

FIELD KEY TO THE IDENTIFICATION OF INDIGENOUS ARBORESCENT SPECIES OF KERALA FORESTS

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SUMMARY

All the previous treatments on the Kerala trees are largely based on generative characters. But, the specimens collected may not always be with generative organs (flowers and fruits). Because of this, experimental and field biologists are often put to difficulties in their identification. Nevertheless, identification at sight, in the field, is often necessary for many practical purposes. For this, an artificial key based on vegetative characters is desirable, besides descriptive floras based mainly on generative characters. To meet this need, the project was undertaken with the aim of generating a convenient key.

A checklist of the dicotyledonous tree species with a minimum of 10 m height, indigenous to the Kerala forests (341 spp.), was prepared from the regional floras. Based on field observations made in the Kerala forests and studies on the collected specimens in the Institute Herbarium, Madras Herbarium (MH) and Central National Herbarium (CAL), a cardex set for characteristics of species was prepared. From this an artificial serial key based on vegetative characters has been compiled.

A systematic compilation of the cardex data in the alphabetic sequence of binomials is given at the end, for convenience. Nomenclaturally correct and taxonomically accepted binomials, whenever available the basionym, the names given in Bourdillon's *The Forest Trees of Travancore (1908)* and Gamble and Fisher's *Flora of the Presidency of Madras (1915-1935)*, correct citations, the commonest Malayalam names, family name, detailed annotations of the vegetative characters, a synopsis of the generative characters, ecological details and distribution within the natural forests of the Kerala State are furnished. Indices of binomials and Malayalam names are also appended.

INTRODUCTION

Forests form the main renewable resource of any nation. Vegetation is the principal component of this important ecosystem, The forest vegetation in turn is predominated by plant forms, namely trees. A first hand knowledge of the trees that give the characteristic physiognomy, economic, environmental and aesthetic values to the forests is therefore of prime importance in forestry.

Owing to the diversity of species in the dense tropical forests, identification of trees is often very difficult. As Kerala falls under the humid dense tropical belt, this region also poses enormous problems.

Beddome's *Flora Sylvatrcra of Southern India* 1869-1874) Bourdillon's *The Forest Trees of Travancore* (1908) and the *Flora of the Presidency of Madras* by Gamble and Fisher (1916-1935) are the pioneering works that contain details of the trees of Kerala. All these treatments, following the Linnaean style, have overemphasised features of the generative organs (flowers and fruits) and employ them both in the annotation and analysis of the taxa. Because of this custom-made anomaly, experimental and field biologists face difficulties in identification. Specimens brought from occasional collections may not definitely be in the generative phase. On the other hand vegetative characters are available almost throughout.

In fact vegetative characters are least studied owing to the persisting botanical notion that these characters are more flexible and hence less reliable. Studies however show that vegetative and field characters can also be distinctive and useful in keying out plant species (Chipp, 1922; Onochie, 1961; Rosayro, 1953; bymington, 1943; Wood, 1952; Wyatt-Smith, 1954). This is particularly true, when the group in question of study is restricted to a small geographical area and when it is composed of a *pot pourri* of not very closely related taxa. Efforts have resulted in the successful generation of field vegetative keys for the identification of tree species in many countries (Beard, 1944; Corner, 1950; Dawkins, 1951; Gellini and Tocci, 1977; Johns, 1979; Meijer, 1978; Whitmore, 1972)

Foresters, biologists and traders are interested in identifying and distinguishing trees involved in their profession and research. For a proper taxonomic identification, collection of specimens with flowers and fruits is a *sine qua non*. Since tropical forests pose a lot of problems in collection (due to enormous height, inconspicuous flowers and short and irregular phenological cycles of trees) conventional method of identification is not always possible. To satisfy this urge for easy and quick, on the spot, field identification, the study was undertaken, so as to emanate a working artificial field key for indigenous trees of Kerala forests. We are happy to leave the present report as a precursor to a 'Manual of forest trees of Kerala'.

MATERIALS AND METHODS

A checklist of the dicotyledonous tree species indigenous to the Kerala forests was prepared after screening through Bourdillon's *Forest Trees of Travancore* (1908) and Gamble and Fischer's *Flora of the Presidency of Madras* (1916-1935). This inventory comprising large shrubs to small, average and large trees numbered to ca. 750 species. In forestry large shrubs and very small trees are of little significance. Therefore, a screening of the list limiting to species with a minimum of 10 m height was done. Monocotyledonous trees and those of the tidal and littoral forests were eliminated. Thus the final list comprised 341 species.

Field trips were conducted to various parts of the Kerala forests and specimens were collected. Ecological and taxonomical characters such as forest types, elevation, height, crown and branching of trees, bark and other vegetative features were studied and field notes prepared. Representative herbarium specimens were also prepared according to conventional methods (*cf.* Lawrence, 1951). In addition to field studies, specimens of tree species from Kerala already available in the Madras Herbarium (MH) and Central National Herbarium, Calcutta (CAL) were also studied. A cardex of vegetative character state of individual species was prepared. Height measurements of trees and topographic details were drawn from earlier floras and incorporated into the cardex. Using the cardex set a serial key was prepared for the 341 tree species. A systematic annotation of the species is also given.

The style followed in annotating each species is as given below:

Citation:

The correct botanical name appears in block face followed by the original citation, basionym, reference to the names in Gamble and Fisher's *Flora of the Presidency of Madras*, Bourdillon's *Forest trees of Travancore*, the more popular Malayalam name(s), and the family name in parenthesis.

Description of trees :

The sequence followed in the description of the trees is as follows: the size range (h = height and d = diameter), phenology, features of the bole, bark, branches, branchlets, leaves, flowers, fruits and seeds. Emphasis is given to the documentation of the vegetative features and the details of the generative organs are condensed to brief supplementary notes.

The tree size range given are from field observations and other documented literature. Only the upper measure of height range is indicated followed by a hyphen which stands for the preposition "upto". The phenology of the trees refer to the evergreen or deciduous nature. Clear, crooked, buttressed and fluted features of the trunk are also incorporated.

The features of the bark are given in the following sequence of description: 1. features of the surface (a. colour; b. texture, viz. smooth or rough; c. relief features, viz. vertical and horizontal fissures, rugations etc.; d. nature of exfoliations, viz. papery or thick and scaly, shape and attachment of scales, etc.), 2. structural properties observable when cut with a knife (fibrocity or brittleness), 3. features of the blaze (colour, lamellation or streaks), and 4. exudation from the cut surface (colour, viscosity, i. e. watery, sticky or viscous).

This is followed by the features of the branches. Here the term 'branches' is used in a restricted sense, referring to the branches of the first order, i. e. from the trunk, and branchlets for the leaf bearing branches of the last order.

Features of the leaves are described in the same pattern as given in floras. It follows the sequence: phyllotaxy, nature of leaf blade dissection if any (simple, compound etc.), stipules, petiole/rachis, and the traits of the leaf blade.

Floral, fruit and seed features are abstracted synopses from already documented literature.

Ecology and distribution:

Following the description of the species, the forest type in which the species is found and the general site features are indicated. The ecological terminology of the forest types as proposed by Champion and Seth (1968), however, is not followed here. As the vegetational types indicate only of the Kerala region, the regional prefixes such as 'southern', 'west coast', etc. are dropped from their terminology for the sake of simplicity. The forest types mentioned in the text are the following: evergreen, semievergreen, moist deciduous, dry deciduous, swamp and secondary forests. The altitudinal details are also given.

As to the distribution of species, three convenient zonation of the Kerala State is recognized, viz. South, Central and North Kerala, the first more or less tallying with the former Princely State of Travancore, the second with the former Princely State of Cochin and the third with the Malabar of the erstwhile Presidency of Madras.

REFERENCES CITED

- Beard, J. S. 1944. Key for the identification of the more important trees of Tobago on characters of bark and blaze. *Emp. For. J.* 23: 1-34.
- Reddome, K. H. 1869-1874. *Flora sylvatica for Southern India*, 3 vols. Madras.
- Bourdillon, T. F. 1908. *The forest trees of Travancore*. Trivandrurn.
- Champion, H. C. and Seth, S. K. 1968. *A revised survey of the forest types of India*. New Delhi.
- Chipp, T. F. 1922. Buttresses as an assistance to identification. *Kew Bull.* 1922: 265-268.
- Corner, E. J. H. 1950. *Way side trees of Malaya*. Singapore.
- Dawkins, H. C. 1951. Graphical field keys of Uganda trees. *E. Agric. J.* 17(2).
- Gamble, J. S. and Fisher, C. E. C. 1916-1935. *Flora of the Presidency of Madras*, rep. 1957. Botanical Survey of India, Calcutta.
- Gellini, R. S. and Tocci, A. V. S. 1977. Chiave di riconoscimento delle Iatifoglie di interesse forestale e dei principali arbusti d'Italia. *Ann. Inst. Seriment Selvicott.* 8:127-234.
- Johns, R. J. 1979. A new approach to the construction of field-keys for the identification of tropical trees. *Austr. J. Ecol.* 3: 403-410.
- Lwrence, G. H. M. 1953. *Taxonomy of vascular plants*, rep. 1973. Oxford & IBH, New Delhi.
- Meijer, W. 1978. Field keys to genera and species of Dipterocarpaceae in Ceylon. *Sri Lanku For.* 1978: 1-6.
- Onochie, C. F. A. 1961. The use of field characters in tree identification. *Comptes Rendus IV Reunion, Aetfat*, :411-423.
- Rosayro, R. A. de. 1953. Field characters in the identification of tropical forest trees. *Emp. For. Rev.* 32: 124-141.
- Symington, C. F. 1843. *Foresters munual of Dipterocarps*. Malay. For. Rec. No. 16.
- Whitmore, T. C. (Ed.). 1972. *Treeflora of Malaya: A manual for foresters*, 2 vols. Longman, London.
- Wood, G. H. S. 1952. Bark as a means of tree identification. *J. Oxford Univ. For. Soc.* 1952 (6): 15-27.
- Wyatt-Smith, J. 1954. Suggested definition of field characters. *Malay. For.* 17 (4) : 170-183.

KEY TO IDENTIFICATION

- 1 a. Leaves compound : 2
- 1 b. Leaves simple : 104
- 2 a. Trunk and branchlets armed with prickles : 3
- 2 b. Trunk and branchlets unarmed : 6
- 3 a. Leaves trifoliolate or digitately compound : 4
- 3 b. Leaves paripinnate, leaflets 16-40 (leaflets ovate-oblong, acuminate, pellucid punctate; bark brown, corky, brittle, blaze yellow) : *Zanthoxylum rhetsa*
- 4 a. Leaves trifoliolate; bark corky, blaze yellowish, lamellate [leaflets deltoid-ovate, prickles on the branchlets green) : *Erythrina stricta*
- 4 b. Leaves palmately 5-9 foliolate; bark not corky, blaze reddish : 5
- 5 a. Petiolule more than 15 mm long, leaflet base not decurrent on the petiolule, rachis pink shaded (blaze pink with radial triangular rays) : *Bombax ceiba*
- 5 b. Petiolule less than 10 mm long, leaflet base decurrent on the petiolule, rachis dark green [blaze pink with radial triangular rays). : *Bombax insigne*
- 6 a. Leaves simply pinnate : 7
- 6 b. Leaves bi- or tri-pinnate : 91
- 7 a. Leaves 2- or 3-foliolate : 8
- 7 b. Leaves 4 to many foliolate : 19
- 8 a. Leaves 2-foliolate : 9
- 8 b. Leaves 3-foliolate : 12
- 9 a. Stipules large, *ca.* 1 cm long, persistent ... : *Humboldtia unijuga*
- 9 b. Stipules small, often not persistent : 10
- 10 a. Leaflets 5-nerved from base, tip obtuse : *Hardwickia binata*
- 10 b. Leaflets penni-nerved, tip acuminate or subacute : 11
- 11 a. Rachis 3-5 mm long, leaflets elliptic, tip acute : *Inga cynometroides*
- 11 b. Rachis 10-12 mm long, leaflets lanceolate, tip acuminate [bark brown, smoothish, lenticellate, blaze yellow with pink tinge) : *Cynometra travancorica*
- 12 a. Leaves alternate : 13
- 12 b. Leaves opposite : 17
- 13 a. Leaflet margin coarsely serrate : *Bischofia javanica*
- 13 b. Leaflet margin entire : 14

- 14 a. Leaflets broadly ovate, tip acute; bark when cut exudes a red juice; young shoots tomentose : *Butea monosperma*
- 14 b. Leaflets elliptic-oblong, ovate-lanceolate or elliptic, tip acute or acuminate; bark devoid of red exudation; young shoots glabrous : 15
- 15 a. Leaflets pellucid punctate, intramarginal nerve present [bark grey-brown, corky, warty, brittle blaze dull yellow) : *Vepris bilocularis*
- 15 b. Leaflets not pellucid punctate, intramarginal nerve absent : 16
- 16 a. Leaflets caudate acuminate at the tip, petiolule of the terminal leaflet less than 1 cm long; branchlets lenticellate : *Crataeva magna*
- 16 b. Leaflets acute at the tip, petiolule of the terminal leaflet more than 2 cm long; branchlets not lenticellate : *Walsura trifolia*
- 17 a. Branchlets 4-angled; leaflets pubescent beneath : *Vitex pubescens*
- 17 b. Branchlets cylindric; leaflets glabrous : 18
- 18 a. Bark grey, lenticellate and warty, blaze creamy : *Euodia lunuakenda*
- 18 b. Bark greyish brown, rough, not lenticellate, blaze turmeric yellow [rachis often winged) : *Vitex altissima*
- 19 a. Leaves digitately pinnate : 20
- 19 b. Leaves pari- or impari- pinnate : 23
- 20 a. Rachis 4-angular, base not sheathing : *Vitex pubescens*
- 20 b. Rachis cylindrical, base sheathing: stipule intrapetiolar : 21
- 21 a. Lateral nerves of the leaflets nearly horizontal : *Schefflera wallichiana*
- 21 b. Lateral nerves of the leaflets ascending, not horizontal : 22
- 22 a. Flowers pedicellate; bracts, bracteoles and pedicels rusty pubescent : *Schefflera racemosa*
- 22 b. Flowers sessile; bracts, bracteoles and pedicels glabrous : *Schefflera capitata*
- 23 a. Leaves imparipinnate : 24
- 23 b. Leaves paripinnate : 67

* The species *Schefflera racemosa* and *S. capitata* are difficult to be identified vegetatively.

24 a.	Leaflets serrate, dentate or crenate	25
24 b.	Leaflets entire	34
25 a.	Leaves opposite	26
25 b.	Leaves alternate	28
26 a.	Blaze turmeric yellow; rachis winged . . .	<i>Vitex altissima</i>
26 b.	Blaze not turmeric yellow; rachis not winged	27
27 a.	Leaflet base acute, marginal serrations at the middle of the lamina 5 mm apart . . .	<i>Turpinia cochinchinensis</i>
27 b.	Leaf base obtuse, marginal serrations at the middle of the lamina ca. 3 mm apart . . .	<i>Turpinia malabarica</i>
28 a.	Leaflets with an intranarginal nerve, strongly aromatic when bruised . . .	<i>Spondias indica</i>
28 b.	Leaflets devoid of intramarginal nerve, not aromatic when bruised	29
29 a.	Leaflets pubescent beneath	30
29 b.	Leaflets glabrous beneath	32
30 a.	Leaflets reddish brown, tomentose beneath especially along the nerves (lateral nerves more than 15 pairs; blaze creamy, aromatic) . . .	<i>Canarium strictum</i>
30 b.	Leaflets grey-pubescent beneath	31
31 a.	Petiolules 20-50 mm long; leaflets coarsely serrate	<i>Ailanthus excelsa</i>
31 b.	Petiolules below 5 mm long: leaflets crenate [bark fibrous, blaze pink) . . .	<i>Garuga pinnata</i>
32 a.	Petiolules 10-20 mm long (lateral nerves of the leaflets 10-15 pairs)	<i>Toona ciliata</i>
32 b.	Petiolules below 10 mm long	33
33 a.	Leaves 30-45 cm long, petiolules 2-3 mm long, lateral nerves of the leaflets ca. 20 pairs	<i>Garuga floribunda</i> var. <i>gamblei</i>
33 b.	Leaves 60-75 cm long, petiolules 5-7 mm long, lateral nerves of leaflets 10-15 pairs . . .	<i>Ailanthus triphysa</i>
34 a.	Rachis winged, articulated	35
34 b.	Rachis not winged, not articulated	36
35 a.	Leaves opposite, leaflets 3-5, 6-15 x 2.5-3.7 cm, lanceolate or narrowly elliptic, acute at tip; blaze turmeric yellow . . .	<i>Vitex altissima</i>
35 b.	Leaves alternate, leaflets 10-16 (-17), 6-7.5 x 1-1.2 cm, lanceolate, acuminate at tip; blaze not turmeric yellow	<i>Filicium decipiens</i>

36 a.	Leaves opposite	...	...	...	...	:	37
36 b.	Leaves alternate	...	...	...	...	:	41
37 a.	Leaflets 3-5; blaze turmeric yellow					:	<i>Vitex altissima</i>
37 b.	Leaflets more than 5; blaze not turmeric yellow					:	38
38 a.	Leaves 60-120 cm long; leaflets 13-19 pairs (blaze pale pink, radially streaked]	...				:	<i>Pajanelia longifolia</i>
38 b.	Leaves under 60 cm long; leaflets 5-11					:	39
39 a.	Leaflets suborbicular, obtuse or emarginate at the tip, pubescent or woolly; leaves 7- 15 cm long; petiolules 8-16 mm long	...	...	...	...	:	<i>Dolichandrone atrovirens</i>
39 b.	Leaflets elliptic or lanceolate, acute or acuninate at the tip, glabrous or pubescent	...	...	...	...	:	40
40 a.	Leaves pubescent	...	...	...	...	:	<i>Stereospermum chelonoides</i>
40 b.	Leaves glabrous [petiolules 10-12 mm long: leaflet base obtuse, tip caudate-acuminate; blaze creamy yellow, concentrically lamellate)	.....				:	<i>Stereospermum colais</i>
41 a.	Leaflets with an intramarginal nerve (bark surface grey, blaze creamy pink, streaked with white)	.....				:	<i>Spondias pinnata</i>
41 b.	Leaflets devoid of an intramarginal nerve					:	42
42 a.	Leaflets pubescent beneath, at least along the midrib	...	...	..	...	:	43
42 b.	Leaflets glabrous beneath	...	...			:	47
43 a.	Leaflets rufous-pubescent beneath	...				:	44
43 b.	Leaflets grey-pubescent beneath	...	...			:	45
44 a.	Leaves less than 30 cmlong; leaflets 2-4 cm broad, lateral nerves 10-12 pairs; bark dark brown (blaze creamy-pink, turning to orange-yellow. interspersed with phloem rays).	...	...	.....	...	:	<i>Meliosma pinnata</i> <i>ssp. arnottiana</i>
44 b.	Leaves 30-60 cm long; leaflets 4-8 cm broad, lateral nerves 15-20pairs;barkgrey					:	<i>Canarium strictum</i>
45 a.	Leaflets 2-2.5cm long, ca.1.5cm board, tip obtuse or emarginate	...	...	...		:	<i>Dalbergia paniculata</i>
45 b.	Leaflets more than 5 cm long and 3.5cm broad, tip acuminate	...	...	...		:	46

- 46 a. Rachis angular; bark grey or white, warty (rough, corky, brittle, verrucose-lenticellate, lenticels fissured, blaze creamy yellow) : *Dysoxylum malabaricum*
- 46 b. Rachis terete; bark brown, deeply cracked : *Chukrassia tabularis*
- 47 a. Leaflets obtuse or emarginate at the tip : 48
- 47 b. Leaflets acute or acuniinate at the tip : 51
- 48 a. Leaflets 7-12 cm long; bark when cut exudes blood-red juice, blaze pink (bark pale greyish black, fibrous) : *Pterocarpus marsupium*
- 48 h. Leaflets less than 6 cm long: bark devoid of red exudation, blaze yellowish, turning to brown : 49
- 49 a. Leaflets less than 25 mm broad, elliptic or oblong (bark grey-brown, rough, fibrous) : *Dalbergia lanceolaria*
- 49 h. Leaflets more than 25 mm broad, obovate or orbicular : 50
- 50 a. Leaflets orbicular, obtuse or round at base (bark grey, rough) : *Dalbergia latifolia*
- 50 b. Leaflets obovate, more or less cuneate at base (bark smooth, blaze lamellate) ... : *Dalbergia sissoides*
- 51 a. Bark when cut exudes a red juice ... : 52
- 51 b. Bark devoid of a red juice : 53
- 52 a. Leaflets 5-7 cm long, 2-3 cm broad, ovate, caudate acuminate at the tip; trees with plank buttress : *Dialium travaricoricum*
- 52 b. Leaflets 7-12 cm long, 3-8 cm broad, oblong, acuminate at the tip: trees devoid of plank buttress (bark surface rough, grey-black, blaze deep pink) : *Lannea coromandelica*
- 53 a. Branchlets and rachis with peltate lepidote scales : 54
- 53 b. Branchlets and rachis devoid of peltate lepidote scales : 57
- 54 a. Leaflets 9-13 : *Aglaia maiae*
- 54 b. Leaflets 3-7 : 55
- 55 a. Leaflet blade lepidote-punctate beneath : *Aglaia tamilnadensis*
- 55 b. Leaf blade riot lepidote-punctate beneath : 56
- 56 a. Leaflet tip acute or obtuse, blade 13-38mm broad : *Aglaia elaeagnoidea*
- 56 b. Leaflet tip acuminate, blade 38-50 m m broad (bark brownish grey, smooth, semi-fibrous, blaze creamy) : *Aglaia lawii*

- 57 a. Leaflets 13 or more 58
- 57 b. Leaflets 11 or less 60
- 58 a. Bark rusty brown, scaling off in large woody irregular flakes [blaze pink-red] : *Toona ciliata*
- 58 b. Bark pale or grey, not scaling off in woody flakes 59
- 59 a. Blaze yellowish: leaflet margin revolute; branchlets more than 1 cm thick *Ailanthus triphysa*
- 59 b. Blaze red: leaflet margin not revolute branchlets less than 1 cm thick ... : *Ricinocarpodendron polystachyum*
- 60 a. Leaflet base symmetric 61
- 60 b. Leaflet base asymmetric 64
- 61 a. Leaflets ovate (bark thick, blaze yellowish) *Pongamia pinnata*
- 61 b. Leaflets oblong, lanceolate or ovate-lanceolate, base acute or attenuate ... : 62
- 62 a. Leaflets 9-11, oblong [leaflet base round or subtruncate; branchlets 8-10 mm thick; bark brown, smooth, brittle, blaze yellowish brown] *Ormosia travancorica*
- 62 b. Leaflets 4-7, lanceolate or ovate-lanceolate 63
- 63 a. Lateral nerves of the leaflets 4-5 pairs, leaflets ovate-lanceolate, base obtuse ... : *Kingiodendron pinnatum*
- 63 b. Lateral nerves of the leaflets 8-10 pairs, leaflets narrow-lanceolate, base attenuate : *Reinwardtiendendron anamalaiense*
- 64 a. Lateral nerves of the leaflets 12-18 pairs; branchlets 4-5mm thick [trees restricted to South Kerala) *Dysoxylum ficiforme*
- 64 b. Lateral nerves of the leaflets 5-12 pairs; branchlets 6-10 mm thick 65
- 65 a. Leaflets alternate [trees restricted to North Kerala] *Dysoxylum binectariferum*
- 65 b. Leaflets strictly opposite 66
- 66 a. Leaflets glaucous beneath, ovate-lanceolate, tip narrowly lanceolate *Tsichilia connaroides*
- 66 b. Leaflets not glaucous beneath, elliptic or elliptic-oblong, tip abruptly acuminate... : *Ricinocarpodendron pozystachyum*
- 67 a. Stipules present, 1 cm or more long, broad, large, often persistent, rarely provided with appendages 68
- 67 b. Stipules absent, or if present small and caducous 71

- 68a. Rachis winged : 69
- 68b. Rachis winged : 70
- 69a. Stipules intrapetiolar, 1-1.2 cm long, ovate-subulate, devoid of an appendage (bark brown, lenticellate, blaze greenish pink) : *Saraca asoca*
- 69 b. Stipules not intrapetiolar, 2-2.5 cm long, ovate with reniform recurved appendages : *Humboldtia vahliana*
- 70 a. Leaflets 15-30 cm long, 5-10 cm broad; stipules upto 6.5 cm long, lanceolate ... : *Humboldtia decurrens*
- 70 b. Leaflets 7-10 cm long, 2.5-4 cm broad; stipules small, falcate : *Humboldtia bourdillonii*
- 71 a. Leaflets 20-40, pellucid punctate (2.5 x 1.3 cm, falcate) : *Chloroxylon swietenia*
- 71 b. Leaflets less than 20, not pellucid punctate : 72
- 72 a. Leaflets 8 or more : 73
- 72 b. Leaflets 4-7 : 75
- 73 a. Leaflets ovate; rachis with a penicellate gland in between the petiolules (bark pale grey or yellowish grey, smooth, powdery, blaze pale pink) : *Cassia fistula*
- 73 b. Leaflets elliptic-oblong, oblong-lanceolate or lanceolate; rachis eglandular ... : 74
- 74 a. Rachis pubescent, leaflets oblong, tip acuminate, lateral nerves 8-12 pairs [bark grey, smooth, lenticellate, semifibrous, blaze creamy yellow) : *Harpullia arborea*
- 74 b. Rachis glabrous: leaflets oblong-lanceolate, tip acuminate, lateral nerves 14-16 pairs (bark yellowish brown, rough, brittle, blaze creamy brown) : *Dimocarpus longan*
- 75 a. Leaflets 1-1.3 cm broad, 2.5-3.5 cm long, tip emarginate : *Cynometra bourdillonii*
- 75 b.. Leaflets 2 cm or more broad, 3-5 cm or more long, tip obtuse, acute or acuminate.. .. : 76
- 76 a. Leaflets dimorphic, lowest pair of leaflets always small-stipuliform, reniform curved down, 1-2 cm across, upper leaflets elliptic or elliptic-obovate : *Otonophelium stipulaceum*
- 76 b. Leaflets not dimorphic, lowest pair of leaflets not stipuliform, leaflets oblong, obovate-oblong, lanceolate, ovate-lanceolate, oblong-lanceolate or oblanceolate : 77

- 77 a. Leaflet base symmetric : 78
- 77 b. Leaflet base asymmetric : 81
- 78 a. Leaflets oblong, tip obtuse; rachis
puberulent : *Schleichera oleosa*
- 78 b. Leaflets lanceolate or ovate-lanceolate,
tip acuminate; rachis glabrous : 79
- 79 a. Leaflets attenuate at base : *Reinwardiodendron
anamalaiense*
- 79 b. Leaflets obtuse at base : 80
- 80 a. Leaflets ovate-lanceolate, 2.5-5 cm broad,
nerves 4-5 pairs : *Kingiodendron pinnatum*
- 80 b. Leaflets broadly elliptic or elliptic-lanceolate,
5-7.5 cm broad, nerves 6-10 pairs
[bark grey-brown, brittle, blaze creamy
yellow) : *Sapindus laurifolius*
- 81 a. Leaflets obtuse or emarginate at the tip : 82
- 81 b. Leaflets acute or acuminate at the tip ... : 84
- 82 a. Rachis puberulent *Schleichera oleosa*
- 82 b. Rachis glabrous 83
- 83 a. Leaflets only 6 *Cynometra beddomei*
- 83 b. Leaflets 6-12 [elliptic-oblong] *Soymida febrifuga*
- 84 a. Leaflets 4 85
- 84 b. Leaflets (5-16-12 87
- 85 a. Leaflets 2.5-5 cm broad 86
- 85 b. Leaflets 5-7.5 cm broad [broadly elliptic
or elliptic-lanceolate; bark grey-brown,
brittle, blaze creamy yellow) *Sapindus laurifolius*
- 86 a. Leaflets ovate-lanceolate, stiyellate; bark
rough, dark brown *Kingiodendron pinnatum*
- 86 b. Leaflets ab lanceolate, sessile: bark
smooth, brownish grey *Cynometra iripa*
- 87 a. Leaflets oblong or obovate-oblong .. : 88
- 87 b. Leaflets lanceolate, ovate-lanceolate or
oblong-lanceolate 89
- 88 a. Leaflets only 6, obovate-oblong *Cynometra beddomei*
- 88 b. Leaflets 6-12, elliptic-oblong *Soymida febrifuga*
- 89 a. Leaflets ovate-lanceolate, nerves 4-5 pairs : *Kingiodendron pinnatum*
- 89 b. Leaflets narrowly lanceolate or oblong-
lanceolate, nerves 6-16 pairs 90
- 90 a. Leaflets 4-6, 5-7.5 cm broad, lateral
nerves 6-10 pairs *Sapindus laurifolius*
- 90 b. Leaflets 5-11, 2.5-5 cm broad, lateral
nerves 14-16 pairs *Dimocarpus longan*

91 a.	Leaves 2-pinnate	..	...	...	...	:	92
91 b.	Leaves 3-pinnate	...	...	...	...	:	102
92 a.	Leaves armed with curved conical stipular spines	..	...	...	...	:	<i>Acacia ferruginea</i>
92 b.	Leaves unarmed	..	...	...	...	:	93
93 a.	Pinnae 2 per leaf	...	...	...	...	:	94
93 b.	Pinnae 4-30 per leaf	...	...	...	...	:	95
94 a.	Leaflets oblong or oblong-lanceolate. base symmetric, lateral nerves 8-10 pairs; bark rough, reddish brown, blaze yellowish with orange tinge; branchlets 5-8 mm thick	...	...	...	...	:	<i>Xylocarpa</i>
94 b.	Leaflets lanceolate, base oblique, lateral nerves 4-6 pairs; bark smooth, brown (lenticellate, blaze pink, sap watery)	..	...	...	...	:	<i>Abarema bigemina</i>
95 a.	Leaflets less than 6 mm broad	...	...	...	...	:	96
95 b.	Leaflets more than 1 cm broad	...	...	...	...	:	99
96 a.	Stipules large (10-20 x 10-15 mm) cordiform, oblique; leaflets ciliate along the margin	...	...	...	...	:	<i>Albizia chinensis</i>
96 b.	Stipules minute or absent; leaflets not ciliate along the margin	...	...	...	...	:	97
97 a.	Midrib of the leaflets diagonal	...	...	...	...	:	<i>Abarema subcoriacea</i>
97 b.	Midrib of the leaflets not diagonal, almost parallel to the margin	...	...	...	...	:	98
98 a.	Bark rough, dark grey with brown flakes (blaze pink-red); leaflets 15-26 mm long	...	...	...	...	:	<i>Albizia odoratissima</i>
98 b.	Bark smooth, greenish-grey; leaflets 6-7 mm long	...	...	...	...	:	<i>Albizia amara</i>
99 a.	Leaflets 5-10 cm long, tip acuminate	...	...	...	...	:	100
99 b.	Leaflets upto 5 cm long, tip obtuse or emarginate	...	...	...	...	:	101
100 a.	Trees with prominent plank buttress; lateral nerves of the leaflets 7-15 pairs	...	...	...	...	:	<i>Acrocarpus fraxinifolius</i>
100 b.	Trees devoid of plank buttress; lateral nerves of the leaflets 6-8 pairs	...	...	...	...	:	<i>Radermachera xylocarpa</i>
101 a.	Young shoots silky-pubescent; lateral nerves of the leaflets prominent, 6-10 pairs; bark yellowish grey, smooth (blaze pinkish)	...	...	...	...	:	<i>Albizia procera</i>
101 b.	Young shoots glabrous, lateral nerves of the leaflets not prominent, ca. 5 pairs; bark brownish grey, rough, brittle (blaze pinkish yellow)	...	...	...	...	:	<i>Albizia lebbeck</i>

- 102 a. Leaves alternate (leaflets crenate; young shoots clothed with stellate hairs: bark brown, exfoliations of the bark attached by their upper end, blaze pinkish white) : *Melia dubia*
- 102 b. Leaves opposite ... l. ... : 103
- 103 a. Leaflets ovate, 7.5-15 cm long, 5-6 cm broad; bark smooth (blaze yellowish) : *Oroxylum indicum*
- 103 b. Leaflets lanceolate, 5-7.5 cm long, 2-3.5 cm broad; bark flaky ... : *Radermachera xylocarpa*
- 104 a. Leaves in whorls of 3 or more ... : 105
- 104 b. Leaves not whorled ... : 111
- 105 a. Lateral nerves of the leaves 20 pairs or more, almost horizontal; bark surface greyish brown, sub-verrucose lenticellate, when cut exudes milky white latex ... : *Alstonia scholaris*
- 105 b. Lateral nerves of the leaves less than 15 pairs, not horizontal: bark when cut does not yield milky white latex ... : 106
- 106 a. Leaves below 15 cm long ... : 107
- 106 b. Leaves above 15 cm long ... : 108
- 107 a. Leaves 1-2 cm broad, tip obtuse ... : *Actinodaphne campanulata* var. *obtusa*
- 107 b. Leaves 2.5-5 cm broad, tip acuniinate ... : *Apollonias arnottii*
- 108 a. Leaves with the lowest pair of main nerves opposite (sub-tripli nerved), glabrous ... : *Actinodaphne madraspatna*
- 108 b. Leaves penni-nerved, pubescent beneath : 109
- 109 a. Leaves lanceolate or oblanceolate, softly cinnamomeous tomentose beneath ... : *Actinodaphne bourdillonii*
- 109 b. Leaves elliptic, lanceolate, acuminate, fulvnis villous beneath : 110
- 110 a. Nerves and nervules of the leaf riot prominent, leaves thickly villous beneath : *Actinodaphne malabarica*
- 110 b. Nerves and nervules of the leaf very prominent, leaves sparsely villous beneath between the nerves ... : *Actinodaphne tadulingami*
- 111 a. Leaves opposite ... : 112
- 111 b. Leaves alternate or sub-opposite : 181

- 112 a. Leaves with two large glands at the base of the lamina (bark pale, tuberculate-lenticellate, corky, blaze creamy yellow with radial triangular phloem rays) ... : *Gmelina arborea*
- 112 b. Leaves devoid of glands : 113
- 123 a. Leaves 3-5 nerved from base ... : 114
- 113 b. Leaves penni-nerved ... : 116
- 114 a. Petioles 2.5-7.5 cm long; bark smooth, flaking off in thin round flakes ... : *Trewia polycarpa*
- 114 b. Petioles less than 2 cm long; bark corky, not flaky ... : 125
- 115 a. Petioles 6-12 mm long, main nerves all arising from the base; bark grey or yellowish grey, tuberculate-lenticellate (blaze turmeric yellow) : *Strychnos nux-vomica*
- 115 b. Petioles 2-3 mm long, upper pair of nerves 5-10mm above the basal pair; bark brownish black, deeply cracked : *Strychnos potatorum*
- 116a. Leaves with inter- or intra- petiolar stipules .. : 117
- 116 b. Leaves estipulate or when present not as above ... : 129
- 117 a. Leaves pubescent at least on the underneath ... : 118
- 117 b. Leaves glabrous ... : 120
- 118 a. Leaves orbicular-cordate, [bark grey, shallowly pitted; blaze pink) ... : *Haldina cordifolia*
- 118 b. Leaves not cordate at base ... : 119
- 119 a. Leaves pubescent on both sides, tip twisted acuminate, nerves 7-10 pairs; bark grey, with tessellate cracks, over 2 cm thick (brittle, blaze creamy) ... : *Hymenodictyon orixense,*
- 119 b. Leaves glabrous above, tip acurninate, not twisted; bark fissured, ca. 1cm thick ... : *Anthocephalus chinensis*
- 120 a. Leaves lanceolate or elliptic-lanceolate ... : 121
- 120 b. Leaves ovate, obovate or oblong-ovate .. : 124
- 121 a. Stipules small, triangular (lateral nerves of the leaves 6-7 pairs) ... ; *Randia gardneri*
- 121 b. Stipules large, foliaceous ... : 122
- 122 a. Stipules connate; bark vertically fissured; branchlets obscurely tetragonous .. : *Morinda tomentosa*
- 122 b. Stipules free, not connate; bark not vertically fissured; branchlets terete ... : 123

- 123 a. Lateral nerves of the leaves 6-8 pairs,
petiole 10-12 mm long : *Neonauclea purpurea*
- 123 b. Lateral nerves of the leaves 10-12 pairs;
petiole ca 6 mm long : *Ochreinauclea missionis*
- 124 a. Leaf margin revolute (tip obtuse or
emarginate, lateral nerves very thin
over 12 pairs) : *Carallia brachiata*
- 124 b. Leaf margin not revolute : 125
- 125 a. Lateral nerves of leaf less than 10
pairs : 126
- 125 b. Lateral nerves of leaf 10 or more pairs ... : 127
- 126 a. Leaf tip obtuse or rarely obscurely
acute, not twisted : *Mitragyna parvifolia*
- 126 b. Leaf tip suddenly acuminate, acumen
twisted (bark greyish black, rough,
brittle blaze pink) : *Hymenodictyon obovatum*
- 127 a. Leaves with an obscure intramarginal
nerve; bark greyish black : *Ixora arborea*
- 127 b. Leaves devoid of an intramarginal
nerve; bark greenish : 128
- 128 a. Leaves below 10 cm long (bark grey-
black, smooth, fibrous, blaze pale pink
with radial white streaks) : *Mitragyna parvifolia*
- 128 b. Leaves 10 cm long or more : *Mitragyna tubulosa*
- 129 a. Plants with milky white, yellow or red
exudation : 130
- 129 b. Plants devoid of exudation or when
present colourless : 146
- 130 a. Plants with milky white exudation ... : 137
- 130 b. Plants with yellowish green or red exu-
dation : 132
- 131 a. Leaves narrow-lanceolate, tip acuminate
or obtuse, lateral nerves very numerous,
close, parallel and forming an intra-
marginal nerve (blaze yellowish brown) : *Hunteria zeylanica*
- 132 b. Leaves elliptic-ovate or oblong-lanceo-
late, tip caudate-acuminate, lateral
nerves 7-9 pairs, distatt, intramarginal
nerve absent (blaze creamy] : *Wrightia tinctoria*
- 132 a. Plants with red exudation (lateral nerves
of the leaves indistinct; bark reddish
brown) : *Mammea suriga*
- 132 b. Plants with yellow or yellowish green
exudation : 133

- 133 a. Petioles with intra petiolar outgrowths : 134
- 133 b. Petioles devoid of intra petiolar outgrowths : 141
- 134 a. Branchlets quadrangular (leaves 22-35 x 5-10 cm) : *Garcinia xanthochymus*
- 134 b. Branchlets not quadrangular : 135
- 135 a. Leaves ovate [5-7.5cm broad, tip obtuse, lateral nerves 30-45 pairs) : *Garcinia echinocurpa*
- 135 b. Leaves lanceolate, oblanceolate or oblong : 136
- 136 a. Leaves lanceolate or oblanceolate, tip acuminate : 137
- 136 b. Leaves elliptic-oblong or linear-oblong : 139
- 137 a. Leaves 1.2-3cm broad : 138
- 137 b. Leaves 3.5-5cm broad : *Garcinia morella*
- 138 a. Leaves lanceolate, petioles 6 mm long : *Garcinia wightii*
- 138 b. Leaves oblanceolate, petioles 3 mm long : *Garcinia imbertii*
- 139 a. Leaves elliptic-oblong, 1.2-2.5 cm broad : *Garcinia travuncorica*
- 139 b. Leaves elliptic-acute, over 2.5 cm broad : 140
- 140 a. Leaves elliptic, 2.5-5 cm broad : *Garcinia gummi-gutta*
- 140 b. Leaves broadly oval, 5-7.5 cm broad (latex some times white: bark brownish, smooth, brittle, blaze creamy brown) ... : *Garcinia spicata*
- 341 a. Twigs and leaves tomentose (nerves numerous, close and parallel) : *Calophyllum polyanthum*
- 141 b. Twigs and leaves glabrous : 142
- 142 a. Nerves visible, numerous, close and parallel : 143
- 142 b. Nerves invisible, leaves glossy ... : 144
- 143 a. Leaves below 4 cm long and 2 cm broad, obovate : *Calophyllum austroindicum*
- 143 b. Leaves above 5 cm long and 4 cm broad, ovate : *Calophyllum apetalum*
- 144 a. leaves 1-3 cm broad, glaucous pruinose (powdery) beneath [bark grey, smooth, blaze pinkish, turning to brown) : *Mesua nagassarium* var. *nugassarium*
- 144 b. Leaves 2.5-3.75 (-6.25) cm broad, not powdery beneath : 145

- 145 a. Leaf blade below 17cm long (11-16.5 x 3-4.2 cm) petioles 5-10 mm long (capsule ovoid, 2.5 x 12 cm) *Poeciloneuron pauciflorum*
- 145 b. Leaf blade over 17 cm 16.5-25x 3.5-6.2 cm) petioles 10-15 (-24)mm long (capsule globose, 2.5 cm diam.) *Poeciloneuron indicum*
- 146 a. Leaves over 20 cm long 147
- 146 b. Leaves below 20 cm long 150
- 147 a. Leaves pubescent beneath 148
- 147 b. Leaves glabrous beneath 149
- 148 a. Leaf base narrow, blade 30-60 cm long: bark surface light brown, blaze yellowish, concentrically lamellate: tender leaves when crushed turns red : *Tectona grandis*
- 148 b. Leaf base obtuse, blade 12-30 cm long: bark brown, blaze creamy white with yellow streaks *Callicarpa tomentosa*
- 149 a. Leaves distichous, lateral nerves 12-16 pairs, intra marginal - nerve absent: young leaves yellowish green (bark yellowish brown, smooth, fibrous, blaze lamellate, creamy, turning to creamy brown) *Lagerstroemia reginae*
- 149 b. Leaves not distichous, lateral nerves 18-22 pairs, intramarginal nerve present, young leaves pink *Syzygium mundagam*
- 150 a. Bark surface white or greyish brown, smooth, peeling off in large, thin, papery flakes (blaze creamy yellow): branches often knotted at the tip (leaves glaucous beneath) *Lagerstroemia microcarpa*
- 150 b. Bark surface not white, not peeling off in papery flakes, branches not knotted : 151
- 151 a. Wood with pleasant aromatic (sandal] smell *Santalum album*
- 151 b. Wood not aromatic 152
- 152 a. Leaves pubescent beneath 153
- 152 b. Leaves glabrous beneath 154
- 153 a. Lateral nerves of the leaves 6-8 pairs; bark surface brown *Callicarpa tomentosa*
- 153 b. Lateral nerves of the leaves 4-5 pairs; bark surface light greyish brown ... : *Premna tomentosa*

154 a.	Leaf margin serrate, serrulate or dentate	:	155
154 b.	Leaf margin entire	:	156
155 a.	Leaf blade elliptic-lanceolate, lateral nerves 8-12 pairs (bark grey, rough, blaze yellowish brown)	:	<i>Olea dioica</i>
155 b.	Leaf blade ovate, obovate or elliptic, lateral nerves 6-7 pairs	:	<i>Cassine glauca</i>
156 a.	Leaves less than 2.5 cm wide	:	157
156 b.	Leaves more than 2.5 cm wide	:	160
157 a.	Branchlets 4 angular	:	<i>Syzygium myhendre</i>
157 b.	Branchlets cylindrical	:	158
158 a.	Leaves narrowly lanceolate, long acuminate [lateral nerves not prominent, glaucous beneath; bark brown, rough, blaze light pink)	:	<i>Mesua nagassarium</i> var. <i>pulchella</i>
158 b.	Leaves suborbicular, ovate or obovate	:	159
159 a.	Leaves 3.5 cm long, obovate, tip abruptly obtusely acuminate, prominently pellucid punctate	:	<i>Syzygium palghatense</i>
159 b.	Leaves 1.5-2.5 cm long, suborbicular or obovate, tip slightly emarginate	:	<i>Syzygium calophyllifolium</i>
160 a.	Leaves over 5 cm broad	:	161
160 b.	Leaves below 5 cm broad	:	171
161 a.	Branchlets 4 angular	:	162
161 b.	Branchlets cylindrical or subcylindrical ...	:	163
162 a.	Leaves obovate, lateral nerves 10-15 pairs	:	<i>Syzygium tamilnadensis</i>
162 b.	Leaves elliptic-oblong, lateral nerves few	:	<i>Syzygium stocksii</i>
163 a.	Leaves obcordate (intramarginal nerve inconspicuous)	:	<i>Syzygium malabaricum</i>
163 b.	Leaves not as above	:	164
164 a.	Leaves cordate at base	:	165
164 b.	Leaves acute, attenuate, cuneate or round at base	:	166
165 a.	Leaf blade 15-30 cm long, oblong, tip obtuse	:	<i>Syzygium mundagam</i>
165 b.	Leaf blade 10-17.5 cm long, elliptic-lanceolate, tip long acuminate	:	<i>Syzygium ramavarma</i>
166 a.	Leaves with numerous, parallel lateral nerves, intramarginal nerve present	:	<i>Syzygium chavaran</i>
166 b.	Leaves with few lateral nerves (10-15 pairs) distant, intramarginal nerve absent	:	167

