule dehiscence circumcissile

14b. Leaves exstipulate

1. Argostemma Wall.


Small herbs with tubercous roots, up to 15 cm tall. Leaves up to 7.5 x 6 cm, ovate or orbicular, obtuse or subacute. Flowers c. 1 cm across, white, in terminal cymes. Capsules coriaceous, dehiscing at apex.

Fl. & Fr.: November—December.

Fairly common; in crevices of rocks in evergreen forests, c. 800 m; Nedumpoyil

2. Canthium Lam.

1a. Armed plants

1b. unarmed plants:

2a. Flowers 5-merous

2b. Flowers 4-merous

C. angustifolium 1

C. dissecram 2

C. travancorienae 3

Scendent shrubs; branches usually with straight or slightly curved short supra-axillary spines. Leaves up to 5.5 × 3.5 cm, lanceolate, acuminate, glabrous and shining above, rusty tomentose beneath. Flowers pale green, in axillary clusters. Drupes c. 1 cm across, subsidymous, compressed.

*Fl. & Fr.*: March—November.

Fairly common; in evergreen forests; Ambayathode, Nedumpanyil.


Shrubs up to 5 m. Leaves up to 9 × 3.8 cm, ovate or ovate-lanceolate, acuminate. Flowers c. 1.5 cm, greenish yellow, in axillary fascicles. Berries c. 3 × 0.8 cm, obovoid, black when dry.

*Fl. & Fr.*: February—August.

Common; in shola forests; Arunappara, Thekkthandamala.


Scendent shrubs; branchlets glabrous. Leaves up to 5.5 × 3.5 cm, membranous, ovate, acuminate, glaucous beneath. Flowers c. 1 cm long, pale green, in fascicles. Drupes c. 1 cm across, obovoid, compressed, yellow when ripe.

*Fl. & Fr.*: March—November.

Fairly common; in moist deciduous forests, c. 200-800 m; Begur, Kannoth.
3. Catunaregam Adams. ex Wolf


Armed trees up to 5 m tall. Leaves up to 7 x 3.5 cm, elliptic or obovate, coriaceous; stipules triangular, caducous. Flowers c. 1.7 cm long, pale greenish-yellow, hispidly villous, in axillary fascicles. Berries c. 3.5 x 2 cm, globose or ovoid, glabrous. Seeds embedded in pulp.

*Fl. & Fr.*: March—November.

Common; in moist deciduous forests, c. 825 m; Chandanathode, Kannoth, Tolpetty.

4. Cerisoides (Hook. f.) Tirvengadum


Deciduous thorny trees up to 7.5 m tall; branches stout, usually armed with leaf-bearing thorns. Leaves up to 14.5 x 6.5 cm, oblong or semi orbicular, obtuse, coriaceous. Flowers 3-4 cm across, woolly, ovoid or globose.

*Fl. & Fr.*: November—March.

Common in moist deciduous forests, c. 825 m; Beveli, Tolpetty.

5. Chasalia Comm. ex Poir.


Erect shrubs up to 1.5 m high; branchlets glabrous. Leaves up to 23 × 8 cm, acute, submembranous to thin coriaceous, glabrous. Flowers c. 1.5 cm long, white with pinkish tinge, in terminal paniculate cymes up to 8.5 cm long. Drupes c. 0.8 cm across, subglobose, purple when ripe.

Fl. & Fr.: November — December.

Fairly common; in evergreen forests; Kannoth, Kottiyur, Payyavur.

Backer & Bakh. f. (Fl. Java 2 : 329. 1965) reduced this genus to Psychotria L.

Leaves are highly variable in size and shape. Plants with linear-lanceolate, elliptic-lanceolate and oblanceolate leaves where collected.

6. DENTELLA J.R. & G. FORST.


Slender prostrate herbs, rooting at the nodes. Leaves elliptic, acute c. 0.7 × 0.15 cm. Flowers c. 0.3 cm long, white, sessile. Fruits indehiscent, densely hairy, calyx limb persistent.

Fl. & Fr.: November — March.

Fairly common; in moist situations in plains; Tollaherry.

7. GEOPHILA D.DON

Small creeping perennial herbs; stems prostrate, up to 50 cm long, rooting at the nodes, pubescent. Leaves cordate-ovate, up to 5 × 4.5 cm; petiole 0.5 - 1.2 cm; stipules broadly ovate, obtuse. Flowers 1.7 cm long, white, slightly pubescent outside, in umbels. Berries c. 1.3 cm across, globose, red when ripe.

Fl. & Fr.: November — December.

Common; in moist deciduous forests, c. 250 m; Kannoth R.F.

8. **Haldina Ridsdale**


Deciduous trees up to 10 m tall; branchlets glabrous. Leaves up to 2.5 × 15 cm, ovate, cordate, abruptly acuminate; stipules oblong, pubescent, up to 2 cm long. Flowers in globose heads c. 2.5 cm across, yellow. Capsules cuneate, densely downy.

Fr.: September — October.

Commonly found in moist deciduous forests, c. 150 m; Kannoth.

9. **Hedyotis** L.

1a. Capsules indehiscent or dehiscing only loculicidally:

2a. Capsules globose; indehiscent

2b. Capsules ovoid; dehiscence:

3a. Leaves lanceolate or ovate-lanceolate; flowers axillary

3b. Leaves ovate or orbicular; flowers shortly pedicellate

1b. Capsules dehiscing septicidally:

4a. Peduncles 1-4-flowered:

5a. Calyx bases touching in fruits

5b. Calyx bases not touching in fruits:

6a. Top of capsules rounded; protruded

6b. Top of capsules flat; not protruded:
7a. Flowers solitary; sessile
7b. Flowers 2-3 together; pedicelled
4b. Peduncles many flowered:
   8a. Pedicels filiform
   8b. Pedicels not filiform


Glabrous decumbent herbs up to 40 cm tall; stems terete. Leaves up to 2.5 x 0.5 cm, linear-lanceolate or elliptic-oblong to elliptic, membranous. Flowers pale blue or white, in terminal as well as axillary panicked cymes. Capsules globose, glabrous, obscurely 8-ribbed.

Fl. & Fr.: January — February.

Globally common in plains; on way to Mattanur.


Prostrate herbs up to 30 cm. Leaves up to 4.5 x 2 cm, ovate, or ovate-lanceolate, acuminate, rounded at base, sparingly pubescent. Flowers c. 0.5 cm long, white, in axillary cymes. Capsules c. 0.2 cm across, hairy.

Fl. & Fr.: July — March.

Common in wastelands and along roadsides in plains and ghats; Chandanathode, Tolpetty.


Erect herbs up to 30 cm tall; stems terete. Leaves linear or linear-lanceolate, up to 2.5 x 0.2 cm, stipules short, membranous. c. 3 mm long.
Flowers c. 1 cm long, white or pale pink, 2-6, in axillary or terminal cymes. Calyx teeth shorter than corolla tube. Capsules c. 0.2 × 0.2 cm, ovoid, glabrous.

_Fl. & Fr._: Almost throughout the year.

Fairly common; in wastelands in plains; Kannoth, Tellicherry.


Diffuse, glabrous herbs, often rooting at the nodes, up to 30 cm tall. Leaves linear, acute, up to 2.5 × 0.3 cm. Flowers c. 0.2 cm long, white, solitary with short pedicel. Calyx teeth acute, glabrous, shorter than corolla tube. Capsule c. 0.2 × 0.2 cm. didymous, opening at apex.

_Fl. & Fr._: November — December.

Fairly common; a weed along the banks of backwaters and rice fields in plains; Kannoth, Tellicherry.


Decumbent, branched herbs up to 40 cm tall; stems 4-angular. Leaves linear or linear-lanceolate, up to 2 × 0.35 cm, glabrous. Flowers axillary, solitary or paired; peduncles filiform. Flowers c. 0.4 cm long, white. Capsules didymous, glabrous.

_Fl. & Fr._: November — December.

Fairly common; a weed in open grounds and fallow lands; Chanda-
nathode, Manantoddy, Tellicherry.


Prostrate herbs; stems 4-angular. Leaves subsessile, up to 8 × 1.5 cm, lanceolate or ovate lanceolate, glabrous, shining above, pale white
beneath. Flowers c. 0.7 cm long, white, in axillary clusters. Capsules c. 0.2 cm long, hard, crustaceous.

Fl. & Fr.: November — December.

Common; in moist situations; Ambayathode, Kannoth, on way to Panoth.


Diffuse herbs up to 20 cm tall. Branchless glabrous. Leaves linear to ovate-lanceolate, up to 2.2 x 0.3 cm. Flowers c. 0.5 cm long, white or pale pink in terminal umbels. Capsules up to 0.3 - 0.2 cm, didymous.

Fl. & Fr.: November — December.

Fairly common in wastelands; Cannanore.


Decumbent annual herbs up to 15 cm tall, stems terete. Leaves up to 2.5 x 0.7 cm, elliptic or elliptic-lanceolate, glabrous. Flowers white, usually 1-2 flowered. Calyx teeth touching the corolla. Capsules didymous, glabrous.

Fl. & Fr.: April — May.

Common; a weed in wastelands; Panoth.

Prostrate herbs rooting at the nodes, up to 15 cm long. Leaves up to 1 x 0.8 cm, basally 3-nerved. Flowers minute, white, axillary. Capsules c. 0.3 x 0.2 cm, didymous, glabrous.

*Fl.* & *Fr.*: November — April.

Faintly common in coconut fields as a weed, Cannanore, Telicherry.

10. *Ixora* L.

1a. Calyx teeth longer than ovary:

2a. Calyx teeth more than 4 mm long, corolla tube more than 2 cm long

*I. polyantha* 9

2b. Calyx teeth less than 4 mm long; corolla tube less than 2 cm long:

3a. Calyx teeth linear, ciliate

*I. lawsonii* 5

3b. Calyx teeth lanceolate, glabrous:

4a. Shrubs; corymb lax, flowers creamy yellow

*I. gambelii* 4

4b. Small trees; corymb dense, flowers red

*I. notoiana* 7

1b. Calyx teeth equal to or shorter than ovary:

5a. Leaves and inflorescence turning black when dried

*I. nigricans* 6

5b. Leaves and inflorescence not turning black when dried:

6a. Peduncles more than 7.5 cm long; calyx teeth pubescent

*I. elongata* 3

6b. Peduncles less than 7.5 cm long; calyx teeth glabrous or indistinct:

7a. Flowers white:

8a. Corolla tube less than 1 cm long; flower buds globose

*I. brachistea* 1

8b. Corolla tube more than 1 cm long; flower buds ellipsoid

*I. panetta* 8

7b. Flowers bright scarlet

*I. cocinea* 2


Evergreen trees up to 3.5 m tall; branchlets glabrous. Leaves up to 22 x 7.5 cm, coriaceous, elliptic-oblong or lanceolate, obtuse. Flowers fragrant, in globose heads or terminal sessile cymes, up to 20 cm long.

*Fl.*: December — April.
Occasional; along the margins of evergreen forests, c. 850 m; Nedum-puyil, Pathanamthitta.


A shrub up to 2 m tall. Leaves up to 7.0 × 3.7 cm, opposite, coriaceous, sessile, oblong or elliptic, obtuse or shortly acute at apex. Flowers c. 3 cm long, in short-peduncled, corymbose terminal cymes. Berries c. 1 cm across, subglobose, purple when ripe.

*Fl. & Fr.*: July — August.

Fairly common in wastelands (near the seashore) in plains; Periyarum, Tollycherry.


Shrubs up to 2 m tall; branchlets glabrous. Leaves up to 25 × 10 cm, chartaceous, elliptic-ovate or oblanceolate, nerves parallel, obtuse, subacute. Flowers c. 1.5 cm long, pink, in brachiate, corymbose, densely congested, branched puberulous cymes up to 20 cm long.

*Fl.*: November — February.

Fairly common; in evergreen forests near streams; Ambayathode, Chandanathode.


Small woody shrubs up to 2.5 m tall; branchlets sparsely pubescent with white hairs. Leaves c. 17.5 × 5.5 cm, elliptic-ovate or oblong, acuminate, obtuse at base. Flowers c. 1.8 cm long. Berries c. 1 cm across, globose, glabrous.

*Fl. & Fr.*: November — December.
Fairly common; near banks of streams in semievergreen forests; Kannoth.

This species differs from I. leucantha Heyne ex G. Don by having longer, more oblong, long acuminate leaves, pubescent inflorescence and creamy yellow flowers.


Evergreen shrubs up to 2.5 m tall; branchlets puberulous. Leaves up to 15 × 6.5 cm, coriaceous, elliptic-ovate to oblong-lanceolate, shining above. Flowers in terminal, densely congested brachiate cymes.

*Fl.*: March — April.

Rare; in shola forests, c. 900 m; Brahmagiri.


Small trees up to 5 m tall; branchlets glabrous. Leaves up to 15 × 6.5 cm, membranous, lanceolate or elliptic, oblong or obovate, acuminate. Flowers c. 2 cm long, white in brachiate glabrous cymes up to 16 cm long. Berries c. 1 × 0.2 cm, globose, dark brownish red when ripe.

*Fl. & Fr.*: Almost throughout the year.

Fairly common; in evergreen forests, c. 500 m; Kannoth.


Small evergreen trees up to 5 m tall; branchlets glabrous. Leaves up to 20 × 7.5 cm, coriaceous, elliptic-obovate, acute, shining above. Flowers in long-peduncled brachiate corymbose cymes.

*Fl.*: July — August.

Occasional; along the sides of streams in evergreen forests; Kannoth.

Small trees up to 5 m tall; branchlets glabrous. Leaves up to 13 × 6.5 cm, coriaceous, elliptic or obovate, obtuse, rounded or cordate at base. Flowers in terminal bractiate cymes up to 20 cm long. Berries c. 0.7 cm across, didymous, glabrous.

*Fl. & Fr.:* January — March.

Occasional; in moist deciduous forests, c. 500 m; Ambayathode, Nedumpoil.


Small woody undershrubs up to 1 m tall. Leaves elliptic, obovate or oblanceolate, up to 24 × 13 cm, abruptly acuminate, chartaceous, glabrous. Flowers c. 1 cm long, white, in corymbose cymes up to 2.5 cm long. Berries c. 1 cm across, ellipsoid or oblong, brownish-red when ripe.

*Fl. & Fr.:* November — December.

Rare; in evergreen forests, Kannoth.

1. *Knoxia* L.

1a. Stipule bristles hisrate; mericarps connate

2a. Leaves lanceolate or linear-lanceolate; cymes lax

2b. Leaves ovate; cymes dense

1b. Stipule bristles glabrous, mericarps separating from the base


Erect woody herbs up to 45 cm tall; branchies glabrous, 4-angled. Leaves up to 10 × 3 cm, ovate, acuminate, pubescent. Flowers c. 0.5 cm long, pale purple, in dense subumbellate cymes, c. 2.5 cm long.
Fl: November — December.

Occasional; along the margins of evergreen forests; Kannoth.


Erect annual herbs up to 75 cm tall; stem stout, angled, internodes long, puberulous. Leaves up to 8.5 × 3 cm, pubescent. Flowers c. 0.7 cm long, blue, in terminal cymes.

Fl. & Fr.: September — December.

Occasional; along the margins of evergreen forests; Kannoth.


Erect woody herbs up to 45 cm tall; branches slender, angled and glabrous. Leaves up to 7 × 1.5 cm, sessile, obovate-lanceolate or linear-lanceolate, glabrous, often folded, curved downwards. Flowers c. 0.7 cm long, pale blue, in terminal puberulous cymose panicles up to 7 cm long.

Fl. & Fr.: November — March.

Fairly common along the margins of evergreen forests, c. 800 m; Brahmagiri.


1a. Flowers in sessile cymes; leaves covered with buffous-based strigose hairs
   L. jackianus 2

1b. Flowers in peduncled cymes; leaves glabrous
   L. capitulatus 4


Evergreen shrubs up to 2.5 m tall; branches slender, glabrous. Leaves up to 14.5 × 4 cm, elliptic-ovate, or obovate-lanceolate, acute at apex,
cuneate or rounded at base. Flowers small, white, few in axillary cymes. Berries c. 0.7 cm across, globose, glabrous, black when ripe.

_Fl. & Fr.:_ March — April.

_Rare; in shola forests, c. 900 m; Brahmagiri._


_Evergreen shrubs up to 2.5 m tall. Leaves up to 15 × 3.5 cm, oblanceolate or oblong, cuneate-acuminate at apex. Flowers c. 1 cm long, pale pink, covered with conspicuous bracts. Drupes c. 0.5 cm across, globose, bluish-violet when ripe._

_Fl. & Fr.:_ November — March.

_Fairly common as an undergrowth in evergreen forests; Penoth, Theerthundamala._

_Bulbous-based hairs of the leaves are very conspicuous._

13. _Mitracarpus Zucc._


_Erect or spreading annual herbs up to 40 cm tall; branches pubescent, 4-angular. Leaves up to 6 × 2.3 cm, sessile, elliptic or ovate, basically veined, veins usually impressed. Flowers white, minute, in dense axillary and terminal clusters. Capsules straw-coloured, c. 0.1 cm across._

_Fl. & Fr.:_ Almost throughout the year.

_Fairly common on roadsides and in waste places from plains to ghats; Kannoth, Manantoddy, Parasanikkadavu._
Native of tropical Africa; recently introduced and getting naturalized.


Medium-sized trees up to 10 m tall. Leaves up to 14 × 9 cm, obovate or orbicular; stipules large, caducous. Flowers c. 1 cm long, greenish-yellow, in pedunculate globose heads c. 2.5 cm across. Capsules with two cocci.

Fl. & Fr.: November — May.

Fairly common; in moist deciduous forests up to 750 m; Baveli, Tolpetty.

15. Morinda L.


Trees up to 5 m tall. Leaves up to 22 × 10.5 cm, broadly ovate, acute. Flowers c. 1.5 cm long, white, in leaf-opposed solitary heads. Syncarpium c. 4 cm across, ovoid, fleshy.

Fl. & Fr.: July — November.

Common; in coastal areas; Tellicherry.

16. Mussaenda L.

Scandent shrubs; stems hirsute. Leaves up to 14 x 7 cm, broadly ovate. Flowers up to 4 cm long, deep orange, in lax terminal cymes up to 16 cm long; one calyx lobe enlarged, white, foliaceous. Berries c. 1.5 cm across, subglobose or ovoid, glabrous.

*Fl. & Fr.*: July — August.

Fairly common in semi-evergreen forest, 250-800 m; Kangroth, Chandanathode.

17. **Neanotis W.H. Lewis**

1a. Flowers in cymes:

2a. Diffuse herbs  

2b. Erect herbs  

1b. Flowers in clusters  


Diffuse herbs, up to 30 cm tall. Branches puberulous. Leaves up to 6 x 2.5 cm, ovate or ovate-lanceolate, acute or subobtuse, densely villous. Flowers c. 0.5 cm long, pink, in dense, peduncled coriaceous cymes.

*Fl. & Fr.*: November — December.

In moist situations along the margins of evergreen forest; Perya, Thiruvithumalai.

According to Lewis (*l.c.*) *Anotis* DC. in strict sense, is entirely a New World genus. He erected a new genus *Neanotis* to accommodate the Old World species of *Anotis sensu lato*.

Erect annual herbs up to 30 cm tall; branches quadrangular, glabrous. Leaves up to 8 × 2.5 cm, membranous, ovate, acute or acuminate, pubescent. Flowers pale pink, c. 1 cm long, in terminal and axillary cymes.

Fl. & Fr.: November — December.

Fairly common; on walls and rocks in coastal areas; Tellicherry.


Erect annual herbs up to 30 cm tall; branches glabrous and cylindrical. Leaves up to 3.8×1.6 cm, membranous, linear or narrowly lanceolate. Flowers c. 0.5 cm, white or purple, sessile or 4-lobed; seeds hemispheric or semi-ellipsoid, pitted, black.

Fl. & Fr.: July — August.

Common in grasslands, Tirunalli.

18. Neolamarckia Bosser


Large spreading trees up to 25 m tall. Leaves up to 21 × 9 cm, elliptic-oblong, shortly acuminate, round at base. Flowers c. 1 cm long, white, fragrant, in terminal heads c. 3 cm across.

Fl. & Fr.: June—July.

Common; in evergreen forests, c. 825 m; on way to Kanoth.


Erect woody-stemmed herbs up to 50 cm tall. Leaves up to 2.5 x 5.5 cm, membranous, glabrous, oblong-elliptic, acuminate; stipules large, bifid. Flowers c. 1.2 cm long, white, rusty puberulous, in terminal cymes up to 10 cm long. Berries c. 1.5 cm across, globose, glabrous.

Fl. & Fr.: November—March.

Fairly common; in rocky places along streams, in evergreen forests; Ambayathode, Theerthamandal.

20. Ophiorrhiza L.

1a. Bracteoles deciduous:

2a. Prostrate herb; leaves rounded at base
   O. prostrata 4

2b. Erect undershrubs; leaves attenuate at base into often long petioles:

3a. Cymes rusty pubescent
   O. brionis 1

3b. Cymes away puberulous
   O. hirtula 2

1b. Bracteoles persistent
   O. prostrata 3


Erect undershrubs, woody at the base, up to 45 cm tall; branchlets glabrous. Leaves up to 10 x 3.4 cm, elliptic or elliptic-ovate, membranous, acuminate. Flowers c. 0.3 cm long, white tinged with lilac, in terminal many-flowered subcorymbose cymes.

Fl. & Fr.: June—October.

Common in moist situations in evergreen forests, c. 200 m; Kannoth.

Undershrubs up to 45 cm tall; branchless glabrous except for the inflorescence. Leaves up to 17 x 4.5 cm, ovate-lanceolate, pale beneath, acute or acuminate at apex, stipules very villous. Flowers white, c. 0.6 cm long, in terminal cymes.

**Fl. & Fr.:** March—November.

Occasional; along the margins of evergreen forests; Ambayathode, Chandanathode.


Undershrubs up to 45 cm tall. Leaves up to 18 x 5.3 cm, elliptic-lanceolate, long acuminate, glabrous above, pale green beneath. Flowers c. 0.4 cm long, white tinged with lilac, in terminal cymes up to 4 cm long.

**Fl. & Fr.:** March—April.

Occasional; in semievergreen forests, c. 840 m; Chandanathode.


Leaves up to 10.5 x 3 cm, elliptic or elliptic-lanceolate, acute, acuminate, sparsely puberulous and white beneath and densely pubescent above. Flowers 1 cm long, white, in short terminal cymes up to 3 cm long. Capsules c. 0.5 cm across, obconical, compressed.

**Fl. & Fr.:** March—August.

Fairly common along margins of semievergreen forests, c. 850 m; Chandanathode.

21. **Pavetta L.**

1a. Style much exerted from corolla ;

2a. Leaves black when dry, pubescent beneath **P. hiaphila** 1
2b. Leaves green when dry, glabrous beneath  

3b. Leaves densely tomentose beneath  

P. tomentosa 3


Erect shrubs up to 3 m tall; branches suberete, including inflorescence slightly pubescent. Leaves up to 15 × 7 cm, lanceolate or oblanceolate. Flowers c. 2 cm long, white, in terminal, lax corymbose cymes up to 17 cm long. Berries c. 0.8 cm across, globose.

*Fl. & Fr.*: March—August.

Occasional; in moist deciduous forests in plains; Kanathodi R.F.


Shrubs up to 5 m tall. Leaves up to 14 × 4 cm, elliptic, obtuse or obtusely acute. Flowers c. 2 cm long, white, in terminal, corymbose cymes up to 4.5 cm long. Berries c. 0.5 cm across, globose, black when ripe.

*Fl. & Fr.*: November—March.

Occasional; in moist deciduous forests, c. 150 m; Kannavam.

3. *Pavetta tomentosa* Roxb. ex Sm. in Rees, Cyclop. 26: 2. 1819.  


Erect shrubs up to 3 m tall; branches subquadangular. Leaves up to 10 × 3.5 cm, lanceolate or oblanceolate, obtuse or acute. Flowers white in terminal or axillary, trichotomously branched corymbose cymes. Berries 1 cm across, subglobose, shining.

*Fl. & Fr.*: November—March.

Occasional; in semievergreen forests, c. 800 m; Tolpetty.

Erect shrubs up to 3.5 m tall; branches sparsely pubescent. Leaves up to 18 x 6 cm, oblong or oblanceolate, acute. Flowers white, in terminal, lax, corymbose cymes, up to 11 cm long. Berries c. 0.5 cm across, sub-globose.

*Fl. & Fr.*: January—August.

Fairly common; in moist deciduous forests, 250 - 800 m; Ambayathode, Kannoth, Panthot.


1a. Cyms branches whorled:

2a. Flowers mixed with reddish brown hairs

2b. Flowers not mixed with reddish brown hairs:

3a. Leaves obovate, with strong parallel nerves:

4a. Bracts and bracteoles persistent

4b. Bracts and bracteoles deciduous:

5a. Calyx toothed, teeth rounded or acute

5b. Calyx truncate, teeth 0 or obscure

3b. Leaves oblong or oblanceolate with weak, parallel nerves

1b. Cyms branches opposite:

6a. Lateral nerves of leaves 10-12

6b. Lateral nerves of leaves 14-16


Small trees up to 3.5 m tall. Leaves up to 15 x 5 cm, acute at apex, cuneate at base. Flowers c. 0.4 cm long, pale green. Berries c. 1 cm across, globose, purplish black when ripe.

*Fl. & Fr.*: December—April.
Common; in semi-evergreen forests; Kannoth.


Evergreen trees up to 5 m tall; branchlets glabrous. Leaves up to 28 x 9 cm, obtuse, cuneate, coriaceous, glabrous, main nerves 18-20, prominent. Flowers white, small, c. 0.7 cm long, in terminal peduncled bracteate cymes. Fruits c. 1.5 cm across, subglobose, black when ripe.

*Fl.* & *Fr.*: March—November.

Fairly common; in evergreen forests, above 250 m; Kannoth, Nedumpoyil.


Evergreen shrubs up to 2.5 m tall. Leaves up to 15 x 7.5 cm, elliptico-oblong, acute, coriaceous, glabrous; main nerves 10-12. Flowers c. 0.6 cm long, white, small, in terminal peduncled cymes, c. 3 cm long. Corolla densely hairy in the throat. Berries c. 0.5 cm across, globose.

*Fl.* & *Fr.*: November—May.

Common; an undergrowth in evergreen forests, c. 500 m; Ambayathode.


Evergreen shrubs. Leaves up to 19 x 6 cm, elliptico-oblong or obovate, acuminate, cuneate, petioles 1.5 - 2 cm. Cymes capitate. Calyx lobes obovate. Fruits c. 1.3 x 0.6 cm, minutely stalked, ellipsoid-ovoid.

*Fr.*: November—December.

Occasional in evergreen forests; Chananathode.

Evergreen shrubs up to 3 m tall; branchlets glabrous. Leaves up to 20 × 7.5 cm, elliptic-oblong, obovate-oblong or oblong-lanceolate, abruptly acuminate, subcoriaceous, glabrous; main nerves 12 - 15. Berries c. 0.7 cm across, ellipsoid or subglobose, black, glabrous.

Fl. & Fr.: November—April.

Fairly common; in evergreen forests, c. 840 m; Chandanathode, Theerthundamala.


Evergreen shrubs up to 2.5 m tall; branches glabrous. Leaves up to 14 × 4 cm, acute, cuneate, sub-coriaceous, glabrous; main nerves 10 - 12. Berries c. 0.5 cm across, globose, in terminal, bractiate cymes.

Fr.: November—December.

Fairly common; in semievergreen forests; Aralam.


Evergreen shrubs up to 3 m tall; branches glabrous. Leaves up to 23 × 10 cm, abruptly acuminate, cuneate, pale beneath, glabrous; main nerves 14 - 16 pairs, prominent. Flowers white, small, 0.5 cm long, in shortly pedicelled dense terminal cymes.

Fl.: March—May.

Fairly common; in Shola Forests; Brahmagiri, Theerthundamala.

23. RICHARDIA L.


Decumbent annual herbs up to 30 cm tall. Leaves sub-sessile, elliptic-lanceolate or ovate, c. 2 × 1 cm. Flowers c. 0.7 cm long, white,
tips of corolla lobes tinged with pink, in capitulate heads, subtended by 4 bracts; calyx lobes oblong-lanceolate. Fruits oblong-ovoid, hispidulous.

_Fl. & Fr._: February—May.

Common weed in sandy regions at higher elevations above 800 m; Mananthody.

24. _Rubia_ L.


Climbing hispid herbs; stems slender, often several metres long, scabrid, shining, glabrous. Leaves in whorls of 4-8, ovate, cordate, acute, up to 4 x 2 cm, lower leaves larger than the upper, scabrous above, greenish white beneath. Flowers pale green, in terminal trichotomously branched glabrous panicled cymes.

_Fl. & Fr._: November—December.

Occasional; climber on nearby bushes in moist deciduous forests; Tolpetty.

25. _Saprosma_ BL.

_1a. Leaves scabrous; flowers less than 1 cm long_ 

2  _S. glomerata_

_1b. Leaves pubescent; flowers more than 1 cm long_ 

1  _S. fragrans_


Woody shrubs up to 4 m high; branches glabrous, terete, dichotomous. Leaves up to 9.5 x 3 cm, opposite, glabrous, elliptic or obovate, abruptly acuminate. Flowers white, in terminal cymes.

_Fl. & Fr._: February—April.

Occasional; in evergreen forests, c. 500 m; Panath.

Woody shrubs up to 2 m tall; branches glabrous, terete and dichotomous. Leaves opposite, one of the pair often smaller than the other, glabrous, elliptic-oblong or oblong-lanceolate, acute, up to 12 × 5 cm. Flowers white, in terminal fascicles.

*Fl.*: April—May.

Occasional; in evergreen forests, c. 500 m; Panath.

26. **Spermacoce** L.

Verdcourt (in Kew Bull. 30: 301. 1975) and Osia Gideou (in J. Am. Arb. 64: 627. 1983) treat *Spermacoce* and *Barreria* as congeneric as it is very difficult to separate them based on the only available character namely the nature of dehiscence of the mature fruits.

1a. Septum persistent in fruits

1b. Septum not persistent in fruits:

2a. Leaves linear-lanceolate

2b. Leaves elliptic to obovate:

3a. Stamens exerted

3b. Stamens not exerted


Procumbent herbs; stem 4-angular, scabrid, hirsute or hispid. Leaves up to 2 × 1 cm, elliptic-lanceolate to obovate, obtuse; stipules truncate, bristles longer than sheath. Flowers c. 0.6 cm long, pale blue, in axillary clusters. Capsules c. 0.2 cm across, ellipsoid, hirsute.
Fl. & Fr.: September—December.

Common; in open wastelands in plains; Cannanore, Kannavam, Parassanikkadavu.


Diffuse herbs; stem 4-angled, angles prominently winged and hispid. Leaves up to 6 x 3 cm, broadly ovate or elliptic, acute, cuneate; stipules with papilatate bristles. Flowers pink, small, in axillary few-flowered cymes.

Fl. & Fr.: August—December.

Common in open wastelands; Kannavam.


Procumbent herbs up to 30 cm tall; stems narrowly winged, densely hairy. Leaves up to 2.5 x 1.5 cm, acute, sessile; stipules c. 0.2 cm long. Flowers white, small, in clusters at nodes. Capsules c. 0.1 cm long, oblong, glabrous.

Fl. & Fr.: November—December.

Common in open wastelands in plains; Cannanore.


Erect herbs up to 60 cm tall; stems sharply angular, angles hispid. Leaves up to 5 x 0.8 cm, sessile; stipular sheath 0.15-0.2 cm. Flowers c. 0.15 cm long, white. Capsules c. 0.2 cm long, obovoid or ellipsoid, densely hairy outside.

Fl. & Fr.: November—December.
Common; in open areas; on way to Kannavam, Kottiyur.

27. Tarenna Gaertn.

Tarenna Gaertn. (1788) has priority over Wehera Schreph. (1791) and Stylocoryne Cat. (1797).

1a. Flowers less than 1 cm long

1b. Flowers more than 1 cm long:

2a. Cymes and calyx tube glabrous

2b. Cymes and calyx tube pubescent

T. asiatica 1

T. canarica 2

T. nilagirica 3


Trees up to 5 m tall. Leaves up to 17.5 × 5 cm, oblong-lanceolate, acute at both ends; shining above, pale green beneath; turning black when dry. Flowers in terminal corymbose cymes. Berries c. 0.5 cm across, globose, shining.

Fl. & Fr.: May—August.

Fairly common in semievergreen forests, 500-800 m; Chandanathode, Nedumpoyil.


Shrubs up to 2.5 m tall. Leaves up to 25 × 7.5 cm, oblanceolate, acuminate, cuneate at base. Flowers up to 4.5 cm long, white, in terminal corymbose cymes up to 5 cm long.

Fl.: November—January.

Occasional; in evergreen forests, c. 500 m; Ambayathode.

shrubs up to 2.5 m tall. Leaves up to 16 × 7.5 cm, obt lanceolate, caudate-acuminate, cuneate at base; sparsely pubescent beneath. Flowers up to 2.5 cm long, pale green, in terminal corymbose cymes. Berries c. 1 cm across, globose, shining.

*Fl. & Fr.*: March — November.

Rare; in evergreen forests, 500-800; Ambayathode, Chandanathode, Tirunalli.


small trees up to 4 m tall; branchlets sparsely pubescent. Leaves up to 8 × 3.5 cm, ternately whorled, elliptic-lanceolate, coriaceous; stipules ovate, entire or bifid. Flowers c. 0.7 cm long, pale yellow, in dense pyramidal panicles up to 15 cm long.

*Fl.*: February — March.

In open grassy slopes in semievergreen forests, c. 840m; Chandanathode.

69. ASTERACEAE (nom. alt. Compositae)

1a. Stems climbing

1b. Stems not climbing:

2a. Flowers all tubular; outer sometimes larger (Female) than inner (bisexual) flowers:

3a. Plants white-woolly

3b. Plants glabrous, hairy or tomentose but not white-woolly:

*Mikania* 23

*Gnaphalium* 18
4a. Leaves opposite; sometimes the upper alternate:

5a. Heads with 1 floret in clusters (compound heads) surrounded by foliar bracts

5b. Florets white; heads in corymb-like clusters

6a. Florets pale blue; heads in paniculate coryms

6b. Florets white; heads in coryms:

7a. Annual herbs

7b. Perennial herbs

4b. Leaves alternate:

8a. Flowers yellow:

9a. Anther bases tailed:

9b. Anther bases obtuse, entire, not tailed:

11a. Stems winged

11b. Stems not winged:

12a. Erect herbs

12b. Diffuse or prostrate herbs:

13a. Leaves pinnatisect

13b. Leaves not pinnatisect:

14a. Achenes 4-angled

14b. Achenes compressed

8b. Florets not yellow:

15a. Leaves deeply pinnatisect:

16a. Shrubs

16b. Herbs, undershrubs or trees:

17a. Heads with equal florets (bisexual)

17b. Heads with outer florets (female) larger than inner (bisexual)

15b. Leaf margins various, not lobed more than half-way to midrib:

18a. Stems narrowly winged; plants aromatic

18b. Stems not winged; plants not aromatic:

19a. Plants scapose

19b. Plants not scapose:

20a. Heads homogamous (outer florets female)
20b. Heads homogamous (all florets bisexual):

21a. Involucral bracts 2 seriate

21b. Involucral bracts many seriate:

22a. Involucral bracts with foliaceous upper part

22b. Involucral bracts without foliaceous upper part

23. Florets all ligulate (heads ligulate) or only the outer ligulate (heads radiate):

23a. Florets all ligulate

23b. Outer florets ligulate, the inner tubular and bisexual;

24a. Outer involucral bracts spinous

24b. Outer involucral bracts uncarted:

25a. Leaves alternate

25b. Leaves opposite (sometimes upper leaves alternate):

26a. Pappus bristles plumose

26b. Pappus bristles retrorsely barbellate, not plumose:

27a. Leaves deeply lobed

27b. Leaves crenate, not deeply lobed:

28a. Outer involucral bracts glandular, ciliate

28b. Outer involucral bracts not glandular:

29a. Receptacles not palescent:

30a. Corolla yellow

30b. Corolla white

31. Receptacles palescent; palesse enclosing flowers:

31a. Heads sessile; axillary

31b. Heads peduncled, axillary and terminal

1. Acanthospermum Schrank


Erect herbs up to 45 cm tall. Leaves up to 8.5 × 5 cm, ovate, acute, cuneate at base, hairy on both sides; heads c. 2.5 cm across, florets yellow. Achenes c. 0.7 cm long, spinous at tip.
FLORA OF CANNANORE

Fl. & Fr.: July November

Common along roadsides and in moist places in plains and ghats; Periyaram, Tolpetty.

An introduction from South America.


Erect undershrubs up to 1 m tall. Leaves up to 12.5 x 6 cm, broadly ovate to ovate-lanceolate, subacute, tapering at base, searblily pubescent. Flowers white, in terminal corymbose heads c. 1 cm across. Achenes c. 0.3 cm long, trigonous, compressed, nearly glabrous; pappus c. 0.2 cm, clavate, hairs on a short ring.

Fl. & Fr.: November—March.

Common; in shades of evergreen forests; Chandanathode, Kannoth, Tirunalli.

3. AGERATUM L.


Erect annual herbs up to 50 cm tall; stems terete, pilose. Leaves opposite, ovate, up to 13 x 6 cm, crenate, hirsute. Flowers pale blue. Corolla c. 0.2 cm long. Achenes black, up to 0.8 cm long. Pappus scales 5, up to 0.2 cm long.

Fl. & Fr.: Almost throughout the year.

Fairly common; a weed on roadsides and cultivated grounds; native of tropical America.
4. *Artemisia* L.


Erect shrubs up to 1 m high. Lower leaves deeply pinnatisect, ovate in outline; upper leaves entire, up to 6 × 1 cm, lanceolate, pubescent above, white tomentose beneath. Flowers yellow, in heads c. 0.3 cm across, in terminal or axillary racemes. Achenes c. 0.1 cm long, pale brown. Pappus c. 0.2 cm long, white, hairy.

*Fl. & Fr.*: November—December.

Common in wastelands in ghats; Begur.

5. *Bidens* L.


Erect herbs up to 0.75 m tall. Leaves 3-5-foliolate; leaflets up to 9 × 3 cm, ovate-lanceolate, acute to acuminate, narrowed at base. Heads c. 0.7 cm across. Achenes laterally compressed.

*Fl. & Fr.*: November—February.

A fairly common weed in ghats; Chandanathode, Tolpetty.

Native of tropical America.


1a. Phyllaries, alean the outer, oblong-ovate to oblong-lanceolate:

2a. Leaves glabrate on the upper surface  
*B. lanceolata* 3

2b. Leaves pubescent on the upper surface  
*B. clarkei* 2

1b. Phyllaries all linear-lanceolate:

3a. Leaves spinous-toothed  
*B. esyodon* 6
3b. Leaves not spinous-toothed:
4a. Achenes ribbed.

5a. Leaves white-pubescent beneath, not lobed

*B. barbata* 1

5b. Leaves not white-pubescent beneath, the lower ones lobed:
6a. Plants more or less glabrate

*B. viridiflora* 7

6b. Plants pubescent

*B. membranacea* 4

4b. Achenes subangular to terete

*B. molis* 5


Erect herbs up to 30 cm tall. Leaves up to 5 x 2.5 cm, elliptic-oblong, apiculate, tapering at base. Heads c. 0.7 cm across, florets yellow. Achenes c. 0.1 cm long, brown, oblong; pappus c. 0.5 cm long, white.

*Fl. & Fr.*: February—March.

Occasional; once collected from ghats, c. 250 m; Kannoth.


Erect herbs up to 75 cm tall. Leaves up to 8 x 1.5 cm, lanceolate-oblong, acute, glandular pubescent on both sides. Heads c. 1.4 cm across; florets yellow. Achenes ribbed. c. 0.15 cm long, oblong. pappus c. 0.8 cm, hairy, white.

*Fl. & Fr.*: February—March.

Rare; once collected from evergreen forests above 800 m in ghats; Brahmagiri.


Large perennial shrubs up to 2 m tall; stems erect, puberulous. Leaves up to 25 x 4 cm, elliptic-oblongulate. Heads c. 1 cm across. Florets
yellow; corolla 0.6 cm long. Achenes linear-oblong, pale brown, 0.1 cm long, puberulous; pappus reddish yellow when fresh, 0.5 cm long.

Fl. & Fr.: March—April.

Rare; in moist shady situations in evergreen forests, c. 1000 m; Chandanathode.


1a. Heads 1 cm across or more

1b. Heads less than 1 cm across

**var. membranacea**

Erect herbs up to 50 cm tall. Leaves up to 7 × 2 cm, ovate-lanceolate, basal leaves sometimes lyrate, pubescent. Heads c. 1 cm across. Florets yellow. Achenes c. 0.1 cm long, oblong, brown; pappus c. 0.5 cm, white hairy.

Fl.: February—May.

Along streams in the evergreen forests, c. 600 m; Ambayathode.


Slender herbs up to 50 cm tall; leaves up to 9 × 3.5 cm, ob lanceolate, dentate, sparsely pubescent on both surfaces. Heads up to 0.7 cm across.

Fl. & Fr.: January—April.

Common in evergreen forests; Ambayathode, Brahmagiri, Periya.

Erect herbs up to 70 cm tall. Leaves up to $8 \times 3.5$ cm, elliptic-oblong to obovate, acute, cuneate at base, white hairy beneath. Heads c. 0.5 cm across, florets purple. Achenes oblong, brown; pappus c. 0.3 cm long, white.

*Fl. & Fr.*: February—September.

Along banks of rivers and in moist situations; Kannoth, Payyavur, Tolpetty.


Prostrate herbs, branches up to 30 cm long. Leaves up to $3.5 \times 2$ cm, oblong-obovate, white hairy beneath. Heads c. 0.5 cm across; florets yellow. Achenes c. 0.1 cm long, angled, pubescent; pappus c. 0.3 cm long, white, hairy.

*Fl. & Fr.*: November—December.

Common in open wastelands in plains; Cannanore, Panur.


Undershubs up to 1.5 m tall. Leaves up to $4.5 \times 2$ cm, oblanceolate, lower leaves liratey lobed. Heads c. 1.1 cm across. Florets yellow. Achenes glabrous; pappus white, c. 0.4 cm long.

*Fl. & Fr.*: December—January.

Occasional; in open wastelands, Padma.

7. **Centipeda** Lour.

Prostrate herbs up to 20 cm long. Leaves up to 0.7 x 0.2 cm, obovate, spatulate, toothed, glabrous. Heads c. 0.3 cm across. Achenes c. 0.1 cm long, 3-angled, hairy on angles.

Fl. & Fr.: February—March.

Occasional; in damp places along margins of rice fields, c. 800 m; Tolpetty.


1a. Heads less than 1.5 cm across; florets blue C. phyllolaenum 2
1b. Heads more than 1.5 cm across; florets pink C. anthemelminticum 1


Erect annual herbs up to 1 m tall; stems striate, pubescent. Leaves up to 14 x 4 cm, elliptic-lanceolate or ovate-lanceolate, coarsely serrate, membranous. Flowers mauve (purplish); corolla c. 1 cm long. Achenes black, c. 0.5 cm long; pappus tawny-white, becoming red with age.

Fl.: December—March.

Not common; near road sides and in wastelands; Begur, Kannoth.


Erect herbs up to 30 cm tall. Leaves up to 6.5 x 3.2 cm, elliptic, acuminate, base narrowed, sparingly hairy above, densely white woolly beneath. Flowers bluish violet, in axillary or terminal heads, c. 1.5 cm across. Pappus brown, stiff.

Fl. & Fr.: December—January.

Common in shade along margins of evergreen forests, 500—800 m; Chandanathode, Kannoth.
9. CHROMOLAENA DC.


Erect undershrubs, up to 1 m tall. Leaves up to $10 \times 4$ cm, ovate to rhomboidal, acute, crenate-serrate. Heads c. 0.4 cm across; corolla white. Achenes c. 0.2 cm long, narrowly oblong, 5-angular, truncate.

*Fl. & Fr.*: November—December.

A troublesome weed inhabiting waste places, roadsides and forest areas in pure formations and the eradication of it from teak and similar other plantations is a great problem faced by the forest department; Tolpetty.

10. *CONYZA* L. *nom. cons.*

1a. Heads in corymbs

*Conyza leucantha* 2

1b. Heads in racemose panicles

*Conyza bonariensis* 1


Erect annual herbs up to 75 cm tall; stem appressed with fine hairs, striate. Leaves up to $12 \times 1.5$ cm, narrowly oblanceolate, pubescent. Heads c. 1 cm across, florets pale yellow. Achenes subglabrous, oblong-elliptic; pappus brownish, c. 0.4 cm long.

*Fl. & Fr.*: November—May.

Common weed on roadsides in ghats, c. 840 m; Manantoddy, Tolpetty.

Erect herbs up to 45 cm tall. Leaves up to 6 × 2.5 cm, lanceolate, narrowed at both ends, pubescent on both sides. Heads c. 1 cm across, florets yellow. Achene c. 0.1 cm long, minutely villous; pappus c. 0.15 cm, slender, reddish.

Fl. & Fr.: May—June.

Occasional; in ghat, c. 600 m; on way to Kannoth.

11 CRANZEPHALIUM Moench.


Erect herbs up to 40 cm tall. Leaves up to 12.5 × 4.5 cm, elliptic-lanceolate, acute-acuminate, narrowed below, somewhat lobed, glabrous. Heads c. 0.8 cm across. Flowers pinkish red. Achenes c. 0.2 cm long, ribbed; pappus c. 1 cm long, silky white, denticulate.

Fl. & Fr.: July—August.

Occasional along margins of evergreen forests, c. 600 m; on way to Kannoth.

12. CYATHEOCLINE Cass.


Erect herbs up to 25 cm tall. Leaves up to 15 cm long, pinnatisect, viscid glandular. Heads c. 0.5 cm across; florets purple. Achenes c. 0.15 cm, ovoid, glabrous.

Fl. & Fr.: November—March.

Common weed in rice fields in ghat; Begur, Tolpetty.

13. DICOCEPHALA L’ Herit. ex DC.


Erect or decumbent annual herb up to 30 cm tall; stems whitish villous. Leaves alternate, broadly elliptic, crenate, up to 7.5 × 3.5 cm. Flowers white; corolla up to 0.1 cm long. Achenes obovate, c. 0.15 cm long, minutely glandular at apex; pappus bristles up to 0.1 cm long.

Fl. & Fr.: Almost throughout the year.

Common weed near drainage ditches and in moist places, Tolpetty.


Diffuse herbs up to 25 cm tall. Leaves up to 5 × 0.5 cm, linear, oblong, sparsely pubescent beneath, glabrous above. Heads c. 1 cm across; florets white. Achenes c. 0.3 cm long, black, 3-angled, oblong.

Fl. & Fr: November—July.

Common; in moist grounds, rice fields and margins of tanks and streams; Tolpetty.

15. Elephantopus L.


Subscapigeroeus perennial herbs up to c. 45 cm tall; stems terete with radical leaves up to 15 × 6 cm, oblong-ovate. Flowers lilac or purplish. Corolla tube c. 0.5 cm long, lobes linear-lanceolate. Achenes oblong, c. 0.4 cm long; pappus with 4–6 bristles; setae c. 0.5 cm long.
Fl. & Fr.: November—February.

On roadsides and in scrubs as a weed; Kannoth, Karimban, Tirunalli.

16. EMILIA CASS.

1a. Leaves chiefly radical

1b. Leaves both radical and cauline


Erect herb up to 25 cm high. Leaves up to 3.5 x 1 cm, chiefly radical or for a short way up the stems, lyrate, prominently crenate especially the rounded end lobe, glabrous above, crisply pubescent beneath, acute or rounded at apex, narrowed at base. Heads c. 0.5 cm across, pinkish, in terminal, solitary, corymbose cymes.

Fl. & Fr.: February—July.

Common; in open grassy slopes; Chandanathode, Manantoddy.


Diffuse herbs up to 30 cm tall. Leaves up to 5 x 2.5 cm, basal leaves lyrate-pinnatifid with large terminal lobes; cauline acutely auricled. Heads c. 0.5 cm across, in terminal corymbose panicles. Achenes c. 0.1 cm long; pappus 0.2 cm long, white.

Fl. & Fr.: May—June.

Common in open grassy places; Tirunalli.

17. EPALTES CASS.

Diffuse herbs up to 20 cm tall. Leaves up to $4.5 \times 0.75$ cm, oblong, spathulate, mucronate, rounded at base. Heads c. 1 cm across; florets purple. Achenes oblong, ribbed.

*Fl.*: November—December.

Common as a weed in rice fields and along railway tracks in plains; Kannoth, Tellicherry.

18. *Cnaphalium* L.


Erect herbs up to 10 cm tall. Leaves up to $3 \times 0.4$ cm, linear-ovate or spathulate, apiculate. Heads c. 0.4 cm across, in leafy terminal spikes, golden yellow. Achenes c. 0.1 cm, oblong, hairy; pappus c. 0.7 cm hairy, white.

*Fl. & Fr.*: November—February.

Common; in open grassy slopes in ghats; Tirunalli, Tolpetty.


Prostrate annual herbs; stems whitish pubescent. Leaves up to 15 $\times$ 7.5 cm, sinuate-pinnatifid, sparsely pubescent. Florets yellow. C. style c. 0.2 cm long. Achenes c. 0.15 cm long, green, glandular, minutely puberulent; pappus tubular, white, c. 0.5 cm long.

*Fl. & Fr.*: March—November.

Common; on the banks of rice fields in ghats; Begur, Manantoddy, Tirunalli.

Procumbent herbs up to 30 cm tall. Leaves up to 4.5 × 2 cm, ovate, acute, grey-pubescent. Heads c. 1.5 cm across. Florets white. Achenes compressed, angled, black.

Fl. & Fr.: November—December.

Common as a weed of cultivated fields in ghats; Begur.


Erect herbs up to 50 cm tall. Leaves up to 8.5 × 2.2 cm, oblong-lanceolate, decurrent onto wing of stem. Heads c. 0.6 cm across; florets purple. Achenes c. 0.1 cm long, ribbed, brown; pappus 0.4 cm long, white, hairy.

Fl. & Fr.: February—November.

Rare; in grasslands above 875 m in ghats; Brahmangiri, Chandanathode.

22. Launaea Cass.

la. Erect herbs; leaves linear-lanceolate  
   L. acutilis 1

lb. Prostrate herbs; leaves oblong, runciolate-pinnatifid  
   L. seratoides 2

Erect herbs with woody root stock, up to 50 cm tall. Leaves up to 12 × 1 cm, radical, shortly acute at apex, narrowed at base. Heads c. 1.7 cm across, yellow, in terminal corymbose cymes. Achenes c. 0.6 cm long, brown; pappus c. 0.6 cm, white, slender.

*Fl. & Fr.*: February—March.

Common; in open grasslands, c. 840 m; Brahmagiri, Chandanathode.


Trailing herbs. Leaves up to 5 × 1 cm, obtuse at apex, narrowed at base. Heads c. 0.3 cm across. Florets yellow. Achenes c. 0.3 cm long brown; pappus c. 0.8 cm, whitish hairy.

*Fl. & Fr.*: November—December.

Fairly common; in sandy seashores; Muzhapplangad.


Twining herbs; stems sparsely pubescent. Leaves deltoid-ovate, up to 13 × 6 cm, with undulate, dentate margins, subglabrous. Flowers greenish white, c. 0.5 cm long. Achenes dark brown, narrowly oblong, c. 0.3 cm long; pappus white, turning reddish brown, c. 0.3 mm long.

*Fl. & Fr.*: March—November.

Fairly common along margins of evergreen forests; Ambayathode, on way to Kannoth.
24. SIGESBECKIA L.


Erect herbs up to 40 cm tall. Leaves up to 6.5 x 3.3 cm, broadly ovate, acute, hairy. Heads c. 0.7 cm across; florets yellow. Achenes c. 0.4 cm, obovoid, glabrous, truncate.

*Fl. & Fr.*: March—November.

Common as a weed in open places in ghats, c. 800 m; Begur, Tollypetty.

25. SPHAERANTHUS L.

1a. Stem wings entire  
_S. africanaus_ 1

1b. Stem wings toothed  
_S. indicus_ 2


Erect herbs up to 45 cm tall. Leaves up to 8 x 3 cm, obovate, acute. Heads c. 0.5 cm across; florets purple. Achenes angled, small, glandular.

*Fl. & Fr.*: November—December.

Common in damp situations in plains; Tellicherry.


Erect herbs up to 45 cm tall. Leaves up to 5.5 x 2 cm, ovate to obovate acute. Heads c. 1 cm across, globose, purplish. Achenes oblong with persistent corolla.

*Fl. & Fr.*: November—December.


Erect herbs up to 30 cm tall. Leaves up to 7 × 3 cm, ovate, acute at apex, narrowed at base, glabrous. Heads c. 0.7 cm across, yellowish white. Achenes c. 0.7 cm long, oblong, compressed, nearly glabrous.

Fl.: February—November.

Fairly common at higher altitudes as a weed in open areas; Tolpetty.


Erect herbs up to 30 cm tall. Leaves up to 9 × 4.5 cm, ovate-lanceolate, acute at apex, cuneate at base. Heads yellow, sessile, heterogamous and rayed. Achenes of the ray florets c. 0.4 cm long, elliptic, compressed and those of tubular florets c. 0.5 cm long, trigonous.

Fl. & Fr.: August—May.

Common weed along roadsides and in cultivated lands in ghts; Kalliaresery, Kuthuparamba, Payyavur.

28. *Tridax* L.


Procumbent herbs up to 45 cm tall. Leaves up to 4 × 1.5 cm, ovate, acute, deeply incised-dentate; lobes acute. Heads c. 1 cm across, Corolla yellow. Achenes turbinate.

Fl. & Fr.: Almost throughout the year.
Common as a weed of wastelands in plains; Kalliaressery, Tellicherry.

29. **Vernonia** Schreb. nom. cons.

1b. Shrubs or herbae:

2a. Involucral bracts obtuse, mucronate:

3a. Leaves green beneath  

3b. Leaves white beneath  

2b. Involucral bracts shortly acuminate:

4a. Heads less than 1 cm across  

4b. Heads more than 1 cm across


Trees up to 7.5 m tall. Leaves up to 17 x 7.5 cm, obovate, acuminate, sparsely pubescent above, densely pubescent beneath. Heads c. 1.5 cm across; florets pink. Achenes c. 0.7 cm long, terete; pappus c. 0.5 cm long, white, feathery.

*Fl. & Fr.:* March—July.

Occasional; in shola forests, c. 875 m; Chandanathode, Theerthundamala.


Erect or decumbent annual herbs up to 45 cm tall; stems terete, strigate, pubescent. Leaves up to 4.5 x 1 cm, ovate-lanceolate, sharply serrate, sparsely pubescent. Heads bluish mauve (purplish); corolla c. 0.4 cm long. Achenes black, c. 0.15 cm long; pappus white.

*Fl. & Fr.:* Almost throughout the year.
Fairly common as a weed of wastelands; Chandanathode, Muzhaplangad, Parassanikkadavu, Tolpetty.


Erect undershrubs up to 1 m tall. Leaves up to 21 × 6 cm, oblongolate, acuminate at apex, tapering at base, sparsely hairy. Heads pink, in corymbs. Achenes c. 0.4 cm long, hairy; pappus 0.6 cm long, pinkish.

*Fl. & Fr.:* November—March.

Occasional; in evergreen forests, c. 500 m; on way to Brahmangiri.

This species was described in 1909 based on a collection of Dalzell from Karnataka (Mysore). The present collection indicates a wider distribution of this species in the Western Ghats.


Shrubs up to 2.5 m tall. Leaves up to 12 × 5.5 cm, elliptic, acute, serrate, tapering at base. Flowers pink, in corymbose heads. Achenes straw-coloured, c. 0.15 cm long, truncate, tapering to a fine point at base; pappus reddish brown, c. 0.3 cm long.

*Fl. & Fr.:* November—March.

Common in semievergreen forests, c. 800 m; Brahmangiri, Tolpetty.


Erect undershrubs up to 0.75 m tall. Leaves up to 5 × 2 cm, broadly ovate or suborbicular, glabrous above, softly tomentose beneath. Heads c. 0.8 cm across; florets purple. Achenes c. 0.2 cm long; pappus c. 0.5 cm long, yellowish.

*Fl. & Fr.:* November—December.
Occasional; in grasslands, c. 875 m; Channadahade.

30. VICOA Cass.

1a. Leaves serice; auricled at base. \textit{V. indica} 2

1b. Leaves perfoliate; not auricled at base. \textit{V. cernua} 1


Erect herbs up to 45 cm tall. Leaves up to 8.5 \(\times\) 2.8 cm, elliptic-lanceolate, acute to acuminate, acute at base, sparsely pubescent. Heads c. 0.8 cm across; florets yellow. Achenes c. 0.5 cm long, oblong; pappus c. 0.3 cm long, bristly hairy.

\textit{Fl. & Fr.}: November—December.

Rare; once collected from grasslands; c. 875 m; Brahmagiri.


Erect herbs up to 25 cm tall. Leaves up to 4.5 \(\times\) 0.6 cm, variable. Oblong-lanceolate or lanceolate, acute at apex, scabrid. Heads c. 1 cm across; flowers yellow, in terminal paniced heads. Achenes c. 0.2 cm, cylindrical; pappus c. 0.3 cm long, white.

\textit{Fl. & Fr.}: February—March.

Common; along roadsides and in wastelands; Brahmagiri.


Scandent shrubs. Leaves up to 10.3 \(\times\) 5 cm, ovate, acute, sparsely pubescent. Heads c. 1.7 cm across; florets yellow. Achenes c. 0.3 cm long, triquetrous, smooth.
Fl. & Fr.: Almost all seasons.

Along the seacoast in sandy areas; Tellicherry.

70. GOODENIACEAE

SCAEVOLA L. nom. cons.


Large shrubs up to 2.5 m tall. Leaves c. 21 x 9 cm, oblanceolate-spathulate. Flowers c. 3 cm long, white, in axillary cymes.

Fl.: November—December.

Common; along seashores, Cannanore.

71. CAMPANULACEAE

LOBELIA L.

1a. Prostrate herbs

L. alstineoides 1

L. nicotianifolia 2

1b. Erect undershrubs


Herbs up to 25 cm long. Leaves c. 1.5 x 1 cm, ovate, oblong, rounded or elliptic, basally 3 nerved. Flowers c. 1.5 cm long, blue, solitary, axillary. Capsules c. 0.3 cm across, baccate, opening by 2-valves.

Fl. & Fr.: Almost throughout the year.

Common; in damp localities; Kannoth, Manantoddy.

Undershubs up to 1.5 m tall. Leaves up to 11 × 2.5 cm, lanceolate, ovate, acuminate, cuneate or rounded base. Flowers c. 3 cm long, white tinged with lilac, in terminal pubescent racemes; anthers villous on the back.

*Fl.*: February—March.

Common as an undergrowth along margins of evergreen forests above 800 m; Chandanathode, Manantoddy.

72. **SPHENOCLEACEAE**

*Sphenoclea* Gaertn. *nom. cons.*


Erect herbs up to 0.75 m high. Leaves up to 10.5 × 2.8 cm, elliptic-lanceolate, glabrous above, glaucous beneath. Flowers c. 0.4 cm across, pale green, in terminal spikes. Capsules depressed-globose, circumsessile, glabrous.

*Fl. & Fr.*: November—March.

Common on banks of backwaters in plains; Tellicherry.

73. **PLUMBAGINACEAE**

**Plumbago** L.


Scandent undershrubs up to 0.75 m tall. Leaves up to 5 × 3.5 cm, ovate, acute, base attenuate into a petiole. Flowers c. 2.5 cm long, white, in terminal spikes up to 11.5 cm long.
Fl. & Fr.: November—March.

Common; in open areas; Kannoth, Tirunalli.

74. MYRSINACEAE

1a. Calyx tube adnate to the ovary; fruits many seeded
   Moesa 3
1b. Calyx tube free from the ovary; fruits 1-seeded:
   2a. Petals imbricate in bud; anthers cordate
       kimberlia 2
   2b. Petals contorted; anthers sagittate
       Ardisa 1

1. ARDISIA Sw. nom. cons.

1a. Anthers spiculate
   2. Anthers acute:
      2a. Inflorescence paniculate racemes
          A. missouriis 1
      2b. Inflorescence umbellate racemes
          A. solenacea 3

1. Ardisia missouriis Wall. ex DC. Prodr. 8: 130. 1844; Clarke in
   1921 (Repr. ed. 2: 531. 1957); Ramach. et al. in J. Econ. Tax. Bot. 1:
   93. 1980. A. courtallensis Wight, t. c. 1215. 1848; Clarke, l.c. 3:
   520.

Small trees up to 3.5 m tall. Leaves up to 19 x 8.5 cm, obovate to
lanceolate, acute at apex, rounded or more or less auricled at base. 
Flowers c. 1.2 cm long, purple. Berries c. 0.6 cm across, red, globose; glabrous.

Fl. & Fr.: March—August.

Occasional, in dense evergreen forests, c. 500 m; Fanath.

2. Ardisia punciflora Heyne ex Roay Fl Ind. 2: 279. 1824; Clarke
   1921 (Repr. ed. 2: 531. 1957).

Small trees up to 5 m tall. Leaves up to 12.5 x 3.5 cm, lanceolate,
acuminate, cuneate at base. Flowers c. 1.5 cm across, white. Berries
    c. 1.5 cm across, subglobose, red, glabrous, in axillary cymes.

Fl. & Fr.: February—April.
Common; in evergreen forests, c. 800 m; Brahmagiri, Thoerthundumala.


Shrubs c. 2 m tall. Leaves up to 7 × 5 cm, obovate-oblong, acute-acuminate, cuneate at base. Flowers c. 1.5 cm across, purple, gland-dotted. Berries c. 0.5 cm across, globose, purple-black, glabrous.

*Fl. & Fr.*: November—December.

Common; in semievergreen forests; on way to Kannoth, Tolpetty.


Climbing shrubs. Leaves up to 10 × 4.2 cm, elliptic-lanceolate, acute, rounded at base. Flowers c. 0.3 cm long, white. Drupes c. 0.4 cm across, globose, glabrous.

*Fl. & Fr.*: February—May.

Common; along the edges of semievergreen forests, c. 800 m; on way to Kannoth, Chandanathode.


Large shrubs up to 3 m tall. Leaves up to 16 × 6 cm, ovate-lanceolate, acuminate, rounded at base. Flowers c. 0.4 cm long, white. Berries c. 0.5 cm across, globose, fleshy; calyx persistent.
Fl. & Fr.: February—March.

Common along the edges of evergreen forests, c. 800 m; Chandanathode, Manantoddy.

75. SAPOTACEAE

1. ISONANDRA Wight

1a. Branchlets stout; leaves obtusely acute at apex

2a. Shrubs; stamens 8
   Isonandra

2b. Trees; stamens 12
   Madhuca 2

1b. Calyx lobes 6-8
   Palagium 3


Small trees up to 3 m tall. Leaves up to 18 x 5.5 cm, obovate to oblanceolate, acuminate, cuneate at base. Berries c. 2 x 1 cm, ellipsoid, glabrous, in the axils of fallen leaves as well.

Fr.: February—March.

Occasional; in evergreen forests, c. 800 m; Chandanathode.


Small trees up to 3 m tall. Leaves up to 14 x 5.3 cm, elliptic-lanceolate to oblanceolate, acuminate, cuneate at base. Flowers c. 0.8 cm long, in clusters, in axils of fallen leaves as well.

Fl.: March—April.

Occasional; in shades of evergreen forests; Brumagiri.
Junkem (i.e.) discusses at length the problems on the identity of this plant. He has relegated *I. candolleana* Wight to the synonymy of *I. perrottetiana* DC.

2. **MADHUCA** Cmeln


Evergreen trees up to 10 m tall. Leaves 17 × 4.5 cm, linear-oblong, subobtuse at apex, narrowed at base. Flowers yellowish white, crowded towards the ends of branches in dense fascicles. Berries c. 5 × 0.8 cm, globose, oblong or ovoid, fleshy, brown tomentose.

*Fl. & Fr.*: March—May.

Common; along banks of streams in ghats; Aralam, Tirunalli.

3. **PALAQUIUM** Blanco


Large trees up to 25 m tall; leaves up to 12 × 5.5 cm, elliptic or elliptic-ovate, obtusely acute, narrowed at base. Berries c. 3.5 cm long, ellipsoid, fleshy.

*Fr.*: November—December.

Common in evergreen forests, c. 500 m; Chandanathode.

76. **EBENACEAE**

**Diospyros** L.

1a. Fruits ovoid-conical:

2a. Leaves rounded at base

*D. pruriens* 3
2b. Leaves subcordate at base

D. saldathae 4

11. Fruits globose or ovoid:

3a. Fruiting calyx lobes plicate, glabrous

D. paniculata 2

3b. Fruiting calyx lobes reflexed; fulvous tomentose

D. ovalifolia 5

1. Diospyros ovalifolia Wight, Is. t. 1227. 1848; Clarke in Hook. f.

Small trees up to 5 m tall. Leaves up to 12.5 × 4.5 cm, elliptic, obtuse,
acute at base. Male flowers c. 0.5 cm long, in clusters. Fruits c. 1.5 cm
across, depressed globose, glabrous.

Fl. & Fr.: March—August.

Fairly common in semievergreen forests, c. 800 m; Chandanathode,
Panath.

4(2): 109. 1852; Clarke in Hook. f. Fl. Brit. Ind. 3: 570. 1882; Gamble,

Trees up to 10 m tall. Leaves up to 20 × 7.5 cm, oblong or oblong-
lanceolate, obtusely acuminate, glabrous. Male flowers c. 2.5 cm long,
greenish yellow, in cymes. Fruits obvate-cordate, c. 3 cm across, glabrous.

Fl. & Fr.: March—December.

Occasional; in evergreen forests; Chandanathode, Nedumpooyil.

4: 110. 1852; Clarke in Hook. f. Fl. Brit. Ind. 3: 553. 1882; Gamble, Fl.

Trees up to 5 m tall. Leaves up to 15 × 6 cm, oblong-lanceolate, acute,
rounded at base, hairy beneath. Male flowers c. 1.5 cm long, yellow.
Fruits c. 3 × 2.5 cm, bristly hairy.

Fl. & Fr: March—August.

Common; along streams in evergreen forests, c. 800 m; Chandanathode,
Theerthundamala.

Small trees up to 3.5 m tall. Leaves up to 12 × 5 cm, elliptic-oblong, shortly acuminate at apex, glabrate above and fulvous hairy beneath. Fruits c. 2.5 × 1.5 cm, densely clothed with fulvous, stinging hairs.

Fl. & Fr.: March—November.

Occasional; in shola forests, c. 800 m; on way to Brahmagiri; Theerthamadala, Tirunalli.

Kostermans (loc.) described this species from Hassan district in Karnataka; first report outside the type locality.

77. SYMPOLOCACEAE

SYMPOLOCOS Jacq.

1a. Drupes globose; ampulliform

1b. Drupes ovoid-oblong; not ampulliform:

2a. Inflorescence fulvous-villous:

3a. Branchlets hispid when young; drupes cylindrical

3b. Branchlets glabrous; drupes ovoid

2b. Inflorescence densely rusty-villous:

4a. Leaves yellow when dry; nerves 10-12 pairs

4b. Leaves green when dry; nerves 5-8 pairs


Small trees up to 5 m tall. Leaves up to 17 × 7 cm, elliptic or lanceolate, acute to acuminate, cuneate at base. Flowers c. 0.7 cm long, white, in axillary branched spikes up to 7.5 cm long. Drupes c. 0.4 cm across.

Fl. & Fr.: February—November.
Common; in shola forests, c. 800 m; Chandanathode. Theerthundamala.


Trees up to 5 m tall. Leaves up to 12 × 3.5 cm, elliptic or oblong, acuminate, cuneate. Flowers white, in axillary, racemes. Fruits c. 1.5 cm long, ellipsoid, greenish yellow.

Fl.: November—December.

Occasional; in shola forests, c. 800 m; Tirunalli.


Trees up to 5 m tall. Leaves up to 21 × 8 cm, elliptic-ovate, acuminate, base acute or nearly rounded. Inflorescence a spike up to 4.5 cm long, puberulous. Bracts and bracteoles appressedly pubescent. Calyx sparsely pubescent; tube c. 0.15 cm long, limb c. 0.3 cm long, hardly divided to the base; corolla c. 0.7 cm long, white, stamens numerous. Disc 5-glandular, shortly pilose; style base hairy.

Fl.: March—April.

Rare; once collected from evergreen forests, c. 800 m; Chandanathode.


1a. Calyx lobes rounded at tip

1b. Calyx lobes acute at tip

subsp. macrophylla

subsp. rossii

subsp. macrophylla

1a. Calyx tube glabrous

1b. Calyx tube appressedly pubescent

var. huguenotii

var. macrophylla

Trees up to 3.5 m tall. Leaves up to 12.5 × 5 cm, oblong to elliptic, acuminate, rounded or cuneate at base. Flowers c. 0.6 cm long, white, scented, in axillary spikes up to 9 cm long.

Fl.: November—December.

Rare; once collected from margins of evergreen forests above 840 m in ghats; Chandanathode.


Large shrubs or small trees up to 3.5 m high. Leaves up to 15 × 7 cm, elliptic, acuminate, cuneate at base. Fruits c. 1.5 × 0.5 cm, ovoid-cylindrical.

Fr.: March—April.

Occasional; in evergreen forests, c. 800 m; Theerthamandala.


Shrubs up to 3 m tall. Leaves up to 12.5 × 4.5 cm, elliptic-obovate, acuminate, base cuneate to subcordate. Fruits c. 1.3 × 0.5 cm, ovoid.

Fr.: March—April.

Rare; once collected from shola forests; Chandanathode.

Nooteboom (l.c.) remarks, "The variabilities of this species result in the species description being rather vague. There are only few characters common to all the infraspecific taxa, but the nearly continuous variation makes it necessary to unite them. It is not surprising that some collections do not fit in with any of the infraspecific taxa".

Shrubs up to 3 m tall. Leaves up to 10×5 cm, elliptic, acute, cuneate at base, glabrous, shining, margins recurved. Fruits c. 1 cm long, ovoid.

Fr.: March—April.

Occasional; in evergreen forests, c. 800 m; Chandanathode.

78. OLEACEAE

1a. Corolla lobes imbricate:
2a. Undershubs or shrubs; usually climbing Jasminum 2
2b. Trees Schrebera 6

1b. Corolla lobes valvate:
3a. Climbing shrubs Myxopyrum 4
3b. Trees or erect shrubs:
4a. Flowers in terminal panicles Ligustrum 3
4b. Flowers in axillary panicles:
5a. Corolla with distinct petals, free or connate in pairs Chionanthus 1
5b. Corol tubular or 0 Olea 5

1. CHIONANTHUS L.


Trees up to 10 m tall. Leaves up to 14×6 cm, elliptic-oblong, obtuse, cuneate at base. Flowers c. 1.5 cm long, yellowish white, axillary in fascicles of few branched cymes. Drupes c. 1.5 cm long, ellipsoid, glabrous.
Fl. & Fr.: November—March.

Common in most deciduous forests, c. 800 m; Chandanathode, Kautili, Manmutody.


2. **Jasminum** L.

1a. Leaves 3-foliolate

1b. Leaves 1-foliolate:

2a. Calyx glabrous

2b. Calyx pubescent:

3a. Erect undergrowth or somewhat climbing shrubs

3b. Climbing shrubs:

4a. Leaves pubescent

4b. Leaves glabrous:

5a. Bracts foliaceous

5b. Bracts not foliaceous

**J. azoricum** 1

**J. richii** 4

J. sambuc 1

J. multiflorum 3

J. rotundifolium 5

J. malabaricum 2


Climbing shrubs. Leaves c. 13 × 4.5 cm, elliptic or ovate, acute to cuneate acuminate, rounded at base. Flowers c. 3.5 cm long, white, fragrant. Berries c. 1.3 × 0.5 cm, ellipsoid, glabrous, black when dry.

Fl. & Fr.: November—December.

Common in the margins of evergreen forests near streams, above 800 m; Brahmagiri.


1a. Flowers less than 2.5 cm long var. laurit

1b. Flowers more than 2.5 cm long var. malabaricum
Climbing shrubs. Leaves up to 12.5 x 7 cm, broadly ovate, acuminate, rounded at base, glabrous. Flowers c. 3 cm long, white, in trichotomous terminal cymes. Berries c. 1.5 x 0.5 cm, ellipsoid, glabrous, black when dry.

Fl. & Fr.: March—November.

Common; in open bushes in ghats; Manantoddy, Tirunalli.


Leaves gradually acuminate. Flowers somewhat smaller than 2.5 cm.

Fl.: March—April.

Common along the streams in ghats above 800 m; Nedumpoyil, Tirunalli.

This plant with beautiful and fragrant flowers is worth introducing into gardens.


Climbing shrubs. Leaves c. 10.5 x 5 cm, cordate at base. Flowers up to 3 cm long, white, in axillary cymes.

Fl.: January — March.

Occasional; along the margins of moist deciduous forests; Chandanathode, Mattanur.

According to Bakh. f. (l.c.) "This species is extremely variable as to the indumentum of the young twigs, leaves, pedicels and calyx, the shape of leaves and to a certain degree also to the dimensions of calyx lobes. Intermediate forms are very common."

Climbing shrubs. Leaves up to $7 \times 3$ cm, ovate or elliptic, acuminate, cuneate at base. Flowers c. 6 cm long, white, in axillary or terminal subpaniculate cymes.

**Fl.:** July — August.

Common along the margins of moist deciduous forests, c. 800 m; Ooty.


Climbing shrubs. Leaves up to $10.5 \times 5$ cm, elliptic-lanceolate, acuminate, rounded at base. Flowers c. 5 cm long, white. Berries c. $1.5 \times 1$ cm, ellipsoid, black when ripe.

**Fl. & Fr.:** November — July.

Fairly common; along edges of moist deciduous forests, c. 250 m; Kannoth, Chandanathode.

*Jasminum sambac* (L.) Ait. is commonly cultivated in gardens.

3. **Ligustrum L.**


Small trees up to 5 m high. Leaves up to $9.5 \times 3$ cm, elliptic or lanceolate, sharply acuminate. Flowers c. 0.6 cm long, white. Drupes 1.5 cm long, obovoid, glabrous, in thyrsoid panicles.

**Fl. & Fr.:** March—November.

Common in margins of shola forests; Chandanathode.

4. **Myxopyrum Bl.**


Climbing shrubs with angular stems. Leaves up to 14.5 × 5 cm, elliptic-lanceolate, acuminate. Berries c. 1.2 × 1 cm, subglobose.

*Fr.*: January—March.

Common; in secondary forests; Kannonth.

5. **OLEA L.**


Trees up to 10 m tall. Leaves up to 13.5 × 5 cm, elliptic-lanceolate, acute to acuminate, acute at base, distantly serrate. Flowers c. 0.3 cm, greenish white, in axillary panicles. Drupes ellipsoid.

*Fl.* & *Fr.*: February—December.

Common; in moist deciduous forests; Chandanathode, Kannonth.

6. **SCHREBENA ROXB. nom. cons.**


Trees up to 10 m tall. Leaves imparipinnate; leaflets 7-9, each up to 12.5 × 5 cm, elliptic-lanceolate, acute, cuneate, glabrous. Flowers c. 2 cm long, yellowish brown, in axillary trichotomous cymes.

*Fl.*: May—June.

Occasional; in moist deciduous forests; Davelli.

79. **APOCYNACEAE**

1a. Stems erect :

2a. Leaves alternate :
3a. Leaves linear; flowers yellow  
3b. Leaves oblongate; flowers white  
2b. Leaves opposite or whorled:

4a. Leaves opposite:

5a. Herbs  
5b. Trees:

6a. Seeds with coma  
6b. Seeds without coma:

7a. Follicles many seeded; linear  
7b. Follicles few seeded; baccate

4b. Leaves whorled:

8a. Fruits dehiscing  
8b. Fruits indehiscent

1b. Stems twining, scrambling or creeping:

9a. Plants with thorns  
9b. Plants without thorns:

10a. Flowers large and showy:

11a. Flowers yellow  
11b. Flowers white

10b. Flowers small:

12a. Corolla lobes overlapping to the left:

13a. Leaves oblong; abruptly acuminate  
13b. Leaves elliptic; acuminate

12b. Corolla lobes overlapping to the right:

14a. Anthers exerted  
14b. Anthers included

1. ALSTONIA R. BR. nom. cons.

Large trees up to 15 m tall. Leaves up to 12.5 × 5 cm, oblong-elliptic to oblanceolate, obtuse at base, emarginate at apex. Follicles paired, c. 45 cm long, linear, slightly divergent.

*Fr.* February—March.

Occasional; in moist deciduous forests; Nedumpoyil, Taliparamba.

2. **Beaumontia** Wall.


Large climbing woody shrubs. Leaves c. 15 × 8 cm, oblong-ovate, abruptly acuminate, cuneate at base. Flowers c. 0.7 cm long, white, in terminal cymes.

*Fl.* November—December

Rare; once collected from shades of evergreen forests, c. 800 m; Chandanathode.

3. **Carissa L. nom. cons.**


Scandent shrubs. Leaves up to 10 × 4.5 cm, ovate to elliptic-lanceolate, acute at apex, mucronate, cuneate at base. Flowers c. 2 cm long, white. Berries c. 2 cm across, ellipsoid, purple when ripe.

*Fl. & fr.*: March—April.

Occasional; in evergreen forests, c. 800 m; Tirunalli.

4. **Catharanthus G. Don**

1a. Annual herbs; flowers white; follicles glabrous

*C. pusillus* 1

1b. Perennial herbs; flowers usually purple; follicles pubescent

*C. roseus* 2

   Erect herbs up to 25 cm tall. Leaves up to 6.5 x 2.3 cm, lanceolate, acuminate, attenuate at base. Flowers c. 1 cm long, in axillary cymes. Follicles c. 4.5 cm long, thin, cylindrical.

   **Fl. & Fr.:** August—November.

   Common in plains; Cannanore, Taliparamba.

   Gamble (i.e.) mentions that it is scarce in the West Coast, but, now it is a very common weed along road sides. It has spread widely in recent years.


   Erect herbs up to 50 cm tall. Leaves up to 6 x 2.3 cm, elliptic to obovate, obtuse, acute at base. Flowers c. 3 cm long, in axillary cymes. Follicles c. 4.5 cm, cylindrical.

   **Fl. & Fr.:** March—April.

   Common; in plains, often cultivated; Arslam.

5. **Caesalpinia L.**


   Small trees up to 2.5 m high. Leaves up to 2.5 x 6 cm, oblanceolate, abruptly acuminate. Flowers c. 3 cm long. Drupes c. 8 cm across; ellipsoid, glabrous.

   **Fl. & Fr.:** July—November.

   Common, in plains near sea-shore; Cannanore.
6. CHILOCARPUS BL.


Climbing shrubs. Leaves up to 12 × 4 cm, elliptic-oblong, cuspidate, rounded below. Flowers c. 0.4 cm long, white or pale yellow in axillary cymes.

*Fl.*: December—January.

Once collected from evergreen forests, c. 500 m; Ambayathode.

A very rare plant; only few very old collections are available in MH.

7. ERVATAMIA Stapf


Small trees up to 5 m tall. Leaves up to 20 × 6 cm, elliptic to lanceolate, acuminate, acute at base. Flowers c. 4 cm long, white. Follicles paired, c. 3.5 cm long, obovate, curved, yellow-orange when ripe.

*Fl & Fr.*: Almost throughout the year.

Fairly common in all types of forests; Kannoth, Tirunalli, Chembakkavu, Kannassery.

8. Holarhena R. Br.

Large shrubs up to 2.5 m tall. Leaves up to 18 × 9 cm, broadly ovate to elliptic, acuminate, rounded at base. Flowers c. 4 cm long, white, in terminal and axillary corymbose cymes.

Fl. & Fr.: March—October.

Occasional; in moist deciduous forests; Begur, Kannoth, Taliparamba.

9. ICHNEOCARBUS R. BR. noni. cons.


Climbing shrubs. Leaves up to 8.8 × 3.5 cm, lanceolate to ovate, acute to acuminate, cuneate at base. Flowers c. 0.5 cm long, white, in axillary and terminal rusty pubescent, trichotomously branched cymose panicles. Follicles paired, c. 10 cm long, thin, linear, somewhat divergent.

Fl. & Fr.: March—December.

Common in secondary forests; Ezhimala, Kannoth, Nedumpoyil, Periyarum.

10. KAMETTIA Kosteletzky


Climbing shrubs. Leaves up to 10 × 3.5 cm, elliptic-oblong, acuminate, rounded or subacute at base. Follicles c. 4.5 cm long, divaricate, linear, terete, slightly recurved, beaked at apex.

Fr.: November—December.

Rare; once collected from dense evergreen forests, c. 300 m; Ambayathode.
1. Parsonsia R. Br. nom. cons.

Periploca alboflavescens Dennst. Schluss, 12, 23, 35. 1818. Parsonsia spiralis  
Wall. ex G. Don, Gen. Syst. 4: 80. 1837-38; Hook. f. Fl. Brit. Ind. 3:  
650. 1882; Gamble, Fl. Pres. Madr. 814. 1923 (Repr. ed. 2: 572. 1957);  

Twinng shrubs. Leaves up to 17 × 9.4 cm, elliptic or oblong-lanceolate,  
acuminate, base rounded or acute. Flowers c. 1.7 cm long, pale greenish  
white, in axillary corymbose cymes. Young follicles c. 5 cm long; linear-  
lanceolate, sharply pointed, straight.

Fl. & Fr.: February—March.

Occasional; in shades of evergreen forests; Chandanathode,  
Manantoddy.

12. Rauvolfia L.

1a. Leaves tomentose  
1b. Leaves glabrous:  
2a. Flowers white tinted with red; drupes obliquely ovoid  
2b. Flowers white; drupes ellipsoid

1753; Wight, Ic. t. 849. 1844-45.

Erect undershrubs up to 0.75 m tall. Leaves up to 17.5 × 6 cm,  
oblancoolate, acute or acuminate, tapering at base. Flowers c. 2.5 cm long,  
in many flowered corymbose cymes. Drupes c. 0.8 cm across, didymous,  
glabrous, greenish when young, purplish black to reddish when ripe.

Fl. & Fr.: May—August.

Occasional; as an undergrowth in moist deciduous forests; c. 800 m;  
Begur, Ezhimala, Kannoth.

Small shrubs up to 1.5 m tall. Leaves up to 15 x 6.2 cm, variable, elliptic, acute, cuneate at base. Flowers c. 0.5 cm long, white. Drupes c. 0.7 cm across, didymous, connate, glabrous.

*Fl. & Fr.:* August—November.

Common as an undergrowth in moist deciduous forests, c. 800 m; Begur.


Large shrubs up to 2.5 m tall. Leaves up to 18 x 7 cm, ob lanceolate or obovate, acuminate. Flowers c. 2 cm long in many flowered corymbose cymes. Drupes c. 1.4 cm long, didymous, brownish purple when ripe.

*Fl. & Fr.:* March—July.

Common: in evergreen forests. c. 800 m: Chandanathode.

13. **Wrightia R. Br.**

1a. Leaves glabrous; follicles smooth, cohering at apex only  

1b. Leaves tomentose; follicles tuberculate, cohering throughout  


Trees up to 5 m tall. Leaves up to 8 x 3 cm, ovate or obovate, acuminate, obtuse at base. Follicles c. 17 x 2 cm, linear-oblong, straight, glabrous.

*Fr.:* March—April.

Rare: once collected from rocky slopes in moist deciduous forests; Nedumpoyil.

Trees up to 7.5 m tall. Leaves up to 16 x 4.5 cm, elliptic-lanceolate or oblong-lanceolate, acuminate, acute or rounded at base. Flowers c. 3 cm across, white, fragrant, in lax terminal, dichotomously branched cymes. Follicles paired, c. 30 x 1 cm, cylindric, glabrous.

*Fl. & Fr.*: March—November.

Fairly common; in moist deciduous forests; Begur, Kannoth, Karimban, Tirunalli.

*Allamanda cathartica* L. is grown as an ornamental. *Thevetia peruviana* (Pers.) Merr. is chiefly grown near villages.

80. **ASCLEPIADACEAE**

1a. Filaments free; pollen masses granular:

2a. Corolla lobes valvate in bud

2b. Corolla lobes contorted in bud

1b. Filaments connate into a tube; pollen masses waxy:

3a. Stems erect

3b. Stems twining, scrambling or prostrate:

4a. Anthers with a membranous appendage:

5a. Pollen masses pendulous

5b. Pollen masses erect, rarely horizontal:

6a. Corona corolline

6b. Corona staminal, rarely 0:

7a. Corolla lobes overlapping:

8a. Corona lobes tubercle-like entirely adnate to staminal column or radiating from its base

8b. Corona lobes adnate to staminal column at base, shortly free above

7b. Corolla lobes valvate

4b. Anthers without a membranous appendage
1. **Asclepias L.**


Undershrubs c. 0.75 m tall. Leaves up to 18 × 4 cm, lanceolate, acute at apex and base, glabrous. Flowers in extra-axillary umbellate cymes. Calyx lobes c. 0.4 cm long, corolla lobes c. 0.8 cm long. Follicles in pairs, c. 12 cm long, lanceolate, glabrous, beaked.

*Fl.* & *Fr.*: February—November.

Common weed; along the banks of streams, c. 800 m; Tolpetty.

2. **Ceropegia L.**


Slender, twining herbs. Leaves up to 9 × 3 cm, ovate or lanceolate, acuminate, glabrous. Flowers c. 4 cm long, pale blue spotted with purple, solitary.

*Fl.*: November—December.

Rare; once collected from the margins of evergreen forests, c. 800 m; Chandanathode.

3. **Cryptolepis R. Br.**


Climbing shrubs. Leaves up to 12.5 × 5 cm, elliptic-oblong, acute to acuminate, acute at base, glaucous above, whitish beneath, glabrous. Flowers greenish yellow, in axillary paniculate cymes. Follicles in pairs,
c. 11 × 1.5 cm, divaricate, triquetrous, tapering to a point at the apex, glabrous.

*Fl. & Fr.*: February—July.

Fairly common; in secondary forests, c. 800 m; Arunappara, Manantoddy.

4. **Cynanchum L.**


Climbing shrubs. Leaves up to 14.5 × 4 cm, elliptic-oblong, acuminate, puberulous above, glabrous beneath. Flowers c. 0.5 cm across, pale green, in corymbose cymes. Follicles solitary, c. 9 × 1.7 cm, glabrous, 2-winged.

*Fl. & Fr.*: February—March.

Occasional; once collected from secondary forests above 800 m; on way to Kannoth.

5. **Gymnema R. Br.**

1a. Leaves glabrous

1b. Leaves pubescent

| G. montana 1 | G. sylvestre 2 |


Climbing shrubs. Leaves up to 13.5 × 4.3 cm, oblong or oblong-lanceolate, acuminate, cuneate. Flowers c. 1.5 cm long, pale yellow, in axillary umbellate cymes.

*Fl.*: June—July.

Rare; once collected from evergreen forests, c. 800 m; Chandanathode.

Twining shrubs. Leaves up to 8 × 3.5 cm, elliptic-oblong, acute, rounded at the base, pubescent below, puberulous above. Flowers c. 0.6 mm across, greenish yellow. Follicles single, c. 0.6 cm long, slightly curved, terete, lanceolate, tapering, glabrous.

*Fl. & Fr.*: February—November.

Fairly common; along margins of semi-evergreen forests, c. 800 m; Chandanathode, Kannoth, Mannamooddy.

6. **Hemidesmus R. Br.**


1a. Leaves glabrous beneath

1b. Leaves pubescent beneath

var. *indicus*  
var. *pubescent*  

Twining undershrubs; stems thick at nodes. Leaves 6-9 × 0.8-2.5 cm, variable, linear-lanceolate, elliptic-oblong, apiculate, rounded at base. Flowers c. 0.6 cm across, in axillary, subterminal cyms.

Fairly common; along the edges of moist deciduous forests, c. 800 m; Kottiyyur, Tolpetty.


Branchlets, leaves beneath and inflorescence pubescent. Leaves elliptic-oblong, up to 8 × 2.5 cm.

*Fl.:* February.

Rare; once collected from secondary forests, c. 500 m; Tolpetty.
7. *Hoya R. Br.*

1a. Leaves linear

1b. Leaves ovate or elliptic.

2a. Petioles more than 2.0 cm long; margins recurved

2b. Petioles less than 2.0 cm long; margins not recurved


Epiphytic climbers; stems terete, swollen at nodes. Leaves c. 8.5 x 3 cm, very thick, fleshy, glabrous, elliptic, subacute, narrowed towards base. Flowers c. 2.2 cm long, in lateral drooping umbels.

*Fl.*: March—April.

Rare; Begur, Kannoth.


Epiphytic, pendulous climbers; stems terete, swollen at nodes. Leaves c. 4.5 x 0.5 cm, linear, thick, fleshy, obcordate, tapering towards base. Follicles solitary, c. 12 x 0.3 cm, cylindrical, tapering towards apex, glabrous.

*Fr.*: May.

Rare; once collected from evergreen forests; c. 800 m; Tirunallai.


Perennial climbers, terrestrial at first and becoming epiphytic; stems terete, glabrous. Leaves up to 8.5 x 3 cm, elliptic-lanceolate, acuminate, subcuneate at base, glabrous. Flowers c. 1 cm across, in umbellate cymes.
Follicles solitary, c. 7.5×0.5 cm, cylindrical, tapering towards apex, glabrous. Seeds c. 2 cm long, oblong, coma 3 cm long.

*Fl. & Fr.*: March—April.

Occasional; in evergreen forests, c. 800 m; Chaudmanathode, Tirunallil.

8. **Tylophora** R. Br.

1a. Leaves glabrous; peduncles more than 1 cm long
1b. Leaves sparsely pubescent; peduncles less than 0.5 cm long


Twining shrubs; stems tetrate, sparsely pubescent. Leaves up to 9×3.5 cm, ovate-oblong, shortly acuminate, rounded at base. Flowers c. 1 cm across, reddish brown, in umbellate cymes.

*Fl.*: March—April.

Rare; once collected from the edges of semievergreen forests, 800 m; Tirunallil.


Twining undershrubs; stems branched, glabrescent. Leaves up to 12.5×1.5 cm, lanceolate, apiculate, obtuse or rounded at base. Flowers c. 1.2 cm across, deep scarlet in lateral much branched panicles. Follicles in pairs, c. 9 cm long, slender, lanceolate, pointed, glabrous.

*Fl. & Fr.*: May—July.

Rare; once collected from forest margins, c. 800 m; Manantoddy.

9. **Wattakaka** Hassk.


Climbing shrubs. Leaves up to 15 x 10 cm, broadly ovate, abruptly acuminate, cordate or round at base; sparsely pubescent. Flowers c. 0.5 cm across, greenish yellow, in lateral umbellate cymes. Follicles c. 9 cm long, in pairs, ovoid, tapering to a very blunt point.

**Fl.** April—May.

Occasional; along margins of evergreen forests, c. 800 m; on way to Kannoor.

81. LOGANIACEAE

1a. Flowers tetramerous

1b. Flowers pentamerous:

2a. Leaf nerves inconspicuous; corolla tube 4-5 cm long

2b. Leaf nerves conspicuous; corolla tube less than 5 cm long

1. FAGRAEA Thunb.


Trees up to 5 m tall; epiphytic when young. Leaves up to 19 x 8 cm, obovate to elliptic, oblique or rounded, cuneate at base. Flowers up to 9 cm long, yellowish green, in axillary or terminal cymes. Berries c. 5 x 4 cm, ellipsoid to globose, somewhat beaked, glossy, glabrous.

**Fl. & Fr.** November—May.

Common; in evergreen forests; Aralam, Tirunalli.
2. **Gardneria** Wall.


Climbing shrubs. Leaves up to 11.5 x 5.5 cm, elliptic, acute or acuminate, base acute to obtuse. Flowers c. 1 cm long, pale yellow, in axillary trichotomous cymes. Berries c. 0.5 cm across, globose.

*Fl. & Fr.*: February—May.

Frequent on margins of evergreen forests; Chandanathode.

3. **Strychnos** L.

1a. Trees

1b. Climbers:

2a. Corolla tube almost as long as the lobes

2b. Corolla tube elongate, much longer than the lobes


1a. Leaves ovate

1b. Leaves narrowly lanceolate

**var. dalzellii**

Climbers with ferruginous, pubescent tendrils. Leaves up to 10 x 4.5 cm, ovate, acute, rounded at base, 3-nerved. Flowers pale green, sparsely ciliate, in axillary cymes. Berries c. 4 cm across, crustaceous, glabrous.

*Fl. & Fr.*: November—December.

Common in evergreen forests; Chandanathode.

Climbers. Leaves up to 12×3.5 cm long, narrowly lanceolate, acuminate, cuneate at base. Flowers c. 3.2 cm long, in axillary congested cymes up to 5 cm long.

Rare, once collected from evergreen forests; Manantoddy.

One of the endemic plants of Wy enslaved.


Trees up to 7.5 m tall. Leaves up to 18×10 cm, broadly ovate or orbicular, obtuse or acute, rounded at base, 5-ribbed. Flowers c. 1.2 cm long, pale green, in terminal cymes. Berries c. 5.5 cm across, globose, slightly shining, orange-red when ripe.

Fl. & Fr.: August—September.

Occasional; in moist deciduous forests; Kannoth.


Climbers with tendrils. Leaves c. 13×6 cm, elliptic or ovate, abruptly acuminate, rounded at base. Flowers pale green, in terminal cymes, up to 4 cm long.

Fl.: February—March.

Common along the banks of streams at lower altitudes up to 250 m; Kannoth.

82. GENTIANACEAE

1a. Stigma capitulate; style filiform

Exacum 2

1b. Stigma not capitulate; style linear:

2a. Corolla lobes with 1 or 2 pits or depressions or glands near base

Swertia 4

2b. Corolla lobes without pits, depressions or glands at base:
3a. Flowers pink or white
    Canescora 1
3b. Flowers yellow
    Hejpecu 3

1. Canescora Lam.

1a. Calyx winged:
2a. Flowers white
    C. deccurves 2
2b. Flowers rose-coloured
    C. parviflora 5

1b. Calyx not winged:
3a. Stem obusely quadrangular; pedicels filiform
    C. diffusa 3
3b. Stem strongly 4 winged; pedicels slender:
   4a. Lower leaves more than 2.5 cm long
    C. deccurves 1
   4b. Lower leaves less than 2.5 cm long
    C. parviflora 4


Erect herbs up to 45 cm high. Leaves variable; lower c. 3 x 1.0 cm. oblong, attenuate at base; upper smaller, ovate or lanceolate, acute. Flowers c. 1.8 cm long, pale rose, in subtrichotomous cymes.

Fl. & Fr.: November—April.

Common as an undergrowth in moist deciduous forests; on way to Alathur, Chandanathode, Taliparamba.


Erect herbs up to 30 cm high. Leaves up to 3 x 1.3 cm, ovate or lanceolate, acute, sessile, 3-nerved. Flowers c. 2.5 cm long, in terminal, paniculate cymes. Capsules c. 2 cm long, obtlong-linear, membranous.

Fl. & Fr.: November—December.

Occasional as an undergrowth in moist deciduous forests; Begur, Kannoth.


Erect herbs up to 50 cm tall. Leaves variable, upper c. 2×0.8 cm, broadly ovate, acute, apiculate, rounded at base, sessile, lower c. 6×1.4 cm, elliptic, acute, narrowed at base, petiolate. Flowers c. 2.2 cm long, rose, in paniculate cymes. Capsules c. 0.7 cm long, narrowly oblong.

*Fl. & Fr.*: November—July.

Fairly common; in moist shaded situations in plains as well as ghats; Tellicherry, Nedumpoyil.


Erect herbs c. 25 cm tall. Leaves variable; lower c. 2×1 cm, ovate, obtuse; upper smaller, oblong, acute. Flowers c. 1.5 cm long, pink, in lax dichotomous cymes.

*Fl.:* October—November.

Occasional; undergrowth in shaded places of evergreen forests; Chandanathode, Kannoth.


Erect herbs c. 45 cm tall. Leaves up to 4×1.7 cm, oblong-lanceolate, acute, sessile, 3-nerved. Flowers c. 3 cm long, in terminal paniculate cymes; bracts c. 2 cm long, circular.

*Fl.:* November—December.

Occasional as undergrowth in moist deciduous forests; Kannoth.

2. **Exacum** L.

Erect herbs up to 50 cm tall. Leaves up to $8 \times 2$ cm, ovate or elliptic, acute, 5-nerved. Flowers c. 4 cm long, pale blue, in terminal cymes up to 10 cm long.

*Fl.* November—December.

Occasional; in grasslands, c. 825 m; Chandanathode.

3. **Hoppia Willd.**


Erect herbs up to 10 cm high. Leaves c. $0.8 \times 0.7$ cm, ovate, acute, sessile. Flowers c. 0.2 cm long. Capsules c. 0.5 cm long, ellipsoid, in terminal trichotomous cymes.

*Fl.* & *Fr.*: November—December.

Occasional; in open grasslands, c. 250 m; Kannoth.

4. **Swertia L.**


Erect herbs up to 60 cm tall. Leaves up to $3.5 \times 1.3$ cm, lanceolate, acuminate, rounded-truncate at base, 3-nerved. Flowers c. 3.5 cm long, in terminal lax cymes. Corolla white with blue nerves.

*Fl.*: November—December.

Occasional; in grasslands, c. 840 m; Chandanathode.
83. MENYANTHACEAE

NYMPHOIDES Seguier


Rhizomes short, erect. Floating leaves up to 4.5 cm across, orbicular, deeply cordate. Flowers c. 1.8 cm across, white, in dense clusters. Capsules subglobose, c. 0.5 cm across; seeds 4-10.

*Fl. & Fr.*: July—January.

Common; in ponds and other similar aquatic situations; Ezhimala, on way to Mattanur, Kuthuparamba.

84. HYDROPHYLLACEAE

HYDROLEA L. nom. cons.


Decumbent herbs; rooting at lower nodes, c. 45 cm tall. Leaves up to 2.5 × 0.5 cm, lanceolate, acute, tapering towards base. Flowers deep blue, in axillary racemes c. 2.5 cm long. Capsules c. 0.9 cm long, ovoid-oblong, covered by persistent calyx.

*Fl. & Fr.*: December—March.

Common weed in rice fields; Begur, Kannoth.

85. BORAGINACEAE

1a. Subdecandent shrubs

1b. Erect herbs, shrubs or trees;
2a. Trees

2b. Undershrubs or herbs:

3a. Aquatic plants

3b. Terrestrial plants:

4a. Prostrate plants

4b. Erect plants:

5a. Fruits glochidiate

5b. Fruits not glochidiate:

5a. Fruiting calyx distinctly enlarged; styles subterminal

5b. Fruiting calyx not enlarged; style terminal

1. Cordiella L.


Procumbent herbs. Leaves c. 4.5 x 1 cm, obovate-oblong, rounded, tapering towards base, coarsely serrate or subpinnatifid, sparsely hairy. Flowers c. 0.3 cm long, white, in axillary spikes. Drupes c. 0.2 cm across with a sharply pointed pyramidal.

*Fl. & Fr.*: February—March.

Common; along the banks of streams; Kanoth.

2. Cordia L.


Trees up to 10 m tall. Leaves up to 16 x 8.5 cm, orbicular-ovate, subcordate or truncate at base, glabrous above, densely stellate tomentose beneath. Drupes c. 2.5 cm across, ovoid, yellow when ripe.

*Fr.*: July—August.
Occasional; in moist deciduous forests, c. 800 m; Tolpetty.

3. Cynoglossum L.


Erect undershrubs up to 1 m tall. Leaves up to 10.5 x 3.3 cm, elliptic-lanceolate, acute, narrowed at base, appressed hairy beneath. Flowers c. 0.4 cm long, bluish violet in terminal or axillary racemes. Fruits c. 1 cm across.

*Fl. & Fr.*: July—December.

Occasional; in open wastelands in ghats, c. 840 m; Tolpetty.

4. Heliotropium L.


Herbs up to 45 cm tall. Leaves c. 13 x 4 cm, ovate or ovate-oblong, obtuse or subacute, base decurrent into petiole, hispid-pubescent. Flowers c. 0.5 cm long, white, in extra-axillary spikes. Fruits c. 0.2 cm long, deeply 2-lobed, each lobe compressed.

*Fl. & Fr.*: November—December.

Common; in open wastelands in plains; Cannanore, Tellicherry.

5. Rotula Lour.

_Ehrertia cuneata_ Wight, Ic. t.1385. 1848.

Woody undershrubs up to 50 cm tall. Leaves c. 1.5 x 0.7 cm, 
spathulate, glabrous above, tumulose beneath. Flowers c. 0.5 cm across, 
purple, in axillary racemes. Drupes c. 0.2 cm across, globose, spiculate, 
orange when ripe.

*Fl. & Fr.*: November—December.

Common on river beds; Aralam, Kannoth.

6. _TURANIS FUKITA_ L.

_Turanis fukita_ hayesiana Wall. ex G. Don, Gen. Syst. 4 : 369. 1837; 

Subscendent shrubs. Leaves c. 13 x 3.3 cm long, oblong-lanceolate, 
long-acuminate, rounded at base. Flowers c. 0.8 cm long, white, in 
terminal cymes. Drupes c. 0.5 cm long, ovoid with a sharp point, black 
when ripe.

*Fl. & Fr.*: February—March.

Occasional; in evergreen forests; Theerthamandal.

7. _TRICHODESMA_ R. Br. nom. cons.

_Trichodesma zeylanicum_ (Burm.f.) R.Br. Prodr. 496. 1810, (zeylanico’); 
41. 1768.

Erect undershrubs up to 0.74 m tall. Leaves c. 8.5 x 2 cm, lanceolate-oblong, acute, narrowed at base, pubescent. Flowers c. 3 cm long, blue. 
Fruits ellipsoid, nutlets ovoid-oblong.

Occasional as an undergrowth in moist deciduous forests; Bavell.
FLORA OF CANNANORE

86. CONVOLVULACEAE

1a. Style present:

2a. Fruits dehiscence:

3a. Ovary 1-celled

3b. Ovary 2-4-celled:

4a. Prostrate herbs

4b. Climbing herbs or shrubs:

5a. Corolla tube uniformly enlarged from base to the apex:

6a. Stems winged

6b. Stems not winged

5b. Corolla tube not uniformly enlarged from base to apex

2b. Fruits indehiscent:

7a. Sepals large, enclosing the fruit

7b. Sepals small, not enclosing the fruit

1b. Style absent

1. Argyreia Lour.

1a. Leaves cordate at base; about as broad as long:

2a. Leaves densely pubescent above

2b. Leaves densely glabrous above

1b. Leaves truncate, cuneate or acute at base; longer than broad

A. hirsuta


Large silky twiners. Leaves up to 10 × 4.5 cm, elliptic or elliptic-lanceolate, subacute, rounded, or subcordate, glabrous above, villose and pale beneath. Berries c. 1 cm across, subglobose, yellow when ripe.