167 a.	Petioles 5-8 mm long	...	...	...	168
167 b.	Petioles 10-18 mm long	...	...	..	170
168 a.	Leaf base obtuse, lateral nerves 10-15 pairs	...	...	...	...
					: <i>Lagerstroemia reginae</i>
168 b.	Leaf base cuneate or tapering, lateral nerves 8-10 pairs	...	...	...	: 169
169 a.	Leaves elliptic-oblong, tip obtuse or with a short acumen, base cuneate	...			: <i>Chionanthus malabarica</i>
169 b.	Leaves oblong-lanceolate, tip abruptly acuminate, base tapering with a long acumen	...	...	...	: <i>Chionanthus leprocarpa</i>
170 a.	Leaves ovate, base decurrent, tip obtuse, petioles 15-18 mm long	...	...	...	<i>Syzygium travancoricum</i>
170 b.	Leaves ovate-lanceolate, base obtuse, tip acute, petioles 6-12 mm long	...	...	...	: <i>Lagerstroemia reginae</i>
171 a.	Branchlets 4 -angular	...	...	...	: 172
171 b.	Branchlets cylindrical or subcylindrical	..			: 173
172 a.	Petioles 4-6 mm long, leaf blade ovate-lanceolate; bark smooth, pale brown	...			: <i>Syzygium rubicundum</i>
172 b.	Petioles 12-20 mm long, leaf blade elliptic, acuminate; bark rough, grey				: <i>Syzygium arnottianum</i>
173 a.	Petioles over 10 mm long	..,	...		: 174
173 b.	Petioles below 10 mm long	...	...		: 176
174 a.	Bark surface blackish, smooth	...	...		: <i>Syzygium hemisphericum</i>
174 b.	Bark white or light grey, smooth	...			: 175
175 a.	Petioles 10-13 mm long, leaf blade elliptic-lanceolate; bark white, smooth, brittle, blaze blackish brown	...	...		: <i>Syzygium gardneri</i>
175 b.	Petioles 12-24 mm long, leaf blade oblong-oval, bark light grey; blaze red				: <i>Syzygium cumini</i>
176 a.	Leaf base round, blade ovate-acuminate				<i>Syzygium zeylanicum</i>
176 b.	Leaf base acute, attenuate or cuneate, blade elliptic-lanceolate or ovate-lanceolate	...	...	...	177
177 a.	Leaves devoid of an intramarginal nerve	...	..,	...	...
					: <i>Syzygium laetum</i>
177 b.	Leaves with an intramarginal nerve	...			: 178
178 a.	Bark surface blackish (smooth)	...	...		<i>Syzygium hemisphericum</i>
178 b.	Bark white or greyish brown	...	...		: 179
179 a.	Bark white, blaze blackish brown	...			<i>Syzygium gardneri</i>
179 b.	Bark not as above	..	...	...	: 180
180 a.	Lateral nerves of the leaves numerous, thin and parallel	. . . . .	...	...	: <i>Syzygium lanceolatum</i>
180 b.	Lateral nerves 8-10 pairs, distant	. . . . .			: <i>Syzygium bourdillonii</i>

181 a.	Leaves alternate and subopposite	:	182
181 b.	Leaves alternate, not subopposite	:	197
182 a.	Base of the leaf blade provided with glands		183
182 b.	Base of the leaf blade devoid of glands	:	186
183 a.	Bark smooth, pinkish grey; leaf margin often crenulate [trees along river banks)	:	<i>Terminalia arjuna</i>
183 b.	Bark rough, brown or greyish black; leaf margin crenulate or not	:	184
184 a.	Leaves pubescent, ovate, obovate or elliptic	:	<i>Terminalia chebula</i>
184 b.	Leaves glabrous, oblong or elliptic-oblong		185
185 a.	Bark greyish black, deeply vertically fissured (blaze pinkish red); leaf margin crenulate, lateral nerves 15-20 pairs		<i>Terminalia crenulata</i>
185 b.	Bark brown, not deeply fissured (blaze pinkish red); leaf margin entire, lateral nerves 5-9 pairs	:	<i>Terminalia paniculata</i>
186 a.	Leaves 3-5 nerved from base	:	187
186 b.	Leaves yenni-nerved from base	:	189
187 a.	Petiole 7-12 cm long, leaf blade with stellate silvery scales beneath		<i>Croton malabaricus</i>
187 b.	Petiole less than 2 cm long: leaf blade devoid of silvery scales	:	188
188 a.	Leaves ovate-elliptic or ovate-lanceolate, 3-5 ribbed, ribs reaching 3/4 th the length of the leaf [bark greyish brown, semifibrous, blaze creamy pink)	:	<i>Cinnamomum verum</i>
188 b.	Leaves narrowly elliptic, 3-ribbed, ribs reaching the tip of the leaves		<i>Cinnamomum malabathrum</i>
189 a.	Leaves clustered at the tips of branchlets [bark grey-black, fibrous, blaze yellow]		<i>Terminalia bellirica</i>
189 b.	Leaves not clustered at the tips of branchlets	:	190
190 a.	Leaves ovate-cordate or orbicular	:	191
190 b.	Leaves elliptic, elliptic-oblong, elliptic-lanceolate or ovate-lanceolate	:	192
191 a.	Leaves ovate-cordate, slightly tomentose beneath, petiole 3-5 cm long		<i>Cordia wallichii</i>
191 b.	Leaves orbicular, glabrous, petiole 0.4-0.6 cm long		<i>Anogeissus latifolia</i>

- 192 a. Leaves crenate-serrate : *Cassine glauca*
192 b. Leaves entire : 193
193 a. Leaves obtuse or emarginate at the tip : 194
193 b. Leaves acute or acuminate at the tip ... : 195
194 a. Leaves 7-22 cm long, oblong, obtuse at both ends; bark with an outer yellow layer : *Lophopetalum wightianum*
194 b. Leaves 4-7 cm long, elliptic, obtuse or emarginate at the tip; bark without an outer yellow layer : *Anogeissus latifolia*
195 a. Leaves ovate-lanceolate; bark very smooth, yellowish brown (plants confined to South Kerala) *Terminalia travancorensis*
195 b. Leaves elliptic-lanceolate or oblong-lanceolate; bark rough, dark green or brown : 196
196 a. Leaves oblong-lanceolate, nerves 6-8 pairs; bark greenish brown : *Beilschmiedia bourdillonii*
196 b. Leaves elliptic-lanceolate, nerves 4-5 pairs; bark dark brown *Beilschmiedia wightii*
197 a. Leaves peltate : 198
197 b. Leaves not peltate : 199
198 a. Leaf base truncate, with 2 peltate glands near the juncture : *Macaranga indica*
198 b. Leaf base rounded, eglandular *Macaranga peltata*
199 a. Leaves 2-7 lobed 200
199 b. Leaves not lobed : 206
200 a. Leaves deeply 2-lobed (broader than long) 201
200 b. Leaves 3-7 lobed : 202
201 a. Leaves not acrid to taste, 3-5 cm long; petioles 1-2 cm long *Bauhinia racemosa*
201 b. Leaves acrid to taste, 5-10 cm long; petioles 3-4 cm long (bark greyish brown, subrugose, fibrous, blaze rosy pink, turning to reddish brown, concentrically striate) : *Piliostigma malabaricum*
202 a. Bark white : *Sterculia urens*
202 b. Bark not white : 203

203 a.	Lobes of the leaf entire :	204
203 b.	Lobes of the leaf serrate :	<i>Sterculia villosa</i>
204 a.	Leaves glabrous (bark grey-black, rough, vertically fissured, fibrous, blaze creamy white with radial phloem rays) :	<i>Firmiana colorata</i>
204 b.	Leaves pubescent or tomentose ...	205
205 a.	Leaves deeply cordate at base, lobes of the blade acuminate :	<i>Cochlospermum religiosum</i>
205 b.	Leaves truncate or rounded at base, lobes of the blade obtuse or acute ...	<i>Kydia calycina</i>
206 a.	Leaf margin crenate, serrate or dentate :	207
206 b.	Leaf margin entire :	250
207 a.	Leaves crowded at the tips of branchlets	208
207 b.	Leaves equidistant, not crowded at the tips of branchlets :	220
208 a.	Petioles flat, broad, base sheathing or decurrent, ... :	209
208 b.	Petioles narrow, cylindric, base neither decurrent nor sheathing :	210
209 a.	Lateral nerves of the leaves very many, close and parallel; bark grey, smooth, brittle :	<i>Dillenia pentagyna</i>
209 b.	Lateral nerves of the leaves 10-22 pairs, not parallel; bark greyish brown, rough, fibrous .., :	<i>Careya arborea</i>
210 a.	Leaf blade longitudinally folded, boat shaped; golden tomentose within ... :	<i>Elaeocarpus recurvatus</i>
210 b.	Leaf blade not folded, not golden tomentose :	211
211 a.	Leaves 15-40 cm long :	<i>Fahrenheitia zeylanica</i>
211 b.	Leaves below 15 cm long :	212
212 a.	Leaves tomentose beneath :	213
212 b.	Leaves glabrous beneath :	214
223 a.	Leaves cordate at base; bark smooth, greyish white, peeling off in papery flakes :	<i>Tetrameles nudiflora</i>
213 b.	Leaves acute at base: bark brown, not peeling off in papery flakes :	<i>Elaeocarpus tuberculatus</i>
214 a.	Leaves with localised glands on the lamina, petiole, or with minute gland like protuberances at the tip of the petioles :	215
214 b.	Leaves and petioles devoid of localised glands, petioles devoid of gland like protuberances at the tip :	219

- 215 a. Axils of the lateral nerves glandular
beneath : 226
- 215 b. Axils of the lateral nerves eglandular
beneath ; 218
- 216 a. Petioles 1-2 cm long, blade oblong or
obovate [base narrowed; trees restricted ed
to South Kerala) : *Elaeocarpus venustus*
- 216 b. Petioles 3-5 cm long, blade elliptic or
ovate [trees distributed throughout
Kerala) : 217
- 217 a. Leaves ovate-acuminate, base round or
subtruncate : *Elaeocarpus munronii*
- 217 b. Leaves elliptic, base acute : *Elaeocarpus serratus*
- 218 a. Leaves with glands at the base of the
lamina : *Cleidion javanicum*
- 218 b. Leaves devoid of glands at the base of
-the lamina (petioles with two minute
gland like protuberances at the tip) : *Elaeocarpus tectorius*
- 219 a. Leaf blade 15-30cm long, petioles 5-12
cm long : *Fahrenheitia zeylanica*
- 219 b. Leaf blade 7.5-12.5 cm long, petioles
0.5-1 cm long : *Barringtonia acutangula*
- 220 a. Leaves 3-5 (-7) nerved from base : 221
- 220 b. Leaves penni-nerved : 226
- 221 a. Leaves silvery beneath [dentate at the
tip) : *Pterospermum
reticulatum*
- 221 b. Leaves not silvery beneath : 222
- 222 a. Leaves scabrous above : 223
- 222 b. Leaves not scabrous above : 224
- 223 a. Trees with milky white latex; leaf base
round or narrow; blaze creamy white : *Ficus exasperata*
- 223 b. Trees without milky white latex; leaf
base obliquely cordate; blaze deep red : *Trema orientalis*
- 224 a. Stipule sagitate; bark fibrous, blaze
pink, streaked with white : *Grewia tiliifolia*
- 224 b. Stipule not sagitate; bark brittle, blaze
yellow sprinkled with brown : 225
- 225 a. Leaf base oblique, margin coarsely
serrate : *Celtis tetrandra*
- 225 b. Leaf base not oblique, margin subentire .. : *Celtis philippensis*
var. *wightii*

- 226 a. Young branchlets pubescent ... : 227
- 226 b. Young branchlets glabrous ... : 232
- 227 a. Bole fluted; branches horizontal (bark pale brown or greenish brown) ... : 228
- 227 b. Bole not fluted ... : 229
- 228 a. Leaf tip caudate-acuminate; bark brown, not lenticellate ... : *Hydnocarpus pentandra*
- 228 b. Leaf tip acute: bark grey, lenticellate, brittle [blaze creamy yellow, turning to yellowish brown) : *Drypetes oblongifolia*
- 229 a. Leaf margin distantly serrate ... : *Drypetes malabarica*
- 229 b. Leaf margin closely serrate or crenulate : 230
- 230 a. Leaves hispid on the midrib beneath, margin serrate ... : *Symplocos foliosa*
- 230 b. Leaves glabrous, margin crenulate ... : 231
- 231 a. Leaves lanceolate or oblanceolate, petiole 7-8 mm long ... : *Symplocos macrocarpa*
- 231 b. Leaves ovate- or elliptic- acuminate: petiole 10-12 mm long ... : *Symplocos macrophylla*
- 232 a. Leaves with glands on the midrib beneath ... : 233
- 232 b. Leaves eglandular on the midrib ... : 234
- 233 a. Bark pinkish grey, smooth; trees mostly confined to banks of streams ... : *Terminalia arjuna*
- 233 b. Bark greyish black, rough, deeply longitudinally fissured; trees not confined to banks of streams ... : *Terminalia crenulata*
- 234 a. Nerves of the leaves obscure when fresh (when dry 8-10 pairs, thin) ... : *Gordonia obtusa*
- 234 b. Nerves of the leaves visible when fresh : 235
- 235 a. Nerves of the leaves 4-5 pairs ... : 236
- 235 b. Nerves of the leaves 6-12 pairs ... : 240
- 236 a. Trees armed with straight spines ... : *Scolopia crenata*
- 236 b. Trees unarmed ... : 237
- 237 a. Trees with milky white latex; leaves very scabrous [bark greyish brown, smooth, lenticellate, fibrous, blaze creamy yellow) ... ; *Strebles asper*
- 237 b. Trees devoid of latex, or if present not milky white ... : 238
- 238 a. Leaves obovate, tip obtuse or emarginate ... : *Symplocos pendula*
- 238 b. Leaves ovate-lanceolate or lanceolate, tip acuminate ... : 239

- 239 a. Petioles 6 mm long; bark smooth, blaze yellowish : *Drypetes travancorica*
- 239 b. Petioles 12-25 mm long; bark rough, deeply vertically fissured; blaze pinkish red : *Salix tetrasperma*
- 240 a. Leaves scabrous or pubescent : 241
- 240 b. Leaves glabrous : 242
- 241 a. Leaves scabrous on both sides: bark fibrous, blaze creamy [latex milky white) : *Antiaris toxicaria*
- 241 b. Leaves glabrous above, pubescent beneath; bark riot fibrous, blaze reddish ... : *Homalium travancoricum*
- 242 a. Nerves of the leaves 8-10 pairs (leaf blade elliptic or elliptic-oblong) : 243
- 242 b. Nerves of the leaves less than 8 pairs ... : 244
- 243 a. Leaves elliptic, tip acute or acuminate, margin closely crenate-serrate, often recurved : *Symplocos beddomei*
- 243 b. Leaves oblong or eiliptic-oblong, tip abruptly obtusely acuminate, margin distantly serrate : *Cyclostemon confertiflorus*
- 244 a. Leaves below 8 cm long : 245
- 244 b. Leaves over 8 cm long : 247
- 245 a. Leaves ovate-lanceolate (tip acuminate) : *Drypetes travancorica*
- 245 b. Leaves elliptic or elliptic-lanceolate ... : 246
- 246 a. Leaves elliptic; nerves 6-10 pairs ... : *Symplocos beddomei*
- 246 b. Leaves elliptic-lanceolate, nerves 6-7 pairs (bark greyish brown, smooth, blaze creamy white) : *Symplocos cochinchinensis* ssp. *laurina*
- 247 a. Leaves less than 5 cm broad : 248
- 247 b. Leaves over 5 cm broad : *Homalium zeylanicum*
- 248 a. Leaves elliptic-ovate or obovate, tip caudate-acuminate : *Symplocos macrocarpa* ssp. *canarana*
- 248 b. Leaves elliptic or elliptic-lanceolate ... : 249
- 249 a. Leaves elliptic, nerves 6-10 pairs ... : *Symplocos beddomei*
- 249 b. Leaves elliptic-lanceolate, nerves 6-7 pairs : *Symplocos cochinchinensis* ssp. *laurina*

250 a.	Leaf base auriculate	<i>Semecarpus auriculata</i>
250 b.	Leaf base not auriculate	: 251
251 a.	Petioles with 1-2 spur-like appendages (especially on young leaves)	252
251 b.	Petioles devoid of appendages	: 256
252 a.	Leaves pubescent beneath, suddenly broadening above the middle	253
252 b.	Leaves glabrous beneath, not suddenly broadening above the middle	254
253 a.	Midrib on the upper surface ciliate with long hairs, petiolar spurs slender, long, villous	<i>Holigarna beddomei</i>
253 b.	Midrib on the upper surface glabrous or puberulent, petiolar spur short, golden tomentose	<i>Holigarna grahamii</i>
254 a.	Leaves acute at apex, lateral nerves 16-20 pairs	<i>Holigarna arnottiana</i>
254 b.	Leaves obtuse or emarginate at apex, lateral nerves less than 14 pairs	255
255 a.	Leaves obovate, lateral nerves ca. 12 pairs	: <i>Holigarna ferruginca</i>
255 b.	Leaves spatulate, lateral nerves 6-9 pairs	: <i>Holigarna nigra</i>
256 a.	Leaves grey or silvery white beneath	: 257
256 b.	Leaves not silvery white beneath	: 263
257 a.	Leaves with adpressed scales beneath	: 258
257 b.	Leaves devoid of adpressed scales	: 259
258 a.	Petioles 5-12.5 cm long, leaf blade rhom- boid-ovate, 3-nerved from base; branches devoid of knots	: <i>Croton malabaricus</i>
258 b.	Petioles 2-2.5 cm long, leaf blade oblong- lanceolate, branches with prominent tubercles (crown conical; branches hori- zontal; blaze pinkish red)	: <i>Cullenia exarilluta</i>
259 a.	Leaves glabrous	260
259 b.	Leaves pubescent	: 262
260 a.	Leaves 4-nerved from base, blade less than 2.5 cm broad	<i>Pterospermum rubiginosum</i>
260 b.	Leaves 3-nerved from base, blade more than 3.5 cm broad	261

- 261 a. Leaves more than 10 cm broad, rectangular, obovate, yellowish white beneath (bark brown, smooth, blaze deep red, radially white-streaked) ... : *Pterospermum diversifolium*
- 261 b. Leaves 3-5 cm broad, oblong (bark brown, fibrous, blaze pink-red) ... : *Pterospermum reticulatum*
- 262 a. Petioles 7-10 cm long, blade as long or broader than long, ovate; bark surface grey, smooth, fibrous, blaze lamellate [leaves subpeltate) ... : *Mallotus tetrarococcus*
- 262 b. Petioles 1.5-4 cm long, blade longer than broad, oblong or lanceolate ... : *Heritiera papilio*
- 263 a. Leaf blade with localised glands in the axils of lateral nerves or at the base of the lamina ... : 264
- 263 b. Leaf blade eglandular ... : 268
- 264 a. Glands in the axils of lateral nerves .. : 265
- 264 b. Glands at the base of the midrib or lamina ... : 266
- 265 a. Lateral nerves of the leaf ca. 4 pairs; bark brownish black, exfoliations of the bark attached by the upper end ... : *Hopea racophloea*
- 265 b. Lateral nerves of the leaf 7-12 pairs; blaze brown, rough, vertically fissured and irregularly cracked [blaze yellowish) ... : *Hopea parviflora*
- 266 a. Petiole less than 1 cm long ... : *Parinarium indicum*
- 266 b. Petiole more than 1 cm long ... : 267
- 267 a. Branchlets glabrous: bark and leaves when bruised smelling prussic acid : *Prunus ceylanica*
- 267 b. Branchlets pubescent: bark and leaves when bruised not smelling prussic acid : *Terminalia chebula*
- 268 a. Branches of the trunk whorled, horizontal or subhorizontal; bark when cut exudes red juice ... : 269
- 268 b. Branches of the trunk not whorled; exudation from the bark not red ... : 273
- 269 a. Leaves grey-or rusty- pubescent beneath : 270
- 269 b. Leaves glabrous beneath ... : 272
- 270 a. Leaves over 30 cm long, lateral nerves 20-40 pairs .. : *Myristica magnifica*
- 270 b. Leaves 12.5-20 cm long, lateral nerves 14-20 pairs (bark greyish brown, smooth, blaze pink-red) ... : *Knema attenuata*

- 271 a. Leaves elliptic-oblong, tip obtuse (bark grey, smooth, tuberculate-lenticellate, semifibrous, blaze red) ... : *Myristica malabarica*
- 271 b. Leaves oblong, tip acute or acurminate : 272
- 272 a. Leaf tip acuminate ... : *Gymnacranthera canarica*
- 272 b. Leaf tip acute (bark blackish, rugose, fibrous, blaze deep red, lamellate) ... : *Myristica dactyloides*
- 273 a. Trees with aerial roots .., ... : 274
- 273 b. Trees devoid of aerial roots ... : 261
- ?74 a. Leaves rusty tomentose beneath ... : *Ficus mollis*
- 274 b. Leaves glabrous beneath ... : 275
- 275 a. Leaves more than 6 cm broad, elliptic, ovate-tip acute ... : 276
- 275 b. Leaves less than 6 cm broad, elliptic-lanceolate or oblong-ovate ... : 278
- 276 a. Lateral nerves 4-7 pairs, aerial roots stout ... : 277
- 276 b. Lateral nerves 6-13 pairs, aerial roots thin ... : *Ficus drupacea* var. *pubescens*
- 277 a. Leaves ovate, tip obtuse, thickly coriaceous ... : *Ficus benghalensis*
- 277 b. Leaves elliptic or elliptic-oblong membranous, tip acuminate ... : *Ficus virens*
- 278 a. Leaves with prominent parallel secondary lateral nerves: bark brown [aerial roots numerous) ... : *Ficus microcarpa*
- 278 b. Leaves without secondary lateral nerves or if present obscure: bark not brown : 279
- 279 a. Lateral nerves 8-10 pairs ... : *Ficus amplissimn*
- 279 b. Lateral nerves 5-8 pairs ... : 280
- 280 a. Branchlets 1.5-3 mm thick; leaves subcoriaceous, narrowly cuneate at base (bark pale grey, smooth, fibrous, blaze creamy pink) : *Ficus racemosa*
- 280 b. Branchlets 3-5 mm thick: leaves membranous, subcordate to cuneate at base : *Ficus virens*
- 281 a. Leaves crowded at the tips of branchlets : 282
- 281 b. Leaves equidistant, not crowded at the tips of branchlets ... : 295
- 282 a. Leaves 3-7 nerved from base ... : 283
- 282 b. Leaves penni-nerved ... : 284

- 283 a. Leaves 5-7 nerved from base, ovate-cordate, glabrous beneath; bark pale grey : *Pterygota alata*
- 283b. Leaves 3-nerved from base, oblong, tomentose beneath; bark brown (rough, fibrous, blaze pinkish, with radial reticulate streaks) ,.. ... *Sterculia guttata*
- 284 a. Leaf base decurrent on the petiole, leaves oblanceolate [bark brittle, blaze reddish brown) ... : *Agrostistachys meeboldii*
- 284 b. Leaf base not decurrent, leaves not oblanceolate ... : 285
- 285 a. Bark when cut exudes copious milky latex, latex not turning black ... : 286
- 285 b. Bark devoid of latex, or if present not milky white ... : 288
- 286 a. Petiole densely pubescent, blade hairy on the nerves beneath ... : *Madhuca bourdillonii*
- 286 b. Petiole and leaf blade glabrous ... : 287
- 287 a. Bark dark yellowish grey, slightly furrowed; lateral nerves of the leaves *ca.* 12 pairs ... : *Bassia longifolia*
- 287 b. Bark dark brown, scaly; lateral nerves of the leaves 15-25 pairs ... : *Madhuca neriifolia*
- 288 a. Lateral nerves of the leaves 5-10 pairs : 289
- 288 b. Lateral nerves of the leaves 12-30 pairs : 293
- 289 a. Leaf tip acute or acuminate : 290
- 289 b. Leaf tip obtuse, round or emarginate ... : 291
- 290 a. Leaves elliptic-ovate: blaze yellow: trees buttressed ... *Terminalia bellirica*
- 290 b. Leaves ovate-lanceolate, elliptic-lanceolate or oblong; blaze brown or pink; trees not buttressed ... : *Phoebe lanceolata*
- 291 a. Leaves obovate, usually more than 6 cm broad .., ... : *Alseodaphne semecarpifolia*
- 291 b. Leaves oblong, ovate or elliptic, usually less than 6 cm broad ... : 292
- 292 a. Leaves elliptic; bark less than 1 cm thick, inner bark black ... : *Daphniphyllum neilgherrense*
- 292 b. Leaves oblong or ovate: bark more than 1 cm thick, inner bark pink (bark grey-black, brittle, smooth, blaze pinkish) : *Persea macrantha*

293 a.	Leaves 12-15 cm broad, tip obtuse, round or emarginate	... ..	<i>Semecarpus travancorica</i>
293 b.	Leaves below 6 cm broad, tip obtuse, acute or acuminate	... ..	294
294 a.	Leaves elliptic-obovate; bark smooth, pinkish grey	... ..	: <i>Gluta travancorica</i>
294 b.	Leaves lanceolate or oblong-lanceolate; bark rough: fissured, exfoliating in scales	... ..	: <i>Mangifera indica</i>
295 a.	Leaves pubescent	... ..	: 296
295 b.	Leaves glabrous	... ..	: 319
296 a.	Leaves 3-5 nerved from base	.....	297
296 b.	Leaves penni-nerved	... ..	: 299
297 a.	Basal nerves extending to the tip of the leaves, leaves oblong or elliptic-oblong	.....	: <i>Celtis wightii</i>
297 b.	Basal nerves not extending to the tip of the leaves, leaves ovate-cordate	.....	298
298 a.	Bark when cut exudes milky white latex; leaves elliptic-ovate or elliptic-obovate, scabrous above (bark greyish white, fibrous, smooth, punctiform lenticellate, blaze creamy white)	... ..	<i>Ficus exasperata</i>
298 b.	Bark devoid of latex; leaves ovate or orbicular-ovate, glabrous above	... ..	: <i>Cordia wallichii</i>
299 a.	Bark when cut exudes milky latex	... ..	: 300
299 b.	Bark devoid of milky latex	... ..	301
300 a.	Leaves elliptic-oblong, tip acuminate, petiole grey-pubescent (bark rough, blaze pink, streaked with white)	... ..	<i>Artocarpus gomezianus</i> ssp. <i>zeylanicus</i>
300 b.	Leaves ovate, tip acute, petiole golden yellow pubescent [bark subrugose, lenticellate, blaze creamy, turning to yellowish pink)	... ..	: <i>Artocarpus hirsutus</i>
301 a.	Leaves less than 5 cm long and 2 cm broad [bark blackish grey, brittle, blaze reddish brown)	... ..	: <i>Diospyros buxifolia</i>
301 b.	Leaves more than 5 cm long and 2 cm broad	.. ... ..	: 302
302 a.	Leaf base obtuse, round or cordate	... ..	: 303
302 b.	Leaf base acute or attenuate	... ..	: 310
303 a.	Lateral nerves of the leaves 4-10 pairs	.....	: 304
303 b.	Lateral nerves of the leaves more than 10 pairs	... ..	: 306

- 304 a. Branchlets puberulent or pubescent;
leaves elliptic or oblong ... : 305
- 304 b. Branchlets glabrous: leaves lanceolate : *Polyalthia cerasoides*
- 305 a. Petiole less than 5 mm long, villous
pubescent .. : *Diospyros pruriens*
- 305 b. Petiole 1-2 cm long, puberulent ... : *Hopea ponga*
- 306 a. Leaves stipulate, stipules sheathing,
stipular scars annular, petioles swollen
at the tip ... : 307
- 306 b. Leaves estipulate, or if present not
sheathing, stipular scars not annular,
petioles not swollen at the tip ... : 308
- 307 a. Petiole densely villous ... : *Dipterocarpus
bourdillonii*
- 307 b. Petiole glabrous (hark yellowish, smooth,
brittle, blaze creamy, chocolate yellow) : *Dipterocarpus indicus*
- 308 a. Branches horizontal; leaf tip acuminate,
base obtuse or subtruncate; bark aromatic
(blaze yellowish with triangular
rays) ... : *Polyalthia fragrans*
- 308 b. Branches not horizontal: leaf tip obtuse
or emarginate; bark not aromatic ... : 309
- 309 a. Petioles less than 1.5 cm long, nerves
with parallel intercostae (bark with
occasional conical thorns, blaze red) : *Bridelia squamosa*
- 309 b. Petioles 2-5 cm long, nerves with reti-
culate intercostae ... : *Semecarpus anacardium*
- 310 a. Lateral nerves of the leaves inconspi-
cuous, or if conspicuous 4-5 pairs ... : 311
- 310 b. Lateral nerves of the leaves conspi-
cuous, more than 7 pairs ... : 312
- 311 a. Lateral nerves of the leaves 4-5 pairs,
leaves glabrous above ... : *Polyalthia cerasoides*
- 311 b. Lateral nerves of the leaves inconspi-
cuous, leaves pubescent above ... : *Diospyros nilagirica*
- 312 a. Leaf tip acute or acuminate ... : 313
- 312 b. Leaf tip obtuse or emarginate ... : 316
- 313 a. bark fibrous ... : 314
- 313 b. Bark brittle ... : 315
- 314 a. Leaves bifarious, lateral nerves 7-10
pairs; bark aromatic, surface black,
marked with shallow vertical fissures,
blaze yellow ... : *Miliusa toinentosa*
- 314 b. Leaves spiral, lateral nerves 10-15 pairs;
bark nonaromatic, surface grey, vertic-
ally fissured, blaze creamy yellow ... : *Vernonia arborea*

- 315 a. Leaves elliptic-oblong, intercostae sub-
scalariform (bark grey, smooth, brittle,
blaze dull yellow) : *Litsea floribunda*
- 315 b. Leaves obovate, intercostae subreticulate : *Litsea bourdillonii*
- 316 a. Bark rough with tessellate [squarish]
scales, fibrous (blaze red) : *Buchanania lanzan*
- 316 b. Bark not tessellated, not fibrous ... : 317
- 317 a. Branchlets rusty tomentose; bark smooth
with horizontal lenticels : *Litsea floribunda*
- 317 b. Branchlets glabrous, of if pubescent not
rusty; bark devoid of lenticels 318
- 318 a. Leaves with parallel intercostae, blade
fulvous pubescent beneath : *Litsea insignis*
- 318 b. Leaves with reticulate intercostae, blade
grey-pubescent beneath : *Litsea glutinosa*
- 319 a. Bark when cut exudes milky white or
sticky exudation 320
- 319 b. Bark devoid of milky white or sticky
exudation : 332
- 320 a. Leaves 3-7 nerved from base : 321
- 320 b. Leaves penni-nerved 327
- 321 a. Leaves 5-7 nerved from base, base
cordate, petioles reddish (bark pale grey,
smooth, tuberculate lenticellate, blaze
light pink] : *Ficus arnottiuna*
- 321 b. Leaves 3-5 nerved from base, base acute,
round or emarginate, never cordate,
petioles not reddish 322
- 322 a. Petiole less than 5 cm long : 323
- 322 b. Petiole 5-10 cm long 326
- 323 a. Leaf tip acute or obtuse (leaves thick,
glossy; bark grey, smooth, lenticellate,
blaze yellowish or creamy) : *Ficus callosa*
- 323 b. Leaf tip acuminate : 324
- 324 a. Bark brown, mottled with white: leaves
membranous : *Ficus nervosa*
- 324 b. Bark grey or greenish; leaves coriaceous : 325
- 325 a. Leaves with zigzag or subreticulate
intercostae, secondary lateral nerves
absent: branchlets 3-5 mm thick ... : *Ficus virens*
- 325 b. Leaves devoid of intercostae, secondary
lateral nerves present: branchlets 1.5-3
mm thick : *Ficus talbotii*

- 26 a. Leaves broadly ovate, lateral nerves
12-15 pairs: bark smooth : *Ficus beddomei*
- 326 b. Leaves elliptic-oblong, lateral nerves
7-10 pairs: bark rough : *Ficus tsjahela*
- 327 a. Leaves with numerous (more than 15
pairs), parallel, thin lateral nerves
looping into an intramarginal nerve : 328
- 327 b. Leaves with few (less than 15 pairs)
lateral nerves, intramarginal nerve
absent : 329
- 328 a. Petiole less than 1 cm long; bark
smooth: leaves elliptic-lanceolate ... : *Donella roxburghii*
- 328 b. Petiole more than 2 cni long; bark rough:
leaves broadly elliptic-acuminate (bark
pale grey, rough, vertically fissured,
brittle, blaze creamy pink) : *Mimusops elengi*
- 329 a. Stipules sheathing, stipular scars
annular; bark rough, flaked surface
orange-red : *Artocarpus heterophyllus*
- 329 b. Stipules absent, or if present not shea-
thing, stipular scars not annular: bark
not flaking, or if flaking, flaked surface
not orange-red : 330
- 330 a. Leaf tip ernarginate (rarely obtuse) ... : *Manilkara roxburghiana*
- 330 b. Leaf tip acute or acuminate : 331
- 331 a. Leaves with close, scalariform inter-
costae : *Isonandra lanceolata*
- 331 b. Leaves with reticulate intercostae (bark
greyish brown, smooth, semifibrous,
blaze reddish pink) : *Palaquium ellipticum*
- 332 a. Leaves 3-5 nerved from base ... : 333
- 332 b. Leaves not 3-5 nerved from base : 340
- a. Leaves with minute scarlet glands
beneath : *Mallotus philippensis*
- 333 b. Leaves eglandular : 334
- 334 a. Branchlets drooping: bark fibrous;
leaves suborbicular-ovate : *Cordia dichotoma*
- 334 b. Branchlets not drooping: bark brittle:
leaves elliptic-oblong, rarely ovate,
when ovate not suborbicular : 335
- 335 a. Lateral nerves from the midrib 9-12 pairs : *Cryptocarya bourdillonii*
- 335 b. Lateral nerves from the midrib 2-8 pairs : 336

- 336 a. Lateral nerves from the midrib 2-5 pairs,
leaf tip acute or acuminate 337
- 336 b. Lateral nerves from the midrib 5-8 pairs,
leaf tip obtuse or eniarginate 339
- 337 a. Leaves with parallel intercostae, young
leaves golden fulvous *Neolitsea fischeri*
- 337 b. Leaves with reticulate intercostae, young
leaves not golden fulvous 338
- 338 a. Petioles less than 2 cm long [berry
oblong-ovoid: bark grey, rough, brittle,
blaze yellowish brown) *Neolitsea cassia*
- 338 b. Petioles more than 2.5 cm long [berry
globose) *Neolitsea foliosa*
- 339 a. Branchlets prominently lenticellate; leaf
base obtuse, margins often reflexed ... : *Cryptocarya stocksii*
- 339 b. Branchlets not lenticellate; leaf base
acute, margins not reflexed *Cryptocarya lawsonii*
- 340 a. Leaves with two glands at the base of
the lamina or midrib beneath *Terminalia paniculata*
- 340 b. Leaves eglandular -.. 341
- 341 a. Leaves less than 1 cm broad 342
- 341 b. Leaves more than 1 cm broad .., 343
- 342 a. Leaves linear-oblong, subsessile, tip
subtruncate (bark grey, fibrous, blaze
pinkish] *Emblica officinalis*
- 342 b. Leaves obovate, petiolate, petiole 1 cm
long, leaf tip round or eniarginate ... : *Diospyros ferrea*
- 343 a. Petioles swollen at the tip 344
- 343 b. Petioles not swollen at the tip 346
- 344 a. Stipules sheathing, stipular scars
annular; leaves ovate *Dipterocarpus indicus*
- 344 b. Stipules not sheathing, stipular scars
riot annular; leaves oblong 345
- 345 a. Leaf blade 15-30 cm long, 6-12 cm broad
[capsule 5-7 x 3-4.5 cm, elliptic-oblong) : *Vateria indica*
- 345 b. Leaf blade 15-37cm long, 10-17 cm broad
[capsule 11-15 x 5-6 cm, lanceolate-
acuminate) : *Vateria macrocarpa*
- 346 a. Stipular scars annular : *Michelia champaca*
- 346 b. Stipular scars not annular : 347

* The two species *Vateria indica* and *V. macrocarpa* are difficult to be distinguished vegetatively.

347 a.	Petioles less than 1 cm long	...	....	348
347 b.	Petioles more than 1 cm long	...	....	376
348 a.	Leaf base acute, attenuate or cuneate	:		349	
348 b.	Leaf base obtuse, round, truncate, emarginate or cordate	362
349 a.	Lateral nerves of the leaves 4-6 pairs	:		350	
349 b.	Lateral nerves of the leaves more than 8 pairs	353
350 a.	Bark pale red inside, non aromatic	...	:	<i>Diospyros foliolosa</i>	
350 b.	Bark pale yellowish inside	...	....	351
351 a.	Bark mildly aromatic	352
352 b.	Bark nonaromatic (smelling <i>Polygala</i>)	:		<i>Xanthophyllum flavescens</i>	
352 a.	Leaves elliptic-acuminate	<i>Xylopia parvifolia</i>
352 b.	Leaves lanceolate-acuminate	...	....	<i>Alphonsea zeylanica</i>
353 a.	Leaves obovate or rarely oblanceolate	:		354	
353 b.	Leaves elliptic, elliptic-oblong, lanceolate or oblong-lanceolate	...	....	355
354 a.	Petioles red, leaf margin entire, not wavy	<i>Ternstroemia japonica</i>
354 b.	Petioles not red, leaf margin wavy	...	:	<i>Vernonia travancorica</i>	
355 a.	Bark brittle	356
355 b.	Bark fibrous	357
356 a.	Lateral nerves of the leaves 6-7 pairs	:		<i>Litsea coriacea</i>	
356 b.	Lateral nerves of the leaves 8-12 pairs	:		<i>Litsea oleoides</i>	
357 a.	Trees with large plank buttress; exfoliations of the bark attached by the upper end	<i>Aphananthe cuspidata</i>
357 b.	Trees not buttressed, exfoliations of the bark not attached by the upper end	...	:	358	
358 a.	Leaves more than 5 cm broad	...	....	359
358 b.	Leaves less than 5 cm broad	...	....	360
359 a.	Leaves 10-11 cm long, 4-5 cm broad, intercostae indistinct	<i>Diospyros sylvatica</i>
359 b.	Leaves 18-30 cm long, 8-15 cm broad, intercostae prominent	<i>Diospyros insignis</i>
360 a.	Bark black, blaze pale red	...	....	<i>Diospyros affinis</i>
360 b.	Bark grey or white	...	....	361
361 a.	Leaves elliptic-oblong, base asymmetric	:		<i>Drypetes venusta</i>	
361 b.	Leaves lanceolate, leaf base symmetric	:		<i>Drypetes elata</i>	
362 a.	Leaf tip retuse, round or emarginate	:		363	
362 b.	Leaf tip acute or acuninate	.....	....	364

- 363 a. Bark white, smooth, exfoliating in thin round flakes, inner bark pinkish, with an outer green layer: branchlets drooping : *Anogeissus latifolia*
- 363 b. Bark brown, rough, exfoliating in rectangular flakes, inner bark red, without an outer green layer; branchlets horizontal or ascending : *Cleistanthus collinus*
- 364 a. Lateral nerves of the leaves 4-7 pairs : 365
- 364 b. Lateral nerves of the leaves 8-12 or more pairs : 370
- 365 a. Bark black, rough, blaze pale red to yellowish brown : 366
- 365 b. Bark greenish or grey, blaze yellow or cream : 368
- 366 a. Leaves with scalariform intercostae, secondary laterals absent (blaze yellowish brown) : *Diospyros bourdillonii*
- 366 b. Leaves with obscure intercostae or if prominent reticulate : 367
- 367 a. Leaves membranous; petioles flat; branchlets 1.5-2 mm thick (bark black, smooth, brittle, blaze yellowish brown) : *Diospyros assimilis*
- 367 b. Leaves coriaceous, petioles subcylindric; branchlets 2-3 mm thick : *Diospyros paniculata*
- 368 a. Bark dark green, smooth : 369
- 368 b. Bark whitish grey, rough : *Holoptelia integrifolia*
- 369 a. Bark mildly aromatic; trunk straight; branches horizontal ; *Mitrephora heyneana*
- 369 b. Bark nonaromatic; trunk branching; branches not horizontal (bark greenish grey, smooth, semifibrous, blaze dull yellow, smelling *Polygala*) : *Xanthophyllum flavescens*
- 370 a. Leaves strictly bifarious : 371
- 370 b. Leaves not bifarious : *Litsea oleoides*
- 371 a. Leaves stipulate, stipules reflexed ... : *Glochidion zeylanicum*
- 371 b. Leaves estipulate, or if stipulate stipules not reflexed : 372
- 372 a. Trees with conspicuous large plank buttress; exfoliations of the bark attached by the upper end : *Aphananthe cuspidata*
- 372 b. Trees devoid of plank buttress; exfoliations of the bark not attached by the upper end : 373

- 373 a. Leaves more than 5 cm broad : 374
373 b. Leaves less than 5 cm broad : 375
374 a. Leaves 25-35 cm long, oblong, lateral nerves 10-12 pairs : *Sageraea grandiflora*
374 b. Leaves 8-25 cm long, lanceolate, lateral nerves 8-10 pairs : *Hydnocarpus alpina*
375 a. Bark black, rough, blaze pale red, non-aromatic; lateral nerves of the leaves 6-8 pairs : *Diospyros bourdillonii*
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377 b. Leaves strictly alternate : 378
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379 a. Leaves 10-15 cm long, lanceolate, lateral nerves 12-15 pairs; trees not buttressed : *Buchanania axillaris*
379 b. Leaves 4-8 cm long, oblong, lateral nerves 8-10 pairs; trees buttressed ... : *Diospyros affinis*
380 a. Trees with prominent plank buttress; exfoliations of the bark attached by the upper end ; *Aphananthe cuspidata*
380 b. Trees devoid of plank buttress; exfoliations of the bark not attached by the upper end : 381
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381 b. Lateral nerves of the leaves 7-20 pairs ... : 384
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382 b. Leaves 8-20 cm long, base symmetric, petiole 12-40 mm long : 383
383 a. Leaves elliptic-oblong or elliptic-obovate, lateral nerves 4-9 pairs : *Mastixia pentandra*
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384 a. Lateral nerves of the leaves 15-20 pairs : 385
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385 a. Leaves 8-18 cm broad : *Meliosma simplicifolia*
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- 386 a. Lateral nerves of the leaves ca. 15 pairs, leaf tip obtusely acuminate (trees restricted to South Kerala) *Buchanania lanceolata*
- 386 b. Lateral nerves of the leaves 16-20 pairs, leaf tip bluntly apiculate (bark brittle, surface grey, blaze deep pink-red) ... *Nothopegia colebrookeana*
- 387 a. Leaves bifarious : 388
- 387 b. Leaves spiral : 391
- 388 a. Blaze reddish or pinkish : 389
- 388 b. Blaze creamy yellow : 390
- 389 a. Bark brown: leaves elliptic-oblong, petiole ca. 12 mm long [bark brittle, blaze light pink-striate) *Aporusa lindleyana*
- 389 b. Bark dark green or blackish; leaves oblong-lanceolate, petiole ca. 8 mm long *Diospyros insignis*
- 390 a. Leaves 5-12.6 cm long, ovate-lanceolate, acumen twisted, lateral nerves 8-12 pairs; branches not horizontal : *Casearia esculenta*
- 390 b. Leaves 12.5-25 cm long, lanceolate, acumen not twisted, lateral nerves 8-12 pairs; branches horizontal *Cyathocalyx zeylanicus*
- 391 a. Leaves obovate, margin undulate towards the tip : *Vernonia travancorica*
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- 392 a. Petioles 8-10 mm long : 393
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- 393 b. Leaves 5-15 cm broad, oblong-lanceolate, lateral nerves ca. 8 pairs: bole not fluted *Diospyros insignis*
- 394 a. Leaves oblanceolate, 8-18 cm broad, lateral nerves 12-16 pairs *Meliosma simplicifolia*
- 394 b. Leaves elliptic or elliptic-oblong, 5-8 cm broad, lateral nerves 4-12 pairs ... : 395
- 395 a. Leaves elliptic-oblong, 5-8 cm broad, lateral nerves 4-9 pairs, petiole 18-38 mm long : *Mastixia pentandra*
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- 404 a. Bark black, aromatic *Sageraea laurifolia*
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- 407 a. Petioles 2.5 cm long, nerves of the leaf
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- 408 a. Bark aromatic, leaves elliptic or oblong : 409
- 408 b. Bark nonaromatic: leaves lanceolate ... : *Hydnocarpus pentandra*
- 409 a. Petioles 8-9 mm long, leaves oblong ... : *Sageraea grandiflora*
- 409 b. Petioles 12 mm long, leaves narrowly
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421 a. Branchlets tawny; bark with horizontal lenticels : *Litsea wightiana*
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422 a. Bark greenish black, blaze red : *Diospyros candolleana*
422 b. Bark dark brown or greyish brown, blaze yellowish : 423
423 a. Bark peeling off in irregular flakes: leaves up to 4 cm broad : *Hopea glabra*
423 b. Bark not flaky; leaves 5-10 cm broad ... : *Hydnocarpus alpina*

ANNOTATION OF TREE SPECIES

Abarema bigemina (Linnaeus) Kostermans in Bull. 20, Organiz. Sci. Res. Indon. 51, f. 34, 3.5. 1954. Syn.: *Miniosa bigemina* Linnaeus, Sp. Pl. 517. 1753. *Pithecellobium bigeminum* (Linnaeus) Mart., Herb. Pl. Brasil in Flora 20, Beibl. 2: 115. 1937 (in observ.); Bourdillon, For. Trs. Travancore 143. 1908; Gamble, Fl. Pres. Madras 1: 308. 1957 (Fam.: Mimosaceae).