Fr.: November—December.

Occasional; in semievergreen forests; Brahmagiri.


Climbing undershrubs; stems sparsely pubescent. Leaves up to 26×16 cm, broadly ovate, abruptly acuminate, strigose above, tomentose beneath. Flowers up to 5.5 cm long, pale purple with a deep purple base inside corolla, in terminal capitate bracteate cymes.

Fl.: July—August.

Fairly common; in disturbed forests at higher elevations, c. 825 m; Mananthody.


Climbing undershrubs; stems glabrous. Leaves up to 30×15 cm, broadly ovate, glabrous above, sparingly strigose beneath, acuminate at apex, cordate or narrowly rounded at base. Berries up to 2 cm across, glabrous.

Fl.: November—December.

Fairly common; in disturbed forests; Kanoth.

2. Erycibe Roxb.


Scandent shrubs up to 5 m tall; branchlets rusty pubescent when young. Leaves up to 12×5 cm, elliptic-oblong or obovate-oblong, abruptly acuminate, cuneate, shining above. Fruit a berry, ellipsoid, about 2 cm long, 1 cm across, black, glabrous.

Fl.: November—December.

Occasional; in secondary forests, c. 250 m; Kanoth.
3. **Evolvulus L.**

1a. Flowers blue; peduncles much longer than the leaves  

**E. alsmodes**  1

1b. Flowers white; peduncles much shorter than the leaves  

**E. munnularius**  2


Perennial herbs with spreading, prostrate, usually hispid, but at times glabrous wiry branches. Leaves up to $3 \times 1$ cm, elliptic - oblong, or lanceolate; rounded or attenuate at base, acute, acuminate or obtuse and mucronate at apex; petioles very short, at times almost absent. Flowers blue, axillary, solitary or 2 - 3 on c. 4 cm long filiform peduncle. Capsules c. 4 mm across, globose; seeds 4, trigonously ovoid, glabrous, dark brown.

*Fl.:* July—August.

Fairly common in dry grasslands in coastal areas; Cannanore, Tellicherry.


Perennial prostrate pilose branching herbs rooting at nodes, branchlets at times glabrous. Leaves up to $1.5 \times 1$ cm with 2-5 pairs of lateral nerves, orbicular or orbicular-ovate, obtuse, base cordate, glabrous. Flowers 1-2, white, in axillary cymes. Capsules glabrous, globose, ovoid; seeds 4 or less, brown to black.

*Fl. & Fr.:* November—July.

Fairly common; in moist situations in coastal areas; Cannanore, Tellicherry.


Twining hiepid herbe. Leaves variable, upto 11 × 8 cm, ovate or elliptic, sometimes angular, acuminate to obtuse at apex, usually coriace at base, more or less softly and adpressely pilose on both the sides; petioles 1-4 cm long, pubescent. Flowers pale yellow with a purple throat, in solitary or few flowered axillary cymes; bracts linear-lanceolate, herbaceous, hairy, calyx silky pubescent outside; corolla with pubescent bands outside. Capsules c. 6 mm in diam., subglobose, hairy, surrounded by slightly enlarged sepals; seeds glabrous.

Fl.: November—December.

Fairly common; in wastelands in coastal areas; Kannoth, Tellicherry.

5. Ipomoea L.

1a. Leaves entire:

2a. Climbers:

3a. Flowers in sessile or nearly sessile heads

3b. Flowers in pedunculate cymes or paniculate:

4a. Stamens included:

5a. Sepals obtuse

5b. Sepals acute

4b. Stamens exerted:

6a. Flowers white

6b. Flowers orange-red

2b. Erect undershrubs
1h. Leaves usually lobed:

7a. Prostrate herbs; leaves 2-lobed: *Ipomoea pes-caurca* 8

7b. Twining herbs; leaves usually 1 or more lobed:

8a. Leaves white woolly beneath: *Ipomoea weightii* 11

8b. Leaves not white woolly beneath:

9a. Corolla more than 3 cm long: *Ipomoea caltha* 2

9b. Corolla less than 3 cm long:

10a. Sepals glabrous; outer bracts broadly ovate-cordate: *Ipomoea anccana* 4

10b. Sepals hairy; outer bracts ovate-oblong: *Ipomoea pes-tigrisida* 9


Large glabrous twiners; stems often muricate. Leaves up to 16 x 16 cm, broadly-ovate, acuminate, glabrous, cordate, angled. Flowers 10-15 cm long, in axillary pedunclate cymes; peduncles up to 4 cm long, glabrous, few-flowered.

*Fl.:* November—December.

Common; in moist deciduous forests, c. 800 m; Begur, Tirunalli.


Glabrous slender climbers. Leaves deeply 5-lobed, lobes elliptic-lanceolate, acute, mucronate, up to 7.5 x 6 cm, glabrous. Flowers c. 6 cm long, rose-purple, in axillary pedunculate cymes.

*Fl.:* April—May.

Cultivated species, naturalized in waste places and other similar situations; Tellicherry.

Erect shrubs up to 2 m high; branchlets glabrous. Leaves up to 15×7 cm, ovate-lanceolate, cordate, shining above. Flowers c. 6.5 cm long, pale pink, in axillary corymbose cymes.

*Fl.*: April—May.

Introduced American plant. Occasionally cultivated as a hedge plant and found as an escape; Manantoddy.

This plant can be easily distinguished by the lanceolate-ovate leaves and is distributed in New World and Old World. In subsp. *fistulosa* Jacq. which is restricted to the New World, the leaves are cordate to rounded at the base.


Slender climbers; stems hirsute. Leaves up to 3×3 cm, 3-7-lobed or entire, ovate-cordate, acute, narrowed at base; shining above, densely pubescent beneath. Flowers up to 1.5 cm long, pink-purple, in pedunculate capitate heads; bracts covered with strigose hairs. Capsules c. 0.5 cm across, ovoid or globose.

*Fl.* & *Fr.*: November—December.

Not common; once collected at an altitude of 850 m in moist deciduous forests; Begur.


Slender twining herbs; stems terete, clothed with appressed hairs. Leaves up to 8×3 cm, ovate-triangular, acute or apiculate, cordate,
glabrous. Flowers c. 1 cm long, bluish-purple, in axillary capitate heads. Capsules c. 0.5 cm across, globose, partly hairy.

*Fl.* & *Fr.*: November—May.

Commonly found in open wastelands; Begur, Tulipity.


Annual twining glabrous herbs. Leaves up to 7 × 4.5 cm, ovate-cordate, acute, membranous, softly pilose above, glabrous beneath, sometimes angled, base cordate. Flowers c. 3.5 cm long, scarlet-red, in axillary few-flowered long pedunculate cymes.

*Fl.*: November—December.

Along margins of forests. Introduced and running wild; Chandanathode.


Annual slender twiners; stems glabrous or hairy. Leaves up to 8.5 × 3.5 cm, broadly ovate, acuminate, cordate, glabrous or sparsely puberulent. Flowers creamy-yellow, c. 3.3 cm long, in axillary pedunculate cymes. Capsules c. 0.8 cm across, ovoid, subacute, glabrous.

*Fl.* & *Fr.*: February—June.

Commonly found in waste grounds and on sandy soil; Baveli, Mattanur.


Creeping herbs; stems long trailing and rooting at nodes. Leaves c. 2 × 4.5 cm, coriaceous, orbicular to broadly elliptic, the apex emarginate,
truncate to deeply 2-lobed, lobes rounded, base cuneate. Flowers c. 6 cm long, rose-purple in long pedunculate axillary cymes. Capsules c. 2 cm across, ovoid.

_Fl._ & _Fr._: August—September.

Fairly common along sandy coast and railway tracks; Cannanore, Kollam.


Stems twining, clothed with long spreading hairs. Leaves digitately 5-7-lobed, lobes ovate, acuminate, hisrate. Flowers c. 1.5 cm long, white, in pedunculate capitulate heads; bracts and sepals with strigose hairs.

_Fl._: November—December.

Common; in disturbed areas such as the margins of cultivated fields and roadsides; Aralam.


Slender climbers; stem glabrous. Leaves up to 9 x 6 cm, variable, ovate-obovate, rounded or hastate, basal lobes acute, glabrous. Flowers c. 1 cm long, pink, in pedunculate subumbellate cymes. Capsules ovoid, glabrous.

_Fl._ & _Fr._: November—December.

Fairly common; in moist areas such as swamp margins near the sea; Cannanore.

Climbing undershrubs; stems clothed with white woolly hairs. Leaves up to 9.5 x 4.5 cm, ovate or cordate, lobed or entire, acute. Flowers c. 2.5 cm long, pink-purple, in long-peduncled yellow-strigose capitate heads with oblong-lanceolate bracts.

Fl.: February—June.

Occasionally found in moist deciduous forests near streams, c. 850 m; Begur.


1a. Corolla more than 2.5 cm long:
   2a. Flowers yellow; leaves 5-7-lobed
      M. vitifolia 4
   2b. Flowers white or cream-coloured; leaves entire, crenate or at times 3-lobed
      M. umbellata 3

1b. Corolla less than 2.5 cm long:
   3a. Peduncles less than 2.5 cm long; leaves linear, linear-oblanceolate
      M. tridentata 2
   3b. Peduncles more than 2.5 cm long; leaves ovate or broadly ovate
      M. hederacea 1


Slender glabrous twiner. Leaves up to 2.5 x 0.7 cm, ovate, sometimes 3-lobed, coarsely toothed, acute and apiculate, deeply cordate with rounded lobes. Flowers bright yellow, in axillary 3-7-flowered cymes. Capsules c. 0.6 cm across, broadly ovoid, glabrous.

Fl. & Fr.: November—January.

Fairly common; in open wastelands in plains; Muzhapplangad.

1a. Leaves emarginate
1b. Leaves not emarginate

subsp. tridentata

subsp. hastata

Slender twining herbs; stems glabrous. Leaves variable, up to 4 x 0.7 cm, oblong-obovate, obtuse, dentate at base. Flowers pale yellow, 1-3 together, in axillary pedunculate cymes. Capsules 2-celled, globose, glabrous.

Fl. & Fr.: November—December.

Common; in open wastelands; Aralam, Ezhimala, Tellicherry.

Austin & Staples (in Brittonia 32: 533. 1980) consider this and another African species of Merremia to belong to a new genus, Xerostegia Austin & Staples. This view which is debatable is based on differences in the anatomy of the stigma, pollen morphology and cotyledon structure.


Leaves c. 5 x 1.2 cm, linear-oblong, hastate at the base and toothed on nerves. Flowers creamy-yellow, 1-3 together, in axillary pedunculate cymes. Capsules depressed globose, glabrous.

Fl. & Fr.: January—April.

Fairly common; in disturbed areas near moist deciduous forests; Aralam, Kannoth, Kuthuparamba.


Slender climbers; stems glabrous. Leaves variable, up to 9 x 4 cm, ovate or oblong-lanceolate, acute or acuminate, rounded, cordate or hastate, sparsely pubescent beneath, glabrous above. Flowers c. 3.5 cm
long, in axillary subumbellate cymes. Capsule globose, about 1.5 cm across; glabrous or pubescent.

_Fl. & Fr._: February—May

Fairly common; along edges of moist deciduous forests; Chambakkavu, Tolpetty.


Climbing shrubs; stem and leaves with deciduous hairs. Leaves about 15 cm across, lobes triangular-acuminate, margins dentate. Flowers c. 3.5 cm long, in axillary 2-3-flowered cymes. Calyx hispid outside.

_Fl._: March—April.

Fairly common; in disturbed areas of mountainous regions; Begur.

7 **OPELULINA Silva Manso**


Large climbing shrubs; stems winged. Leaves c. 6 × 2.5 cm, variable, entire, angular, ovate, glabrous, truncate at base. Capsules c. 1.5 cm across, in axillary cymes. Enlarged sepals and thickened pedicels conspicuous.

_Fr._: May—June.

Occasional; in disturbed forests; Begur.

8. **STICTOCARDINA** Hall. f.


Diffuse climbers up to 3 m high; stems glabrous. Leaves c. 12.5 × 10 cm, cordate, obtuse, glabrous above, sparsely puberulous beneath. Flowers up to 8 cm long, pale purple, in axillary or terminal cymes.

Fl.: November—February.

Common in wastelands; Begur, Cuddapah.

According to Austin et al. (in Brittonia 30: 195-198 1978), *Ipomoea campanulata* L. (1753) regarded as a synonym of *Stictocardia tiliifolia* (Desr.) Hall. f. for the past 50 years, is synonymous with an entirely different plant, *Ipomoea iluustris* (Clarke) Frain. They re-evaluated *S. tiliifolia* (Desr.) Hall. f. and accepted it as the correct name for the type species of the genus *Stictocardia* Hall. f.

87. SOLANACEAE

1a. Fruiting calyx enclosing the fruit

   Physalis 

1b. Fruiting calyx not as above:

   2a. Fruit a capsule:

   3a. Flowers up to 20 cm long

   Datura 2

   3b. Flowers over 20 cm long

   Brugmansia 1

   2b. Fruit a berry:

   4a. Calyx saucer shaped in fruit

   Lycianthes 3

   4b. Calyx not as above

   Solanum 5


Shrubs up to 1.5 m high. Leaves up to 21.5 × 6 cm, ovate-oblung or elliptic, acute or acuminate, obliquely rounded at base. Flowers white, corolla campanulate, solitary. Capsules c. 1 cm across, short-hairy.

Common; in secondary thickets in ghats; Chandanathode, Manantody.

2. Datura L.


Undershubs up to c. 0.75 m high. Leaves up to 16.5 × 6 cm, ovate-lancolate, acute, unequal at base. Flowers white, on short peduncles. Capsules c. 5 cm across, globose, covered with short spines.

*Fl. & Fr.*: March—July.

Common in open wastelands; Cannanore, Manantody, Pappinissery.

3. Lycianthes Hassler nom. cons.


Straggling undershrubs. Leaves up to 14.5 × 4.7 cm, elliptic-lanceolate, long acuminate. Flowers c. 1.5 cm long, pale purple, in extra-axillary fascicles. Berries c. 1 cm across, globose, red when ripe.

*Fl. & Fr.*: March—November.

Common; in shades of evergreen forests; Ambayathode, Panoth.

4. Physalis L.

Decumbent herbs up to 45 cm high. Leaves up to $8 \times 2.3$ cm, ovate, acute, sinuate or toothed. Flowers c. 2 cm long, white, solitary, axillary. Berries c. 1 cm across, globose, yellow when mature.

*Fl. & Fr.: All seasons.*

Common; in waste places; Aralam, Tellicherry.

5. **Solanum L.**

1a. Climbing plants  
1b. Erect plants:

2a. Plants unarmed:

3a. Leaves glabrous  
3b. Leaves stellately pubescent  

2b. Plants armed:

4a. Flowers purplish blue:

5a. Leaves entire  
5b. Leaves shallowly lobed  

4b. Flowers white:

6a. Plants with both straight and recurved prickles  
6b. Plants with either straight or recurved prickles:

7a. Berries up to 1.5 cm across  
7b. Berries c. 2.5 cm across  


Shrubs up to 2.5 m tall. Leaves up to $12 \times 6$ cm, ovate or ovate-oblong, acute, subequal at base. Flowers c. 1 cm across, in extra-axillary racemose cymes. Berries c. 1 cm across, globose, shining, orange-yellow when ripe.


*Fl. & Fr.: March—August.*

Common along margins of evergreen and moist deciduous forests; Elangad, Tirunalli, Tolpetty.
Hepper (t. c.) has shown that the correct name of the so called *S. indicum* of our Floras should be *S. anguivi* Lam and has discussed at length its nomenclature and identity.


Small trees up to 2.5 m tall. Leaves up to 15.5 x 8 cm, elliptic-lanceolate, acuminate, cuneate at base, tomentose above, tawny beneath. Flowers c. 1.5 cm long, in axillary corymbose cymes. Berries c. 0.8 cm across, globose, yellow when ripe.

*Pl. & Fr.*: July—August.

Common; in evergreen forests; Telpetty.

According to Roe (t.c.) this common unarmed pantropical species traditionally known as *Solanum verbascifolium* L. must be called *S. erianthum* D. Don. The Linnaean type of *S. verbascifolium* L. belongs to the prickly subgenus *Leptostemonum*.


Straggling herbs. Leaves up to 35 x 33 cm, broadly elliptic, pinnately cut into few triangular lobes; prickles on both sides of nerves. Flowers c. 1.8 cm long, in axillary leaf-opposed cymes. Berries globose, densely covered with fulvous hairs.

*Pl. & Fr.*: March—April.

Common; in shades of evergreen forests; c. 800 m; on way to Brahmagiri.


Shrubs up to 4 m high. Leaves up to 22 x 7 cm, oblong to oblanceolate, shortly acuminate, cuneate at base. Flowers c. 1.2 cm long, in subterminal corymbose cymes. Berries c. 1 cm across, globose, shining red when ripe.
Fl. & Fr.: May—November.

Common along the margins of moist deciduous forests, c. 800 m; on way to Brahmagiri


Erect herbs up to 50 cm tall. Leaves up to 9.5×4.8 cm, ovate-lanceolate, acute, base tapering into petiole. Flowers c. 1 cm across, white, in supra-axillary, subumbellate cymes. Berries c. 0.5 cm across, globose, shining red when ripe.

Fl. & Fr.: July—November.

Common; in open wastelands; Cannanore, Tolpetty.


Leaves up to 10×3.5 cm, pinnate, pinnae 2-4 pairs, narrowly ovate or lanceolate. Flowers c. 1 cm across, blue, star-shaped, in pendulous racemes up to 11 cm long. Berries c. 1 cm across, globose, blue when ripe.

Fl. & Fr.: May—November.

Common along margins of moist deciduous forests; Begur, Tolpetty.


Shrubs up to 2.5 m high. Leaves up to 15.5×10 cm, more or less ovate, shallowly lobed, shortly acuminate at apex, subcordate at base. Flowers c. 1.5 cm across, in corymbose cymes. Berries globose, shining yellow when ripe.

Fl. & Fr.: November—May.

Common along margins of evergreen and moist deciduous forests; Begur, Kuruppuhalli.

Undershubs up to 0.75 m high. Leaves 16 x 11 cm, ovate, sinuately lobed, acute, unequal at base. Flowers c. 1.5 cm across, in axillary racemes. Berries c. 3.5 cm across, globose, yellow when ripe.

*Fl. & Fr.:* February July.

Common in open wastelands in ghats, c. 800 m: Manantoddy.

*Cestrum parqui* L’ Herit. and *Lycopersicon esculentum* Mill. are grown as an ornamental and for edible fruits respectively.

88. **SCROPHULARIACEAE**

1a. Semiparastic herbs:

2a. Calyx spathaceous, split on one side

2b. Calyx tubular, ribbed

1b. Nonparastic herbs:

3a. Corolla distinctly 2-lipped:

4a. Limnophytes

4b. Not limnophytes:

5a. Calyx keeled or narrowly winged

5b. Calyx not keeled or winged:

6a. Leaves whorled or at least 3 together at the top

6b. Leaves opposite:

7a. Calyx lobes similar:

8a. Woody erect herbs; flowers more than 2 cm long

8b. Nonwoody erect or trailing herbs; flowers less than 2 cm long

7b. Calyx lobes dissimilar:

9a. Flowers yellow

9b. Flowers bluish violet

3b. Corolla lobes not bilipped
1. Adenosma R. Br.


Erect herbs up to 25 cm tall. Leaves up to $3 \times 1.3$ cm, ovate, acute, cuneate, sparsely ciliate. Calyx lobes 1-7 cm long, lanceolate, hirsute. Capsules c. 1.5 cm long, ellipsoid.

Fl.: August—September.

Rare; once collected from the banks of a stream in phatas, c. 250 m; Kannonth.

2. Artanema D. Don


Erect herbs up to 75 cm tall. Leaves up to $12 \times 3.5$ cm, lanceolate-acuminate, scabrid. Flowers c. 2.3 cm long, violet-purple, in terminal racemes up to 15 cm long.

Fl.: July—August.

Occasional; In open grasslands in moist deciduous forests, c. 800 m; Telpetty.

3. Centranthera R. Br.


An erect scabrid herb up to 15 cm tall. Leaves up to $4 \times 0.5$ cm long, elliptic or linear-oblong, hairy on both surfaces. Flowers pink, solitary, in axils, the upper ones forming a terminal spike. Capsules enclosed in the calyx, c. 1 cm long.

Fl. & Fr.: November—December.
Common; in open grasslands in plains: Taliparamba.

4. **Limnophila R. Br. nom. cons.**

1a. Leaves opposite \( L. \) repens 2
1b. Leaves 3-4-nately whorled \( L. \) indica 1


Erect herbs up to 10 cm high; stem villous. Leaves verticillate, variously lobed. Flowers c. 1.5 cm long, white or pale yellow, solitary, axillary. Capsules subglobose.

**Fl.**: March—April.

Common; in rice fields above 825 m in ghats; Begur.


Prostrate herbs. Leaves up to 2.5 x 0.7 cm, elliptic-ovate, obtuse, narrowed at base, subamplexicaul. Flowers c. 0.6 cm long, violet-pink, solitary, axillary. Capsules c. 0.4 cm long, broadly ellipsoid, enclosed by persistent calyx.

**Fl. & Fr.**: August—January.

Common; in damp situations in plains; Kannoth, Muzhappilangad.

5. **Lindernia** All.

1a. Perfect stamens 4:

2a. Capsules longer than calyx \( L. \) anagallis 1
2b. Capsules as long as calyx:
3a. Flowers white
L. caespitoso 3

3b. Flowers purplish blue:

4a. Calyx lobes divided to the base
L. sterna 16

4b. Calyx lobes divided up to the middle only
L. ornatnmo 6

1b. Perfect stamens 2:

5a. Leaves with 3-5 ribs from the base:

6a. Flowers c. 3.5 cm long
L. hysopoifolus 6

6b. Flowers c. 1.5 cm long
L. parvisiota 8

5b. Leaves penninerved:

7a. Leaves linear
L. temnifolius 9

7b. Leaves otherwise:

8a. Leaves sharply, deeply and closely serrate
L. ciliata 4

8b. Leaves distantly and shallowly serrate:

9a. Decumbent herbs
L. antipoda 3

9b. Erect herbs
L. apposita 7


Erect annual herbs up to 15 cm tall, rooting at lower nodes, glabrous. Leaves up to 4.5 x 0.5 cm, ovate, obtuse or subacute, obscurely crenate-serrate. Flowers c. 0.8 cm long, white or blue, solitary, axillary. Capsules linear, c. 1.7 cm long, glabrous.

Fl. & Fr.: November—March.

Common weed; in moist localities in plains; Cannanore, Tellicherry.

Annual herbs, rooting at nodes. Leaves up to 3.5 x 1.6 cm, sessile or petiolate, oblong, obovate-lanceolate or ovate-lanceolate, subacute, margins serrate, glabrous. Flowers c. 1 cm long, rose-purple. Capsules linear, c. 1.5 cm long.

*Fl. & Fr.*: March—August.

Fairly common; in wastelands, crevices of rocks and rice fields; on way to Mattanur, Tellicherry.


Diffuse annual herbs rooting at nodes, up to 15 cm high. Leaves ovate or ovate-cordate, serrate, basally 3-5-veined, 1.5 x 1 cm. Flowers white with yellowish brown throat, axillary solitary or in pairs. Capsules subglobose, c. 1.5 cm long.

*Fl. & Fr.*: November—March.

Common; in moist damp situations; usually on river beds; Kannoth, on way to Mattanur.


Stiff annual glabrous herbs, up to 12 cm high. Leaves up to 2.5 x 1 cm, sessile, oblong, obtuse or subacute, cuneate, glabrous. Flowers c. 1 cm long, purple, in terminal racemes. Capsules linear c. 1.5 cm long.

*Fl. & Fr.*: July—November.

Fairly common; in moist situations in plains; Kannoth, Tellicherry.


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Diffuse annual herbs rooting at nodes. Stem glabrous or thinly pubescent. Leaves up to 2.5 × 0.8 cm, suborbicular, ovate or lanceolate, margins shortly serrate, obtuse or subobtuse rounded or cordate. Flowers c. 2.2 cm long, solitary, axillary. Capsules c. 2.5 cm long, linear.

*Fl. & Fr.*: August -November.

Fairly common; in damp localities in plains; Irutti, Tellicerry.


Erect slender herbs up to 40 cm tall. Lower leaves up to 2 × 0.3 cm, oblanceolate; upper linear, smaller, elliptic, acute, c. 0.7 × 0.4 cm. Flowers solitary, axillary, blue; pedicel filiform, 2 cm long in fruits. Capsules obovoid-oblong, c. 0.6 cm long.

*Fl. & Fr.*: March-August.

Common; in damp situations; Tellicerry, Tirunalli.


Annual erect much branched herbs up to 20 cm tall. Leaves up to 1.5 × 0.8 cm long, narrowly oblong, distantly serrate, glabrous. Flowers pale blue, in axillary or terminal racemes. Capsules linear, c. 1.2 cm long.

*Fl. & Fr.*: February—March.

Weed in wet cultivated fields, in plains; Kannoth.

Erect slender annual herbs up to 15 cm tall. Leaves up to 2.5×1.2 cm long, lower ones ovate-lanceolate or oblong, upper ones linear, glabrous. Flowers c. 1.5 cm long, white with blue tinge. Capsules ovoid-oblong, c. 1.5 cm long, glabrous.

*Fl. & Fr.*: November—December.

Common; in marshy situations; Kannoth.


Succulent tufted erect herbs up to 15 cm high. Leaves up to 4×0.4 cm, sessile, fleshy. Flowers very small, axillary, upper ones racemose; corolla blue, c. 0.3 cm long. Fruiting pedicels up to 1.2 cm long. Capsules linear, 0.8-1 cm long, glabrous.

*Fl. & Fr.*: July—August.

Common along banks of backwaters; Tellicherry.


Small pubescent herbs up to 10 cm tall. Leaves up to 3.2×1.7 cm long, ovate to broadly ovate; upper ones smaller, sessile, shallowly serrate. Flowers c. 0.8 cm long, white with an yellow throat, in terminal and axillary racemes. Capsules 1-1.3 cm long, ovoid, glabrous.

*Fl. & Fr.*: February—March.

Common as a weed in sandy regions near streams, in plains; Kannoth.
6. **Mecardonia Ruiz. & Pavon**


Prostrate herbs up to 25 cm tall. Leaves c. 2 × 1 cm, elliptic or ovate, acute. Flowers c. 1.6 cm long, yellow. Capsules c. 2 cm long.

*Fl. & Fr.*: February—July.

Common; in open wastelands; Tolpaty

An exotic weed, getting naturalized in the district.

7. **Scoparia L.**


Erect herbs up to 45 cm tall. Leaves c. 5 × 1 cm, elliptic-lanceolate, acute, cuneate at base. Flowers c. 0.2 cm across, creamy-white, in axillary pairs. Capsules c. 0.4 cm across, tipped with persistent style, enclosed within persistent calyx.

*Fl. & Fr.*: Almost throughout the year.

Common; in open wastelands; Begur, Cannanore.

8. **Stemodia L. nom. cons.**


Annual erect herbs up to 15 cm tall. Leaves up to 4.2 × 1.5 cm, ovate, cuneate or obtuse at base, serrate-dentate above the base. Flowers c. 0.5 cm long, bluish violet, solitary in leaf axils or at terminal racemes or spikes. Capsules orbicular.

*Fl. & Fr.*: March—April.
Rare; once collected from the banks of a river in ghats; Begur.

9. STRIGA Lour.

1a. Ribs of calyx 10  
   S. asiatica 2
1b. Ribs of calyx 15  
   S. angustifolia 1


Annual, erect, parasitic herbs, up to 15 cm tall. Leaves up to 1.5 x 0.2 cm, linear, narrow, scabrous, acute. Flowers white, in terminal racemes.

*Fl. & Fr.:* October—November.

Common; in open wastelands; Kannoth.


Erect, annual scabrid herbs up to 15 cm tall. Lower leaves opposite; upper alternate, sessile, linear, acute, hirsute, up to 20 x 2 cm. Flowers yellow, solitary, axillary.

*Fl. & Fr.:* February—March.

Fairly common; in grasslands; Chandanathode.

10. TOREnia L.

1a. Flowers up to 1 cm long  
   T. lindernioides 3
1b. Flowers more than 1 cm long:
   2a. Flowers under 2.5 cm long  
      T. bicolor 1
   2b. Flowers more than 2.5 cm long  
      T. hirsuta 2

   Annual, trailing herbs, rooting at nodes. Leaves up to 3×2 cm, deltoid, ovate, crenate-serrate, subcordate, sparsely hisrate. Flowers bluish violet, solitary, axillary; pedicels deflexed in fruits. Capsules included in the calyx.

   *Fl.* & *Fr.:* November—July.

   Fairly common; in wet regions in plains as well as ghats; Kannoth, Tolpetty.


   Erect diffuse annual herbs. Leaves up to 1.7×0.8 cm, deltoid-ovate, acute, truncate or cordate, coarsely serrate, pubescent. Flowers pale blue with deep blue throat, in axillary, solitary or apparently terminal racemes.

   *Fl.* & *Fr.:* February—March.

   Rare; once collected from open wet ground in ghats above 800 m; Periya.


   Prostrate herbs. Leaves up to 1.5×1.3 cm, ovate, crenate-serrate, subcordate. Flowers pale pink, solitary, axillary. Capsules c. 0.5 cm long, ellipsoid, included within calyx.

   *Fl.* & *Fr.:* August—November.

   Common; in open wastelands in ghats; Kannoth.

89. OROBANCHACEAE

**Aeginetia L.**

1a. Corolla deep purple

1b. Corolla yellow

   *A. indica* 1

   *A. pedunculata* 2

Leafless parasitic herbs up to 20 cm tall. Scape slender. Flowers solitary, up to 3.5 cm long. Calyx pinkish, enclosing corolla tube. Corolla purple with a touch of white near the throat. Capsules c. 2 cm long, oblong-ovoid.

Fl. & Fr.: August, September.

Common; on roots of several plants in semievergreen forests; c. 250 m; Kannoth.


Leafless parasitic herbs up to 20 cm tall. Flowers many; calyx orange; corolla up to 8 cm long, tube yellow, mouth blue. Capsules ovoid.

Fl. & Fr.: November—January.

Rare as a root-parasite on grasses in plains as well as ghats; Chandanathode, on way to Mattanur.

90. LENTIBULARIACEAE

UTRICULARIA L.

1a. Scares twining

1b. Scares not twining:

2a. Leaves linear or linear-spathulate

2b. Leaves orbicular or reniform


Slender terrestrial herbs c. 12 cm long; stolons filiform. Scares erect with a few scales. Flowers c. 0.7 cm long, bluish pink, shortly pedicellate, spur conical, curved.
Fl. & Fr.: March—April.

Occasional; along streams in shady places, c. 800 m; Munantoddy.


Herbs c. 30 cm long; scapes with a few scale. Flowers c. 2.5 cm long, bluish-violet, distinctly pedicellate, spur short, slightly curved. Capsule c. 1.8 cm long, ovoid, seeds raomboid, reticulate.

Fl. & Fr.: November—December.

Fairly common; in rice fields; Kannonth, Tellicherry.


A small slender herb c. 10 cm tall; stolons filiform. Leaves c. 0.4 x 0.3 cm, in rosettes at the base of scapes, small, petiolate, persistent. Scapes filiform with minute bracts, up to 3.5 cm long, few flowered, terminal, pink with yellow spots.

Fl. August.

Fairly common; on moist rocks near running water, 800 m; Chandanathode.

91. GESNERIACEAE

1a. Epiphytic undershrubs; seeds tipped with long hairs

Aeschynanthus 1

1b. Erect or submersed herbs or undershrubs; seeds not as above:

2a. Leaves radical; stamens 4

Jerdonia 3

2b. Leaves cauline; stamens 2-4:

3a. Leaves oblong at base with a long acuminate tip

Rhynchoglossum 4

3b. Leaves subequal at base with a short acuminate tip:

4a. Succulent herbs, fruit a capsule

Epithema 2

4b. Undershubs; fruit a berry

Rhynchoglossum 5
1. *Aeschynanthus* Jack *nom. cons.*


Leaves up to $9 \times 2$ cm, elliptic-lanceolate, or obovate, acute, rounded at base. Flowers c. 2.5 cm long, scarlet, solitary. Capsules up to 2.5 cm long, linear, papery, loculicidally 2-valved.

*Fl. & Fr:* February—July.

Common; in evergreen forests, c. 800 m; Chandanathode.

2. *Epithema* Bl.


Succulent herbs c. 10 cm tall. Leaves up to $6 \times 5$ cm, broadly elliptic or ovate, obtuse at apex, rounded at base, sparsely hairy. Flowers c. 1.2 cm long, blue, in terminal cymes.

*Fl. & Fr:* November—December.

Occasional; on rocks in shady regions in ghats; Nedumpoyil.

3. *Jerdonia* Wight


Erect herbs up to 25 cm tall. Leaves up to $13 \times 5.5$ cm, elliptic-oblong, obtuse, subcordate at base, glabrous above, rusty villous beneath. Flowers c. 2 cm long, pale lilac with red tinge, in scapes up to 14 cm long.
FL.: March—July.

Frequent in evergreen forests; Chandanathode.

A monotypic and endemic genus of the Western Ghats.

4. Rhynchoscholessum Bl.


Weedsia notoniana Wall. Tent. Fl. Nepal. 46. 1826.

Succulent herbs up to 40 cm tall. Leaves up to 12 x 4.5 cm, ovate-lanceolate, acute or acuminate. Flowers c. 1.5 cm long, blue, in terminal racemes. Capsules ovoid, 2-valved.

FL. & FR.: November—December.

Common; in damp situations in plains; Cannanore.

5. Rhynchoteleum Bl.


Subbaccate undershrubs c. 0.75 m tall. Leaves up to 20 x 5 cm, oblanceolate, woolly tomentose on both sides. Flowers white, axillary, corymbose. Berries c. 1 cm across, ovoid to globose with accrescent calyx.

FL. & FR.: June—October.

Common; near streams in evergreen forests; Chandanathode.

92. BIGNONIACEAE

1a. Capsules winged on both margins; the septa flat

Pajanelia 2

1b. Capsules not winged:

2a. Capsules terete or 4-angled

Stereospermum 3

2b. Capsules flat

Oroxyllum 1
1. ORXYLUM Vent.


Trees up to 10 m tall. Leaves 2-3-pinnate, leaflets 2-4 pairs, ovate or elliptic, acuminate, rounded at base. Capsules up to 60 x 7.5 cm, straight, tapering at both ends, acute, c. 0.8 cm thick, valves semi-woody.

*Fr.*: November—December.

Occasional; in moist deciduous forests; Kannoth.

2. PAJANELIA DC.


Trees up to 20 m tall. Leaves imparipinnate, leaflets 13-15, up to 16 x 10 cm, ovate or elliptic, acuminate, unequal at base. Flowers c. 7.5 cm long, white on tube, crimson-purple on lobes, in terminal thyrsoid panicles. Capsules c. 25 x 6 cm, straight, compressed. oblong-ovate, pointed, glabrous.

*Fl. & Fr.*: March—April.

Common; in open wastelands in plains; Kannoth.

3. STEREOSPERMUM Cham.

Clarke in Hook. f. Fl. Brit. Ind. 4: 382. 1884; Wight, Ic. t. 1341. 1848. "Pathiri".

Deciduous trees up to 15 m tall. Leaves pinnate; leaflets 7-11, c. 14.5 × 5 cm, elliptic, caudate-acuminate, cuneate at base. Flowers c. 3.5 cm long, pale yellow with reddish purple, in lax, drooping panicles. Capsules c. 45 × 1 cm, subquadangular, curved, pointed, more or less spirally twisted.

Fl. & Fr.: March—July.

Common; in moist deciduous forests; Kannoth, Tolpetty.

93. PEDALIACEAE

1a. Flowers rose coloured; fruits dehiscient Martynia 1
1b. Flowers pale yellow, fruits indehiscent Pedaliun 2

1. MARTYNIA L.


Erect, pubescent herbs up to 0.75 m tall. Leaves up to 15 × 16 cm, deltoid-ovate, covered by a glutinous dew-like substance. Flowers c. 4.5 cm long, in axillary racemes up to 6 cm long. Fruits c. 5 cm long, beetle-shaped, woody, hard, with 2 sharp anterior hooks.

Fl. & Fr.: July—August.

Common; in open wastelands and along roadsides in plains; Cannanore.

2 Pedaliun Roven ex L.


Decumbent subfleshy herbid herbid up to 45 cm tall. Leaves up to 7 × 3 cm, broadly ovate-oblong, obtuse, cuneate at base, glaucous beneath.
Flowers c. 1.5 cm long, solitary, axillary. Fruits c. 1.8 cm long, narrowed at base, bluntly 4-angled with sharp conical spines at angles.

Fl. & Fr.: November—December.

Common; in open wastelands in plains; Cannaore.

*Sesamum orientale* L. is largely cultivated for oil.

94. ACANTHACEAE

1a. Climbing shrubs

1b. Erect or prostrate herbs or shrubs:

2a. Seeds not supported on retinacula:

3a. Calyx 4-partite; stamens 2  
   *Nelsonia* 15

3b. Calyx 5-partite; stamens 4  
   *Stachyogyna* 23

2b. Seeds supported on band, upwardly curved retinacula:

4a. Corolla without an upper lip; the lower lip large, expanded, 3-lobed:

5a. Lower filaments with an excurrent process  
   *Blepharis* 5

5b. Lower filaments without such a process  
   *Asarina* 1

4b. Corolla 2-lipped or with 5 subequal lobes:

6a. Corolla lobes twisted to the left in bud:

7a. Ovules more than 2 in each cell; seeds per capsule 6 or more:

8a. Corolla distinctly 2-lipped  
   *Higrophila* 11

8b. Corolla subequally 5-lobed:

9a. Capsules clavate with a stellate base:

10a. Erect herbs; roots tuberous  
   *Ruellia* 21

10b. Prostrate herbs; roots not tuberous  
   *Dipteronactia* 6

9b. Capsules semi-bulbous from the base  
   *Hemigraphis* 16

7b. Ovules 2 in each cell; seeds per capsule 4 or less:

11a. Placentas separating elastically from base of ripe capsule  
   *Phalangiea* 16

11b. Placentas not separating elastically from base of ripe capsule:

12a. Stamens 2; corolla tube linear:
13a. Leaves grey-woolly beneath

13b. Leaves glabrous

12b. Stamens 4, corolla tube narrow below, usually inflatibuliform upwards:

14a. Pollen grain bands septe

14b. Pollen grain bands not septe:

15a. Bracts and bracteoles various, not spatulate

15b. Bracts and bracteoles linear-oblong, obtuse, spatulate

Mackenziesia 14

6b. Corolla lobes imbricate in bud:

16a. Ovules 3-10 in each cell; capsules normally 6 or more seeded:

17a. Capsules compressed at right angles to the septum; seeds ovoid, hardly compressed

17b. Capsules subterete; seeds much compressed

Andrographis 2

Gynnostaechyos 9

16b. Ovules 2 or rarely 1 in each cell; capsules 4 or less seeded:

18a. Corolla lobes 5; subequal:

19a. Calyx 4-partite

19b. Calyx 5-partite:

20a. Stamens 4; corolla tube inflated above

20b. Stamens 2; corolla tube long, slender

Asperotrochos 3

Pseudadromothemum 10

18b. Corolla distinctly 2-lipped:

21a. Stamens 4

21b. Stamens 2:

22a. Placentas separating elastically from valves from base upwards

22b. Placentas not separating elastically from valves:

23a. Anther cells parallel, subequal

23b. Anther cells one higher than the other:

24a. Anther cells, at least the lower, with a basal spur, when not spurred apiculate

24b. Anther cells neither spurred nor apiculate:

25a. Bracts and bracteoles small, subequal; corolla white

25b. Bracts and bracteoles larger, in opposite valvate pairs; corolla rose or purple
1. **Acanthus** L.


Erect undershrubs up to 1.5 m tall. Leaves up to 8.5 × 5 cm, pinnately lobed, lobes ending in spines. Flowers c. 5.5 cm long, glabrous, shining. Seeds spongy.

*Fl. & Fr.*: May—July.

Common; along banks of tidal streams; Tellicherry.

2. **Andrographis** Wall. ex Nees

1a. Corolla up to 1.5 cm long; anthers prominently bearded

1b. Corolla above 1.5 cm long; anthers not prominently bearded


Erect undershrubs, up to 0.75 m tall. Leaves c. 12 × 2.5 cm, oblong-lanceolate, acute, cuneate at base, sparsely pubescent. Flowers up to 2 cm long, pink with dark purple-red blotsches on lower lip. Capsules c. 2.7 cm long, elliptic-oblung.

*Fl. & Fr.*: October—December.

Common as an undergrowth in secondary forests; Chekkary, Kannoth.


Erect, much branched herbs up to 50 cm tall. Leaves c. 5.5 × 1.5 cm, elliptic to lanceolate, acute at both ends. Flowers pink, in terminal or axillary panicles. Capsules c. 3 cm long, linear-oblung, compressed.

*Fl. & Fr.*: November—December.
Common; in open waste places; Panur.

3. **Asystasia Bl.**

1a. Leaf base rounded or subcordate

   *A. gangetica* 2

1b. Leaf base narrowed

   *A. dalzelliana* 1


Decumbent undershrubs c. 0.75 m tall. Leaves c. 12 × 4.5 cm, elliptic-ovate, acute, narrowed at base. Flowers up to 1.5 cm long, lilac, in terminal second racemes. Capsules c. 2.7 cm long, elliptic.

*Fl. & Fr.*: July—November.

Common as an undergrowth in secondary forests; Kannoth, Taliparamba.


Diffuse herbs, c. 45 cm tall. Leaves c. 6 × 2 cm, ovate, acute, rounded or subcordate at base. Flowers c. 3 cm long, pale yellow, in terminal one sided racemes.

*Fl.*: November—December.

Common in wastelands in plains; Cannanore.

4. **Barleria L.**

1a. Plants with spines:

2a. Capsules with 2 seeds

   *B. prionitis* 4
2b. Capsules with more than 2 seeds

1b. Plants without spines:

3a. Corolla c. 7.5 cm long; tube reddish purple  
*Barleria involucrata*  3

3b. Corolla less than 7.5 cm long; tube yellow  
*Barleria courtillica*  2


Under shrubs, up to 0.50 m tall. Leaves c. 2 × 1.5 cm, orbicular or ovate, spinous-mucronate. Flowers c. 3 cm long, white, solitary. Capsules ellipsoid.

*Fl. & Fr.*: November—December.

Common; in open waste places; Flangad.


Shrubs up to 1 m tall. Leaves c. 20 × 7 cm, elliptic-lanceolate, acuminate at both ends. Flowers c. 6.5 cm long, blue, in terminal or axillary spikes. Capsules oblong, 4-seeded.

*Fl. & Fr.*: January—July.

Common as an undergrowth in shady parts of evergreen forests; Ambayathode, Kannoth.


Shrubs up to 1.5 m tall. Leaves up to 29 × 8 cm, elliptic-lanceolate, more or less pubescent, acuminate at both ends. Flowers c. 7.5 cm long, blue. Capsules c. 3.5 cm long, oblong, glabrous.

*Fl. & Fr.*: February—November.
Common; in shades of dense evergreen forests; Chandanathode, on way to Panath.


Shrubs up to 1 m tall. Leaves c. 10.5×4 cm, elliptic-acute. Flowers c. 3 cm long, yellow, solitary in lower axils, spicate above. Capsules ovoid, 2-seeded.

*Fl. & Fr.:* July—December.

Common; in open wastelands; Kannoth.

5. Blepharis Juss.


Prostrate herbs. Leaves c. 1×0.5 cm, obovate-oblong, mucronate, obtuse. Flowers c. 1 cm long, blue. Capsules ellipsoid, surrounded by bracts and sepals.

*Fl. & Fr.:* November—December.

Common along the seashore; Cannanore.

6. Dipteracanthus Nees *emend.* Bremek.


Diffuse herbs, sometimes rooting at lower nodes. Leaves c. 5×2 cm, elliptic or ovate, acute. Flowers c. 2.5 cm long, pale blue, solitary in the axils. Capsules c. 2 cm long, linear-oblong, sparsely hairy.
Fl. & Fr.: March—July.

Common; in open wastelands; Cannanore, Tellicherry.

7. Ecballium Kurz

Ecballium viride (Forssk.) Alston var. laetevirens (Vahl) Raizada

Erect woody undershrubs, up to 1 m tall. Leaves up to 14 × 4 cm, broadly lanceolate, acuminate, glabrescent. Flowers c. 3.5 cm long, pale blue, in terminal spikes.

Fl.: November—December.

Common; in secondary forests as an undergrowth; Kannoth.

8. Eranthemum L.


Undershrubs, up to 75 cm tall. Leaves up to 14 × 5 cm, elliptic, acuminate, attenuate at base. Flowers c. 4 cm long, blue, in axillary and terminal spikes. Capsules c. 1.5 cm, oblong, glabrous.

Fl. & Fr.: February—December.

Common as an undergrowth in moist deciduous forests; Kannoth, Toletty.


1a. Leaves only at the base of stem

G. sebrifolium 2

1b. Leaves otherwise:
2a. Leaves serrulate; corolla less than 1.8 cm long, pubescent  
G. cuneovulgaris 1

2b. Leaves entire; corolla about 2.5 cm long, glabrous  
G. latifolium 3


Undershubs, up to 0.15 m tall. Leaves c. 19 × 6.3 cm, ovate, acute, slightly decurrent at base. Flowers pale greenish yellow. Capsules c. 1.5 cm long, linear.

Fl. & Fr.: March—November.

Common as an undergrowth in evergreen forests; Nedumpeyil.


1a. Bracts foliaceous, conspicuous  
var. bracteatum

1b. Bracts not foliaceous; inconspicuous  
var. febrifugum

var. bracteatum Ramach. var. nov.

A Gymnostachyum febrifugum; Benth var. febrifugum, bracteis magnis foliaceis conspicuis differt.

Scapigerous herbs up to 40 cm tall. Leaves c. 30 × 11 cm, ovate, rounded at base and long decurrent on the petiole; subentire or undulate, crenulate, lineolate above, nearly glabrous. Panicles up to 25 cm long, radical. Flowers 2.5—3 cm long, Bracts ovate-cordate, foliaceous conspicuous.


var. febrifugum

Scapigerous herbs up to 0.50 m tall. Leaves c. 30 × 11 cm, ovate, acute, rounded at base, with long decurrent petioles. Flowers c. 3.5 cm long, pale greenish yellow, in terminal panicles.
Flora of Cannanore

Fl.: November—December.

Common as an undergrowth in evergreen forests, Kannuthi.


1a. Leaves decurrent at base var. decurrentis
1b. Leaves not decurrent at base var. latifolium

var. latifolium

Undershubs up to 1 m tall. Leaves up to 32 x 17 cm, broadly ovate, acute, truncate at base. Flowers pale greenish yellow, in axillary racemes or panicles. Capsules up to 2 cm long, linear, bluntly pointed, glabrous.

Fl. & Fr.: February—November.

Common as an undergrowth in dense evergreen forests; Theerthundamala.


Leaves c. 20 x 5 cm, acuminate at base. Calyx lobes smaller.

Fl. & Fr.: November—December.

Common as an undergrowth in evergreen forests above 800 m in ghats; Ambayathode, Chandanathode

10. HEMIGRAPHIS Nees

1a. Corolla tubular, vestigial; longer filaments glabrous in the upper half, hairy below H. venosa 2
1b. Corolla funnel-shaped; longer filaments densely bearded in the upper half H. latifrons 1

Straggling undershrubs up to 50 cm tall. Leaves up to 10 × 3.5 cm, ovate, acuminate, crenate-serrate. Flowers blue. Capsules c. 2 cm long, tetragonal, pubescent, 6-seeded.

*Fl. & Fr.*: February—March.

Common as an undergrowth in moist deciduous forests; Tolpetty.


Creeping herbs, rooting at lower nodes. Leaves up to 3 × 0.8 cm, ovate, acute, crenate, pubescent. Flowers c. 1 cm long, pink, in pseudo-axillary spikes or heads. Capsules c. 1 cm long, linear, glabrous, 6-seeded, compressed, discoid, hygroscopically hairy.

*Fl. & Fr.*: November—December

Common as an undergrowth in open areas in ghats; Baveli.


1a. Inflorescence spinous

1b. Inflorescence not spinous


Erect herbs up to 50 cm tall. Leaves up to 14 × 2.5 cm, lanceolate, acute at both ends. Flowers c. 2.5 cm long, pale blue, in axillary whorls.

*Fl.*: November—December.
Common; in moist situations in plains; Kannoth.


Erect herbs up to 50 cm tall. Leaves up to 14 x 2.5 cm, obovate or lanceolate, narrowed at both ends. Flowers c. 1.5 cm long, pale blue, in axillary whorls. Capsules c. 2 cm long, narrowly oblong, glabrous.

*Pl. & Fr.*: November - December.

Common; in moist situations in plains; Cannanore, Pazhassi.

12. *JUSTICIA* L.

*Justicia* L. (*sensu lato*) consists of more than 300 species distributed throughout the World. Nees (in Wall. Pl. As. Rar. 3: 76-100. 1832) split this into different genera like *Justicia* (*sensu stricto*), *Adhatoda*, *Gendarussa* and *Rostellularia*. The treatment of Nees did not receive much attention till the revival of these genera by Bremer (Verh. Nederl. Acad. Wet. 45(2): 1-18. 1948). However, Stearn (J. Arn. Arb. 52: 636-637. 1971) is in favour of maintaining the *sensu lato* status of the genus.

1a. Anther cells at least the lower spurred at the base:

2a. Calyx 5-partite:

3a. Erect shrubs; flowers more than 2.5 cm long

3b. Herbs or almost undershrubs; flowers 1.0-1.5 cm long:

4a. Leaves sessile

4b. Leaves petiolate:

5a. Bracts ovate or lanceolate; conspicuous

5b. Bracts linear-lanceolate; inconspicuous

2b. Calyx 4-partite:

6a. Spikes cylindrical; bracts and bracteoles as long

as or longer than calyx lobes:
7a. Leaves orbicular

7b. Leaves ovate or oblong

6b. Spikes linear; bracts and bracteoles shorter than the calyx lobes

1b. Anther cells not spurred at base


Erect undershrubs, up to 1.5 m tall. Leaves up to 17 × 6.5 cm, elliptic or lanceolate, acuminate, tapering at base, glabrous. Flowers c. 3.5 cm long, white, in axillary spikes. Capsules ovate, compressed; seeds 1 or 2, orbicular, compressed.

Fl. & Fr.: January—February.

Commonly grown as a hedge plant; also in waste places; Pazhasseri.

Stearn (l.c.) points out that Justicia adhatoda L. is the type species of the genus Justicia L.


Erect undershrubs, up to 1.5 m tall. Leaves up to 12 × 4 cm, ovate, acuminate, glabrous. Flowers c. 1 cm long, white spotted with pink, in terminal spikes. Capsules c. 1.5 cm long, linear-oblong, glabrous.

Fl. & Fr.: March—April.

Common; along streams in moist deciduous forests; Chandanathode, Kannoth.

Erect herbs, up to 30 cm tall. Leaves c. 5 × 3.3 cm, sparsely pubescent. Flowers c. 0.8 cm long, pale pink, in axillary or terminal spikes. Capsules c. 0.7 cm long, linear-oblarg, villous at apex.

Fl. & Fr.: November May.

Common; in grassy slopes in ghats; Baveli, Chandanathode.

Ellis (l.c.) has shown that Justicia japonica Taub. and J. simplex D. Don are conspecific.


Erect herbs, up to 30 cm tall with thick rootstocks. Leaves up to 4 × 1 cm, sessile, oblong or linear-oblarg, glabrous. Flowers c. 1.1 cm long, white, with red spots. Capsules c. 1.3 cm long, oblong, in terminal spikes, up to 4.5 cm long.

Fl. & Fr.: February–March.

Occasional; in grassy slopes; on way to Brahmagiri.


Prostrate herbs, up to 15 cm long. Leaves c. 1 × 0.6 cm, orbicular, sparsely pubescent. Flowers pale pink, in terminal spikes. Capsules c. 0.3 cm long, urdvid, glabrous.

Fl. & Fr.: November—December.

Common on rocks along seashore; Cannanore.


Erect shrubs, up to 2.5 m tall. Leaves up to 19 x 4.5 cm, elliptic-lanceolate, acute, attenuate at base. Flowers white with purple streaks, in terminal panicles up to 20 cm long. Capsules up to 2.5 cm long, clavate, 4-seeded.

*Fl. & Fr.*: January—March.

Common in semievergreen forests; Chandanathode.


Diffuse or prostrate herbs, rooting at lower nodes. Leaves up to 2.3 x 12 cm, orbicular, or suborbicular, sparsely pubescent. Flowers c. 0.8 cm long, pink in axillary or terminal spikes.

*Fl. & Fr.*: May—November.

Common; in damp places in plains; Ambayathode, Chandanathode, Kannoth, Tellicherry.


Erect undershrubs, up to 1.5 m tall. Leaves up to 15.5 x 7 cm, elliptic, acuminate at both ends, sparsely pubescent. Capsules c. 1.5 cm, linear-oblong, glabrous.

*Fl. & Fr.*: November—March.

Common as an undergrowth in moist deciduous forests; Aralam, Kannoth.

1a. Leaves entire or undulate

1b. Leaves crenate or crenate-serate

*L. incurva* *L. fasciculata*


Diffuse, softly villous herbs up to 30 cm tall. Leaves c. 3.5×2 cm, ovate or lanceolate, obtuse, decurrent at base. Flowers c. 1 cm long, pale purple. Capsules c. 0.6 cm long, oblong, thin, in axillary or terminal leafy cymes.

*Fl.* & *Fr.*: April—May.

Common as an undergrowth in ghats; Kannoth R.F.


Diffuse herbs, up to 25 cm tall. Leaves 2-10×1-3 cm, variable, ovate or lanceolate, acuminate, decurrent at base. Flowers white, in axillary or terminal spikes.

*Fl.*: February—April.

Common; in open wastelands; Arunappara, Kannoth.

14. *Mackenzia* Nees


Freck shrubs, up to 1.5 m tall. Leaves up to 15×3.5 cm, lanceolate, cundate-acuminate, scabrous above, tawny pubescent beneath. Flowers c. 1.7 cm long, pale blue, in many flowered heads. Capsules c. 1.2 cm long, linear-oblone, glabrous.
Fl. & Fr.: July—November.

Common as an undergrowth in evergreen forests; Chandanathode, Kannoth.

15. Nelsonia R. Br.


Trailing herbs. Leaves variable; basal ones c. 11 x 4 cm, oblong, obtuse, acuminate, terminal ones c. 3 x 1.5 cm, oblong, sparsely pubescent. Flowers c. 0.7 cm long, purple, in spikes. Capsules c. 0.5 cm long, oblong, acute, glabrous.

Fl. & Fr.: February—March.

Common as an undergrowth in moist deciduous forests; Begur, Chandanathode.


1a. Seeds glabrous:

2a. Flowers in spikes:

3a. Bracts lanceolate

3b. Bracts rounded:

4a. Bracts glandular hairy

4b. Bracts glabrous

N. hupulinus 4

N. heyneanus 3

2b. Flowers in heads:

5a. Calyx lobes lanceolate

5b. Calyx lobes linear

N. nilgheenanus 4

N. teterhamilis 5

1b. Seeds hairy

N. asper 1

Erect shrubs, up to 1.5 m tall. Leaves up to 17 × 6.5 cm, elliptic-ovate, acuminate, tapering at base, scabrid above, hirsute beneath, crenate. Flowers c. 2 cm long, pale blue, in spikes.

_Et._: February—April.

Occasional; in shola forests, c. 950 m; on way to Brahmagiri, Theerthamalala.


Erect undershrubs, up to 1.5 m tall. Leaves up to 18 × 5 cm, lanceolate, acuminate at both ends, glabrous. Flowers c. 1.5 cm long, white, solitary, axillary. Capsules c. 1.5 cm long, glabrous.

_Et._ & _Fr._: February—December.

Common as an undergrowth in evergreen forests; Kannoth.


Erect shrubs, up to 1.5 m tall. Leaves up to 19 × 7.5 cm, ovate or elliptic, acuminate, with a few bulbous hairs above and silky hairs on both surfaces. Flowers c. 1.5 cm long, pale blue, in trichotomous cymes.

_Et._ & _Fr._: October—November.

Common as an undergrowth in evergreen forests; Kannoth.


Erect undershrubs, up to 1.5 m tall. Leaves c. 20 × 7.5 cm, elliptic-ovate, acuminate, slightly connate at base, rugose. Capsules c. 1.2 cm, enclosed in elliptic-obovate, obtuse bracts.
Fr.: May—July.

Occasional as an undergrowth in dense evergreen forests above 840 m in ghats; Begur, Tirunalli.

The purple glandular-hairy bracts are quite characteristic of this species.


Erect shrubs, up to 1.5 m tall. Leaves up to 20 × 7.5 cm, ovate acuminate, rounded at base, crenate, hispid above, sparsely pubescent beneath. Flowers c. 2 cm long, pale blue. Capsules c. 1.5 cm long, linear-oblong, glabrous.

Fl. & Fr.: May—November.

Common nearby streams in evergreen forests, c. 825 m; on way to Brahmagiri, Tirunalli.


Erect shrubs, c. 1.5 m tall. Leaves up to 5 × 2 cm, elliptic-lanceolate, acute, decurrent at base, scabrous hispid. Flowers c. 2 cm long, pale blue,

Fl. & Fr.: April—May.

Occasional; in shola forests, c. 950 m; Theerrhundamala.

15. *Peristrophe* Nees


Erect undershrubs, up to 0.75 m tall. Leaves c. 23 × 9 cm, elliptic, long-acuminate, glabrous. Flowers c. 3 cm long, pink, in axillary and terminal cymes. Capsules ellipsoid; seeds 4, discoid, compressed, papilllose.
Fl. & Fr.: March—November.

Common as an undergrowth in evergreen forests; Chandanathode, Tirunalli.


Diffuse pubescent herbs, up to 25 cm tall. Leaves c. 7.5 x 2.5 cm, ovate, acuminate. Flowers white, in dense, terminal spikes. Bracts c. 0.7 x 0.7 cm, orbicular. Capsules c. 0.6 cm long.

Fl. & Fr.: December—March.

Common as an undergrowth in deciduous forests; Kannoth, Tolpetty.

Micranthus Wendl. (1798) is the earliest name of this genus and the same has been used by Ecklon (Top. Verz. 43. 1827) to a plant of the family Fridnaeae and that is now conserved. So, the name Micranthus Wendl is not available for this genus.

17. Phleophyllum Nees


Erect shrubs, up to 1.5 m tall. Leaves up to 19 x 5.5 cm, ovate-lanceolate, long cuspitate-acuminate, depressed woolly beneath. Flowers pale blue, c. 1.5 cm long, in spikes.

Fl. & Fr.: March—December.
Occasional; in evergreen forests near rocky slopes, 500 m; Nedumpooyil.

18. Pleocanthis Bremek


Erect undershrubs with woody rootstocks, up to 45 cm tall. Leaves up to 4 x 2.5 cm, ovate, acute, subcuneate at base, softly glandular-hairy. Flowers c. 2.5 cm long, bluish purple, in axillary or terminal spikes.

Fl. & Fr.: November—December.

Rare; once collected from hills of Drahmagiri above 875 m.

First report from anywhere other than Nilgiris.

19. Pseuderanthemum Radlk.


Erect undershrubs, up to 0.5 m tall. Leaves up to 15 x 5 cm, ovate or elliptic acuminate. Flowers c. 3 cm long, white in terminal spikes. Capsules c. 2.5 cm long, oblong, glabrous.

Fl. & Fr.: March—July.

Common as an undergrowth in evergreen forests; Kannoth, Nedumpooyil.

20. Rhinacanthus Nees

Erect undershrubs, up to 1.5 m tall. Leaves c. 17 × 4.5 cm, elliptic-lanceolate, acuminate, sparsely pubescent. Flowers c. 2 cm long, white, solitary or 2–3 together in lax terminal panicles.

Fl.: November—December.

Common as an undergrowth in secondary forests; Ambayathode.


Erect herbs. Leaves up to 9 × 4 cm, ovate or elliptic, obtuse, glabrous. Flowers c. 4 cm long, deep blue. Capsules c. 3 cm long, linear-oblong, glabrous, shining, in axillary cymes.

Fl. & Fr.: March—November.

Common in open wastelands; Tellicherry.

22. Rungia Nees

1a. Erect shrubs

1b. Erect or diffuse herbs:

2a. Flower bearing bracts glabrous

2b. Flower bearing bracts villous or woolly


Diffuse herbs, c. 15 cm tall. Leaves c. 9 × 4 cm, variable, ovate or lanceolate or linear-spathulate, obtuse. Flowers small, c. 0.5 cm long, blue, in terminal spikes; bracts elliptic, mucronate, narrowly margined.

Fl. & Fr.: March—April.

Common as an undergrowth in open wastelands; Cannanore, Tulpalley.

Divaricately branched herbs, up to 15 cm tall. Leaves c. 2 x 0.8 cm, elliptic-oblongolate. Flowers blue, in short one-sided spikes. Bracts dimorphic, the barren bracts elliptic-acute and the flowering bracts orbicular with conspicuous hyaline ciliate margins.

Fl.: November—December.

Common in open wastelands; Kannoth.


Erect undershrub, up to 1 m tall. Leaves up to 14 x 5.5 cm, oblong-lanceolate, acuminate at both ends, glabrous. Flowers c. 1 cm long, white, in terminal or axillary one-sided spikes; bracts c. 1.5 cm long, purplish.

Fl. & Fr.: November—December.

Occasional; in moist deciduous forests; Tolpetty.

23. Staurogyne Wall.

1a. Stem branches trailing; hispid, not viscid  
S. zeypantica 2

1b. Stem branches not trailing; viscosous-pubescent  
S. glauca 1


Erect herbs, up to 25 cm tall. Leaves up to 4 x 1 cm, oblongolate-spathulate. Flowers c. 0.6 cm long, purple, in axillary or terminal spikes. Capsules c. 0.5 cm long, oblong, glabrous.
Fl. & Fr.: December—January.

Common as an undergrowth in moist deciduous forests; on way to Maltamur.


Prostrate herbs. Leaves up to 4.5 × 1.5 cm, elliptic-oblong or obovate, glabrous above, sparsely pubescent beneath. Capsules c. 0.5 cm, oblong, glabrous, in axillary or terminal spikes.

Fl.: March—April.

Common as an undergrowth in moist situations in ghats; Chandanathode.

Breukelkamp (in Proc. Kon. Ned. Akad. Wet. Ser. 56: 541–546. 1953) and (in Nova Guinea new ser. 8: 129–155. 1957), treats the genus, *Staurogyne* Wall. under Scrophulariaceae. Airy Shaw (Dictionary of Flowering Plants and Ferns 8th ed. 1095. 1973) states: "Acanthaceae or Scrophulariaceae. The genus is almost exactly intermediate between the two families". Till the problem is finally resolved, we are placing this genus under the family Acanthaceae as has been done by Hook. f. (i.c.) and Gamble (i.c.)

24. **Thunbergia** Retz. nom. cons.

1a. Flowers yellow
    2. *T. myorenus* 1
1b. Flowers blue
    3. *T. grandiflora* 1


Large climbers. Leaves c. 11 × 4.5 cm, elliptic-lanceolate, acuminate, acute at base. Flowers c. 5 cm long, blue. Capsules c. 5 cm long, in pendulous racemes.
Fl. & Fr.: February—July.

Common; in open areas in plains; Kuthuparamba.


Large climbers. Leaves up to 18 x 6 cm, elliptic-lanceolate, acuminate, rounded or acute at base. Flowers c. 6 cm long, bright yellow. Capsules c. 3.5 cm long, in long pendulous racemes.

Fl. & Fr.: February—November.

Common; in dense shades of evergreen forests, c. 800 m; Theerthundamala.

95. VERBENACEAE

1a. Prostrate herbs

1b. Erect or climbing herbs or shrubs or trees:

2a. Inflorescence capitulate or subcapitate, peduncled:

3a. Flowers less than 10; bracts 6, foliaceous

3b. Flowers many; bracts not as above

2b. Inflorescence not capitulate or subcapitate:

4a. Leaves digitate

4b. Leaves simple:

5a. Large trees more than 20 m tall; fruiting calyx much inflated

5b. Herbs, shrubs or small trees (up to 10 m); fruiting calyx not much inflated:

6a. Inflorescence spikes or racemes; centripetal:

7a. Flowers pedicelled:

8a. Flowers violet; branches armed

8b. Flowers white; branches unarmed

7b. Flowers sessile

6b. Inflorescence cymose; centrifugal:

9a. Flowers actinomorphic

Phyla 5
Symphorema 8
Lantana 4
Vitex 10
Tectona 9
Duranta
Citharexylum
Stachynarpheta 7
Callicarpa 1
9b. Flowers zygomorphic:

10a. Drupes with 4 pyrenees

10b. Drupes with 1 pyrene:

11a. Flowers large, more than 2.5 cm long; calyx with 2-3 glands

11b. Flowers small, less than 1 cm long; calyx without such glands

1. Callicarpa L.


Small trees, up to 5 m tall. Leaves up to 30x14 cm, broadly elliptic, acuminate, glabrescent above, densely stellately tomentose beneath. Flowers c. 1 cm long, in axillary corymbose cymes. Drupes c. 0.5 cm long, globose, glabrous.

*Fl. & Fr.*: November—July.

Common; in moist deciduous forests; Alakode, Kannoth.

2. Clerodendrum Burm. ex L.

1a. Flowers white:

2a. Corolla tube drooping

2b. Corolla tube not drooping:

3a. Plants dense-tomentose

3b. Plants glabrous

1b. Flowers not white:

4a. Flowers blue

4b. Flowers not

Straggling shrubs, c. 1.5 m tall. Leaves up to 6×2.5 cm, elliptic or obovate. Flowers c. 5.5 cm long, white, in axillary cymes. Drupes pyriform.

*Fl. & Fr.:* November—December.

Common along banks of backwaters; Tellicherry.


Erect shrubs, up to 1 m tall. Leaves c. 13×19 cm, 3-5-lobed; lobes acuminate, cordate at base. Flowers c. 3.5 cm long, in terminal dichotomous cymose panicles.

*Fl.:* July—August.

Common; in open wastelands; Cannanore, Tolpetty.

Introduced as an ornamental and is now getting naturalized in this region.


Undershrubs, up to 1.5 m tall. Leaves c. 26×11 cm, oblong or ovate, coarsely and sharply serrate. Flowers c. 2.5 cm long, in terminal bracteate rhyssoid panicles. Drupes obovoid, purple.

*Fl. & Fr.:* July—November.

Common; in moist deciduous forests, c. 825 m; Tirunalli, Tolpetty.


Erect woody shrubs up to 2.5 m tall. Leaves up to 16×4 cm, ovate or orbicular, acuminate, cordate at base; sparsely pubescent. Flowers c. 1 cm long, in terminal panicles. Drupes globose.
Flora of Cannanore

Pl. & Fr.: July—November.

Common; in open wastelands; Tolliberry, Tolpetty.

Clerodendrum indicum (L.) O. Kuntze is cultivated as an ornamental.

3. Gmelina L.

1a. Armed shrubs

1b. Unarmed tree

G. asiatica 2

G. arborea 1


Trees, up to 10 m high. Leaves c. 15×14 cm, large, deltoid-ovate, acuminate, fulvous tomentose beneath; petioles c. 10 cm long. Flowers c. 4.5 cm long, yellow, in terminal panicles.

Pl. : March—April.

Common; in moist deciduous forests; Begur, on way to Kannoth, Tolpetty.


Straggling shrubs. Leaves c. 10×4 cm, elliptic or ovate, glabrous, above, glabrescent beneath. Drupes c. 1.5×1 cm, obovoid, glabrous.

Fr. : November December.

Common in open wastelands; Canaanore.

4. Lantana L.

1a. Stems with prickles

1b. Stems without prickles

L. camara 1

L. crenulata 2

Straggling shrubs. Leaves c. 8.5 x 4 cm, ovate-acute, scabrid. Flowers c. 1 cm long, orange-red. Drupes globose, bluish black when ripe.

Fl. & Fr.: November—December.

Common; in open secondary forests; Kanoth.


Erect undershrubs up to 1 m tall. Leaves c. 8 x 4 cm, ovate-lanate, acuminate, scabrid. Flowers c. 1 cm long, pink.

Fl.: November—December.

Occasional; along edges of moist deciduous forests; Manantoddy.

Introduced, getting naturalized in the district.

5. Phyla Lour.


Leaves c. 3 x 1.1 cm, cuneate-spathulate, serrate at apex. Flowers c. 0.2 cm long, white, in capitulate spikes.

Fl.: November—December.

Fairly common in plains; Tellicherry.


1a. Climbers 

1b. Erect undershrubs

Leaves up to $28.5 \times 10.5$ cm, ovate or ovate-oblanceolate, abruptly cuspitate-acuminate, cordate at base, glabrous above, sparsely pubescent beneath. Drupes c. 0.5 cm, globose, glabrous.

Fl. & Fr.: March—April.

Common; along water courses in evergreen forests; Aralam.


Leaves up to $10.5 \times 5.5$ cm, broadly elliptic-ovate, obtuse at apex with a very short point, rounded at base. Flowers c. 0.5 cm long, greenish yellow. Drupes c. 0.5 cm, globose, glabrous.

Fl. & Fr.: May—November.

Common; on the banks of backwaters; Tellicherry.

7. Stachytagpheta Vahl nom. cons.

1a. Flowers purple  S. mutabilis 2
1b. Flowers blue  S. jamaicensis 1


Erect undershrubs up to 1 m tall. Leaves c. 9.5 $\times$ 3 cm, elliptic-ovate, acute, cuneate at base, crenate-serrate, glabrous. Flowers c. 1.2 cm long, in terminal spikes.

Fl.: February—July.

Common; in open wastelands; Kannoth, Mamantody.

Native of Tropical America.

Erect herbs, up to 50 cm tall. Leaves up to 7.5 × 4 cm, ovate, acute, serrate, scabrous. Bracts c. 1 cm long, linear. Flowers c. 1.8 cm long, in stout terminal spikes.

*Fl.*: February—March.

Occasional; in open wastelands; Kannoth, Manantoddy.

8. **Symphorema** Roxb.


Climbing shrubs. Leaves c. 3.2 × 1.5 cm, ovate-lanceolate, abruptly acuminate, glabrous above, stellate pubescent beneath. Bracts subequal, oblong, puberulous c. 1.8 cm long. Flowers c. 1.2 cm long.

*Fl.*: March—April.

Rare; once collected in evergreen forests above 500 m; Panoth.

Some taxonomists like A. R. Shaw (in Dictionary of Flowering Plants and Ferns, 9th ed. 1973) and H. N. Moldenke and A. L. Moldenke (in Dassanayake, Revised Handbook to the Flora of Ceylon 4 : 138. 1983) include this genus under a separate family Symphoremaeaceae as it differs from other members of Verbenaceae in having free-central placentation and 4-16 stamens.


Large deciduous trees up to 20 m tall. Leaves up to 35 × 17 cm, obovate, acute or acuminate, glabrous above, tawny tomentose beneath.
Flowers c. 0.5 cm long, white, in terminal cymose panicles. Drupes c. 2.5 × 2 cm, enclosed in enlarged calyx.

*Fl. & Fr.*: July—August.

Cultivated on a large scale by the Forest Department.

10. *Vitex Tourn. ex L.*

1a. Petioles winged

1b. Petioles not winged:

2a. Leaves sessile

V. *trifolia* 3

7b. Leaves petiolate

V. *negrundo* 2


Lofty trees, up to 25 m tall. Leaves 3-5-foliolate; leaflets lanceolate-acuminate, glabrous above, sparsely pubescent beneath. Flowers c. 0.8 cm long, blue, in sparsely pubescent terminal panicles.

*Fl.*: March—May.

Occasional; in moist deciduous forests, 825 m; Begur.


Small trees, up to 5 m tall. Leaves 5-7-foliolate; leaflets lanceolate, grey pubescent beneath. Flowers c. 1 cm long, pale blue, in terminal panicles.

*Fl.*: February—July.

Commonly grown as a hedge plant; Kannoth, Manantoddy.

Shrubs, up to 1.5 m tall. Leaves 3-foliolate; leaflets elliptic or obovate or oblanceolate, obtuse, glabrous above, densely tomentose beneath. Flowers c. 1.5 cm long, pale blue. Drupes c. 0.7 x 0.3 cm, subglobose, purplish when ripe.

_Fl. & Fr._: May—July.

Common in open wastelands; Cannanore, Tellicherry.

_Citharexylum fruticosum_ L. and _Duranta erecta_ L. are cultivated within the area.

96. AVICENNIACEAE

**AVICENNA** L.


Small trees, up to 2.5 m tall. Leaves up to 10 x 4.2 cm, elliptic-oblong or obovate, obtuse, attenuate at base, glabrous above, brownish tomentose beneath. Flowers c. 1.2 cm long, yellow, in axillary capitate cymes. Capsules c. 4 x 2 cm, compressed, ovoid.

_Fl. & Fr._: April—November.

Common along banks of backwaters; Tellicherry.

97. LAMIACEAE _nom. alt. Labiatae_

1a. Nutlets succulent

   _Gomphostemma_ 6

1b. Nutlets dry:

2a. Stamens with anthers confluent:

3a. Lower lip of corolla declinate:

4a. Calyx deflexed in fruit:

5a. Lower lip of corolla flat; stigmas bifid

   _Ocimum_ 9

5b. Lower lip of corolla concave; stigmas entire

   _Orthosiphon_ 10

4b. Calyx suberect or declinate in fruit

   _Acrocephalus_ 1
3b. Lower lip of corolla oblong or ovate. 

6a. Flowers in capitulate heads. *Hypitis* 7

6b. Flowers not in capitulate heads:

7a. Flowers in spikes. *Anisochilus* 2

7b. Flowers in paniculate cymes. *Plectranthus* 11

2b. Stamens with anthers not confluent:

8a. Corolla lobes 4:

9a. Stamens included. *Cleome* 4

9b. Stamens exserted:


10b. Corolla lobes equal. *Eustertia* 5

8b. Corolla lobes 5:

11a. Upper lip of corolla hooded. *Leucas* 3

12a. Upper lip of corolla woolly. *Leucas* 3

12b. Upper lip of corolla not woolly. *Scutellaria* 13

11b. Upper lip of corolla short; nearly flat (not hooded). *Anisochilus* 3

1. **Acrocephalus** Benth.


Erect herbs up to 50 cm tall. Leaves c. 4 × 1.3 cm. ovate or lanceolate, subacute, decurrent. Flowers c. 0.5 cm long, in terminal heads; bracts c. 0.2 cm long, broadly ovate, shortly acuminate, cuneate at base.

*Fl.:* November-December.

Fairly common; in damp situations in plains; Kannur, Tellicherry.

2. **Anisochilus** Wall.


Erect herbs up to 60 cm tall. Leaves up to 8 x 4 cm, broadly ovate, obtuse, cordate or rounded at base, slightly pubescent, tomentose beneath. Flowers c. 0.7 cm long, pale purple, pubescent outside, in terminal spikes up to 20 cm long; bracts c. 2.5 cm long, ovate, acuminate, pubescent.

Fl. : November—December.

Occasional along the margins of moist deciduous forests; Tolpetty.

3. Anisomeles R. Br.

1a. Fruiting calyx hispid

1b. Fruiting calyx softly villous

A. indica 1

A. malabarica 2


Erect undershrubs up to 75 cm tall. Leaves up to 8 x 4 cm, ovate, slightly cuneate at base, softly pubescent on both surfaces. Flowers c. 1.5 cm long, bluish purple, in axillary spikes in florescences.

Fl. : November—December.

Common; in open wastelands; on way to Kannoth.


Erect undershrubs up to 75 cm tall. Leaves up to 10 x 6 cm, oblong-lanceolate, acute, rounded at base, pale above, softly white tomentose beneath. Flowers c. 2 cm long, pale purple, slightly pubescent outside; in spikes.

Fl. : November—December.
Common in open wastelands; Elangad.

4. Colebrookea J.E. Smith


Spreading shrubs, up to 2.5 m tall. Leaves up to 20 x 5 cm, oblanceolate, acuminate, acute at base, softly pubescent. Flowers c. 0.7 cm long, white, in axillary spikes up to 10 cm long.

Fl.: November—March.

Common along the margins of semi-evergreen forests; Chandanathode, Poriya.

5. Eusteralis Rafin.


1a. Plants pubescent; nodal scars not prominent

E. decemensis 1

1b. Plants glabrous; nodal scars prominent

E. praecox 2


Aquatic herbs up to 25 cm tall. Leaves many in a whorl, narrowly linear, entire, puberulous, c. 0.6 x 0.2 cm. Flowers c. 0.6 cm long, pink, in terminal spikes up to 6 cm long.

Fl.: February—March.

Common in paddy fields; c. 800 m; Arunapara.

Erect herbs up to 30 cm tall; stems thick, with prominent nodal scars. Leaves with more distant whorls. Spikes slender, c. 2.5 cm long.

*Fl.*: March—April.

Common in sandy places in plains; Muzhaplangad.

6. **Gomphostemma** Wall. ex Benth.


Erect undershrubs up to 75 cm tall. Leaves up to 27 x 12 cm, obovate-ovate, subacute, abruptly emarginate, decurrent on the petiole, shortly hirsute above, densely tomentose beneath. Flowers c. 1.5 cm long, yellow, in terminal spikes, c. 20 cm long.

*Fl.*: May—June.

Common; in the shades of evergreen forests; Tirunalli.

7. **Hypitis Jacq. nom. cons.**


Erect herbs up to 75 cm tall. Leaves up to 6.5 x 3.5 cm, ovate, sinuate, denticulate, cordate at base, tomentose. Flowers c. 1 cm long, blue.

*Fl.*: November—December.

Common weed along roadsides and in wastelands in plains; Kannoth, Tellicherry.

1a.-mouth of the calyx oblique:

2a. Leaves ovate

2b. Leaves linear or linear-lanceolate

1b. Mouth of the calyx straight:

3a. Calyx teeth erect, merely spreading, throat naked, whorls axillary:

4a. Leaves white tomentose beneath

4b. Leaves not white tomentose beneath:

5a. Leaves ovate

5b. Leaves lanceolate:

6a. Flowers c. 1.2 cm long

6b. Flowers more than 1.5 cm long

3b. Calyx teeth erect and usually stellately spreading, throat villous; whorls terminal but sometimes in upper axils:

7a. Leaves up to 2.5 cm broad, subobtuse, distantly shallowly crenate

7b. Leaves more than 2.5 cm broad, acute, crenate-serrate:

8a. Leaves lanceolate

8b. Leaves ovate


Herbs with straggling branches up to 75 cm tall. Leaves up to 9 × 4 cm, acute, truncate or subcordate at base, pubescent. Flowers c. 1.5 cm long, white in axillary whorls c. 2 cm across.

*Fl. & Fr.*: March—July.

Common; in evergreen forests above 800 m; Begur, Nedumpoyil, Tolkeddy.

Procumbent herbs up to 75 cm tall. Leaves up to $5.5 \times 3.5$ cm, obtuse, rounded at base, pubescent. Flowers c. 1.7 cm long, white, in axillary, 4-15-flowered whorls, c. 2 cm across.

*Fl.* & *Fr.*: November—July.

Common: along margins of evergreen forests; Arunapara, Kanoth.


Erect undershrubs up to 60 cm tall. Leaves up to $13 \times 5$ cm, acute, rounded, sparsely pubescent. Flowers c. 1.5 cm long, in terminal and axillary whorls, c. 3 cm across.

*Fl.* & *Fr.*: November—March.

Common; in semievergreen forests, c. 825 m; Begur, Chandanathode.


Stout undershrubs up to 75 cm tall. Leaves up to $10 \times 2$ cm, lanceolate, obtuse, narrow at base, hispid-pubescent. Flowers c. 1 cm long, in terminal whorls, c. 1.7 cm across.

*Fl.* & *Fr.*: November—March.

Common in grasslands, 875 m; Brahmagiri, Chandanathode, Theer thundamala.


Erect herbs up to 50 cm tall. Leaves up to $6 \times 0.5$ cm, linear-lanceolate, obtuse, entire or slightly serrate. Flowers c. 1.2 cm long, white, in axillary or terminal whorls, c. 1.5 cm across.

*Fl.*: January—July.
Common; in open wastelands; Manantoddy, Tellicherry.


Straggling undershrubs up to 75 cm tall. Leaves up to 5 × 3 cm, ovate or rounded, obtuse, rounded or cordate at base. Flowers c. 1.5 cm long, white, in whorls c. 1.5 cm across.

*Fl. & Fr.*: November—December.

Common; in moist deciduous forests, c. 850 m; Hilldale, Tirunalli.


Procumbent herbs up to 50 cm tall. Leaves up to 3.5 × 1.5 cm, obtuse, sparsely pubescent. Flowers c. 1.2 cm long, white, in axillary or terminal 1-2-flowered whorls c. 1.5 cm across.

*Fl. & Fr.*: November—December.

Common; in moist shady places; Aralem, Kannoth.


Erect, hoary, herbs, up to 60 cm tall. Leaves up to 7.5 × 3.5 cm, obtuse, cuneate at base, sparsely pubescent. Flowers c. 0.7 cm long, white; in axillary globose heads, c. 2.5 cm across.

*Fl.*: August—September.

Fairly common; in shades of moist deciduous forests; 825 m; Manantoddy.

Erect herbs, up to 50 cm tall. Leaves up to $8 \times 3$ cm, acute, narrowed at base, villous. Flowers c. 1.5 cm long; in terminal, solitary whorls, c. 2 cm across.

Fl.: November—December.

Common; in open grasslands above 875 m in ghats; Theerthamadamala.

9. Ocimum L.

1a. Lower calyx-teeth longer than the upper lip

\[ O. \textit{canum} \]

1b. Lower calyx-teeth shorter than the upper lip

\[ O. \textit{gratissimum} \]


Erect, much branched herbs, up to 45 cm tall. Leaves up to $6 \times 2$ cm, elliptic-lanceolate, narrowed at both ends. Flowers c. 0.6 cm long, white, in terminal racemes, up to 7 cm long.

Fl.: July—November.

Common; in open wastelands in plains; Kannoth, Kuthuparamba, Pappinissery.

Alston (in Trimen, Handb. Fl. Ceyl. 6: 234, 1931) and successive recent authors wrongly treated this species as conspecific with \( O. \textit{americanum} \) L. Morton (in J. Linn. Soc. Bot. Lond. 58: 234. 1962) has clearly shown that \( O. \textit{americanum} \) L. is quite different and conspecific with \( O. \textit{basilicum} \) L.


Erect undershrubs, up to 75 cm tall. Leaves up to 10.5 \times 4$ cm, ovate, acute, cuneate at base, sparsely pubescent on both sides. Flowers c. 0.7 cm long, pale greenish yellow; in terminal racemes, up to 7 cm long.
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**Fl.**: November—March.

Common near banks of streams in moist deciduous forests; Kannoth, Tolpetty.

10. **Orthosiphon** Benth.

1a. Upper leaves sessile  
O. rubicundus 2

1b. Upper leaves petiolated  
O. thymiflorus 2


1a. Stems purplish red  
var. rubicundus

1b. Stems greenish  
var. bokanukari

**var. rubicundus**

Erect undershrubs, up to 50 cm tall. Leaves up to 5.3 x 2.2 cm, ovate-lanceolate, acute, cuneate at base. Flowers c. 1.2 cm long, white with pink patches; in terminal racemes, up to 20 cm long.

**Fl.**: June—July.

Common; in moist deciduous forests; Bagelli.


Differs from the above variety by lax racemes (distantly flowered), smaller size of calyx etc.

**Fl.**: June—July.

Common; in moist deciduous forests; Bagelli.

Erect herbs up to 60 cm tall. Leaves up to 5 x 2.5, broadly ovate-cordate, acute, shortly cuneate at base. Flowers c. 1.2 cm long, pale purple; in terminal racemes up to 12 cm long.

Fl.: July—November.

Common; in moist deciduous forests, c. 800 m; Kannoth, Tolpetty.

11. PLECTRANTHUS L’Herit. nom. cons.


Erect undershrubs, up to 75 cm tall. Leaves up to 15 x 11 cm long, ovate, acute, rounded or slightly cordate at base. Flowers c. 2.5 cm long, pale lilac with dark blue upper lip; in terminal pyramidal panicles, up to 25 cm long.

Fl.: May—June.

Common; in shades in moist localities; Manantoddy, on way to Periya.

Loureiro (1790) raised the genus *Coleus* to accommodate the species of *Plectranthus* L’Herit. (Stripes Novac 84, t. 41. 1788) with the stamens united at base. This character was regarded by Bentham (*I.C.*) as of over-riding importance and thus these two genera came to stay. However, Morton (in J. Linn. Soc. Bot. 58:231-282. 1962) and Keng (in Steenis. Fl. Males. ser. I, 8: 382-393. 1978) and Willemse (*I.C.*) among others considered this character as unreliable and therefore the two genera have now been merged, *Plectranthus* 1788, taking precedence.

12. FOGOSTEMON Desf.

1a. Floral bracts conspicuous:

2a. Floral clusters interrupted:

3a. Clusters one-sided

3b. Clusters not one-sided

2b. Floral clusters close:
4a. Floral leaves reflexed:  
4b. Floral leaves not reflexed:

5a. Inflorescence sparsely brown tomentose:  
P. pubescens  
5b. Inflorescence densely white tomentose:  
P. benghalensis  
5c. Inflorescence brown tomentose:  
P. auriculatus

Mentha auriculata L. Mant. Pl. 81. 1767. 

Erect flaccid herbs, up to 50 cm tall. Leaves up to 4.5 x 2 cm, elliptic-oblong, subacute, rounded at base. Flowers c. 0.3 cm long, pale lilac, in spike-like racemes up to 7 cm long.

Fl.: February—July.

Common; in moist regions of evergreen forests, c. 840 m; Kannur, Mananthody.

Origaniun benghalense Burm. f. Fl. Ind. 128. t. 38. f. 3. 1768. 

Shrubs, up to 1.5 m tall. Leaves up to 1.5 x 0.5 cm, ovate, acute, rounded or slightly cuneate at base. Flowers c. 0.7 cm long, white tinged with pink, in axillary or terminal spikes up to 8 cm long; bracts c. 0.7 cm long, ovate, acute, softly pubescent, imbricating.

Fl.: November—December.

Common in evergreen forests; Kannur R.F.

Erect undershrubs, up to 75 cm tall. Leaves up to 15.5 x 6.5 cm, ovate, obtuse, cuneate at base, sparingly puberulous. Flowers c. 0.6 cm long, white, in terminal spikes up to 13.5 cm long; bracts c. 0.8 cm, lanceolate, acute, ciliate.

Fl.: November—December.

Common; in open places near forests; Ambayathode, Periya.


Erect undershrubs, up to 75 cm tall. Leaves up to 8.5 x 4 cm, ovate, acuminate, cuneate at base, pubescent with appressed hairs. Flowers c. 0.6 cm long, white, in terminal spikes; bracts c. 0.7 cm long, obliquely ovate, imbricate, pubescent.

Fl.: November—December.

Common; in open waste places in plains; Cannanore, Chembukavu.


Erect herbs, up to 50 cm high. Leaves up to 11 x 5 cm, ovate, or ovate-lanceolate, acuminate, rounded or slightly cuneate at base. Flowers c. 0.8 cm long, white with purple tinge, in terminal spikes; bracts c. 0.6 cm, ovate, imbricate.

Fl.: November—December.

Common; in evergreen forests above 800 m in ghats; Periya.


Erect herbs up to 50 cm tall. Leaves up to 8 x 4.5 cm, ovate or ovate-lanceolate, acute, cuneate at base, softly hairy. Flowers c. 0.8 cm long,
white with purple upper lip, in terminal spikes up to 18 cm long; bracts c. 0.7 cm long, ovate, acute, slightly falcate, ciliate.

Fl.: November—December.

Common in open wastelands in plains, Cannanore.

13. SCUTELLARIA L.


Straggling herbs up to 75 cm tall. Leaves up to 10.5×5 cm, ovate, subacute, cordate at base. Flowers c. 1.5 cm long, blue with white patches, in terminal racemes up to 12 cm long; bracts sparsely pubescent.

Fl.: March—April.

Occasional; in shades nearby streams in evergreen forests above 900 m; Brahmagiri.

98. NYCTAGINACEAE

1a. Climbing shrubs

Plasenia 2

1b. Erect or diffuse herbs:

2a. Plants diffuse, leaf-pair unequal, pedicels articulate, flowers 2-6 mm long

Boerhavia

2b. Plants erect, leaf-pair equal, pedicels not articulate, flowers 5-6 cm long

Mirabilis

1. BOERHAVIA L.

1a. Anthocarp club-shaped, obvate at apex, glandular hairy

B. diffusa 1

1b. Anthocarp obconic, truncate at apex, glabrous

B. erecta 2

Diffuse herbs with almost prostrate branches. Stems often purple tinted. Leaves ovate or lanceolate, 0.5 - 4.0 × 0.3 - 4.0 cm, acute or obtuse, undulate. Flowers in axillary cymose panicles. Perianth pinkish. Fruits ribbed, glandular pubescent.

Fl. & Fr.: August—March.

In dry wastelands, roadsides, railway tracks, etc.; Common.


Diffuse or subscandent herbs. Leaves up to 2 × 1 cm, broadly ovate or suborbicular, rounded at apex, rounded or subcordate at base, glabrous above, white scaly beneath. Flowers c. 0.3 cm long, white or pinkish-white. 4 - 10 together in umbels.

Fl.: March—April.

Common; in open wastelands in plains; Tellicherry.

7. Pisonia L.


Scandent shrubs. Leaves up to 11 × 4.5 cm, elliptic-lanceolate, obtuse, tapering at base. Male flowers c. 0.2 cm long, white, pubescent outside, in short dense cymes.

Fl.: January—February.

Occasional; in secondary thickets; Mattanur.

Mirebils Jalapa L. is cultivated as an ornamental plant.

99. AMARANTHACEAE

1a. Leaves alternate:

2a. Ovary uniloculate; ovules 4-20 or more

Celestia s
2b. Ovary unicellular:

3a. Pseudostaminodes present  **Aerva 2**

3b. Pseudostaminodes absent:

4a. Flowers bisexual:

5a. Flowers in panicles  **Indoarumia 9**

5b. Flowers in heads  **Allamanda 3**

4b. Flowers unisexual  **Amaranthus 5**

1b. Leaves opposite:

6a. Fertile flowers subtended by modified sterile flowers  **Cyathula 7**

6b. Fertile flowers not subtended by such modified sterile flowers:

7a. Flowers in globose or cylindrical heads:

8a. Staminal filaments fused almost to the top  **Gomphrena 8**

8b. Staminal filaments fused only at base  **Allamanda 4**

1b. Flowers in elongate paniculate spikes  **Achyranthes 1**

1. **Achyranthes L.**

1a. Staminodes fimbriate  **A. aspera 1**

1b. Staminodes not fimbriate  **A. bidentata 2**


Herbs with stiff branches up to 45 cm tall. Leaves up to 8 × 3.5 cm, variable, obovate to oblong-lanceolate, apiculate. Flowers c. 0.5 cm long, green, deflexed, in terminal spikes up to 15 cm long.

**Fl. & Fr.:** November—December.

Occur abundantly as a weed in wastelands; Kannoth.


Undershubs, up to 75 cm tall. Leaves up to 15 × 4.2 cm, elliptic-lanceolate or linear, acuminate, acute at base. Utricles c. 0.7 cm, indesicent.

**Fl.:** November—December.
Commonly found along the margins of most deciduous forests, especially near streams in ghats; Theerthandamala, Telipetty.

2. Aerva Forssk. nom. cons.


Prostrate, tomentose herbs, up to 50 cm tall. Leaves up to 4.5 × 2.5 cm, elliptic-oblanceolate or orbicular, pubescent above, white pubescent beneath. Flowers c. 0.1 cm long, white, in axillary spikes c. 2.5 cm long.

*Fl. & Fr.*: Almost throughout the year.

Common as in open wastelands; Cannanore, Sreekantapuram, Pappinissery, Tellicherry.

3. Allmania R.Br. ex Wight


Erect herbs up to 45 cm tall. Leaves up to 4.5 × 1.8 cm, narrowly spatulate, apiculate, tapering at base. Flowers c. 0.5 cm long, white, in oblong or ovoid heads c. 1.5 cm across.

*Fl.*: November—December.

Common as a weed in plains; Aralam.


1a. Bracts and tepals spinescent

1b. Bracts and tepals not spinescent

Prostrate herbs, up to 30 cm long. Leaves up to $2 \times 1.2$ cm, oblanceolate, elliptic, or more or less rounded. Flowers green, in axillary heads, c. 0.5 cm across.

Fl. & Fr.: May—June.

Commonly found as a weed in open forest areas along with grasses at higher elevations; Baveli.


Prostrate herbs, up to 45 cm tall. Leaves up to $2 \times 1.6$ cm, ovate or elliptic, rounded at tip, cuneate at base. Flowers white, small, in dense globose heads, c. 0.5 cm across.

Fl. & Fr.: Almost throughout the year.

Very common weed growing in moist places like rice fields, wastelands, etc. Begur, Tellicherry.

5. *Amaranthus* L.

1a. Plants with spines

1b. Plants without spines:

2a. Stamens and perianth lobes 5

2b. Stamens and perianth lobes 1

Erect herbs up to 45 cm tall. Leaves up to 9 × 3 cm, oblanceolate, acute. Utricles c. 0.5 cm long, pale green in axillary thyrses. Seeds c. 0.1 cm across.

Fl.: November—December.

Occasional; in open wastelands; Tulpetty.


Erect much branched herbs, up to 75 cm tall. Leaves up to 9 × 2.7 cm, ovate or oblanceolate, acute or obtuse. Flowers c. 0.3 cm long, green, in axillary or terminal paniculate spikes.

Frequently found as a garden weed and in waste places near habitations; Kannoth, Tulpetty.


Erect or diffuse herbs, 50 cm tall. Leaves up to 16 × 6 cm, ovate or lanceolate, emarginate at tip. Flowers c. 0.3 cm, green, in axillary or terminal paniculate spikes up to 13 cm long. Seeds c. 0.1 cm across, black.

Fl. & Fr.: May—July.

Commonly found in open wastelands; Ambayathode, Tellicherry.

6. **Celosia L.**


Erect herbs, up to 50 cm tall. Leaves up to 10 × 0.6 cm, linear-lanceolate acute to acuminate. Flowers c. 1 cm long, white, in terminal elongated ellipsoid spikes c. 15 cm long. Seeds c. 0.1 cm across, black, shining.

Fl. & Fr.: November—December.
Frequent and locally abundant as a weed especially in forest cleared areas; Aralam, Payyanur, Taliparamba.

7. CYATHULA Bl. nom. cons.


Creeping or ascending herbs, up to 40 cm tall. Leaves up to 5.5 x 2.5 cm, rhomboid or ovate, subacute. Flowers c. 0.3 cm long, pale violet, in terminal spikes.

*Fl. & Fr.*: November—December.

Common; in open wastelands; Ambayathode, Kannoth, Taliparamba.

8. GUMPHRENA L.


Diffuse herbs, up to 25 cm tall. Leaves up to 4 x 1 cm, elliptic acute or oblanceolate, sparsely pubescent. Flowers c. 0.5 cm long, white, in terminal cylindrical heads.

*Fl. & Fr.*: July—November.

Fairly common; in wastelands; Cannanore, Tolpetty.

9. INDOBANALIA Henry & Roy


Erect shrubs up to 75 cm tall. Leaves up to 14 x 4 cm, ovate-lanceolate, acuminate. Utricles c. 0.3 cm long, white, indehiscent.
Fr.: February—March.

Occasional in semievergreen forests; c. 825 m; on way to Brahmagiri.

The generic name *Banalia* Moq. (1849) is a later homonym of *Banalia* Rafin. (1840) (now included in *Croton* of Euphorbiaceae).

100. CHENOPODIACEAE

CHENOPODIUM L.


Erect herbs, up to 60 cm tall. Leaves oblong-lanceolate, obtuse, or acute, sinuate-dentate; the upper ones entire. Flowers minute. Capsules circumcissile,

Fl. & Fr.: March—April.

Occasional; in wastelands in ghats; Begur.

101. Polygonaceae

1a. Plants with tendrils

1b. Plants without tendrils

1. ANTIGONON Endl.


Climbing shrubs. Leaves up to 7×5 cm, ovate-lanceolate, cordate at base. Flowers c. 1 cm long, bright pink or white, in axillary racemes, up to 7 cm long.

Fl.: November—March.

Naturalized near seashore and other wastelands in plains; Cannanore, Tellicherry.
2. Polygonum L.

1a. Prostrate herbs

1b. Erect or climbing herbs or shrubs:

2a. Climbing shrubs

2b. Erect herbs or undershrubs:

3a. Ochreae glabrous; not ciliate at mouth

3b. Ochreae striate; ciliate at mouth:

4a. Racemes stout; dense

4b. Racemes slender; lax

P. hydropiper 4


Erect herbs up to 0.75 m tall. Leaves up to 18 x 1.7 cm, linear-lanceolate, appressed hairy, acuminate, tapering at base; ochreae c. 3.5 cm. Flowers c. 0.7 cm long, white or pale pink, in terminal racemes up to 18 cm long.

Fl.: November—December.

Common along banks of streams; c. 800 m; Begur.


Leaves up to 12 x 5 cm, elliptic or ovate, entire, or crenulate, shortly acuminate, truncate-rounded at base; ochreae c. 2 cm long, oblique, cleft, acuminate. Flowers c. 0.7 cm long, white, in corymbose terminal panicles, up to 15 cm long.

Fl.: November—December.

Common in bushes near streams in moist deciduous and evergreen forests; Chandanathode, Tolpetty.

Erect herbs, rooting at lower nodes, up to 75 cm high. Leaves up to 30 × 3 cm, linear lanceolate, long acuminate, tapering at base. Flowers up to 0.6 cm long, pink, in terminal racemes up to 20 cm long.

Fl. & Fr.: November—February.

Common along the banks of streams; Begur, Sreekankupuram, Tallpetty.


Erect herbs up to 45 cm tall. Leaves up to 11 × 2.5 cm, elliptic-lanceolate or lanceolate, acuminate, attenuate at base, sparsely pubescent; ochreae c. 2.5 cm long, tubular. Flowers c. 0.6 cm long, pale pink, in terminal racemes up to 16 cm long.

Fl.: February—July.

Common; in open moist situations; Manantoddy, Tallpetty.


Rootstock woody. Leaves up to 2 × 0.5 cm, linear or oblanceolate, obtuse; stipules hyaline, short. Flowers pink, in axillary clusters. Nuts c. 0.2 cm, 3-gonous, smooth, shining, with persistent style.

Fl. & Fr.: February—March.

Common; in wastelands; Begur.

102. PODOSTEMACEAE

*Polypleurum* (Tayl. ex Tul.) Warming


Small submerged, aquatic thalloid herbs, appressed to rocks. Thallus branched, c. 0.5 cm wide. Flowering shoots many on margins of thallus. Capsules ribbed, isohalous.

Fl. & Fr.: February—March.

Common; in streams above 250 m in ghats; Kannoth.

Hall (i.e.) observes that the Indian and Ceylonese species which have commonly been assigned to the genus Dicraea Thou. (1806) are congeneric with Polypleurum (Tayl. ex Tul.) Warm. (1901) but the name Dicraea cannot be used for them because it is illegitimate and the type species belong to another genus. The correct name is Polypleurum (Tayl. ex Tul.) Warming (1901).

103. ARISTOLOCHIACEAE

<table>
<thead>
<tr>
<th>1a. Erect undershrubs</th>
<th>Thattea 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1b. Herbaceous twiners</td>
<td>Aristolochia 1</td>
</tr>
</tbody>
</table>

1. ARISTOLOCHIA L.

<table>
<thead>
<tr>
<th>1a. Leaves deeply cordate at base</th>
<th>A. tosala 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1b. Leaves truncate to attenuate at base</td>
<td>A. indica 1</td>
</tr>
</tbody>
</table>


Climbing herba. Leaves up to 10.5 × 5 cm, linear to obovate oblong, scuminate. Flowers c. 3.5 cm long, solitary; perianth tube greenish white; limb purplish brown.

Fl.: November—December.

Kannoth, Taliparamba.

Climbing shrubs. Leaves up to 24 × 11.5 cm, ovate or ovate-oblong, acuminate. Flowers up to 8.5 cm long; tube greenish yellow; lip purple-brown. Capsules c. 5 cm long, oblong-ellipsoid, glabrous.

*Fl. & Fr.*: December May.

Common in moist deciduous forests; Kannoth.


Plants up to 1.5 m tall. Leaves up to 22.5 × 6 cm, oblong-lanceolate or oblanceolate, long acuminate, acute at base, glabrous above, minutely pubescent beneath. Flowers c. 1.5 cm across, pinkish purple, in axillary irregular cymes. Capsules up to 7.5 cm long, 4-locous, straight, minutely pubescent.

*Fl. & Fr.*: February—November.

Common; along banks of streams, under dense shade; Chandanathode, Theerthundamala.

104. PIPERACEAE

1a. Flowers unisexual; plants dioecious

1b. Flowers bisexual; plants monoecious:

2a. Shrubs

2b. Herbs


Erect undershrubs up to 1.5 cm tall. Leaves c. 30 x 30 cm, orbicular. Flowers very minute, in axillary umbellate cylindrical spikes.

*Fl.*: February—July.

Common along streams in evergreen forests, c. 800 m; Chandanathode, Theerthandumala.

2. *Peperomia* Ruiz & Pavon

1a. Leaves coriaceous:

2a. Leaves in whorls of 4  

*P. tetraphylla* 5

2b. Leaves opposite  

*P. heyneana* 2

1b. Leaves fleshy:

3a. Leaves 5-7-ribbed  

*P. pellucida* 3

3b. Leaves 3-5-ribbed:

4a. Leaves and stems pubescent with crisped hairs  

*P. didigulensis* 1

4b. Leaves and stems glabrous  

*P. portulacoides* 4


Erect succulent herbs up to 25 cm tall. Leaves up to 2 x 1.3 cm, elliptic ovate or obovate, rounded. Flowers minute, in terminal panicles up to 8 cm long.

*Fl.*: August—September.

Occasional; on tree trunks in evergreen forests; Chandanathode.

Erect epiphytic herbs up to 15 cm tall. Leaves up to $2 \times 2.2$ cm, obovate, emarginate, cuneate at base. Flowers in terminal spikes. Nutlets minute.

Fr.: March—April.
Occasional; on tree trunks in evergreen forests above 825 m in ghats; Tirunalli.