Small trees; h -10 m, d-15-30 cm. **Bark** 3-4 mm thick, surface dark brown, smooth, pustular-lenticellate, lenticels vertical and horizontal; blaze pink-red, inner surface slimy to touch. **Leaves** alternate, bipinnate, stipules present, rachis 7.5-15 cm long, pinnae 2-3 pairs, paripinnate, leaflets 4-8, terminal largest, stipules nil, petiolules 1-5 mm long, leaflet blade 5-17.5 x 2.5-5 cm, lanceolate, tip acuminate, base asymmetric, margin entire, lateral nerves 4-6 pairs: glabrous. **Flowers** white, bisexual, in globose heads arranged in terminal panicles, 10-12 mm long. **Fruit** a pod, 7.5-12.5 x 1.5-1.8 cm, flat, curved like a ring, twisted, reddish brown. Seeds 5-8, 1 cm across, subglobose, slightly flattened, black or dark blue.

Evergreen forests up to 900 m. Throughout Kerala.

Abarema subcoriacea (Thwaites) Kostermans in Bull. 20, Organiz. Sci. Res. Indon. 41. 1954. Syn.: *Pithecellobium subcoriaceum* Thwaites, Enum. Pl. Zeylan. 100. 1859;

Bourdillon, For. Trs. Travancore 144. 1908; Gamble, Pl. Pres. Madras 1: 308, 1957 (Fam.: Mimosaceae).

Small trees; h -10m, d 20-35 cm. **Base** often twisted. **Bark** 4-6 mm thick, surface dark brown to grey, roughish, peeling off in hard rectangular pieces; blaze red to pink. **Branchlets** angular, rusty tomentose. **Leaves** alternate, bipinnate, rachis 5-15 cm long, glandular, glands 1-3, discoid, half way between each pair of pinnae, pinnae 4-12 pairs, uppermost longest, paripinnate, leaflets 20-50, sessile, blade 8-12 x 2-4 mm, trapezoid, asymmetric, tip acute, mucronulate or obtuse, margin entire, incurved: glabrous above, pilose beneath. **Flowers** bisexual, in heads arranged in terminal panicles, 10-12 mm long, greenish white. **Fruit** a pod, 7.5-10 x 1 cm, flat, circinate-curved. **Seeds** 4-7, black.

Evergreen forests above 1,200 m. South and Central Kerala.

Acacia ferruginea De Candolle, Prod. Syst. Nat. Veg. 2: 458; Bourdillon, For. Trs. Travancore 139, 1908; Gamble, Pl. Pres. Madras 1: 303. 1957 (Fam.: Mimosaceae).

Moderate to large trees; h 8-10 m. **Bark** 10-12 mm thick, surface dark brown, rough, deeply fissured; blaze pink. **Leaves** alternate, 8-15 cm long, bipinnate, stipular spines present, curved, pinnae 4-6 pairs, paripinnate, leaflets

30-60, subsessile, blade 5-8 x 2-3 mm, linear-oblong, tip obtuse, base oblique, margin entire, midrib slightly away from the centre. **Flowers** bisexual, in spikes arranged in loose panicles, 4-4.5 cm long, pale yellow. **Fruit** a pod, 7.5-17.5 x 1.6-1.8 cm, strap-shaped, flat, dark brown. **Seeds** 4-6, oval, flat.

Dry forests at low elevations.

Actocarpus fraxinifolius Wight, Ic. Pl. Indiae Orient. t. 254, excl. leaf. 1840 Bourdillon, For. Trs. Travancore 123. 1908; Gamble, Pl. Pres. Madras 1: 281. 1957 -**Mal.**: Korangadi, Malamkonna, Narivenga [Fam.: Caesalpinaceae).

Large deciduous trees; **h** -30 m, **d** -1.2 m. **Bark** thin, surface light grey. **Bole** buttressed. **Branchlets** 3-4 mm thick. **Leaves** alternate, bipinnate, pinnae 3-5 pairs, 20-30 cm long, paripinnate, leaflets 10-12 per pinna, 7.5-10 x 2.5-3.7 cm, opposite, petiolules 3-4 mm long, blade elliptic-lanceolate, tip acuminate, base asymmetric, acute or obtuse, margin entire, lateral nerves 7-15 pairs; glabrous. **Flowers** bisexual, in axillary racemes. **Fruit** a pod, winged. **Seeds** 5-10, obovate, oblique, compressed.

Occasional in evergreen and semievergreen forests up to 1,200m. Throughout Kerala.

Actinodaphne bourdillonii Gamble in Kew Bull. 1925: 129. 1925 et Fl. Pres. Madras 2: 862. 1957 (Fam.: Lauraceae).

Small trees; **h** -10 m. **Leaves** in whorls of 7-10, simple, petioles 5-15 mm long, blade 18-23 x 5-7 cm, oblong-lanceolate or oblanceolate, tip acuminate, base attenuate, margin entire; undersurface softly grey or cinnamomeous-tomentose. **Flowers** in large clusters, with concave bracts, female in umbels from the scars of fallen leaves, **Fruit** a berry, 5 mm across, globose, black.

Evergreen forests between 200-1,200m. South and Central Kerala.

Actinodaphne campanulata Hooker f., Pl. Brit. India 5: 148. 1886; Gamble, Pl. Pres. Madras 2: 861. 1957 (Fam.: Lauraceae)

Small trees; **h** -10m. **Leaves** subverticillate, simple, blade 6-7 x 1-2 cm, oblong, tip obtuse, base acute, margin entire, lateral nerves 6-8 pairs, slender; glabrous.

Evergreen forests between 900-1,200 m. Confined to South Kerala.

Actinodaphne madraspatana Beddome ex Hooker f., Pl. Brit. India 5: 149. 1886; Bourdillon, For. Trs. Travancore 268. 1908; Gamble, Fl. pres. Madras 2: 861. 1957 -**Mal.**: Mungeli (Fain.: Lauraceae).

Large evergreen trees; **h** -20 m, **d** -45 cm. **Leaves** subverticillate, simple, petioles 10-12 mm long, blade 18-23 x 4-6.5 cm, linear- or oblong-lanceolate, tip acute, base

acute, margin entire, subtriply nerved, lateral nerves of the midrib 8-10 pairs, lowest pair opposite; glabrous, glaucous beneath. **Flowers** 10-12 mm wide, white, in short axillary clusters. **Fruit** a berry, 6-8 mm across, globose, black, seated in an enlarged perianth cup.

Evergreen forests up to 900 m. South Kerala.

Actinodaphne malabarica Balakrishnan in J. Bombay Nat. Hist. Soc 63: 329. 1967. *Syn.*: *Actinodaphne hirsuta* -Hooker f., Fl. Brit. India 5: 152. 1886; Bourdillon, For. Trs. Travancore 268. 1908; Gamble, Fl. Pres. Madras 2: 862. 1957 (Fam.: Lauraceae).

Large trees; *h* -18 m, *d* -45 cm. **Branchlets** fulvous pubescent. **Leaves** subverticillate, simple, petioles 15-22 mm long, blade 20-25 x 6-7.6 cm, elliptic-lanceolate, tip acuminate, base attenuate, margin entire, fulvous, villous pubescent, lateral nerves 8-10 pairs, very prominent, shining above. **Flowers** female in umbellate racemes. **Fruit** a berry, 7-8 mm across, globose, seated on a perianth cup.

Evergreen forests up to 900 m. Throughout Kerala.

Actinodaphne tadulingami Camble in Kew Bull. 1925: 130. 1925 et Fl. Pres. Madras 2: 862. 1957 (Fam.: Lauraceae).

Medium sized trees. **Branchlets** fulvous pubescent. **Leaves** sub-

verticillate, simple, petioles 10-20 mm long, blade 20-25 x 5-7.5 cm, elliptic-lanceolate, tip acuminate, base attenuate, margin entire, lateral nerves 10-15 pairs, intercostae subparallel; shining above, sparsely villous beneath between the nerves. **Flowers** in umbels. **Berries** 4 mm long, ovoid.

Evergreen forests up to 700 m. Throughout Kerala.

Aglaia elaeagnoidea (Jussieu) Benth Fl. Austr. 1: 383. 1863. *Syn.*: *Nemeda elaeagnoidea* Jussieu, Mem. Mus. Hist. Nat. Paris 19: 295, t. 14. 1830. *Aglaia roxburghiana* Miquel in Ann. Mus. Ludg. Bat. 4: 41. 1863; Gamble, Fl. Pres. Madras 1: 128. 1957 -*Mal.*: Punyava [Fam.: Meliaceae).

Trees. *h* -15 m. **Bark** thin, surface greyish or light brown, blotched with yellow, smooth. **Branchlets** 3-4 mm thick. **Leaves** alternate, 7.5-17.8 cm long, simply imparipinnate, leaflets 5-7, petioles 3-8 mm long, leaflet blade 5-10 x 1.2-3.8 cm, elliptic, lanceolate or oblanceolate, tip acute or obtuse, base acute, margin entire, lateral nerves 8-10 pairs; glabrous, paler beneath. **Flowers** polygamodioecious, in axillary branching panicles.

Evergreen forests. North Kerala.

Aglaia lawii (Wight) Saldanha in Saldanha et Nicolson, Fl. Hassan Dist. 392. 1976. *Syn.*: *Nimmoia lawii* Wight, Calcutta J. Nat. Hist. 7: 13. 1847. *Amoora lawii* (Wight) Beddome. Fl. Sylv. t. 133. 1871;

Gamble, Fl. Pres. Madras 1: 130. 1957 (Fam.: Meliaceae).

Moderate sized trees. **Bark** 3-4 mm thick, surface brownish grey, mottled with green, smooth, exfoliations thin; semifibrous; blaze creamy yellow. **Branchlets** 1-2.5 mm thick, lepidote. **Leaves** alternate, simply imparipinnate, leaflets 3-5, petiolules 5-7 mm long, leaflet blade 7-12.5 x 3.5-5 cm, elliptic, tip obtusely acuminate, base acute, margin entire, lateral nerves 8-11 pairs. **Flowers** polygamodioecious, female in lateral spikes, male in panicles or racemes. **Fruit** a capsule, 1.5-2 cm long, obovoid, yellowish, **Seeds** surrounded by a fleshy aril.

Evergreen and semievergreen forests at low elevations. Throughout Kerala.

Aglaia maiae Bourdillon in J. Bombay Nat. Hist. Soc. 12: 349. 1898 *et* For. Trs. Travancore 75. 1908; Gamble, Fl. Pres. Madras 1: 129. 1957 [Fam.: Meliaceae].

Medium sized evergreen trees; **h** -18 m, **d** -30 cm. **Bark** 5-6 mm thick, surface reddish brown, mottled with white, smooth, flaking off. **Branchlets** lepidote. **Leaves** alternate, 45-60 cm long, simply imparipinnate, leaflets 9-13, petiolules 10-12 mm long, leaflet blade 10-22.5 x 3.7-6.2 cm, lanceolate, base asymmetric, tip acute, margin entire; glabrous beneath. **Flowers** polygamodioecious, 2-3 mm across, yellow, in lax panicles. **Fruit** a berry, 22-25 mm long, ovoid. **Seeds** with a fleshy aril-like testa.

Evergreen forests up to 500 m. South Kerala.

Aglaia tamilnadensis Nair *et* Rajan, Fl. Tamilnadu, ser. 1, analysis 66. 1983. **Syn.:** *Amoora canarana* (Turczaninow) Hiern in Hooker f., Fl. Brit. India: 560. 1875; Bourdillon, For. Trs. Travancore 77. 1908. Gamble, Fl. Pres. Madras 1: 130. 1957 - **Mal.:** Kar akil (Fam.: Meliaceae)].

Large evergreen trees; **h** -20m, **d** -60 cm. **Blaze** pink. **Branchlets** lepidote. **Leaves** alternate, 15-38 cm long, simply imparipinnate, petiolules 5-6 mm long, leaflets 3-7, leaflet blade 7.5-15 x 3.8-6.5 cm, narrowly elliptic or lanceolate, tip acuminate, base asymmetric, margin entire, glabrous above, punctate-lepidote beneath. **Flowers** polygamodioecious, small, pale yellow, in panicles. **Fruit** a capsule, obovoid.

Evergreen forests up to 1,000m. Throughout Kerala.

Agrostistachys meeboldii Pax *et* Hoffmann in Engler, Pflanzenreich Euphorb.-Crotophor. 4: 100. 1912. Gamble, Fl. Pres. Madras 2: 922. 1957; *Agrostistachys longifolia* Benth in Hooker f., Fl. Brit. India 5: 407. 1887; Bourdillon, For. Trs. Travancore 300. 1908 - **Mal.:** Muli-pala (Fam.: Euphorbiaceae).

Small dioecious trees; **h** -10 m **d** -20 cm. **Bark** 8-10 mm thick, surface blackish grey, mottled with white, smooth; brittle; blaze reddish brown. **Leaves** alternate, clustered at the tips of branchlets, simple, petiole very short, blade

Gamble, Fl. Pres. Madras 1: 130. 1957 (Fam.: Meliaceae).

Moderate sized trees. **Bark** 3-4 mm thick, surface brownish grey, mottled with green, smooth, exfoliations thin; semifibrous; blaze creamy yellow. **Branchlets** 1-2.5 mm thick, lepidote. **Leaves** alternate, simply imparipinnate, leaflets 3-5, petiolules 5-7 mm long, leaflet blade 7-12.5 x 3.5-5 cm, elliptic, tip obtusely acuminate, base acute, margin entire, lateral nerves 8-11 pairs. **Flowers** polygamodioecious, female in lateral spikes, male in panicles or racemes. **Fruit** a capsule, 1.5-2 cm long, obovoid, yellowish. **Seeds** surrounded by a fleshy aril.

Evergreen and semievergreen forests at low elevations. Throughout Kerala.

Aglaia maiae Bourdillon in J. Bombay Nat. Hist. Soc. 12: 349. 1898 *et* For. Trs. Travancore 75. 1908; Gamble, Fl. Pres. Madras 1: 129. 1957 (Fam.: Meliaceae).

Medium sized evergreen trees; *h* -18 m, *d* -30 cm. **Bark** 5-6 mm thick, surface reddish brown, mottled with white, smooth, flaking off. **Branchlets** lepidote. **Leaves** alternate, 45-60 cm long, simply imparipinnate, leaflets 9-13, petiolules 10-12 mm long, leaflet blade 10-22.5 x 3.7-6.2 cm, lanceolate, base asymmetric, tip acute, margin entire; glabrous beneath. **Flowers** polygamodioecious, 2-3 mm across, yellow, in lax panicles. **Fruit** a berry, 22-25 mm long, ovoid. **Seeds** with a fleshy aril-like testa.

Evergreen forests up to 500 m. South Kerala.

Aglaia tamilnadensis Nair *et* Rajan, Fl. Tamilnadu, ser. 1, analysis 66. 1983. **Syn.:** *Amoora canarana* (Turczaninow) Hiern in Hooker f., Fl. Brit. India: 560 1875 Bourdillon, For. Trs. Travancore 77. 1908. Gamble, Fl. Pres. Madras 1: 130. 1957 - **Mal.:** Kar akil (Fam.: Meliaceae).

Large evergreen trees; *h* -20m, *d* -60 cm. **Blaze** pink. **Branchlets** lepidote. **Leaves** alternate, 15-38 cm long, simply imparipinnate, petiolules 5-6 mm long, leaflets 3-7, leaflet blade 7.5-15 x 3.8-6.5 cm. narrowly elliptic or lanceolate, tip acuminate, base asymmetric, margin entire, glabrous above, punctate-lepidote beneath. **Flowers** polygamodioecious, small, pale yellow, in panicles. **Fruit** a capsule, obovoid.

Evergreen forests up to 1,000m. Throughout Kerala.

Agrostistachys meeboldii Paxet Hoffmann in Engler, Pflanzenreich Euphorb-Crozophor. 4: 100. 1912. Gamble, Fl. Pres. Madras 2: 922. 1957; *Agrostistachys longifolia* Benth in Hooker f., Fl. Brit. India 5: 407. 1887; Bourdillon, For. Trs. Travancore 300. 1908 - **Mal.:** Muli-pala (Fam.: Euphorbiaceae).

Small dioecious trees; *h* -10m, *d* -20 cm. **Bark** 8-10 mm thick, surface blackish grey, mottled with white, smooth; brittle; blaze reddish brown. **Leaves** alternate, clustered at the tips of branchlets, simple, petiole very short, blade

10-25 x 5-7.5 cm oblanceolate, tip acuminate, base narrowed, margin entire, lateral nerves 12-14 pairs; glabrous. *Flowers* unisexual, yellow, male 3-4 together in erect racemes, female solitary or in racemes. *Fruit* a capsule, 7-8 mm across, brown. *Seen's* globose.

Evergreen forests between 600-1,500m Throughout Kerala.

Ailanthus excelsa Roxburgh, Pl. Coast Coromandel 1: 24, t. 23. 1795; Gamble, Fl. Pres. Madras 1: 116. 1957 (Fam.: Simarubaceae).

Moderate sized trees. *Bark* surface rough. *Leaves* alternate, 30-90 cm long, simply imparipinnate, leaflets 8-14 pairs, petiolules 2-5 cm long, blade 10-15 cm long, margin coarsely toothed; grey pubescent beneath. *Flowers* polygamous, in panicles, small. *Fruit* a samara, narrow, oblong, twisted. *Seeds* 1-5.

Dry deciduous forests. Central Kerala.

Ailanthus triphysa (Dennstaedt) Alston in Trimen, Hbk. Fl. Ceylon 6, Suppl. 4I. 1931. *Syn.*: *Adenanthera triphysa* Dennstaedt, schluess. Hort Malabar. 32. 1818. *Ailanthus malabarica* De Candolle, Prod. Syst. Nat. Veg. 2: 89. 1825; Bourdillon, For. Trs. Travancore 65. 1908; Gamble, Fl. Pres. Madras 1: 116, 1957 -Mal.: Matti, Pongilyam (Fam.: Simarubaceae).

Lofty deciduous trees; *h* -25 m, *d* -60 cm. *Bark* thick, surface grey,

smooth. *Leaves* alternate, 60-75 cm long, simply imparipinnate, leaflets 10-24, petiolules 5-7 mm long blade 7-17.5 x 4-6.5 cm, elliptic to lanceolate, tip acute, base acentric margin entire, slightly revolute; glabrous, glaucous beneath. *Flowers* polygamous, in axillary panicles, 6-8 mm across, yellow. *Fruit* a samara, 5-6 x 1.5-1.8 cm, flat, reddish brown.

Occasional in the semievergreen and moist deciduous forests up to 900 m. Throughout Kerala.

Albizia amara (Roxburgh) Boivin, Eucycl. 19, Siecle 2: 34. 1838; Bourdillon, For. Trs. Travancore 142. 1908; Gamble, Fl. Pres. Madras 1: 306. 1957. *Syn.*: *Mimosa amara* Roxburgh, Pl. Coast Coromandel 2: t. 122. 1799 -Mal.: Varachi (Fam.: Mimosaceae).

Small, much branched trees, 11-10 m, *d* -30 cm. *Bark* thin surface greenish, smooth, scaly; blaze yellowish. *Branchlets* yellowish brown. pubescent. *Leaves* alternate, bipinnate, rachis 7.5-10 cm long, yellowish brown, pubescent, pinnae 8-15 pairs, 2.5-3.7 cm long, paripinnate, leaflets 20-60, closely packed, sessile, blade 5-6 x 2-3 mm, linear, tip subacute, base asymmetric, attenuate on the upper side, rounded on the lower side, margin entire, ciliate or glabrous, midrib central. *Flowers* bisexual; in 2-3 dense axillary clustered heads, 6-8 mm long, pinkish. *Fruit* a pod, 10-12.5 x 2.5 cm, flat, greyish brown, veiny. *Seeds* 6-8, compressed, ovate-orbicular.

Dry deciduous forests up to 600 m. South Kerala.

Albizia chinensis (Osbeck) Merrill in Am. J. Bot. 3: 575. 1916. *Syn.*: **Mimosa chinensis** Osbeck, Dag. Ostind. Resa. 233. 1757. **Albizia stipulata** (Roxburgh) Boivin, Encycl. 19, Siecle 2: 33.1838. **Albizia marginata** (Lamarck) Merrill in Philip. J. Sci. Bot. 5: 23. 1910: Gamble, Fl. Pres. Madras 1: 301. 1957 *-Mal.*: Potta vaka (Fam.: Mimosaceae).

Large deciduous trees: *h* 30-40 m, *d* 60-120 cm. **Bark** 5-6 mm thick, surface brownish grey, smoothish, horizontally furrowed; blaze pink. **Branchlets** minutely golden tomentellous. **Leaves** alternate, bipinnate, stipules large, obliquely cordate, acuminate, pinkish-orange pubescent, caducous; rachis 20-35 cm long, pinnae 6-20 pairs, 8-12.5 cm long, paripinnate, leaflets 50-80, sessile, blade 15-18 x 3-6 mm, falcate-lanceolate, tip acute, base obtuse or subtruncate, margin entire, ciliate, midrib close to the upper edge, ciliate. **Flowers** bisexual, in globose heads arranged in terminal and axillary panicles, 3.7 cm long, white. **Fruit** a pod, 15-20 x 2.5 cm, strap-shaped, flat, reddish brown. **Seeds** 8-12, 6-10 x 5-8 mm, ovate, dull dark brown.

Moist deciduous forests up to 900 m. Throughout Kerala.

Albizia lebbek (Linnaeus) Benth in Hooker, London J. Bot. 3: 87. 1844 (as '*lebbek*'); Bourdillon, For. Trs. Travancore 147. 1908: Gamble Fl. Pres. Madras 1: 306. 1957. *Syn.*: **Mimosa lebbek** Linnaeus, Sp. Pl. 526.

1753 *-Mal.*: Vaka [Fam.: Mimosaceae)

Large deciduous trees; *h* 18-25 m, *d* 50-60 cm. **Bark** 20-25 mm thick, surface yellowish brown, rough, deeply fissured, exfoliations irregular: semibrittle; blaze pinkish yellow. **Leaves** alternate, bipinnate, rachis 15-20 cm long, pinnae 2-3 pairs, 12.5-15 cm long, paripinnate, leaflets 10-18, subseparable, blade 2.7-5 x 1.8-2.5 cm, asymmetric, one half cuneate, other round, margin entire: glabrous above, slightly pubescent beneath. **Flowers** bisexual, in subglobose heads forming corymbose racemes, 3.5-3.7 cm long, greenish white. **Fruit** a pod, 20-30 x 4-5 cm, flat, oblong, straw coloured. **Seeds** 8-12, 12-15 x 7.5 mm, flat, oval, pale brown.

Moist deciduous forests at low elevations. Throughout Kerala.

Albizia odoratissima (Linnaeus f.) Benth in Hooker, London J. Bot. 3: 88. 1844; Bourdillon, For. Trs. Travancore 141. 1908: Gamble, Fl. Pres. Madras 1: 306. 1957. *Syn.*: **Mimosa odoratissima** Linnaeus f., Suppl. Pl. 437. 1781 (as '*adoratissima*') (Fam.: Mimosaceae).

Large deciduous trees; *h* 15-30 m, *d* 80 cm. **Bark** 10-15 mm thick, surface yellowish grey, rough, irregularly cracked, exfoliated surface pale cream: fibrous; blaze reddish pink. **Branchlets** pubescent. **Leaves** alternate, bipinnate, rachis 20-30 cm long, downy, glandular, gland round or ovals

basal and between the bases of the pinnae, pinnae 3-8 pairs, 5-20 cm long, leaflets 20-40, sessile, blade 18-24 x 5-6 mm, oblong, tip apiculate, base oblique, margin entire, midrib not median; glabrous. **Flowers** bisexual, in globose heads forming terminal panicles, 10-12 mm long, white. **Fruit** a pod, 15-20 x 2.5-3.7 cm, flat, strap-shaped, reddish brown. **Seeds** 6-12, 7-8 x 5-6 mm, oblong, orbicular, compressed.

Moist deciduous, dry deciduous and semievergreen forests up to 1,000 m. Throughout Kerala.

Albizia procera (Roxburgh) Benth in Hooker, London J. Bot. 3: 89. 1844; Bourdillon, For. Trs. Travancore 139. 1908; Gamble, Fl. Pres. Madras 1: 306. 1957. **Syn.:** *Mimosa procera* Roxburgh, Pl. Coast Coromandel 2: 12, t. 121. 1799 -*Mal:* Karum thakara (Fam.: Mirnosaceae).

Large deciduous trees; *h* -20 m, *d* -60 cm. **Bark** 10-15 mm thick, surface greenish yellow, smoothish, exfoliations small, irregular: exfoliated surface pale yellow, semifibrous; outer bark pinkish, inner creamy yellow. **Leaves** alternate, bipinnate, rachis 25-30 cm long, pinnae 3-5 pairs, 12-25 cm long, pariyinnate, leaflets 10-20, 2.5-5. x 1.8-2.5 cm, obliquely oblong, halves unequal, base asymmetric, lateral nerves 6-10 pairs; slightly villous beneath. **Flowers** bisexual, in globose heads forming axillary or terminal panicles, 6-8 mm long, yellowish white. **Fruit** a pod, 10-20 x 1.8-2.5 cm, flat, dark brown. **Seeds** 8-12, compressed.

Moist deciduous forests up to 600 m. Throughout Kerala.

Alphonsea zeylanica Hooker f. *et* Thomson, Fl. Indica 153. 1855 **emend.** Hooker f., Fl. Brit. India 1: 89. 1872; Bourdillon, For. Trs. Travancore 10. 1908; Gamble, Fl. Pres. Madras 1: 16. 1957 [Fam.: Annonaceae].

Medium sized trees. **Leaves** alternate, bifarious, simple, petioles 5-6 mm long, blade lanceolate, 5-10 x 1.5-2.5 cm, tip acuminate, base attenuate, glabrous, nerves 4-5 pairs. **Flowers** bisexual, solitary or geminate, yellowish green. **Fruit** a berry, 2.5-3.8 cm across, globose.

Evergreen forests between 600-900 m. Confined to South Kerala.

Alseodaphne semecarpifolia Nees in Wallich, Pl. Asiat. Rar. 2: 72. 1831; Bourdillon, For. Trs. Travancore 265. 1908; Gamble, Fl. Pres. Madras 2: 858. 1957 (Fam.): Lauraceae).

Large or moderate sized trees. **Bark** thick, surface yellowish brown, vertically furrowed. **Leaves** 7.5-17.5 x 3.7-10 cm. simple, alternate, petioles 6-10 mm long, blade elliptic-oblong or obovate, tip round or emarginate, base cuneate, margin entire, lateral nerves 6-9 pairs; glabrous, glaucous beneath. **Flowers** bisexual, in slender lax axillary panicles, small, yellowish green. **Fruit** a berry, 20-25 mm long, ellipsoid.

Evergreen and semievergreen forests up to 1,500 m. Throughout Kerala.

Alstonia scholaris (Linnaeus) R. Brown in Mem. Wern. Nat. Hist. Soc. 1: 76. 1811, prep. 1810; Bourdillon, For. Trs. Travancore 233. 1908; Gamble, Fl. Pres. Madras 2: 569. 1957. *Syn.*: *Echites scholaris* Linnaeus, Mant. Pl. 53. 1767 -*Mal.* Ezhilam pala (Fam.: Apocynaceae):

Large evergreen trees; *h* -30m, *d* -90 cm. *Bark* 10-12 mm thick, surface grey-brown, smoothish, subverrucose lenticellate; blaze creamy, outer layer thin, corky, inner layer brittle; latex milky white. *Branchlets* whorled. *Leaves* 5-8 together, whorled at nodes, simple, petioles 6-10 mm long, blade 10-20 x 2.5-6 cm, elliptic oblong or obovate, tip obtuse or emarginate, base narrowed, lateral nerves numerous, parallel; paler beneath. *Flowers* bisexual in terminal panicles, 10-12 mm long, greenish white. *Fruit* of 2 follicles, 30-45 cm long, slender. *Seeds* 5-6 mm long, commate at both ends.

Moist deciduous forests up to 600 m. Throughout Kerala.

Anacolosia densiflora Beddome in Madras J. Sci. 3(1): 38. 1864; Bourdillon, For. Trs. Travancore, 84. 1908; Gamble, Fl. Pres. Madras 1: 137. 1957 - *Mal.*: Kal manikkam, Malam kara (Fam.: Olacaceae).

Lofty trees: *h* -27m, *d* -60cm. *Bole* straight. *Bark* 12-14 mm thick, surface mottled with yellow-brown and white, smooth. *Leaves* alternate, simple, 3.7-5 cm. petioles 10-12 mm long, blade 7.5-15 x 3.7-5 cm, ovate, tip acuminate, base

round, margin entire; glossy. *Flowers* bisexual, in axillary cymes, 10-12 x 10-12 mm, white. *Fruit* a drupe, 15-13 mm across, globose.

Evergreen forests up to 750 m. South Kerala.

Anogeissus latifolia (De Candolle) Wallich *ex* Guillemin *et* Perr., Fl. Seneg. Tent. 1: 280. 1832; Bourdillon For. Trs. Travancore 159. 1908; Gamble, Fl. Pres. Madras 1: 330. 1957. *Syn.*: *Conocarpus latifolia* Roxburgh *ex* De Candolle, Prod. Syst. Nat. Veg. 3: 17. 1828 -*Mal.*: Mazhukan hiram (Fam.: Combretaceae).

Large deciduous trees: *h* -18 m, *d* -60 cm. *Bark* 10-12 mm thick, surface dark grey, rough, exfoliating in thin irregular rounded scales; blaze pinkish brown. *Branchlets* 1-2 mm thick. *Leaves* alternate or subopposite, bifarious, simple, petioles 6-8 mm long, blade 7-12.5 x 3-8 cm elliptic or suborbicular, tip obtuse or emarginate, base obtuse or round, margin entire, lateral nerves 7-9 pairs; glabrous. *Flowers* bisexual, in axillary globose heads, 5-6 mm across, pale green. *Fruits* in heads, 6-8 mm across, compressed, circular, winged. *Seed* 1.

Dry deciduous forests up to 600 m. Throughout Kerala.

Anthocephalus chinensis (Lamarck) Richard *ex* Walpers, Rep. 2: 491. 1843. *Syn.*: *Cephalanthus chinensis* Lamarnk, Encycl. Meth. 1: 678. 1785.

Anthocephalus indicus Richard in Mem. Soc. Hist. Nat. Paris 5: 238. 1834; Gamble, Fl. Pres. Madras 2: 411. 1957. *Anthocephalus cadamba* (Roxburgh) Miquel, Fl. Indiae Bat. 2: 135. 1856; Bourdillon, For. Trs. Travancore 211. 1908 -Mal.: Attu thekk [Fam.]: Rubiaceae).

Large deciduous trees: *h* -20m, *d* -60 cm. **Bole** straight. **Branches** horizontal. **Bark** 6-8 mm thick, surface dark grey, cracked, longitudinally fissured, exfoliating in small rectangular pieces; blaze yellowish brown. **Branchlets** 3-5 mm thick, terete. **Leaves** opposite, simple, petioles 20-45 mm long, blade 12-30 x 7.5-15 cm, ovate, tip acuminate or obtuse, base obtuse, subtruncate or cordiform, margin entire, lateral nerves 8-13 pairs, intercostae subscalariform; glabrous or pubescent beneath. **Flowers** in terminal heads, orange, narrow, tubular. **Fruits** capsular, in globose heads, fleshy, yellowish green. **Seeds** many, minute, angular.

Semievergreen forests up to 450 m. Throughout Kerala.

Antiaris toxicaria (Persoon) Lesschenault in Ann. Mus. Par. 16: 478. 1810; Bourdillon, For. Trs. Travancore 328. 1908; Gamble, Fl. Pres. Madras 3: 957. 1957. *Syn.*: *Ipotoxi-curia* Persoon, *Syn.* Pl. 2: 566. 1807-Mal.: Ara-anjali (Fam.: Moraceae).

Loafy deciduous trees; *h* -50 m, *d* -1.5 m. **Crown** conical. **Bole** buttressed. **Bark** 10-15 mm thick, surface greyish white, smooth, pustular-lenticellate, lenticels in

vertical rows; blaze creamy white; latex watery or milky. **Leaves** alternate, bifarious, petioles 2-3 mm long or sessile, blade 10-20 x 7.5 cm, elliptic-oblong, tip acuninate, base round or cordate, margin entire or serrulate, lateral nerves 8-10 pairs, scabrous. **Flowers** minute, in receptacles, male receptacle discoid, axillary, female flower solitary, in an involucre. **Fruit** a drupe, 12-25 x 11-20 mm, pyriform, fleshy, scarlet. **Seed** 10;16 mm long.

Evergreen forests up to 600 m. Throughout Kerala.

Aphananthe cuspidata (Blume) Planchon in De Candolle, Prod. Syst. Nat. Veg. 17: 209. 1873. *Syn.*: *Cyclostemon cuspidatum* Blume, Bijdr. 599. 1825. *Gironniera reticulata* Thwaites, Enum. Pl. Zeylan. 1: 268. 1861; Bourdillon, For. Trs. Travancore 311. 1908; Gamble, Fl. Pres. Madras 3: 944. 1957 (Fam.: Ulmaceae).

Large dioecious trees. **Bole** buttressed. **Bark** brownish, exfoliating in loose irregular flakes; blaze rosy pink with light streaks. **Leaves** alternate, simple, petioles 6-12 mm long, grooved above, blade 7.5-18 x 2.5-7.5 cm, oblong-ovate or ovate-lanceolate, tip long acuminate, base round or acute, margin entire, lateral nerves 10-12 pairs; glabrous, shining. **Flowers** unisexual, axillary, male in panicles, female solitary. **Fruit** a drupe, 12-18 mm long, slightly compressed-ovoid, 2 angled. **Seeds** subglobose.

Evergreen forests up to 900 m. Throughout Kerala.

Apodytes dimidiata E. Meyer ex Arnott in Hooker, J. Bot. 3: 155. 1849. *Syn.*: *Apodytes benthamiana* Wight, Ic. Pl. Indiae Orient. 3: t. 1253. 1846; Bourdillon, For. Trs. Travancore 85. 1908; Gamble, Fl. Pres. Madras 1: 140. 1957 (Fam.: Icacinaceae).

Medium sized trees; *h* -18 m, *d* -30 cm. *Leaves* alternate, simple, petioles 12-25 mm long, blade 7.5-10 x 2.5-3.7 cm, oblong, tip obtuse, base obtuse. margin entire, revolute, lateral nerves 6-9 pairs; glabrous, coriaceous. *Flowers* bisexual, in short terminal panicles, 5-6 mm long, white. *Fruit* a drupe, 15-18 x 10-12 mm, obliquely ovoid or reniform, compressed, with a lateral appendage, stone crustaceous, 1-seeded.

Evergreen forests above 500 m. Throughout Kerala; but nowhere common.

Apollonias arnotii Nees in Syst. Laurin. 670. 1836; Bourdillon, For. Trs. Travancore 262. 1908; Gamble, Fl. Pres. Madras 2: 854. 1957 *-Mal.*: Chenthanam (Fam.: Lauraceae).

Moderate sized trees; *h* -15 m, *d* -45 cm. *Leaves* alternate, clustered at the tips of branchlets. *Leaves* simple, petioles 6-8 mm long, blade 7.5-15 x 2.5-5 cm, narrowly lanceolate, tapering to both ends, margin entire; glabrous, shining above; young leaves pink. *Flowers* bisexual, in axillary or subterminal

racemose panicles, 3-4 mm long, greenish yellow. *Fruit* a drupe, 10-12mm long, ovoid, pale green.

Evergreen forests between 500-1,500m. Through out Kerala.

Aporusa lindleyana (Wight) Baillon, Etudes Gen. Euph. 645. 1874; Bourdillon, For. Trs. Travancore 285. 1908; Gamble, Fl. Pres. Madras 2: 916. 1957. *Syn.*: *Scepa lindleyana* Wight, Ic. Pl. Indiae Orient. t. 361. 1840 *-Mal.*: Vetti (Fam.: Euphorbiaceae).

Small or middle sized evergreen trees; *h* -10 m, *d* -25 cm. *Bark* 6-8 mm thick, surface greyish brown, vertical striations shallow, brittle; blaze light pink, striated. *Leaves* alternate, bifarious, simple, stipules caducous. petioles 10-12 mm long, blade 7.5-17. 5 x 3-7.5 cm, elliptic-oblong, tip acuminate, base acute or round, margin entire or undulate, lateral nerves 8-10 pairs. *Flowers* male in spikes, small, yellow, female 3-8 together, pale green. *Fruit* a capsule, 10-12 mm across, globose, yellow. *Seed* 1, brown, in a yellow pulp.

Evergreen and semievergreen forests up to 900m. Throughout Kerala.

Artocarpus gomezianus Wallich ex Trecul ssp. **zeylanicus** Jarret in J. Arnold Arbor. 61: 90. 1960. *Syn.*: *Artocarpus lakoocha* sensu Bourdillon, For. Trs. Travancore 327. 1908, non Roxburgh; Gamble, Fl. Pres. Madras 3: 958. 1957 *-Mal.*: Theetti plavu (Fam.: Moraceae).

Large deciduous trees; *h* 20-40 m, *d* -90 cm. **Bark** 10-12 mm thick, surface grey, rough, exfoliations small; fibrous; blaze pink: latex milky white, sticky. **Branchlets** 5-8 mm thick, minutely pubescent. **Leaves** alternate, distichous, simple, stipules 8-10 mm long, sheathing, pubescent; petioles 2-5 cm long, blade 10-25 x 5-12.5 cm, oblong or elliptic, tip acuminate, base round or subcordate, margin entire or denticulate, lateral nerves 6-12 pairs; shining and glabrous above, pubescent beneath. **Flowers** unisexual, small, male and female in separate globose heads. **Fruit** a synanthocarp, 2-3 cm across, subglobose, yellow. **Seeds** few, flat, broad.

Moist deciduous and semi-evergreen forests up to 1,000 m, Throughout Kerala.

Artocarpus heterophyllus Lamarck, Encycl. Meth. 3: 210. 1789. *Syn.*: **Artocarpus integrifolius** sensu Bourdillon, For. Trs. Travancore 326. 1908, non Linnaeus f.; Gamble, Fl. Pres. Madras 3: 957. 1957 -**Mal.**: Plavu (Fam.: Moraceae) .

Large evergreen trees; *h* -25 m, *d*-60 cm. **Bark** 10-12 mm thick, blackish grey, mottled with green and black, exfoliating in large thick flakes, exfoliated surface orange-red; blaze pinkish yellow; latex milky white, sticky. **Branchlets** 5-8 mm thick. **Leaves** alternate, simple, stipules large, sheathing, glabrous, caducous; petioles 12-25 mm long, blade 10-25.5 x 6-12.5 cm, ovate or oblong, tip acumi-

nate, base acute, margin entire, lateral nerves 7-8 pairs: shining above, coriaceous. **Flowers** unisexual, minute, yellowish green, male in narrow-cylindric catkins, female in oblong-ovoid catkins, catkins axillary or on small stout branches on the trunk. **Fruit** a synanthocarp 30-45 x 20-25 cm oblong, tuberculate, tubercles conical, yellowish green, **Seeds** 10-12 x 8-10 mm, ovoid, pale brown.

Evergreen forests between 450-1,200m. Throughout Kerala.

Artocarpus hirsutus Lamarck, Encycl. Meth. 3: 210. 1789; Bourdillon, For. Trs. Travancore 325. 1908; Gamble, Fl. Pres. Madras 3: 957. 1957 -**Mal.**: Ayini plavu [Fam.: Moraceae].

Large evergreen trees; *h* 45-50 m, *d* -1.2 m. **Bark** 10-15 mm thick, surface dull grey-brown, smoothish, lenticellate, exfoliations thin, exfoliated surface red; fibrous; blaze creamy, turning to pinkish yellow: latex milky white, sticky. **Branchlets** 8-10 mm thick, hirsute. **Leaves** alternate, simple, petioles 18-25 mm long, hirsute, blade 12.5-25 x 7.5-12.5 cm, broadly ovate or obovate, tip acute, base obtuse or round, margin entire, wavy, lateral nerves 7-11 pairs, intercostae scalariform; glabrous above, hirsute-pubescent beneath. **Flowers** unisexual, minute, yellowish green, male in axillary narrow-cylindric heads, female in ovoid heads. **Fruit** a synanthocarp, 6-7.5 cm across, globose or ovoid, spiny. **Seeds** 16-18 mm long, ovoid, white,

Evergreen, semievergreen and moist deciduous forests up to 900m. Throughout Kerala.

Barringtonia acutangula (Linnaeus) Gaertner, Fruct. 2: 97. 1791: Bourdillon, For. Trs. Travancore 170. 1908; Gamble, Fl. Pres. Madras 1: 344. 1957. *Syn.*: *Eugenia acutangula* Linnaeus, Sp. Pl. 673. 1753 -*Mal.*: Attu-pezhru, Neer-pezhru (Fam.: Lecythidaceae).

Medium sized trees: *h* -15m, *d* -45 cm. *Bark* 10-12 mm thick, surface dark brown, rough. *Leaves* clustered at the tips of branchlets, alternate, stipules caducous, petioles 10-12 mm long, blade 7.5-12.5 x 2.5-3.8 cm, obovate or oblanceolate, base tapering, margin crenate-serrate; glabrous. *Flowers* bisexual, in terminal pendulous racemes, 6-8 mm across, red. *Fruit* a fibrous berry, 2.5-3.8 cm long, oblong-ovoid, bluntly quadrangular.

Evergreen and deciduous forests, mostly confined to river banks. Throughout Kerala.

Bauhinia racemosa Lamarck, Encycl. Meth. 1: 390. 1785; Bourdillon, For. Trs. Travancore 132. 1908; Gamble, Fl. Pres. Madras 1: 288. 1957 [Fam.: Caesalpiniaceae].

Small deciduous trees: *h* -10 m. *d* -30 cm. *Bark* surface black, rough. *Leaves* alternate, simple, petioles 12-18 mm long, blade 3.7-5 x 5-6 cm, broader than long, tip bilobed, lobes rounded, base subtruncate or subcordate, glabrous, palmately 7-9 nerved from base. *Flowers* bise-

xual, in terminal racemes, 10-12 mm across, yellowish white. *Fruit* a pod, 21-25 x 1.6-1.8 cm, blackish brown. *Seeds* 12-20.

Moist and dry deciduous forests up to 1,200m. Throughout Kerala.

Beilschmiedia bourdillonii Brandis, Indian Trs. 528. 1906: Bourdillon, For. Trs. Travancore 263. 1908; Gamble, Fl. Pres. Madras 2: 855. 1957 -*Mal.*: Mora kutthi (Fam.: Lauraceae).

Large trees: *h* -27 m, *d* -45 cm *Bark* 6-8 mm thick, surface dark green. *Leaves* opposite or alternate, simple, petioles 12-25 mm long, blade 7.5-15.5 x 3.7-7.5 cm, ovate-lanceolate, tip acuminate, base tapering, margin entire, lateral nerves 6-8 pairs: glabrous, shining above. *Flowers* bisexual, in axillary and terminal racemes, 6-8 mm across, greenish yellow. *Fruit* a berry, 2.5-3.7 x 1.5-1.8 cm cylindrical, purple.

Evergreen forests up to 450 m. Throughout Kerala.

Beilschmiedia wightii (Nees) Bentham ex Hooker f., Fl. Brit. India 5: 124. 1886; Bourdillon, For. Trs. Travancore 263. 1908; Gamble, Fl. Pres. Madras 2: 855. 1957. *Syn.*: *Haasia wightii* Nees, Syst. Laurin. 676. 1836 (Fam.: Lauraceae).

Large trees: *h* -27 m, *d* -60 cm. *Bark* 14-16 mm thick, surface brown, rough. *Leaves* subopposite, simple, petioles 12-18 mm long, blade 7.5-15 x 2-6.2 cm, ovate or

elliptic lanceolate, tapering to both ends, lateral nerves 4-5 pairs, reticulations areolate; glabrous, shining above. **Flowers** bisexual, in panicles, minute, greenish yellow. **Fruit** a berry, 17-18 mm long, ovoid, purple.

Evergreen forests up to 1,200 m. South Kerala.

Bhesa indica (Beddome) Ding Hou in *Blumea*, Suppl. 4: 152. 1958. **Syn.:** *Trochisandra indica* Beddome, Fl. Sylv. t. 120. 1871. *Kurrimia bipartita* Lawson in Hooker f., Fl. Brit. India 1: 622. 1875; Bourdillon, For. Trs. Travancore 403. 1908. *Kurrimia indica* (Beddome) Gamble, Fl. Pres. Madras 2: 207. 1918 *et* 1: 149. 1957 (Fam.: Celastraceae).

Large evergreen trees; **h** -30 m, **d** -75 cm **Bark** 5-6 mm thick, surface grey, mottled with greenish white; brittle: blaze creamy brown, inner surface slimy to touch. **Leaves** alternate, simple, stipules large, petioles 2.5-3.8 cm long, blade 10-30 x 5-10 cm, broadly elliptic-ovate, tip obtuse, base obtuse or subtruncate, margin entire. lateral nerves 15-20 pairs; glabrous, coriaceous; young leaves pink-red. **Flowers** bisexual, in terminal panicles, 6-8 mm across, pale yellow. **Fruit** a capsule, 3-3.7 cm long, 2 lobed, lobes flat, divergent, reddish brown. **Seeds** 1-3, aril fleshy, white.

Evergreen forests between 900-1,800 m. South and Central Kerala.

Bischofia javanica Blume Bijdr. 1168. 1827; Bourdillon, For. Trs. Travancore 281. 1908; Gamble, Fl. Pres. Madras 2: 918. 1957 **-Mal.:** Chola vengā, Nira, Thirippu (Fam.: Euphorbiaceae).

Large dioecious trees; **h** -30 m, **d** -1.5 m. **Bark** 5-6 mm thick, surface brown, rough; fibrous and succulent: blaze pink; exudation red, watery or jelly-like. **Leaves** alternate, 3-foliolate, rachis 8-20 cm long, petiulules 12-18 mm long, ovate, tip acuminate, margin closely regularly serrate, lateral nerves 5-7(-8) pairs; glabrous. **Flowers** yellowish green, male in terminal panicles, small, female 5 mm across. **Fruit** a berry, 10-12 mm across, globose, trigonous with one curved and two flat facets, brown, fleshy. **Seeds** 3-6.

Evergreen and semievergreen forests up to 1,200m. Throughout Kerala.

Bombax ceiba Linnaeus, Sp. Pl. 511. 1753; **Syn.:** *Bombax malabaricum* De Candolle, Prod. Syst. Nat. Veg. 1: 479. 1624; Bourdillon, For. Trs. Travancore 40. 1908; Gamble, Fl. Pres. Madras. 1: 71. 1957 **-Mal.:** Elavu (Fam.: Bombacaceae).

Large deciduous trees; **h** -45 m, **d** -2.4 m. **Bole** straight, buttress 1-2 m high. **Bark** 20-30 mm thick, surface grey, mottled with white, longitudinal fissures shallow, often with conical prickles: blaze pink, marked with triangular rays, peelings from the inner surface netted. **Branchlets** horizontal. **Leaves**

alternate, digitate-compound, rachis 15-25 cm long, leaflets 5-7, petiolules 14-20 mm long, blade 10-20 x 1.8-2.5 cm, lanceolate, tip acuminate. *Flowers* bisexual, solitary, 6-7 cm across, dark crimson. *Fruit* a capsule, 8-10 cm long, cylindrical. *Seeds* 6 mm across, ovoid, embedded in white cotton.

Moist deciduous arid semievergreen forests up to 1,200 m. Throughout Kerala.

Bombax insigne Wallich, Pl. Asiat. Rar. 1:71. 1830; Bourdillon, For. Trs. Travancore 41. 1908; Gamble, Fl. Pres. Madras 1:71. 1957 -*Mal.*: Kal elavu (Fam.: Bonibacaceae).

Deciduous trees; *h* -25 m, *d* -80 cm. *Bole* straight. *Bark* 20-25 mm thick, surface grey, smooth, armed with conical prickles; fibrous: blaze pink, striate with radial triangular rays. *Branches* whorled. *Leaves* alternate, crowded at the tips of branchlets, digitate-compound, rachis 15-30 cm long, leaflets 6-8, petiolules 6-8 mm long, blade 12-23 x 2.5-5 cm, obovate, tip cuspidate, lateral nerves 15-18(-22) pairs; glabrous. *Flowers* bisexual, axillary, solitary, creamy yellow to pale pink. *Fruit* a capsule, 8-10 x 4-4.5 cm. *Seeds* many, 4-5 mm across, subovoid, brownish-black, covered in silk-white cotton.

Moist deciduous forests at low elevations. Throughout Kerala.

Bridelia squamosa (Mueller-Aargau) Graham in Bot. Jard. 41, Bibl. 93: 30. 1908. *Syn.*: *Bridelia retusa* var.

squamosa Mueller-Aargau ex De Candolle, Prod. Syst. Nat. Veg. 15: 493. 1866. *Bridelia retusa* (Linnaeus) Sprengl, Syst. Veget. 3: 48. 1826; Bourdillon, For. Trs. Travancore 282. 1908; Gamble, Fl. Pres. Madras 2: 896. 1957 -*Mal.*: Mul kaini [Fam.: Euphorbiaceae].

Large deciduous monoecious or dioecious trees; *h* -20m, *d* -60 cm. *Bark* 12-15 mm thick, surface grey to black, exfoliations thin, flat, irregular, occasionally armed with thorns; fibrous; blaze red, peels from the inner surface netted. *Leaves* alternate, simple, stipules lanceolate, petioles 10-12 mm long, blade 7.5-15 x 6-10 cm, elliptic-oblong or obovate, tip obtuse, base obtuse, margin entire, lateral nerves 15-25 pairs, intercostae scalariform; glabrous above, puberulous beneath. *Flowers* in terminal spikes, 3-4 mm across. *Fruit* a drupe, 7-8 mm across, globose, purplish black, seated on persistent calyx.

Moist deciduous and semi-evergreen forests up to 1,200 m. Throughout Kerala.

Buchanania axillaris (Desrousseau) Raniamurthy in Saldanha et Nicolson, Fl. Hassan Dt. 374. 1976. *Syn.*: *Mangifera axillaris* Desrousseau in Lamarck, Encycl. Meth. 3: 697. 1792. *Buchnanania angustifolia* Roxburgh, Pl. Coast Coromandel t. 262. 1820; Bourdillon, For. Trs. Travancore 108. 1908; Gamble, Fl. Pres. Madras 1: 184. 1957 -*Mal.*: Cheru (Fam.: Anacardiaceae).

Medium sized trees. **Bark** 12-18 mm thick, surface blackish brown, rough, deeply fissured. **Leaves** alternate, simple, estipulate, petioles 2-3 mm long, slender, blade 10-15 x 3-5 cm, lanceolate tip obtuse or emarginate, base acute or obtuse, nerves 12-15 pairs; glabrous. **Flowers** bisexual, in panicles, 3-4 mm across, dull white. **Fruit** a drupe, 12-13 mm across, laterally compressed, oblique.

Moist and dry deciduous forests. Throughout Kerala.

Buchanania lanceolata Wight, l.c. Pl. Indiae Orient. t. 237. 1839; Bourdillon, For. Trs. Travancore 108. 1908; Gamble, Fl. Pres. Madras 1: 184. 1957 -**Mal.**: Mala mavu (Fam.: Anacardiaceae).

Medium sized trees: **h** -18 m, **d** 30-45 cm. **Leaves** simple, alternate, estipulate, petioles 12-20 mm long, blade 10-12 x 4-4.5 cm, elliptic-lanceolate, tip obtusely acuminate, base acute, margin entire, lateral nerves 16-20 pairs, slender, arched. **Flowers** bisexual, in panicles, 2-3 mm across. **Fruit** a drupe, 18 mm long, laterally compressed, red.

Evergreen forests up to 600 m, Confined to South Kerala.

Buchanania lanzan Sprengl in J. Bot. (Schrader) 2: 234. 1800; Gamble, Fl. Pres. Madras 1: 184. 1957; **Buchanania latifolia** Roxburgh, Fl. Indica 2: 385. 1832; Bourdillon, For. Trs. Travancore 108. 1908 (Fam.: Anacardiaceae).

Medium sized trees; **h** -18 m. **Bark** 10-12 mm thick, surface black, rough, tessellate, cracks deep; blaze red. **Leaves** alternate, simple, estipulate, petiole 12 mm long, blade 10-15 x 5 cm, broadly oblong, tip obtuse or emarginate, base acute, margin entire, lateral nerves 10-12 pairs; glabrous beneath, coriaceous. **Flowers** greenish white. **Fruit** a drupe, 13 mm long, laterally compressed, black.

Dry and moist deciduous forests up to 1,200 m. Throughout Kerala.

Butea monosperma (Lamarck) Taubert in Engler *et* Prantl, Pflanzenfam. 3(3): 386. 1894. **Syn.**: *Erythrina monosperma* Lamarck, Encycl. Meth. 1: 391. 1783. *Butea frondosa* Koenig *ex* Roxburgh in Asiat. Res. 3: 469. 1792; Bourdillon, For. Trs. Travancore 115. 1908; Gamble, Fl. Pres. Madras 1: 252. 1957 -**Mal.**: Plash, Chamatha (Fam.: Fabaceae).

Medium sized deciduous trees. **Bark** 5-6 mm thick, grey. **Leaves** alternate, trifoliolate, rachis 12.5-20 cm long, petiolules 8-10 mm long, leaflet blade 10-20 cm long, ovate, lateral ones smaller and with asymmetric base, lateral nerves 4-6(-8) pairs; glabrous above, silky pubescent beneath. **Flowers** bisexual, in terminal or axillary racemes, 5 cm long, bright red. **Fruit** a pod, 12.5-28 cm long, **Seed** 1.

Dry deciduous forests up to 600 m.

Callicarpa tomentosa (Linnaeus) Murray, Syst. Veg. ed. 13, 130. 1774. *Syn.: Tomex tomentosa* Linnaeus, Sp. Pl. 118. 1753. *Callicarpa lanata* Linnaeus, Mant. Alt. 331. 1771; Rourdillon, For. Trs. Travancore 256. 1908; Gamble, Fl. Pres. Madras 2: 764. 1957 -*Mal.*: Peruvellam (Fam.: Verbenaceae).

Small trees; *h* -10 m, *d* -25 cm. *Bark* 5-8 mm thick, surface brown, rough; blaze creamy white with yellow streaks, becoming darker on exposure. *Branchlets* tomentose. *Leaves* opposite, simple, petioles 2.5-5 cm long, tomentose, blade 12.5-30 x 7.5-20 cm, ovate, tip acuminate, base rounded, margin entire, lateral nerves 6-8 pairs, intercostae scalariform; fulvous tomentose. *Flowers* bisexual, in axillary branched cymes, 5-6 mm long, pinkish purple. *Fruit* a drupe, 5-6 mm across, globose, black. *Seeds* 3-4, oblong, angular.

Moist deciduous and semi-evergreen forests between 600-1,200 m; also common in secondary forests. Throughout Kerala.

Calophyllum apetalum Willdenow in Ges. Naturf. Freunde Berlin Mag. Neuesteu 5: 79. 1811. *Syn.: Calophyllum decipiens* Wight, Ic. Pl. Indiae Orient. t. 106. 1839; Gamble, Fl. Pres. Madras 1: 54. 1957. *Calophyllum wightianum* Wallich ex Planchon *et* Triana, Ann. Sci. Nat. Bot. ser. 4, 15: 256. 1861; Bourdillon, For. Trs. Travancore 26. 1908 -*Mal.*: Cheru punna, Manga punna (Fam.: Clusiaceae).

Moderate sized trees; *h* -20 m, *d* -60 cm. *Bark* 15-18 mm thick, surface yellowish brown, deeply cracked, *Branchlets* 4-angular. *Leaves* opposite, simple, petioles 10-12 mm long blade 5-7.5 x 3.8-5 cm, ovate-oblong, tip obtuse, base acute or obtuse, margin entire, lateral nerves very numerous, close and parallel, at right angles to the midrib; glossy. *Flowers* bisexual, in axillary panicles, 10-12 mm across, white. *Fruit* a drupe, 10-12 x 10-12 mm, ovoid, green. *Seed* subglobose.

River banks in evergreen forests up to 800 m. Throughout Kerala.

Calophyllum austroindicum Kostermans ex Steevens in J. Arnold Arbor. 61: 250. 1980. *Syn.: Calophyllum trapezifolium* Thwaites, Enum. Pl. Zeylan. 51. 1858; Gamble, Fl. Pres. Madras 1: 55. 1957 (Fam.: Clusiaceae).

Medium sized trees; *h* -10 m, *d* -30 cm. *Leaves* opposite, simple, petioles 6-8 mm long, blade 2.5-3.7 x 1.2-1.8 cm, obovate, tip round, base tapering, margin entire; coriaceous, glossy. *Flowers* bisexual, in axillary racemes, 25 mm across, white. *Fruit* a drupe, 16-18 mm long, ovoid, purple, *Seeds* subglobose.

Evergreen forests at ca. 1,200 m. Mostly confined to the South Kerala, very sparse in the North.

Calophyllum polyanthum Wallich ex Choisy, Deser. Guttif. Ind. 43. 1849. *Syn.: Calophyllum elatum* Beddome, Fl. Sylv. 1: t. 2. 1869; Bourdillon, For. Trs. Travancore 25. 1908; Gamble, Fl. Pres. Madras 1: 54. 1957 -*Mal.*: Kattu punna (Fam.: Clusiaceae).

Large evergreen trees; *h* -35 m, *d*-1.2 m. *Bole* straight. *Bark* 15-16 mm thick, surface yellow, fissures deep, vertical. *Branchlets* 4-angular. *Leaves* opposite, simple, petioles 12-25 mm long, blade 10-12.5 x 3.7-5 cm, elliptic or oblong, tip acuminate to obtuse. base acute to obtuse, margin entire, lateral nerves very numerous, parallel, almost horizontal. *Flowers* bisexual, in axillary and terminal panicles, 16-18 mm across, white. *Fruit* a drupe, 2-2.5 cm long, ovoid, dark purple. *Seed* subglobose.

Evergreen forests between 300-1,500 m. Throughout Kerala.

Canarium strictum Roxburgh, Pl. Indica 3: 138. 1832; Bourdillon, For. Trs. Travancore 68. 1908; Gamble, Fl. Pres. Madras 1: 123. 1957 -*Mal.*: Thelli (Farn.: Burseraceae).

Large trees; *h* -30 m, *d* -90 cm. *Bole* straight. *Bark* 4-7 mm thick, surface grey-brown, roughish, exfoliations small, irregular; blaze aromatic, creamy yellow, outer bark brittle, inner bark fibrous, inner surface slimy to touch. *Leaves* alternate, 30-120 cm long, simply odd-pinnate, rachis pubescent, leaflets 7-15, petiolules pubescent, leaflet blade 7.5-30 x 5-15 cm, lanceolate, tip acuminate,

margin serrate; rusty tomentose beneath. *Flowers* bisexual or polygamous, in axillary panicles, 5-6 mm across, bright yellow. *Fruit* a drupe, 2.5-5 cm long, bluish.

Evergreen and semievergreen forests up to 1,500 m. Throughout Kerala.

Carallia brachiata (Loureiro) Merrill in Philip. J. Sci. Bot. 15: 249. 1919. *Syn.: Diatoma brachiata* Loureiro, Fl. Cochinch. 296. 1790. *Carallia lucida* Roxburgh, Hort. Bengal. 92. 1814; Bourdillon, For. Trs. Travancore 170. 1908. *Carallia integerrima* De Candolle, Prod. Syst. Nat. Veg. 3: 33. 1828; Gamble, Fl. Pres. Madras 1: 325. 1957 -*Mal.*: Varangu, Vallabham (Farn.: Rhizophoraceae).

Medium sized evergreen trees; *h* -30 m, *d* -75 cm. *Bark* 10-12 mm thick, surface dark grey, corky, furrowed. *Leaves* opposite, simple, petioles 5-6 mm long, blade 7.5-12.5 x 5-8.5 cm, obovate, tip obtuse or shortly acute, base acute or attenuate, margin entire, or serrulate at the tip, slightly revolute, lateral nerves 10-27 pairs, parallel; glabrous, coriaceous. *Flowers* bisexual, in axillary trichotomous cymes, 5-6 mm across. *Fruits* 5-6 mm across, red. *Seed* orange.

Evergreen forests up to 1,200 m. Throughout Kerala.

Careya arborea Roxburgh, Pl. Coast Coromandel t. 218. 1811; Bourdillon, For. Trs. Travancore 171. 1908; Gamble, Fl. Pres. Madras

1: 345. 1957 -*Mal.*: Pezhu [Fam.: Lecythidaceae).

Medium sized deciduous trees; *h* -12 m, *d* -30 cm. *Bark* 10-12 mm thick, greyish brown to black, rough, exfoliations small, more or less rectangular; fibrous; blaze stratified, reddish brown. *Leaves* alternate, clustered at the tips of branchlets, simple, petioles short or nil, blade 15-30 x 5-10 cm. broadly obovate, tip rounded, base tapering, margin crenate, wavy, lateral nerves 10-12 pairs; glabrous, shining on both sides. *Flowers* bisexual, in terminal spikes, 5-10 cm across, greenish white. *Fruit* a berry, 5-7.5 cm across, globose, green, pericarp fibrous, crowned with sepals.

Moist and dry deciduous forests up to 1,500 m. Throughout Kerala.

Casearia esculenta Roxburgh, Fl. Indica 2: 422. 1832; Bourdillon, For. Trs. Travancore 178. 1908; Gamble, Fl. Pres. Madras 1:368. 1957 - *Mal.*: Malam pavetta, Vellakkannan (Fam.: Samydeaceae).

Medium sized trees; *h* -20 m, *d* -45 cm. *Bark* 3-4 mm thick, surface green, mottled, smooth. *Leaves* alternate, distichous, simple petioles 10-12 mm long, blade 5-12.5 x 2.5-6.5 cm. ovate-lanceolate, tip shortly acuminate, acumen twisted, base tapering, margin entire or distantly serrate, midrib red, lateral nerves 7-9 pairs; glabrous. *Flowers* bisexual, in axillary clusters, 6-8 mm across, greenish. *Fruit*

a capsule, 1.2-3 cm long, ovoid, bright orange. *Seeds* many, aril scarlet.

Evergreen forests up to 300 m. Throughout Kerala.

Cassia fistula Linnaeus, Sp. Pl. 377. 1759; Bourdillon, For. Trs. Travancore 124. 1908; Gamble, Fl. Pres. Madras 1:283. 1957 -*Mal.*: Kanikkonna (Fam.: Caesalpiniaceae).

Medium sized deciduous trees; *h* -15 m, *d* -30 cm. *Bark* 8-10 mm thick, surface pale when young, dark grey when old, smooth, exfoliating in hard scales; outer bark brittle, inner bark fibrous, pale pink. *Leaves* alternate, 20-30 cm long, simply paripinnate, leaflets 8-16, opposite, petiolules 5-7 mm long, blade 5-15 x 3.5-5.6 cm, ovate, tip acute, base obtuse, margin entire, lateral nerves 10-15 pairs; glabrous. *Flowers* bisexual, in axillary drooping racemes, 3.7-5 cm across, yellow. *Fruit* a pod, 30-60 x 1.2-1.6 cm, cylindrical, black. *Seeds* 25-100, 6-8 mm broad, ovoid, pale brown, immersed in pulp.

Dry and moist deciduous forests up to 900 m. Throughout Kerala.

Cassine glauca (Rottboll) Kuntze, Rev. Gen. Pl. 1:114. 1891. *Syn.*: *Mangifera glauca* Rottboll, Nye Saml. Kongel Norske Vidensk Selsk. Skr. 2: 534, t. 4, f. 1. 1783. *Elaeodendron glaucum* (Rottboll) Pergoon, Syn. Pl. 1:241. 1805; Bourdillon, For. Trs. Travancore 90. 1908;

Gamble, Fl. Pres. Madras 1: 152. 1957 -*Mal.*: Karuvalli (Fam.: Celastraceae].

Medium sized trees; *h* -25 m, *d* -50 cm. *Bark* 3-4 mm thick, surface gray, often blackish. *Leaves* opposite, 5-15 x 2.5-6 cm, simple, petioles 10-12 mm long, blade elliptic or oval, sometimes obovate, tip obtuse or acute, base acute, margin crenate or entire, lateral nerves 6-7 pairs; glabrous, coriaceous. *Flowers* bisexual or polygamous, in axillary cymes, 5-6 mm across, yellowish green. *Fruit* a drupe, 10-12 mm long, ovoid, yellowish green. *Seeds* 1-2.

An occasional tree in the dry deciduous forests between 300-600 m.

Celtis philippensis Blanco var. *wightii* (Planchon) Soepadmo, Fl. Males. ser 1, 8(2): 62. 1977. *Syn.*: *Celtis wightii* Planchon in Ann. Sci. Nat. not., ser. 3, 10: 307. 1848; Bourdillon, For. Trs. Travancore 311. 1908; Gamble, Fl. Pres. Madras 3: 944. 1957 -*Mal.*: Bhutha (Fam.: Ulmaceae].

Large trees. *Bark* 5-6 mm thick, surface grey, mottled with green and white; brittle; blaze yellow, speckled with brown dots. *Leaves* alternate, bifarious, 10-15 cm long, petioles 8-12 mm long, blade oblong or elliptic-oblong, tip acute, base obtuse, margin crenate-serrate, 3-ribbed from base, ribs extending to the tip: grey pubescent beneath or glabrous. *Flowers* polygamous, in axillary cymes.

Semievergreen and evergreen forests between 200-1,300 m. Throughout Kerala.

Celtis tetrandra Roxburgh, Fl. Indica 2: 63. 1832; Bourdilloii, For. Trs. Travancore 310. 1908; Gamble Fl. Pres. Madras 3: 944. 1957 (Fam.: Ulmaceae].

Large trees; *h* -18 m, *d* -60 cm. *Bark* 5-6 mm thick, surface dark grey, smooth; brittle; blaze yellow. *Leaves* alternate, bifarious, simple, petioles 5-6 mm long, blade 3.7-7.5 x 1.63 cm, obliquely ovate, tip long acurminate, base narrowed, asymmetric, margin coarsely serrate, 3-ribbed from base; glabrous. *Flowers* polygamous, axillary, female solitary or geminate, male in cymes, pale yellow. *Fruit* a drupe, 10-12 mm long, ovoid. *Seed* ovoid.

Evergreen forests above 700 m. Throughout Kerala.

Chionanthus leprocarpa Thwaites var. *courtallensis* (Beddome) Nair *et* Jaardhanan in J. Bombay Nat. Hist. Soc. 78 (2): 330. 1981. *Syn.*: *Chionnthus courtallensis* Beddome, For. Man. Bot. 155. 1872. *Linociera courtallensis* Bourdillon, For. Trs. Travancore 260. 1908; Gamble, Fl. Pres. Madras 2: 558. 1957 (Fam.: Oleaceae).

Medium sized trees; *h* -18 m, *d* -45 cm. *Leaves* opposite, simple, petioles 5-6 mm long, blade 5-12.5 x 2.5-6 cm, oblong-lanceolate, base narrow, margin entire, lateral nerves 8-10 pairs; glabrous, coriaceous. *Flowers* bisexual, in racemose cymes, 5-6 mm across, white.

Fruit a drupe, 2.5 cm long, ovoid, brownish purple.

Evergreen forests between 900-1,500 m. South Kerala.

Chionanthus malabarica (Wallich ex G. Don) Beddome in For. Man. Bnt. 154. 1872. *Syn.*: *Linociera malabarica* Wallich ex G. Don, Gen. Syst. 4:53. 1837; Bourdillon, For. Trs. Travancore 229. 1908; Gamble, Fl. Pres Madras 2: 558. 1957 (Fam.: Oleaceae).

Medium sized trees: *h* -12 m, *d* -30 cm. *Leaves* opposite, simple, petiole 4-8 mm long, blade 7.5-15 x 2.5-6 cm, elliptic-oblong, tip obtuse with a short abrupt acumens, base cuneate, margin entire, lateral nerves 8-10 pairs, joining in loops; glabrous. *Flowers* bisexual, in cymes, 5-6 mm long, white. *Drupes* 10.12 mm long, ovoid.

Evergreen forests between 600-1,200 m. Throughout Kerala.

Chloroxylon swietenia De Candolle, Prod. Syst. Nat. Veg. 1: 625. 1824; Gamble, Fl. Pres. Madras. 1: 109. 1957. *Syn.*: *Swietenia chloroxylon* Roxburgh, Pl. Coast Coromandel 1: t. 64. 1796 -*Mal.*: Vari maram (Fam.: Rutaceae).

Medium sized deciduous trees; *h* -15 m, *d* -60 cm *Crown* feathery. *Bark* 6-8 mm thick, surface light grey or yellowish; spongy, aromatic. *Leaves* alternate, 12.5-22.5 cm long, simply paripinnate, leaflets 20-40, subsessile, leaflets blade 16-18 x 6-8 mm, oblong, asy-

mmetric, base unequal, margin entire; glabrous, dull bluish green, pellucid gland-dotted. *Flowers* bisexual, in terminal and axillary panicles, 6-9 mm long, cream colored. *Fruit* a capsule, 22-25 mm long, ovoid, dark brown. *Seeds* numerous, 15-18 mm long, flat, winged at one end.

Dry deciduous forests up to 600 m. South and North Kerala (Marayur, Agali).

Chukrasia tabularis A. Jussieu in Mem. Mus. Par. 19: 251. 1830 (as '*Chickrassia*'); Bourdillon, For. Trs. l'ravancore 80. 1908; Gamble, Fl. Pres. Madras 1: 133. 1957 -*Mal.*: Chuvanna akil (Fam.: Meliaceae).

Large trees; *h* -36 m, *d* -1.5 m. *Bark* thick, dark brown, deeply cracked. *Leaves* alternate, 30-45 cm long, simply imparipinnate, leaflets 10-20, subopposite, petiolules 6-10 mm long, leaflet blade 5-12.5 x 3.7-6.2 cm, obliquely ovate, tip acuminate, base asymmetric, margin entire, lateral nerves 6-7(-8) pairs; pubescent beneath. *Flowers* bisexual, in terminal panicles, ca. 20 mm across, yellowish white. *Fruit* a capsule, 3.7-5 cm long, ovoid, dark brown. *Seeds* many, flat, winged below.

Sporadic in the semievergreen and moist deciduous forests. between 300-1,300 m. Throughout Kerala.

Cinnamomum malabaricum [Burmam f) Blume, Rijr. 568. 1825. *Syn.*: *Lau-*

rus malabathrum Rurmann f., Fl. Indica 92. 1768. *Cinnamomum iners* sensu Gamble, Fl. Madras 2: 857. 1957, non Reinwardt ex Blume, 1825.

Medium sized trees: *h* -15 m. **Bark** surface reddish brown: blaze reddish, aromatic. *Leaves* opposite, rarely subopposite, simple, blade 20-28 x 6-8 cm, narrowly elliptic, triply nerved from base, lateral ribs reaching to the tip, intercostae scalariform; glabrous, highly aromatic when bruised. *Flowers* bisexual, in axillary and terminal paniculate cymes.

Evergreen and semievergreen forests below 1,000 m. Throughout Kerala.

Cinnamomum verum J. S. Presl, Rostl. 2: 36, 37-44, t. 7. 1825. *Syn.*: *Cinnamomum zeylanicum* Garcke ex Blume, Bijdr. 586. 1825; Bourdillon, For. Trs. Travancore 266. 1908; Gamble, Fl. Pres. Madras 2: 857. 1957 -*Mal.*: Edana, Karuva, Vazhanna (Fam.: Lauraceae).

Moderate sized trees; *h* -24 m, *d* -60 cm. **Bark** 8-10 mm thick surface brown, rough, cracks mostly vertical; semifibrous; blaze creamy pink. *Leaves* subopposite or opposite, simple. petioles 12-25 mm long, blade 7-25 x 3-10 cm, ovate or ovate-elliptic. tip shortly acuminate, base obtuse, rounded or narrowed, margin entire, 3-5 ribbed from a little above the base, side ribs ending 3/4 th up, intercostae reticulate; glabrous, coriaceous, shining above. *Flowers* bisexual, in terminal and axillary

panicles, 3-6 mm long, pale yellow. **Fruit** a berry, 16-18 mm long, cylindrical, oblong-ovoid, bright blue, surrounded by the enlarged perianth.

Evergreen forests above 900 m.

Cleidion javanicum Blume, Bijdr. 613. 1825; Bourdillon, For. Trs. Travancore 308. 1908; Gamble, Fl. Pres. Madras 2: 927. 1957 -*Mal.*: Yellari (Fam.: Euphorbiaceae).

Medium sized evergreen monoecious or dioecious trees: *h* -20 m, *d* -60 cm. **Bark** 5-6 mm thick, surface greenish white, smooth. *Leaves* alternate, clustered at the tips of branchlets, simple, petiole 2.5-7 cm long, swollen at the base, blade 7.5-20 x 2.5-7.5 cm tip acuminate, base acute and with 2 glands, margin distantly serrate lateral nerves 4-6 pairs; glabrous. *Flowers* pale green, male in racemes, 5-6 mm across, female solitary. **Fruit** a capsule, 10-12 x 12-25 mm, broader than long, didymous. **Seed** 1, 10-12 mm across, round, grey-black.

A less common tree in the evergreen and semievergreen forests up to 900 m. Throughout Kerala.

Cleistanthus collinus (Roxburgh) Bentham ex Hooker f. Fl. Brit. India 5: 274. 3887; Gamble, Fl. Pres. Madras 2: 897. 1957. *Syn.*: *Cluvtia collina* Roxburgh, Pl. Coast Coromandel t. 169. 1802 (Fam.: Euphorbiaceae).

Moderate sized deciduous trees. **Bark** surface dark brown or nearly black, rough, exfoliations

subrectangular or subcircular; blaze red. *Leaves* alternate, bifarious, simple, petioles 3-4 mm long, blade 5-11.5 x 2.5-7.5 cm, elliptic, obovate or orbicular, tip retuse or round, base obtuse, lateral nerves 5-8 pairs; glabrous. *Flowers* yellowish green, in axillary fascicles. *Fruit* a capsule, 2-2.5 cm, ellipsoid. *Seeds* 3, globose, black.

Moist deciduous forests. Central and North Kerala.

Cochlospermum religiosum (Linnaeus) Alston in Trimen, Hbk. Fl. Ceylon 6: 14. 1931. *Syn.*: *Bombax religiosum* Linnaeus, Sp. Pl. 552. 1753. *Cochlospermum gossypium* De Candolle, Prod. Syst. Nat. Veg. 1: 527. 1824; Bourdillon, For. Trs. Travancore 15. 1908; Gamble, Fl. Pres. Madras 1: 36. 1957 -*Mal.*: Appa kudaka, Parapoola (Fam. :Cochlospermaceae).

Small deciduous trees: *h* -10 m, *d* -30 cm. *Bark* 20-25 mm thick, surface dark grey; fibrous. *Leaves* alternate, simple, 7.5-20 cm long, palmately 3-5 lobed, base open sinuate, lobe tips acuminate, lobe margins crenate-serrate, palmately 5-7 nerved; glabrous above, pubescent beneath. *Flowers* bisexual, in terminal panicles, 7.5-10 cm across, bright yellow. *Fruit* a capsule, 7.5 cm diam., ovoid, brown. *Seeds* 6 mm long, black, curved, embedded in white cotton.

Dry and moist deciduous forests up to 300m. Throughout Kerala.

Cordia dichotoma Forster f., Prod. 18. 1786. *Syn.*: *Cordia obliqua* Willdenow, Phytogr. 4: t. 4. 1794; Gamble, Fl. Pres. Madras 2: 623. 1957. *Cordia myxa* sensu Bourdillon, For. Trs. Travancore 272. 1908 -*Mal.*: Viri (Fain.: Boraginaceae).

Medium sized trees; *h* -10 m, *d* -30 cm. *Bark* 13-18 mm thick surface grey or brown, rough, shallowly furrowed, blaze white, turning dark brown. *Branchlets* drooping. *Leaves* alternate, simple, petiole 3-4 cm long, blade 12.5 x 3.7-8 cm, ovate, suborbicular, tip obtuse, base often cordate, margin entire or crenate, palmately 3-5 nerved from the base. *Flowers* bisexual, in terminal corymbs, white. *Fruit* a drupe, 12-25 mm long, ovoid, yellowish brown.

Occasional in moist and dry deciduous forests, Throughout Kerala.

Cordia wallichii G. Don, Gen. Syst. 4: 379. 1837; Gamble, Fl. Pres. Madras 2: 624. 1957 (Fam.: Boraginaceae).

Moderate sized deciduous trees. *Leaves* alternate, simple, petioles 5 cm long, blade 10-15 cm in diam., ovate-orbicular, tip obtuse or slightly acute, base truncate or cordate, margin entire, 3-5 nerved from base; densely woolly beneath. *Flowers* bisexual, in lax cymes.

Moist deciduous forests. Central arid North Kerala.

Crateva magna (Loureiro) De Candolle, Prod. Syst. Nat. Veg. 1: 243. 1824. *Syn.*: *Capparis magna* Loureiro,

Fl. Cochinchin. 1: 331. 1790. *Crateva nurvala* Hamilton in Trans. Linn. Soc London 15: 121. 1827; Bourdillon, For. Trs. Travancore 13. 1908. *Syn.*: *Crateva religios* sensu Gamble, Fl. Pres. Madras 1: 34. 1957, non Forster -*Mal.*: Neer mathalam (Farn.: Cappariaceae).

Small deciduous trees; *h* -10 m, *d* -30 cm. *Bark* 2-3 mm thick, surface grey, smooth, longitudinally wrinkled. *Leaves* alternate, trifoliolate, rachis 8-10 cm long, leaflets 6-15 x 3-6 cm, ovate-lanceolate, tip acuminate, base acute, margin entire, lateral nerves 9-12 pairs. *Flowers* bisexual, in terminal Corymbs, 4-5 cm across, yellowish white, often tinged with purple. *Fruit* a berry, 4-5 cm long, ovoid, pale brown, pulpy.

Sporadic along banks of streams at low elevations. Throughout Kerala.

Croton malsbaricus Beddome, Ic. Pl. Indiae Orient. t. 181. 1874; Bourdillon, For. Trs. Travancore 296. 1908; Gamble, Fl. Pres. Madras 2: 919. 1957 -*Mal.*: Pamparam (Fam.: Euphorbiaceae).

Medium sized trees: *h* 10-20 m, *d* 30-45 cm. *Leaves* alternate, simple, stipules 12-18 mm long, scarious, petioles 5-12.5 cm long, blade 7.5-15 x 3.7-7.5 cm, rhomboid-ovate, tip acuminate, base cuneate, margin entire, 3-nerved from base; glabrous above, with stellate silvery lepidote scales below. *Flowers* unisexual, in erect racemes, 5-6 mm across, white.

Fruit a capsule, 2.5 cm long, obovuid.

Evergreen and semievergreen forests between 500-1,200 m. Throughout Kerala.

Cryptocarya bourdillonii Gamble in Kew Bull. 1925: 127. 1925 *et* Fl. Pres. Madras 2: 853. 1957 (Fam.: Lauraceae).

Large evergreen trees. *Bark* 10-12 mm thick, surface brown, smooth. *Leaves* alternate, simple, petioles 20-25 mm long, blade 5-20 x 3.5-10 cm, elliptic or elliptic-oblong, tip acuminate, base rounded, margin entire, midrib impressed, lateral nerves 9-12 pairs, intercostae subparallel: glabrous, glaucous beneath. *Flowers* bisexual, in axillary panicles, small. *Fruit* a berry, 10-15 mm across, globose, black.

Evergreen forests between 150-1,200 m. South Kerala.

Cryptocarya lawsonii Gamble in Kew Bull. 1925: 127. 1925 *et* Fl. Pres. Madras 2: 853. 1957 (Fam.: Lauraceae).

Lofty trees. *Leaves* alternate, simple, petioles 10-12 mm long, blade 7.5-12.5 x 2.5-5 cm, elliptic-oblong, tip obtuse or emarginate, base acute, margin entire, midrib impressed, lateral nerves 6-8 pairs, intercostae subparallel, reticulations areolate; glabrous, glaucous beneath. *Flowers* bisexual, in terminal or axillary panicles. *Fruit*; a berry, 30-37 x 15-18 mm ovoid, block.

Evergreen forests above 1,500 m. South Kerala (Munnar).

Cryptocarya stocksii Meissner in De Candolle, Prod. Syst. Nat. Veg. 15 (1): 71. 1864; Bourdillon, For. Trs. Travancore 262. 1908; Gamble, Fl. Pres. Madras 2: 853. 1957 (Fam.: Lauraceae).

Large trees; *h* -18 m, *d* -45 cm. *Leaves* alternate, simple, petioles 5-6 mm long, blade 6.5-10 x 3-8.5 cm, oblong, tip obtuse, base obtuse or emarginate, margin entire, often reflexed, lateral nerves 5-8 pairs, midrib and nerves impressed; glabrous. *Flowers* bisexual, in small panicles, 5-6 mm long, yellow. *Fruit* a drupe, 6-8 mm long, ovoid, dull purplish black.

Evergreen forests between 1,200-1,500 m. Throughout Kerala.

Cullenia exarillata Robyns in Bull. Jard. Bot. Nat. Belgium 40: 249. 1970. *Syn.*: *Cullenia excelsa* Wight, Ic. Pi. Indiae Orient. tt. 1761, 1762. 1851; Bourdillon, For. Trs. Travancore 42. 1908; Gamble, Fl. Pres. Madras 1: 73. 1957 -*Mal.*: Mullan chakko (Fam.: Bombacaceae).

Large evergreen trees: *h* 30-40 m, *d* 60-75 cm. Crown conical. *Bole* straight, buttressed. *Bark* 10-15 mm thick, surface grey, mottled with white, smooth; outer bark 1-2 mm thick, dead, inner bark fibrous, pinkish red, turning more reddish. *Branches* horizontal. Young *shoots* covered by peltate lepidote scales. *Leaves* alternate, bifarious, simple,

petioles 2-2.5 cm long, blade 7.5-15 x 2.5-5 cm, oblong-lanceolate, tip acuminate, base round or obtuse, margin entire, lateral nerves 12-18 pairs or more, very thin, patent, secondary laterals numerous: glabrous, covered with orange peltate scales beneath. *Flowers* bisexual, in fascicles on older branches, 3-3.8 cm long, brownish white. *Fruit* a capsule, 10-12 cm across, globose, spinous. *Seeds* 8-10, 4-4.5 x 2-2.5 cm, deep brown.

Evergreen forests between 700-1,600 m. Throughout Kerala.

Cyathocalyx zeylanicus Champion ex Hooker f. et Thomson, Fl. Indica 1: 127. 1855; Bourdillon, For. Trs. Travancore 4. 1908; Gamble, Fl. Pres. Madras 1: 9. 1957 (Fam.: Annonaceae).

Medium sized evergreen trees; *h* -12 m, *d* -15 cm. *Bark* surface dark, smooth. *Branchlets* drooping. *Leaves* alternate, simple, petioles ca. 12 mm long; blade 12.5-25 x 5-7.5 cm, lanceolate, tip acuminate, base acute, lateral nerves 8-12 pairs; glabrous. *Flowers* bisexual, in fascicles, 1-3 together, 5-6 cm long, pale green. *Fruit* a berry, ovoid. *Seeds* 6-8.

Evergreen forests up to 1,000 m. Throughout Kerala.

Cyclostemon confertiflorus Hooker f., Fl. Brit. India 5: 341. 1887; Gamble, Fl. Pres. Madras 2: 911. 1957 [Fam.: Euphorbiaceae).

Large dioecious trees. *Leaves* alternate, simple, petioles 6-8 mm long, blade 20 x 7 cm, oblong or elliptic-oblong, tip obtusely acuminate, base symmetric or not, margin entire or distantly serrate, lateral nerves 8-10 pairs. *Flowers* in clusters. *Fruit* a drupe, large, yellow.

Evergreen forests. Throughout Kerala.

Cynometra beddomei Prain in J. Asiat. Soc. Bengal 66(2): 478. 1897; Gamble, Fl. Pres. Madras 1: 293. 1957 (Fam.: Caesalpinaceae).

Large trees. *Leaves* alternate, simply paripinnate, rachis 2-3.5 cm long, leaflets 3 pairs, 6-8 x 2.5-3 cm, lowest pair smallest, 2-5 cm long, obliquely obovate-oblong, unequal sided, tip obtusely acuminate and emarginate, margin entire, lateral nerves 6-8 pairs; glabrous. *Flowers* bisexual, in racemes, 5-6 mm long.

Evergreen forests Confined to North Kerala.

Cynometra bourdillonii Gamble in Kew Bull. 1908: 446. 1908 et Fl. Pres. Madras 1: 293. 1957 (Fam.: Caesalpinaceae).

Medium sized trees. *Leaves* alternate, simply paripinnate, stipules caducous, rachis 3-4 cm long, leaflets 3 pairs, 2.5-3.7 x 1-1.2 cm, all pairs similar, obovate, halves dissimilar, tip emarginate, base cuneate, margin entire, lateral nerves 6-7 pairs; glabrous,

Flowers bisexual, in axillary fascicles. *Fruit* a pod, 12-13 mm across, reniform-globose. *Seed* 1.

Evergreen forests at ca. 200 m. South Kerala.

Cynometra iripa Kostelezky, Allg. Med. Pharm. Fl. 4: 1341. 1835. *Syn.*: *Cynometra mimosoides* sensu Gamble Fl. Pres. Madras 1: 293. 1957 -*Mal.*: *Iripa* (Fam.: Caesalpinaceae).

Small to moderate sized trees; *h* 8-10 m. *Leaves* alternate, simply paripinnate, rachis 10-13 mm long, leaflets 2-4, 2.5-9 x 2-4.5 cm. petiolules ca. 1 mm long, leaflet blade elliptic to obovate-oblong, tip round and emarginate, margin entire, lateral nerves 5-7 pairs. *Flowers* bisexual, in racemes. 2-3 mm long. *Fruit* a pod, ellipsoid, with an apicomarginal beak, rugose.

A scarce tree in the evergreen forests up to 500 m South Kerala

Cynometra travancorica Beddome, Fl. Sylv. 3: t. 316. 1873; Bourdillon, For Trs. Travancore 127. 1908; Gamble, Fl. Pres. Madras 1: 293. 1957 (Fam.: Caesalpinaceae).

Large evergreen trees; *h* -20 m, *d* -80 cm *Bole* shortly buttressed. *Bark* 3-4 mm thick, surface reddish brown smoothish, lenticellate: blaze creamy, yellow with pink tinge. *Leaves* alternate, 2-foliolate, rachis 3-5 mm long, leaflets 8-12 x 2-3 cm, unequal sided, tip acuminate, base asymmetric, margin entire, lateral nerves 4-6 pairs; glabrous. *Flowers* bisexual, in

axillary racemes, 6-8 mm across, rosy white. *Fruit* a pod, 2.5-3 cm long, flat semicircular

Evergreen forests between 500-900 m. Throughout Kerala: but nowhere common.

Dalbergia lanceolaria Linnaeus f., Suppl. Pl. 316. 1781; Bourdillon, For. Trs. Travancore 118. 1908 Gamble, Fl. Pres. Madras 1: 270. 1957 -*Mal.*: Pulari (Fam.: Fabaceae)

Large deciduous trees; *h* -15 m, *d* -45 cm. *Bark* 15-25 mm thick, surface grey-brown rough: fibrous: blaze yellow, turning to brownish yellow. *Leaves* alternate, simply imparipinnate, stipules 12-18 mm long, rachis 12.5-17.5 cm long, leaflets 10-17, stipules absent, petiolules 5-6 mm long, leaflet blade 2.5-3.7 x 1.8-2.5 cm, ovate-oblong, tip obtuse, lateral nerves 5-7 pairs, very thin, ascending; glabrous, glaucous beneath. *Flowers* bisexual, in loose axillary panicles, 8-9 mm long, purplish white. *Fruit* a pod, 55-62 x 10-12 mm. *Seeds* 1-3, 7-8 mm long, compressed.