Procumbent succulent herbs up to 25 cm tall. Leaves up to $3 \times 2.3$ cm, broadly ovate-deltoid, acute. Nutlets minute.

Fr.: November—December.

Fairly common; in damp situations in plains; Cannanore, Payyavur.


Erect succulent herbs up to 25 cm tall. Leaves c. $3 \times 1.7$ cm, obovate, emarginate, cuneate at base. Flowers in terminal spikes. Nutlets minute.

Fl. & Fr.: November—May.

Common; on tree trunks in evergreen forests; Chandanathode.


Epiphytic herbs up to 20 cm tall. Leaves c. $1.20 \times 0.8$ cm, orbicular, sessile, shining. Nutlets minute, in terminal spikes c. $3.5$ cm long.
Fr.: February—March.

Common on tree trunks, in moist deciduous forests; Teliputty.

3. **Piper** L.

1a. Fruiting spikes globose

P. *malabaum* 3

1b. Fruiting spikes not globose:

2a. Fruiting spikes cylindric, dense

P. *longum* 2

2b. Fruiting spikes not cylindric, loose:

3a. Flowers enclosed in globose sacs of connective bracts

P. *trichostachyum* 5

3b. Flowers not enclosed in such globose sacs:

4a. Bracts forming a short cup under the flowers

P. *nigrum* 4

4b. Bracts adnate to the rhachis with deciduous free membranous margins:

5a. Leaves pubescent beneath with crisped hairs

P. *hymenophyllum* 1

5b. Leaves glabrous

P. *trilocum* 6


Climbing shrubs. Leaves up to 11 × 4.5 cm, ovate or elliptic-ovate, acuminate, rounded at base. Spikes up to 27 cm long, interrupted, axillary, sparsely pubescent. Berries c. 0.3 cm across, oblong or globose.

Fr.: March—July.

Common; in evergreen forests; on way to Brahmagiri, Kannoth.


Subscandent undershrubs. Leaves up to 15 × 5.5 cm, variable, lower ones ovate-cordate, upper ones oblong-cordate, acuminate, amplexicaul at base. Spikes c. 5 cm long. Berries c. 0.3 cm across, globose.

Fr.: November—March.
Common; in evergreen forests; Aralam, on way to Panoth.


Climbing shrubs. Leaves up to 15 × 7.5 cm, elliptic-ovate or lanceolate, obtusely cuneate, acuminate, acute at base. Spikes c. 0.5 cm across, rachis pubescent. Berries c. 0.3 cm across, globose.

*Fr.*: August—September.

Rare; once collected from evergreen forests above 840 m; Chandanathode.

The globose female spikes easily separate this species from other *Piper* spp. occurring in the area.


Climbing shrubs. Leaves up to 16.5 × 6.5 cm, broadly ovate, acuminate, more or less unequal or rounded at base. Spikes up to 10 cm long. Berries c. 0.5 cm across, globose.

*Fr.*: November—March.

Cultivated.


Climbing shrubs. Leaves up to 15 × 8 cm, elliptic-lanceolate, acuminate, rounded at base. Spikes up to 15 cm long, minutely pubescent. Berries c. 0.4 cm across, globose, yellow when ripe.

*Fr.*: March—April.

Rare; once collected from evergreen forests above 840 m in ghats; Brahmagiri.

Climbing shrubs. Leaves up to 14 × 7 cm, ovate, elliptic-ovate or oblong, abruptly acuminate, rounded or cordate at base. Spikes up to 22 cm long, slender. Berries c. 0.3 cm, globose-oblong.

Fr.: March—May.

Common; in evergreen forests; Brahmagiri, Kannoth.

105. CHLORANTHACEAE

SARCANDRA Gardn.


Erect undershrubs up to 1 m tall. Leaves up to 20 × 6 cm, lanceolate, acute to acuminate, cuneate at base. Flowers c. 0.5 cm long, pale yellow, in terminal or pseudo-axillary spikes. Drupes c. 0.3 cm across, obovoid or globose, purplish black.

Fl. & Fr.: November—December.

Common; along water-courses in dense evergreen forests above 825 m in ghats; Theerthandemala

106. MYRISTICACEAE

1a. Aril lacinate at the apex only; anthers stellately spreading

Knema 2

1b. Aril lacinate almost to the base; anthers not as above:

2a. Androecium sessile

Gymnocarpophora 1

2b. Androecium stalked

Myristica 3


Trees up to 20 m tall. Leaves up to 26 x 10 cm, oblong-lanceolate, acuminate, cuneate at base, shining above, glaucous beneath. Male flowers yellowish orange, in axillary panicles.

*Fl.* March—April.

Occasional; along banks of streams, c. 200 m; Kannoth.

2. *Knema* Lour.


Trees up to 20 m tall. Leaves up to 25 x 8 cm, oblong-lanceolate, acuminate, rounded or cuneate at base, glossy above, rusty tomentose beneath. Flowers c. 0.4 cm, pinkish brown tomentose, in umbels. Fruits c. 4 x 2 cm, ovoid-ellipsoid, beaked, brown tomentose. Arils crimson.

*Fl.* & *Fr.*: December—August.

Scattered in evergreen forests in ghats; Chembukkavu, Chandanathode.


Flora of Cannanore


Lofty trees c. 25 m tall. Leaves up to 30 x 11 cm, elliptic to oblong-lanceolate, bluntly acute at apex, subacute or rounded at base, shining above, slightly glaucous beneath. Flowers subsessile, in axillary tomentose cymes. Fruits c. 6 x 3 cm, 1-2 together, oblong or oblong-ovoid, rusty tomentose. Anil red.

Fl. & Fr.: June—November.

Frequent; in evergreen forests; Ambayathode, Chandanathode.

107. LAURACEAE

1a. Parasitic twining herbs Cassytha 3
1b. Trees:

2a. Leaves triple nerves:

3a. Perianth lobes 6 Chlamydomonas 4
3b. Perianth lobes 4 Nematodraza 7
2b. Leaves pinnate;

4a. Flowers bisexual:

5a. Leaves ovate Cryptocarya 5
5b. Leaves not ovate:

6a. Anthers 2-celled Apolloniopsis 2
6b. Anthers 4-celled:

7a. Perianth lobes reflexed in fruits Persoon 8
7b. Perianth lobes erect in fruits Phoebe 9
4b. Flowers unisexual:

8a. Inflorescal bracts deciduous in flower Litsea 6
8b. Inflorescal bracts persistent in flowers Actinodaphne 1

1. ACTINODAPHNE Nees

1a. Female flowers with patelliform shallow perianth tube A. malabarica 1
1b. Female flowers with cup shaped perianth tube A. radulina-sonil 2

Trees up to 15 m tall. Leaves up to 25 × 5 cm, elliptic lanceolate, acuminate, attenuate at base, glabrous and shining above, fulvous-villous beneath. Male flowers c. 0.7 cm long, yellow, in short axillary racemes, Berries c. 2 cm long, on persistent enlarged perianth tube, in clusters of 3-5.

Fl. & Fr.: March—May.

Common; in semi-evergreen forests above 825 m in ghats; Brahmagiri, on way to Kannoth, Tirunalli.


Trees up to 15 m tall. Leaves up to 23 × 8 cm, elliptic-lanceolate, acuminate, attenuate at base, somewhat shining above, villous beneath. Flowers c. 0.5 cm long, pale green with a brown tinge, in axillary racemes. Berries c. 2 cm long, oblong or ovoid, enclosed in persistent perianth lobes.

Fl. & Fr.: August—December.

Occasional; in evergreen forests, c. 800 m, Chandanathode.

2. Apollonias Nees


Trees, up to 5 m tall. Leaves c. 14.5 × 3.5 cm, acuminate, long cuneate at base, glabrous above, slightly glaucous beneath. Flowers c. 0.6 cm long, pale greenish yellow, in subterminal axillary racemes c. 5 cm long.

Fl.: November—May.

Rare; in shola forests above 840 m in ghats; Chandanathode.

3. Cassytha L.

Stems twining, filiform. Flowers white in short spikes. Drupes c. 0.5 cm across, white, subglobose, enclosed by an enlarged inflated perianth tube.

Fl. & Fr.: August—September.

Common on bushes in plains; Khandala.

4. **Cinnamomum Schenk. nov. comb.**

1a. Leaves more than 10 cm long

1b. Leaves less than 10 cm long:

2a. Leaves linear-lanceolate

2b. Leaves ovate

   C. **verum** 3


Trees, up to 7.5 m tall. Leaves c. 10.0 × 2.3 cm, linear-lanceolate, acuminate, acute at base. Berries c. 1.5 cm long, ovoid, shining, bright blue when ripe.

Fl.: February—March.

Occasional; along banks of streams, c. 250 m; Araiam.


Trees up to 10 m tall. Leaves up to 9.5×4 cm, ovate, acute or acuminate, cuneate at base, glabrous above, tomentose beneath. Flowers c. 0.7 cm long, greenish yellow, fulvous-tomentose, in terminal racemes.

Fl.: March—April.

Rare; once collected from evergreen forests above 825 m in ghats; Chandanathode.

Trees, up to 7.5 m tall. Leaves up to 13 × 6.5 cm, ovate-lanceolate, coriaceous, shining above, pale beneath. Flowers c. 1.3 cm long, pale yellow, in subterminal cymes.

Fl.: March—April.

Occasional; in evergreen forests; Kanoth, Karimbam.

5. Cryptocarya R. Br.


Trees, up to 3.5 m tall. Leaves up to 8.5 × 7.5 cm, obtuse, truncate at base, shining above, reddish glaucous beneath. Flowers c. 0.2 cm long, pale yellow, in subterminal pedunculate panicles up to 6 cm long.

Fl.: March—April.

Occasional; along margins of chala forests above 975 m; Theerthundamala.


1a. Perianth lobes complete:

2a. Umbellules sub sessile, in axillary or lateral clusters:

3a. Leaves elliptic-obovate or lanceolate, shortly acute; main nerves 6-7 pairs, obscure

L. coriacea 2

3b. Leaves oblong-lanceolate, acuminate; main nerves 10-12 pairs, prominent

L. laevigata 6

2b. Umbellules in racemes:

4a. Leaves glabrous beneath;

5a. Leaves reddish brown beneath when dry

L. okeides 8

5b. Leaves white glaucous beneath when dry

L. beddomei 1

4b. Leaves pubescent beneath:

6a. Leaves sparsely fulvous pubescent beneath; main nerves 4-8 pairs

L. glutinosa 5

6b. Leaves densely fulvous tomentose beneath; main nerves 10-15 pairs

L. floribunda 4

1b. Perianth lobes incomplete or 0:

7a. Leaves pubescent beneath; main nerves 10-15 pairs

L. ducmensis 3

7b. Leaves glabrous beneath; main nerves 6-8 pairs

L. lineata 7

Trees, up to 5 m tall. Leaves up to 15 × 3.5 cm, linear-oblong or lanceolate, obtuse, glabrate above. Male flowers c. 0.7 cm long, pubescent. Berries c. 1.2 cm long, oblong, apiculate, seated on an enlarged perianth tube with a more or less thickened pedicle; perianth tube hemispheric, c. 1 cm across; pedicle c. 0.8 cm long. Fruits shining black when dry; seeds 2, c. 0.8 cm long.

Fl. & Fr.: November—April.

Common; in evergreen forests, c. 800 m; Chandanathode, Periya.


Trees up to 7.5 m tall. Leaves up to 20 × 5.5 cm, acuminate at both ends. Male flowers c. 0.4 cm across, funnel shaped. Berries c. 1.5 cm long, ovoid, on enlarged cupular truncate perianth tube.

Fl. & Fr.: November—May.

Common; in semievergreen forests, c. 800 m; Kannoth, Karimbam; on way to Panoth, Tirunallil.


Trees up to 10 m tall. Leaves up to 25 × 10 cm, elliptic or obovate, shortly acuminate, cuneate at base, glabrous above. Berries c. 1 cm across, globose, on small thickened perianth tube.

Fr.: November—December.

Common in semievergreen forests, c. 800 m; Ambayathode, on way to Brahmagiri.

Trees up to 10 m tall. Leaves up to 19.5 x 7 cm, elliptic-oblung to obovate, acute, subacute at base, glabrous above. Flowers pale yellow. Berries c. 1.5 cm long, on turbinate perianth tube with thick pedicel.

Fl. & Fr.: November—May.

Fairly common; in moist deciduous and semievergreen forests, c. 825 m; Chandanathode, Manantoddy, Tirunalli.


Trees up to 7.5 m tall. Leaves up to 21 x 8.5 cm, elliptic-oblong, acute. Flowers c. 0.5 cm long, greenish yellow in axillary umbellules.

Fl.: April—May.

Searce; Kalliansery, Tallicherry.


Trees up to 10 m tall. Leaves up to 18 x 5.6 cm, acuminate, narrowed at base, glabrous and shining above, minutely puberulous beneath. Berries c. 1.5 cm long, ellipsoid, yellow when ripe.

Fl.: March—April.

Occasional; once collected from semievergreen forests, c. 825 m; Nedumpoyil.


Trees up to 5 m tall. Leaves up to 20 x 5.5 cm, elliptic-oblung or obovate, obtuse, shining. Flowers c. 0.5 cm long, in axillary clusters.

Fl.: April—May.

Rare, once collected from evergreen forests, c. 500 m; Panoth.

Trees up to 3.5 m tall. Leaves up to 16 × 6.2 cm, elliptic-lanceolate, obtuse, acute at base; male flowers c. 0.7 cm across, in axillary pubescent racemes, c. 4 cm long.

Fl.: November—December.

Rare; once collected from evergreen forests above 800 m in ghats; Chandanathode.


Trees up to 5 m tall. Leaves up to 10 × 2.8 cm, elliptic or oblong-lanceolate, glabrous, glaucous beneath. Berries c. 2 cm long, ellipsoid, on somewhat enlarged perianth tube.

Fr.: March—April.

Common; along margins of shola forests; Brahmagiri, Theerthundamala.


Trees up to 25 m tall. Leaves up to 20.5 × 5.7 cm, elliptic-oblong, acute, rounded at base, glabrous above, slightly glaucous beneath. Flowers c. 1.2 cm long, creamy-yellow, in terminal panicles up to 20 cm long. Berries c. 1.5 cm across, globose.

Fl. & Fr.: December—February.

Common; in evergreen forests, c. 800 m; Chandanathode.
9. **Phoebe Nees**


Trees up to 7.5 m tall. Leaves up to $14 \times 3$ cm, acuminate, cuneate at base. Flowers c. 0.5 cm long, greenish yellow, on peduncles c. 4 cm long.

*Fl.*: June—July.

Occasional; in evergreen forests; c. 800 m; Chandanathode.

108. **PROTEACEAE**

1a. Leaves entire

1b. Leaves bipinnatifid

**Helicia** Lour.


Trees up to 5 m tall. Leaves up to $14 \times 8$ cm, elliptic-oblong, acuminate, acute at base. Flowers c. 1.7 cm long, white, in axillary racemes up to 12 cm long.

*Fl.*: June—July.

Occasional; in evergreen forests, c. 800 m; Chandanathode.

*Grevillea robusta* A. Cunn. ex R. Br., the Australian silver oak, is commonly cultivated by the Forest Department.

109. **ELAEAGNACEAE**

**Elaeagnus** L.

1a. Leaves 5-6-nerved; thin

1b. Leaves 3-4-nerved; thick

Straggling shrubs. Leaves up to 12.5 x 5 cm, elliptic or elliptic-oblong or obovate, shortly acuminate, cuneate at base, silvery below, dark green above. Drupes c. 3 cm long, oblong, red when ripe.

Fr.: November—December.

Common; along margins of evergreen forests; Kannoth.


Straggling shrubs. Leaves up to 9.5 x 4 cm, ovate or ovate-oblong, obtuse, rounded at base, silvery below, dark green above. Drupes c. 4 x 1.5 cm, oblong-ellipsoidal, orange-red when ripe.

Common; in shola forests, c. 800 m; Chandanathode.

110. LORANTHACEAE

1a. Plants with leaves; flowers bisexual:

2a. Bracts forming an involucre enclosing the inflorescence

Tolympianthus 6

2b. Bracts not involucrate:

3a. Flowers subtended by 2-3 bracts

Macrosolen 3

3b. Flowers subtended by a single bract:

4a. Petals free

Heritxanthera 2

4b. Petals united:

5a. Flowers actinomorphic

Dendrophthoe 1

5b. Flowers zygomorphic:

6a. Leaves opposite

Scorpiol 4

6b. Leaves alternate

Taxillus 5

1b. Plants without leaves; flowers unisexual

Viscum 7

1. DENDROPHTHAE Mart.


Semiparasitic shrubs. Leaves c. 12.5 x 4 cm, thickly coriaceous, broadly elliptic-oblong or suborbicular, amplexicaul or cordate at base. Flowers c. 3.5 cm long, scarlet orange, in stout racemes. Berries c. 1 cm across, ovoid-oblong.

Fl. & Fr.: November—March.

Fairly common on Tectona grandis L.f. in moist deciduous forests; Begur, Ezhimala.

2. Helixanthera Lour.

1a. Flowers less than 1 cm long

II. wallichiana 2

1b. Flowers more than 1.5 cm long

H. intermedia 1


Semiparasitic undershrubs. Leaves up to 13.5 x 11 cm, broadly ovate or elliptic, obtuse, base rounded-cordate or auricled at base. Flowers c. 1.7 cm long, red, in axillary solitary or fascicled racemes up to 4 cm long. Berries c. 1 cm across, ellipsoid.

Fl. & Fr.: February—March.

Occasional; in moist deciduous forests, c. 800 m; Panoth, Tirunalli.


Semiparasitic undershrubs. Leaves up to 9.5 x 7.5 cm, elliptic-ovate or orbicular, obtuse, narrowed at base. Flowers c. 0.9 cm long, red, in axillary fasciculate racemes up to 9 cm long.

Fl.: March—April.

Occasional; in evergreen forests; Chandanathode, on way to Kannoth.
3. *MACROSOLEN* (Bl.) Reichb.


Semiparastic shrubs. Leaves up to 8 x 2.5 cm, ovate-oblong or lanceolate, acuminate, rounded at base. Flowers c. 5 cm long, red, in axillary spikes.

Fl.: May—June.

Occasional; in evergreen and semievergreen forests; Kallassery, Manantoddy.

4. *SCURRULA* L.


Semiparasitic shrubs. Leaves up to 10 x 4.5 cm, ovate, orbicular or elliptic, glabrous above, rusty tomentose beneath. Flowers c. 2 cm long, greenish yellow, covered with dense golden-yellow tomentum.

Fl.: November—December.

Common; in moist deciduous forests, c. 800 m; Begur, on way to Kottiyur.

5. *TAXILLUS* van Tieghem


Semiparasitic shrubs. Leaves up to 6 x 3 cm, obovate, obtuse, cuneate at base, glabrous above, tawny pubescent beneath. Flowers
c. 1.5 cm long, greenish yellow, densely rusty floccose, woolly, in axillary shortly peduncled fascicles.

Fl.: November—February.

Common; in moist deciduous forests, c. 800 m; Hilldale, Manantoddy.

6. TOLYPANTHUS (Bl.) Reichb.


Semi-parasitic shrubs. Leaves c. 10 x 6 cm, orbicular or oblong, rounded at base. Bracts c. 3 cm long, scarlet-red, bell shaped. Flowers in groups, about 5.5 cm long, pale green, oblong-lanceolate.

Common; in evergreen forests, 800 m; Chandanathode, on way to Kannoth.

7. VIScum L.


Semi-parasitic herbs; branchlets tetragamous. Berries c. 0.2 cm across, globose, sessile, solitary or whorled at nodes.

Fl.: February—April.

Common; in moist deciduous forests, c. 800 m; Chandanathode, Tirunalli

111. SANTALACEAE

1a. Trees with spines

1b. Trees without spines

1. SANTALUM L.

Semiparasitic trees up to 5 m tall. Leaves up to 7 × 2 cm, elliptic-ovate, acute, tapering at base. Flowers c. 0.5 cm long, brownish purple, in axillary and terminal paniculate cymes c. 4 cm long.

Fl.: November—December.

Occasional in open areas; Ethimala; Karimkari, Tolpetty.

2. **Scleropyrum** Arn. *nom. cons.*


Trees up to 5 m tall. Leaves c. 20 × 9 cm, ovate-oblong, obtuse, subacute at base. Flowers c. 1.5 cm long, yellowish red, in catkin like spikes, c. 10 cm long. Drupes c. 2.5 cm long, pyriform, reddish brown, crowned by persistent perianth segments.

Fl. & Fr.: December—February.

Common; in evergreen forests; Kannoth, Tirunalli.

112. **Balanophoraceae**

*Balanophora* J.R. & G. Forst.


Fleshy root parasites with tuberous woody rhizomes, up to 25 cm tall. Leaf scales c. 3 × 2 cm, broad based, spiral. Male flowers subtended by truncate bracts. Sepals elliptic-lanceolate, acute. Synandrium on a short stamnus, slightly compressed. Female scapes up to 6 × 4 cm, depressed, ellipsoid or obovoid.

Fl. & Fr.: November—February.

Occasional; in evergreen forests, c 800 m; Chandanathode, Thirumalavadi.
113 EUPHORBIACEAE

1a. Flowers in cyathia

1b. Flowers not in cyathia:

2a. Leaves 3-foliolate

2b. Leaves simple:

3a. Cells of ovary 2-ovuled:

4a. Petals present; calyx valvate

4b. Petals absent; calyx imbricate:

5a. Disc present:

6a. Disc conspicuous:

7a. Flowers in clusters:

8a. Fruit a capsule:

9a. Stamens 3

9b. Stamens 5

8b. Fruit a berry or a drupe:

10a. Fruit a berry:

11a. Fruits c. 1 cm across

11b. Fruits c. 0.4 cm across

10b. Fruit a drupe

7b. Flowers in spikes or racemes

6b. Disc combined with calyx lobes:

12a. Anthers sessile on the column

12b. Anthers adnate to the column

5b. Disc absent:

13a. Stamens connate

13b. Stamens free:

14a. Plants cauliflorous

14b. Plants not cauliflorous

3b. Cells of ovary 1-ovuled:

15a. Pistillode present:

16a. Calyx of male flowers valvate:

17a. Petals present in male flowers:
18a. Herbs
18b. Trees

17b. Petals absent in male flowers:
19a. Twining herbs with stinging hairs
19b. Erect herbs, shrubs or trees without stinging hairs:

20a. Filaments branched:
21a. Filaments free:
22a. Leaves entire
22b. Leaves palmately lobed
21b. Filaments connate

20b. Filaments not branched:
23a. Styles laciniate
23b. Styles not laciniate:
24a. Stamens 2-9:
25a. Styles entire
25b. Styles not entire
24b. Stamens numerous:
26a. Styles plumose
26b. Styles not plumose

16b. Calyx of male flowers imbricate:
27a. Petals present in male flowers:
28a. Flowers in racemes:
29a. Calyx enlarged in fruit
29b. Calyx not enlarged in fruit
28b. Flowers in terminal cymes

27b. Petals absent in male flowers:
30a. Leaves deeply lobed
30b. Leaves not lobed:
31a. Calyx lobes 4-5
31b. Calyx lobes 3:
32a. Herbs
32b. Trees or shrubs

15b. Pistillodes absent
1. **Acalypha L.**

1a. Male and female flowers in same spike

   *A. fruticosa* 2

1b. Male and female flowers in different spikes:

   2a. Female flowers pedicelled

   *A. racemosa* 4

   2b. Female flowers sessile:

   3a. Bracts longer than capsule

   *A. ollacata* 1

   3b. Bracts shorter than capsule

   *A. lanceolata* 3


   Erect herbs up to 30 cm tall. Leaves up to 7.5 × 3.2 cm, ovate, cuspidate-acuminate, cuneate at base. Bracts campanulate. Flowers in axillary spikes. Capsules c. 0.2 × 0.2 cm.

   *Fr.*: November—August

   Common; in open wastelands; Cannanore, Tellicherry.


   Much branched undershrubs up to 45 cm tall. Leaves up to 9.5 × 3.3 cm, ovate, obtusely acuminate, cuneate at base, glabrous. Bracts glandular. Flowers in axillary spikes. Capsules c. 0.3 cm across, tomentose.

   *Fr.*: July—August.

   Common; in open wastelands; Tolpetty.


   Erect herbs up to 40 cm tall. Leaves up to 8.5 × 4.5 cm, ovate or lanceolate, acute, cuneate at base. Bracts dentate, hispid. Capsules c. 0.5 cm across, hispid.
Fr : August—September

Common; in open wastelands, c. 250 m; Cannanore.


Erect herbs, up to 30 cm tall. Leaves up to 7 × 2.5 cm, ovate, acuminate, rounded at base. Bracts minute. Capsules c. 0.4 cm across, 3-lobed.

Fr: July—August.

Common; in open and shady places; c. 250 m; Kanoth.

2. *Agrostistachys* Dalz.


Trees up to 5 m tall. Leaves up to 15 × 6.5 cm, oblanceolate, obtuse. Flowers c. 1.5 cm long, pale greenish yellow, in elongate, spicate racemes up to 15 cm long.

Fl.: November—December.

Occasional; in evergreen forests, c. 840 m; Chathanathode.

3. *Antidema* L.


1a. Stamens inserted in hollows of the disc:

2a. Stamens 3–5:
3a. Flower clusters close on inflorescence  

A. zeylanicum 4

3b. Flower clusters distant on inflorescence  

A. menziesii 3

2b. Stamens?  

A. acidum 1

1b. Stamens inserted within the disc  

A. bunius 2


Small trees up to 3.5 m tall. Leaves up to 9 x 4 cm, elliptic or obovate, acute at both ends. Flowers in axillary racemes. Drupes c. 0.3 cm across, ovoid, acute, purplish-red when ripe.

Fr.: May—July.

Common; in semievergreen forests; Kanoth.


Small trees up to 5 m tall. Leaves up to 15.5 x 7.5 cm, elliptic-lanceolate or oblanceolate, acuminate, tapering at base. Male flowers c. 0.3 cm long, pale green, in axillary spikes c. 9 cm long. Drupes c. 0.3 cm across, ovoid, acute, red when ripe.

Fl. & Fr.: March—May.

Common; in evergreen forests, c. 825 m; on way to Brahmagiri; Chandanathode.


Trees up to 7.5 m tall. Leaves up to 20 x 8 cm, elliptic-oblong, acuminate, mucronate, shining. Male flowers c. 0.3 cm long, pale green, in axillary paniculate racemes. Drupes c. 0.8 x 0.5 cm, ovoid, acute, red when ripe.

Fl. & Fr.: March—December.
Common; in evergreen forests, Chandanathode, Kannoth.


Trees up to 7.5 m tall. Leaves up to 9.5 × 3.5 cm, ovate, obtusely acuminate, mucronate, shining. Flowers in axillary spikes. Drupes c. 0.3 cm across, ovoid, acute, red when ripe.

*Fr.*: March—May.

Occasional; in shades of evergreen forests. c. 825 m. Brahmagiri. Panth.

4. Aporosa Bl.


Trees up to 7.5 m tall. Leaves up to 13 × 5 cm, elliptic-oblong, acuminate, rounded or acute at base. Capsules c. 0.7 cm across, globose, shining, pointed with the persistent style.

*Fr.*: February—March.

Common; in evergreen forests; Kannoth, Manantoddy, Sreekantapuram.

5. Baccaria Linn.


Trees up to 15 m tall. Leaves c. 21 × 7.5 cm, elliptic-acuminate, acute at base. Male flowers c. 0.15 cm long, crimson-red, in panicles.

*Fl.*: November—March.

Common; in evergreen forests above 500 m in ghats; Chandanathode, Nedumpooyil.
4. BALIOSPERMUM Bl.


Shrubs up to 2 m tall. Leaves up to 20 × 9.5 cm, variable; lower large, ovate; upper ones smaller, lanceolate. Male flowers c. 0.6 cm long, pale yellow. Female flowers c. 0.7 cm long, pale yellow, in axillary racemes c. 4 cm long.

Fl.: November—February.

Gamble (l.c.) mentions "..........West Coast in shady places at lower levels". However, the present collection has been made from ghats above 825 m.

5. BISCHOFIA Bl.


Large trees up to 25 m tall. Leaves 3-foliolate; leaflets up to 16.5 × 7 cm, ovate-elliptic, acuminate, crenate; terminal leaflets usually larger than the lateral ones. Male flowers c. 0.2 cm long, in axillary panicles. Berries c. 1.5 cm across, globose.

Fl. & Fr.: December—March.

Common; in dense evergreen forests above 500 m in ghats; Chandanathode, Nedumpoyil.

6. BLACHIA Baill.

FLORA OF CANNANORE

Trees up to 5 m tall. Leaves up to 12 × 5.5 cm, elliptic-ovate, acuminate, narrowed at base. Capsules c. 1.5 cm across, globose.

Fr.: April—December.

Common; in dense evergreen forests, c. 500 m; Chandanathode, Nedumpoyl.


1a. Calyx greatly enlarged in fruit

| B. retusa 1 |

1b. Calyx not or scarcely enlarged in fruit

| B. vitisidaea 2 |


Shrubs up to 1.5 m tall. Leaves up to 3×1.1 cm, elliptic, obtuse, glabrous above, glaucous beneath. Capsules c. 0.8 cm across, depressed-globose, orange-red when ripe.

Fr.: June—August.

Common; in evergreen forests; Kannoth.


Shrubs, up to 2.5 m tall. Leaves c. 6.5×3.5 cm, elliptic, obtuse or acute. Male flowers c. 0.6 cm long, greenish yellow. Capsules c. 0.7 cm across, globose, red when ripe.

Fl. & Fr.: February—July.

Common; in evergreen forests; Chandanathode, Kallianassery, Kannoth.
8. BRIDELIA Willd.


Climbing shrubs. Leaves up to 9 \times 5.5 cm, elliptic-oblong or obovate, obtuse, rounded at base. Drupes c. 1 \times 0.6 cm, ellipsoid-oblong; pyrenes smooth.

Fr.: July—November.

Common; in secondary forests; Kannoth, Tolpetty.

9. CHROZOPHORA Juss. nom. cons.


Erect herbes up to 35 cm tall. Leaves up to 7.6 \times 4 cm, broadly ovate, orbicular, undulate, stellately hairy. Capsules c. 0.6 cm across, globose, red.

Fr.: April—May.

Common: in rice fields, c. 825 m; Begur.

10. CROTON L.

1a. Straggling shrubs

C. klotzschianus 2

1b. Erect trees or herbes:

2a. Trees

C. sigilium 3

2b. Herbes

C. bonplandianus 1


Herbs up to 40 cm tall. Leaves up to 4.5 \times 1.7 cm, lanceolate, acuminate, sparsely hairy. Male flowers c. 0.4 cm long, greenish white.
Capsules c. 0.5 cm across, oblong, depressed at tip, sparsely stellately hairy when young.

Fl. & Fr.: July—August.

Common; in open wastelands in plains; Cannanore.


Leaves up to 12×5.5 cm, elliptic-ovate or oblong, acute, glabrous above, puberulous on nerves beneath. Male flowers pale greenish yellow, in terminal racemes c. 6 cm long.

Fl.: March—April.

Occasional; in evergreen forests, c. 825 m; Trissolari.


Trees up to 3 m tall. Leaves up to 16×6.5 cm, ovate, acute, acuminate, glabrous. Male flowers c. 0.8 cm long, pale green. Capsules c. 2 cm across, white, turbinately ovoid, obtusely trigonous.

Fl. & Fr.: March—November.

Cultivated as a shade tree in pepper plantations; Chailamathkoch; Kannoth

11. DRYPETES Vahl

1a. Drupes 1-seeded

D. elata 1

1b. Drupes 2-4-seeded

D. oblongifolia 2

Lofty trees up to 25 m tall. Leaves up to 11 × 5 cm, elliptic-lanceolate, obtusely acuminate, slightly unequal at base. Drupes c. 6 × 1.5 cm, obovoid or ellipsoid, solitary.

Fr.: August—January.

Common; in evergreen forests, c. 500 m; Ambayathode, Panath.


Trees up to 15 m tall. Leaves up to 25 × 8.5 cm, oblong, abruptly acuminate, unequal at base, coriaceous. Drupes c. 3 cm across, subglobose-ovoid, yellow-tomentose, in lateral clusters.

Fr.: May—June.

Occasional; in evergreen forests near banks of streams above 500 m in ghats; Panath.

12. \textit{Emblica} Gaertn.


Trees up to 10 m tall. Leaves up to 1 × 0.2 cm, closely distichous, linear-oblong, obtuse, apiculate, unequal at base. Berries c. 1.5 cm across, globose, 6-furrowed, pale greenish yellow.

\textit{Fl.} & \textit{Fr.} November—April.

Common; in moist deciduous forests c. 825 m; Begur.


\textit{Epiprinus malleiformis} (Muell.-Arg.) Croizat in J. Arn. Arb. 23: 52. 1942. \textit{Symphyllis malleiformis} Muell.-Arg. in Linnaea 34: 156. 1865;

Trees up to 15 m tall. Leaves up to 31 x 11 cm, elliptic or oblong, obtuse, rounded at base. Male flowers c. 0.2 cm across, in axillary spiciform racemes up to 17 cm long.

Fl.: November—March.

Common along the banks of streams in evergreen forests above 825 m in ghats; Chandanathode, Theerthamadala.

14. Euphorbia L.

1a. Shrubs

1b. Herbs or undershrubs:

2a. Prostrate herbs:

3a. Capsules sharply keeled, hairy only on keels

E. chamaesyce 1

3b. Capsules obtusely keeled, hairy throughout

E. thyrsiflora 5

2b. Erect herbs or undershrubs:

4a. Undershrubs; leaves dimorphic

E. rothiana 4

4b. Herbs; leaves not dimorphic:

5a. Plants glabrous; cymes not capitate

E. indica 3

5b. Plants hispid; cymes capitata

E. hirta 3


Prostrate herbs. Leaves up to 0.6 x 0.4 cm, elliptic or obovate, oblique at base, glabrous. Capsules c. 0.2 cm long.

Fl.: March—April.

Common; in open waste places in plains; Kannoth.

Diffuse hispid herbs up to 30 cm tall. Leaves up to 3.5 x 1.4 cm, obliquely elliptic or lanceolate, acute, pubescent. Cyathia green; involucre with red-tipped glands. Capsules c. 0.1 cm long, appressed pubescent.

Fl. & Fr.: July—November.

Common; in open and shady wastelands in plains; Karimnagam, Tellicherry.


Erect ascending herbs up to 30 cm tall. Leaves up to 3 x 1.5 cm, elliptic-oblong or obovate, obtuse, serrulate, glaucous beneath. Capsules c. 0.2 cm long, subglobose, hairy.

Fr.: May—June.

Occasional; in moist deciduous forests; c. 825 m; Baveli.


Erect herbs up to 50 cm tall. Leaves up to 8 x 1 cm, linear-lanceolate or oblanceolate. Floral leaves broadly ovate-cordate, acute, mucronate. Involucre lobes subquadrate, ciliate.

Fl.: March—April.

Occasional; in dense evergreen forests, c. 840 m; Tirunalli.


Prostrate herbs. Leaves up to 0.7 x 0.4 cm, obliquely oblong, rounded at both ends, glabrous above, sparsely pubescent beneath. Capsules c. 0.1 cm long.
**Flora of Cannanore**

*Pl. & Fr.*: Almost throughout the year.

Common weed in open, waste places in plains; Cannanore, Kannavam, Tellicherry.

*Euphorbia paliscerata* Willd. ex Klotz is cultivated in gardens.

15. **EXCOCCARIA** L.

1a. Leaves alternate

1b. Leaves opposite

E. *agallocha* 1

E. *crenulata* 2


Small trees up to 3 m tall. Leaves up to 10.5 × 4 cm, ovate-elliptic or orbicular, shortly acuminate, glabrous. Male flowers c. 0.3 cm long, pale yellow, in axillary spikes c. 4.5 cm long.

*Fl.*: November—February.

Common along the banks of backwaters in plains; Cannanore, Tellicherry.


Small trees up to 5 m tall. Leaves up to 22 × 5.5 cm, oblong-s lanceolate, abruptly acuminate, cuneate at base, shining. Male flowers c. 0.2 cm long, pale yellow, in stout spikes c. 16 cm long.

*Fl.*: February—April.

Occasional; in evergreen forests; Nedumpoyil.


Tall trees up to 10 m tall. Leaves up to 22 × 8 cm, ovate or obovate, obtusely acuminate, cuneate at base. Flowers c. 1.5 cm long, pale yellow, sparsely pubescent.

Fl. & Fr.: November—December.

Occasional; in evergreen forests, c. 840 m; Chandanathode.

One of the endemic species of Wynad.


1a. Branchlets and leaves pubescent

1b. Branchlets and leaves glabrous:

2a. Leaves acuminate at both ends

2b. Leaves otherwise:

3a. Leaves unequal at base; nerves 5-6 pairs

3b. Leaves obtuse at base; nerves 7-10 pairs

G. volubulum 4

G. ellipticum 2

G. bourdillonii 1

G. malabaricum 3


Small trees up to 5 m tall. Leaves up to 10×4 cm, ovate or obovate, shortly acute at apex. Male flowers c. 1 cm long, white. Capsules c. 0.7 cm across, depressed-globose.

Fl. & Fr.: February—March.

Occasional: in secondary forests near streams; Nedumpoyil.


Trees up to 10 m tall. Leaves up to 14×4.5 cm, oblong-lanceolate, unequal at base. Male flowers c. 1.2 cm long, white. Capsules c. 1 cm across, depressed-globose, 4-6-lobed.
Fl. & Fr.: February—November.

Common along the banks of streams; Ambayathode, Chandanathode, Kottiyur.


Small trees up to 5 m tall. Leaves up to 14 x 5.5 cm, elliptic or oblong, abruptly acuminate at apex, obtuse at base. Male flowers c. 0.8 cm long, white. Capsules c. 1 cm across, depressed-globose.

Fl. & Fr.: March—December.

Common; in semi-evergreen forests; Brahmagiri, on way to Kommeri.


Shrubs up to 2 m tall. Leaves up to 8 x 4 cm, elliptic-oblong or elliptic-lanceolate, shortly acuminate, cuneate at base. Flowers c. 1.5 cm, yellow, in axillary clusters. Capsules c. 1 cm across, orange-red, orbicular, depressed, 4-6-lobed.

Fl. & Fr.: March—November.

Common; in moist deciduous forests, c. 825 m; Brahmagiri, Tirunalli, Tulpetty.

18. Homonopia Linn.

1a. Spikes under 2.5 cm long

1b. Spikes more than 2.5 cm long

H. retusa 1

H. riparia 2


Rheophytic undershrubs up to 0.75 m high. Leaves up to 4 x 1.3 cm, obovate or oblanccolate, emarginate, cuneate at base, glabrous above,
sparingly lepidote beneath. Male flowers c. 0.3 cm long, in spikes. Capsules c. 0.3 cm across, globose, hairy

*Fl. & Fr.*: January—August.

Common on river banks; on way to Mattanur, Kannoth.


Rheophytic shrubs up to 2.5 m tall. Leaves up to 17 × 3.5 cm long, linear, or linear-oblong, acute, apiculate, glabrous above, densely lepidote beneath. Male flowers c. 0.5 cm across, in axillary spikes.

*Fl. & Fr.*: January—February.

Common; on river banks and rocky stream beds; Ambayathode, Arunapara.

19. *Jatropha* L.

1a. Petals free:

2a. Flowers red

  J. gossypifolia 2

2b. Flowers pale green

  J. tanjorensis 3

1b. Petals connate to the middle

  J. curcas 1


Erect shrubs up to 1.5 cm tall. Leaves up to 12 × 12.5 cm, orbicular-cordate, entire or 3-lobed. Flowers c. 1.5 cm long, yellowish-green. Capsules c. 3 cm across, globose, rugose.

*Fl. & Fr.*: Juicy—November.

Commonly planted as a hedge plant; Kuthuparamba. Tolpetty.

Erect shrubs up to 1.5 m tall. Leaves 3-5-lobed, each lobe up to 6.5–3.5 cm, obovate, shortly acute. Flowers c. 1 cm long. Capsules 0.4 cm across, subglobose, reticulately rugose.

Fl. & Fr.: July–August.

Commonly cultivated as a hedge plant at low altitudes, at times running wild; Kallissery, Tellicherry.


Shrubs up to 2.5 m tall. Leaves 5-lobed, each lobe up to 10 × 3.5 cm, obovate, acute. Flowers c. 1.5 cm long.

Fl.: November–December.

Commonly found in waste places in plains; Tellicherry.


Scandent shrubs up to 2.5 m tall. Leaves up to 2 × 1.2 cm, oblong or elliptic, obtuse. Male flowers c. 0.2 cm long, pale green, axillary. Capsules c. 0.4 cm across, depressed-globose, purplish-black when ripe.

Fl. & Fr.: November–December.

Common; in open wastelands in plains; Cannanore, Kallissery, Kannoth.


Tall trees up to 10 m tall. Leaves up to 20×16 cm, peltate, ovate or orbicular, acuminate, shortly toothed at apex, glabrous above, pubescent beneath. Male flowers c. 0.5 cm long, pale yellow, in axillary panicles; bracts cup-like, dentate, obtuse, tomentose.

Fl.: June—July.

Common; in secondary forests, c. 300 m; Kanoth.

22. MALLOTUS LOUR.

1a. Leaves alternate:

2a. Capsules covered with white tomentose spines  
   M. tetragonatus  

2b. Capsules covered with red resinous powder  
   M. philippensis  

1b. Leaves opposite:

3a. Capsules covered with yellow glands  
   M. resinosus  

3b. Capsules not as above  
   M. aureopunctatus  


Trees up to 2.5 m tall. Leaves up to 19×6.5 cm, oblong-lanceolate or oblanceolate, obtuse, acute at base, sinuate-dentate. Male flowers c. 0.8 cm long. Capsules c. 1.2 cm across, globose, densely clothed with spines, in axillary racemes.

Fl. & Fr.: March—August.

Rare; in evergreen forests, c. 500 m; Panoth.


Trees up to 10 m tall. Leaves up to 23×12 cm, ovate or ovate-lanceolate, acuminate, rounded at base, glabrous above, fulvous tomentose beneath. Capsules c. 1 cm across, 3-lobed.
Fr.: December—February.

Common; in moist deciduous forests; Chandanathode, Kannoth, Taliparamba.


Trees up to 5 m tall. Leaves up to 25 × 8 cm, rhombic-lanceolate narrowed at both ends. Capsules c. 1.5 cm across, tridymous.

Fr.: December—January.

Rare; in evergreen forests, c. 825 m; Ambasyathode.


Trees up to 15 m tall. Leaves up to 17 × 15 cm, broadly ovate, orbicular, deltoid, acuminate, shortly lobed, glabrous above, yellow-pubescent beneath. Male flowers c. 0.3 cm long, yellow. Capsules c. 0.8 cm across, globose.

Fl. & Fr.: February—July.

Common in semievergreen forests, c. 500 m; Chandanathode, Kannoth.


1a. Capsules verrucose

1b. Capsules smooth:

2a. Stipules peltate:

3a. Leaves of upper branches much smaller; male and female flowers pedicellate

3b. Leaves not as above; male flowers subsessile

P. urinaria 5

P. gardnerianus 3

P. virgatus 6
2b. Stipules not petalate:

4a. Calyx lobes with white margins

P. rheediai 4

4b. Calyx lobes without white margins:

5a. Flowers solitary in each axil

P. debilis 2

5b. Flowers paired, one male and the other female, in each axil

P. amarus 1


Erect herbs up to 40 cm tall. Leaves up to 1 x 0.5 cm, oblong, obtuse, slightly oblique at base, glaucous beneath. Flowers greenish white, minute, axillary. Capsules c. 0.2 cm across, depressed-globose, scarcely lobed.

Fl. & Fr.: July—August.

Common in rice fields in plains; Tellicherry.


Erect herbs up to 45 cm tall. Leaves up to 1.2 x 0.4 cm, elliptic to oblong, acute or obtuse. Flowers pale green, minute, solitary, axillary. Capsules c. 0.2 cm across, globose, scarcely lobed.

Fl. & Fr.: Almost throughout the year.

Common in open wastelands and cultivated fields, especially on bunds of paddy fields; Kannoth, Tellicherry.


Erect herbs up to 40 cm tall. Leaves c. 2 x 1 cm, variable, upper ones elliptic, obtuse, lower ones elliptic-oblong, glaucous beneath. Male flowers c. 0.2 cm across, white. Capsules c. 0.4 cm across, globose, glabrous.
Flora of Kannanore

Fl. & Fr.: November—December.

Common; in evergreen forests, c. 840 m; Chandanathode.


Erect herbs up to 45 cm tall. Leaves up to 2.4 x 1.4 cm, elliptic or ovate, acute. Male flowers c. 0.4 cm across, fascicled. Capsules c. 0.3 cm across, globose, solitary, on thickened pedicels.

Fl. & Fr.: February—July.

Common; in shady places in ghats, 825 m; Chandanathode, Tolpetty.


Erect herbs up to 60 cm tall. Leaves up to 1 x 0.3 cm, oblong or oblong-ovate, obtuse or obtusate at apex, oblique at base. Flowers greenish white, minute, axillary, solitary. Capsules c. 0.3 cm across, depressed-globose.

Fl. & Fr.: March—July

Common; in open waste places and as an undergrowth in forests; Alakode, Ambayathode, Kannodi, Karimbaam, Tolpetty.


Procumbent herbs. Leaves up to 2.5 x 0.3 cm, oblong, distichous, overlapping, obtuse, glabrous; stipules petiolar, sagittate, scarious. Male flowers c. 0.3 cm across, white with pink streaks, solitary on pedicels. Capsules c. 0.3 cm across, globose, crustaceous.

Fl. & Fr.: February—November.
Common; in open wastelands in ghats, c. 825 m; Chandanathode, Ezhimala, Manaatoddy.

24. **Ricinus L.**


Large shrubs up to 2.5 m tall. Leaves digitately lobed, each lobe up to 22 × 8 cm, oblanceolate, acuminate. Flowers monoecious. Male flowers above, yellow; female flowers below. Capsules c. 1 cm across, globose, spinous.

*Fl. & Fr.*: May—June.

Occasional; near teak plantations; Begur.

25. **Saurophus Bl.**


Tall shrubs up to 2 m tall. Leaves up to 4.5 × 1.3 cm, ovate-oblong, obtuse or acute, glaucous beneath. Flowers c. 0.4 cm across, greenish, axillary, solitary.

*Fl.*: November—March.

Common; in secondary forests; Cannanore, Panott.

26. **Sebastiania Spreng.**


Spreading herbs up to 30 cm tall. Leaves up to 4 × 0.4 cm, linear, obtuse at apex, tapering at base. Capsules subglobose-oblong, schizocarp covered with spinules.
Fl. & Fr.: July—November.

Common in waste places in plains; Taliparamba, Tellicherry.

27. Securinega Comm. ex Juss. nom. cons.


Deciduous shrubs up to 1 m tall. Leaves up to 6 × 2.7 cm, elliptic or obovate, rounded at apex, glabrous, somewhat glaucous beneath. Male flowers c. 0.7 cm, pale green, in axillary clusters. Fruits c. 0.7 × 0.5 cm, globose, coriaceous.

Fl. & Fr.: March—May.

Common; in open situations and sandy areas nearby rivers; Cannanore, Kannoth.

28. Tragia L.

1a. Leaves cordate at base

T. bicolor 1

1b. Leaves not cordate at base

T. involucrata 3


Slender twining herbs with stinging hairs. Leaves up to 15 × 7.5 cm, acuminate, fulvous tomentose. Capsules c. 0.8 cm across, tomentose, in axillary racemes.

Fl.: November—December.

Occasional; in evergreen forests; Chandamathode, Kannavam.

Twining herbs with stinging hairs. Leaves up to 12.5 × 5 cm, broadly ovate, abruptly acuminate, hirsute. Perianth lobes of female flowers hairy.

Fr.: March—September.

Common: in open wastelands: Chandanathode, Kannavam.

29. Trewia L.


Trees up to 5 m tall. Leaves up to 28 × 13 cm, broadly ovate, acuminate, base cordate or truncate, glabrous. Drupes c. 2 cm across, globose to ovoid, densely tomentose.

Fl. & Fr.: May—November.

Common: along the banks of streams, c. 835 m; Regur. Tulpetty.

*Hevea brasiliensis* Muell.-Arg. and *Manihot esculenta* Cranz. are cultivated.

114. ULMACEAE

1a. Leaves white tomentose beneath

1b. Leaves not white tomentose beneath

3. **Celtis** L.

1a. Leaves with primary nerves above basal ribs

1b. Leaves without primary nerves above basal ribs


Trees up to 10 m tall. Leaves up to 8 × 3.2 cm, obliquely ovate, oblong, acuminately acuminate or cordate; cuneate, cordate or rounded at base. Drupes c. 0.5 cm across, globose, orange-red when ripe.

Fr.: February—March.
Common; in evergreen forests, c. 825 m; on way to Brahmagiri.


Trees up to 10 m tall. Leaves up to 13 × 5.8 cm, obovate-lanceolate to ellipsoid-lanceolate, shortly acuminate, acute or cuneate, unequal at base. Drupes c. 0.15 cm across, ovoid, narrowed towards tip, black when ripe.

Fr.: January—March.

Common; in evergreen forests; Chembukkave, Tirunalli.

A variable species. According to Santapau (l.c.) C. cinnamomea and C. wightii are conspecific.

2. TREMA Lour.


Trees up to 10 m tall. Leaves up to 12×5 cm, obliquely ovate-acuminate, cuneate, cordate or rounded at base. Flowers c. 0.2 cm across, pale green, in axillary pubescent cymes.

Fr.: November—December.

Common in moist deciduous forests; Beigur, Sreekantapuram, Taliparamba.

115. MORACEAE

1a. Plants with milky juice:

2a. Flowers in syconia

2b. Flowers exposed.
3a. Leaves with few or no transverse intercostal veins  
   
3b. Leaves with many transverse intercostal veins

3a. Leaves spirally arranged  
4b. Leaves distichous

1b. Plants not with milky juice  
   
1. **Artocarpus** J.R. & G. Forst. nom. cons.

1a. Leaves glabrous beneath  
   
1b. Leaves strigose to hairy beneath  


   Evergreen trees up to 25 m tall. Leaves up to 25×12 cm, obovate-oblong or elliptic, obtuse, cuneate at base. Female spikes ellipsoid, oblong, from old wood. Fruits echinate, spines short.

   *Fr.*: November—December.

   Fairly common throughout the district.


   Evergreen trees up to 25 m tall. Leaves up to 16×10.5 cm, elliptic, rhomboid or ovate, shortly acuminate at apex, rounded to cuneate at base. Fruits c. 4.5×2 cm, echinate, spines straight.

   *Fr.*: March—April.

   Occasional; Kannonth, Manantoddy.

   **Artocarpus communis** Forst. is commonly cultivated for the edible fruits.

2. **Ficus** L.

1a. Leaves opposite  
1b. Leaves alternate;
2a. Figs distinctly peduncled:

3a. Leaves scabrous:

4a. Figs in clusters  
   *F. hemiptera* 8

4b. Figs solitary  
   *F. exasperata* 3

3b. Leaves not scabrous:

5a. Figs in pairs:

6a. Leaves elliptic-oblance  
   *F. nervosa* 5

6b. Leaves cordate  
   *F. auriculata* 1

5b. Figs not in pairs  
   *F. racemosa* 6

2b. Figs sessile or subsessile:

7a. Leaves cuneate:

8a. Petioles c.4 cm long; cusp less than 3 cm long  
   *F. subcordata* 7

8b. Petioles more than 4 cm long; cusp more than 5 cm long  
   *F. religiosa*

7b. Leaves not cuneate:

9a. Leaves obtuse; figs red  
   *F. benghalensis* 2

9b. Leaves acute to acuminate; figs pink to purple  
   *F. tajahali* 9


Trees up to 5 m tall. Leaves up to 35 x 30 cm, shortly cuspidate. Figs axillary, obovoid, 3 cm across, pubescent, brown.