Moist deciduous forests at low elevations. Throughout Kerala.

Dalbergia latifolia Roxburgh, Pl. Coast Coromandel t. 13. 1799; Bourdillon, For. Trs. Travancore 117. 1908; Gamble, Fl. Pres. Madras 1: 270. 1957 -*Mal.*: Kari veeti (Fam.: Fabaceae).

Large deciduous trees; *h* -25 m, *d* -1.2m. *Crown* ovoid. *Bark* 10-15 mm thick, surface grey, rough:

fibrous: blaze yellow, turning brown. *Leaves* alternate, simply imparipinnate, stipules small, caducous, rachis 7.5-12.5 cm long, leaflets 3-7, alternate, petiolules very short, leaflet blade 2.5-6.2 x 2.5-6.2 cm, orbicular, tip obtuse or emarginate, base acute or attenuate, lateral nerves 5-7 (-10) pairs: glabrous, glaucous beneath; young leaves green. *Flowers* bisexual, in axillary panicles, 5-6 mm long, white. *Fruit* a pod, 5-7.5 x 1.5-1.8 cm, oblong-lanceolate, tip round. *Seeds* reniform, brown,

Semievergreen and moist teak bearing forests up to 1,200 m. Throughout Kerala.

Dalbergia paniculata Roxburgh, Pl. Coast Coromandel t. 134. 1799; Bourdillon, For. Trs. Travancore 119. 1908; Gamble, Fl. Pres. Madras 1: 270. 1957 -*Mal.*: Painganni, Vettu tholi (Fam.: Fabaceae).

Medium sized trees; *h* -18 m, *d* -45 cm. *Bark* 2-3 mm thick, surface grey, smooth. *Leaves* alternate, simply imparipinnate, stipules lanceolate, caducous, rachis 15-17.5 cm long, leaflets 9-13 alternate. stipules absent, leaflet blade 15.25 x 32-16 mm, oblong, tip obtuse or emarginate, base round: pubescent along the midrib. *Flowers* bisexual, in terminal panicles, 7-8 mm long, bluish white. *Fruit* a pod, 25-50 x 10-12 mm, narrowed at both ends. *Seeds* 1-2.

Dry deciduous forests up to 450 m.

Dalbergia sissoides Graham *ex* Wight *et* Arnott, Prod. 265. 1834; Bourdillon, For. Trs. Travancore 118. 1908; Gamble, Fl. Pres. Madras 1: 270. 1957 -*Mal.*: Eetti, Vetti [Fam.: Pabaceae).

Large deciduous trees; *h* -18 m, *d* -60 cm **Bark** 15-20 mm thick, surface grey to pale brown, smooth, exfoliations small, irregular; fibrous; blaze concentrically striated, cream coloured, turning to dull yellow. **Leaves** alternate simply imparipinnate, stipules small, caducous, rachis 12.5-15 cm long, leaflets 7-10, alternate stipels absent, petiolules 6-8 mm long, leaflet blade 3.7-6.2 x 1.8-3 cm, oblong or suborbicular, obovate, tip acute or rarely obtuse, base more or less cuneate, margin entire, lateral nerves 4-7 pairs; glabrous; young leaves pale green. **Flowers** bisexual, in small terminal panicles, 7-8 mm long, white. **Fruit** a pod, 5-7.5 x 1-1.2 cm tapering to both ends. **Seeds** reniform, pale brown.

Moist deciduous and semi-evergreen forests up to 1,500 m. Throughout Kerala.

Daphniphyllum neilgherrense (Wight) Rosenthal in Engler, Pflanzenreich, Daphniphyllac. 7. 1919; Fl. Pres. Madras 2: 917. 1957. *Syn.*: **Goukia neilgherrense** Wight, Ic. Pl. Indiae Orient. tt. 1878, 1879. 1852. **Daphniphyllum glaucescens** Mueller-Aargau, in De Candolle, Prod. Syst. Nat. Veg. 16 (1): 3. 1869; Bourdillon, For. Trs. Travancore 327. 1908 (Fam.: Euphorbiaceae).

Medium sized dioecious or monoecious trees: *h* -15 m, *d* -30 cm. **Bark** 2-3 mm thick, surface brown; outer bark somewhat corky, inner bark black. **Leaves** alternate, clustered at the tips of branchlets, simple, petioles 2-5 cm long, red, blade 5-10 x 2.5-5 cm, obovate-oblong, tip round, base tapering, margin entire, lateral nerves 4-5 pairs; glaucous beneath. **Flowers** yellowish green, in axillary racemes. **Fruit** a drupe, 10-12 mm long, ovoid, greenish red.

Evergreen forests between 1,200-1,500 m. Confined to South Kerala.

Dialium travancoricum Bourdillon in Indian For. 30: 243. 1904 *et* For. Trs. Travancore 127. 1908; Gamble, Fl. Pres. Madras 1: 286. 1957 -*Mal.*: Malam puli (Fam.: Caesalpinaceae).

Large evergreen trees; *h* -30 m, *d* -90 cm **Bark** 2-3 mm thick, surface pale brown, smooth. **Leaves** alternate, 10-15 cm long, simply imparipinnate, rachis 10-15 cm long, leaflets 7-11, subopposite or alternate, shortly stalked, blade 5-7.5 x 1.8-2.5 cm, ovate, tip caudate acuminate, base rounded, margin entire; glabrous. **Flowers** bisexual, in axillary or terminal panicles, 2-3 mm long, brown. **Fruit** a pod, 2-2.2 cm broad. **Seed** 1, compressed, pale brown.

A very rare tree reported to occur in the evergreen forests at Ponmudi in South Kerala.

Dillenia pentagyna Roxburgh, Pl. Coast Coromandel 1: t. 20. 1795; Bourdillon, For. Trs. Travancore 1. 1908; Gamble, Fl. Pres. Madras 1: 6. 1957 -*Mal.*: Malam punna, Vazhapunna (**Fam.**: Dilleniaceae).

Deciduous trees; *h* -20 m, *d* -45 cm, *Bark* 15-20 mm thick, surface grey, mottled with white, smooth; blaze pink-red. *Leaves* alternate, clustered at the tips of branchlets, simple. petioles sheathing, winged, blade 30-45 cm long, oblong-lanceolate, margin serrate, lateral nerves numerous, close and parallel. *Flowers* bisexual, on leaflets branches, 2.5 cm across, yellow. *Fruit* a berry, 10-12 mm across, globose. *Seeds* numerous, minute.

Moist deciduous forests up to 900 m. Throughout Kerala.

Dimocarpus longan Loureiro, Fl. Cochinchin. 233. 1970, *Syn.*: *Nephelium longana* Cambessedes in Mem. Mus. Hist. Nat. Paris 18: 30. 1829; Bourdillon, For. Trs. Travancore 98. 1908; Gamble, Fl. Pres. Madras 1: 180. 1957 -*Mal.*: Chem punna (**Fam.**: Sapindaceae).

Large evergreen trees; *h* -18 m, *d* -45 cm *Bark* surface greyish brown, smooth. *Leaves* alternate, 15-45 cm long, simply paripinnate, leaflets 5-11, subsessile, blade 5-20 x 2.5-6 cm, oblong-lanceolate, tip acute or acuminate, base oblique, margin entire, lateral nerves 14-16 pairs; shining above, glaucous beneath. *Flowers* polygamous, in axillary and terminal panicles, 5-6 mm across, yellowish white.

Fruit of 1-2 of cocci, 15-18 mm across, globose, reddish brown. *Seed* 1, black.

Evergreen and semievergreen forests up to 1,500 m. Throughout Kerala.

Diospyros affinis Thwaites, Enum. Pl. Zeylan. 179. 1860; Bourdillon, For. Trs. Travancore 220. 1908; Gamble, Fl. Pres. Madras 2: 544. 1957 (**Fam.**: Ebenaceae).

Medium sized dioecious trees. *Bole* straight, fluted, buttress 1-2 m high. *Bark* surface black, peeling off in patches, conspicuously fissured and ridged, ridges wavy, up to 4 cm wide. *Leaves* alternate, simple, petioles 6-10 mm long, flattened, blade 3.5-8 x 2-4 cm, oblong tip obtuse, base rounded, margin entire lateral nerves 8-10 pairs, arcuate at the margins; glabrous, shining, coriaceous. *Flowers* unisexual, male 7-8 mm across, in clusters of 3-7, female larger, solitary. *Fruit* a berry, 2.5 cm across, globose. *Seeds* 18 mm long, dark brown.

Evergreen forests.

Diospyros assimilis Beddome in Madras For. Rep. 1866-1867: 20, t. 1. 1866-1867; Bourdillon, For. Trs. Travancore 221. 1908; Gamble, Fl. Pres. Madras 2: 545. 1957 -*Mal.*: Karu (**Fam.**: Ebenaceae).

Large evergreen dioecious trees: *h* -20 m, *d* 60-75 cm. *Bark* 4-6 mm thick, surface black, mottled with green and white.

cracked: outer bark 1 mm thick, dark black, dead, inner bark 4-5 mm thick, brittle, yellowish brown. *Leaves* alternate, simple, petioles 5-6 mm long, blade 10-15 x 3.5-6 cm, elliptic-oblong, tip acuminate, base rounded, lateral nerves 4-6 pairs, lowest pair usually opposite; membranous to chartaceous. *Flowers* unisexual, pale yellow, male 7-8 mm across, clustered, female larger, solitary. *Fruit* a berry, globose.

Evergreen forests between 300-900m. Throughout Kerala.

Diospyros bourdillonii Brandis, Indian Trs. 435, 713. 1906; Bourdilloii, For. Trs. Travancore 224. 1908; Gamble, Fl. Pres. Madras 2: 547. 1957 -*Mal.*: Kari (Fam.: Ebenaceae).

Large dioecious trees; *h* 20-25 m, *d* 50-60 cm. *Bark* 6-8 mm thick, surface black, rough: brittle; blaze yellowish brown. *Young shoots* strigose. *Leaves* alternate, simple, petioles 5-6 mm long, blade 7-15 x 2.5-5 cm, oblong-lanceolate, tip shortly acuminate, lateral nerves 6-8 pairs, intercostae subparallel: glabrous. *Flowers* unisexual, white, male in rusty tomentose axillary cymes, 10-12 mm long, female in compound cymes, larger. *Fruit* a berry, 7.5 cm across, globose.

Evergreen forests up to 750 m. Throughout Kerala.

Diospyros buxifolia (Blume) Hiern in Trans. Camp. Phil. Soc. 12: 218.

1873. *Syn.*: *Leucoxylum buxifolium* Blume, Bijdr. 1169. 1827. *Diospyros microphylla* Beddome, Ic. Pl. Indiae Orient. t. 133. 1874: Bourdillon, For. Trs. Travancore 217. 1908; Gamble, Fl. Pres. Madras 2: 546. 1957 -*Mal.*: Thovara kari (Fam.: Ebenaceae).

Large dioecious trees: *h* -30 m, *d* -75 cm. *Bole* buttressed. *Bark* 5-6 mm thick, surface blackish grey, mottled with white, brittle; blaze reddish brown. *Branchlets* yellow-pubescent. *Leaves* alternate, simple, bifarious, petioles 2-3 mm long, blade 1-3 x 0.6-2 cm, elliptic-ovate, tip acute, base acute; glabrous above, pubescent beneath. *Flowers* unisexual, 4-merous, white, male in axillary cymes, 2-3 mm, female solitary, 7-8 mm. *Fruit* a berry. 15-18 x 10-12 mm, ovoid, purple. *Seeds* 1-2.

Evergreen and semirvergreen forests up to 700 m. Throughout Kerala.

Diospyros candolleana Wight, Ic. Pl. Indiae Orient. tt. 1221, 1222. 1848: Bourdillon, For. Trs. Travancore 223. 1908; Gamble, Fl. Pres. Madras 2: 547. 1957 -*Mal.*: Kari (Fam.: Ebenaceae).

Medium sized dioecious trees: *h* -15 m, *d* -30 cm. *Bark* 5-6 mm thick, surface greenish black, smooth. *Leaves* alternate, bifarious, simple, petioles 10-12 mm long: blade 7-17 x 3-7 cm, oblong, tip shortly acuminate, base obtuse or subtruncate, margin entire, nerves inconspicuous, 9-11 pairs; glabrous. *Flowers* unisexual, pale yellow,

male in dense fascicles, 7-8 mm across, female in sessile axillary clusters, 10-12 mm across. **Fruit** a berry, 2.5 cm long, conical, green, calyx not enlarged, woody.

Evergreen forests up to 500 m. South and Central Kerala.

Diospyros ferrea [Willdenow] Bakh-
uizen-Brink in Gard. Bull. S. S. 7:
162. 1933. **Syn.:** *Fhretia ferrea*
Willdenow, Phytogr. 1:4, t. 2, fig.
2. 1794. *Maba buxifolia* (Roxburgh)
Persoon, Syn. Pl. 2: 606. 1807;
Boordillon, For. Trs. Travancore
2 13. 1908; Gamble, Fl. Pres. Madras
2: 539. 1957 [Farn.: Ebenaceae].

Medium sized trees; *h* -12 m,
d -30 cm. **Bark** surface greyish
black. **Leaves** alternate, bifarious,
simple, petioles 10-12 mm long,
blade 6-24 x 8-16 mm, obovate-
oblong, tip rounded or emarginate,
base tapering, margin entire, revolute;
glabrous.

Evergreen forests at ca. 600 m.
South Kerala (Aryankav).

Diospyros foliolosa Wallich, Num.
List Dried Plts. E. India Co. Mus.
(Cat.) no. 4143. 1831; Bourdillon,
For. Trs. Travancore 223. 1908;
Gamble, Fl. Pres. Madras 2: 544.
1957 (Fam.: Ebenaceae).

Moderate sized dioecious
trees; *h* -18 m; *d* -45 cm. **Bark**
surface dark brown, smooth. **Leaves**
alternate, simple, petioles 4-6 mm
long, blade 5-10 x 2-3.5 cm, narrowly
lanceolate or oblong, tip acuminate,
base narrowed, nerves 4-5 pairs; glabrous,

shining above. **Flowers** unisexual,
bright yellow, male 6 mm, female
solitary, larger than the male. **Fruit**
a berry, 15-16 mm across, globose,
calyx enlarged and foliaceous.

Evergreen forests up to 900m.
South Kerala.

Diospyros insignis Thwaites, Enum.
Pl. Zeylan. 180. 1860; Bourdillon,
For. Trs. Travancore 226. 1908;
Gamble, Fl. Pres. Madras 2: 543.
1957 (Farn.: Ebenaceae).

Large dioecious trees; *h* -24 m;
d -1.2 m. **Leaves** alternate, simple,
rarely subopposite, petioles 6-8
mm long, blade 10-28 x 5-15 cm,
lanceolate-oblong, tip acuminate,
base cuneate, contracted, nerves
ca. 8 pairs; glabrous, paler beneath,
coriaceous. **Flowers** unisexual,
yellowish white, male crowded in
clusters, 10-12 mm long, female 1-3
together. **Fruit** a berry, 3-3.5 cm
across, depressed globose, calyx
enlarged to form a woody cup.

Evergreen forests at low ele-
vations. South Kerala.

Diospyros nilagirica Beddome, For.
Man. Bot. 144. 1872; Bourdillon,
For. Trs. Travancore 215. 1908;
Gamble, Fl. Pres. Madras 2: 545.
1957 -**Mal.:** Kari (Fam.: Ebenaceae).

Medium sized dioecious trees:
h -18 m, *d* -45 cm. **Bark** 10-12 mm
thick. **Leaves** alternate, simple, petioles
10-12 mm long, blade 7.5-15 x
2.5-5 cm, lanceolate or oblong-
lanceolate, tip acuminate, base
attenuate, margin entire, reflexed,

lateral nerves *ca.* 6 pairs; coriaceous, rufous tomentose when young. **Flowers** unisexual, yellowish white, male in fascicles, 10-12 mm long, female solitary. **Fruit** a berry, 2.5 cm across, globose, green.

Evergreen forests between 900-1,500 m. Confined to South Kerala.

Diospyros paniculata Dalzell in Hooker's J. Bot. Kew Gard. Misc. Inform. 4: 109. 1852; Bourdillon, For. Trs. Travancore 216. 1908; Gamble, Fl. Pres. Madras 2: 544 1957 *Mal.*: Kari, Karivella (Fam.: Ebenaceae).

Medium sized dioecious trees; *h* -15 m, *d* 30-40 cm. **Bark** 7-8 mm thick, surface black, rough. **Leaves** alternate, simple, petioles 8-10 mm long, blade 7.5-20 x 2.5-5 cm, oblong, lanceolate, tip obtusely acuminate, base rounded or obtuse, margin entire, lateral nerves 5-6 pairs; glabrous; young leaves bright yellow. **Flowers** unisexual, greenish white, male in axillary pedunculate cymes, female solitary. **Fruit** a berry, 2-5 cm long, ovoid, green.

Evergreen forests up to 900 m. Throughout Kerala.

Diospyros pruriens Dalzell in Hooker's J. Bot. Kew Gard. Misc. Inform. 4: 110. 1852; Bourdillon, For. Trs. Travancore 215. 1908; Gamble, Fl. Pres. Madras 2: 544. 1957 (Fam.: Ebenaceae).

Small dioecious trees. **Branchlets** hirsute-pubescent. **Leaves** alternate, simple, petioles 3-4 mm long, blade 10-12.5 x 5 cm, elliptic-oblong, tip acute, base rounded or cordate, fulvous hirsute beneath, membranous, lateral nerves 5-6 pairs. **Flowers** unisexual, yellowish white, male in cymes, 16-18 mm long, female solitary. **Fruit** 2.5 cm long, ovoid-conical, covered with yellow stinging hairs, calyx slightly enlarged.

Evergreen forests up to 900 m. Throughout Kerala.

Diospyros sylvatica Roxburgh, Pl. Coast Coromandel 3: t. 47. 1791; Bourdillon, For. Trs. Travancore 213. 1908; Gamble, Fl. Pres. Madras 2: 543. 1957 (Fam.: Ebenaceae).

Medium sized dioecious trees; *h* -18 m, *d* -30 cm. **Bark** blackish grey, thin. **Leaves** simple, alternate, petioles 5-6 mm long, flattened, blade 7-15 x 5-8.5 cm, elliptic, tip acute or acuminate, base tapering, lateral nerves *ca.* 8 pairs, very thin; glabrous. **Flowers** unisexual, white, 2-3 mm long, male 7-35 together in cymes, female solitary or 3 together. **Fruit** a berry, 16-18 mm across, globose, dark grey, fruiting calyx enlarged, flat, foliaceous.

Evergreen forests between 600-1,500 m. Throughout Kerala.

Dipterocarpus bourdillonii Brandis in Hooker. Ic. Pl., ser 4, t. 2403. 1896; Bourdillon, For. Trs. Travancore 32. 1908; Gamble, Fl. Pres. Madras

1: 58. 1957 -**Mal.**: Karanjali, Karuths anjali (Fam.: Dipterocarpaceae).

Large evergreen trees; **h** -45 m, **d**-1.2 m. **Bark** surface pale, exfoliating in thick irregular flakes. **Young shoots** tomentose. **Leaves** alternate, simple, stipulate, stipules large, stipular scars annular, petioles 3.8-5 cm long, swollen at the tip, blade 20-45 x 12.5-25 cm, ovate, tip acuminate, base round or subcordate, margin entire or wavy, coriaceous, lateral nerves 12-15 pairs. **Flowers** bisexual, in short racemes, 4-5 x 3.7 cm, white. **Fruit** a nut, 2.5 cm across, globose, 2-winged, calyx tube 5-angular.

Evergreen forests at low elevations. South Kerala.

Dipterocarpus indicus Beddome, Fl. Sylv. t. 94. 1873; Bourdillon, For. Trs. Travancore 32. 1908; Gamble, Fl. Pres. Madras 1: 58. 1957 -**Mal.**: Kal payin (Fam.: Dipterocarpaceae).

Lofty evergreen trees; **h** -35 m, **d**-1.5 m. **Bole** straight. **Crown** round. **Bark** 2-10 mm thick, surface yellowish brown, mottled with grey and white, smooth, exfoliations irregular; brittle: blaze creamy chocolate yellow. **Leaves** alternate, simple, stipules large, stipular scars annular, tomentose, petioles 2.5-5 cm long, swollen at the tip, blade 15-25 x 6-12 cm, ovate, tip acute or acuminate, base rounded or slightly cordate, margin entire, undulate, lateral nerves 10-15 pairs. **Flowers** bisexual, in small racemes, 2.5-3 cm across, white. **Fruit** a nut, 16 mm across,

globose, 2-winged, calyx tube not winged.

Evergreen arid semievergreen forests up to 900 m. Throughout Kerala.

Dolichandrone atrovirens (Roth) Sprague in Bull. Misc. Inform. Kew 304. 1919; Gamble, Fl. Pres. Madras 2: 700. 1957. **Syn.**: **Bignonia atrovirens** Heyne *ex* Roth, Nov. Pl. Sp. 284. 1821 (Fam.: Bignoniaceae).

Small deciduous trees. **Bark** 1-2 cm thick, surface brown, rough. **Leaves** opposite, simply imparipinnate, opposite, leaflets 5-7. petioles 8-16 mm long, that of the end leaflet longer, blade 2.5-7 x 3-5 cm. obovate, tip obtuse or emarginate; grey pubescent or strongly villous. **Flowers** bisexual, in corymbose inflorescences, 6-7 cm long. **Fruit** a capsule, 5 cm long, arcuate. **Seeds** membranous, winged.

Moist deciduous forests up to 900 m. South Kerala,

Donella roxburghii (C. Don) Pierre *ex* Lecomte, Fl. Gen. Indochine 3: 897. 1930. **Syn.**: **Chrysophyllum roxburghii** G. Don, Gen. Syst 4: 33. 1838; Bourdillon, For. Trs. Travancore 207. 1908; Gamble, Fl. Pres. Madras 2: 533. 1957 -**Mal.**: Atha (Fam.: Sapotaceae).

Large trees; **h** -30 m. **d** -60 cm. **Bark** surface dark grey, smooth; latex milky white. **Leaves** alternate, 5-15 x 1.8-3.7 cm, petioles 10-18 mm long, blade oblong-lanceolate, tip

acuminate, base cuneate, margin entire, lateral nerves very numerous, parallel; glabrous. **Flowers** bisexual, in axillary clusters, 2-3 mm long, greenish white. **Fruit** a berry, 3.7-5 cm. across, globose, yellowish green. **Seeds** 4-5, 16-18 mm long, brown, shining.

Evergreen forests up to 1,200 m. South Kerala.

Drypetes data (Reddome) Pax *et* Hoffmann in Engler, Pflanzenreich 81: 268. 1922. **Syn.:** *Hemicyclia elata* Beddome, Fl. Sylv. t. 279. 1872; Bourdillon, For. Trs. Travancore 289. 1908; Gamble, Fl. Pres. Madras 2: 909. 1957 (Fam.: Euphorbiaceae).

Lofty dioecious trees; *h* -30 m, *d* -60 cm. **Bole** fluted. **Bark** grey. **Leaves** alternate, simple, petioles 8-10 mm. long, blade 9-12 x 3-5 cm, lanceolate, tip acuminate, base acute, margin entire, lateral nerves 10-12 pairs; glabrous, shining. **Flowers** unisexual, 7-8 mm. across, greenish yellow, male clustered, female solitary or few together. **Fruit** a drupe, 18-24 mm long, ovoid.

Evergreen and semievergreen forests at ca. 600 m. Throughout Kerala.

Drypetes malabarica (Beddome) Airy Shaw in Kew Bull. 23: 56. 1969. **Syn.:** *Cyclostemon malabaricus* Beddome, For. Man. Bot. 199. 1873; Bourdillon, For. Trs. Travancore 291. 1908; Gamble, Fl. Pres. Madras 2: 911. 1957 (Fam.: Euphorbiaceae).

Medium sized dioecious trees.

Branchlets golden tomentose. **Leaves** alternate, simple, petioles 5-6 mm long, blade 10-22 x 3.5-6 cm, oblong, tip suddenly acuminate, base asymmetric, margin distantly serrate, lateral nerves 7-10 pairs; glabrous above, pilose beneath on the nerves. **Flowers** unisexual, 10-12 mm across, reddish yellow. **Fruit** a drupe, 25 x 16-18 mm, slightly bilobed.

Evergreen forests above 900 m. Confined to South Kerala.

Drypetes oblongifolia (Beddome) Airy Shaw in Kew Bull. 23: 57. 1969. **Syn.:** *Laneasagum oblongifolium* Beddome in Madras J. Sci., n. 9. 6: 72. 1861. *Cyclostemon macrophyllus* acut. non Blume, 1825; Bourdillon, For. Trs. Travancore 290. 1908; Gamble, Fl. Pres. Madras 2: 911. 1957 **-Mal.:** Mala payin [Fam.: Euphorbiaceae).

Large dioecious trees; *h* -24 m, *d* -75 cm. **Bole** fluted. **Bark** 10-12 mm thick, surface pale grey, mottled with green, smooth, lenticellate; brittle; blaze creamy yellow, turning yellowish brown. **Branches** horizontal. **Branchlets** slightly pubescent. **Leaves** petioles 5-6 mm long, thick, blade 8-23 x 4-6 cm, oblong-lanceolate, tip acute, margin shallowly serrate, midrib impressed above, lateral nerves 5-8 pairs, conspicuous beneath; glabrous. **Flowers** unisexual, 16-18 mm across, pale yellow, male fascicled on the old wood, female solitary, axillary. **Fruit** a drupe, ovoid, about 2 cm across.

Evergreen and semievergreen forests between 300-1,200 m. Throughout Kerala.

Drypetes travancorica (Bourdillon) Santapau *et* Jain in Indian For. 92: 643. 1966. *Syn.*: *Hemicyclia travancorica* Bourdillon, For. Trs. Travancore 329. 1908; Gamble, Fl. Pres. Madras 2: 910. 1957 (Farn.: Euphorbiaceae).

Medium sized dioecious trees; *h* -18 m, *d* -45 cm. *Bark* surface pale brown, smooth. *Leaves* petioles 5-6 mm long, blade 3.5-7.5 X 2-3.5 cm, ovate-lanceolate, tip acuminate, base asymmetric, margin dentate, lateral nerves 5-6 pairs; glabrous. *Flowers* unisexual, yellow, male in axillary clusters or on old wood, 3-4 mm across. *Fruit* a drupe, 10-12 mm long, ovoid, bright red.

A less common tree in the evergreen forests ca. 300m. Confined to South Kerala.

Drypetes venusta (Wight) Pax *et* Hoffmann in Engler, Pflanzenreich 81: 268. 1922. *Syn.*: *Astylis venusta* Wight, Ic. Pl. Indiae Orient. t. 1992. 1853. *Hemicyclia venusta* (Wight) Thwaites in Hooker's J. Bot. Kew. Gard. Misc. Inform. 7: 272. 1855; Bourdillon, For. Trs. Travancore 289. 1908; Gamble, Fl. Pres. Madras 2: 909. 1957 -*Mal.*: Vella kasavu (Fam.: Euphorbiaceae).

Small dioecious trees; *h* -12 m, *d* -45 cm. *Bole* fluted. *Bark* surface white, smooth, thin. *Branchlets*

drooping. *Leaves* alternate, simple, petioles 2-3 mm long, blade 7.5-15 x 2.5-5 cm, elliptic-oblong, tip obtusely acute, base asymmetric, one side acute, other obtuse, margin entire, lateral nerves slender; glabrous. *Flowers* unisexual, 5-6 mm across, pale yellow, male in clusters, female solitary or few together. *Fruit* a drupe, 15-18 mm long, obovoid.

Evergreen and semievergreen forests between 600-1,500 m. Confined to South Kerala.

Dysoxylum binectariferum Roxburgh) Hooker f. ex Beddome in Trans. Linn. Soc. London 25: 212. 1866; Gamble, Fl. Pres. Madras 1: 127. 1957. *Syn.*: *Guarea binectarifera* Roxburgh, Fl. Indica 2: 240. 1832 (as '*binertarifera*') (Fam.: Meliaceae).

Trees. *Branchlets* 5-8 mm thick. *Leaves* alternate, 20-45 cm long, simply imparipinnate, leaflets 5.9, alternate, petiolules 4-10 mm long. leaflet blade 6-17.5 x 2.5-7.5 cm, obliquely ovate-lanceolate, tip acuminate, base asymmetric, acute, margin entire, lateral nerves 6-9 pairs. *Flowers* bisexual, in panicles, 7-9 mm long, white. *Fruit* a capsule, 5-7 mm long, red. *Seeds* 4, dark purple.

Evergreen forests up to 1,000 m. Throughout Kerala.

Dysoxylum ficiforme (Wight) Gamble, Fl. Pres. Madras 1: 178. 1919 *et* 1: 127. 1957. *Syn.*: *Amoora ficiformis* Wight, Ill. Indian Bot. 147. 1840

(in note under *Dysoxylum binectariferum*). *Dysoxylum purpureum* Bourdillon in J. Bombay Nat. Hist. Soc. 12: 349. 1900 *et* For. Trs. Travancore 74. 1908 -*Mal.*: Karakil, Puvil akil (Fam.: Meliaceae).

Large evergreen trees: *h* -30 m. *Bark* surface pale, smooth. *Leaves* alternate, 30-45 cm long, simply imparipinnate, leaflets opposite or alternate, petiolules 8-10 mm long, leaflet blade 12.5-20 x 3.5-7.5 cm, lanceolate, tip acuminate, base asymmetric, margin entire, lateral nerves 12-18 pairs, secondary laterals present; glabrous. *Flowers* bisexual, in panicles. *Fruit* a capsule, purple.

Evergreen forests between 300-600 m. South Kerala.

Dysoxylum malabaricum Beddome *ex* Hiern in Hooker f., Fl. Brit. India 1: 548. 1875; Bourdillon, For. Trs. Travancore 72. 1908; Gamble, Fl. Pres. Madras 1: 128. 1957 -*Mal.*: Vella akil (Fam.: Meliaceae).

Large trees; *h* -35 m, *d* -1.5 m. *Bark* 5-8 m m thick, surface pale grey, roughish, verrucose, lenticels warty, fissured: blaze aromatic, outer bark dead, corky, inner bark creamy yellow. *Leaves* alternate, 30-45 cm long, simply imparipinnate, rachis angular, leaflets 7-11, 12.5-22.5 x 3.7-5 cm, opposite or alternate, petiolules 5-6 mm long, glandular at the axils, leaflet blade lanceolate, tip acuminate, base asymmetric, oblique, margin entire, lateral nerves 9-18(-20) pairs: glabrous. *Flowers* bisexual, in axillary panicles, 5-6

mm across, greenish yellow. *Fruit* a capsule, 5-7.5 cm long, pear-shaped, yellow. *Seeds* 3-4, reddish brown.

Evergreen and semievergreen forests up to 900 m. Throughout Kerala.

Elaeocarpus munronii (Wight) Masters in Hooker f., Fl. Brit. India 1: 407. 1874; Bourdillon, For. Trs. Travancore 55. 1908; Gamble, Fl. Pres. Madras 1. 88. 1957. *Syn.*: *Monocera munronii* Wight, Ill. Indian Bot. 1: 84. 1840 -*Mal.*: Pungari (Fam.: Elaeocarpaceae).

Medium sized trees: *h* -20 m, *d* -45 cm. *Branchlets* sympodial. *Leaves* alternate, simple, petioles 2.5-5 cm long, slender, blade 5-7.5 x 2-2.5 cm, ovate or ovate-lanceolate, tip bluntly acuminate, base round, margin distantly serrate or subentire, lateral nerves 3-4(-5) pairs; glabrous. *Flowers* bisexual, in short drooping racemes, 10-12 mm across, white. *Fruit* a drupe, 10-12 mm long, ovoid, blue.

Evergreen forests between 600-1,800 m. Throughout Kerala.

Elaeocarpus recurvatus Corner in Gard. Bull. S. S. 10: 319, 325. 1939 [in obs.]. *Syn.*: *Elaeocarpus ferrugineus* (Wight) Beddome, Fl. Sylv. t. 112. 1871; Bourdillon, For. Trs. Travancore 54. 1908; Gamble, Fl. Pres. Madras 1: 88. 1957 (Fam.: Elaeocarpaceae).

Small trees; *h* -12 m, *d* -30 cm. *Leaves* alternate, simple, clustered

at the tips of branchlets, petioles 2.5-5 cm long, blade 7.5-15 x 4-5 cm, ovate, folded back, boat-shaped, tip acute, base acute, margin serrulate or crenate, rarely entire, lateral nerves 6-8 pairs; softly pubescent beneath, glabrous above. **Flowers** bisexual, in short axillary racemes, 12-13 mm across, white. **Fruit** a drupe, 10-12 mm long, ovoid.

Evergreen forests between 1,800-2,100 m. Confined to South Kerala (Idukki Dt.).

Elaeocarpus serratus Linnaeus, Sp. Pl. 515. 1753; Bourdillon, For. Trs. Travancore 53. 1908; Gamble, Fl. Pres. Madras 1: 88. 1957 -**Mal.**: Nalla kara, Valiya kara (Fam.: Elaeocarpaceae).

Medium sized trees: **h** -18 m, **d** -45 cm. **Bark** 8-10 mm thick, surface grey-brown, mottled with white; outer bark thin, dead, inner bark semifibrous, outer surface of the inner bark blood red. **Leaves** alternate, simple, petioles 1.2-2.5 cm long, blade 5-12.5 x 2.5-5 cm, elliptic-obovate, base tapering, crenate-serrate; glabrous above, slightly pubescent beneath. **Flowers** bisexual, in racemes, 10-12 mm across, white. **Fruit** a drupe, 2.5 cm long, ovoid, green, stone 1-seeded, pointed, tuberculate.

Evergreen forests up to 1,500 m. Throughout Kerala.

Elaeocarpus tectorius (Loureiro) Poiret in Lamarck, Encycl. Meth., Suppl. 2: 704. 1812. **Syn.**: *Craspedum*

tectorium Loureiro, Fl. Cochinchin. 399. 1790. **Elaeocarpus oblongus** sensu J. E. Smith in Rees, Cyclop. 12: n. 2, 1809; Bourdillon, For. Trs. Travancore 53. 1908; Gamble, Fl. Pres. Madras 1: 88. 1957, non Gaertner, 1788 -**Mal.**: Kattu kara, Malam kara [Fam.: Elaeocarpaceae).

Large trees; **h** -18 m, **d** -60 cm. **Leaves** alternate, simple, petioles 1.8-3.6 cm long, blade 7.5-12.7 x 5-9 cm, ovate-elliptic, glabrous. **Flowers** bisexual, in racemes, 10-12 mm across, white. **Fruit** a drupe, 3 cm across, globose, green.

Evergreen forests up to 1,800 m. Throughout Kerala.

Elaeocarpus tuberculatus Roxburgh (Hort. Bengal. 93. 1824, **nom. nud.**) Fl. Iridica 2: 594. 1832; Bourdillon, For. Trs. Travancore 54. 1908; Gamble, Fl. Pres. Madras 1: 88. 1957 -**Mal.**: Bhadraksham, Rudraksham (Paul.: Elaeocarpaceae).

Large trees; **h** -24 m, **d** -75 cm. **Bark** 10-12 mm thick, grey, mottled with white. **Leaves** alternate, clustered at the tips of branchlets, simple, petioles 1.2-2.5 cm long, stout, blade 10-30 x 7.5-12.5 cm, obovate, tip obtuse, base round, margin serrulate. lateral nerves 8-12 pairs; glabrous above, ferruginous pubescent beneath. **Flowers** bisexual, in axillary racemes, 2-2.5 cm across, white. **Fruit** a drupe, 5 cm long, ovoid, green, stones flat, 1-2 celled, tuberculate.

Evergreen and semievergreen forests up to 1,500 m; mostly along river banks. Throughout Kerala.

Elaeocarpus venustus Beddome, Fl. Sylv. t. 174. 1871; Bourdillon, For. Trs. Travancore 54. 1908; Gamble, Fl. Pres. Madras 1:89. 1957 (Fam.: Elaeocarpaceae).

Large trees; *h* -15 m, *d* -45 cm. **Leaves** alternate, simple, petioles 1.2-2 cm long, blade 7.5-10 x 4-5 cm, oblong or obovate. base narrowed, margin serrulate, with large glands on the lateral nerves; glabrous. **Flowers** bisexual, in axillary racemes, 2.5 cm across, white. **Fruit** a drupe, 5 x 2.5 cm, ovoid.

Evergreen forests between 1,000-1,200 m. Confined to South Kerala (reported from Mrithukuli Vayal and Cheemungi).

Embllica officinalis Gaertner, Fruct. 2: 122. 1791; Gamble, Fl. Pres. Madras 2: 906. 1957. *Syn.*: *Phyllanthus eniblica* Linnaeus, Sp. Pl. 982. 1753 -**Mal.**: Nelli (Fam.: Euphorbiaceae).

Medium sized deciduous trees ; *h* -15 m. *d* 30-40 cm. **Bark** 5-6 mm thick, surface grey-brown, rough, exfoliations irregular; blaze pinkish red. **Leaves** 10-12 x 2-4 mm, alternate, bifarious on short deciduous branchlets, closely overlapping, simple, subsessile, blade linear-oblong, tip subacute or mucronate, base round, margin entire, lateral nerves obscure, 3-4 pairs: glabrous. **Flowers** 2-3 mm across, greenish yellow, axillary. **Fruit** a capsule 20-25 mm across, globose, yellowish green, fleshy. **Seeds** triquetrous.

Moist and dry deciduous forests. Throughout Kerala.

Epiprinus mallotiformis (Mueller-Aargau) Croizat in J. Arn. Arbor. 23: 53 1942. *Syn.*: *Sympyllia mallotiformis* Mueller-Aargau in Linnaea 34: 156. 1865-66; Gamble, Fl. Pres. Madras 2: 925. 1957. *Adenochlaena indica* Beddome ex Hooker f., Fl. Brit. India 5: 418. 1887; Rourdillon, For. Trs. Travancore 344. 1908 (Fam.: Euphorbiaceae).

Large or medium sized trees; *h* -12 m. **Leaves** alternate, simple, petioles 1-10 cm long, blade 7.5-17 x 1-6 cm, ovate-oblong, tip acute, base rounded, margin entire, lateral nerves 6-8 pairs, prominent beneath; coriaceous, shining. **Flowers** unisexual, in close spikes. **Fruit** a capsule, 15-18 mm in diam., 3-lobed.

Evergreen forests at ca. 1,000 m. South Kerala.

Erythrina stricta Roxburgh, Hort. Bengal. 53. 1814 *et* Fl. Indica 3: 251. 1832; Bourdillon, For. Trs. Travancore 114. 1908; Gamble, Fl. Pres. Madras 1:250. 1957 -**Mal.**: Murukku (Fam: Fabaceae).

Medium sized trees; *h* -15 m, *d* -45 cm. **Bark** 10-20 mm thick, surface yellowish, vertically fissured, armed with bossed prickles; outer bark corky, stratified, inner bark thin, fibrous. **Leaves** alternate, trifoliolate, stipules small, rachis ca. 10 cm long, stipels gland-like, leaflet blade

5-12.5 x 3.7-10 cm, deltoid-ovate, tip abruptly acuminate, base subtruncate or obtuse, margin entire; glabrous. **Flowers** bisexual, 5 x 1.8 cm, red. **Fruit** a pod, 5-10 cm long, lanceolate. **Seeds** 1-3, black.

Moist deciduous forests up to 1,200 m. Throughout Kerala.

Euodia lunu-akenda (Gaertner) Merrill, Phillip. J. Sci. Bot. 7: 378. 1913 (as '*lunar-akenda*'); Gamble, Fl. Pres. Madras 1: 105. 1957. *Syn.*: **Fagara lunu-akenda** Gaertrier, Fruct. 1: 334, t. 68, f. 9. 1788 -*Mal.*: Kambili, Kanala (Fan.: Rutaceae).

Small deciduous trees: **h** -12 m, **d**-45 cm. **Bark** 6-8 mm thick, surface grey, smooth. **Branchlets** 2-5 mm thick. **Leaves** opposite, trifoliolate, rachis 4-8 cm long, leaflets 6-10 x 3.7-5 cm, petiolules 5-12 mm long, leaflet blade elliptic or elliptic-oblong, tip acuminate, base acute, margin entire, lateral nerves 8-14 pairs; glabrous. **Flowers** unisexual, in axillary panicle cymes, 2-3 mm across, greenish yellow. **Fruit** of 4 cocci, each 5-6 mm long, ovoid, brown. **Seed** oblong, black.

Evergreen, semievergreen and secondary forests up to 1,200 m. Throughout Kerala.

Fahrenheitia zeylanica (Thwaites) Airy Shaw in Kew Bull. 20: 410. 1966. *Syn.*: **Desmostemon zeylanicus** Thwaites, Enum. Pl. Zeylan. 278. 1861. **Ostodes zeylanicus** (Thwaites) Mueller-Aargau in Linnaea 34: 214.

1865: Bourdillon, For. Trs. Travancore 299. 1908; Gamble, Fl. Pres. Madras 2: 934. 1957 (Fam.: Euphorbiaceae).

Large trees; **h** -18 m, **d** -45 cm. **Bark** 3-4 mm thick, surface brown, smooth, exfoliations as small; brittle or semifibrous; blaze orange brown. **Leaves** alternate, clustered at the tips of branchlets, simple, petioles 5-12 cm long, blade 15-30 x 5-12.5 cm, lanceolate-oblong, tip subacute, base acute, margin coarsely serrate, lateral nerves 10-13 pairs; glabrous, thick, paler beneath. **Flowers** unisexual, in terminal and lateral panicles, white. **Fruit** a capsule, 3 cm across, subglobose, slightly 6-grooved. **Seeds** mottled.

Evergreen forests between 400-900 m. Throughout Kerala.

Ficus amplissima J. E. Smith in Rees, Cyclop. 14: n. 68. 1810. *Syn.*: **Ficus tsiela** Roxburgh *ex* Buchanan-Hamilton in Trans. Linn. Soc. London 15: 149. 1826; Bourdillon, For. Trs. Travancore 321. 1908; Gamble, Fl. Pres. Madras 3: 953. 1957 (Fam.: Moraceae).

Large spreading trees: **h** -24 m, **d** -1.2 m. **Aerial roots** few or none. **Bark** greenish grey, smooth. **Leaves** alternate, simple, petioles 2.5-5 cm long, blade 5-12 x 2.5-5 cm, ovate or ovate-oblong, tip acute, base narrowed or round, margin entire, 3-ribbed from base, lateral nerves of the midrib 8-10 pairs; glabrous. **Flowers** unisexual, minute, arranged

in globose, axillary geminate receptacles crowded towards the ends of branchlets. **Fruit** a fig, purple when ripe.

Deciduous and evergreen forests between 300-1,000 m. South Kerala.

Ficus arnottiana (Miquel) Miquel in Ann. Mus. Bot. Ludg. Bat. 3: 287. 1867; Bourdillon, For. Trs. Travancore 321. 1908; Gamble, Fl. Pres. Madras 3: 953. 1957. **Syn.:** *Urostigma arnottianum* Miquel in London J. Bot. 6: 564. 1847. **-Mal.:** Amakanniyan (Fam.: Moraceae).

Small deciduous epiphytic or independent trees; *h* -10 m, *d* -30 cm. **Aerial roots** absent. **Bark** surface grey-brown, smooth, tuberculate-lenticellate; blaze light pink; latex milky white. **Leaves** alternate, spiral, simple, stipules large, 3-5 cm long, reddish green, petioles 3-7 cm long, red, blade 7.5-20 x 5-12.5 cm, broadly ovate, tip caudate-acuminate, base truncate or cordate, margin entire, slightly undulate, glabrous, 7-nerved from base, lateral nerves of the midrib 5-7 pairs. **Flowers** unisexual, minute, arranged in subglobose receptacles, receptacles in axillary pairs or clusters. **Fruit** a fig, yellowish brown when ripe.

Rocky places in moist and dry deciduous forests up to 1,300 m. Throughout Kerala.

Ficus beddomei King in Ann. Roy. Bot. Gard. Calcutta 1: 26, tt. 24, 81 m. 1887; Bourdillon, For. Trs.

Travancore 317. 1908; Gamble. Fl. Pres. Madras 3: 954. 1957. **-Mal.:** Thavittal (Fam.: Moraceae).

Large evergreen trees, epiphyte or independent; *h* -30 m, *d* -1.5 m. **Aerial roots** none. **Bark** pale brown, smooth. **Leaves** alternate, simple, petioles 5-10 cm long, stipules large, 7.5-15 cm long, golden yellow, sheathing, leaf blade 15-25 x 10-15 cm, broadly ovate, tip shortly acuminate, base round or truncate, margin entire, slightly undulate, 3-nerved from base, lateral nerves from the midrib 12-15 pairs; glabrous. **Flowers** unisexual, in subglobose receptacles, receptacles in axillary pairs, 38-25 mm across, 3-ribbed. **Fruit** a fig, green and spotted with yellow when ripe.

Evergreen forests between 300-1,500 m. Throughout Kerala.

Ficus benghalensis Linnaeus. Sp. Pl. 1059. 1753; Bourdillon, For. Trs. Travancore 313. 1908; Gamble, Fl. Pres. Madras 3: 952. 1957. **-Mal.:** Peral (Fam.: Moraceae).

Large spreading trees; *h* 20-30 m, *d* 2-3 m. **Aerial roots** numerous from the branches. **Crown** umbraeous. **Bark** 10-12 mm thick, surface greyish white, smooth, exfoliating in irregular flakes. **Leaves** alternate, simple, stipules 2-2.5 cm long, sheathing, petioles 2.5-5 cm long, blade 10-20 x 5-12.5 cm, ovate or elliptic, tip obtuse, base subcordate or -rounded, margin entire, 3-7 nerved from base, lateral nerves from the midrib 4-6 pairs. **Flowers** unisexual,

minute, in globose receptacles, receptacles in axillary pairs, 15-18 mm across. **Fruit** a fig, red when ripe.

Deciduous and semievergreen forests up to 1,200 m. Throughout Kerala.

Ficus callosa Willdenow in Acta Acad. Berol. 101. 1798; Bourdillon, For. Trs. Travancore 322. 1908; Gamble, Fl. Pres. Madras 3: 954. (Fam.: Moraceae).

Large trees; *h* 25-45 m, *d* -60 cm. **Aerial roots** none. **Bark** 10-15 mm thick, surface grey, smooth, lenticellate; fibrous; blaze creamy yellow; latex milky, or watery and turning milky. **Leaves** alternate, simple, stipules 15-30 mm long, petioles 2.5-4 cm long, blade 10-25 x 7.5-12.5 cm, elliptic or ovate-oblong, tip rounded and shortly acuminate, base rounded or subcordate, margin entire, lateral nerves 5-12 (-16) pairs; thick, scabrid, shining above. **Flowers** unisexual, minute, in subglobose receptacles, receptacles axillary, 22-25 mm across. **Fruit** a fig, greenish yellow when ripe.

Evergreen, moist deciduous and secondary forests up to 750 m. Throughout Kerala

Ficus drupacea Thunberg var. **pubescens** (Roth) Corner in Gard. Bull. S. S. 17: 381. 1960. **Syn.:** *Ficus mysorensis* Heyne *ex* Roth in Roemer *et* Schultes, Syst. Veg. 1: 508. 1817; Bourdillon, For. Trs. Travancore 317. 1908; **Ficus**

mysorensis var. **pubescens** Roth in Roemer *et* Schultes, Syst. Veg. 1: 508. 1817; Gamble, Fl. Pres. Madras 3: 952. 1957 (Fam.: Moraceae).

Large trees; *h* -25m, *d* -90 cm. **Crown** umbrageous. **Aerial roots** numerous, arising in tufts from the stout branches. **Bark** surface grey or brownish, smooth. **Leaves** alternate, spiral, subdistichous, simple, stipules 10-20 mm long, petioles 12-35 mm long, blade 10-20 x 6.5-15 cm, ovate to ovate-elliptic, tip shortly acuminate, base rounded or emarginate, margin entire, lateral nerves 10-13 pairs; glabrous. **Flowers** minute, unisexual, in oblong receptacles, receptacles in axillary pairs, 2.5 cm long. **Fruit** a fig, orange-red when ripe.

Semievergreen forests between 150-1,000 m. Throughout Kerala.

Ficus exasperata Vahl, Enum. 2: 197. 1806. **Syn.:** *Ficus asperrima* Roxburgh (Hort. Bengal. 103 1841; *nom. nud.*) Fl. Indica 3: 554. 1832; Bourdillon, For. Trs. Travancore 323. 1908; Gamble, Fl. Pres. Madras 3: 955. 1057 *-Mal.:* Therakam [Fam.: Moraceae).

Medium sized trees; *h* -18 m, *d* -60 cm. **Aerial roots** none. **Bark** 5-6 mm thick, greenish white, smooth, punctiform lenticellate; fibrous; blaze creamy white. **Leaves** alternate, simple, petioles 3.5-5 cm long, blade 10-15 x 2.5-6 cm, ovate, obovate or oblong-lanceolate, tip rounded and cuspidate, or acuminate, base round, rarely narrowed,

margin entire, 3-ribbed from base, lateral nerves from the midrib 3-5 pairs, prominent below: scabrid. *Flowers* minute, unisexual, in globose receptacles, receptacles 12-18 mm across, solitary or geminate. *Fruit* a fig, purplish yellow when ripe.

Secondary forests up to 1,300 m. Throughout Kerala.

Ficus microcarpa Linnaeus f., Suppl. Pl. 442. 1781. *Syn.: Ficus retusa* sensu Bourdillon, For. Trs. Travancore 318. 1908; Gamble, Fl. Pres. Madras 3: 952. 1957 -*Mal.*: Ithi al (Fam.: Moraceae).

Large evergreen trees, usually epiphytic; *h* -18 m, *d* -60 cm. *Aerial roots* numerous, slender, arising from the branches. *Bark* surface brownish, smooth. *Branchlets* 2-3 mm thick. *Leaves* alternate, spiral, subdistichous, simple, stipules 10-15 mm long, petioles 5-12 mm long, blade 5-11 x 2.5-6 cm, ovate, tip obtuse with a slight acumination, base narrowed, margin entire, lateral nerves 5-8 pairs, interspersed with secondary laterals: glabrous, shining. *Flowers* unisexual, minute, in globose receptacles, receptacles axillary, geminate, 6-8 mm across. *Fruit* a fig, greenish yellow when ripe.

Evergreen and semievergreen forests up to 1,200m. Throughout Kerala.

Ficus mollis Vahl, Sym. Bot. 1: 82. 1790. *Syn.: Ficus tomentosa* Roxburgh ex Willdenow, Sp. Pl. 4:

1136. 1806; Bourdillon, For. Trs. Travancore 317. 1908; Gamble, Fl. Pres. Madras 3: 952. 1957 -*Mal.*: Kallal (Fam.: Moraceae).

Large deciduous trees, epiphytic or independent; *h* -15 m, *d* -30 cm, *Aerial roots* few or none. *Bark* 5-6 mm thick, surface greenish white, smooth. *Branchlets* 3-5 mm thick. *Leaves* alternate, spiral, stipules 10-12 mm long, sheathing, densely woolly outside, petioles 18-25 mm long, blade 5-12.5 x 2.5-7.5 cm, ovate, tip bluntly apiculate, base rounded or cordate, margin entire, 3-7 ribbed from base, lateral nerves from the midrib 5-8 pairs; glabrous above, grey-downy beneath. *Flowers* unisexual, minute, in pisiform receptacles, receptacles 6-8 mm across, depressed, in axillary pairs. *Fruit* a fig, grey when ripe.

Dry deciduous forests up to 600 m. Throughout Kerala.

Ficus nervosa Heyne ex Roth, Nov. Pl. Sp. 336. 1821; Bourdillon, For. Trs. Travancore 319. 1908; Gamble, Fl. Pres. Madras 3: 954. 1957 -*Mal.*: Eecha maram (Fam.: Moraceae).

Moderate sized to large evergreen trees: *h* 30-35 m, *d* -1.5 m. *Aerial roots* none. *Crown* dense. Bole buttressed, buttresses -6 m. *Bark* 10-12mm thick, grey, smooth; latex scanty white, turning yellowish soon. *Leaves* alternate, spiral, simple, stipules 10-12 mm long, subulate, petioles 12-25 mm long, blade 7.5-17.5 x 3.7-7.5 cm

elliptic or oblanceolate, tip abruptly acuminate, base narrow or rounded, margin entire, often undulate, 3-5 ribbed from base, lateral nerves from the midrib 7-12 pairs; glabrous; young leaves pink-red, shining. *Flowers* unisexual, minute, in globose receptacles, receptacles axillary, solitary or geminate, 15-16 mm across. *Fruit* a fig, reddish yellow when ripe.

Evergreen forests between 100-1,300 m. Throughout Kerala.

Ficus racemosa Linnaeus, Sp. Pl. 1060. 1753. Syn.: *Ficus glomerata* Roxburgh, Pl. Coast Coromandel 2: t. 123. 1798; Bourdillon, For. Trs. Travancore 324. 1908; Gamble, Fl. Pres. Madras 3: 954. 1957 -*Mal.*: Athi (Fam.: Moraceae).

Large deciduous trees; *h* 18-30 m, *d*-60 cm. *Aerial roots* none. *Crown* shabby. *Bole* buttressed. *Bark* 8-10 mm thick, surface pale grey, smooth, coarsely flaky; fibrous; blaze creamy pink; latex milky white. *Branchlets* 1.5-3 mm thick. *Leaves* alternate, simple, stipules 12-18 mm long, linear-lanceolate, petioles 2.5-5 cm long, blade elliptic-oblong or oblong-ovate, tip narrowed, blunt or acute, base acute, or obtuse, margin entire, lateral nerves 4-8 pairs; glabrous. *Flowers* unisexual, minute, in sub-globose receptacles, receptacles on short branches on the trunk, 28-30 mm across. *Fruit* a fig, orange, pink or dark crimson when ripe.

Moist deciduous and semievergreen forests up to 2,800 m. Throughout Kerala.

Ficus talbotii King in Ann. Roy, Bot. Gard. Calcutta 1: 51, pl. 63. 1887; Bourdillon, For. Trs. Travancore 319. 1908; Gamble, Fl. Pres. Madras 3: 953. 1957 (Fem.: Moraceae).

Large evergreen epiphytic trees; *h* -30 m, *d*-75 cm. *Aerial roots* none. *Bark* 10-12mm thick, surface green, smooth. *Branchlets* 1.5-3 mm thick. *Leaves* alternate, spirial, simple, stipules small, 5 mm long, petioles 1.5 cm long, blade 5-10 x 2.5-5 cm, elliptic-ovate, tip shortly caudate-acuminate, base narrow, margin entire, lateral nerves 6-9 pairs; glabrous, coriaceous, shining above. *Flowers* unisexual, minute, in obovoid receptacles, receptacles axillary, geminate, 5-6 mm across. *Fruit* a fig, greenish yellow and dotted when ripe.

Evergreen forests between 100-1,300 m. Throughout Kerala.

Ficus tsjahela Burmann f., Fl. Indica 227. 1768 (as '*tjakela*'); Bourdillon, For. Trs. Travancore 321. 1908; Gamble, Fl. Pres. Madras 3: 953. 1957 -*Mal.*: Karal (Fam.: Moraceae).

Much branched deciduous trees; *h* -15 m, *d* -45cm. *Aerial roots* none. *Bark* surface dark brown, roughish. *Branchlets* 2-4 mm thick, dark brown. *Leaves* alternate, spirial, simple, stipules small, 14-16 mm long, petioles 5-10 cm long, slender, blade 7-18 x 3.5-6.5 cm, oblong-lanceolate, tip shortly acuminate, base rounded or widely cuneate, margin entire, 3-5 nerved from base, lateral nerves of the

midrib 7-10 pairs; glabrous. *Flowers* unisexual, minute, in globose receptacles, receptacles crowded on the branches, 4-5 mm across. *Fruit* a fig, dull grey-purple with pale spots when ripe.

Moist deciduous, semievergreen and secondary forests up to 1,000 m. Throughout Kerala.

Ficus virens Aiton, Hort. Kew. 3: 451. 1789. *Syn.*: *Ficus infectoria* Koxburgh, Fl. Indica 3: 551. 1832, non Willdenow, 1806; Bourdillon, For. Trs. Travancore 322. 1908; Gamble, Fl. Pres. Madras 3: 953. 1957. *-Mal.*: Cherla (Fam.: Moraceae).

Frequently epiphytic deciduous trees; *h* -20 m, *d* -1.2 m. *Aerial roots* few, often tufted. *Bark* 10-12 mm thick, surface greenish grey, smooth. *Branchlets* 3-5 mm thick, brown. *Leaves* alternate, spiral, stipules 10-22 mm long, broadly ovate, pubescent, petioles 3.7-5 cm long, blade 5-17.5 x 3-10 cm, oblong-ovate, tip shortly acuminate, base round or subcordate, margin entire; glabrous, *Flowers* unisexual, minute, in globose receptacles, receptacles axillary, geminate, 6-12 mm across. *Fruit* a fig, white and flushed with pink when ripe.

A rare tree in the evergreen forests up to 2,100 m.

Filicium decipiens Thwaites, Enum. Pl. Zeylan. 408. 1864; Bourdillon, For. Trs. Travancore 69. 1908; Gamble, Fl. Pres. Madras 1: 178. 1957. *Syn.*: *Rhus decipiens* Wight, Ill.

Indian Bot. 1: t. 75. 1840. *-Mal.*: Valmuriccha (Fam.: Sapindaceae).

Large evergreen trees; *h* -30 m, *d* -90 cm. *Bark* blackish brown, rough. *Branchlets* 5-8 mm thick. *Leaves* alternate, 15-25 cm long, simply imparipinnate, rachis winged, leaflets 5-8 pairs, 6-7.5 x 1-1.2 cm subopposite, sessile, leaflet blade narrowly elliptic, tip acute, base asymmetric, acute, margin entire, lateral nerves very numerous; glabrous. *Flowers* unisexual, in axillary panicles, 5-6 mm across, pinkish white. *Fruit* a drupe, 10-12 mm across, ovoid, purple. *Seed* 1, oblong.

Evergreen and semievergreen forests up to 1,500 m. Throughout Kerala; but not common.

Firmiana colorata (Roxburgh) R. Brown in Bennet *et* Brown, Pl. Jav. Rar. 235. 1844; Gamble, Fl. Pres. Madras 1: 76. 1957. *Syn.*: *Sterculia colorata* Roxburgh, Pl. Coast Coromandel 1: t. 25. 1795; Bourdillon. For. Trs. Travancore 46. 1908; *-Mal.*: Malam paruthi (Fam.: Sterculiaceae).

Moderate sized deciduous trees; *h* -25 m, *d* -45 cm. *Bark* 20-30 mm thick, surface grey-black, rough, longitudinally fissured; outer bark dead, corky, inner bark fibrous, creamy white, with radial narrow triangular rays. *Branchlets* 7-8 mm thick. *Leaves* alternate, clustered at the tips of branchlets, simple, petioles 10-20 cm long, blade palmately 3-4 lobed, 10-15 x 10-15 cm, base cordate, lobes oblong, lobe

tips acuminate, margin entire, palmately 5-8 ribbed from base; glabrous. Flowers bisexual, in terminal panicles, 10-18 mm long, scarlet. Fruit of 5 follicles, each 6-7.5cm long membranous. Seeds 2, avoid, yellow.

A less common tree in moist deciduous forests. Throughout Kerala.

Garcinia echinocarpa Thwaites in Hooker's J. Bot. Kew Gard. Misc. Inform. 6: 71. 1854; Bourdillon, For. Trs. Travancore 21. 1908; Gamble, Fl. Pras. Madras 1: 52. 1957 (Pam.: Clusiaceae).

Large evergreen trees; *h* -20m. *d* -60 cm. Bark 5-6 mm thick, surface green, mottled with yellow, red and white, smooth; inner bark deep red; exudation creamy yellow. Leaves opposite, simple, stipules obsolete, intrapetiolar, petioles 12-25 mm long blade 7.5-12.5 x 5-7.5 cm, succulent, ovate or elliptic-oblong, tip obtuse, base acute or obtuse, margin entire, lateral nerves 30-45 pairs, parallel. **Flowers** polygamodioecious, male in clusters, 15-18 mm across, green and red, female, solitary. **Fruit** a berry, 3.7-6 x 2.5-5 cm, ovoid, green, pulpy, echinate. Seeds 1-4 large brown.

Evergreen Forests between 1,200-1,500 m. Confined to South Kerala.

Garcinia gummi-gutta (Linnaeus.) Robson in Brittonia 20: 103. 1968. (in adnot). **Syn.:** *Mangostana cambogia*

Gaertner, Fruct. 2: 106. 1790.

Garcinia cambogia [Gaertner] Dasrousseau in Lamarck, Encycl. Meth. 3; 701. 1792; Bourdillon, For. Trs. Travancore 20. 1908; Gamble, Fl. Pres. Madras 1: 53. 1957 -**Mal:** Koda puli (Fam.: Clusiaceae).

Medium sized evergreen trees; *h* -20 m, *d*-60 cm. Bark 3-4 mm thick, surface black, rough. Leaves opposite, simple, petioles 10-12 mm long, blade 5-12.5 x 2.5-5 cm, elliptic. tip obtuse, base narrowed, margin entire, lateral nerves 10-20 pairs, parallel; yellowish beneath. Flowers polygamodioecious, yellowish white, male in axillary umbels 26-18 mm long, female axillary, in clusters of 2-3, slightly larger. **Fruit** a berry, 7.5 cm across globose, 8-10 grooved, pale yellow. seeds 6-8.

Evergreen forests up to 1,800 in. Throughout Kerala.

Garcinia imberti Bourdillon in J. Bombay Nat. Hist. Soc. 12: 349. 1900 *et* For. Trs. Travancore 23. 1908; Gamble, Fl. Pres. Madras 1: 53. 1957 (Fam.: Clusiaceae).

Medium sized trees: *h* -12 m, *d* -30 cm. Bark 5-6 mm thick, surface brown, rough, vertically cracked. Leaves opposite, simple, petioles 2-3 mm long, blade 5-8 x 1.2-3 cm, oblanceolate, tip caudate acuminate, base narrowed, margin entire, lateral nerves close. Flowers polygamodioecious, yellow, fleshy, 4-6 mm across, male at the ends of branchlets, female solitary or

geminate. **Fruit** a berry. 2.5 x 1.2 cm, green. **Seeds** 1-2.

Evergreen forests at *ca.* 900 m. Confined to South Kerala.

Garcinia morella (Gaertner) Desrousseaux in Lamarck, Encycl. Meth. 3: 701. 1792; Bourdillon, For. Trs. Travancore 21. 1908; Gamble, Fl. Pres. Madras 1: 52. 1957. **Syn.:** *Mangostana morella* Gaertner, Fruct. 2: 106. 1790 -**Mal.:** Chikiri (Fam.: Clusiaceae).

Moderate sized trees; *h* -12 m, *d*-30 cm. **Bark** 5-6 mm thick, surface brown, smooth. **Leaves** opposite, simple, petioles 6-12 mm long, blade 7-12 x 4-6 cm, elliptic-ovovate, or lanceolate, tip obtuse to caudate-acuminate, base acute, margin entire, lateral nerves 8-15 pairs, close, parallel; glabrous. **Flowers** polygamodioecious, axillary, 5-6 mm long, succulent, reddish, male 2-3 together, female solitary. **Fruit** a berry, 16-18 mm across, globose, reddish brown. **Seeds** 1-4, ovoid, brown.

Evergreen forests up to 900 m. Throughout Kerala.

Garcinia spicata (Wight *et* Arnott) Hooker f. in J. Linn. Soc. 14: 486. 1875; Gamble, Fl. Pres. Madras 1: 53. 1957. **Syn.:** *Xanthochymus spicatus* Wight *et* Arnott, Prod. 1: 102. 1834. *Garcinia ovalifolius* Hooker f., Fl. Brit. India 1: 269. 1874; Bourdillon, For. Trs. Travancore 26. 1908 -**Mal.:** Manja nang (Fam.: Clusiaceae).

Medium sized evergreen trees; *h* -25 m, *d*-46 cm. **Bark** 10-12 mm thick, surface brown, mottled with white, smooth; brittle: blaze creamy brown; latex milky white to yellowish green, not copious. **Branches** horizontal. **Branchlets** opposite. **Leaves** opposite, simple, petioles 10-12 mm long, blade 7.5-15 x 5-7.5 cm ovate-elliptic, tip obtuse to emarginate, base obtuse, margin entire, lateral nerves 15-18 pairs. **Flowers** polygamodioecious, in glomerate fascicles, white. **Fruit** a berry, 2.5-3 cm long, ovoid. **Seeds** 1-3, brown.

Evergreen forests at low elevations. Throughout Kerala; but nowhere common.

Garcinia travancorica Beddome, Fl. Sylv. t. 173. 1872; Bourdillon, For. Trs. Travancore 23. 1908; Gamble, Fl. Pres. Madras 1: 53. 1957 (Fam.: Clusiaceae),

Medium sized trees: *h* -15 m, *d* -30 cm. **Bark** 5-6 mm thick, surface brown, rough. **Leaves** opposite, simple, petioles 10-12 mm long, blade 5-10 x 1.2-2.5 cm, linear oblong, or elliptic, tip round, base obtuse, margin entire, lateral nerves 20-30 pairs, parallel: glabrous, shining above, coriaceous. **Flowers** polygamodioecious 10-12 mm across, white, succulent, male 2-3 together, female solitary. **Fruit** a berry, 3.7-5 x 1.2-2.5 cm, oblong, flattened, green. **Seeds** 1-2, brown.

Evergreen forests up to 1,000 m. South Kerala.

Garcinia wightii T. Anderson in Hooker f., Fl. Brit. India 1: 265. 1874; Bourdillon, For. Trs. Travancore 22. 1908; Gamble, Fl. Pres. Madras 1: 53. 1957 (Fam.: Clusiaceae)

Small trees: *h*-10 m *d* -20 cm. **Bark** 5-6 mm thick, surface brown, rough **leaves** opposite simple, petioles 5-6 mm long, blade 7.5-10 x 1.2-1.8 cm lanceolate tip acuminate, margin entire, lateral nerves distant, ascending; glabrous, very glossy young leaves pale yellow. **Flowers** polygamodioecious, in the axils of old leaves, 6-8 mm long, yellow, male' solitary) or geminate, female solitary **Fruit**. berry, 16-18 mm across, globose, pale green. **Seeds** 4.

Evergreen forests ca. 1000m
Central and South Kerala.

Garcinia xanthochymus Hooker f., Fl. Brit. India 1: 269. 1874; Bourdillon, For. Trs. Travancore 24. 1908. **Syn.**: *Garcinia tinctoria* (De Candolle) W. F. Wright in U. S. Dept. Agric. Bur. Pl. Industry Bull. 137: 50. 1909; Gamble, Fl. Pres. Madras 1: 53. 1957 (Fam.: Clusiaceae).

Medium sized trees; *h* -15m, *d*-30 cm. **Bark** 5-6 mm thick, surface brown exfoliations small; blaze white, latex white, turning yellow. **Branches** horizontal, tips drooping. **Branchlet** 4-angular. **Leaves** opposite, simple, petioles 2-2.5 cm long, blade 20-35 x 5-10 cm, oblong or oblong-lanceolate, tip somewhat round and apiculate,

base acute, margin entire, lateral nerves 35-20 pairs, erect-patent.

Flowers polygamodioecious, in axillary fascicles white. **Fruit** a berry 8-9 cm across subglobose **Seeds** oblong, brown.

Evergreen forests up to 1,008 m. Throughout Kerala.

Garuga floribunda De Gaisne var. **gamblei** (King ex Smith) Kalkman in Blumea 7(2): 466. 1953. **Syn.**: *Garuga gamblei* King ex Smith in Rec. Bot. Surv. India 4: 262. 1911; Gamble, Fl. Pres. Madras 1: 121. 1957 [Fam.: Burseraceae).

Small to medium sized trees. **Bark** surface grey, smooth, fibrous; blaze pink. **Leaves** alternate, 30-45 cm long, simply odd pinnate, rachis terete, glabrous, leaflets 11-21, petiolules 2-3 mm long, blade 5-15 x 3.5-5 cm, ovate-oblong, tip acuminate, base obtuse or cordate, margin crenate-Serrate, lower pair of leaflets smallest, curved down, stipule-like; glabrous.

Reported to occur in North Kerala.

Garuga pinnata Roxburgh, Hort. Bengal. 33. 1814; Gamble, Fl. Pres. Madras 1: 121. 1957 -**Mal.**: Annakkara (Fam.: Burseraceae).

Large trees. **Bark** surface grey or brown, shallowly longitudinally furrowed, exfoliating in large irregular flakes; blaze red. **Leaves** alternate, crowded at the tips of branchlets, 15-30 cm long

simply odd pinnate leaflets 13-19 opposite, subsessile, ovate-lanceolate, tip acuminate, margin crenate-tomentose. *Flowers* polygamous, in panicles, yellow. *Fruit* a drupe, globose, fleshy.

Moist and dry deciduous forests North and Central Kerala.

Glochidion zeylanicum (Gaertner) A. Jussieu, Tent. Euph. 107, t. 3. 1824; Bourdillon For. Trs. Travancore 294. 1908; Gamble, Fl. Pres. Madras 2: 914. 1957. *Syn. Bridelia zeylanica* Gaertner, Fruct. 2: 128, t. 109. 1790 -Mal.: Neer vetti (Fam.: Euphorbiaceae).

Small monoecious or dioecious trees h-10 m d-15 cm. Bark 2-3 mm thick brown rough soft, longitudinally cracked. *Leaves* alternate simple, bifarious, stipules reflexed petioles 3-4 mm long, blade 5-20 x 3.7-7.5 cm, ovate-lanceolate or oblong tip shortly acute, base cordate or rounded slightly unequal, margin entire, lateral nerves 8-12 pairs; glabrous. *Flowers* unisexual, yellow, in axillary clusters. *Fruit* a capsule, 10-12 mm long, orange coloured.

Evergreen forests, banks of streams and moist places. An occasional tree throughout Kerala.

Gluta travancorica Beddome, Fl. Sylv. 1 t. 60: 1870 Bourdillon, For. Trs: Travancore 294. 1908; Gamble Fl. Pres. Madras 1: 186. 1957 -Mal.: Cheru (Fam.: Anacardiaceae)!

Large trees h 30-36 m, d-1.5 m. Bark 6-8 mm thick, surface pinkish grey smooth *Leaves* alternate crowded at the tips of branchlets simple blade 7.6-15.2 x 2.5-5 cm, elliptic-ovate, coriaceous, lateral nerves 13-16 pairs. *Flowers* 8 mm across, cream coloured. *Fruit* a drupe, 3.8 cm across, globose.

Evergreen forests up to 1000 m. confined to South Kerala.

Gmelia arborea Roxburg Hort. Bengal 46. 1814; Bourdillon, For. Trs. Travancore 254. 1908; Gamble, Pl. Pres. Madras 2: 768. 1957 -Mal.: Kumbil (Pam.: Verbenaceae)

Medium sized deciduous trees: h-18 m, d-66 cm. *Bark* 8-10 mm thick, surface whitish grey or pale, smooth, lenticellate; corky: blaze yellow, with triangular rays. *Leaves* opposite, simple, petioles 5-12.5 cm long, blade 7.5-25 x 6-20 cm, broadly ovate, tip acuminate, base rounded, truncate or cordate, with glands on either side of the midrib, margin entire, 3-5 nerved from base, lateral nerves from the midrib 3-5 pairs; glabrous above, tomentose beneath. *Flowers* bisexual, in terminal panicles, 3-3.7 cm long, yellow with orange pinkish shade. *Fruit* a drupe, 2-5 cm long, ovoid, pulpy, pyrene bonny, ovoid with a deep depression. Seeds 2-4, elliptic.

Moist deciduous and secondary forests upto 1500m. Throughout Kerala.

Gordonia obtusa Wallich, Num. List Dried Pl. E. India Co. Mus [Cat.] no. 1459. 1829; Bourdillon, For. Trs. Travancore 30. 1908; Gamble, Fl. Pres. Madras 1: 57. 1957 (Fam.: Theaceae).

Medium sized trees; *h* -18 m, *d* -60 cm. **Bark** 5-6 mm thick, surface grey, smooth. **Leaves** alternate, simple, petioles 2.5-3 cm long, blade 7.5-12.5 x 2.5-5 cm, lanceolate, tip acute, base acute or attenuate, margin crenate, lateral nerves obscure, 8-10 pairs; glabrous. **Flowers** bisexual, axillary, solitary, 4-5 cm across, white. **Fruit** a capsule, 2.5-3 x 1-1.2 cm, oblong, brown. **Seeds** many, winged.

Evergreen forests between 800-2,100 m. Throughout Kerala.

Grewia tiliifolia Vahl, Symb. Bot. 1:35. 1790; Bourdillon, For. Trs. Travancore 52. 1908; Gamble, Fl. Pres. Madras 1: 84. 1957 (as *tiliaefolia*')-*Mal.*: Chadachi (Fam.: Tiliaceae).

Medium sized deciduous trees: *h* -15 m, *d*-45 cm. **Bark** 15-20 mm thick, surface grey-black, rough, vertical fissures shallow, exfoliations small; fibrous; blaze chocolate brown, radially streaked. **Branchlets** 3-4 mm thick. **Leaves** alternate, bifarious, simple, stipules 10-12 mm long, sagitate, auricled, petioles 12-35 mm long, blade 6-12.5 x 3.7-7.5 cm, obliquely ovate, asymmetric, tip acute or obtuse, base oblique, margin dentate, 3-5 nerved from base; glabrous.

Flowers bisexual, in axillary few flowered cymes, 6-8 mm across, yellow. **Fruit** a drupe, 6-8 mm across, didymous, reddish purple, pyrenes 1-2.

Moist deciduous forests up to 1,200 m. Throughout Kerala.

Gymnacranthera canarica (King) Warburg, Monog. Myrist. 368. 1897; Gamble, Fl. Pres. Madras 2: 849. 1957. *Syn.*: *Myristica canarica* Beddome *ex* King in Ann. Roy. Bot. Gard. Calcutta 3: 307, t. 138. 1891; Bourdillon, For. Trs. Travancore 259. 1908 -*Mal.*: Unda payin (Fam.: Myristicaceae).

Large evergreen dioecious trees; *h* -35 m, *d*-60 cm. **Bark** 6-8 mm thick, surface brown, smooth; blaze red; exudation red. **Leaves** alternate, bifarious, simple, petioles 10-12 mm long, blade 14.5-25 x 5-10 cm, oblong, tip acuminate, base rounded, margin entire, lateral nerves 8-20 pairs; glabrous, shining above, glaucous beneath. **Flowers** unisexual, in axillary panicles, 3-4 mm long, female in axillary racemes, larger. **Fruit** a capsule, 2.5-3 cm across, globose. **Seed** 1, 16-18 mm across, globose, pale brown.

Evergreen and swamp forests up to 300 m. Throughout Kerala.

Haldina cordifolia (Roxburgh) Ridsdale in Blumea 24: 361. 3978. *Syn.*: *Nauclea cordifolia* Roxburgh, Pl. Coast Coromandel 1: 40, t. 53. 1796. *Adina cordifolia* (Roxburgh) Hooker f. *ex* Brandis, For. Fl. t. 33. 1874

Bourdillon, For. Trs. Travancore 188. 1908; Gamble, Fl. Pres. Madras 2: 412. 1957 -*Mal.*: Manja kadambu (Fam.: Rubiaceae).

Large deciduous trees; *h* -30 m, d-1.2 m. **Bole** buttressed. **Crown** round. **Bark** 10-12 mm thick, surface pale brown, shallowly pitted, longitudinally wrinkled arid cracked; fibrous; inner bark pink. **Leaves** opposite, 10-20 x 10-20 cm, simple, stipules intrapetiolar, foliaceous, 10-12 x 7 mm, obovate, petioles 4-10(-16.5) cm long, blade ovate, tip acuminate, base cordate, margin entire; glabrous above, puberulent beneath. **Flowers** bisexual, in axillary globose heads, 3-4 mm long, yellow. **Fruit** a capsule, 2-3 mm long, turbinate. **Seeds** oblong.

Moist deciduous forests up to 450 m. Throughout Kerala.

Hardwickia binata Roxburgh, Pl. Coast Coromandel 3: 6, t. 209. 1819; Gamble, Fl. Pres. Madras 1: 292. 1957 (Fam.: Fabaceae).

Large gregarious deciduous trees. **Bark** surface dark grey, rough, irregularly cracked. **Leaves** alternate, 2-foliolate, rachis 5-7.5 cm long, petiolules absent, leaflet blade 10-15 cm long, oblique-ovate, tip obtuse, pentapli-nerved from base; glabrous, coriaceous. **Flowers** bisexual, in lax racemose panicles, greenish yellow. **Fruit** a pod, 50-80 x 10-12 mm. oblong-lanceolate. **Seeds** obovate, compressed, 2-furrowed.

Dry deciduous forests. South Kerala (Marayur).

Harpullia arborea (Blanco) Radlk-
ofer, Sitzungsber, Math.-Phys. Cl.
Koenigl. Bayer Akad. Wiss.
Munchen 16: 404. 1890. *Syn.*: *Ptelea*
arborea Blanco, Fl. Philip., ed. 1, 63.
1837. *Harpullia imbricata* Thwaites,
Enum. Pl. Zeylan. 56. 1858;
Gamble, Fl. Pres. Madras 1: 180.
1957. *Harpullia cupanoides* sensu
Hiern in Hooker f., Fl. Brit. India
1: 692. 1875, p. p.; Bourdillon,
For. Trs. Travancore 112. 1908
-*Mal.*: Chittila madakk (Fam.:
Sapindaceae).

Large trees; *h* -15 m or more.
Bark 3-5 mm thick, surface pale
grey, smooth, lenticels horizontal;
semifibrous; blaze creamy yellow.
Leaves alternate, -45 cm long,
simply paripinnate, rachis pubes-
cent, leaflets 8-10, 5-20 x 3-10 cm,
petiolules 3-4 mm long, blade lan-
ceolate or elliptic-oblong, tip
acuminate, base unequal, margin
entire, midrib pubescent beneath,
lateral nerves 8-12 pairs; glabrous,
membranous. **Flowers** polygamo-
dioecious, in axillary or subtermi-
nal drooping panicles, 10-12 mm
long, yellowish green. **Fruit** a
capsule, 10-12 x 20-25 mm, 2-lobed
scarlet. **Seeds** 2, ellipsoid, black,
shining, aril orange.

Evergreen and semievergreen
forests between 200-1,200 m,
Throughout Kerala.

Heritiera papilio Beddome, Fl.
Sylv. t. 218. 1872; Bourdillon, For.
Trs. Travancore 47. 1908; Gamble,

Fl. Pres. Madras 1: 74. 1957
(Fam.: Sterculiaceae).

Moderate sized to large trees; h-25 m, d -60cm. **Bark** surface longitudinally . fissured. **Leaves** alternate, simple, petioles 18-37 mm long, blade 12.5-20 x 5-10 cm, oblong or lanceolate, tip acute, base rounded, lateral nerves 6-7 pairs; glabrous above, silvery beneath. **Flowers** bi- or uni-sexual, in axillary, panicles, 3-4 mm long, cream coloured. **Fruit** of 1-6 samaroid carpels, 5-6 cm long, red. **Seed** 1.

An occasional tree in the semievergreen forests between 600-1,200 m. South and Central Kerala.

Holigarna arnotiana Hooker f., Fl. Brit. India 2: 36. 1876; Bourdillon, For. Trs. Travancore 109. 1908; Gamble, Fl. Pres. Madras 1: 191. 1957 **-Mal.:** Cheru, Naicheru (Fam.: Anacardiaceae).

Large trees; h -18 m. **Bark** 6-8 mm thick, surface rough; exudation caustic, black on dryness. **Leaves** alternate, crowded at the tips of branchlets, simple, petioles 16-18 mm long, spurred with 1-2 appendages at the base, blade 10-25 x 2.5-7.5 cm, oblanceolate, not suddenly broadening above the middle, tip obtusely acute, base cuneate, margin entire, lateral nerves 10-20 pairs; glabrous beneath, coriaceous. **Flowers** polygamous; dioecious, in axillary panicles, 2-3 mm across, yellowish brown. **Fruit** a drupe, 2.5cm long, obliquely ovoid.

Evergreen and semievergreen forests up to 1,000m. Throughout Kerala.

Holigarna beddomei Hooker f., Fl. Brit. India 2: 38. 1876; Bourdillon, For. Trs. Travancore 110. 1908; Gamble, Fl. Pres. Madras 1: 192. 1957 (Fam.: Anacardiaceae).

Lofty trees; h -24 m, d -60 cm. **Bark** 3-4 mm thick, surface smooth, exudation black on dryness. **Leaves** alternate, simple, petioles 3-7 mm long, villous, spurred at base with 2 linear appendages, blade 25-38 x 14-17 cm, oblanceolate, suddenly broadened above the middle, base cuneate, margin entire and ciliate: upper surface pubescent.

Evergreen forests up to 1,000 m. Throughout Kerala.

Holigarna ferruginea Marchant, Rev. Anacard. 171. 1868; Gamble, Fl. Pres. Madras 1: 191. 1957 (Fam.: Anacardiaceae).

Large trees. **Leaves** alternate, simple, petioles spurred with 2 linear appendages; blade 10-17.5 x 6-7.5 cm, obovate, not suddenly broadening above the middle, midrib slightly pubescent when young, lateral nerves Ca. 12 pairs; glabrous beneath.

Evergreen forests. Throughout Kerala.

Holigarna grahamii [Wight) Kurz in J. Asiat. Soc. Bengal 42: 305. 1872; Gamble, Fl. Pres. Madras 1: 191. 1957. Syn.: *Semecarpus grahamii*

Wight, lc. Pl. Indiae Orient. t. 235. 1839 -**Mal.**: Anacheru, Valia cheru (Fam.: Anacardiaceae).

Large trees: *h* -50 m, *d* -50 cm. **Bark** 20-25 mm thick, surface yellowish grey, mottled with green. and white, smooth, lenticellate: outer bark 1-2 mm thick, dead, corky, inner bark thick, brittle, inner layers fibrous; exudation scanty, colourless. **Branchlets** 8-13 mm thick. **Leaves** alternate, clustered at the tips of branchlets, simple, petioles 20-45 mm long, spurred with 2 golden-tomentose appendages, blade 40-50 x 15-20 cm, oblanceolate, suddenly broadened above the middle, tip acuminate, base acute, margin entire, lateral nerves 20-25 (-30) pairs: pubescent beneath.

Evergreen forests. North and Central Kerala.

Holigarna nigra Bourdillon in Indian For. 30: 95. 1904 et For. Trs. Travancore 110. 1908; Gamble, Fl. Pres. Madras 1: 191. 1957 -**Mal.**: Cheru (Fam.: Anacardiaceae).

Large trees; *h* -30 m, *d* -60 cm. **Bark** 5-6 mm thick, surface grey, smooth: juice acid. **Leaves** alternate, simple, petioles 20-25 mm long, spurred with 2 narrow caducous appendages, blade 7.5-15 x 3.7-5 cm, spatulate, not suddenly broadening above the middle, tip obtuse or emarginate, margin entire; glabrous beneath, coriaceous. **Flowers** polygamodioecious, in panicles, 3-4mm across, white within black without,

Evergreen forests between 600-1,200 m. Confined to South Kerala.

Holoptelea integrifolia (Kuxburgh) Planchon in Ann. Sci. Nat. Rot., ser. 3, 10: 269. 1848; Bourdillon, For. Trs. Travancore 309. 1908; Gamble, Fl. Pres. Madras 3: 943. 1957 -**Mal.**: Aaval (Fam.: Ulniaceae).

Large deciduous trees: *h*-30 m, *d* -60 cm. **Bark** 6-8 mm thick, surface whitish grey. **Leaves** alternate, bifarious, simple, petioles 6-8 mm long, blade 7.5-12.5 x 2.5-5 cm, ovate-oblong, tip acuminate, base round or cordate, margin entire, serrate when young, lateral nerves 5-7 pairs: glabrous, leathery. **Flowers** polygamous or bisexual, in axillary fascicles, 5-8 mm across, greenish purple. **Samaras** 2-2.5 cm across, orbicular, wings nerved, **Seed** 1.

Moist deciduous and semievergreen forests at low elevations. Throughout Kerala.

Homalium travancoricum Beddome, Fl. Sylv. 2: t. 211. 1872; Bourdillon, For. Trs. Travancore 179. 1908; Gamble, Fl. Pres. Madras 1: 369. 1957 (Fam.: Samyidaeae).

Medium sized trees; *h* -12 m, *d* -45 cm, **Bark** 3-4 mm thick, surface smooth, pale yellow; blaze red. **Leaves** alternate, simple, petioles 8-16 mm long, blade 5-10 x 2.5-5 cm, ovate, tip obtuse with an acute point, or acuminate, base round, upper half of the margin serrate, basal half entire, lateral

nerves 7-8 pairs: pubescent beneath. **Flowers** bisexual, in axillary spikate racemes, small, greenish white. **Fruit** a capsule. **Seeds** small.

Evergreen forests at ca. 1,000 m. South Kerala.

Homalium zeylanicum (Cardner) Benth in J. Linn. Soc. Bot. 4: 35. 1860; Bourdillon, For. Trs. Travancore: 179. 1908; Gamble, Fl. Pres. Madras 1: 369. 1957. *Syn.*: **Blackwellia zeylanica** Gardner, Calcutta J. Nat. Hist. 7: 452. 1847 -*Mal.*: Manthala mukki (Fam.: Samydaeeae).

Large evergreen trees: *h* -30 m, *d* -60 cm, **Bole** straight; **Bark** 15-16 mm thick, pale, rough. **Leaves** alternate, simple, petioles 6-8 mm long, blade 10-12.5 x 5-7.5 cm, elliptic, tip shortly acuminate, base narrow, margin crenate serrate, lateral nerves 6-8 pairs; glabrous. **Flowers** bisexual, in axillary racemes, small, greenish white.

Evergreen forests between 600-900 m. Throughout Kerala.

Hopea glabra Wight et Arnott, Prod. 85. 1834; Hourdillon, For. Trs. Travancore 35. 1908 -*Mal.*: Illa pongu, Irumbagam (Fam.: Dipterocarpaceae),

Large trees; *h* 18-21 m, *d* -1.5 m. **Bark** 5-6 mm thick, surface dark brown, peeling off in irregular flakes. **Leaves** alternate, simple, petioles 10-15 mm long, blade 6-10 x 2.5-4 cm, elliptic, oblong to lanceolate, tip acute or acuminate,

base round or obtuse, lateral nerves 4-8 pairs; glabrous. **Flowers** bisexual, in axillary racemose panicles, 5-6 mm across, creamy yellow. **Fruit** a nut, ovoid, 2-winged.

Evergreen forests between 300-1,200 m; mostly confined to river banks. Throughout Kerala; less common in South.

Hopea parviflora Beddome, Fl. Sylv. 1: t. 7. 1870; Bourdillon, For. Trs. Travancore 33. 1908; Gamble, Fl. Pres. Madras 1: 59. 1957 -*Mal.*: Thambagam (Fam.: Dipterocarpaceae).

Large trees; *h* 30-37 m, *d* -1.5 m. **Bole** cylindrical. **Bark** 6-10 mm thick, surface light brown or grey, mottled with white, rough, vertically fissured; fibrous, blaze yellowish. **Branchlets** reddish brown, slightly pubescent. **Leaves** alternate, simple, petioles 10-12 mm long, blade 8-10 x 3-3.5 cm, ovate or lanceolate, tip apiculate or bluntly acuminate, base cordate or subcordate, margin slightly undulating, lateral nerves 8-12 pairs, axils of the lateral nerves glandular; glabrous. **Flowers** bisexual, in axillary racemose panicles, 3-4 mm across, creamy yellow. **Fruit** a nut, 5-6 mm long, 2-winged, straw coloured.

Evergreen and semievergreen forests along river banks up to 900 m. Throughout Kerala,

Hopea ponga (Dennstaedt) Mabblerley in Taxon 28: 587. 1979. *syn.*:

Artocarpus ponga Dennstaedt, Schlus. Hort. Ind. Malabar 15, 18, 30. 1878. *Hopea wightiana* Wallich ex Wight et Arnott, Prod. 85. 1834; Bourdillon, For. Trs. Travancore 35. 1908; Gamble, Fl. Pres. Madras 1: 59. 1957 -*Mal.*: Ila pongu (Farn.: Dipterocarpaceae).