**Fl.**: November—February.


Large trees up to 10 m tall with many aerial roots. Leaves up to 23 x 11 cm, ovate-oblong, obtuse, coriaceous. Figs axillary, paired, sessile, 2 cm across, basal bracts rounded.

**Fl. & Fr.**: January—May.
Occasional; Baveli, Kannoth.


Small to medium sized, deciduous trees up to 7.5 m tall. Leaves up to 13.5x8 cm, obovate-ovate or elliptic-oblong, lanceolate, acuminate, scabrid above, hispid beneath, triple nerved. Figs c. 1.5 cm across, globose, pilose, yellow-red; peduncles c. 1 cm long; bracts lateral and small.

*Fl. & Fr.*: May—November.

Fairly common; at medium altitudes in ghats; Chandanathode, Kannoth, Tolpetty.


Small trees up to 5 m tall. Leaves up to 15x6.5 cm, oblong-elliptic to ovate-elliptic, acuminate, scabrid, triple nerved. Figs c. 1.5 cm across, obovoid, axillary to caulifluous on hanging leafless twigs in clusters; bracts small and lateral.

*Fl. & Fr.*: November—March.

Common; in evergreen and moist deciduous forests up to 850 m in ghats; Begur, Chandanathode, Tirunalli.


Large trees up to 15 m tall. Leaves up to 16.5x5 cm, subacute to acuminate. Figs axillary, subglobose, red when ripe, c. 1.5 cm across; basal bracts 3, minute.

*Fl. & Fr.*: March—June.
Rare; in evergreen forests; Odanathode.


Medium sized deciduous trees up to 10 m tall. Leaves up to 14 x 4.5 cm, elliptic-oblong, subacute at apex, triple nerved. Figs c. 2.5 cm across, in large clusters on main branches and trunk, ripening rose-red; peduncle c. 1 cm long; basal bracts distinct.

*Fl. & Fr.*: December—March.

It can easily be recognized from other *Ficus* species of the area by the clusters of large, red figs on the trunk and branches.


Large deciduous trees up to 20 m tall. Leaves up to 11.5 x 5 cm, elliptic or ovate-elliptic, glabrous, pinnerved. Figs c. 0.8 cm across, axillary, paired, ovoid, glabrous, reddish brown; basal bracts distinct.

*Fl. & Fr.*: May—June.

Occasional; in evergreen forests; Tirunalll.


Small trees up to 7.5 m tall, with aerial roots. Leaves up to 15 x 5.5 cm, elliptic-l nectolate to ovate-elliptic or subrhombic, acute to strongly acuminate, cuneate. Figs c. 0.8 cm across, axillary, ripening golden yellow, sebriudulous, pyriform to subglobose; basal bracts small.

*Fl. & Fr.*: July—December.
Occasional; in plains; Kuthuparamba, Tellicherry.


Large deciduous trees up to 15 m tall. Leaves up to 22 × 10 cm, ovate-elliptic, cuneate, glabrous. Figs c. 0.6 cm, axillary and paired or in clusters of 3-6 on the twigs; basal bracts bifid.

*Fr.*: November—May.

Occasional; in semievergreen forests, c. 800 m; Ambayathode, Manan-toddy, Periya.

According to Corner (*i.e.* the correct spelling of this specific epithet is *tsjakele* but Fischer (*i.e.*) gives it as *tsakela*, while Cooke (Fl. Pres. Bomb. 2(4) : 650. 1907) gives it as *tsjakele*).

**Ficus religiosa** L. is commonly grown near temples.

3. **Streblus** Lour. *emend.* Corner


Small trees c. 5 m tall. Leaves up to 4.5×2.6 cm, elliptic-oblong or obovate, rounded or cordate, unequal at base. Male flowers in dense capitulate clusters; female flowers 1–2 in the axils. Drupes c. 0.5 cm across globose.

*Fl.* & *Fr.*: February—March.

Occasional; in moist deciduous forests, c. 825 m; Begur.

**Bromelia papyrifera** Vent. and *Macua alba* L. are often cultivated.

116. **URTICACEAE**

1a. Plants with stinging hairs:

2a. Flowers clustered on cyrnes or spikes

*Girardinia* 4
2b. Flowers not clustered

1b. Plants without stinging hairs:

3a. Herbs or undershrubs:

4a. Flowers aggregated on a fleshy receptacle:

5a. Leaves opposite

5b. Leaves alternate

4b. Flowers not aggregated on a fleshy receptacle:

6a. Flowers cymose; cistoliths of leaves linear:

7a. Leaves opposite

7b. Leaves alternate

6b. Flowers in sessile clusters; cistoliths of leaves punctiform

53. Small trees or arboraceous shrubs:

8a. Flowers in clusters on long spicles; fruiting perianth not fleshy

Boechmeria 1

8b. Flowers in clusters on short cymes or on panicles; fruiting perianth more or less fleshy:

9a. Leaves white tomentose beneath

Dibresciaria 2

9b. Leaves not white tomentose beneath

Oropecida 7

1. Boechmeria Jacq.

1a. Leaves alternate

B. glomerulifera 1

1b. Leaves opposite

B. macropetala 2


Shrubs up to 2 m tall. Leaves up to 15 x 10 cm, broadly ovate, acuminate, rounded or subacute, petiolate up to 17 cm long, seahrial above, pubescent beneath. Flowers minute. Achenes c. 0.1 cm, ovoid.

Fl. & Fr.: February—March.

Common along water courses in evergreen forests; Chandanathode, Nedumpoyil.

Spreading shrubs up to 2 m high. Leaves up to 15×11 cm, ovate, acuminate, cordate at base; petioles c. 7 cm long. Flowers minute in axillary spikes, up to 30 cm long.

*Fl.*: November—December.

Occasional; along water courses in evergreen forests; on way to Panoth.

The earliest legitimate name for this species is *Boechera macrophylla* Hornem. Therefore Hook.f.'s variety *longissima* treated under *Boechera platyphylla* has to be transferred as a variety of *B. macrophylla*.

2. **Debregeasia** Gaud.

1a. Trees

_D. longifolia_ 2

1b. Straggling shrubs

_D. ceylanica_ 1


Leaves up to 12×10 cm, rotund or rotund-ovate, finely cuspidate, subcordate at base. Flowers minute, pale red, in terminal panicled cymes.

*Fl.*: March—April.

Rare; once collected from evergreen forests, c. 675 m; on way to Kannoth.


Trees up to 5 m tall. Leaves up to 19×3.5 cm, linear to oblong-lanceolate, acuminate, rounded at base. Flowers in tiny heads of short dichotomous cymes in axis of present or fallen leaves.
FLORA OF CANNANORE

Pl. & Fr.: December—February.

Common along fringes of evergreen forests near streams, c. 500 m; Chandanathode.


1a. Herbs or undershrubs over 30 cm high:

2a. Cystolith of leaves conspicuous

E. lineolatum 3

2b. Cystolith of leaves inconspicuous

E. acuminatum 1

1b. Herbs under 15 cm high

E. cuneatum 2


Undershrubs up to 1 m tall. Leaves up to 15 × 3.5 cm, obliquely oblong or oblong-lanceolate, cuneate, subacute at base, coarsely crenate at apex, glabrous. Flowers minute, pale green, in sessile receptacles.

Fl.: April—May

Common as an undergrowth along streams in evergreen forests, 825 m; Chandanathode.


Leaves up to 3 × 5 cm, falcately cuneate, or hatchet shaped, rounded or subacute, inequilateral at base, coarsely crenate on middle. Flowers minute, in receptacles up to 0.5 cm across.

Fl.: August.

Rare, growing on rocks; once collected from lower altitudes; Mattanur.


1a. Leaves glabrous

var. lineolatum

1b. Leaves furunculata

var. setosum
var. lineolatum

Fl. & Fr.: January—February.

Common along streams in dense shades of evergreen forest, c. 825 m; Theerthandamala.


Fl. & Fr.: November—March.

In similar situations as the previous variety.


Undershubs up to 50 cm tall.

Fl. & Fr.: March—November.

Occasional; in evergreen forest, c. 825 m; on way to Brahmagiri, Tolpetty.

5. Laportea Gaud. nom. cons.

1a. Herbs; cystaliths linear

L. interrupta 2

1b. Trees; cystaliths punctiform

L. crenulata 1


Flowers c. 0.4 cm long, white, in paniculate cymes up to 10 cm long.

Fl.: December—February.

Fairly common; in evergreen forest; Chandanathode.
The Elephant Nettle or Devil Nettle, a much dreaded plant, the sting of which can lead to complications including fever.


Erect herbs up to 50 cm tall. Leaves up to 15 × 5.5 cm, ovate-acuminate, coarsely toothed, sometimes 3-5-lobed. Fruits c. 0.2 cm across, oblique, compressed.

*Fl.* & *Fr.*: July—November.

Common, in open wastelands in plains, Cannanore, Tulliverry.


Erect herbs up to 30 cm tall. Leaves up to 8.5 × 3 cm, subrotund, ovate or elliptic, acute, oblique at base. Flowers dioecious, white, in axillary, long-pedicelled heads.

*Fl.:* May—June.

Rare; once collected from dense shades in evergreen forests; Titunall.


Small trees up to 5 m tall. Leaves up to $16 \times 5.1$ cm, lanceolate or oblanceolate, acuminate or subacuminate, narrowed at base. Achenes c. 0.4 cm, free or adnate to perianth, embraced below by marcescent bracteoles, orange.

Fr.: February—March.

Common; along streams in margins of evergreen forests; on way to Kannoth.

8. PELLIONIA Gaud. nom. cons.


Creeping woody herbs. Leaves up to $15 \times 8$ cm, linear-lanceolate to broadly lanceolate, acuminate or caudate, base narrowed and unequally cordate. Flowers whitish, in axillary cymes, up to 9 cm long.

Fl.: March.

Common as an undergrowth in evergreen forests, c. 825 m; Chandanathode, Panoth.

9. PILEA Lindl. nom. cons.


Small delicate herbs up to 15 cm tall. Leaves up to $0.8 \times 0.2$ cm, elliptic to spatulate. Male and female flowers minute, in axillary cymes. Achenes c. 0.1 cm, ovoid, compressed.

Fl. & Fr.: August—November.

Common on walls in plains; Karimbarn, Tellicherry.

10. POUZOLZIA Gaud.

1a. Perianth lobes of male flowers convex or gibbous; buds rounded or acute

P. neolantica 2
1b. Perianth lobes of male flowers plicate and abruptly inflexed at about the middle; buds truncate

P. wightii


1a. Flowers not in spikes

1b. Flowers in spikes

var. wightii

var. caudata

var. wightii

Erect herbs up to 50 cm tall. Leaves up to 5.5 x 1.5 cm, ovate to narrow lanceolate, acuminate, subcordate at base.

Fl. & Fr.: November—February.

Common; in moist deciduous forests; Talpetty.


Erect herbs up to 60 cm tall. Leaves up to 12.5 x 2.7 cm, lanceolate to ovate-lanceolate, acuminate. Flowers c. 0.7 cm across in terminal spikes, up to 15 cm long.

Fl. & Fr.: July—August.

Common; near streams in moist deciduous forests; Chandanathode.


Procumbent herbs up to 75 cm tall. Leaves variable, lower leaves 3 x 1.5 cm, ovate-lanceolate; upper leaves much smaller. Flowers c. 0.2 cm, white, in axillary clusters, c. 0.7 cm across.

Fl. & Fr.: August—November.

Common; in open wastelands in plains; Alakode, Taliparamba.
117. CASUARINACEAE

Casuarina Adans.


Tall trees up to 10 m tall; branches modified into cladodes. Leaves reduced to scales in whorls of 6-7. Carpophore c. 2.5 × 1.5 cm, ellipsoid; achenes enclosed in the hardened enlarged bracteoles.

Fr.: July.

Cultivated in plains; Tellicherry.

Fosberg & Sachet (in Smithsonian Contrib. Bot. 24: 4. 1975) treated this species as a synonym under *Casuarina litorea* L. But Friis (l.c.) has shown that the name *Casuarina equisetifolia* L. was validly published by Linnaeus in 1759. According to him, "*Casuarina litorea* L. ex Fosberg & Sachet appears to be an illegitimate superfluous name, under Art. 63. 1 (ICBN); it includes the type of a name (*C. equisetifolia* L.) which ought to have been adopted under the rules".

118. SALICACEAE

Salix L.


Short trees up to 7.5 m tall. Leaves up to 12 × 2.5 cm, linear to ovate-lanceolate, acuminate, narrowed at base, glaucous beneath. Capsules c. 0.7 cm across, ovoid or lanceolate, in terminal catkins up to 6 cm long.

Fr.: March.

Common; along banks of streams in moist deciduous forests, Tulpetty.
119. CYCADACEAE

CYCAS L.


Trees up to 2.5 m tall, clothed with the woody bases of the petioles. Leaves in terminal crowns, pinnate, 1-1.5 m long; leaflets 30 x 1.5 cm, linear, acute at base, acuminate at tip. Ovuliferous scales loosely imbricate, leaf-like, pinnatifid with 1 to 3 pairs of ovules along the margins of the stalk. Seeds 4.5 x 2.5 cm, ellipsoid, compressed.

Occasional; in open wastelands in plains; Ezhimala, Kannoth.

120. GNETACEAE

_Gnetum_ L.


Large woody climbers; branchlets slender with swollen nodes, glabrous. Leaves up to 16 x 7.5 cm, ovate-oblong or elliptic, subcoriaceous, glabrous, shining, obtusely acuminate at apex, cuneate at base. Fruits up to 3.5 x 1.5 cm long, oblong, obtuse, fleshy, longitudinally wrinkled when dry.

Fairly common in semi-evergreen forests, c. 250 m; Aralam, Chandanathode, Partyaram.

121. HYDROCHARITACEAE

_Blyxa_ Thouars ex L.C. Richard


 Dioecious submerged annual herbs; stems erect. Leaves radical, up to 25 x 0.8 cm, linear, narrowed at base, acute at apex. Male and female spathes up to 25 cm long, stalked; flowers white. Capsules up to 5 cm long, terete, cylindrical or narrowly obclavate.

*Fl. & Fr.:* November—December.

Common in swampy regions; Kalliassery, Kannoth, Mambaram.

122. ORCHIDACEAE

1a. Terrestrial herbs:

2a. Leafy herbs:

3a. Flowers spurred or with a mentum:

4a. Lips spurred:

5a. Spur cylindric:

6a. Tubercous herbs; leaves sessile or subsessile; lip free; midlobes entire  

    *Habenaria* 16

6b. Non-tubercous herbs; leaves petiolated; lip adnate at base; midlobes deeply cleft  

    *Calanthe* 5

5b. Spur not cylindric (scerotiform or conical or vermiform):

7a. Inflorescence lateral; leafless when flowering  

    *Eulophia* 14

7b. Inflorescence terminal; leafy when flowering:

8a. Plants with tubers; lip inferior  

    *Peristylus* 21

8b. Plants without tubers; lip superior  

    *Trapidia* 31

4b. Lip not spurred:

9a. Sepals free  

    *Zeuxine* 33

9b. Sepals connate  

    *Cheirostylis* 6

3b. Flowers without spur or mentum:

10a. Column very short, entire  

    *Makiris* 19

10b. Column long, margined or winged towards apex  

    *Liparis* 17

2b. Leafless herbs:

11a. Lip spurred  

    *Epipogium* 12

11b. Lip not spurred  

    *Aphyllochoris* 3
1b. Epiphytic herbs:

12a. Plants with terete leaves:

13a. Flowers many in a pendulous raceme

13b. Flowers few (2-5) on an erect raceme:

14a. Lip with spur

14b. Lip without a spur

12b. Plants with flat leaves:

15a. Leaves fleshy, equitant:

16a. Stem very short; leaves tufted

16b. Stem elongate; leaves inarching throughout

15b. Leaves not fleshy:

17a. Plants with pseudobulbs:

18a. Pseudobulbs with single leaf:

19a. Pseudobulbs in clusters; inflorescence terminal on the pseudobulbs

19b. Pseudobulbs not in clusters; inflorescence lateral from pseudobulbs:

20a. Sepals subequal, lateral ones not cohering along margins, not twisted

20b. Sepals very unequal; lateral ones cohering along margins and twisted

18b. Pseudobulbs with 2 or more leaves:

21a. Flowers with a mentum:

22a. Lip lobed

22b. Lip entire

21b. Flowers without mentum:

23a. Pseudobulbs with 2 terminal leaves:

24a. Flowers in panicled

24b. Flowers in simple racemes:

25a. Flowers yellow; lip entire

25b. Flowers white; lip trilobed

23b. Pseudobulbs with 4 or more leaves:

26a. Inflorescence pendulous; lateral

26b. Inflorescence erect; terminal

17b. Plants without pseudobulbs:
27a. Plants short; less than 10 cm tall:

28a. Inflorescence much shorter than leaves:

29a. Spur sacate; midlobe at rim of spur, not covering it

29b. Spur pointed; midlobe halfway down, spur covering it

28b. Inflorescence equalling the length of leaves

Tetraspernum 30

27b. Plants tall, more than 10 cm tall:

30a. Lip with spur:

31a. Leaves praemorse at apex

Vanda 32

31b. Leaves refute or cleft at apex:

32a. Inflorescence drooping; lip entire

Rhyynchostylis 26

32b. Inflorescence racemose, erect; lip trifoliate:

33a. Inflorescence racemose, much larger than leaves

Aerides 2

33b. Inflorescence corymbose, much shorter than leaves

Acampe 1

30b. Lip without a spur:

34a. Leaves linear; flowers without a mentum

Cattania 9

34b. Leaves ovate-lanceolate; flowers with a mentum:

35a. Mentum formed by lateral sepals and foot of column

Dendrobium 11

35b. Mentum formed by lip and foot of column

Phalaenopsis 22

I. ACAMPE Lindl. nom. cons.


Stems up to 60 cm long with vermiciform roots. Leaves c. 20 x 2 cm, lorate, distichous, keeled, thickly coriaceous with two rounded lobes at apex. Flowers c. 1.5 cm across, yellow, with red transverse striae, in leaf-opposed corymbose panicles, up to 15 cm long. Capsules c. 5 cm long, fusiform.

Fl. & Fr.: November—March.

Common; in semievergreen forests near streams; Aralam, Kannoth.
2. Aerides Lour.


Robust epiphytes; stems 5 - 20 cm long, woody. Leaves c. 20×2 cm, linear, equally cleft at apex, sheathing at base, coriaceous. Flowers c. 2 cm long, pink or mauve, in racemes, up to 15 cm long. Capsules up to 3 cm long, obovoid-oblong.

Fl. & Fr.: March—April.

Occasional; in semievergreen forests, c. 250 m; Kannoth.

3. Aphyllorchis Bl.


Slender saprophytic, leafless herbs up to 60 cm high; scales up to 1.5 cm long, embracing the stem. Flowers c. 2.5 cm long, pinkish yellow, in racemes. Bracts c. 1 cm long, linear-lanceolate, acute, deflexed.

Fl.: August.

Rare; once collected from evergreen forests, c. 250 m; Kannoth.


1a. Lip with long hairs on lower surface

1b. Lip glabrous

B. tremulum 2

B. neilgherrense 1


Robust epiphytes with creeping slender stem. Pseudobulbs c. 3.5×2 cm, conical-ovoid. Leaves c. 14×3 cm, oblong-elliptic, obtuse or
emarginate, thick, fleshy. Flowers c. 1 cm long, dull yellow, in racemes up to 2.5 cm long.

Fl.: December—January.

Common; in shades of moist deciduous forests, c. 250 m; Kannoth, Karimbam.


Creeping herbs with slender rhizomes; pseudobulbs at intervals, ovoid-conical. Leaf one per pseudobulb, c. 14 x 3.5 cm, oblong-lanceolate, obtuse or acute. Flowers c. 1.5 cm long, yellow with purple tinges, in racemes up to 19 cm long. Capsules c. 2.5 cm long, ellipsoid.

Fl.: March—April.

Occasional; on tree trunks in evergreen forests, c. 825 m; Chandanathode, Kakkavangad.

5. Calanthe R. Br. var. cons.


Robust evergreen terrestrial herbs up to 1 m tall. Leaves c. 40 x 11 cm, ovate-lanceolate, acuminate, tapering into a petiole at base, sparsely pubescent beneath. Flowers c. 3 cm long, pink in lax flowered racemes, up to 65 cm long. Capsules up to 5 cm long, fusiform.

Fl. & Fr.: November—February.

Common in shades of evergreen forests, c. 825 m; Chandanathode, Thenchindamala.

6. Cheirostylis Bl.


Slender succulent saprophytic herbs up to 20 cm tall. Leaves 4-7, c. 2.8 \times 1.2 cm, ovate, acute, with sheathing base. Flowers up to 1.4 cm long, white with purple tinge, in glandular pubescent racemes up to 15 cm long.

Fl.: December—January.

Rare; on decaying wood in dense evergreen forests, c. 825 m; Chandanathode.

7. CIRRHOPETALUM Lindl. nom. cons.


Rhizome slender with angled yellow pseudobulbs, c. 1 cm across, crowded. Leafless during flowering. Spike up to 12 cm long, with 9-12 lemon yellow flowers; each about 2 cm long; lip deep purple with a yellow centre, c. 0.5 cm long, fleshy.

Fl.: February—March.

Occasional in evergreen forests, c. 825 m; Thariods Forest (Abraham & Vatsala l. c.)

8. COELOGYNE Lindl.


Creeping epiphytes. Pseudobulbs c. 5 \times 2.5 cm, oblong-ovoid. Leaves c. 18.5 \times 4 cm, elliptic, acute, narrowed into a keeled petiole, punctate. Capsules c. 5.5 cm long, ellipsoid.

Fl.: February.
Rare: once collected from evergreen forests above 8/5 m; on way to Brahmagiri.

9. COTTONIA WIGHT


Stems c. 10 cm long. Leaves c. 16 x 1.4 cm, linear, keeled, unequally 2-lobed, sheathing at base. Flowers c. 1.4 cm long, greenish yellow, with purple lip, in erect panicles up to 50 cm long.

Fl.: March—April.

Common on tree trunks in semi-evergreen forests; Aralam.

10. CYMBIDIUM Sw.


Robust herba with imbricating leaf bases. Leaves c. 26 x 1.5 cm, distichous, linear-oblong, obtuse, shortly obliquely notched. Flowers c. 4 cm long, yellowish red; racemes up to 45 cm long.

Fl.: March—September.

Common on tree trunks in moist deciduous forests; Kannoth.

11. DENDROBIUM Sw. nom. cons.

1a. Plants with pseudobulbs; stems short

D. nanum 7

1b. Plants without pseudobulbs; stems elongate:
2a. Flowers at leafy nodes.
3a. Flowers in fascicles, on leaf-opposed tubercles
   D. haemagoglossum 2
3b. Flowers in racemes, not on leaf-opposed tubercles:
   4a. Racemes axillary, longer than leaves
       D. heyneanum 4
   4b. Racemes terminal, shorter than leaves
       D. nigrii 8
2b. Flowers at leafless nodes:
   5a. Flowers in racemes
       D. herbaceum 3
   5b. Flowers fascicled:
       6a. Lip of lip as broad as long:
       7a. Column foot distinct; lip pubescent
           D. crepidatum 1
       7b. Column foot absent; lip glabrous
           D. lownianum 5
       6b. Lip of lip twice as long as broad
           D. macrostachyum 6

1. Dendrobium crepidatum Lindl. in Paxton, Fl. Gard. 1: 63. f. 43.
   Pendulous herbs. Stems shining where there are no covering sheaths.
   Leaves c. 10 x 1 cm, lanceolate, acuminate. Flowers c. 3 cm long, white,
   with pink tinge.

   Fl.: April.

   Rare; on tree trunks. Once collected from evergreen forests above
   825 m in ghats; Periya.

   1416. 1928 (Repr. ed. 3: 590. 1957).
   Tufted epiphytes up to 45 m tall. Leaves c. 12 x 0.9 cm, linear, coria-
   ceous, obtuse, slightly incurved. Flowers c. 2 cm long, pale yellow, in pairs.

   Fl.: April.

   Rare; on tree trunks. Once collected from dense evergreen forests
   above 500 m in ghats; Panath.

   Brit. Ind. 5: 719. 1890; Fischer in Gamble, Fl. Pres. Madr. 1416. 1928
Much branched pendulous herbs up to 45 cm long; stem caespitose, yellow, shining, ridged. Leaves c. 5.5 x 0.4 cm, linear-lanceolate, acute. Capsules c. 3 cm long, ellipsoid, tapering at base, with 6 ribs.

Fr.: March—April.

Occasional; in moist deciduous forests, c. 825 m; Trisalleri.


Epiphytes up to 20 cm tall; stems c. 12 cm long. Leaves c. 12 x 0.8 cm, linear-lanceolate, acute with sheathing base; leaf sheaths hyaline. Flowers in axillary racemes up to 5.5 cm long, white with pink tinge. Capsules ovoid, c. 1.2 cm long with marcescent perianth.

Fl.: April—July.

Common; in evergreen forests, c. 840 m; Chandanathode, Tirunalli.


Pendulous herbs with tufted stems up to 25 cm long. Leaves 5-7, c. 13 x 1.6 cm, ovate to lanceolate, acuminate. Capsules up to 5 cm long, ellipsoid.

Fr.: June—August.

Common; in evergreen forests, c. 825 m; Chandanathode.

Drooping herbs; stems up to 50 cm long. Leaves c. 7 x 1.5 cm, lanceolate, acute at tip, shortly sheathing at base. Capsules c. 4 cm long, ellipsoid, ridged with marcescent perianth.

Fr.: May—June.

Occasional; in semi-evergreen forests, c. 800 m; Manantoddy.


Small slender herbs. Leaves c. 4 x 0.4 cm, lanceolate-elliptic, sheathing at base, acute. Flowers 10, c. 1.5 cm long, white with yellow tinge, in terminal racemes, up to 8 cm long.

Fl.: November.

Rare; once collected from evergreen forests, c. 825 m; Chandanathode.


Slender epiphytes up to 15 cm long. Leaves c. 9 x 0.4 cm, linear-lanceolate, acute, sheathing at base. Flowers 5-6, c. 1.7 cm long, white tinged with pink, mildly fragrant, in terminal racemes up to 7 cm long. Capsules c. 2 x 0.7 cm, ovoid with marcescent perianth.

Fl. & Fr.: December—January.

Occasional; on tree trunks in evergreen forests c. 825 m; Chandanathode.


Saprophytic, leafless tuberous herbs up to 30 cm long. Tubers c. 3.5 x 2 cm, oblong-ovoid, wrinkled; scales c. 1 cm long. Flowers c. 1.5 cm long, white with purple tinge in pendulous stout racemes up to 27 cm long. Capsules c. 1 cm long, ellipsoid.

Fl. & Fr.: January—April.

Common; Ambayathode, Chandanathode.

13. **Eria Lindl. nom. cons.**


Pseudobulbs discoid, c. 1 cm across, clustered. Leaves 2, c. 6.5 x 1 cm, linear-oblong, narrowed into a short sheathing base. Flowers c. 0.6 cm long, pale orange yellow, faintly perfumed in several racemes up to 9 cm long.

Fl.: August.

Rare; once collected from evergreen forests, c. 825 m; on way to Brahmagiri, Chandanathode.

14. **Eulophia R. Br. ex Lindl. nom. cons.**


Terrestrial herbs with creeping underground tubers. Tubers c. 8 x 5 cm, horizontally oblong with transverse ridges, leafless when flowering. Flowers c. 2.5 cm long, greenish white, in racemes up to 60 cm long; scape terete, with sheathing bracts.

Fl.: April—July.

Rare; in dense shades of evergreen forests, c. 825 m; Chandanathode.
15. Gastrochilus D. Don


Small epiphytic herbs with verrucose roots. Leaves 4-5, c. 16 x 2 cm, flat, linear-oblong, narrow, sheathing and articulating at base, apex unequally bilobed. Capsules c. 3 x 0.4 cm, ellipsoid, winged with marcescent perianth.

Fl.: February.

Occasional; in semievergreen forests, c. 250 m; Nedumpoyil.


1a. Leaves 8-9, clustered about the middle of the plant; petals 2-partite

H. multicaudata 2

1b. Leaves 5-6, subradical (only at base); petals entire

H. longicorniculata 1


Drept herbae, up to 50 cm long. Tubers 2-3, each c. 2.5 x 1.3 cm, oblong. Leaves up to 12 x 2.5 cm, elliptic or narrowly oblong-obovate, abruptly acuminate. Flowers 2. c. 3.5 cm long, white; lip c. 2.5 cm long, much reflexed, trident to the middle. Spur up to 10 cm long, much longer than ovary.

Fl.: November.

Rare; once collected from grasslands, c. 875 m; Chandanathode.


Erect herbs up to 50 cm tall. Tubers 2, each up to 3.5 x 1.5 cm, ovoid-oblong. Leaves c. 16.5 x 3.5 cm, elliptic-oblong, acute, sheathing at base. Flowers c. 2.5 cm long, pale green, in racemes up to 20 cm long; spur c. 1.5 cm long.

Fl.: August.

Occasional; in grasslands, c. 840 m; Chandanathode.


Lithophytic or epiphytic herbs up to 45 cm tall. Pseudobulbs c. 7 cm long, ovoid; stems slantly. Leaves 2, each up to 22.5 x 2.5 cm, linear, oblanceolate, acute. Capsules c. 1.2 cm long, pale yellow, globose or oblong.

Fr.: February.

Common; in evergreen forests; Chandanathode, Nedumpoyil.

18. Luisia Gaud.


Herbs with terete stems up to 12 cm tall. Leaves c. 8 cm long, terete, sheathing at base, acute. Capsules up to 2 x 0.4 cm, cylindrical, in axillary spikes.
Fr.: June.

Occasional; in moist deciduous forests, c. 825 m; Begur.

19. MALAXIS Sol. ex Sw.


Erect herbs up to 45 cm tall. Leaves 4-5, each up to 15×6 cm, ovate-oblanceolate, shortly acuminate, abruptly narrowed into a sheathing petiole. Flowers c. 0.5 cm long, maroon coloured, lip yellow, in terminal racemes up to 15 cm long.

Fl.: July—November.

Common in dense shades of semi-evergreen forests, Chandranathole, Kannoth.

20. OBERSOIA Lindl. nom. cons.

1a. Lateral lobes of lip bigger than the midlobe:

2a. Lateral lobes of lip long and narrow; lip glabrous

O. brunoniana 1

2b. Lateral lobes of lip broad and wing-like; lip glabrous pubescent

O. chandrasekharanii 2

5b. Lateral lobes of lip much smaller than the midlobe

O. verticillata 3


Pendulous herbs up to 30 cm tall. Leaves c. 11×2 cm, linear-oblanceolate, acutish. Flowers c. 0.4 cm long, yellowish orange, in dense erect or arcuate subcylindric spikes up to 22 cm long. Capsules c. 0.4 cm long, oblong, ribbed, shining.

Fl. & Fr.: July—August.
Common; in moist deciduous forests, 825 m; Chandanathode.


Pendulous epiphytes. Leaves articulate, up to 15 cm long, 0.5-1.5 cm, broad, ensiform, acute.Scape adnate to upper leaf, up to 9 cm long, 0.3-0.6 cm broad, flattened. Racemes up to 18 cm. Flowers pale greenish-yellow in verticils of 3-6; verticils 2-3 mm apart; bracts c. 2 x 1.25 mm, lanceolate, acuminate, fringed along margin, gland-dotted. Sepals and petals c. 1.25 x 0.5 mm, linear, truncate and toothed at apex. Lip reniform in outline, 3-lobed, c. 1.5 x 2 mm, pubescent, gland-dotted; lateral lobes auriform, longer than broad, folded upwards around the column; midlobe c. 0.5 x 0.75 mm, two lobed with a sinus in between; lobules of midlobe orbicular; disc ovate, concave; nerves not clear. Column c. 0.5 x 0.3 mm, oblong; stigma suborbicular. Ovary with pedicel c. 2 mm. Pollinia ovoid.

Fl.: August.

Rare; once collected from evergreen forests above 840 m, in ghats; Chandanathode, VSR 66946 (Type).


Pendulous herbs up to 25 cm long. Leaves c. 15 x 1.2 cm, narrowly ensiform, acuminate. Flowers very minute, pale greenish yellow, shortly pedicellate, in slender racemes up to 13 cm long.

Fl. & Fr.: January—February.

Common; in moist deciduous forests, 825 m; Tolpetty.


1a. Leaves clustered about the middle of stem:

2a. Spur as long as sepals

\textit{P. aristatus} 1

2b. Spur shorter than sepals

\textit{P. goodyeroides} 2

1b. Leaves scattered and imbricate on stem

\textit{P. spiralis} 3

Erect herbs up to 45 cm tall. Tubers c. 3×2 cm, oblong. Leaves 4-5, each up to 14×4.2 cm, broadly obovate or elliptic-lanceolate, sheathing at base, acute at tip. Flowers c. 1 cm long, pale green, in racemes up to 27 cm long. Capsules c. 1 cm long, ellipsoid.

*Fl. & Fr.*: June—August.

Common in grasslands c. 825 m; Chandanathode.


Erect herbs up to 1 m tall. Tubers 1-2, each up to 4×1.5 cm, oblong. Leaves 4-5, each up to 17×5.3 cm, subequal, ovate, elliptic-obovate, sheathing at base, acute at tip. Capsules c. 1 cm long, oblong, in 10-15 cm long spikes.

*Fr.*: November.

Common; in grasslands, c. 825 m; Tolpetty.


Erect herbs up to 45 cm tall. Tubers 1-2, each up to 2×0.5 cm, oblong. Leaves 3-4, c. 9×1.2 cm, linear-lanceolate to elliptic, sheathing at base, acute at tip. Flowers c. 0.8 cm long, pale green, in spikes up to 17 cm long.

*Fl. & Fr.*: November—March.
Common; in grasslands, c. 875 m; on way to Brahmagiri, Chanda-nathode.

22. **Phalaenopsis** Bl.

1a. Stem 3 cm long; leaves 3-4  \(P. \text{ decumbens} \) 1
1b. Stem 1.5 cm long; leaves 2  \(P. \text{ mysorensis} \) 2


Stems up to 3 cm long; roots vermiciform. Leaves 2-3, each up to 15×4.5 cm, oblong-lanceolate, obtuse, coriaceous. Flowers c. 2 cm long; pale pink with creamy yellow tinge, in racemose panicles up to 12 cm long.

*Fl. & Fr.*: August.

Rare; once collected from semi-evergreen forests; Kannoth.


Pendulous epiphytes; roots 5-6, firmly attached to tree trunks. Leaves 2, each up to 7.6×2 cm, elliptic-obovate, unequally forked at apex, coriaceous. Capsule c. 4 cm long, elliptic-oblong.

*Fr.*: May.

Rare; once collected from evergreen forests, c. 875 m; Tirunalli.

23. **Pholidota** Lindl.

Pseudobulbs c. 4.5 × 2.5 cm, oblong-conical, in clusters. Leaves up to 30 × 5 cm, elliptic-ob lanceolate, acute, narrowly into short petioles. Flowers c. 1.5 cm long, white, arranged in two rows in pendulous racemes up to 30 cm long. Fruits c. 2 cm long, ellipsoid, ribbed, shining.

Fl. & Fr.: August—November.

Common; in moist deciduous forests, c. 250 m; Chandanathode, Taliparamba.

24. CODONOPSIS Bl.


Tufted leafy epiphytic herbs up to 20 cm tall. Leaves 1.6 × 0.6 cm, distichous, equitant, laterally compressed, subulate or ovate-subacute, stem acute, straight erect. Flowers c. 0.5 cm long, pink in terminal racemes, up to 4.5 cm long.

Fl.: November.

Occasional on tree trunks in evergreen forests near streams; Chandanathode.

25. POLYSTACHYON Hook. *nom. cons.*


Herbs up to 30 cm tall; stems short, covered by sheathing bracts and sheathing bases of leaves at base. Leaves 2-4, each up to 18 × 2.5 cm, distichous, oblong-elliptic or lanceolate, narrowed into sheathing petiole, articulate at base, obtuse or acute. Flowers c. 0.5 cm long, pale brown, in c. 20 cm long panicles.

Fl. & Fr.: August—November.
Common; in evergreen forests, c. 825 m; on way to Brahmagiri, Chandanathode.


Stout herbs up to 50 cm tall; stem c. 15 cm long, woody, covered by sheathing bases of fallen leaves. Leaves c. 17×2.5 cm. linear, praemorse at apex, articulate and sheathing at base. Capsules c. 2.6 cm long, oblance-obovoid, in drooping racemes up to 30 cm long.

**Fl. & Fr.**: February March.

Occasional; in moist deciduous forests; Tirunalli, Taliparamba.

27. Sarcanthus Lindl.


Small pendent epiphytes up to 25 cm tall; stems slender c. 15 cm long. Leaves c. 10×0.5 cm, linear-lanceolate, falcately recurved, acuminate, coriaceous, sheathing at base. Capsules c. 1.5 cm long, fusiform, delinated, in leaf-opposed racemes up to 3.5 cm long.

**Fr.**: January.

Occasional; in semievergreen forests, c. 500 m; Kanoth.

28. Sirhookera Kuntze

*Sirhookera lanceolata* (Wight) Kuntze, Rev. Gen. Pl. 681. 1891; *Josephia lanceolata* Wight, Fl. t. 1742. 1851; Hook. f. Fl. Brit. Ind. 5 :
Epiphytes with very short pseudobulbs with vermiform roots. Leaves solitary, 8 × 3.5 cm, oblanceolate, subacute or obtuse, coriaceous, base continuing into petiolar sheath. Flowers c. 0.2 cm long, pale purple in 15-20 cm long racemes.

Fl.: August.

Occasional; in shola forests 975 m, Thenithalmala.

29. Smithsonia Sald.


Epiphytic herbs c. 10 cm tall. Stems very short. Leaves reflex at tip. Flowers c. 0.5 cm wide, yellow with red spots; lip white with pink spur. Capsules ribbed.

Fl.: April—May.

Rare; once collected in evergreen forests; Chandanathode.

30. Thrixspermum Lour.


Stem slender, erect or pendent. Leaves c. 12 × 1.5 cm, lorate, flat, coriaceous, unequally 2-lobed at apex, base articulating with petiolar sheaths. Flowers c. 3 cm across, golden yellow in leaf-opposed axillary racemes up to 12 cm long.

Very rare; Chandanathode (Abraham & Vatsala i.e.)
31. Tropidia Lindl.


Terrestrial leafy herbs; stems up to 45 cm long. Leaves 2-3, each up to 14 x 8 cm, elliptic or broadly ovate, acuminate, rounded or cordate at base, 5-7-veined, sheaths enclosing stem. Flowers c. 1.5 cm long, white, in terminal dense spikes up to 8 cm long.

*Fl.* & *Fr.* : August.

Once collected from dense shades of evergreen forests above 800 m in ghats; Chandanathode.

32. Vanda R. Br.


Stems c. 10 cm long, thick. Leaves c. 11 x 0.9 cm, linear, keeled, praemorse at tip, sheathing and articulate at base. Flowers c. 2.5 cm long, pale yellow, pedicellate, in axillary racemes up to 10 cm long.

*Fl.* : June.

Common; in moist deciduous forests, c. 825 m; Begur.

33. Zeuxine Lindl. *nom. cons.*

Erect herbs up to 30 cm tall. Rhizomes decumbent and swollen at nodes. Leaves 3, each up to 5.5 x 2 cm, membranous, pinkish on drying, crowded at the base of the inflorescence, ovate-lanceolate, acute, sheathing at base. Flowers c. 2.3 cm long, white, in 20-25 cm long racemes.

Fl.: February.

Common on forest floors in evergreen forests, c. 625 m; Chandanathode.

123. ZINGIBERACEAE

1a. Leaves spirally arranged; sheaths tubular

1b. Leaves distichously arranged; sheaths usually open on one side:

2a. Styles exerted much beyond anther-thecae

2b. Styles not exerted much beyond anther-thecae:

3a. Bracts of the inflorescence adnate to each other; anthers spurred basally

3b. Bracts free up to base; anthers not spurred basally:

4a. Bracts of the inflorescence distichous

4b. Bracts of the inflorescence spirally arranged:

5a. Inflorescence terminal on a leafy stem:

5b. Inflorescence basal or arising near the long rhizomes:

8a. Inflorescence arising near the base of a leaf; anthers crested

8b. Inflorescence arising from wandering rhizomes; anthers not crested

1. ALPINIA Roxb. nom. cons.

Erect herbs up to 3 m tall. Leaves c. 46×7 cm, narrowly lanceolate, acuminate, pubescent beneath. Flowers c. 5 cm long, white, in racemes up to 25 cm long; inflorescence axis densely tomentose. Capsules c. 3 cm across, globose, pubescent, red when ripe.

Fl. & Fr.: March—April.

Common along streams in evergreen forests; Chandanathode.

2. Amomum Roxb. nom. cons.

1a. Peduncles more than 10 cm long; spikes subglobose
   A. muricatum 2
1b. Peduncles less than 2.5 cm; spikes oblong-lanceolate
   A. cannicarpum 1


Erect herbs up to 75 cm tall. Rhizomes thick, stems swollen at base. Leaves c. 27×6 cm, linear-lanceolate, finely acuminate, acute at base. Bracts 2-5 cm long, broadly ovate. Flowers 3-3.5 cm long, yellow, in dense flowered spikes. Capsules c. 2×1 cm, globose, densely echinate, chestnut-coloured.

Fl. & Fr.: August—September.

Occasional; along streams in evergreen forests, c. 500 m; Chandanathode.


Erect herbs up to 75 cm tall. Rhizomes thick, stems swollen at base. Leaves c. 30×7.5 cm, elliptic or oblong-lanceolate, finely acuminate. Bracts c. 2.6 cm long, oblong, pink. Flowers 3-3.5 cm long, white with red tinge.

Fl.: April.

Common; in shades in evergreen forests, c. 500 m; Nedumpoyil.
3. BOESENBERGIA O. Kuntze


Erect herbs up to 30 cm tall. Leaves c. 13.5 x 4.5 cm, elliptic, acute, unequal at base; pedioles c. 3 cm long. Floral bracts up to 3.5 cm long. Flowers c. 1.5 cm long, white with pink tinge.

Fl.: April—May.

Occasional in shades along streams in evergreen forests, c. 250 m; Kollam.

4. COSTUS L.


Erect herbs up to 1.5 m tall. Leaves up to 26 x 6.5 cm, oblong-acuminate, narrowly rounded at base, silky beneath, glabrous above. Bracts c. 1.5 cm long, ovate-acute, red, minutely pubescent. Flowers 6 cm long, white tinged with yellow, in terminal spikes. Capsules globose, 1.5 cm across, bright red.

Fl. & Fr.: July—November.

Common; along forest streams; Bigur, Chandranathode, Payyavur.

5. CURCUMA Roxb.

1a. Spikes lateral: appearing before the leaves

1b. Spikes arising from the centre of previously formed tuft of leaves:

2a. Rootstock small, bearing tubers at the ends of fibrous

2b. Rootstock large; tubers sessile

Erect herbs up to 45 cm tall. Leaves up to 30×12 cm, oblong-lanceolate, acuminate, narrowed at the base; petioles up to 30 cm long. Bracts c. 3 cm long, greenish white. Flowers c. 3.5 cm long, bright yellow, in terminal spikes up to 25 cm long.

*Fl.*: July—November.

Common; along streams in semievergreen forests; Bagur, Kannoth.


Herbs with rhizomatic rootstock ending in globose tubers. Spikes up to 30 cm long. Bracts c. 3 cm long, white inside, oblong-lanceolate, acute, pale yellowish green. Flowers c. 2.5 cm long, bright yellow; lip broadly ovate or suborbicular.

*Fl.*: February—March.

Common; in grasslands, c. 840 m; Chandanathode.


Tuberous herbs up to 20 cm tall; tubers up to 4×0.8 cm, oblong-ellipsoid. Leaves c. 13×6.5 cm, ovate, elliptic, oblique at base, acuminate and apiculate; sheaths up to 8 cm long. Flowers up to 5 cm long, white, in spikes up to 8 cm long; bracts up to 2.5×1.7 cm, lanceolate, obtuse, recurved at apex, green.

*Fl.*: March—April.

Common along margins of semievergreen forests; Kalliaserry, Kannoth, Karimnam.


Differs from var. *oligantha* mainly by the yellow colour of the flowers and grows together.
6. Globba L.

1a. Anthers with spreading bifid wings; bracts persistent  
   G. bulbilfera 1

1b. Anthers without wings; bracts deciduous  
   G. ophioglossa 2


   Erect herbs up to 30 cm tall. Leaves c. 17 x 3.5 cm, oblong to broadly lanceolate, acute, attenuate at base, minutely puberulous beneath. Bracts c. 1.5 cm long, broadly ovate. Capsules c. 2.5 cm across, globose, dehiscent.

   Fl.: November—December.

   Occasional; in moist deciduous forests, c. 825 m; Tollypetty.


   Erect herbs up to 75 cm tall. Leaves up to 18 x 4.5 cm, elliptic-lanceolate, cuneate, acuminate, sparsely pubescent beneath. Flowers pale yellow, in terminal spikes.

   Fl.: July—August.

   Common as an undergrowth in evergreen forests along streams; Kannoth.


   Erect herbs up to 2.5 m tall. Leaves lanceolate, acuminate, tapering at base, sparsely pubescent beneath. Bracts up to 5 x 3.5 cm, broadly ovate, obtuse. Flowers up to 10 cm long, yellow, in terminal inflorescence up to 15 cm long.

   Fl.: June—July.
Common: along banks of streams: Chandanathode.

8. Zingiber Boeilm. var. cons.

1a. Spikes produced direct from the rootstock:  
**Z. roseum** 3

1b. Spikes not produced direct from the rootstock:

2a. Spikes more than 15 cm long:  
**Z. neesianum** 1

2b. Spikes less than 15 cm long:  
**Z. purpureum** 2


Erect herbs up to 50 cm tall. Leaves up to 25×4.5 cm, linear-lanceolate, acuminate, sparsely pubescent beneath. Bracts c. 2.5 cm long, ovate. Flowers c. 2.5 cm long, white, in cylindric spikes up to 35 cm long. Capsules c. 0.7 cm across, obovoid, red.

**Fl. & Fr.:** August—November.

Common; in evergreen forests, c. 500 m; on way to Kannoth, Panath.


Erect herbs up to 1 m tall. Leaves up to 26×4.5 cm, lanceolate acute, pubescent beneath; sheath pubescent. Bracts c. 2.5 cm long, ovate. Flowers 2.5-3.0 cm long, pale yellow, in terminal spikes up to 10 cm long.

**Fl.:** April—May.

Common along streams in evergreen forests, c. 800 m; Tirunalli.

Erect herbs up to 1 m tall. Leaves up to 27 × 5.5 cm, oblong-lanceolate, acuminate, sparsely pubescent beneath. Bracts 5-6 cm long, red; outer ones broadly ovate; inner ones linear-lanceolate. Flowers c. 3.5 cm long, red, in oblong spikes, up to 11 cm long.

Fl.: October—November.

Rare; once collected in moist deciduous forests, c. 825 m; Tolpetty.

Eleusaria cardamomum (L.) Maton the cardamum of commerce is largely cultivated.

124. MARANTACEAE

1a. Shrubs with stems; flowers in dichotomously branched terminal panicles
   Schumannianthus 1

1b. Stemless herbs; flowers in capitate spikes
   Stachyophyrium 2

1. SCHUMANNIANTHUS Gagnep.


Erect shrubs with dichotomous branches, up to 3.5 m tall. Leaves up to 30 × 6.5 cm, oblong-lanceolate, acuminate, rounded at base; sheaths up to 15 cm long. Bracts c. 3.5 cm long, oblong. Flowers c. 2.5 cm long, white, in panicles. Capsules c. 2 cm across, subpyriform.

Fl. & Fr.: July—August.

Common; near streams along margins of evergreen forests above 825 m; Chandasathode.

2. STACHYPHYRIUM K. Schum. nom. cons.

Creeping herbs with rhizomatous stems, up to 40 cm tall. Leaves up to 17 \times 5 \text{ cm}, oblong, caudate-acuminate or cuspidate, rounded at base; petioles up to 19 cm long. Bracts c. 1.5 cm long, ovate. Flowers c. 2.5 cm long, white, in spikes up to 7 cm long.

Fl.: April—May.

Occasional in the floor of semi-evergreen forests, c. 250 m; Aralam, Nedumpoyil.

125. HAEMODORACEAE

1a. Leaves plicate, folded
Peliosanthes 2

1b. Leaves flat, not folded
Ophiopogon 1

1. OPHIOPOGON ker-Gawl.


Subscendent herbs with short rootstock, up to 75 cm tall. Leaves up to 22 \times 1.2 \text{ cm}, linear-lanceolate, acuminate, tapering at base. Berries c. 1.5 cm across, globose, in pairs.

Fl.: November—December.

Rare; once collected from shades in dense evergreen forests, c. 825 m; on way to Brahmagiri.

2. PELIOSANTHES Andrews


Creeping herbs with rootstocks. Leaves up to 25 \times 4.5 \text{ cm}, elliptic-acuminate, tapering at base; petioles up to 20 cm long. Flowers c. 1 cm across, greenish to dark purple, in slender racemes up to 10 cm long.

Fl.: October—December.
Common in dense evergreen forests, c. 825; Chandanathode, Nedumpoyil.

126. HYPOXIDACEAE

Curculigo Gaertn.


Stemless herbs with tubers, up to 15 cm tall. Leaves up to 12 x 2 cm, linear to lanceolate, acute, tapering at base. Flowers c. 1 cm long, yellow, solitary, on a very short scape, c. 2.5 cm long, among leaves.

Fl.: March—July.

Common in grasslands above 840 m in ghats; Chandanathode, Manantoddy.

127. DIOSCOREACEAE

*Dioscorea* L.

3a. Leaves unifoliolate:

2a. Stems armed

2b. Stems unarmed:

3a. Stems twining to the left

3b. Stems twining to the right:

4a. Stems winged or regularly angled

4b. Stems neither winged nor angled

1b. Leaves 5-5-foliolate


Climbing shrubs. Stems bearing warted bulbils in leaf axils. Leaves up to 12 x 6 cm, broadly ovate to suborbicular, acuminate, cordate at base; petioles up to 6 cm long. Male flowers c. 0.2 cm long, in pendulous axillary panicles.
Fl.: November—December.

Occasional; in moist deciduous forests, c. 825 m; Tolpetty.


Climbing shrubs. Leaves up to 11 × 6 cm, ovate or lanceolate, acuminate, truncate to deeply cordate at base; petioles c. 4 cm long. Capsules c. 2 × 4 cm, reniform, refuse, 3-winged.

Fr.: November—December.

Common; in moist deciduous forests, c. 825 m, Kannonth, Tolpetty.


Climbing shrubs. Leaves up to 12.5 × 5 cm, lanceolate to elliptico-oblanceolate, ovate or suborbicular, acuminate or obtuse; petioles c. 1.5 cm long. Male flowers minute, in fascicled spikes up to 5 cm long.

Fl.: August—November.

Occasional; along margins of evergreen forests, c. 825 m; Chandanathode.


1a. Leaves rusty tomentose  
   
1b. Leaves glabrous  
   
2a. Leaves shining  
   
2b. Leaves not as above  

Leaves 5-lobed; terminal leaflets larger, up to 9 × 3 cm, ovate or obovate, abruptly cuspitate, base attenuate. Male flowers c. 0.3 cm long, in axillary panicles up to 25 cm long.

Fl. & Fr.: June—November.

Fairly common; in moist deciduous forests, c. 825 m; on way to Periya.


Leaves 5-lobed; terminal leaflet larger, up to 5 × 2.7 cm, obovate, cuspitate, attenuate at base. Male flowers c. 0.3 cm long, in axillary panicles up to 20 cm long.

Fl.: July—August.

Occasional; in moist deciduous forests; Tolpetty.

var. pentaphylla

Leaves 5-lobed; terminal leaflets up to 7.5 × 2.5 cm, elliptic-lanceolate, abruptly cuspitate, attenuate at base. Male flowers c. 0.6 cm long. Capsules c. 2.5 × 1.5 cm, oblong, glabrous.

Fl. & Fr.: June—November.

Fairly common; in moist deciduous forests, c. 825 m; Chandanathode, Tolpetty.


Climbing shrubs; stems armed at base. Leaves up to 14 × 6 cm, broadly ovate, suborbicular, abruptly acuminate or cuspitate, glabrous; petioles up to 10 cm long. Capsules up to 3 × 3.5 cm, broadly obovate, apex emarginate.

Fr.: November—December.

Common; in moist deciduous forests; Aralam, Tolpetty.
128. LILACEAE

1a. Leaves replaced by cladodes

Asparagus 1

1b. Leaves well developed:

2a. Climbing plants:

3a. Leaves ending in a tendril

Gloriosa 4

3b. Leaves not ending in a tendril

Smilax 5

2b. Erect herbs or undershrubs:

4a. Leaves radical

Chlorophytum 2

4b. Leaves cadicne

Dracena 3

1. Asparagus L.


Subterranean undershrubs. Cladodes c. 1 cm long, flat, falcate-ensiform, acute or acuminate. Flowers c. 0.3 cm long, white, in axillary racemes up to 3 cm long. Berries c. 0.8 cm across, globose.

Fl. & Pr.: July—November.

Common; in moist deciduous forests, c. 875 m, Tolpetty

2. Chlorophytum Ker-Gawl.

1a. Leaves linear

C. attenuatum 1

1b. Leaves elliptic-lanceolate

C. nimmonii 2


Erect herbs up to 40 cm tall. Leaves up to 30 x 2 cm, slightly narrowed at base. Flowers c. 1.5 cm long, white, fragrant, in terminal racemes up to 20 cm long. Capsules c. 1.5 cm across, 3-winged, loculicidial.

Fl. & Pr.: July—November.

Common; in semievergreen forests, c. 250 m; Kannott.

Erect herbs up to 60 cm tall. Leaves up to 25 x 7 cm, acute. Flowers up to 2 cm long, paired, in terminal panicles up to 50 cm long. Bracts c. 1 cm long, lanceolate.

*Fl.*: August—September.

Occasional; in evergreen forests; Nedumpoyil.

3. *Dracena* Vand. ex L.


Subscandent undershrubs up to 1.5 m tall. Leaves up to 28 x 5, elliptic lanceolate, acute, narrowed at base. Berries c. 1.5 x 1 cm, 3 lobed, globose.

*Fr.*: February—March.

Rare; near streams in dense evergreen forests; on way to Brahmagiri, Chandanathode.

4. *Gloriosa* L.


Climbers. Leaves up to 21 x 5.5 cm, ovate-lanceolate, tapering at apex, rounded or cordate at base. Flowers up to 7 cm long, orange with yellow tinge, solitary, axillary; pedicels up to 12 cm long.

*Fl.*: July—August.
Occasional; along margins of deciduous forests, c. 825 m; Tolpetty.

5. *Smilax* L.

1a. Petiole sheath auricled

S. *zeelanica* 2

1b. Petiole sheath not as above

S. *perfoliata* 1

   Roxb. Fl. Ind. 3: 795. 1832; Hook. f. Fl. Brit. Ind. 6: 312. 1892; Fischer in

Climbers with prickles. Leaves up to 12×5.3 cm, elliptic-ovate, shortly apiculate, subcordate at base. Flowers white. Berries globose.

*Fl. & Fr.*: July—November.

Common; in evergreen forests, c. 250 m; Kannoth.

   309. 1892; Fischer in Gamble, Fl. Pres. Madr. 1518. 1928 (Repr. ed. 3:

Climbing shrubs with or without prickles. Leaves up to 11×6 cm, broadly ovate or elliptic to oblong-lanceolate, acute, rounded or cordate at base. Flowers pale green, c. 1.5 cm long.

*Fl. & Fr.*: November—March.

Common; in semievergreen forests; Ambayathode, Pariyarum, Thiruvlandamala.

129. PONTEDERIACEAE

1a. Petioles enlarged to from floats

Eichhornia 1

1b. Petioles not as above

Menchtricia 2


*Eichhornia crassipes* (Mart.) Solms. in DC. Monogr. Phan. 4: 527.
Floating water plants up to 50 cm tall. Leaves up to 8 x 8 cm, obovate, rounded or cordate. Flowers c. 5 cm long, bluish violet, in dense racemes.

Fl: August—September.

Common; in ponds and wet lowlands in plains; Tellicherry.

2. Monochoria Presl


Erect herbs up to 45 cm tall. Leaves up to 4 x 4 cm, ovate or sub-reniform, acuminate, base rounded or cordate; petioles up to 18 cm long. Flowers c. 3 cm long, blue, in axillary racemes. Capsules c. 2 cm long, oblong, glabrous.

Fl.: November—December.

Common weed in rice fields and other wet lowlands in plains and hills; Muzappilangad, on way to Tirunalli.

130. XYRIDACEAE

Xyris L.

1a. Plants more than 30 cm long

1b. Plants less than 15 cm long

X. indica 1

X. pauciflora 2


Scapigerous herbs. Leaves up to 30 x 0.6 cm, flat, obtuse or acute. Scapes up to 30 cm long, terete, strongly ridged; heads c. 2.3 cm across, globose or ellipsoid; bracts c. 0.6 cm long, orbicular or cuneately obovate, dark red-brown. Flowers orange yellow.

Fl.: February—March.
Common in rice fields and wet lowlands in plains; KannaOTH.


Scapigerous herbs. Leaves up to 8 x 0.3 cm, acuminate, minutely papillose. Scape up to 10 cm long, finely striate; heads c. 0.8 cm across, globose or ovoid; bracts orbicular, chestnut-brown, margins yellowish brown. Flowers yellow.

**Fl:** March—April.

Common; in swampy areas in plains and ghats; Tirunalli.

131. COMMELINACEAE

1a. Fertile stamens 3; staminodes 1-3:

2a. Inflorescence a cyma; bracts spathaceous

2b. Inflorescence a panicle or cluster of 1-5 flowers; bracts not spathaceous:

3a. Flowers secund; fruits indehiscent

3b. Flowers not secund; fruits dehiscent:

4a. Cells of the ovary 1-ovuled

4b. Cells of the ovary 2 to many ovuled

1b. Fertile stamens 6; staminodes 0:

5a. Cymes enclosed in the inflated leaf sheaths

5b. Cymes not enclosed in the leaf sheaths:

6a. Stamens with bearded filaments

6b. Stamens with glabrous filaments

1. **Aclisia Meyer**

FLORA OF CANNANORE

Erect branched herbs, up to 1 m tall. Leaves up to 30 x 8 cm, elliptic-lanceolate, caudate-acuminate, narrowly at base, glabrescent; sheaths c. 1 cm long. Flowers in terminal panicles up to 30 cm long. Capsules c. 1 cm across, glabrous, pale blue, shining.

Fr.: November—December.

Rare; as an undergrowth nearby streams in evergreen forests; Ambayathode, Chandanathode.

2. COMMELINA L.

1a. Fruits indehiscent

C. indehiscent 3

1b. Fruits dehiscent:

2a. Spathe distinctly stained:

3a. Spathe ovate or ovate-lanceolate C. diffusa 3

3b. Spathe funnel shaped C. bengalensis 1

2b. Spathe sessile C. paludosa 4


Creeping herbs, rooting at nodes, up to 45 cm tall. Leaves up to 5 x 3 cm, ovate-oblong or suborbicular, obtuse or acute, base inequilateral, contracted into a petiole. Spathe c. 1.5 cm long, axillary, auricled.

Fl. & Fr.: November—December.

A common weed of plains; Muzhapalamad.


Diffuse herbs, rooting at lower nodes, up to 45 cm tall. Leaves up to 5.5 x 1.8 cm, lanceolate or ovate-lanceolate, acute; sheaths c. 1.5 cm long, glabrous, margins ciliate. Spathe c. 1.5 cm long. Flowers blue.

Fl. & Fr.: February—May.
Common: in open wastelands in plains and ghats; Chandanathode, Payyanur, Tolpetty.


Much branched prostrate herbs up to 45 cm tall. Leaves up to 6 x 2 cm, ovate to broadly lanceolate, acute or acuminate, rounded at base, bulbous based hairy; sheaths c. 1.5 cm long. Capsules c. 2.5 cm long, subglobose.

Fr.: November—January.

Occasional; in semievergreen forests near streams; Aralam.


Diffuse herbs up to 45 cm tall. Leaves up to 15 x 4 cm, lanceolate or elliptic-lanceolate, acute or ciliate-acute, narrowed at base; sheaths up to 2 cm long, mouth bearded with rufous hairs. Spathes up to 2 cm long, solitary, funnel shaped, in terminal heads. Flowers blue.

Fl.: November—December.

Common; in evergreen forests, c. 825 m; Chandanathode, on way to Panath.

3. Cyanotis D. Don, nom. cons.

1a. Flowers rose purple
   C. caesia 2

1b. Flowers blue

2a. Herbs floccously woolly
   C. pilosa 4

2b. Herbs glabrous, but for stem ciliate on one side:

3a. Leaves lanceolate
   C. cristata 3

3b. Leaves elliptic-oblong
   C. burmanniana 1

FLORA OF CANNAFORE

Creeping herbs, rooting at lower nodes, up to 25 cm tall; stem tomentose. Leaves up to 4 x 0.6 cm, hairy. Bracts ovate, up to 0.7 x 0.5 cm. Cymes short. Filaments bearded.

Fl.: August—December.

Common; in open wastelands in plains; Cannanore, Kannoth.


Prostrate, tomentose herbs, rooting at lower nodes, up to 50 cm tall. Leaves up to 5 x 2.5 cm, ovate-lanceolate, obtuse to subacute, densely pubescent; sheaths c. 2 cm long. Bracts c. 3 cm long, ovate.

Fl. & Fr.: December—March.

Occasional; on rocky slopes in evergreen forests near streams; on way to Chandanathode, Nedumppyil.


Diffuse herbs, rooting at lower nodes, up to 60 cm tall. Leaves up to 6 x 2 cm, obtuse or subacute, rounded at base. Bracts 1.5 x 0.5 cm, ovate, acute or acuminate. Flowers in terminal cymes up to 2.5 cm long. Capsules nearly glabrous; seeds black, striate.

Fl. & Fr.: May—December.

Common; in open wastelands; Kannoth, Toopetty.


Creeping herbs up to 45 cm tall. Leaves up to 6 x 1.3 cm, linear to narrowly lanceolate, pubescent beneath, slightly narrowed at base. Bracts c. 1 cm long, ovate-lanceolate. Flowers in terminal cymes; filament bearded.
Fl.: December.

Occasional; along the margins of evergreen forests, c. 825 m; Chanda-
nathode.

4. **Dictyospermum** Wight

Morton (J. Linn. Soc. Bot. Lond. 59: 431-478. 1966) has transferred
all Asiatic species of *Anellema* to *Dictyospermum* Wight and this treatment
has been followed by Hara (The Flora of Eastern Himalayas), and Hong

1a. Panicles much larger than the uppermost leaves

1b. Panicles much shorter than the uppermost leaves

1. **Dictyospermum montanum** Wight, le. t. 2069. 1853. *Anellema
montanum* (Wight) Clarke in A. & C. DC. Monogr. Phan. 3: 217. 1881;
1546. 1931 (Repr. ed. 3: 1079. 1957)

Decumbent herbs up to 50 cm tall. Leaves up to 16×3 cm, elliptic-
lanceolate, acuminate, base narrowed into a short petiole, glabrous,
scabrous; sheaths 3 cm long, mouth ciliate. Flowers c. 0.7 cm long,
blue, in terminal lax panicles up to 25 cm long. Capsules c. 0.3 cm across,
globose, cuspidate.

Fl. & Fr.: November—December.

Occasional; as an undergrowth in evergreen forests; Chandanathode,
Kannerh.

2. **Dictyospermum ovalifolium** Wight, le. t. 2070. 1853. *Anellema
3: 218. 1881; Hook. f. Fl. Brit. Ind. 6: 382. 1892; Fischer in Gamble,

Erect herbs up to 75 cm tall. Leaves up to 14×3.5 cm, broadly
elliptic or elliptic-lanceolate, acuminate or caudate-acuminate, base
narrowed into petiole; sheaths c. 2 cm long, ciliate at mouth. Fruits
 c. 0.8 cm across, globose.

Fl.: November—December.

Occasional as an undergrowth in evergreen forests; Chandanathode,
Kottyur.
5. FLOECA LOUT.


Creeping herbs, rooting at lower nodes, up to 50 cm tall. Leaves up to 7 × 1.5 cm, elliptic-lanceolate, acuminate, much narrowed at the base; sheaths c. 1 cm long, mouth fringed with long hairs. Flowers pink, in terminal panicles up to 1.5 cm long. Capsules c. 0.5 cm across; suborbicular white, shining.

Fl. & Fr.: November—January.

Common near banks of streams in plains and ghats; Kannoth, Tollypetty.

6. MUDANIA RYUE nom. cons.

1a. Flowers dull yellow:

2a. Flowers axillary, solitary or few clustered

M. lunghorni 3

2b. Flowers terminal, panicked

M. pauciflora 5

1b. Flowers blue:

3a. Seed one in each capsule

M. vaginata 7

3b. Seeds more than one in each capsule:

4a. Seeds 1-seriate in each cell:

5a. Mouth of sheath obtuse

M. dimorpho 1

5b. Mouth of sheath straight

M. optrecta 6

4b. Seeds 2 or more seriate in each cell:

6a. Leaves linear or linear-lanceolate

M. nudiflora 4

6b. Leaves ovate-lanceolate or elliptic-oblong

M. japonica 2

Decumbent herbs up to 50 cm tall. Leaves up to $3.5 \times 0.6$ cm, linear-lanceolate, acute or obtuse; sheaths c. 0.5 cm long; bracts ovate. Flowers in terminal panicles. Capsules c. 0.5 cm across, oblong, trigonous.

Fl. & Fr.: November—December.

Common in coastal areas; Cannanore, Kannoth, Tirunalli.


Erect herbs up to 50 cm tall. Leaves up to $17 \times 7$ cm, acute or acuminate, base cordate; sheaths c. 1.5 cm long. Flowers c. 2.5 cm long, in stout dichotomously branched panicles up to 18 cm long. Capsules c. $1 \times 0.7$ cm, subglobose.

Fl. & Fr.: July—January.

Common; in open wastelands; Ambayathode, Kannoth, Chandanathode.


Erect herbs up to 50 cm tall. Leaves up to $3.5 \times 1.8$ cm, linear to linear-lanceolate, finely acuminate, pubescent; sheaths c. 0.5 cm long. Flowers yellow when fresh, blue when dry. Capsules c. 1 cm across, oblong-trigonus, long cuspidate with the style.

Fl. & Fr.: November—December.

Rare; in grasslands, c. 1000 m; Tirunalli.

FLORA OF CANNANORE


Diffuse delicate herbs rooting at nodes. Leaves up to 9 x 1.5 cm, acuminate, base rounded or cordate. Flowers in terminal subcorymbose panicles. Pedicels c. 0.5 cm long. Capsules c. 0.4 cm across, subglobose.

Fl. & Fr.: March—April.

Occasional; in open wastelands; on way to Kannoth.


Diffuse, slender, herbs rooting at lower nodes up to 15 cm tall. Leaves up to 3.5 x 1 cm, ovate or elliptic, obtuse or subacute at apex, rounded or cordate at base; sheath c. 0.5 cm long. Capsules c. 0.4 cm long, pedicels decurved.

Fr.: August—September.

Occasional; in open wastelands in plains; Chandanathode, Kannoth—

Murdannia wightii a new name proposed by Rao & Kammathy cannot be taken as a substitute name for M. pauciflora (Wight) Brueckn. based on Aneilema pauciflora Wight (1853) non Dalz. 1851. M. pauciflora Brueckn. though based on the illegitimate basionym A. pauciflorum Wight has to be considered as a new name scrapping the parenthetical author Wight in the light of Art. 72 of ICBN as has been pointed by Nicolson in Taxon 27 : 366. 1978.

Decumbent herbs. Leaves up to 2 \times 1 \text{ cm}, narrowly lanceolate, acute, cordate or amplexicaul at base; sheaths c. 0.4 \text{ cm} long. Fruits c. 1 \text{ cm} across, subglobose, in terminal panicles up to 5 \text{ cm} long.

*Fl. & Fr.:* February—March.

Occasional on floors of moist deciduous forests, c. 825 m; Toli petty.


Tufted herbs up to 30 cm tall. Leaves up to 14 \times 0.5 \text{ cm}, linear-lanceolate, acuminate. Bracts narrowly oblong-obtuse, truncate. Flowers 4 - 6 together fascicled in the axils of bracts. Capsules c. 0.7 \times 0.4 \text{ cm}, globose.

*Fl. & Fr.:* July—February.

Common; in damp situations in plains and ghats; Cannanore, Kannoth, Tellicherry.

7. *Tonningia* Neckr ex Jussieu


Suberect herbs up to 75 cm tall. Leaves up to 15 \times 0.8 \text{ cm}, linear, sparsely hairy; sheaths shortly ciliate. Flowers blue; filaments bearded, inflated at apex

*Fl.:* August—December.

Common; as a weed in cultivated lands in plains; Irutti, Kannoth.
Amischophacelus Rao & Kammathy (1966) is nomenclaturally super-
fluous as Tonningia Necker ex Jussieu (1829) is also based on the same
1979).

132. JUNCACEAE

Juncus L.

Ind. 6 : 393. 1892; Fischer in Gamble, Fl. Pres. Madr. 1533. 1931 (Repr.

Erect herbs up to 45 cm tall. Leaves up to 13 cm long, terete or
compressed. Heads c. 1 cm across; bracts c. 1.5 cm long. Flowers c.
0.5 cm long, greenish or dirty brown. Capsules trigonous, pale brown.

F1. & F2: February—March.

Common; in damp situations, c. 825 m; Tirunalli.

133. ARECACEAE (nom. alt. Palmae)

1a. Climbing shrubs with hooked spines

1b. Trees or erect shrubs:

2a. One or more of the lowest pair of leaflets
transformed into spines

2b. None of the leaflets transformed into spines:

3a. Leaflets with two unequal auricles at base

3b. Leaflets not auricled at base:

4a. Apex of leaflets praemorse:

4b. Apex of leaflets not praemorse

5a. Leaves white beneath

5b. Leaves not white beneath

Arenga

Pinanga

Arca

Cocos

1. Arenga Labill. nom. cons.

Fl. Brit. Ind. 6 : 422. 1892; Fischer in Gamble, Fl. Pres. Madr. 1533. 1931
(Repr. ed. 3 : 1087. 1957), 'Alabukilthena'.
Tres. Leaves 7-9 cm long, in terminal crown; leaflets up to 80 × 5 cm. Spadix c. 1 m long. Spathes many, green, tubular. Berries c. 3 cm across, hard, depressed-globose.

Fl. & Fr.: November—December.

Common in evergreen forests, c. 825 m; Chandanathode.

2. Calamus L.

1a. Spines on leaf blade black; leaflets 1 ribbed

1b. Spines on leaf blade not black; leaflets 3 ribbed

C. thwaitesii 2

C. pseudotenuis 1


Climbers. Petiole up to 40 cm, flat; rachis channelled above, trigonous upwards, up to 1.5 m long. Leaflets ensiform or lanceolate, opposite or nearly opposite, in distant groups, up to 60 × 6 cm. Drupes c. 2 cm across, yellowish brown, obovoid, suddenly beaked in tubular spathes.

Fl. & Fr.: April—May.

Rare; once collected from evergreen forests, c. 825 m; Chandanathode.


Climbers. Petioles up to 20 cm long; rachis c. 1.5 cm long, trigonous, ochrea of leaf c. 10 cm long; leaflets linear-lanceolate, penicillate at apex, up to 50 × 2.5 cm with or without short bristles on ribs and margins. Drupes c. 1.5 cm across, subovoid, brown, apiculate.

Fl. & Fr.: January—February.

Occasional; in evergreen forests, c. 300 m; Kottiyur.

3 Phoenix L.

FLORA OF CANNANORE

Shrubs up to 1 m tall. Leaves 1.5 - 2 cm long; leaflets up to 20 x 1.5 cm, plicate, fascicled, more or less 4-farous, pulvinate at the insertion. Fruits c. 2 cm long.

Fr.: February—March.

Common; in open grasslands, c. 975 m; Brahmagiri.

4. PINANGA Bl.


Trees. Leaves 1.5 cm long, in a terminal crown; leaflets up to 60 x 2.5 cm, sessile, opposite, broadly linear, 5 7-nerved glabrous; uppermost confluent. Spadix with 4-8 stout branches clothed with imbricating flowers, spathes simple. Fruits c. 1.6 x 0.7 cm, ellipsoid.

Fr.: December—March.

Common; in evergreen forests, c. 825 m; Chandanathode, Panath.

Areca catechu L. and Cocos nucifera L. are cultivated in the area.

134. PANDANACEAE

Pandanus L. ex Stickman


Small trees up to 3.5 m tall. Leaves long, linear, apex gradually attenuate; margins and keel below armed with short sharp forward pointing spinules. Male spathes golden yellow and staminate inflorescence terminal; stamens umbellate at the apex of stemonophore.

Fl.: November—December.

Common; along the banks of streams at lower altitudes; Kannoth.
125. ARACEAE

1a. Erect herbs without aerial adventitious roots:
   2a. Rootstocks creeping
       *Lagenandra* 4

2b. Rootstocks not creeping:
   3a. Leaves simple:
       4a. Plants with leafless bulbiferous shoots
           *Remusatia* 7
       4b. Plants without leafless bulbiferous shoots:
           5a. Leaves peltate
               *Colocasia* 3
           5b. Leaves not peltate
               *Typhonium* 8

3b. Leaves compound:
   6a. Leaflets pedately or radially arranged
       *Arisaema* 2
   6b. Leaflets 3-partite
       *Anaphyllum* 1

1b. Scandent shrubs with aerial adventitious roots:
   7a. Leaves entire
       *Pothos* 5
   7b. Leaves pinnatisect
       *Raphidophora* 6

1. ANAPHYLLUM SCHOTT


Erect herbs up to 75 cm tall. Leaves pinnatisect to the midrib; leaflets often narrowed into petiole, shortly decurrent, apical leaflet 3-lobed, ovate-lanceolate, acuminate; petioles up to 30 cm long, spathes up to 30 cm long. Oblong-lanceolate, acuminate, convolute at base then expanded, lightly contorted, 3-veined dark violet.

*Fl.*: August.

Rare; once collected from evergreen forests, c. 825 m; Chandanathoda.

2. ARISAEMA MART.

1a. Spadix with appendage much longer than the spathe

1b. Spadix with appendage shorter than the spathe

*A. torminum* 2

*A. leschenaultii* 1

Erect tuberous herbs up to 45 cm tall. Leaves compound, pedate or radical; leaflets 5-9, linear to ovate or oblanceolate, acuminate. Flowers pale yellow, in spadix. Spathes purplish, up to 15 cm long, acuminate or caudate.

*Fl.*: March—April.

Common in evergreen forests; Nedumpooyil.


Erect tuberous herbs up to 50 cm tall. Leaves compound, peltate or radical; leaflets 5-9, linear to ovate or oblanceolate, acuminate. Flowers in spadix enclosed by spathes, up to 15 cm long, acuminate or caudate, pale green. Berries orange-red when ripe.

*Fl.* & *Fr.*: June—July.

Common; in dense evergreen forests, c. 500 m; on way to Panoth.

3. **Colocasia** Schott nom. cons.


Tuberous herbs up to 50 cm tall. Leaves c. 21 x 14 cm, ovate to suborbicular-cordate, rounded at apex; basal sinus triangular; petioles stout, up to 40 cm long. Flowers pale yellow, in spadix up to 20 cm long. Spathes yellow, limb lanceolate, caudate-acuminate.

*Fl.*: July—August.
Common in waste places in plains; Tellicherry.

4. **Lagenandra Dalz.**


Aquatic herbs up to 50 cm tall, rhizomes c. 3.5 cm across. Leaves c. 26 × 10 cm, elliptic to ovate, lanceolate, acuminate, cuneate to narrowly cordate at base; petioles c. 14 cm long. Spathes up to 14 cm long; greenish purple outside, deep purple within; limb much longer than tube, caudate-acuminate.

*Fl.*: January February.

Common along banks of streams at lower altitudes; Kannah.

5. **Pothos L.**


Leaves up to 18 × 4 cm, ovate to lanceolate, acuminate, rounded; petioles winged. Spadix obovoid or subglobose, on short axillary peduncles, up to 1 cm long.

*Fl.*: December April.

Common; on trees in evergreen forests; Chandanathode, Kannah.

6. **Raphidophora Hasek.**

**Flora of Cannanore**


Stout climbing shrubs. Leaves up to \(45 \times 25\) cm, ovate to suborbicular, pinnatifid, inequilateral, oblique at base; petioles c. 35 cm long. Flowers c. 0.2 cm across, pale green, in cylindric spadix up to \(10 \times 2\) cm.

*Fl.*: August—November.

Common in dense evergreen forests; Chandanathode, Nedumpoory.

7. **REMUSATIA Schott**


Bulbiferous shoots up to 40 cm long. Leaves 1 or 2 from a tuber, 25 \(\times\) 10 cm, peltate, ovate-cordate.

*Fl.* & *Fr.*: August—September.

Common; on rocks in evergreen forests, c. 800 m; Chandanathode.

8. **TYPHONIUM Schott**


Tuberosous herbs up to 25 cm tall. Leaves ovate-oblong, acute or acuminate, cordate at base, basal lobes hastate or rounded, green above, glaucous beneath. Flowers in spadix; spathe up to 15 cm long, pale green, tube oblong; limb of spathe narrowly lanceolate.

*Fl.*: July—August.

Common in open wastelands in plains; Tellicherry.
136. ALISMATACEAE

SAGITTARIA L.


Aquatic herbs up to 50 cm tall. Leaves hastate or sagittate; terminal lobes up to $6 \times 1.2$ cm, acute or obtuse; basal lobes up to $8 \times 1.0$ cm, finely acuminate; petioles trigonous, up to 16 cm long. Achenes c. 1 cm across, obliquely ovate.

*Fr.*: March—April.

Common; in swampy rice fields, c. 825 m; Manantoddy.

137. ERIOCAULACEAE

ERIOCAULON L.

1a. Heads about 1 cm across  
1b. Heads less than 1 cm across:

2a. Involucral bracts stellately spreading  
2b. Involucral bracts not as above:

3a. Leaves purplish red when dry  
3b. Leaves not as above:

4a. Involucral bracts exceeding the floral bracts  
4b. Involucral bracts not as above:

5a. Sepals 3 in female flowers  
5b. Sepals 2 in female flowers

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Erect herbs up to 25 cm tall. Leaves up to $8 \times 0.6$ cm, linear-lanceolate, acute. Peduncles many, striate; sheaths c. 4 cm long. Heads c. 0.5 cm across, hemispheric, white. Involucral bracts lanceolate, straw coloured.
Fl. & Fr.: July—December.

Common in marshy rice fields in plains; Elangad, Kattumth.

This species can easily be recognised in the field by the conspicuous involucral bracts.


Erect herbs up to 15 cm tall. Leaves up to $5 \times 0.4$ cm, linear-elliptic, lanceolate, acute. Peduncles numerous, 5-ribbed, sheaths lax. Heads c. 0.5 cm across, globose or obovate, grey or snow-white.

Fl. & Fr.: February—March.

Common as a weed in cultivated fields; Manantoddy.

This species can be distinguished in the field by its pinkish red colouration on leaves.


Tufted erect herbs up to 45 cm tall. Leaves up to $30 \times 1.2$ cm, linear attenuate at apex, subacute. Peduncles many, striate; sheaths lax, oblique at mouth. Heads globose, snow-white; involucral bracts c. 0.5 cm long, obovate-ovate, straw-coloured.

Fl. & Fr.: February—March.

Common; in marshy areas along banks of ponds; Manantoddy, Periya.

This species can easily be distinguished from its allies by its robust appearance.

Slender herbs up to 45 cm tall. Leaves up to 10 × 0.7 cm, linear-ensiform. Peduncles numerous, 5-ribbed, glabrous; sheaths c. 15 cm long, oblique at mouth. Heads c. 0.6 cm across, globose-columnar, hemispheric, white. Involucral bracts c. 0.2 cm long, orbicular, yellow, glabrous.

Fl. & Fr.: February—March.

Occasional; in dry ponds and lakes; Kannoth.


Small tufted herbs up to 7.5 cm tall. Leaves c. 3.5 × 0.2 cm, linear-ensiform, subacute, slightly hairy. Peduncles many, with hairs. Heads globose, c. 0.5 cm across. Involucral bracts c. 0.6 cm long.

Fl. & Fr.: August—September.

Rare; once collected from river beds; Kannoth.


Erect herbs up to 15 cm tall. Leaves up to 4 × 0.3 cm, ensiform, linear, peduncles many, 5-8-ribbed; sheaths lax, shorter than leaves. Heads c. 0.5 cm across, hemispheric. Involucral bracts c. 0.3 cm long, broadly ovate or rounded, pale straw coloured.

Fl. & Fr.: January—March.

Common; in open places; Chandanathode, Kannoth, Manantoddy.

138. CYPERACEAE

1a. Spikelets unisexual:

2a. Nut enclosed in utricule

2b. Nut not enclosed in utricule:

3a. Male flowers basal

3b. Male flowers terminal

1b. Spikelets bisexual:
4a. Glumes distichously arranged

4b. Glumes spirally arranged:

5a. Hypogynous bristles absent:

6a. Style swollen at base:

7a. Stigmas 3:

8a. Style base persistent, button shaped

8b. Style base not persistent

7b. Stigmas 2

6b. Style not swollen at base

5b. Hypogynous bristles present:

9a. Inflorescence always a solitary spikelet

9b. Inflorescence a panicle, an umbel or reduced to a capitulate head:

10a. Spikelet one-flowered

10b. Spikelet many flowered:

11a. Hypogynous bristles 3

11b. Hypogynous bristles 2

I. **Bulbostylistis Kunth nom. cons.**


Annual herbs up to 25 cm tall. Stems c. 0.5 cm thick. Leaves up to 15 × 0.3 cm, acuminate, glabrous; sheaths pilose. Spikelets up to 0.9 × 0.13 cm, linear-oblong, in dense terminal globose heads up to 1.5 cm across; bracts 3, up to 6 cm long. Nuts minute, smooth, pale brown, obtusely trigonous.

**Fl. & Fr.:** Almost throughout the year.

Common; near banks of streams; Ambayathode, Aralam, Pazhassi.

2. **Carex** L.

1a. Rhachis of inflorescence pubescent

1b. Rhachis of inflorescence glabrous

C. glauca 2

C. filicina 1

Stems up to 1 m tall, triangular, smooth. Leaves basal, 1 cm wide. Spikelets linear-oblong, numerous, in long stalked decomposed panicles, the upper portion male and the rest female; glumes ovate-lanceolate, acute, acuminate, reddish brown. Utricles narrowly ellipsoid or lanceolate, rarely very short, bilid at mouth.

*Fl.*: February—March.

Common; along margins of evergreen forests, c. 824 m; Chandanathode.


Stems up to 1 m tall; triangular, smooth. Leaves c. 1 cm wide. Spikelets oblong or linear-oblong in spikes, bracts leafy. Spikes linear, upper portion male and the rest female. Female glumes c. 0.2 cm long, lanceolate, reddish brown. Utricles lanceolate or ellipsoid with a slender beak with scarbid margins.

*Fl. & Fr.*: February—March.

Common; along margins of evergreen forests; Nedumpoyil.

3. *Cyperus* L.


1a. Nuts trigonus, stigmas 3:

2a. Rachilla persistens:
3a. Spikelets spicate arranged on a node or less elongated node:

4a. Spikelets cylindrical

4b. Spikelets ovoid or obvoid:

5a. Rachilla broadly winged:

6a. Rhizomes creeping with stolons; glumes closely imbricate:

7a. Stems trigonous:

8a. Spikelets not turgid; strongly compressed
   C. roanulus 24

8b. Spikelets turgid; suberecte
   C. stolonifera 27

7b. Stems suberecte:

9a. Stems not articulated when dry
   C. panamrei 19

9b. Stems articulated when dry
   C. corymbosus 5

6b. Rhizomes not creeping, without stolons, glumes scarcely imbricate
   C. dissita 9

5b. Rachilla not or hardly winged:

10a. Perennials with rhizomes; glumes rounded on the back:

11a. Margins of glumes inconspicuously hyaline; nuts narrowly oblong
   C. malaccensis 17

11b. Margins of glumes conspicuously hyaline; nuts obovoid or ellipsoid
   C. pilosa 20

10b. Annuals with fibrous roots; glumes mucronate:

12a. Nuts about as long as the subtending glumes
   C. unia 13

12b. Nuts about half as long as the subtending glumes
   C. compressus 4

3b. Spikelets digitate or distally arranged on a much abbreviated rachis:

13a. Perennials with very short rhizomes
   C. diffusa 8

13b. Perennials with stoloniferous rhizomes or small sized, tufted annuals:

14a. Nuts much shorter than the subtending glumes:

15a. Inflorescence of a single head
   C. arenarius 1

15b. Inflorescence of many heads:

16a. Spikelets perispermous; connective of anthers smooth
   C. texelapica 29

16b. Spikelets not perispermous; connective of anthers with scutelate appendage
   C. kalvan 12

14b. Nuts about as long as the subtending glumes
   C. difformis 7
2b. Rachilla disarticulating:

17a. Keels of nut-bearing glumes winged

17b. Keels of nut-bearing glumes not winged:

18a. Glumes with conspicuously spreading or recurved micro:

19a. Glumes oblong

19b. Glumes elliptic with curved arista

C. squarrosus 26

C. madaraspatanus 16

18b. Glumes not with conspicuously spreading or recurved micro:

20a. Spikelets several to many flowered; glumes not tightly clasping the nut:

21a. Stems densely papillose; spikelets turgid

21b. Stems not papillose; spikelets not turgid

C. javanicus 14

C. compactus 3

20b. Spikelets few flowered; glumes tightly clasping the nuts

C. cyperinus 6

1b. Nuts lenticular; stigmas 2:

22a. Rachilla persistent; each spikelet maturing to several nuts:

23a. Nuts smooth:

24a. Glumes mucous:

24a. Stems decumbent; margins of glumes striped dark red

C. sanguinolentus 25

25b. Stems erect; margins of glumes not as above:

26a. Leaves flat; glumes acute

C. polystachyos 21

26b. Leaves canaliculate; glumes obtuse

C. globosus 11

24b. Glumes minute

C. puniceum 71

23b. Nuts rugulose

C. substraminens 28

22b. Rachilla disarticulating at the base; each spikelet maturing to a single nut:

27a. Keels of the glumes distinctly winged

C. kyllingia 15

27b. Keels of the glumes wingless:

28a. Rhizomes densely caespitose; stolons wanting

C. triepsi 30

28b. Rhizomes horizontally creeping:

29a. Rhizomes up to 0.2 cm thick; leaf blades well developed

C. brevifolius 2

29b. Rhizomes more than 0.2 cm thick; leaf blades except one or two reduced to sheaths

C. melanosperrnus 18

Erect herbs with wiry creeping rootstock. Stems up to 20 cm tall. Leaves c. 4.5 x 0.5 cm, rigid, tough, linear. Spikelets straw-coloured or brown, in capitate heads c. 2.5 cm across. Bracts 2-3, foliaceous. Nuts black, ovoid, rounded at apex, 3-angled.

*Fl. & Fr.*: November—December.

Common; in sandy areas in plains; Cannanore.


Perennial erect herbs up to 50 cm tall; rhizomes short, creeping, pinkish. Stems 5-7-together. Leaves c. 0.3 cm broad. Spikelets c. 0.35 x 0.1 cm, elliptic-lanceolate, in capitate heads c. 1 cm across. Nuts c. 0.15 x 0.7 cm, obovoid, oblong obovoid, yellowish, ultimately brown.

*Fl. & Fr.*: July—August.

Common; along sandy regions near streams. c. 825 m; Tolpetty.


Perennial herbs up to 45 cm tall. Stems c. 0.5 cm thick, suberect or trigonous. Leaves 5-7 cm broad, canaliculate at base; sheaths spongy, reddish brown. Spikelets c. 1.5 x 0.1 cm, linear-lanceolate, suberecte, in subglobose spikes up to 2 cm across in decomposed or compound heads. Nuts c. 0.2 cm long, linear-oblong, trigonous, deeply punctate, deep brown.

*Fl. & Fr.*: July—December.

Common; along hanks of streams; Pazhassi, Tellicherry.

Annual tufted herbs up to 40 cm tall. Stems compressed, trigonous, c. 0.2 cm thick. Leaves c. 0.4 cm broad, greyish green. Spikelets c. 2.5 × 0.5 cm, linear-oblong, compressed, in lax heads; bracts 3-7, foliaceous. Nuts c. 0.15 cm long, obovoid, triquetrous, apiculate, blackish brown.

**Fl. & Fr.**: July—August.

Common; in fallow paddy fields in plains; Tellicherry.


Erect herbs up to 50 cm tall; rhizomes creeping, c. 0.5 cm thick; stems c. 0.5 cm thick; leafless. Spikelets clustered, 4-6 together, linear, up to 4 × 0.1 cm, in compound heads. Nuts c. 0.15 cm long, narrowly obvoid-ellipsoid, trigonous, apiculate, black.

**Fl. & Fr.**: February—March.

Common; along the banks of streams, c. 825 m; Tolpetty.


Erect herbs up to 40 cm tall. Stem bases somewhat thickened c. 0.5 cm thick. Spikelets subulate in obvoid spikes up to 5 cm long; bracts 4-8, foliaceous. Nuts c. 0.2 × 0.1 cm, obovate-oblong, obtuse, brown.

**Fl. & Fr.**: May—June.

Common; along the banks of streams, 825 m; Raveli, Tolpetty.


Annual tufted herbs, up to 50 cm tall; roots reddish. Stems c. 0.3 cm thick, compressed, triquetrous. Leaves 1-3, c. 0.5 cm broad, abruptly acuminate. Spikelets c. 0.8 × 0.1 cm, linear-lanceolate, in simple or compound umbels of subglobose heads up to 1.5 cm across. Nuts c. 0.8 cm, obovoid, trigonous, broadly-ellipsoid, pale brown.

Fl. & Fr.: December—January.

Common; in marshy localities in plains; Pazhassi.


Perennial, tufted herbs up to 60 cm tall. Rhizomes woody. Stem trigonous, c. 0.5 cm thick. Leaves c. 1 cm broad. Spikelets linear, up to 2 × 1.5 cm, tightly imbricating the rachilla of spikes, in decompound or supra-decompound heads. Bracts 4-10, foliaceous. Nuts c. 0.1 cm long, triquetrous, ellipsoid, acute, blackish-brown.

Fl. & Fr.: December—January.

Common; along streams; Ambayathode.


In. Spikelets distant, spreading at maturity

1b. Spikelets crowded, erect at maturity

var. *distans* var. *pseudodistans*

Perennial, tufted herbs up to 50 cm tall. Stems c. 0.3 cm thick, triquetrous, swollen at base. Leaves c. 1 cm broad. Spikelets c. 0.6 × 1 cm, linear, in lax pyramidal spikes, in decompound heads; bracts 4-8, foliaceous. Nuts c. 0.16 cm long, ellipsoid, trigonous, apiculate, dark brown.

Fl. & Fr.: January—February.
Common; along banks of streams in plains; Aralam, Pazhassi.

var. pseudomutans Kuekenth. in Engler, Pflanzenr. 101: 137. 1935. 

Spikelets suberect in fruit thus forming subpennicillate spikes.

Fl. & Fr.: February—March.

Common; along banks of streams; Manantoddy.


Perennial herbs up to 25 cm tall, rhizomes woody. Stems c. 0.6 cm thick, triquetrous, base swollen. Leaves c. 1 cm broad. Spikelets up to 1 x 0.2 cm, linear-lanceolate, in lax or dense spikes up to 6 cm long in decomposed heads. Nuts c. 0.8 cm long, ellipsoid-ovate, trigonous, apiculate, stramineous.

Fl. & Fr.: November—January.

Common; along banks of streams; Toipetty.


Annual tufted herbs, up to 15 cm tall. Leaves filiform. Spikelets linear, parallel sided, apex blunt or subacute, congested. Spikes in simple umbellate heads. Bracts 2-4, foliaceous. Nuts broadly ellipsoid or obovoid, apex rounded, apiculate, dark brown.

Fl. & Fr.: November—March.

Common; near banks of streams; c. 825 m; Hilldale, Tirunalli.

1a. Creeping plants; stamens 3  
subsp. juncoidees

1b. Tufted plants; stamens 1  
subsp. halpin

subsp. halpin

Perennial tufted herbs up to 60 cm tall. Rhizomes creeping, up to 5 cm. Stems c. 0.3 cm thick, compressed, trigonous. Leaves 3-7, c. 0.4 cm broad. Spikelets c. 1.3 x 0.15 cm, digulate, linear-lanceolate, in lax compound or decumbent heads. Bracts 2-3, foliaceous. Nuts c. 0.05 cm long, shortly stipitate, broadly obovoid, trigonous, apiculate, yellowish.

Fl. & Fr.: July-August.

Common; along streams in plains; Payyanur, Tellicherry.

subsp. juncoidees (Lam.) Kuekenh. in Feddes Repert. 23: 184. 1926.  
Cyperus juncoidees Lam. Ill. I. 147. 1791.

Rhizome generally long creeping; stems up to 45 cm, winged.

Fl. & Fr.: February—March.

Common along streams, c. 825 m; Chandanathode.


Annual tufted herbs up to 45 cm tall. Stems compressed, triquetrovs, c. 0.5 cm broad. Leaves c. 0.5 cm broad. Spikelets c. 1.3 x 0.2 cm, approximate to remote, suberect; spikes narrow, c. 4 cm long. Nuts c. 0.15 cm long, obovoid-ellipsoid, triquetrovs, apiculate, glossy, deep brown.

Fl. & Fr.: March—July.

Common; along streams in plains and ghats; Baveli, Begur, Tellicherry.


Rhizomatous perennial herbs up to 75 cm tall. Leaves canaliculate, 1 cm wide. Spikelets oblong to lanceolate, spicately arranged, in broadly cylindrical obtuse spikes in decumbent heads; bracts 5-7, foliaceous,
overlapping the inflorescence. Nuts trigonous, ellipsoid or obovoid
spicate, shining, dark brown.

*Fl. & Fr.*: July—August.

Common; along banks of backwaters in plains; Tellicherry.

Vindob. 1: 42. t. 97. 1770, *non* *Cyperus cephalotes* Vahl, 1806. *Kyllinga
monolepala* Rottb. Descr. & Il. t. 4. f. 4. 1773, p.p.; Clarke in Hook. f.
Char. Gen. Pl. 130. 1776, *non* *Cyperus nemoralis* Charm. 1921.

Erect herbs with creeping rhizomes, up to 15 cm tall. Leaves longer
than the stem. Heads oblong, solid, white, solitary; bracts foliaceous.
Nuts suborbicular, yellowish brown.

*Fl. & Fr.*: February—March.

Common; along banks of streams and other moist places; Chand-
anathode, Karimbam.

*non* *Cyperus squarrosus* L. 1753; Fischer in Gamble, Fl. Pres. Madr.

Tufted erect herbs up to 12 cm tall. Leaves filiform. Spikelets linear,
markedly compressed, in hemispherical spikes; bracts 3-4, foliaceous.
Nuts narrowly oblong, acute, brown, punctulate.

*Fl. & Fr.*: November—December.

Occasional, in open wastelands, Tellicherry.

17. *Cyperus malaccense* Lam. Ill. 1: 146. 1791; Clarke in Hook. f.
Fl. Brit. Ind. 6: 608. 1893; Fischer in Gamble, Fl. Pres. Madr. 1641. 1931
(Repr. ed. 3: 1140. 1957); Kern in Steenis, Fl. Males. ser. I. 7: 629-630.
1974.
Perennial erect herbs up to 50 cm tall; rhizomes creeping, thick, stoloniferous. Stems c. 0.5 cm thick, sharply trigonous. Spikelets linear, terete, in compound umbels, bracts 3-5, foliaceous. Nuts narrowly oblong, obtusely trigonous, blackish brown.

Fl. & Fr.: July—August.

Common; on banks of backwaters in plains; Tellicherry.


Rhizomatous herbs up to 50 cm tall. Stems triquetrous, c. 0.2 cm wide. Leaves up to 25 × 0.4 cm, acuminate. Spikelets ovate-elliptic, c. 0.3 × 0.1 cm, in ovoid to oblong-ovoid heads c. 0.8 cm across. Nuts broadly elliptic to obovate.

Fl. & Fr.: January—March.

Common; on the banks of streams; Kannoth, Tolpetty.


Perennial herbs up to 60 cm tall. Rhizomes long creeping. Stems c. 0.5 cm thick, subcylindrical below, trigonous above. Leaves up to 30 × 0.5 cm. Spikelets up to 2.8 × 0.3 cm, obliquely spreading; spikelets in decompound or compound heads up to 12 cm long; bracts 3-5-foliaceous. Nuts c. 0.15 cm long, narrowly ovoid, trigonous, blackish brown.

Fl. & Fr.: March—July.

Common; along streams on sandy soil in plains; Tellicherry, Tirunalli.


Perennial tufted herbs up to 50 cm tall. Rhizomes stoloniferous. Stems compressed-triquetrous, c. 0.5 cm thick. Leaves c. 1 cm broad. Spikelets c. 1.2 × 0.2 cm, subdistichous, dianicinate or the lower deflexed;
in subsessile spikes 3-7 together in rays up to 5 cm long. Bracts 3-5, foliaceous. Nuts c. 0.1 cm long, obvoid, triquetrous, shortly stipitate, apiculate, blackish.

*Fl. & Fr.:* November—December.

Common, along streams; Areala.


Annual tufted herbs, up to 40 cm tall. Stem compressed, trigonous c. 0.2 cm thick. Leaves 4-6, c. 0.4 cm broad. Spikelets c. 2.5 × 0.15 cm, numerous, congested; rays 2-7, up to 6 cm long, in simple umbels. Bracts 3-6, foliaceous. Nuts c. 0.1 cm long, linear-oblong, apex subtruncated, minutely apiculate, brown.

*Fl. & Fr.:* March—July.

Common; in fallow paddy fields in plains; Tirunalli, Toipetty.


*Fl. & Fr.:* November—February.

Common; in marshy lands in plains and ghats; Nedumpoyil, Tirunalli.


Annual tufted herbs up to 25 cm tall. Stems compressed, trigonous, c. 0.1 cm thick. Leaves canaliculate, c. 0.2 cm broad. Spikelets linear-oblanceolate, compressed, c. 1.3 x 0.2 cm long, in subglobose heads. Bracts 3-5, foliaceous. Nuts c. 0.5 cm long, narrowly obovoid, shortly stipitate, apiculate, blackish brown.

Fl. & Fr.: February—March.

Common; along banks of streams; Baveli.


Perennials; stolons long, with aromatic tubers. Stems up to 40 cm tall, compressed, trigonous, c. 0.2 cm broad. Leaves c. 0.6 cm broad. Spikelets c. 2.5 x 0.3 cm, linear-lanceolate; secondary rays in lax compound heads up to 10 cm long, obovoid, trigonous, scarcely apiculate, blackish brown.

Fl. & Fr.: July—August.

Common along streams in plains; Atakade, Tellicherry.


Annual erect herbs up to 50 cm tall. Rhizomes creeping, c. 0.2 cm thick. Stems compressed, trigonous, c. 0.2 cm thick. Leaves c. 0.4 cm wide. Spikelets ovate or oblanceolate, c. 0.5 x 0.3 cm, compressed, rachilla wingless, in spikes up to 4 cm long in capitate heads; bracts 2-5, foliaceous. Nuts c. 0.13 x 0.1 cm, broadly obovoid to suborbicular, apiculate, blackish brown.

Fl. & Fr.: January—March.

Common; on river banks in plains and ghats; Kannoth, Tirunalli.

Tufted herbs up to 15 cm tall. Leaves narrow, leaf sheaths inflated, purple. Spikelets oblong or linear-oblong, flat, congested in globose spikes. Bracts 4-5, foliaceous. Nuts trigonous, elliptic-ovoid, dark brown, punctulate.

*Fl. & Fr.*: August—September.

Occasional; on banks of streams, 825 m; Baveli.


*Fl. & Fr.*: July—August.

Common; on banks of streams in plains; Tellicherry.


Tufted erect herbs up to 75 cm tall. Leaves filiform, spikelets 1.3 × 0.2 cm, linear, straw-coloured, compressed, in simple spikes. Nuts compressed-orbicular, obtuse, black with white transverse lines.

*Fl. & Fr.*: February—March.

Occasional; on banks of streams, 825 m; Chandanathode.

Annual tufted herbs up to 30 cm tall. Stems c. 0.1 cm thick, trigonous. Leaves c. 0.4 cm broad. Spikelets up to 1 x 0.15 cm, linear-lanceolate, digitate; spikes in compound or decompound heads, up to 10 cm across. Bracts 2-3, foliaceous. Nuts c. 0.2-0.3 cm long, obscurely trigonous, broadly obovoid to subglabrous, obtuse or apiculate, tubercled, marble-white.

Fl. & Fr.: January—March.

Common; along the streams in plains; Kannaith, Pazhaikkal.


Fl. & Fr.: May—July.

Common; on banks of streams and other moist places; Baveli, Tulpetty.


Annual tufted herbs up to 15 cm tall. Leaves c. 0.5 cm wide, linear, flat. Spikelets c. 0.7 cm long, few flowered, in clusters. Female spikelets c. 0.3 cm long, cylindric. Nuts nearly globose, minutely apiculate, white or pale brown, hidden by the connivent glumes and falling with them.

Fl. & Fr.: November—December.

Common; in open marshy areas, c. 250 m; Kannaith.
5. ELEOCHARIS R. BR.

1a. Spikelets about as thick as the stems; subcylindrical

E. spiralis 2

1b. Spikelets markedly thicker than the stems; ovoid-oblong

E. retroflexa 1


Annual tufted herbs. Stems up to 30 cm tall; leafless. Sheaths up to 7 cm, reddish at the base. Spikelets c. 5 × 0.3 cm, ovoid, obtuse. Nuts pale straw coloured, trigonous, conspicuously cancellate, costulate on the angles.

Fl. & Fr.: December—January.

Occasional; along streams above 825 m; Chandanathode.

Kern (i.e.) merged the Asiatic species Eleocharis chaetaria Roem. & Schult. and the New World species E. retroflexa (Poir.) Urban. Koyama (i.e.) however, treats the former as a subspecies of the latter as small morphological differences between them can clearly be correlated with the difference in geographical distribution.