Medium sized trees; *h* 10-15 m, *d* -1 m. *Bark* surface dark grey, smooth, exfoliations large, rectangular or irregular. *Branchlets* pubescent. *Leaves* alternate, simple, petioles 1-2 mni long, blade 13-24 x 5-7 cm, ovate or ovate-oblong, tip obtuse or subacute, base rounded, lateral nerves 6-10 pairs, obliquely curved; glabrous. *Flowers* bisexual, in racemose panicles, 7-8 mm across, yellowish pink. *Fruit* a nut, 10-12 mm long, ovoid, 2-winged, dark red.

Evergreen and semievergreen forests up to 450 m.

Hopea utilis [Beddome] Bole in Kew Bull. 2: 146. 1951. *Syn.*: *Balanocarpus utilis* Beddome, For. Man. Bot. 236. 1873; Bourdillon, For. Trs. Travancore 36. 1908; Gamble, Fl. Pres. Madras 1: 60. 1957 -*Mal.*: Karakongu, Kongu (Fam.: Dipterocarpaceae).

Medium sized trees; *h* 18-24 m. *d* 2-2.4 m. *Bark* surface dark brown, mottled with grey, smooth. Young shoots pubescent. *Leaves* alternate, simple, petioles 10-12 mm long, blade 12-17 x 2.5-3.5 cm, linear-lanceolate, tip acute, base rounded, margin entire, lateral nerves 10-12 pairs, intercostae

parallel; glabrous. *Flowers* bisexual, 6-8 mm long. *Fruit* a nut, 10-12 mm across, globose, wings 5.

Evergreen forests between 300-900 m: not common.

Humboldtia bourdillonii Prain in J. Asiat. Soc. Bengal 73: 200. 1905; Bourdillon, For. Trs. Travancore 131. 1908; Gamble, Fl. Pres. Madras 1: 291. 1957 -*Mal.*: Adimundan, Korathi (Fam.: Caesalpiniaceae).

Medium sized trees: *h* -15 m, *d* -35 cm. *Leaves* alternate, simply paripinnate, stipules ovate with a falcate appendage, rachis flattened, leaflets 3-4 pairs, 10-17.5 x 3-3.5 cm, lanceolate, tip acuminate, margin entire, intramaarginal nerve present; chartaceous. *Flowers* bisexual, in axillary corymbs, 20-25 x 16-18 mm white. *Fruit* a pod, 8-10 x 2-2.5 cm, flat, oblong, bright red.

Evergreen forests at ca. 900 m. South Kerala.

Humboldtia decurrens Beddome ex Oliver in Hooker, Ic. Pl., ser. 4, 24: t. 2368. 1895; Bourdillon, For. Trs. Travancore 133. 1908; Gamble, Fl. Pres. Madras 1: 291. 1957 -*Mal.*: Kunthani (Fam.: Caesalpiniaceae).

Moderate sized trees; *h* -15 m, *d* -30 cm *Bark* 3-4 mm thick, surface bluish green. *Leaves* alternate, 20-45 cm long, simply paripinnate, rachis 30-35 cm long, broadly winged, stipules 5-6 cm long, falcate-lanceolate, appendage of the stipules ovate or reni-

form, leaflets 4-6 pairs, opposite, petiolules 3-4 mm long, leaflet blade 15-30 x 5-10 cm oblong-lanceolate, tip long acuminate, base obtuse or round, margin entire, lateral nerves 10-16 pairs, intramarginal nerve present. *Flowers* bisexual, in axillary pendulous racemes, 17-18 mm long, pink. *Fruit* a pod, 9-10 x 2.7-3 cm, thin, brown. *Seeds* 2-3, 16-18 mm broad, flat, round.

Evergreen forests between 200-900m. South and Central Kerala; not very common.

Humboldtia unijuga Beddome, Fl. Sylv. 1: t. 183. 1872; Bourdillon, For. Trs. Travancore 130. 1908; Gamble, Fl. Pres. Madras 1: 291. 1957 (Fam.: Caesalpinaceae).

Small trees; *h* -12 m, *d* -20 cm. *Leaves* alternate, 2-foliolate, stipules 5-6 mm long, lanceolate, leaflets subsessile, blade 12.5-17.5 x 3-5 cm, lanceolate, tip acuminate, base unequal, margin entire, intramarginal nerve present. *Flowers* bisexual, in short racemes, 20-25 mm long, crimson. *Fruit* a pod, 7-7.5 cm long, flat, oblong, deep red. *Seeds* 2-3.

Evergreen forests between 600-900 m. South Kerala.

Humboldtia vahliana Wight, Ic. Pl. Indiae Orient. 4:tt. 1607, 1608. 1850; Bourdillon, For. Trs. Travancore 131. 1908; Gamble, Fl. Pres. Madras 1: 291. 1957 -*Mal.*: Korathi [Fam.: Caesalpinaceae).

Medium sized trees; *h* -15 m, *d* -45 cm. *Bark* 5-6 mm thick, surface dark brown, mottled with white. *Leaves* alternate, simply paripinnate, stipules 2.5 cm long, ovate with a reniform appendage, rachis 12-15 mm long, terete, leaflets 3-5 pairs, opposite, petiolules 6-8 mm long, leaflet blade 12.5-17.5 x 3 cm, lanceolate, tip acuminate, margin entire, glabrous, coriaceous. *Flowers* bisexual, in axillary racemes, 27-30 mm long, white. *Fruit* a pod, 15-20 x 3.7-5 cm, flat, pale brown. *Seeds* 3-4.

Evergreen forests up to 300 m. Throughout Kerala.

Hunteria zeylanica (Retzius) Gardner ex Thwaites, Enum. Pl. Zeylan. 191. 1860. *Syn.*: *Cameraria zeylanica* Retzius, Obs. Bot. 4: 24. 1876. *Hunteria corymbosa* Roxburgh (Hort. Bengal 84. 1814, nom. nud.) Fl. Indica 1: 695. 1832; Bourdillon, For. Trs. Travancore 232. 1908; Gamble, Fl. Pres. Madras 2: 568. 1957 [Fam.: Apocynaceae).

Small trees; *h* -10 m, *d* -20 cm. *Bark* 8-13 mm thick, surface grey, mottled; outer bark 0.5-1 mm thick, dead, inner layer thick, brittle, yellowish brown: latex milky white, not copious. *Leaves* opposite, simple, petioles 12-18 mm long, blade 7-15 x 2.5 cm, narrow-lanceolate, tip acuminate, base acute, lateral nerves very numerous, parallel, intramarginal nerve present: glabrous, shining

above. *Flowers* bisexual, in terminal leaf opposed cymes, 6-8 mm long, pale yellow. *Fruit* of 2 fleshy berries. *Seeds* 1 each.

Evergreen and semievergreen forests between 300-600 m. South arid Central Kerala.

Hydnocarpus alpina Wight, Ic. Pl. Indiae Orient. t. 942, 1845; Bourdillon, For. Trs. Travancore 18. 1908; Gamble, Fl. Pres. Madras 1: 37. 1957 -*Mal.*: Malmurithi, Marotti [Fam.: Flacourtiaceae].

Medium sized evergreen trees. *Bark* 5-6 mm thick, surface greyish brown, slightly rough. *Leaves* alternate, simple, drooping. petioles 6-8 mm long, blade 8-25 x 5-10 cm, oblong-lanceolate, tip acuminate, base round, margin entire, lateral nerves 8-10 pairs: glabrous, glossy. *Flowers* bisexual, solitary or in short axillary fascicles, 22-25 mm across, yellowish white. *Fruit* a berry, 6-7.5 cm across, brown, globose, woody. *Seeds* many, embedded in pulp.

Evergreen and semievergreen forests up to 1,800m. Throughout Kerala.

Hydnocarpus macrocarpus [Beddome] Warburg in Engler et Prantl, Natur. Pflanzenfam. 3 (6 A): 21. 1893. *Syn.*: *Asteriastigma macrocarpa* Beddome, For. Man. Bot. 236. 1873; Bourdillon, For. Trs. Travancore 16. 1908; Gamble, Fl. Pres. Madras 1: 38. 1957 (Fam.: Flacourtiaceae).

Medium sized evergreen trees: *h* -20m, *d*-45 cm. *Leaves* alternate.

simple, petioles 2-3 mm long, blade 20-30 x 7.5-10 cm, oblong, tip suddenly acute, base round or subtruncate, lateral nerves 6-8 pairs; glabrous, glossy, pale beneath. *Flowers* polygamous, clustered on old branches, 22-25 mm across, white. *Fruit* a berry, 12-15 cm across, globose, dark brown, woody. *Seeds* 70-100.

Evergreen forests between 450-900 in. South and Central Kerala; but not common.

Hydnocarpus pentandra (Buchanan-Hamilton) Oken, Allg. Naturgesch. 3(2): 1381. 1841. *Syn.*: *Chilmoria pentandra* Buchanan-Hamilton in Trans. Linn. Soc. London 13: 501. 1822. *Hydnocarpus wightiana* Blume, Rumph. 4: 22. 1858; Bourdillon, For. Trs. Travancore 17. 1908; Gamble, Fl. Pres. Madras 1: 37. 1957 -*Mal.*: Marotti [Fam.: Flacourtiaceae].

Large evergreen dioecious trees; *h* -30 m, *d* -75 cm. *Bole* fluted. *Bark* 4-5 mm thick, surface pale brown, mottled with white patches, smooth; brittle; blaze creamy yellowish. *Branchlets* puberulent or pubescent. *Leaves* alternate, simple, petioles puberulent, blade 10-23 x 3.8-10 cm, oblong, tip abruptly acuminate, base obtuse or round, margin crenulate, midrib raised above, lateral nerves 6-8 pairs, intercostae parallel: glabrous. *Flowers* unisexual, 5-6 mm across, solitary or in small fascicles. *Fruit* a berry, 5-10 cm across, globose, brown, woody.

Semievergreen and evergreen forests up to 600 m. Throughout Kerala.

Hymenodictyon obovatum Wallich in Roxburgh, Fl. Indica 2: 416. 1824; Bourdillon, For. Trs. Travancore 190. 1908; Gamble. Fl. Pres. Madras 2: 416. 1957 [Fam.: Rubiaceae).

Small or medium sized trees; *h* -12 m, *d*-30 cm. **Bark** 6-7 mm thick, surface grey-black, rough, exfoliations small; brittle: blaze pink. **Leaves** opposite, 7.5-10 x 5-6 cm, simple, stipules interpetiolar, large, 3.5-5 cm, petioles 3.7-5 cm long, blade obovate, tip suddenly acuminate, base rounded or subtruncate, margin entire, lateral nerves 6-8 pairs; glabrous. **Flowers** bisexual, in terminal racemes, white. **Fruit** a capsule, 10-12 mm long, ovoid, brown. **Seeds** 5-6 mm long, narrowly winged.

A less common tree in the moist deciduous forests up to 1,200 m.

Hymenodictyon orixense (Roxburgh) Mabberley in Taxon 31: 66. 1982. **Syn.:** *Cinchona orixensis* Roxburgh, Bot. Descr. Swietenia 21. 1793. *Hymenodictyon excelsum* (Roxburgh) Wallich in Roxburgh, Fl. Indica 2: 149. 1824; Bourdillon, For. Trs. Travancore 189. 1908; Gamble, Fl. Pres. Madras 2: 418. 1957 -**Mal.:** Ilam chekka, Perum tholi (Fam.: Rubiaceae).

Medium sized trees; *h* -18 m, *d* -45 cm. **Bark** thick, grey, tessell-

late. **Leaves** opposite, simple, petioles 7.5-20 cm, blade 12.5-25 x 10-20 cm, broadly ovate, tip abruptly acuminate, base narrow, margin entire, lateral nerves 7-10 pairs; pale, softly pubescent. **Flowers** bisexual, in axillary and terminal racemes, 5-6 mm long, pale green. **Fruit** a capsule, 2.5 cm long, flat, elliptic. **Seeds** 10-12 mm long, broadly winged.

Moist deciduous forests. Throughout Kerala.

Inga cynometroides Beddome ex Baker in Hooker f., Fl. Brit. India 2: 306. 1878; *Calliandra cynometroides* Beddome, Fl. Sylv. t. 317. 1872; Bourdillon, For. Trs. Travancore 161. 1908; Gamble, Fl. Pres. Madras 1: 309. 1957 [Fam.: Mimosaceae).

Medium sized trees. **Branches** thorny. **Leaves** alternate, 2-foliolate, rachis 10-12 mm long, leaflets 7.5-10 x 2.5-3.7 cm, narrow-oblong, halves dissimilar, pointed at both ends, margin entire; glabrous. **Flowers** bisexual or unisexual, in axillary globose heads, 16-18 mm long. **Fruit** a pod, 10-12.5 x 1.5-1.8 cm, linear, falcate, with a hook at the end. **Seeds** 5-6, orbicular or obovate, compressed.

Evergreen forests between 700-1,000 m. Reported to occur in South Kerala.

Isonandra lanceolata Wight, Ic. Pl. Iridiae Orient. t. 350. 1840; Bourdillon, For. Trs. Travancore

208. 1908; Gamble, Fl. Pres. Madras 2: 535. 1957 [Fam.: Sapotaceae).

Small trees; *h* -10 m, *d* -30 cm. **Bark** brown. **Leaves** alternate, simple, petioles 5-6 mm long, blade 25-38 x 2.5-7.5 cm, lanceolate, oblanceolate or oblong, tip abruptly acuminate, base tapering, margin entire, pale beneath, lateral nerves 10-13 pairs, intercostae subscalariform; glabrous. **Flowers** bisexual, in axillary clusters, 1-2 mm across, white. Fruit a berry, 16-18 mm long, oblong-ovoid, cylindric, scarlet. **Seed** 1, brown, shining.

Evergreen forests between 500-1'500 m Throughout Kerala.

Ixora arborea Roxburgh ex J. E. Smith in Rees, Cyclop. 19: 5. 1811. **Syn.:** *Ixora parviflora* Vahl, Symb. Bot. 3: 11, t. 52. 1794, non Lamarck, 1791; Bourdillon, For. Trs. Travancore 198. 1908; Gamble, Fl. Pres. Madras 2: 445. 1957 (Fam.: Rubiaceae).

Evergreen trees; *h* -10 m. -20 cm. **Bark** 5-6 mm thick, surface dark brown. **Leaves** opposite, simple, petioles 6-8 mm long, blade 7.5-12.5 x 5-7.5 cm, ovate-oblong or obovate, tip shortly acuminate, base round, margin entire, lateral nerves 10-15 pairs, a faint intramarginal nerve present; glabrous, shining above. **Flowers** bisexual, in terminal panicles, 5-6 mm long, white. **Fruit** a drupe, 5-6 mm across, globose, succulent, black, pyrenes 2, planoconvex.

Evergreen and semievergreen forests up to 600 m. Throughout Kerala.

Kingiodendron pinnatum (Roxburgh ex De Candolle) Harms in Engler *et* Prantl, Natur. Pflanzenfam. 1: 194. 1897; Gamble, Fl. Pres. Madras 1: 292. 1957. **Syn.:** *Hardwickia pinnata* Roxburgh (Hort. Bengal. 33. 1814, nom. nud.) ex De Candolle, Prod. Syst. Nat. Veg. 2: 487. 1825; Bourdillon, For. Trs. Travancore 128. 1908 (Fam.: Caesalpiniaceae).

Large evergreen trees; *h* -30 m, *d*-1.2 m. **Bark** 5-6 mm thick, surface dark brown and green, rough. **Leaves** alternate, simply pari- or impari-pinnate, rachis 10-15 cm long, stipules caducous, minute, leaflets 4-7, 5-10 x 2.5-2 cm. alternate, blade ovate-lanceolate, base obtuse, margin entire, lateral nerves 4-5 pairs; glabrous. **Flowers** bisexual, in a panicle of racemes, 2-3 mm across, white. **Fruit** a pod, 4-5 x 2-2.5 cm, flat, oblong, dark brown, woody. **Seed** 1.

Evergreen and semievergreen forests upto 900 m. Throughout Kerala.

Knema attenuata (Hooker f. *et* Thomson) Warburg. Monog. Myristic. 590. 1897; Bourdillon, For. Trs. Travancore 260. 1908; Gamble, Pl. Pres. Madras 2: 851. 1957. **Syn.:** *Myristica attenuata* Wallich ex Hooker f. *et* Thomson, Fl. Indica 157. 3855. -*Mal.:* Chora payin (Fam.: Myristicaceae).

Medium sized dioecious trees; *h* -18 m, *d*-45 cm. **Bark** 6-8 mm

thick, surface greenish black to grey-brown, mottled with green and white, smooth, exfoliations irregular; blaze pink-red; exudation watery, red. **Branches** horizontal. **Branchlets** 2-4 mm thick, rusty pubescent. **Leaves** alternate, distichous, simple, 12-20 x 4-7.5 cm, petioles 10-12 mm long, rusty tomentose, blade lanceolate, tip acuminate, base obtuse, margin entire, lateral nerves 14-15(-18) pairs; glabrous, glossy above, glaucous beneath. **Flowers** unisexual, 5-6 mm across, in small axillary fascicles. **Fruit** a capsule, 3-3.7 cm long, ovoid, apiculate. **Seed** 1, aril crimson.

Evergreen and semievergreen forests up to 600 m. Throughout Kerala.

Kydia calycina Koxburgh, Pl. Coast Coromandel 3: t. 215. 1811; Bourdillon, For. Trs. Travancore 43. 1908; Gamble, Fl. Pres. Madras 1: 67. 1957 [Fam.: Malvaceae].

Small or moderate sized trees; *h* -12 m, *d* -30 cm. **Bark** 5-6 mm thick, exfoliating in irregular flakes or long strips. **Branchlets** stellate pubescent. **Leaves** alternate, simple, petioles 2.5-7.5 cm long, blade 7.5-15 x 7.5-15 cm, ovate, 3-5 lobed, base obtuse, round, truncate or subcordate, lobes acute at apex, lobe margins serrate, 5-7 ribbed from base; stellate-pubescent. **Flowers** bisexual, in terminal panicles, 17-18 mm across, white or pink. **Fruit** a capsule, 5-6 mm across, depressed globose, 3-valved. **Seeds** 2-3, reniform, brown.

Moist deciduous forests up to 900 m. North Kerala.

Lagerstroemia microcarpa Wight, Ic. Pl. Indiae Orient. t. 109. 1839. **Syn.:** *Lagerstroemia lanceolata* Wallich ex C. B. Clarke in Hooker f., Fl. Brit. India 2: 576. 1879; Bourdillon, For. Trs. Travancore 175. 1908; Gamble, Fl. Pres. Madras 1: 362. 1957 -**Mal.:** Ven thekku (Fam.: Lythraceae).

Large deciduous trees; *h* -30 m, *d*-90 cm. **Bark** 6-8 mm thick, surface white, smooth, peeling off in thin, long and broad flakes; blaze creamy yellow, outer part brittle, inner layers fibrous. **Branches** knotted. **Leaves** opposite, distichous, simple, stipules caducous, petioles 6-12 mm long, blade 5-10 x 3.7-5 cm, ovate-lanceolate, tapering at both ends, margin entire, lateral nerves 6-d pairs: shining above, bluish white below, glabrous. **Flowers** bisexual, in axillary and terminal panicles, 5-6 mm across, white. **Fruit** a capsule, 8-12 mm long, ovoid. **Seeds** many, elongate, falcately winged, brownish.

Moist deciduous and semi-evergreen forests up to 900 m. Throughout Kerala.

Lagerstroemia reginae Roxburgh, Pl. Coast Coromandel 1: t. 65. 1795. **Syn.:** *Lagerstroemia flos-reginae*, Retzius, Obs. Bot. 5: 25. 1788, p. p.; Bourdillon For. Trs. Travancore 175. 1908; Gamble, Fl. Pres. Madras 1: 362. 1957 -**Mal.:** Mani maruthu,

Neer maruthu, Puzha maruthu (Fam.: Lythraceae).

Large deciduous trees; *h* -24 m, *d* -90 cm. **Crown** round. **Bole** rarely buttressed. **Bark** 4-6 mm thick, surface yellowish brown, smooth; fibrous; blaze striated, yellow, turning to brown. **Leaves** opposite, distichous, simple, petioles 6-12 mm long, blade 15-25 x 5-10 cm, ovate-lanceolate, tip acute, base rounded, margin entire, lateral nerves 12-16 pairs; glabrous. **Flowers** bisexual, in terminal panicles, 5-7 cm across, pink. **Fruit** a capsule, 18-30 mm long, ovoid, brown, woody. **Seeds** 10-12 mm long, winged, pale brown.

Semievergreen and swamp forests; mostly confined to river banks. Throughout Kerala.

Lanea coromandelica (Houttugn) Merrill in J. Arnold Arbor. 19: 353. 1939. **Syn.**: *Dialium coromandelicum* Houttugn, Nat. Hist., ser. 2, 2: 39, t. 5, fig. 2. 1774. **Odina wodier** Roxburgh, Fl. Indica 2: 293. 1832; Gamble, Fl. Pres. Madras 1: 187. 1957. **-Mal.**: Kalasam, Uthi (Fam.: Anacardiaceae).

Large dioecious or monocious trees; *h* -24 m, *d* -75 cm. **Bark** surface grey, smoothish, exfoliating in small irregular rounded flakes; fibrous; blaze crimson or deep pink; sap copious, red. **Leaves** alternate, simply imparipinnate, 30-47 cm long, leaflets 7-9, opposite, leaflet blade 7-12 x 3-8 cm, oblong, tip acuminate, margin entire. **Flowers** unisexual,

male in compound racemes, female in simple racemes, 8 mm across yellow. **Fruit** a drupe, 12 mm long, ovoid, red.

Semievergreen and moist and dry deciduous forests up to 1,000 m. Throughout Kerala.

Litsea bourdillonii Gamble in Kew Bull. 1925. 130. 1925 et Fl. Pres. Madras 2: 866. 1957 [Fam.: Lauraceae).

Moderate sized to large dioecious trees. **Leaves** alternate, simple, petioles 8-10 mm long, blade 18-23 x 8-10 cm, obovate or obovate-oblong, tip obtuse or abruptly acute, base cuneate, margin entire, lateral nerves 12-18 pairs, close; minutely fulvous pubescent. **Flowers** in dense tufts, axillary or lateral. **Fruit** a berry, 10-32 mm long, oblong, seated on a cup-shaped perianth tube,

Evergreen forests between 700-2,800 m. South Kerala.

Litsea coriacea (Wallich) Hooker f., Fl. Brit India 5: 166. 1886; Bourdillon. For. Trs. Travancore 270. 1908; Gamble, Fl. Pres. Madras 2: 865. 1957. **Syn.**: *Tetranthera coriacea* Heyne ex Wallich, Num. List Dried Pls. E. India Co. Mus. (Cat.) no. 2556. 1830. **-Mal.**: Maravettythali (Fam.: Lauraceae).

Small dioecious trees; *h* -12 m, *d* -30 cm. **Branchlets** puberulous. **Leaves** alternate, simple, petioles 4-6 mm long, blade 10-17.5 x 2.5-7.5 cm, ovate or lanceolate, tip acute

or acuminate, base narrowed, lateral nerves 6-7 pairs: glabrous, minutely puberulous beneath. **Flowers** crowded in subsessile axillary umbels, small, white. **Fruit** a berry, 10-12 mm long, ovoid, greenish white, seated on a thickened perianth tube.

Evergreen and semi-evergreen forests up to 600 m. Throughout Kerala.

Litsea floribunda (Blume) Gamble, Fl. Pres. Madras 1238. 1925 *et* 2: 867. 1957. **Syn.:** *Cylicodaphne floribunda* Blume in Mus. Bot. Ludg. Bat. 1: 387. 1857 (Fam.: Lauraceae).

Medium sized dioecious trees: *h* -15 m, *d* -45 cm. **Bark** 8-10 mm thick, surface light brown, smooth, lenticellate, lenticels horizontal; brittle: blaze dull yellow. **Leaves** simple, alternate, petioles 10-12 mm long, blade 7.5-25 x 3.7-10 cm, elliptic or ovate-oblong, tip acute or acuminate, base tapering, margin entire, lateral nerves 10-15 pairs, prominent beneath; coriaceous, rusty tomentose beneath. **Flowers** male in racemes. **Fruit** a berry, 12-18 mm long, oblong, seated on a turbinate perianth tube.

Evergreen forests between 600-2,800 m. Throughout Kerala.

Litsea glutinosa (Loureiro) C. B. Robinson in Philip. J. Sci. 6: 321. 1911. **Syn.:** *Sebifera glutinosa* Loureiro, Fl. Cochinch. 2: 283. 1790. **Litsea chinensis** Lamarck, Encycl. Meth. 3: 574. 1792; Gamble, Fl. Pres.

Madras 2: 864. 1957. **Litsea sebifera** Persoon, Syn. Pl. 2: 4. 1809: Bourdillon, For. Trs. Travancore 305. 1908 (Fam.: Lauraceae).

Medium sized dioecious trees; *h* -12 m, *d* -30 cm. **Bark** 2-2.5 cm thick, surface brown. **Leaves** alternate, simple, petioles 12-36 mm long, blade 6.2-23.5 x 3-10 cm, elliptic-oblong, tip round or obtuse, base acute, lateral nerves 8-12 pairs; glabrous above, grey-pubescent beneath. **Flowers** in few flowered umbels, 5-6 mm across, yellowish. **Fruit** a berry. 5-6 mm across, globose, purple.

An occasional tree in the evergreen forests up to 900 m. Throughout Kerala.

Litsea insignis Gamble in Kew Bull. 1925: 130. 1925 *et* Fl. Pres. Madras 2: 866. 1957 (Fam.: Lauraceae).

Lofty dioecious trees. **Leaves** alternate, simple, petioles 10-12 mm long, blade 18-22 x 10-12 cm, elliptic-oblong or obovate, tip obtuse or abruptly acute, base cuneate, margin entire, lateral nerves 10-12 pairs; intercostae parallel, conspicuous; fulvous pubescent beneath. **Flowers** in axillary, lateral or cauliflorous umbellules, yellowish. **Fruit** a berry, 20-25 x 5-6 mm ellipsoid, on a deep obconic cup.

Evergreen forests between 300-900 m. South Kerala.

Litsea nigrescens Gamble, Fl. Pres. Madras 1236. 1925 *et* 2: 865. 1957 (Fam.: Lauraceae).

Moderate sized dioecious trees. *Leaves* alternate, simple, petioles 12-18 mm long, blade 10-12.5 x 4-5 cm, elliptic, tip obtusely acute or acuminate, base narrowed, margin entire, lateral nerves 9-12 pairs; glabrous, coriaceous. *Flowers* in racemes of umbellules.

Evergreen forests up to 500 m. South Kerala.

Litsea oleoides (Meissner) Hooker f., Fl. Brit. India 5: 175. 1886; Gamble, Fl. Pres. Madras 2: 865. 1957. *Syn.*: *Tetranthera oleoides* Meissner in De Candolle, Prod. Syst. Nat. Veg. 15(1): 195. 1864 (Fam.: Lauraceae).

Large dioecious trees. *Leaves* alternate, uppermost ones sometimes opposite, petiolules stout, blade 12-15 x 4-6 cm, elliptic, elliptic-oblong or lanceolate, tip obtuse or acute, base narrowed or rounded, lateral nerves 8-12 pairs; glabrous, coriaceous. *Flowers* in axillary racemes. *Fruit* a berry, 20-25 mm across, depressed globose, seated on the perianth tube.

Evergreen forests above 1,200 m. South and Central Kerala.

Litsea wightiana (Nees) Hooker f., Fl. Brit. India 5: 177. 1886; Bourdillon, For. Trs. Travancore 270. 1908; Gamble, Fl. Pres. Madras 2: 86E. 1957. *Syn.*: *Cyhcodaphne wightiana* Nees in Wallich, Pl. Asiat. Rar. 2: 68. 1830 (Fam.: Lauraceae).

Large evergreen dioecious trees; *h* -15 m, *d* -45 cm. *Bark* surface

brown, smooth, lenticellate, lenticels horizontal. *Leaves* alternate, simple, petioles 10-12 mm long, blade 8-10 x 4-6 cm, elliptic-lanceolate, tip obtuse, narrowed or round, lateral nerves 4-8 pairs. *Flowers* in 4-flowered umbels, arranged in axillary racemes, 5-6 mm long, yellowish white. *Fruit* a berry, 14-16 mm long, ovoid, seated on the enlarged perianth.

Evergreen forests above 1,800 m. South and Central Kerala.

Lophopetalum wightianum Arnott in Ann. Nat. Hist. 3: 151. 1639; Bourdillon, For. Trs. Travancore 89. 1908; Gamble, Fl. Pres. Madras 1: 147. 1957 -*Mal.*: Ven kotta (Fam.: Celastraceae).

Large trees: *h* -30 m, *d* -90 cm. *Bark* surface brown, mottled with white. *Leaves* alternate or opposite, simple, petioles 1-1.5 cm long, blade 7.5-22.5 x 3.7-10 cm, oblong-obtuse at both ends, margin entire, lateral nerves 6-7 pairs; glabrous. *Flowers* bisexual in dichasial cymes, 15-18 mm across, yellow and dark crimson. *Fruit* a capsule, 10-15 cm long, trigonous, brown. *Seeds* 5 x 1.2 cm, thin, brown.

Evergreen forests up to 900 m; mostly confined to river banks. Throughout Kerala.

Macaranga indica Wight, Ic. Pl. Indiae Orient. tt. 1883, 1949 ii. 1852; Gamble, Fl. Pres. Madras 2: 957. 1957 -*Mal.*: Vatta (Fam.: Euphorbiaceae).

Small, often gregarious, dioecious trees. **Bark** grey, smooth. **Leaves** 15-30.5 x 12.5-25 cm, alternate simple, petioles 12-22 cm long, blade deltoid-ovate, tip acuminate, base peltate, margin entire or toothed, palmately 8-9 nerved from base, midrib with 6-8 pairs of lateral nerves; with round yellow resinous glands beneath, softly tomentose. **Flowers** in axillary zig-zag panicles. **Fruit** a capsule, small, covered with resinous outgrowths, echinate. **Seeds** globose.

Moist deciduous and secondary forests between 900-1,800 m. North and Central Kerala.

Macaranga peltata (Roxburgh) Muell. in De Candolle, *Prod. Syst. Nat. Veg.* 15(2): 1010. 1866; Gamble, *Fl. Pres. Madras* 2: 928. 1957. **Syn.**: *Osyris peltata* Roxburgh *Fl. Indica* 3: 855. 1832. **-Mal.**: Vatta (Fam.: Euphorbiaceae).

Small dioecious trees; **h** -12 m, **d** -30 cm. **Bark** 10-15 mm thick, surface pale, greyish brown, mottled with white, smooth. lenticellate; brittle; blaze deep pink-red. **Branchlets** glaucous. **Leaves** alternate, simple. stipules large, ovate-acuminate, petioles 12-35 cm long, blade 12-25 x 12-25 cm. orbicular-ovate, tip long acuminate, base peltate, 3-ribbed from base, nerves and ribs prominent beneath, red. **Flowers** greenish yellow, male in dense panicles, concealed in large bracts, female in smaller panicles. **Fruit** a capsule, 5-6 mm across, globose, glandular. **Seeds** black.

Secondary, moist deciduous and semievergreen forests up to 900 m. Throughout Kerala.

Madhuca bourdillonii (Gamble) H. J. Lam in *Bull. Jard. Bot. Bzg.*, ser. 3, 7: 463. 1927. **Syn.**: *Bassia bourdillonii* Gamble in *Kew Bull.* 1921: 121. 1921 *et Fl. Pres. Madras* 2: 536. 1957. **-Mal.**: Thandidiyan (Fam.: Sapotaceae).

Medium sized trees; **h** -20 m, **d** -45 cm. **Bark** 6-8 mm thick, surface greyish brown, deeply fissured; latex milky white. **Leaves** alternate, simple, petioles 6-20 mm long, tomentose, blade 23-30 x 6.5-7.5 cm, ovate-oblong, tip rutuse or shortly acuminate, base tapering, margin entire, lateral nerves 18-22 pairs; glabrous above, fulvous pubescent beneath. **Flowers** bisexual in terminal clusters, 15-16 mm long, yellowish white. **Fruit** a berry, 3.7 cm long, ovoid, green. **Seeds** 4-5.

Evergreen forests up to 300 m. South Kerala (Aryankavu).

Madhuca longifolia (Koenig ex Linnaeus) McBride, *Contr. Gray Herb. Harv. Univ. N. S.* 53: 17. 1918. **Syn.**: *Bassia longifolia* Koenig in Linnaeus, *Mant. Alt. App.* 563. 1771; Bourdillon, *For. Trs. Travancore* 209. 1908; Gamble, *Fl. Pres. Madras* 2: 537. 1957. **-Mal.**: Iluppa (Fam.: Sapotaceae).

Large trees; **h** -25 m, **d** -90 cm. **Bark** thick, dark yellowish grey, slightly furrowed; blaze red; latex milky white. **Leaves** alternate,

rowded at the ends of branchlets, simple, stipules linear, petioles 12-37 mm long, slender, blade 8.5-12.5 x 4.5-5 cm, lanceolate, tapering to both ends, margin entire, lateral nerves 10-12 pairs; glabrous. *Flowers* bisexual, axillary, solitary, 16-18 mm long, pale yellow. *Fruit* a berry, 4-5 cm long, obliquely ovoid. *Seeds* 1-2, compressed, yellow, shining.

Evergreen and semievergreen forests at low levels. North and Central Kerala.

Madhuca nerriifolia (Moon) H. J. Lam in Bull. Jard. Bot. Bzg., ser. 3, 7: 182, 265. 1925. *Syn.*: *Bassia nerriifolia* Moon, Cat. Pl. Ceylon 36. 1824. *Bassia malabririca* Beddome, For. Man. Bot. 140. 1870; Bourdillon, For. Trs. Travancore 210. 1908; Gamble, Fl. Pres. Madras 2: 537. 1957 (Fam.: Sapotaceae).

Large trees. *Bark* 6-8 mm thick, surface dark brown, knotty. *Leaves* alternate, crowded at the tips of branchlets, simple, petioles 6-18 mm long, blade 7.5-25 x 2.5-6.2 cm, linear-oblong or oblanceolate, tip obtuse, base tapering, margin entire, lateral nerves 15-25 pairs; glabrous, shining, coriaceous. *Flowers* bisexual, in axillary subterminal clusters, 10-12 mm across, yellowish white. *Fruit* a berry, 20-25 x 6-8 mm. *Seed* 1, brown.

Evergreen forests; mostly seen along the banks of streams and rivers up to 1,200 m. Throughout Kerala.

Mallotus philippensis (Lamarck) Meuller-Aargau in Linnaea 34: 196. 1865; Bourdillon, For. Trs. Travancore 305. 1908; Gamble, Fl. Pres. Madras 2: 924. 1957. *Syn.*: *Croton philippensis* Lamarck, Encycl. Meth. 2: 206. 1784 (Fani: Euphorbiaceae).

Small dioecious trees; *h*-12 m. *d*-30 cm. *Bark* 4-5 mm thick, pale brown. *Leaves* alternate, simple, petioles 2.5-7.5 cm long, blade 7.5-20 x 3.7-11 cm, ovate-lanceolate, tip subacute, base rounded or acute, margin entire or slightly dentate-serrate, strongly 3-nerved from base; grey pubescent and glandular beneath. *Flowers* in terminal spikes. *Fruit* a capsule, 7-8 mm across, 2-3 lobed, covered with red resinous powder. *Seeds* black.

Moist deciduous, semievergreen and evergreen forests up to 1,500 m. Throughout Kerala.

Mallotus tetracoccus (Roxburgh) Kurz in J. Asiat. Soc Bengal 16: 245. 1873. *Syn.*: *Rottlera tetracocca* Roxburgh, Fl. Indica 3: 827. 1832. *Mallotus albus* sensu Meuller-Aargau in Linnaea 34: 188. 1865, excl. basionym; Bourdillon, For. Trs. Travancore 304. 1908. *Mallotus albus* var. *occidentalis* Hooker f., Fl. Brit. India 5: 429. 1887; Gamble, Fl. Pres. Madras 2: 924. 1957 -*Mal.*: Vattakkumbil (Fam.: Euphorbiaceae).

Medium sized dioecious trees; *h*-32 m, *d*-30 cm. *Bark* 5-8 mm thick, surface grey, smooth; fibrous; blaze concentrically

striate, pinkish, inner surface slimy to touch. **Branchlets** grey tawny tomentose. **Leaves** alternate, simple, petioles 7.5-10 cm long, blade 10-15 x 10-15 cm, orbicular or deltoid-ovate, tip acuminate, base truncate or subcordate, margin entire, subcrenulate or sometimes obscurely 3-5 lobed, 3-5 ribbed from base; silvery white beneath. **Flowers** yellow, in branching pubescent spikes. **Fruit** a capsule, 7-8 mm across, globose. **Seeds** black.

. Evergreen and often in secondary forests between 500-1,200 m. Throughout Kerala.

Mammea suriga (Buchanan-Hamilton ex Roxburgh) Kostermans in Comm. For. Res. Inst. Indonesia 72: 201, f. 19. 1961. **Syn.:** *Calophyllum suriga* Buchanan-Hamilton ex Roxburgh, Fl. Indica 2: 608. 1832. *Ochrocarpus longifolius* Bentham et Hooker f. ex T. Anderson in Hooker f., Fl. Brit. India 1: 270. 1874; Gamble, Fl. Pres. Madras 1: 54. 1957 (Fam.: Clusiaceae).

Large evergreen trees. **Bark** 5-6 mm thick, surface reddish brown; exudation red. **Leaves** opposite, simple, blade 12-23 cm long, oblong or oblong-lanceolate, margin entire, lateral nerves obscure; coriaceous. **Flowers** bisexual, solitary or in axillary fascicles, 6-7 mm across, white, streaked with red. **Berries** 2-2.5 cm long, ovoid. **Seed** 1, large.

Reported to occur in North Kerala.

Mangifera indica Linnaeus, Sp. Pl. 200. 1753; Rourduillon, For. Trs. Travancore 103. 1908; Gamble, Fl. Pres. Madras 1: 185. 1957 -*Mal.*: Mavu (Fam.: Ariacardiaceae).

Large evergreen trees; **h** -15 m. **Bark** 2-2.5 cm thick, surface dark grey, rough. **Branchlets** 3-7 mm thick. **Leaves** alternate, clustered at the tips of branchlets, simple, petioles 1-6 cm long, blade 15-30 x 3-5 cm, oblong-lanceolate, tip acuminate, base acute, margin entire, lateral nerves 14-28 pairs; glabrous, coriaceous. **Flowers** polygamodioecious, in terminal panicles, pale yellow. **Fruit** a drupe, 5-15 cm long, ovoid, compressed, yellowish.

Evergreen and semievergreen forests up to 1,200 m. Throughout Kerala.

Manilkara roxburghiana (Wight) Dubard in Ann. Mus. Col. Mars. 23: 10, f. 3. 1915. **Syn.:** *Mimusops roxburghiana* Wight, Ic. Pl. Indiae Orient. 4: t. 1588. 1850; Bourduillon, For. Trs. Travancore 213. 1908; Gamble, Fl. Pres. Madras 2: 538. 1957 (Fam.: Sapotaceae)

Large trees; **h** -18 m, **d**-60 cm. **Latex** milky white. **Leaves** alternate, simple, stipules lanceolate, caducous, petioles 12-20 mm long, blade 6-10 x 3.7-5 cm elliptic-obovate, tip obtuse or emarginate, base round, margin entire; glabrous. **Flowers** bisexual, in axillary fascicles, white. **Berries** 16-18 mm across, depressed globose. **Seeds** 3-6.

Reported from the evergreen forests up to 1,500 m. South Kerala.

Mastixia arborea (Wight) Beddome, Fl. Sylv. t. 216 1872; Bourdillon, For. Trs. Travancore 184. 1908; Gamble, Fl. Pres. Madras 1: 405. 1957. *Syn.: Bursinopetalum arboreum* Wight, Ic. Pl. Indiae Orient. t. 956. 1845 (Fam.: Cornaceae).

Large trees; *h* -30 m, *d* -60 cm. *Bark* 10-12 mm thick, surface pale brown., mottled with dark brown, lenticellate. *Leaves* alternate, simple, petioles 12-38 mm long, blade 7.5-20 x 3.6-7.5 cm, elliptic-ovate, tip abruptly acuminate, acumen twisted, base acute, margin entire, lateral nerves 3-4(-5) pairs; glabrous. Flowers bisexual, in terminal corymbose panicles, 5-6 mm across, yellowish green. Fruit a drupe, 2.5-3 cm long, avoid, greenish purple. Seed ellipsoid.

Evergreen forests above 900 m. Throughout Kerala.

Mastixia pentandra Blume, Bijdr. 654. 1826, non Clarke: Bourdillon For. Trs. Travancore 184. 1906; Gamble, Fl. Pres. Madras 1: 405. 1957 -Mal.: Vella adamb (Fam.: Cornaceae).

Large trees; *h* -30 m, *d* -75cm. *Bark* 6-8mm thick. *Leaves* alternate, simple, petioles 2-4 cm long, blade 10-18 x 5-8 cm, obovate, elliptic-oblong, tip acute to acuminate, base cuneate to attenuate, margin entire, lateral nerves 4-7(-9) pairs; glabrous. *Flowers* bisexual, in

terminal panicles, small green. *Fruit* a drupe, 3-3.5cm long, ovoid, greenish purple.

Evergreen forests up to 300 m. Throughout Kerala.

Melia dubia Cavanilles, Diss. 7: 369, 1789. *Syn.: Melia composita* Willdenow, Sp. Pl. 2: 509. 1799; Bourdillon, For. Trs. Travancore 71. 1908; Gamble, Fl. Pres. Madras 1: 126. 1957 -Mal.: Mala veppu (Fam.: Meliaceae).

Large deciduous trees; *h* -18 m, *d* -60 cm. *Bark* 6-8 mm thick, surface dark brown, rough, exfoliations rectangular, long and broad, attached by the distal end, exfoliate surface brown: outer part pink, inner fibrous. *Branchlets* 8- 10 mm thick. Leaves alternate, 30-90 cm long, 2-3 pinnate, imparipinnate, pinnae 3-7 pairs, leaflets 3-11 on each pinna, petiolules 3-7 mm long, leaflet blade 4.5-6.5 (-9) x 2-2.5(-4) cm, ovate-lanceolate, tip acuminate, base obtuse, round or acute, symmetric or asymmetric, margin crenate, lateral nerves 6-10 pairs: glabrous. *Flowers* bisexual, in axillary panicles, 5-6 mm long, greenish white. Fruit a drupe, 2.5-3.7cm long, greenish ;yellow, ovoid, fleshy.

Moist deciduous forests up to 600 m. Throughout Kerala.

Meliosma pinnata (Roxburgh) Walpers ssp. *arnottiana* [Wight] Beusekom in Blumea 19: 499. 1971. *Syn.: Millingtonia arnottiana*. Wight, Ill. Indian Bot. 1: 144. t. 53. 1840.

Meliosma arnottiana (Wight) Walpers, Rep. 1:423. 1842; Bourdillon, For. Trs. Travancore 101. 1908; Gamble, Fl. Pres. Madras I: 183. 1957 -*Mal.*: Kalavi (Fam.: Sabiaceae).

Medium sized trees; *h* -18 m. *d*-45 cm. *Bark* 10.15 mm thick, surface grey brown, mottled with white; blaze creamy pink, turning to orange yellow, interspersed with lighter rays, inner bark succulent, innermost layers fibrous. *Leaves* alternate, 15-25 cm long, simply imparipinnate, leaflets 9-15, putiolules 5-6 mm long, blade 7.5-12.5 x 2.5-3.7 cm. lanceolate, tip acute, base obtuse, symmetric or asymmetric, margin entire, lateral nerves 10-12 pairs; glabrous above, rusty tomentose beneath. *Flowers* bisexual, in terminal panicles, yellowish white. *Fruit* a drupe, 5-6 mm across, globose.

Evergreen forests between 1,200-2,100 m. Throughout Kerala.

Meliosma simplicifolia (Roxburgh) Walpers, Rep. 1:423. 1842; Bourdillon, For. Trs. Travancore 101. 1908; Gamble, Fl. Pres. Madras 1: 182. 1957. *Syn.*: *Millingtonia simplicifolia* Roxburgh, Pl. Coast Coromandel 3: t. 254, 1820 (Fam.: Sabiaceae).

Small trees. *Leaves* alternate, simple, petioles 12-18 mm long, blade 12.5-40 x 8-18 cm, oblanceolate, tip acute, base attenuate, margin entire, or distantly toothed when young, midrib and nerves raised above, lateral nerves 12-16 pairs; glabrous. *Flowers* bisexual,

in terminal lax panicles, small, yellowish white. *Fruit* a drupe, 5-6 mm across. globose, purple-black. *Stone* rugose.

Evergreen and semievergreen forests up to 1,300m. Throughout Kerala.