Perennials; erect tufted herbs up to 45 cm tall with creeping rhizomes. Stems c. 0.4 cm wide, trigonous at top, leafless; sheaths purple, 10-15 cm. Spikelets c. 4 × 0.5 cm, cylindrical, slightly broader than the stem, terete, straw coloured. Nuts brown, biconvex or orbicular-ovoid, trabeulate, shining.

Fl. & Fr.: July—November.

Common; in drying swamps and moist sandy localities in plains; Tellicherry.

1a. Nuts linear-oblong with almost parallel sides

1b. Nuts obovoid or suborbicular:

2a. Stigmas 2; nuts lenticular:

3a. Inflorescence with 1-3 spikelets

3b. Inflorescence with many spikelets:

4a. Ligules present:

5a. Nuts finely striolate

5b. Nuts vertically ridged

4b. Ligules absent

2b. Stigmas 3, nuts trigonous:

6a. Glumes at least lower ones of most of the spikelets distichous

6b. Glumes all spiral.

7a. Flowering stems leafy

7b. Flowering stems leafless; if cauline leaves present, at least the upper ones reduced to bladeless sheaths

F. acutiflora 1

F. acuminata 2

F. ferruginea 3

F. dichotoma 4

F. articulata 5

F. eragrostis 6

F. tenera 7

F. milianca 8


Perennial erect herbs up to 40 cm tall. Stems obtusely quadrangular. Leaves absent. Spikelets 1-2 × 0.35 cm, ovoid-oblong or lanceolate, terete, solitary, terminal. Nuts c. 0.15 × 0.15, shortly stipitate, broadly obovoid, biconvex, white.

*Fl.* & *Fr.*: July—August.

Common; in open wastelands in plains; Tellicherry.


Annual erect herbs up to 20 cm tall. Leaves 1-3, c. 0.1 cm broad, glabrous. Spikelets c. 0.6 × 0.15 cm, acute, solitary, polygonal, oblong-lanceolate, in compound or decompound heads 4.5 cm across. Nuts c. 0.05 × 0.03 cm, obovoid, biconvex, stramineous.
$Fl. \ & \ Fr.$: July—August.

Common; along banks of streams in plains; Kuthuparamba.


Annual erect herbs up to 60 cm tall. Stems trigonous, c. 0.15 cm thick. Leaves up to $30 \times 0.5$ cm, linear. Spikelets c. $1.3 \times 0.3$ cm, ovoid-globose, terete, in supra-decompound dense heads; bracts 2-4, foliaceous, 8-10 cm long. Nuts c. $0.12 \times 0.08$ cm, obovoid, apiculate, pale straminous.

$Fl. \ & \ Fr.$: November—July.

Common; on the banks of streams in sandy regions; Pazhassi, Payyanur, Tolpetty.


Perennial erect herbs up to 45 cm tall, rhizomes woody. Stems angular. Leaves c. 0.5 cm abrad, acute. Spikelets in clusters of 2-4, ellipsoid, compressed or subterete, c. $1.5 \times 0.4$ cm, brown, in simple or compound umboes. Nuts c. $0.1 \times 0.1$ cm, obovoid, trigonous, pale brown, minutely tubereled.

$Fl. \ & \ Fr.$: May—June.

Occasional; in grasslands above 825 m; Chandanathode.


Perennial tufted herbs up to 40 cm tall. Stems c. 0.3 cm thick. Leaves rigid, triquetrous. Spikelets c. $2 \times 0.4$ cm, ovoid or oblong-ovoid, dull

_Fl. & Fr._: July—August.

Common; near streams and backwaters in plains; Tullibcherry.


Annual herbs up to 40 cm tall. Stems 5 angled. C. 0.2 cm thick; flowering stems leafless. Spikelets ovoid or ovoid-oblong, c. 0.5×0.2 cm, subcystate, angular, in decomposed umbels; bracts c. 5 cm long, foliaceous. Nuts 0.08×0.05 cm, narrowly obovate-trigonal, striamineous.

_Fl. & Fr._: Almost throughout the year.

Common; near banks of streams; Begur.


_Fl. & Fr._: May—June.

Common; near streams, c. 875 m; Ravali.


 Erect herbs up to 40 cm tall. Stems tetragonal; leaves absent; sheaths 2-3. Spikelets up to 1.8×0.6 cm, solitary, terminal, ovoid-globose. Nuts c. 0.2 cm long, stipitate, linear-oblong with almost parallel sides.
Fl. & Fr.: March—April.

Common; in open marshy places near streams and ditches; Manantoddy.

The leafless quadrangular stems with solitary spikelets and linear-oblong nuts are characteristic of this species.

7. FUIRENA Rottb.

1a. Glumes 3-nerved:
    2a. Hypogynous scales not clawed
        F. umbellata 2
    2b. Hypogynous scales distinctly clawed
        F. ciliaris 1

1b. Glumes 7-nerved
    F. tenuiflora 3


Annual erect herbs up to 45 cm tall. Leaves c. 0.4 cm wide, pubescent. Spikelets ovoid or oblong, in capitate cluster. Nuts narrowly or broadly ovoid, cuspidate, shortly stalked, sharply trigonous, whitish, smooth.

Fl. & Fr.: November—March.

Common; in marshes and paddy fields; Manantoddy, Payyanur, Tellicherry.


Perennial tufted erect rhizomatous herbs up to 30 cm tall. Leaves 1.5 cm wide, flat. Spikelets ovoid to oblong-ovoid, acute, in dense capitate clusters. Nuts elliptic to obovate, triquetrous, shortly stalked, smooth, shining.

Fl. & Fr.: December—March.

Common; as a weed in paddy fields in plains; Mambram, Nedumpoyil.
3. 


Annual pubescent herbs up to 25 cm tall. Leaves c. 0.4 cm wide. Spikelets ovoid, crowded in capitate heads. Nuts obovoid, sharply trigonous, acuminate, shortly stalked, smooth, pale brown.

*Fl. & Fr.*: March—April.

Common; along streams above 25 m in ghats; Manantoddy.


Robust perennial herbs up to 1 m tall. Stems trigonous. Leaves up to 2.5 cm wide. Spikelets obovate-ovoid or ellipsoid, in decumbent, corymbose panicles, 10 cm across; bracts 2-4, foliaceous. Nuts compressed-ovoid to subglobose, rugose, smooth, brown.

*Fl. & Fr.*: February—March.

Common; along streams in shades, c. 250 m; Kannoth.

9. **Lipocarpha** R. Br. *nom. cons.*


Erect tufted herbs up to 25 cm tall. Leaves rigid or involute, c. 0.4 cm wide. Spikelets ovoid to oblong-ovoid, terete, oblate, white, in aggregate terminal heads; bracts 2-3, foliaceous. Nuts oblong-obovate to oblong, straight or slightly curved, biconvex or plano-convex, brown.
10. **Rhynchospora Vahl nom. cons.**


Stout perennial herbs up to 1 m tall. Stems trigonous. Leaves up to 2.5 cm wide. Spikelets lanceolate, acute, fascicles in corymbose panicles. Nuts obovate or oblong-obovate, compressed, truncate at the top, irregularly plicate, brown.

*Fl. & Fr.*: March—April.

Common; in open swampy places; Aralam.

11. **Schoenoplectus (Reichb. f.) Palla nom. cons.**


Tufted erect herbs up to 20 cm tall; stems terete. Leaves reduced to sheaths. Spikelets ovoid, 3-12, in sessile clusters; bracts up to 10 cm, canaliculate. Nuts globose 0bvoid, trigonous, sharply transversely ridged, black.

*Fl. & Fr.*: January—February.

12. **Scleria Berg.**

1a. Hypogynous disc obsolete; reduced to a narrow band
   \[ S. lithosperma \]

1b. Hypogynous disc well developed, 3-lobed
   \[ S. terrestris \]

S. lithosperma 1

S. terrestris 2

Perennial herbs with woody rhizomes; stems triqueteros. Leaves linear, rigid. Spikelets bisexual, up to 0.5 cm long, in axillary spicate panicles. Nuts c. 0.25 x 0.15 cm, ovoid-oblong or globose, obtusely trigonous, white, shining, smooth.

*Fl. & Fr.*: July—November.

Common; in semievergreen forests above 250 m; Kannath.


Erect perennial herbs up to 1.5 m tall; stems sharply trigonous, 1 cm thick. Leaves c. 1.5 cm wide. Male spikelets lanceolate, c. 0.4 cm long; female spikelets broadly ovate, c. 0.4 cm long, in terminal decomposed panicles; bracts foliaceous. Nuts ovoid or subglobose, obtuse or apiculate, umbonulate, smooth to cancellate, shining white or pale brown.

*Fl. & Fr.*: December—January.

Common; in evergreen forests above 825 m in ghats; Chundauvathode.

139. POACEAE

*(nom. alt. Gramineae)*

1a. Culms herbaceous, if perennial, usually not woody; blade-base not disarticulating from the sheath.

2a. Spikelets 2-flowered; falling entire at maturity, usually with the upper floret hermaphrodite and the lower male or barren and if the latter, often reduced to the lemma; rarely the lemma entirely absent; all alike or more often differing in size, shape and structure; frequently dorsally compressed.
3a. Upper lemma and palea membranous; thinner than the glumes:

4a. Paired spikelets monomorphic, both fertile; rachis joints slender, usually swollen at base of spikelet:

5a. Spikelets arranged in more or less ample panicles or compound racemes arranged along an elongated central axis:

6a. Rachis of racemes tough or tardily breaking up; spikelets disarticulating from their pedicles; inflorescence spicate

6b. Rachis of racemes disarticulating; lower spikelets falling off together with the rachis joint; inflorescence paniculate

Spodiopogon 43

5b. Spikelets arranged in a single or in several racemes, the latter being digitate or subdigitate:

7a. Racemes solitary; upper glumes not awned or if awned awns not more than 0.3 cm long

Pogonatherum 38

7b. Racemes two or more; upper glumes awned

Eulalia 23

4b. Paired spikelets dimorphic, if more or less similar, then joints of the racemes and the pedicles thick and swollen:

8a. Joints of the rachis and the pedicles slender, if swollen only at the top:

9a. Inflorescence a panicle; not interrupted by spathes:

10a. Spikelets dorsally compressed; callus not elongated

Sorghum 42

10b. Spikelets laterally compressed; callus obliquely elongated; sharply pointed

Chrysochon 10

9b. Inflorescence in single racemes or digitate racemes; if in panicles interrupted by spathes or not:

11a. Lower glume of lower spikelets cylindrical, neither keeled nor grooved; callus more or less elongated and sharp pointed; awns hairy:

12a. Spikelets many, imbricate in single raceme, not in a compound false panicle

Heteropogon 25

12b. Spikelets several in a compound false panicle surrounded at the base by an involucre of 2 pairs of homogamous spikelets

Themeda 44

11b. Lower glume of lower spikelet 2-keeled or grooved; callus rounded:

13a. Aromatic plants; racemes spatheate

Cymbopogon 12

13b. Nonaromatic plants; racemes not spatheate

Dichanthium 17

8b. Joints of rachis and pedicels swollen, 3-angled, rounded or flattened:

14a. Racemes one jointed, subtended by a spathe

Aphido 2

14b. Racemes two to several noded, usually contracted in a cylinder when young

Ischaemum 28
3b. Upper lemma and palea coriaceous to cartilaginous; thicker than the glumes:

15a. Spikelets enclosed by an involucre of bristles and falling off with the bristles  

*Pennisetum* 36

15b. Spikelets not enclosed by an involucrum of bristles, but if bristled then bristles persistent and spikelets deciduous:

16a. Inflorescence a loose open or densely contracted spike-like panicle; spikelets usually distinctly pedicelled, not arranged on one sided raceme:

17a. Spikelets with one to several persistent bristles at the base of the spikelets  

*Sesamia* 41

17b. Spikelets without bristles at their bases:

18a. Panicle cylindrical, densely set with spikelets  

*Sacciolepis* 40

19a. Spikelets truncate, gibbous; strongly and laterally compressed  

*Cyriococcum* 14

19b. Spikelets not gibbous; not truncate, dorsally compressed  

*Panicum* 33

16b. Inflorescence in digitate or racemose racemes; spikelets sessile or shortly pedicelled, arranged on one sided racemes:

20a. Spikelets dorsally compressed or almost testiculate:

21a. Upper glume and upper lemma with their back to the floral axis:

22a. Upper lemma with flat hyaline margins:

23a. Upper lemma awnless  

*Digitaria* 18

23b. Upper lemma awned  

*Alloseropsis* 1

24a. Lower glume usually wanting, if present, only in some of the spikelets  

*Paspalum* 35

24b. Lower glume present, if wanting callus well developed:

25a. Glumes and lower lemma acute, awnless; upper florets transversely fusing  

*Paspalidium* 34

25b. Glumes and lower lemma acuminate or awned; upper lemma smooth:

26a. Leaf-blades lanceolate to broadly ovate; callus partly creeping  

*Oplismenus* 32

26b. Leaf-blades linear, narrow; culms erect or suberect  

*Echinochloa* 19

22b. Lower glume present, if wanting callus well developed:

23a. Glumes and lower lemma acute, awnless; upper florets transversely fusing  

*Paspalidium* 34

23b. Glumes and lower lemma acuminate or awned; upper lemma smooth:

26a. Leaf-blades lanceolate to broadly ovate; callus partly creeping  

*Oplismenus* 32

26b. Leaf-blades linear, narrow; culms erect or suberect  

*Echinochloa* 19

21b. Upper glume and upper lemma with their back away from the floral axis:

27a. Inflorescence subdigitate; lower glume absent  

*Azonopus* 5

27b. Inflorescence not subdigitate; lower glume present  

*Brachiaria* 7

20b. Spikelets laterally compressed; obliquely ovate; upper glume with rows of glands or hooked hairs between nerves  

*Pseudochisandra* 29
2b. Spikelets 1- many flowered, breaking up at maturity above the more or less persistent glumes or if falling off entire then not 2 flowered with the lower floret male or barren and upper hermaphrodite, usually more or less laterally compressed or terete or if 2- flowered finally entire, the glumes and the lemmas all membranous and with a globose wrinkled seed which splits the pales when mature:

28a. Lemmas distinctly veined; spikelets nearly terete

28b. Lemmas faintly veined; spikelets compressed:

29a. Spikelets with more than 2, usually several to many, hermaphrodite florets:

30a. Inflorescence elongate with the spikelets in dense globose clusters

30b. Inflorescence not as above:

31a. Inflorescence an open or contracted panicle

31b. Inflorescence digitate, one sided spikes:

32a. Upper glume mucronate; axis of spikes terminating in a sharp point

32b. Upper glume not mucronate; axis of spikes terminating in a spikelet

29b. Spikelets with only one or two hermaphrodite florets:

33a. Spikelets with only one hermaphrodite floret and without another male or barren floret:

34a. Awns of lemma 3-fid

34b. Awns of lemma, when present, not 3-fid:

35a. Spikelets secund; spikes digitate

35b. Spikelets not secund; spikes or racemes not digitate:

36a. Lemma awned in the sinus; base of glumes bearded

36b. Lemma not awned; base of glumes not bearded:

37a. Glumes long awned

37b. Glumes not awned

38b. Spikelets awned:

39a. Spikelets in compact subcapitate dense spikes:

40a. Lemma with dense beard on each side below the lobes; lobes awned

40b. Lemma without dense beard on each side below the lobes; lobes unawned

39b. Spikelets not in compact subcapitate dense spikes

38b. Spikelets unawned:
41a. Rhachis, pedicels and rhachilla flat: *Linnopoa* 30

41b. Rhachis, pedicels and rhachilla terete: *Isachne* 27

42a. Upper lemma becoming indurated; glumes deciduous

42b. Upper lemma remaining membranous; glumes persistent *Caelachne* 11

10. Culms woody, always pinnatifid; blade base disarticulating from the sheath, usually petiolate:

43a. Stamina numerous *Ceblandra* 31

43b. Stamina 5-7:

44a. Spikelets in globose congested heads *Dendrocalamus* 16

44b. Spikelets not in globose congested heads *Bambusa* 6

1. **Aloothesopsis** J.S. Preel ex C.B. Preal *cinnerea* Hieche.


Tufted grass. Culms erect, up to 50 cm tall. Leaves lanceolate, acute, cordate at base; more or less hairy from tubercles. Racemes spikeform, digitate; spikelets ovoid, c. 0.6 cm long, dark brown.

*Fl. & Fr.:* March—December.

Common; on the banks of streams, paddy fields and other moist places in plains; Kannoth, Nedumpoyil, Seeakantapuram, Tellicherry.

2. **Apluda** L.


Perennials; culms branched, rooting at lower nodes. Leaves c. 18 × 0.5 cm, linear-lanceolate, acute. Panicles compound. Spikelets in threes at the tip of each branchlet, enclosed in a spathe.

*Fl. & Fr.:* February—March.
Common; in grasslands in ghats and plains; Aralam, Begur.

3. **ARISTIDA L.**


Perennial grass; clumps erect, up to 50 cm tall. Panicle contracted; main axis terete, axils glabrous; branches erect, straight; glumes long awned; awns 0.3 - 0.5 cm long.

*Fl. & Fr.*: December — March.

Common; on rocky slopes in plains; Mambram, Tellicherry.

4. **ARUNDINELLA Raddi**

1a. Upper lemma with setae one on either side of the awns at the tip  
   *A. seiosa* 4

1b. Upper lemma devoid of such setae:
   2a. Spikelets small, not more than 0.2 cm long  
      *A. pumila* 2
   2b. Spikelets well over 0.2 cm long:
      3a. Spikelets glabrous  
         *A. purpurea* 3
      3b. Spikelets densely covered with tubercle based hairs  
         *A. ciliata* 1


Annual, clumps erect, up to 35 cm tall. Leaves up to 10 x 1.5 cm, lanceolate, acuminate, narrowed at base, clothed with long soft hairs; Panicles compact, spikelets more than 0.2 cm long.

*Fl. & Fr.*: November—December.

Common; along forest margins, c. 250 m; Kannoth.

Annual; culms erect, up to 40 cm tall. Leaves up to $8 \times 1.8$ cm, ovate to linear-lanceolate, acuminate, base narrowed; membranous to chartaceous; panicles effuse, up to 15 cm long. Spikelets not more than 0.2 cm long.

*Fl. & Fr.:* November—December.

Common; along margins of forests; Chandanathode, Kannoth.


Tufted herbs; culms up to 35 cm tall. Leaves linear-lanceolate, acuminate, panicles close, spikelets crowded and larger.

*Fl. & Fr.:* December—January.

Common; in grasslands above 640 m in ghats; Chandanathode.


Perennial; culms up to 30 cm tall. Leaves linear, finely acuminate; hispidly hairy. Panicles lax; branches c. 5 cm long; spikelets c. 0.6 cm long; pedicelled.

*Fl. & Fr.:* February—March.

Common in grasslands; Kuthuparamba.

5. *Axonopus P. Beauv.*

Culms erect, up to 40 cm high. Leaves up to 15 × 1 cm, linear-lanceolate. Spikelets c. 0.25 cm long, elliptic-acute, in spiciform racemes up to 10 cm long.

_Fl. & Fr._: August—September.

Common; along margins of evergreen forests; Nedumpoyil.

6. **Bambusa Schreb. nom. cons.**


Culms armed, up to 25 m tall. Internodes hollow. Leaves up to 12.5 × 3 cm, linear-lanceolate, blade of culm-sheath densely felted with dark purple hairs within. Spikelets c. 3 cm long, one flowered, in compound panicles.

_Fl. & Fr._: February—March.

Common; in moist deciduous forests; Begur, Periyarum.

7. **Brachiaria** Griseb.

1a. Spikelets distant on the rachis

1b. Spikelets crowded on the rachis


Perennials; culms straggling, up to 60 cm tall. Leaves flat, linear. Racemes 2-4, spikes up to 4 cm long. Spikelets 0.25-0.3 cm long, elliptic-ovate, acute, secund on the rachis.

_Fl. & Fr._: May—June.

Common; in open wastelands in ghats; Baveli.

Perennials; culms robust, up to 1 m tall. Leaves ensiform, broadly lanceolate, rounded at base, finely acuminate. Racemes up to 8 cm long; spikelets elliptic or elliptic-oblong to obovate on triquetrous rachis.

Fl. & Fr.: July—August.

Common: as an undergrowth in moist deciduous forests, above 825 m; Tolpetty.


Perennials, culms erect, up to 75 cm tall. Leaves narrowly lanceolate, to ovate, panicles spiciform, up to 20 cm long. Spikelets secund, alternate, laterally compressed.

Fl. & Fr.: December—February.

Common: near forest margins above 250 m; Ambayathode, Kannoth.

Clayton (l.c.) points out that when Trinius (1820) published the name Centotheca latifolia it contained no information other than the synonym Conocra lappacea L. and as such it should be considered an illegitimate substitute for the latter one.

9. Chandrasekharana V.J. Nair, V.S. Ramachandran & P.V. Sreekumar

Annuals up to 40 cm tall; culms rooting at lower nodes. Leaves lanceolate or ovate-lanceolate, 2-4.5 × 0.5-0.8 cm, sparsely tubercle-based hairy. Inflorescence contracted, ovoid or oblong spicate racemes 1.5-2.5 × 1-1.5 cm. Spikelets 2-flowered, 5-6 mm. Lower glumes c. 3.5 × 4 mm, ovate, awned, densely hairy on upper half of the dorsal surface with tubercle-based hairs, the median and alternating two nerves prominent, the midrib and the awn scabrid, margins ciliately. Upper glume 5.5-6 mm, ovate-lanceolate, acuminate, the lip with an awn c. 3 mm long, scaberulous on the nerves, scabrid on the arista. Margins ciliolate. Lemma elliptic-lanceolate, 4-5 mm long, shortly notched at apex with an awn in the sinus, coriaceous, glabrous except for the scaberulous midrib, awn scabrid, 1.5-2 mm; palea c. 4 mm, keels ciliate, apex bilobed, lobes acute. Anthers c. 1.25 mm, filaments c. 0.25 mm. Lodicles cuneate and shallowly notched at apex. Gynoecium c. 2 mm; ovary c. 0.5 mm, oblong. Grains ellipsoid, c. 1 mm, brown, coloured with a black spot at the distal end.

Fl. & Fr.: January—February.

Rare; once collected from Kannaith, at an altitude of 175 m.


1a. Pedicels half the length of the sessile spikelets or longer C. aciculatus 1

1b. Pedicels shorter than half the length of the sessile spikelet C. hookerii 2


Perennials with creeping woody rootstocks, culms up to 40 cm tall. Leaves basal, flat or conduplicate, rounded at tip. Spikelets c. 0.3-0.45 cm long, linear, compressed.

Fl. & Fr.: June—July.

Common; in open wastelands in plains and ghats; Ambayathode, Tellicherry.

Perennials; culms up to 1 m tall. Leaves linear-acuminate, glabrous, with a few tubercle-based hairs. Panicles 10-15 cm long, spikelets 3-nate, pedicelled ones shorter than the sessile, covered with chocolate brown or rufous brown hairs.

*Fl. & Fr.:* November—December.

Occasional; in ghats above 750 m; on way to Kannoth.

11. COELACHNE R. Br.


Annual trailing herb; culms up to 10 cm tall. Leaves flat, rolled. Panicles spikeform, up to 5 cm long. Spikelets 2-flowered; glumes up to 1.5 cm long, subrastiad.

*Fl. & Fr.:* February—March.

Common; in marshy places in ghats, above 625 m; Manantoddy, Tirunelli.

12. CYMBOPOGON Spreng.


Perennials; culms up to 1.5 m tall. Leaves linear-lanceolate to lanceolate, tapering at apex, cordate and amplexicaul at base; panicles up to 3 cm long, reddish brown. Spikelets 2-nate, one sessile and other pedicelled, 0.35-0.4 cm long; pedicelled spikelets glabrous.

*Fl. & Fr.:* November—December.

Common in ghats; Ambayathode.

1a. Rhizomatous herbs; ligule a ring of white hairs

\[ C. daucylon \ 2 \]

1b. Non-rhizomatous herbs; ligule membranous

\[ C. arcuratus \ 1 \]


Perennials; erect culms up to 40 cm tall. Leaves flat or conduplicate, lanceolate. Spikes acuminate, digitate, 6-8, up to 10 cm long. Spikelets sessile.

*Fl. & Fr.:* March—June.

Common in open wastelands in forests above 500 m; Ambayathode.


Perennial; erect culms with creeping rhizomes, up to 40 cm tall. Leaves flat. Spikes digitate 3-6, up to 6 cm long. Spikelets sessile, 2- seriate, compressed laterally.

*Fl. & Fr.:* May—June.

Common in open wastelands; Ambayathode, Tellicherry.

14. CYRTOCCUM Stapf

1a. Pedicels short, rarely as long as the spikelets:

2a. Leaves elliptic or linear-lanceolate, acute

\[ C. trigonum \ 4 \]

2b. Leaves oblong or elliptic-lanceolate, acuminate

\[ C. oxyphyllum \ 2 \]

1b. Pedicels longer than the spikelets:

3a. Lower lemma obtuse

\[ C. patens \ 3 \]

3b. Lower lemma cuspidate

\[ C. longipes \ 1 \]

Perennials; culms robust, decumbent up to 60 cm tall. Leaves flat, ovate-lanceolate; panicles up to 20 cm long, fuscitigially branched. Spikelets semi-obovate. smooth.

*Fl. & Fr.: January—March.*

Common; in the shade of forest plantations; Ambayathode, Chulanaathode, Nedampoyil.


Perennial; culms erect or creeping at base, up to 45 cm tall. Leaves 6-12 cm. Panicles 10-12 cm long. Spikelets obliquely ovate, compressed, glabrous.

*Fl. & Fr.: December—January.*

Common as an undergrowth in evergreen forests; Ambayathode.


Perennials; culms slender, creeping and rooting at base, up to 60 cm tall. Leaves linear to linear-lanceolate. Panicles contracted. Spikelets c. 0.15 cm long, obliquely ovate, laterally compressed, smooth.

*Fl. & Fr.: May—June.*

Common as an undergrowth in evergreen forests; Tirumali.

Annuals; culms slender, creeping at base, up to 60 cm tall. Leaves elliptic or lanceolate, acute. Panicles effuse, up to 6 cm long. Spikelets c. 0.15 cm long, ellipsoid, hispidulous.

*Fl. & Fr.:* February—March.

Common in the shades of forest plantations above 825 m in ghats: Tirunallil.

15. **Dactyloctenium Willd.**


Creeping herbs; culms up to 50 cm long. Leaves up to 11 x 0.8 cm, linear-lanceolate, pilose. Spikelets digitate, up to 4.5 cm long; spikelets sessile, laterally compressed, in two rows.

*Fl. & Fr.:* March—July.

Common in open wastelands in plains: Aralam. Tellicherry.

16. **Dendrocalamus Nees**


Culms up to 15 m tall; culm sheaths with sparse hairs, glabrescent. Leaves up to 25 x 3 cm, linear-lanceolate, acuminate at apex and rounded at base. Spikelets pale green, ovate, in dense globose heads up to 4 cm across. Grain c. 0.8 cm long, ovate.

*Fl. & Fr.:* December—January.
Occasional; in moist deciduous forests; Chandalamulaode.

17. DICHANTHUM Willemet


Tufted perennial herbs. Culms up to 45 cm tall. Leaves linear, finely scabrid, margins scaberulous. Racemes up to 5.5 cm long, solitary or 2-nate, pale green or silvery. Sessile spikelets c. 0.4 cm long; callus short, bearded.

Fl. & Fr.: February—May.

Common in open wastelands in ghats; Begur.

18. DIGITARIA Haller nom. cons.

1a. Hairs on spikelets verrucose

1b. Hairs on the spikelets, if any, never verrucose:

2a. Upper glume well developed, more than 1/2 the length of the spikelets; racemes puberulous or glabrous in the lower axils:

3a. Spikelets in interrupted loose groups on the racemes

3b. Spikelets not in interrupted loose groups on the racemes

2b. Upper glume a minute 3-nerved triangular scale; racemes densely pubescent with or without a few long hairs in the lower axils


Annuals; culms up to 45 cm tall. Leaves lanceolate, flat. Racemes digitate, 10 cm long; pedicels very minute, spikelets imbricate.

Rare; once collected from open wastelands above 825 m in ghats; Aralam, Sreekantapuram.

Perennial; culms up to 1 m tall. Leaves flat, linear. Racemes 5-12, alternate, opposite or subverticillate, up to 7 cm long. Spikelets ovate, 2-nate, pubescent.

*Fl. & Fr.:* August—September.

Common; as an undergrowth in moist deciduous forests; Begur.


Culms slender, 35 cm tall with a creeping and rooting base. Leaves lanceolate. Racemes 2 or 3, digitate, slender, up to 6 cm long. Spikelets elliptic-oblong, c. 0.2 cm long; pubescent.

*Fl. & Fr.:* June—February.

Common; in forest margins, c. 250 m; Kuthuparamba.


Culms tufted, rooting at base, up to 60 cm tall. Leaves linear, flat. Racemes 4-10, subdigitate on a short common axis up to 12 cm long, appressed. Spikelets lanceolate, c. 0.4 cm long.

*Fl. & Fr.:* May—June.

Common; in forest margins above 850 m in ghats; Baveli.


1a. Ligule a fringe of stiff hairs

1b. Ligule absent;
2a. Spikelets 0.25-0.3 cm long; lower lemma awnless  

_E. colona_ 1

2b. Spikelets 0.3-0.4 cm long; lower lemma awn

_E. crusgalli_ 2


Annuals; culms stout, up to 75 cm tall. Leaves c. 25 x 0.8 cm, lanceolate. Racemes second bearing spikelets up to 0.25-3 cm long. Spikelets globose to ovoid, acute, subcuspidate, more or less hispidly pubescent.

_Et: & Fr._: February—July.

Common in rice fields in ghats and plains; Nodumpoyil, Tolpetty.


Annuals. Culms erect, up to 60 cm tall. Leaves lanceolate, panicules erect, racemes spikeform, up to 5 cm long. Spikelets lanceolate-oblong, more or less hispidulous.

_Et: & Fr._: February—March.

Common as a weed in rice fields; Manantoddy.


Perennial aquatic grasses with floating spongy culms up to 75 cm tall. Leaves lanceolate. Racemes spikeform, c. 2.4 cm long, fascicled on a racemose axis, purplish. Spikelets 0.3-0.4 cm long, acute or shortly cuspidate.

_Et: & Fr._: March—April.

Common; in rice fields; Manantoddy.
20. **Eleusine Gaertn.**


Annual grass; culms up to 50 cm tall. Leaves up to 13 x 0.5 cm, linear-lanceolate. Spikes c. 6 cm long, secund, digitately terminating the culms. Spikelets densely imbricating.

*Fl. & Fr.*: February—March.

Common; in open wastelands in plains; Arlalam, Chandanathode.

21. **Elytrophonous P. Beauv.**


Erect annuals; culms up to 25 cm tall. Leaves linear. Inflorescence densely packed globose culsters of spikelets in a rachis forming cylindric interrupted spike. Spikelets small, laterally compressed, 3-6-flowered, subtended by empty glumes.

*Fl. & Fr.*: February—March.

Fairly common in rice fields, c. 825 m; Arnapara.

22. **Eragrostis Wolf**

The name *Eragrostis* is usually ascribed to P. Beauv. (1812) on the plea that *Eragrostis* Wolf (1776) is not validly published. Rose (Acta Bot. Neerl. 15 : 147. 161. 1966) has clearly shown that Wolf’s name is validly published.

1a. Spikelets breaking up from above downwards; rachis fragile:

2a. Keels of the palea ciliate *E. tenella*
2b. Keel of the palea scabrid or smooth, not ciliate

1b. Spikelets breaking up from below upwards; rachis tough; lemma falling away without the palea.

3a. Spikelets ovate to ovate-oblong (0.4-1.2 x 0.2-0.3 cm)

3b. Spikelets linear:

4a. Spikelets fascicled in groups on the primary or secondary branches:

5a. Perennials; basal leaves flat; spikelets 0.2-0.27 cm wide; lemmas 0.2-0.25 cm long

5b. Annuals; basal leaves bi/triflorous; spikelets 0.15-0.2 cm wide; lemmas 0.15-0.2 cm long

4b. Spikelets not fascicled in groups on the branches:

6a. Lemmas up to 0.15 cm long:

7a. Spikelets yellow to olive green

7b. Spikelets slate-grey to black

6b. Lemmas over 0.15 cm long:

8a. Annuals:

9a. Spikelets olive green to slate-grey black; strongly compressed

9b. Spikelets pale green or purplish; not strongly compressed

8b. Perennials


Erect culms up to 45 cm tall. Leaves linear. Spikelets up to 0.9 x 0.25 cm, in contracted panicles up to 20 cm long. Grain c. 0.08 cm long, oblong.

Fl. & Fr.: November—March.

Common; in margins of forests and in open wastelands; Aralam, Chandanathode.

Culms erect. Leaves up to $5 \times 0.3$ cm, linear. Spikelets c. 0.55 cm long in open panicles up to 15 cm long. Glumes chartaceous, deltoid, inconspicuously venied. Grains subglobose.

_**Fl. & Fr.:** May–June._

Rare; once collected in open wastelands in ghats above 800 m; Chandanathode.


Tufted herbs; culms up to 25 cm tall. Leaves up to 10 × 0.5 cm, usually flat, lanceolate-acuminate; ligule membranous. Spikelets c. 0.2 cm long, pinkish white in interrupted panicles up to 15 cm long.

_**Fl. & Fr.:** December–June._

Common; near banks of streams in plains; Tirunalli.

de Winter (_Botanica J_ : 387. 1900) proposed that _E. japonica_ and _E. diarrhena_ should be transferred to a new genus _Diandrochloa_ de Winter, because they possess membranous ligule, 2 stamens and scabrid or smooth keels of the pala. Following de Winter's proposal Henry (i.e.) transferred _E. japonica_ and _E. diarrhena_ to the genus _Diandrochloa_. Based on a careful analysis, Roy (_Goebios 5 : 76-77. 1978_) points out that the characters delimiting the genus _Diandrochloa_ occur in various combinations in many species of *Eragrostis*. He concludes that de Winter's observations were not based on extensive study of *Eragrostis* species found in different geographical regions and as such it will be advisable to retain in the original status of this genus.

Tufted herbs; culms up to 90 cm tall, shining, suberect. Leaves up to 20 × 0.2 cm, linear, rigid, glaucous, tapering to a fine point at apex. Spikelets not flattened, on crowded narrow panicles up to 30 cm long.

Fl. & Fr.: February–March.

Common; in open wastelands, c. 825 m; Tirunalli, Tulpetty.


Tufted herbs; culms up to 40 cm tall. Leaves up to 15 × 0.5 cm, linear-lanceolate; mouth of sheaths bearded. Spikelets c. 0.2 cm long, salty grey to black in diffuse panicles up to 25 cm long.

Fl. & Fr.: February–March.

Common; in wastelands in ghats above 825 m in ghats; Sagur.


Tufted herbs; culms up to 25 cm tall. Leaves up to 9 × 0.4 cm, linear-lanceolate, acuminate; sheaths bristly. Spikelets c. 0.2 cm long, white, in diffuse panicles up to 15 cm long.

Fl. & Fr.: July–August.

Common; in sandy areas in plains; Tellicherry.


Tufted herbs; culms up to 25 cm tall. Leaves up to 12 × 0.5 cm, linear-lanceolate; mouth of sheaths naked. Spikelets c. 0.3 cm long, white, in lax panicles up to 15 cm long.
**Fl. & Fr.:** March—June.

Occasional; in open wastelands in ghats; Baveli, Brahmagiri.


Culms slender, up to 40 cm tall. Leaves up to $12 \times 0.4$ cm, linear-lanceolate, acuminate; sheaths glabrous, ligule membranous. Spikelets c. $0.6$ cm long, white or purplish, in diffuse panicles up to 25 cm long.

**Fl. & Fr.:** December—January.

Fairly common; in sandy regions in plains; Muzhapplangad.


Erect annual glabrous herbs; culms up to 50 cm tall. Leaves up to $10 \times 0.5$ cm, linear-lanceolate, sheath bearded at the mouth. Spikelets purplish, compressed, in spreading panicles 15-20 cm long.

**Fl. & Fr.:** February—July.

Fairly common in open wastelands in plains and ghats; Kannonth, Nedumpoyil, Pappinissery, Tolpetty.


Erect or ascending perennial herbs up to 15 cm tall. Leaves up to $5 \times 0.5$ cm, narrowly linear; sheaths bearded at the mouth. Spikelets greyish purplish, laterally much compressed, in panicles, 3-15 cm long.

**Fl. & Fr.:** January—February.
Rare; in open wastelands in plains; Hosdurg.

23. **Eulalia Kunth**


Slender culms up to 50 cm tall. Leaves linear-lanceolate, lower sheaths glabrous. Racemes 4-13. 20 cm long, rachis joints and pedicels long-ciliate; spikelets in pairs, one sessile and other pedicelled.

*Fl. & Fr.:* March—April.

Common; in grasslands in ghats above 825 m; Chandanathode.

24. **Garnotia** *Brong.*


Perennial grass; culms erect, up to 1 m tall; nodes pubescent. Leaves up to 15 x 2.5 cm, broadly lanceolate with long filiform tip, subcordate or rounded at base. Spikelets c. 0.3 cm long in terminal panicles up to 15 cm long.

*Fl. & Fr.:* February—March.

Common in grasslands above 825 m in ghats; Manantoddy.

25. **Heteropogon** *Pers.*


Perennial; culms up to 45 cm long. Leaves mainly basal, linear. Racemes spiciform, solitary, terminating the culms, up to 12 cm long. Spikelets in pairs, one sessile and the other pedicelled.

Fl. & Fr.: November—March.

Common in plains and on hill slopes; on way to Brahmagiri, Tellicherry.

Sharply pointed callus and hygroscopic awns of the fruits are characteristic of this species.

26. IMPERATA Cyt.


Perennials; rootstock stoloniferous; culms erect, up to 1 m tall. Leaves ovate-lanceolate, panicles up to 20 cm long; spikelets up to 0.4-0.5 cm long, 2-nate, one short and the other long pedicelled.

Fl. & Fr.: May—June.

Common; in forest margins, c. 825 m; Baveli.

Culms largely used as a thatching material.

27. ISACHNE R. Br.


Culms erect, rooting at base, up to 30 cm tall. Leaves ovate-lanceolate, flat. Panicles dense; spikelets c. 0.2 cm long; puberulous on the margins.
FLORA OF CANNANORE

Fl. & Fr.: February—March.

Common; in open wastelands in ghats; Tirunalli.

28. ISCHEMA M. L.

1a. Lower leaves petiololed; spikes less than 0.5 cm long; keels of the upper glumes of sessile spikelets not winged above the middle

I. zeylanicolum

1b. Lower leaves sessile; spikes 0.5-0.6 cm long; keels of the upper glumes of sessile spikelets broadly winged above the middle

I. indicum


Perennials. Culms slender, creeping at base, up to 25 cm tall. Leaves ovate-lanceolate, rounded or narrowed at base. Racemes 2, up to 4-6 cm long; spikes up to 0.5-0.6 cm long, sessile, awned, up to 1.2 cm long.

Fl. & Fr.: February—July.

Common; in open wastelands; Manamooddy, Nedumpoyil, Taliparamba.


Straggling perennial herbs up to 75 cm tall. Leaves up to 8 x 1.5 cm, linear-lanceolate, acuminate; sheaths smooth; ligule a tuft of hairs. Spikelets 0.5 cm long, in pairs, on sparsely villose racemes up to 5.5 cm long.

Fl. & Fr.: February—March.

Rare; once collected from the margins of evergreen forests above 825 m in ghats; Chandanathode.
29. **Jansenella** Bor


Annual herbs; culms erect, up to 20 cm tall. Leaves up to $5 \times 0.3$ cm, ovate-lanceolate, acute, sparsely hairy, amplexicaul at base. Spikelets c. 0.5 cm long, in congested ovoid or oblong terminal heads up to 3 cm long.

**Fl. & Fr.:** November—December.

Common; in grasslands above 840 m in ghats; Chandanathode.

30. **Limnopea** C.E. Hubb.


Annuals with creeping culms. Leaves lanceolate, c. 3 x 0.2 cm, acuminate, rounded or narrowed at base, ligule a row of hairs. Spikes c. 3 cm long, hardly exserted from the sheath. Spikelets ovate-oblong, paired; upper glume obovate or spathulate; lower floret male, upper bermaphrodite.

**Fl. & Fr.:** October—November.

Very rare; in marshy places near tidal rivers; Payyanur.

Endemic to Kerala; this has been located only three times (including the present collection) after the type.

31. **Ochlandra** Thw.


Culms up to 4 m tall. Culm sheaths c. 25 cm long, purplish green, hairy when young. Leaves up to 25 × 2.5 cm, linear-lanceolate, acuminate at apex and rounded at base; leaf sheaths smooth with two facilitating auricles fringed with stiff deciduous bristles. Spikelets c. 3 cm long, in axillary or terminal panicles.

*Fl.*: March—August.

Along banks of streams in evergreen forests above 840 m in ghats; Chandanathode.

32. **Oplismenus** P. Beauv.

1a. Awns needle-like, smooth

1b. Awns capillary, minutely scabridulous


Annuals; culms creeping at base, up to 60 cm tall. Spikelets up to 0.25 cm long. Leaves flat, elliptic-acute, hispid. Racemes spiciform, second, distant on the panicles.

*Fl.* & *Fr.*: November—December.

Common; in shades; Kannoth, Pappinissery, Taliparamba.


Culms robust, up to 75 cm tall. Leaves broadly elliptic-lanceolate, acuminate. Panicles up to 20 cm long, spikelets distant, c. 0.4 cm long.

*Fl.* & *Fr.*: February—March.
Common; in shades; Chandanathode, Manantoddy.

33. Panicum L.

1a. Leaf-blades linear to narrowly lanceolate; spikelets symmetrical
   2a. Spikelets about 0.15 cm long  \( P. \text{ humidorum} \)  
   2b. Spikelets over 0.15 cm long:
      3a. Spikelets narrowly lanceolate to lanceolate-oblong acute:
         4a. Culms spongy  \( P. \text{ paludosum} \)
         4b. Culms not spongy  \( P. \text{ repens} \)
      3b. Spikelets oblong, ovate-oblong to elliptic, acute or obtuse  \( P. \text{ sumatrense} \)
   1b. Leaves ovate-elliptic, amplexicaul; spikelets slightly gibbous  \( P. \text{ brevifolium} \)


Annuals; culms rooting at the lower nodes, slender, up to 40 cm tall. Leaves ovate-elliptic, acute. Panicles effuse. Spikelets c. 0.15 cm long hispidulous, slightly gibbous.

\( Fl. \ & \ Fr. \): December—January.

Common; in forest margins above 825 m in ghats; Chandanathode.


Erect perennial herbs up to 1 m tall; culms procumbent and creeping below. Leaf blades linear, sheaths smooth. Inflorescence a contracted panicle. Spikelets c. 0.15 cm long, narrowly lanceolate.

\( Fl. \ & \ Fr. \): February—March.

Occasional near streams in lower ghats; Aralam.

Perennials; stems creeping and rooting at lower nodes, up to 45 cm tall. Leaves flat, sheaths inflated. Spikelets c. 0.3 cm long, lanceolate, in panicles.

Fl & Fr - November—December.

Common; in open grasslands at lower altitudes; Aralam, Kannur, Talikhoory.


Tussock subuliferum grass. Leaves dischuous, involute, linear-lanceolate. Spikelets c. 0.25 cm long, lanceolate to lanceolate-oblong, in terminal panicles.

Fl. & Fr. - March—April.

Common; near banks of streams at lower altitudes; Mananthody, Taliparamba.


Annuals; culms up to 45 cm tall. Leaves linear, tapering from a broad base. Spikelets up to 0.2 - 0.25 cm long, persistent, in contracted panicles up to 15 cm long.

Fl. & Fr.: May—June.

Fairly common near forest wastelands; Bawali.

34. *Paspalium* Stapf

Annuals; culms up to 60 cm tall. Leaves lanceolate, acute, flat, ciliate near the base. Racemes spiciform, 5-12, on a long triquetrous common rachis. Spikelets 2-seriate, second on the rachis, c. 0.3 cm long, ovate, acute.

Fl. & Fr.: June—July.

Common; along the banks of streams, Tellicherry.

35. Paspalum L.

1a. Spikelets up to 0.12 cm long
   P. canarum 1

1b. Spikelets more than 0.12 cm long:
   2a. Spikelets ciliate on the margins
       P. conjugatum 2
   2b. Spikelets not ciliate on the margins
       P. scrobiculatum 3


Culms up to 25 cm tall. Leaves linear-lanceolate, sparsely hairy. Racemes 6-12, alternate; rachis subtriquetrous; spikelets in two rows, up to 0.12 cm long and the margins of upper glumes fimbriate.

Fl. & Fr.: December—February.

Common; in damp situations near forest margins, c. 825 m; Chandanathode.


Perennials with creeping stolons; culms up to 60 cm tall. Leaves lanceolate. Racemes 2, up to 10 cm long, rachis flat. Spikelets c. 0.2 cm long, compressed, plano-convex, subobtuse, apiculate.

Fl. & Fr.: April—July.
Common; in open wastelands; Ambayathode, Taliparamba, Telli-cherry.


Annuals; culms up to 60 cm tall. Leaves lanceolate. Racemes secund, 2-4, rachis flat, winged or flat; spikelets in two rows, up to 0.25 cm long, orbicular or ovate-orbicular.

Fl. & Fr.: April—July.

Common; in open grasslands at lower altitudes; Kanoth, Tellicherry.


1a. Lemmas more or less alike; lower not 3 lobed:

2a. Rachis of the spikes glabrous, often scabrid P. hohenackeri 1

2b. Rachis of the spikes villous or woolly P. purpureum 3

1b. Lemmas heteromerphous; lower 3-lobed P. polystachyon 2


Perennials; culms up to 60 cm tall. Leaves coarivolute, glabrous. Racemes up to 15 cm long. Spikelets solitary, acute, lanceolate.

Fl. & Fr.: March—April.

Common on the bunds of paddy fields at high altitudes; Tirunalli.


Annuals; culms up to 75 cm tall. Leaves lanceolate; panicles spikeform, 15-20 cm long, spikelets solitary, sessile, in plumose briefly involucre.
Fl. & Fr.: February—March.

Common; on waste and cultivated lands; Manantoddy.


Perennials; culms up to 75 cm tall. Leaves lanceolate. Panicles spiciform, up to 15 cm long. Spikelets sessile, solitary, involucral bristles golden.

Fl. & Fr.: December—January.

Common; in open wastelands; Pazhassi.

A native of tropical Africa and getting naturalized. "Elephant Grass".

37. Perotis Ait.


Tufted wiry herbs; culms 60 cm tall. Leaves flat, ovate-cordate, acute. Racemes spiciform, up to 12 cm long, terminal. Spikelets minute, subulate, purplish.

Fl. & Fr.: November—December.

Common on sandy regions in plains; Muzhappilangad.

38. Pogonatherum P. Beauv.

Tufted erect herbs; culms up to 30 cm tall. Leaves flat, narrow, suberect. Racemes up to 4 cm long, terminal, solitary; rachis fragile; spikelets c. 2.5 cm, 2-nate, one sessile and the other pedicellate.

Fl. & Fr.: November—December.

Common; on the banks of streams; Chandanathode.

39. PSEUDOKINOLARIA (Hook. f.) StafF


Annuals; culms up to 60 cm tall. Leaves ovate to linear-lanceolate, acuminate; panicles spiciform, up to 5 cm long. Spikelets obliquely ovoid, pedicellate.

Fl. & Fr.: November—December.

Common in grasslands in ghats; Chandanathode.

40. SACCOLEPSIS Nash


Erect herbs; culms slender up to 25 cm tall. Leaves linear-lanceolate, flat. Spikelets up to 0.3 cm long, ovoid in pseudospikes.

Fl. & Fr.: March—April.

Common near banks of streams in ghats; Chandanathode, Manantoddy.

41. SATARRA P. BERRY. nom. cons.

1a. Perennials; leaves plicate; inflorescence not cylindric

S. palmifolia

1b. Annuals; leaves flat, not plicate; inflorescence cylindric

S. puella

Erect robust grass; culms up to 1 m tall. Panicles up to 30 cm; spikelets c. 0.3 cm long, ovate-lanceolate, acute or acuminate.

*Fl. & Fr.:* November—March.

Common; as an undergrowth in moist deciduous forests; Chandanathode, Tolenpetty.


Culms up to 60 cm tall. Leaves flat, glabrous; panicles cylindric, dense. Spikelets up to 0.25 cm, elliptic-oblong; involucral bristles 8, longer than the spikelets.

*Fl. & Fr.:* December—March.

Common; in moist shady areas; on way to Alathur, Tellicherry.

42. *Sorghum Moench* *nom. cons.*


Perennials with creeping rhizomes; culms up to 1 m tall. Leaves elliptic-lanceolate. Panicles effuse, up to 25 cm long; sessile spikelets more or less obtuse, elliptic to subelliptic or elliptic-lanceolate.

*Fl. & Fr.:* February—March.
Common; near the banks of streams in ghats; Tolpetty.

43. Spodiopogon Trii.


Perennials; culms tufted, up to 75 cm tall. Leaves linear-acuminate, rounded at the base. Panicles dense from spatheaceous sheaths, rachis and pedicels more or less densely silky hairy. Spikelets 1 sessile and 1-2 pedicelled.

*Fl. & Fr.*: August—November.

Common; along the forest margins in evergreen forests above 825 m in ghats; Ambayathode, Chandanathode.

44. *Themeda* Forstk.

1a. Involucral spikelets all at the same level.  
1b. Involucral spikelets in superposed pairs.  

*T. triandra* 1


Tufted herbs. Leaves linear. Panicles racemiform; spatheales finely scabrous from large tubercles. Pedicelled spikelets glabrous.

*Fl. & Fr.*: February—March.

Common along the margins of forests; Chandanathode, Taliparamba.
Robust perennial herbs; culms up to 45 cm tall. Leaves narrow; racemes subtended by spathes; sessile spikelets awned.

Fl. & Fr.: February—March.

Common; in grasslands in ghats; Chandanathode.

45. ZOYSIA Willd.


Creeping herbs up to 30 cm tall. Leaves up to 5 cm long, very narrow, convolute, rigid. Racemes up to 4 cm long, spiciform, solitary, terminal, rachis inarticulate, notched. Spikelets ovoid, laterally compressed. 1-flowered.

Fl. & Fr.: July—August.

Common along the banks of backwaters in plains; Tellicherry.
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B. euphrasoides (Benth.) B. euphrasoides Benth. Scroph. Ind. 41. 1835, non Vahl 1794. Striga}

335 15 Eranthemum Eranthemum
423 4 resinosæ resinosæ
432 16 Setilæm. Setilæm.
433 30 elliptic-lanceolate elliptic-lanceolate
437 18 188 1888
468 16 Trim. Trim.

var. oligantha var. oligantha

485 32 paniculata paniculatum
486 25 sheaths sheaths
495 26 glaucous glaucous
500 6 upper upper
508 21 Clark Clarke

Squarrosum squarrosum

510 20 101; 101;
32 Steenis Steenis,
516 22 abroad abroad
537 3, 12, 21 Echinochloa Echinochloa
539 19 tenuifolia tenuifolia

last & ;
540 2 deltoid deltoid
3 venosed venosed
33 Gook. f. Hook. f.
541 12 slaty slaty
555 5 rhizophorus rhizophorus
576 last Epiphrus Epiphrus