Mesua nagassarium (Burmans f.) Kostermans in Ceylon J. Sci., Biol. sci., 12 (1):71. 1976, var. ***nagassarium*** -*Mal.*: Churuli, Nangu (Fam.: Clusiaceae).

Small to medium sized trees; *h* 10-15 m. *Bark* 5-6 mm thick, surface brown, smooth, exfolitions irregular; outer bark dead, brown, inner bark pinkish, turning to brown, semifibrous; latex scanty, milky white. *Leaves* opposite, simple, petioles 2-4 mm long, blade 15-18x2-4 cm, linear-oblong, acute or shortly acuminate, base more or less obtuse, margin entire, lateral nerves numerous, parallel; glabrous, underneath glaucous-pruinose. *Flowers* bisexual, axillary or terminal, solitary or geminate, 7-8 cm across, white. *Fruit* a capsular nut, 3-4 cm in diameter, ovoid. *Seeds* 1-4, browc.

Evergreen forests up to 1,200 m. Throughout Kerala.

Mesua nagassarium (Burmans f.) Kosternians var. ***pulchella*** (Planchon et Triana) Trimen, Hbk. Fl. Ceylon 1: 106. 1893. *Syn.*: ***Mesua pulchella*** Planchon et Triana in Ann. Sci. Nat., ser. 4, Bot. 15: 307. 1861 (Fain.: Clusiaceae).

Large to medium sized trees; *h* -20m, *d* -45 cm. **Bark** 8-10 mm thick, surface brown, rough, exfoliations irregular; fibrous; blaze light pink; latex scanty, colourless. **Leaves** opposite, simple, petioles 3-4 mm long, blade 5-6 x 1-1.2 cm, narrowly lanceolate, tip long acuminate, base acute, margin entire, lateral nerves obscure, very numerous, close, parallel; glabrous. **Flowers** bisexual, solitary or geminate, 3-3.5 cm across, white.

Evergreen forests at *ca.* 1000 m.

Michelia champaca Linnaeus, Sp. Pl. 536. 1753; Bourdillon, For. Trs. Travancore 2. 1908; Gamble, Pl. Pres. Madras 1: 6. 1957 -**Mal.**: Chem pakam, Ponchempakam (Fam.: Magnoliaceae).

Tall evergreen trees; *h* -20 m, *d* -90 cm. **Crown** oblong, spreading. **Branches** ascending and spreading. **Bark** 10-12 mm thick, surface grey with numerous small pits. **Branchlets** lenticellate, lenticels elliptic, lenticular. **Leaves** alternate, simple, petioles 10-15(-30) mm long, stipules adnate to the petiole, convolute, pubescent, stipular scars annular, blade 20-25 x 6.2-10 cm, ovate-lanceolate, tip acuminate, base attenuate, margin entire, wavy, midrib depressed above, lateral nerves 8-12(-15) pairs; glabrous. **Flowers** bisexual, solitary, terminal or axillary, 4-5 cm across, yellow or white, fragrant. **Fruit** an aggregate of follicles. **Seeds** 1-12, oval, outer wall fleshy, reddish brown, inner wall hard, black.

Occasional in evergreen forests.

Milium tomentosum (Roxburgh) Sinclair in Gard. Bull. 14: 378. 1955. **Syn.**: *Uvaria tomentosa* (Roxburgh) Pl. Coast Coromandel 1: t. 35. 1795. *Saccopetalum tomentosum* (Roxburgh) Hooker f. et Thomson, Fl. Indica 152. 1855; Bourdillon, For. Trs. Travancore 10. 1908; Gamble, Pl. Pres. Madras 1: 16. 1957 -**Mal.**: Kana kaitha (Fam.: Annonaceae).

Large deciduous trees. **Bark** 15-25 mm thick, surface blackish, vertically striate; fibrous; blaze yellowish, peels from the inner surface netted. **Branchlets** tomentose. **Leaves** alternate, simple, petioles 5-6 mm long; blade 10-30 x 6.5-10 cm, ovate, tip acute, base acute, truncate or subcordate, lateral nerves 7-10 pairs; glabrous above, tomentose beneath. **Flowers** bisexual, in axillary cymes, greenish yellow.

Moist deciduous and semievergreen forests at low elevations. Throughout Kerala.

Mimusops elengi Linnaeus, Sp. Pl. 349. 1753; Bourdillon, For. Trs. Travancore 212. 1908; Gamble, Pl. Pres. Madras 2: 538. 1957 -**Mal.**: Ilenji (Fam.: Sapotaceae).

Small trees; *h* -18 m, *d* -75 cm. **Bark** 8-10 mm thick, surface dark grey, rough, vertically fissured; outer bark thin, dead, corky, inner bark brittle, pink; latex milky white. **Leaves** alternate, simple; stipules lanceolate, caducous,

petioles 20-25 mm long, blade 7.5-12.5 x 3.7-6 cm, elliptic-ovate, tip shortly acuminate, base rounded, margin entire, lateral nerves very numerous, parallel; glabrous, shining above. *Flowers* bisexual, in axillary fascicles, 10-12 mm across, white. *Fruit* a berry, 20-25 mm long, ovoid, orange yellow. *Seed* 1, elliptic, compressed, brown, shining.

Evergreen and semievergreen forests up to 1,200m. Throughout Kerala.

Mitragyna parvifolia (Roxburgh) Kunth, Obs. Naubl. Ind. 19. 1839; Gamble, Fl. Pres. Madras 2: 413. 1957. *Syn.:* *Nauclea parvifolia* Roxburgh, Pl. Coast Coromandel t. 52. 1795. *Stephegyne parvifolia* Korthals, Verh. Gesch. Nat. Bot. 161. 1841; Bourdillon, For. Trs. Travancore 213. 1908 -*Mal.:* Veembu (Fam.: Rubiaceae).

Large deciduous trees; *h* -25 m, *d* 60-90 cm. *Bark* 20-25 mm thick, surface light grey, smooth, exfoliations irregular; fibrous; blaze pink, traversed by whitish rays. *Leaves* opposite, simple, petioles 10-12(-40) mm long, blade 5-10 x 3.7-7.5 cm, ovate, tip obtuse, base obtuse or round, margin entire, lateral nerves 6-10 pairs; glabrous, pale beneath. *Flowers* bisexual, in terminal heads, 10-12 mm long, creamy white. *Fruit* a capsule, 2-3 mm long, ribbed. *Seeds* many, flattened.

Moist deciduous, semievergreen and dry deciduous forests. Throughout Kerala.

Mitragyna tubulosa (Arnott) J. Havil. in J. Linn. Soc. 33: 71. 1897; Gamble, Fl. Pres. Madras 2: 413. 1957. *Syn.:* *Nauclea tubulosa* Arnott in Thwaites, Enum. PI. Zeylan. 137. 1859. *Stephegyne tubulosa* Hooker f. in Bentham *et* Hooker f., Gen. Pl. 2: 31. 1873; Bourdillon, For. Trs. Travancore 213. 1908 -*Mal.:* Malam thumba (Fam.: Rubiaceae).

Small deciduous trees; *h* -15 m, *d* 40-45 cm. *Bark* 20-15 mm thick, surface dark green, smooth. *Leaves* opposite, simple, stipules large, petioles 12-18 mm long, blade 10-20 x 7-12.5 cm, broadly ovate, tip acute, base round, margin entire, lateral nerves 10-12 pairs; glabrous. *Flowers* bisexual, in terminal heads, 10-11 mm long, purplish pink. *Fruit* a capsule, ovoid, ribbed. *Seeds* flattened.

Semievergreen and moist deciduous forests. South and Central Kerala.

Mitrephora heyneana Thwaites, Enum. PI. Zeylan. 8. 1858; Bourdillon, For. Trs. Travancore 8. 1908; Gamble, Fl. Pres. Madras 1: 14. 1957 (Fam.: Annonaceae).

Medium sized trees; *h* -15 m, *d* -30 cm. *Bark* 5-6 mm thick, surface dark green, smooth. *Leaves* alternate, simple petioles 4-6 mm long, blade 5-10 x 2.5-6 cm, ovate-lanceolate, tip acuminate or obtuse, base round, lateral nerves 4-6 pairs; glabrous. *Flowers* bisexual, solitary or geminate, 5 cm across, axillary. *Fruit* a berry, 10-12 mm long, ovoid,

Evergreen forests at ca. 1,200 m. South and Central Kerala.

Morinda tomentosa Heyne *ex* Roth, Nov. Pl. Sp. 147. 1821. *Syn.*: *Morinda tinctoria* Roxburgh (Hort. Bengal. 15. 1814, *nom. nud.*) Fl. Indica 2: 197. 1924, non Noronha, 1790; Bourdillon, For. Trs. Travancore 197. 1908; Gamble, Fl. Pres. Madras 2: 499. 1957 -*Mal.*: Manjanathi (Fam.: Rubiaceae).

Moderate sized trees; *h* -10 m, *d* -45 cm. **Bark** surface pale brown, vertically fissured; corky, brittle. **Branchlets** obscurely 4-gonous. **Leaves** opposite, simple, stipules sheathing, connate, petioles 5-6 mm long, blade 7.5-15 x 2.5-6 cm, lanceolate, acute at both ends, margin entire; glabrous, dull green. **Flowers** bisexual, in terminal globose heads, white. **Fruit** a syncarp, 15-18 mm across, globose, pyrenes 4, oblong.

Dry deciduous forests at low elevations. Central and North Kerala.

Myristica dactyloides Gaertner, Fruct. 1: 195. t. 41, f. 2 a-d. 1788. *Syn.*: *Myristica beddomei* King in Ann. Roy. Bot. Card. Calcutta 3: 291, t. 118, f. 1-8. 1891; Bourdillon, For. Trs. Travancore 258. 1908; Gamble, Fl. Pres. Madras 2: 850. 1957 -*Mal.*: Adakka payin, Pantha payin (Fam.: Myristicaceae).

Large evergreen dioecious trees; *h* -25 m, *d* -75 cm. **Bark** 10-14 mm thick, surface blackish green, smoothish, exfoliations

small; outer bark 1-2 mm thick, dead, inner bark 10-12 mm thick, fibrous, striate, deep red; exudation watery, red. **Branchlets** 2-4 mm thick. **Leaves** alternate, bifarious, simple, petioles 6-10 mm long, blade 12-25 x 6-10 cm, oblong, tip acute, base round, margin entire, lateral nerves 16-20 pairs; glabrous. **Flowers** unisexual, 5-6 mm long, white, male on woody tubercles, 10-20 together, female 3-4 together, larger. **Fruit** a capsule, 5-7.5 x 3.7-6 cm, ovoid. **Seed** 1, aril orange red, lacinate.

Evergreen forests up to 1,500 m. Throughout Kerala.

Myristica magnifica Beddome, Fl. Sylv. t. 268. 1872; Bourdillon, For. Trs. Travancore 258. 1908; Gamble, Fl. Pres. Madras 2: 850. 1957 -*Mal.*: Kotha payin (Fam.: Myristicaceae).

Lofty dioecious trees; *h* -35 m, *d* -90 cm. **Bole** often buttressed. **Bark** surface purplish black, smooth. **Leaves** alternate, bifarious, simple, petioles 10-25 mm long, blade 30-60 x 10-15 cm, oblong tip acute, base round, margin entire, lateral nerves 16-19 pairs; glabrous above, reddish-tomentose beneath, coriaceous. **Flowers** unisexual, male fascicled on woody tubercles, 5-6 mm long, female in axillary fascicles. 6-8 mm long. **Fruit** a capsule, 8-10 x 6-7.5 cm, oblong-ovoid. **Seed** 1, cylindrical, brown, aril orange red.

Swamp forests. South Kerala.

Myristica malabarica Lamarck in Mem. Acad. Sci. Par. 162. 1788 (1791); Bourdillon, For. Trs. Travancore 259. 1908. *Syn.*: *Myristica contorta* Warburg, Monogr. Myristic. 507, t. 61. 1897, *p. p.*; Gamble, Fl. Pres. Madras 2: 850. 1957 -*Mal.*: Ponnampayin (Fam.: Myristicaceae).

Large dioecious trees; *h* -15 m, *d* -45 cm. *Bark* 8-10 mm thick, surface greenish black, smooth, tuberculate-lenticellate; semi-fibrous; blaze reddish; exudation deep red. *Leaves* alternate, bifarious, simple, petioles 15-18 mm long, blade linear oblong, tip sub-acute, base obtuse, lateral nerves 6-14 pairs; glossy above, glabrous. *Flowers* unisexual, 5-6 mm long, white, male in axillary paniculate cymes, female in small fascicles. *Fruit* a capsule, 5.7-5 x 1.5-1.8 cm, cylindrical. *Seed* 1, elongate, aril yellow.

Evergreen forests up to 300 m. Throughout Kerala.

Neolitsea cassia (Linnaeus) Kostermans in J. Sci. Res. Indonesia 1:85. 1952. *Syn.*: *Laurus cassia* Linnaeus, Sp. Pl. 369. 1753. *Litsea zeylanica* Nees, Cinnarn. Disp. 1: 58, t. 5. 1823; Bourdillon, For. Trs. Travancore 308. 1908. *Neolitsea zeylanica* (Nees) Merrill in Philip. J. Sci. 1, Suppl. 57. 1906; Gamble, Fl. Pres. Madras 2: 868. 1957 (Fam.: Lauraceae).

Small or medium sized dioecious trees: *h* -18 m, *d* -45 cm. *Bark* 8-10 mm thick, surface grey, rough;

brittle; blaze creamy yellow, turning yellowish brown, inner surface slimy to touch. *Leaves* alternate, simple, petioles 16-18 mm long, blade 7.5-17.5 x 3.7-9 cm, elliptic or oblong-lanceolate, tip acute, base narrowed, margin entire, 3-ribbed from base, lateral nerves from the midrib 2-4 pairs, reticulations fine, areolate; glabrous, glaucous beneath. *Flowers* in axillary fascicles of 3-5 flowered sessile heads, 8-9 mm long, pale yellow. *Fruit* a berry, 10-12 mm across, ovoid or globose, seated on a crenate perianth tube.

Evergreen forests between 600-1,800 m. Throughout Kerala.

Neolitsea fischeri Gamble in Kew Bull. 1925: 132. 1925 et Fl. Pres. Madras 2: 868. 1957 (Fam.: Lauraceae).

Large dioecious trees. *Buds* golden fulvous. *Leaves* alternate, simple, petioles 2-3 cm long, blade 12.5-17.5 x 5-7.5 cm, ovate, tip acuminate, margin entire, coriaceous, 3-ribbed from base, lateral nerves from the midrib 3-5 pairs, prominent, intercostae parallel; glaucous. *Flowers* in sessile umbellules. *Fruit* a berry, 10-15 x 10 mm, globose to obovoid.

Evergreen forests above 1,800 m. Central and South Kerala.

Neolitsea foliosa Gamble, Fl. Pres. Madras 1240. 1925 et 2: 868. 1957 (Fam.: Lauraceae).

Dioecious trees. *Leaves* alternate, simple, petioles 2.5-5 cm long, blade 15-17 x 6-8 cm, ovate or lanceolate, tip acuminate, margin entire, 3-ribbed from base, lateral nerves from midrib 2-3 pairs, reticulations areolate; glabrous. chartaceous or subcoriaceous, glaucous beneath. *Flowers* in axillary clustered umbellules. *Fruit* a berry, 5-6 mm across, globose.

Evergreen forests up to 1,500 m. Reported from South Kerala.

Neonauclea purpurea (Roxburgh) Merrill in Interpret. Rumph. Herb. Amboinense 483. 1917; Gamble, Fl. Pres. Madras 2: 412. 1957. *Syn.*: *Nauclea purpurea* Roxburgh, Pl. Coast Coromandel t. 54. 1796 -*Mal.*: Manja neer kadambu (Fam.: Rubiaceae).

Small trees. *Bark* surface greyish brown, exfoliating in thin flakes. *Leaves* opposite, simple, petioles 10-12 mm long, blade 12.5-20 x 4-7 cm, elliptic-lanceolate, tip acute, margin entire, lateral nerves 6-8 pairs, *Flowers* bisexual, in heads, purple. *Fruit* a pseudocarp, globose. *Seeds* flat, winged, bifid at the tip.

Evergreen forests up to 900 m. North Kerala.

Nothopegia colebrookeana (Wight) Blurne, Mus. Rot. Ludg. Bat. 1: 203. 1850; Rourdillon, For. Trs. Travancore 105. 1908; Gamble, Fl. Pres. Madras 1: 189. 1957. *Syn.*: *Pegia colebrookeana* Wight, Ic. Pl. Indiae Orient 1: t. 235. 1839 -*Mal.*: Macheru (Fam.: Anacardiaceae).

Evergreen trees; *h* - 12 m, *d* - 30 cm. *Bark* 5-6 mm thick, surface grey brown, mottled with white and green; brittle; outer bark *ca.* 1 mm thick, dark, dead, inner bark 4-5 mm thick, deep pink red, exudation if present scanty, acid. *Leaves* alternate, simple, petioles 10-12 mm long, blade 5-15 x 2.5-5 cm, obovate-lanceolate, tip apiculate, base narrowed, lateral nerves 12-15 pairs; glabrous. *Flowers* polygamous, 5-6 mm across, greenish white. *Fruit* a drupe, 1-2 cm across, bright red.

Evergreen and semievergreen forests between 300-1,500 m. Throughout Keaala.

Ochreinauclea missionis (G. Don) Ridsdale in Blumea 24 (2): 332. 1978. *Syn.*: *Nauclea missionis* Wallich *ex* G. Don, Gen. Hist. 3: 467. 1834; Gamble, Fl. Pres. Madras 2: 411. 1957. *Sarcocephalus missionis* Havil. in J. Linn. Soc. 33: 32. 1397; Bourdillon, For. Trs. Travancore 210. 1908 -*Mal.*: Attu vanji (Farn. Rubiaceae).

Small evergreen trees; *h* - 12 m, *d* - 30 cm. *Bark* smooth. *Leaves* opposite, simple, stipules large, concave, caducous, petioles 5-6 mm long, blade 7.5-12.5 x 2.5-5 cm, elliptic-lanceolate, margin entire, lateral nerves 10-12 pairs; glabrous, shining. *Flowers* bisexual, in terminal heads, 5-6 mm long, yellowish white. *Fruit* a drupe, globose. *Seeds* ovoid.

A rare tree mostly confined to river banks up to 450 m. Throughout Kerala.

Olea dioica Roxburgh, Fl. Indica 1: 105. 1820; Bourdillon, For. Trs. Travancore 230. 1908; Gamble, Fl. Pres. Madras 2: 559. 1957 (Fam.: Oleaceae).

Medium sized trees; *h* 15-30 m, *d*-75 cm. **Bark** 10-16 mm thick, surface grey or brown, rough; blaze yellowish brown. **Leaves** opposite, simple, 10-20 x 5-10 cm, petioles 8-16 mm long, blade ovate-lanceolate, tapering at both the ends, margin entire or obscurely toothed, lateral nerves 8-12 pairs; glabrous, coriaceous. **Flowers** bisexual or polygamous, creamy white, male 2-3 mm long, female narrower, in axillary divaricate panicles. **Fruit** a drupe, 10-12 mm long, ovoid, blue.

Moist deciduous and semievergreen forests up to 1,500 m. Throughout Kerala.

Ormosia travancorica Beddome, Fl. Sylv. 1: t. 45. 1870; Bourdillon, For. Trs. Travancore 121. 1908; Gamble, Fl. Pres. Madras 1: 275. 1957 **-Mal.:** Mala manchadi (Fam.: Fabaceae).

Evergreen trees; *h* -24 m, *d* -75 cm. **Bark** 10-12 mm thick, surface brown, mottled with grey, smooth; brittle; blaze yellowish brown. **Branchlets** 8-10 mm thick. **Leaves** alternate, clustered at the tips of branchlets, 20-25 cm long, simply imparipinnate, stipules small, leaflets 9-11, opposite, stipels absent, leaflet blade 5-7.5 x 2.5-3.7 cm, elliptic-oblong, tip cuspidate, base obtuse, margin entire, lateral nerves

8-9 pairs, secondary laterals present; glabrous and glossy above, grey-downy beneath. **Flowers** bisexual. in axillary arid terminal racemes. **Fruit** a pod, 5-7.5 cm long, oblong, thick, flat, red. **Seed** obovate or suborbicular, biconvex, bright red.

Evergreen and semievergreen forests up to 900 m. South and Central Kerala.

Oroxylum indicum (Linnaeus) Ventenat, Dec. Gen. Nov. 8: 1808; Bourdillon, For. Trs. Travancore 245. 1908; Gamble. Fl. Pres. Madras 2: 698. 1957. **Syn.:** **Bignonia indica** Linnaeus, Sp. Pl. 625. 1753 **-Mal.:** Palaka payyani, Vella pathiri (Fam.: Bignoniaceae).

Medium sized trees; *h* -10 m. *d* -25 cm. **Bark** 5-6 mm thick, surface brownish grey, blaze yellowish green. **Leaves** opposite, 1-5 m long, 2-3 pinnate, imparipinnate, pinnae numerous, pinnules 3-5 foliolate, leaflets 7.5-15 x 5-6 cm, ovate, tip acuminate, base asymmetric, margin entire. **Flowers** bisexual, in lax terminal racemes, 6-7.5 cm long, reddish purple without, pinkish yellow within. **Fruit** a capsule, 80-95 mm long, 8-10 cm wide. **Seeds** 7.5 x 3.7 cm, rectangular, flat.

Evergreen and semievergreen forests up to 600 m. Throughout Kerala.

Otonephelium stipulaceum (Beddome) Radlkofer, Sapindac. Holl-Ind. 71. 1879. **Syn.:** **Nepheium stipulaceum** Beddome in Trans. Linn. Soc.

London 25: 232. 1865; Bourdillon, For. Trs. Travancore 98. 1908; Gamble, Fl. Pres. Madras 1: 80. 1957 -*Mal.*: Paviri mulei (Fani.: Sapindaceae).

Medium sized trees: *h* -18 m, *d*-35 cm. *Bark* 5-6 mm thick. *Leaves* alternate, 15-35 cm long, simply paripinnate, stipules large, reniform, leaflets 4-6, alternate or subopposite, petiolules 6-10 mm long, blade broadly oblong or elliptic-obovate, tip obtuse or abruptly acute, base acute, margin entire, lateral nerves 9-11 pairs, lowest pair of leaflets very small, 2-2.5 cm long, curved and sub-reniform; glabrous.. *Flowers* polygamous, in axillary and terminal panicles, 5-6 mm across, cream coloured *Fruit* of 1-3 cocci, 16-18 mm long, ovoid, covered with prickles. *Seeds* brown, aril fleshy.

Evergreen forests up to 900 m. Throughout Kerala.

Pajanelia longifolia (Willdenow) K. Schumann in Engler *et* Prantl, Natur. Pflanzenfam. 4(36): 244. 1895. *Syn.*: *Bignonia longifolia* Willdenow, Sp. Pl. 3: 306. 180. *Pajanelia rheedii* Wight, Ic. Pl. Indiae Orient. tt. 1343, 1344. 1848; Bourdillon, Fur. Trs. Travancore 245. 1908; Gamble. Fl. Pres. Madras 2: 702. 1957 -*Mal.*: Azhantha (Fam.: Bignoniaceae).

Large deciduous trees; *h* 12-24 m, *d* -60 cm. *Bark* 2-3 cm thick, surface pale grey, rough, longit-

udinally fissured; outer bark 3-4 mm thick, dead, corky, inner bark fibrous, pale pink, radially streaked, peelings from the inner surface netted. *Leaves* opposite, 60-120 cm long, simply odd pinnate, leaflets 13-15 pairs, opposite, petiolules very short, blade ovate, tip acuminate, base asymmetrical, glabrous *Flowers* bisexual, in terminal panicles, 9-70 cm long, crimson-purple, white within. *Fruit* a capsule, 30-45 x 5-7.5 cm, compressed. *Seeds* 2.5 x 1.2 cm, winged.

Sporadic in semievergreen forests up to 600 m. Throughout Kerala.

Palaquium ellipticum (Dalzell) Bailon, Triate Bot. Med Phari. 1500. 1884; Bourdillon, For. Trs. Travancore 211. 1908; (Gamble, Fl. Pres. Madras 2: 537. 1957. *Syn.*: *Bassia elliptica* Dalzell in Hooker's J. Bot. Kew Misc. 3: 36. 1851 -*Mal.*: Pali (Fam.: Sapotaceae).

Large evergreen trees; *h* -30 m, *d*-1 m. *Bark* 10-12 mm thick, surface brown, mottled with white, smooth; semifibrous; blaze reddish pink; latex milky white. *Branchlets* 2-3 mm thick, sympodial. *Leaves* alternate, simple, petioles 20-25 mm long, blade 7.5-10 x 3.7-5 cm, ovate or obovate, tip obtuse, blunt, base narrow, margin entire, lateral nerves 10-12 pairs; glabrous. *Flowers* bisexual, in axillary fascicles, 10-12 x 10-12 mm, white. *Fruit* a berry, 3-3.7 x 1-1.6 cm, ellipsoid, green. *Seed* 1.

Evergreen forests between 300-1,200 m Throughout Kerala.

Parinarium indicum Beddome, Fl. Sylv. t. 191. 1872; Gamble, Fl. Pres. Madras 1: 310. 1957 (Fam.: Rosaceae).

Medium sized evergreen trees. *Leaves* alternate, simple, petioles 6-12 mm long, blade 19-22 x 5-7.5 cm, elliptic-lanceolate, tip acuminate, base acute to subobtuse, margin slightly undulate, lateral nerves 8-10 pairs; glabrous. *Flowers* bisexual, in axillary or terminal racemes, white. *Fruit* a drupe, stone 1-seeded.

Evergreen forests between 600-900 m. North Kerala.

Persea macrantha (Nees) Kostermans in Reinwardtia 6: 193. 1962. *Syn.*: *Machilus macrantha* Nees in Wallich, Pl. Asiat. Rar. 2: 70. 1831; Bourdillon, For. Trs. Travancore 264. 1908; Gamble, Fl. Pres. Madras 2: 859. 1957 *-Mal.*: Kula niavu (Fam.: Lauraceae).

Large evergreen trees; *h* -27 m, *d* -75 cm. *Bark* 20-25 mm thick, surface pale brown, mottled with dark blotches, rough, exfoliations small; brittle blaze pinkish. *Leaves* alternate, clustered at the tips of branchlets, simple, petioles 25-37 mm long, blade 10-20 x 3.7-7.5 cm, oblong, tip obtuse or acute, base tapering, margin entire, lateral nerves F-9 pairs; glaucous beneath, glabrous. *Flowers* bisexual, in terminal divaricate panicles, 10-12 mm across, pale yellow.

Fruit a berry, 15-18 mm across, globose, green with white specks, aromatic.

Evergreen, semievergreen and moist deciduous forests up to 2,100 m. Throughout Kerala.

Phoebe lanceolata Nees, Syst. Laurin. 109. 1836; Bourdillon, For. Trs. Travancore 265. 1908; Gamble, Fl. Pres. Madras 2: 860. 1957 (Fam.: Lauraceae).

Medium sized evergreen trees; *h* -12 m. *d* -30 cm. *Bark* surface yellowish white or grey, smooth with shallow fissures, exfoliating in thick flakes; fibrous; blaze brownish. *Leaves* alternate, clustered at the tips of branchlets, simple, petioles 6-18 mm long, blade 9-25 x 2.5-6.5 cm, ovate-lanceolate, tip acuminate, base tapering, margin entire, lateral nerves 6-10 pairs; glabrous, coriaceous, pale brown beneath. *Flowers* bisexual, in long panicles, 2-3 mm, pale yellow. *Fruit* a berry, 10-12 mm long, ovoid, supported by perianth segments.

Evergreen forests between 900-1,500 m. Throughout Kerala.

Pliostigma malabaricum (Roxburgh) Bentham in Miquel, Pl. Jungh. 261. 1852. *Syn.*: *Bauhinia malabarica* Roxburgh, Fl. Indica 2: 321. 1832; Bourdillon, For. Trs. Travancore 133. 1908; Gamble, Fl. Pres. Madras 1: 288. 1957 *-Mal.*: Arampuli (Fam.: Caesalpinaceae).

Medium sized deciduous trees; *h* -15 m. *d* -40 cm. **Bark** 10-15 mm thick, surface brown, rough; fibrous; blaze rosy pink, turning to reddish brown, concentrically striate. **Leaves** alternate, broader than long, simple, petioles 3-3.7 cm long, blade 5-10 x 7.5-12.5 cm, sub-orbicular, tip 2-lobed, base subcordate, margin entire, palmately 7-9 nerved from base: glaucous beneath. **Flowers** bisexual, in axillary racemes, 6-8 mm across, cream coloured. **Fruit** a pod, 25-30 x 1.8-2.5 cm, straight, dark brown. **Seeds** 20-30.

Moist and dry deciduous forests up to 600 m. Throughout Kerala.

Poeciloneuron indicum Beddome in J. Linn. Soc. 8: 267, t. 17. 1865; Bourdillon, For. Trs. Travancore 28. 1908; Gamble, Fl. Pres. Madras 1: 56. 1957 -**Mal.**: Vayila (Fam.: Clusiaceae).

Large, evergreen, gregarious trees; *h* -30 m, *d* -75 cm. **Bark** 5-6 mm thick, surface grey, roughish. **Leaves** opposite, simple, petioles 10-15 mm long, blade 16-25 x 4-6.5 cm, linear-oblong to oblong-lanceolate, tip acuminate, base obtuse, margin entire, lateral nerves numerous, close; glabrous. **Flowers** bisexual, in axillary and terminal panicles, 16-18 mm across, white. **Fruit** a capsule, 2.5 cm across, globose. **Seed** 1, fleshy.

Evergreen forests between 300-1,200 m. Throughout Kerala.

Poeciloneuron pauciflorum Beddome, Fl. Sylv. 1: t. 93. 1971; Bourdillon, For. Trs. Travancore 29. 1908; Gamble, Fl. Pres. Madras 1: 56. 1957 -**Mal.**: Puli vayila (Fam.: Clusiaceae).

Large evergreen trees; *h* -20 m, *d* -60 cm. **Leaves** opposite, petioles 5-10 mm long, blade 12-16.5 x 3-4.2 cm, linear-oblong to oblong-lanceolate, tip bluntly acuminate, base narrow, margin entire, lateral nerves numerous, close, parallel: glabrous. **Flowers** bisexual, solitary or 3-4 together, 10-12 mm across, white. **Fruit** a capsule, 2-2.5 x 1-1.2 cm, ovoid.

Evergreen forests between 600-1,303 m, mostly along river banks. Confined to South Kerala.

Polyalthia cerasoides (Roxburgh) Bentham *et* Hooker f. ex Beddome, Fl. Sylv. t. 1. 1870; Bourdillon, For. Trs. Travancore 6. 1908; Gamble, Fl. Pres. Madras 1: 12. 1857. **Syn.**: *Uvaria cerosoides* Roxburgh, Pl. Cost Coromandel t. 33. 1795 (Fam.: Annonaceae).

Medium sized evergreen trees; *h* -15 m, *d* -30 cm. **Bark** surface dark, smooth. **Leaves** alternate, simple, blade 5-20 x 2.5-5 cm, lanceolate, tip acuminate, base acute or obtuse, margin entire, lateral nerves 4-5 pairs; glabrous. **Flowers** bisexual, axillary or on short branchlets, solitary or 2-3 together, pale green. **Fruit** a berry, 15-18 mm long, dark red.

Sporadic in deciduous forests up to 1,000 m. South Kerala, scarce towards the North

Polyalthia coffeoides (Hooker f. *et* Thomson) Bentham *et* Honker f. ex Hooker f. *et* Thomson in Hooker f., Fl. Brit. India 1: 62. 1872; Rourdillon, For. Trs. Travancore 103. 1908; Gamble, Fl. Pres. Madras 1: 11. 1957. *Syn.*: *Guatteria coffeoides* Thwaites in Hooker f. *et* Thomson, Fl. Indica 141. 1855 -*Mal.*: Nedunaru, Villa (Fam.: Annonaceae).

Medium sized trees: *h* -24 m, *d* -30 cm. *Bole* straight with knots and tubercles. *Bark* surface dark green, mottled with greyish white, smooth. *Leaves* alternate, simple, petioles 4-6 mm long, blade 10-23 x 2.5-5 cm, lanceolate or oblanceolate, tip acuminate, lateral nerves 8-11 pairs; glabrous. *Flowers* bisexual, solitary or in fascicles, 7.5 cm across, pale yellow. *Fruit* a berry, purple.

Evergreen and semievergreen forests up to 1,200 m. Throughout Kerala.

Polyalthia fragrans (Dalzell) Beddome, Fl. Sylv. t. 74. 1871; Bourdillon, For. Trs. Travancore 5. 1908; Gamble, Fl. Pres. Madras 1: 11. 1957. *Syn.*: *Guatteria fragrans* Dalzell in Hooker's J. Bot. Kew Gard. Misc. 3: 206. 1851 -*Mal.*: Nedunaru (Fam.: Annonaceae).

Tall trees: *h* -30 m, *d* -60 cm. *Bole* straight, buttressed. *Bark* 10-12 mm thick, surface blackish grey, mottled with white, smooth,

lenticellate; blaze yellow with triangular rays, peels from the inner surface netted; aromatic. *Branches* horizontal. *Leaves* alternate, simple, petioles 10-15 mm long, blade 10-22 x 3.7-11 cm, oblong-lanceolate, tip acuminate, base obtuse, lateral nerves 12-16 pairs: pubescent above. *Flowers* bisexual, fascicled in the axils of fallen leaves, straw-coloured. *Fruit* a berry, ovoid, ash coloured. *Seed* .

Evergreen and semievergreen forests up to 1,200 m. Throughout Kerala.

Pongamia pinnata (Linnaeus) Pierre, Fl. Cochinchin., sub t. 385. 1899. *Syn.*: *Cytisus pinnatus* Linnaeus, Sp. Pl. 741. 1753. *Pongamia glabra* Ventenat, Jard. Mal. t. 28. 1803; Bourdillon, For. Trs. Travancore 121. 1906; Gamble, Fl. Pres. Madras 1: 272. 1957 -*Mal.*: Pongh, Ungh (Fam.: Fabaceae).

Moderate sized evergreen trees; *h* -18 m, *d* 40-50 cm. *Bark* 10-12 mm thick, surface grey, speckled with brown. *Branchlets* 3-4 m thick, lenticellate. *Leaves* alternate, simply imparipinnate, rachis 10-12.5 cm long, base pulvinate, leaflets 5-7. petiolules 20-25 mm long, leaflet blade 5-12 x 4-7 cm, oblong-ovate, tip acuminate, base obtuse, lateral nerves 6-8 pairs, intercostae reticulate: glabrous, shining. *Flowers* bisexual, in lax axillary racemes, 15-18 mm long, purplish white. *Fruit* a pod, 4-5 x 2-2.5 cm, obliquely oblong, flat, thick, pointed at both ends. *Seed* 1, reniform.

Evergreen and semievergreen forests up to 900 m; mostly confined to banks of streams. Throughout Kerala.

Premna tomentosa Willdenow, Sp. Pl. 3: 314. 1800; Bourdillon, For. Trs. Travancore 255. 1908; Gamble, Fl. Pres. Madras 2: 767. 1957 (Fam.: Verbenaceae).

Medium sized trees; *h* -18 m, *d* -40 cm. **Bark** thin, surface greyish brown. **Branchlets** lawny tomentose. **Leaves** opposite, simple, petioles 2.5-5 cm long, blade 7.5-20 x 7.5-15 cm, broadly ovate, tip acuminate, base round, margin entire. lateral nerves 4-5 pairs; densely tomentose beneath. **Flowers** bisexual, in terminal cymes, yellow. **Fruit** a drupe, 5-6 mm long, ovoid, stone 1. **Seeds** 4.

Moist deciduous forests up to 1,200 m. Throughout Kerala.

Prunus ceylanica (Wight) Miquel, Pl. Indiae Bat. 1: 366. 1855. **Syn.:** *Polydontia ceylanica* Wight, Ill. Indian Bot. 1: 203. 1840. *Pygeum gardneri* Hooker f., Fl. Brit. India 2: 321. 1878; Bourdillon, For. Trs. Travancore 146. 1908; Gamble, Fl. Pres. Madras 1: 311. 1957 (Fam.: Rosaceae).

Medium sized trees; *h* 20-24 m. *d* 30-75 cm. **Bark** 6-8 mm thick, surface dark brown, rough, cracked. **Leaves** alternate, simple petioles 18-25 mm long, blade 10-15 x 4.5-7.5 cm, ovate or elliptic, tip acuminate, base acute or rounded, margin entire, midrib

with 1-2 glands at the base, lateral nerves 8-9 pairs; glabrous; leaves when bruised smelling prussic acid. **Flowers** bisexual, in axillary racemes, 5-6 mm across, white. **Fruit** a drupe, 20-25 x 35-37 mm, depressed globose, obscurely 2-lobed. **Seed** 1.

Evergreen forests above 600 m. Throughout Kerala.

Pterocarpus marsupium Roxburgh, Pl. Coast Coromandel t. 116. 1799; Bourdillon, For. Trs. Travancore 120. 1908; Gamble, Fl. Pres. Madras 1: 271. 1957 -*Mal.*: Venga (Fam.: Fabaceae).

Large deciduous trees; *h* -24 m, *d* -75 cm. **Bark** 10-15 mm thick, surface grey to black, rough, deeply vertically cracked, exfoliations small, irregular; fibrous; blaze pink, sap blood-red. **Leaves** alternate, simply imparipinnate, stipules small, rachis 7.5-10 cm long, leaflets 5-7, stipels absent, leaflet blade 7.5-12.5 x 3.7-6.2 cm. elliptic-oblong, tip obtuse, emarginate or acute, base obtuse or acute, margin entire, lateral nerves 15-20 pairs; glabrous. **Flowers** bisexual, in terminal or axillary racemes, 10-12 mm long, bright yellow. **Fruit** a pod, 2.5-5 cm across, orbicular-reniform, broadly winged. **Seed** 1, subreniform. .

Moist, dry deciduous and semievergreen forests up to 1,300 m. Throughout Kerala.

Pterospermum diversifolium Blume, Bijdr. 88. 1825; Gamble, Fl. Pres.

Madras 1: 78. 1957. *Syn.: Pterospermum glabrescens* Wight et Arnott, Prod. 69. 1834; Bourdillon, For. Trs. Travancore 54. 1908 -*Mal.*: Pambaram (Fam.: Sterculiaceae).

Medium sized trees: *h* -18 m, *d*-45 cm. *Bark* 4-5 mm thick, surface brown, mottled with green and white: fibrous; blaze deep red, radially streaked. *Branchlets* 3-4 mm thick. *Leaves* alternate, bifarious, simple stipules large, 7 x 4 mm, petioles 10-17 mm long, furfuraceous, blade 15-30 x 12.5-25 cm, rectangular-oblong, rarely panduriform, tip abruptly acuminate, base cordate, margin entire, 5-7 nerved from base, lateral nerves from the midrib 5-6 pairs, intercostae parallel; glabrous above, silvery beneath. *Flowers* bisexual, axillary, solitary or geminate, 14-15 cm long, white. *Fruit* a capsule, 10-12.5 x 2-2.5 cm, oblong, ribbed. *Seeds* winged at one end.

Evergreen forests between 600-1,200 m. Throughout Kerala.

Pterospermum reticulatum Wight et Arnott, Prod. 69. 1834; Bourdillon, For. Trs. Travancore 49. 1908; Gamble, Fl. Pres. Madras 1: 77. 1957 -*Mal.*: Mala urani (Fam.: Sterculiaceae).

Large trees; *h* -38 m, *d* -45 cm, *Bark* 10-15 mm thick, surface brown, mottled with green, smooth, exfoliations thin; fibrous; blaze deep pink-red. *Leaves* alternate, bifarious, simple, petioles 8-10 mm long, blade 12-15

x 5.5-6.5 cm, oblong, obovate, tip acuminate, base obtuse or cordiform, margin entire except for the dentate tip, lateral nerves 5-6(-7) pairs; glabrous above, white beneath. *Flowers* bisexual, axillary, 2-3 together, 3-3.7 cm across, white. *Fruit* a capsule, 5-7.5 x 3-3.7 cm, obtusely angled. *Seeds* 15-20, winged at one end.

Semievergrees and moist deciduous forests at low elevations. Throughout Kerala.

Pterospermum rubiginosum Heyne *ex* Wight *et* Hrnott, Prod. 68. 1834; Bourdillon, For. Trs. Travancore 48. 1908; Gamble, Fl. Pres. Madras 1: 78. 1957 -*Mal.*: Malam thodali (Fam.: Sterculiaceae).

Large trees; *h* -25 m, *d* -60 cm. *Bark* 5-6 mm thick, surface brown. *Leaves* alternate, simple, stipules oblique, petioles 6-12 mm long, blade 3.7-6.2 x 1.2-1.8 cm, lanceolate, tip acuminate or acute, base asymmetric, upper half obtuse, margin entire, pinnately 4-nerved from base, 2 on the broader side and one on the narrower side; white beneath. *Flowers* bisexual, axillary, few together, 3-3.7 cm across, white. *Fruit* a capsule, 40-50 x 6-9 mm, subclavate, angled, brown. *Seeds* winged at one end,

Evergreen forests up to 900 m. Throughout Kerala.

Pterygota alata [Roxburgh] R. Brown in Bennett, Pl. Javae Rar. 234. 1844; Gamble, Fl. Pres. Madras 1: 75. 1957. *Syn.: Sterculia alata*

Roxburgh, Pl. Coast Coromandel 3: 84, t. 287. 1820; Bourdillon, For. Trs. Travancore 46. 1908 -*Mal.*: Ana thondi [Pam.: Sterculiaceae).

Large evergreen trees; *h* -35 m, *d* -1.2 m. *Bark* surface pale. *Branchlets* 4-7 mm thick. *Leaves* alternate, simple, petioles 5-10 cm long, blade 10-30 x 7.5-20 cm, ovate, tip caudate acuminate, base truncate or subcordate, margin entire, 5-7 nerved from base; glabrous. *Flowers* polygamous, in panicles from the axils of fallen leaves, 22-25 mm long. *Fruit* of 3-5 follicles, each 10-12.5 cm long, obovoid. *Seeds* 25-30, 5-7.5 cm long, winged.

Evergreen forests up to 900 m. Throughout Kerala.

Radermachera xylocarpa (Roxburgh) K. Schumann in Engler et Prantl, Natur. Pflanzenfam. 4 (3 b): 243. 1895; Gamble, Fl. Pres. Madras 2: 702. 1957. *Syn.*: *Bignonia xylocarpa* Roxburgh, Fl. Indica 3: 108. 1832. *Stereospermum xylocarpum* Wight, Ic. Pl. Indiae Orient. tt. 1335-1336. 1848; Bourdillon, For. Trs. Travancore 277. 1908 -*Mal.*: Vedang konna (Fam. : Bignoniaceae).

Medium sized deciduous trees; *h* -18 m, *d* -45 cm. *Bark* 2-2.5 cm thick, surface pale brown, rough, *Leaves* opposite, 30-120 cm long, 2-pinnate, odd-pinnate, pinnae 6-9, leaflets 3-9 per pinna, 5-7.5 x 2-3.5 cm, ovate-lanceolate, tip acuminate, base acute, margin entire,

lateral nerves 6-8, looping. *Flowers* bisexual, in panicles, 3-8.5 cm long, white, tinged with yellow. *Fruit* a capsule, 30-75 x 2.5-3.7 cm, slightly curved, tuberculate. *Seeds* 30 x 6 mm, discoid.

Dry and moist deciduous forests up to 1,200 m. Throughout Kerala.

Randia gardneri [Thwaites) Hooker f., Fl. Brit. India 3: 112. 1880; Bourdillon, For. Trs. Travancore 194. 1908; Gamble, Fl. Pres. Madras 2: 435. 1957. *Syn.*: *Griffithia gardneri* Thwaites, Enum. Fl. Zeylan. 158. 1859 (Fam.: Rubiaceae).

Medium sized trees; *h* -20 m, *d*-45 cm. *Bark* 6-8 mm thick, surface greyish brown, mottled. *Leaves* opposite, simple, stipules triangular, petioles 6-12 mm long, blade 7.5-15 x 1.8-5 cm, lanceolate, tip acuminate, base narrowed, margin entire, lateral nerves 6-7 pairs; glabrous. *Flowers* bisexual, in leaf opposed cymes, 6-8 x 5-6 mm, white. *Fruit* a berry, 6-8 mm across, globose, green.

Evergreen forests up to 800 m. South Kerala.

Reinwardtiadendron anamalaiense (Beddome) Mabberley in Malays. For. 45: 452. 1982. *Syn.*: *Lansium anamallayanum* Beddome in Madras J. Lit. Sci. ser. 3, 1: 40. 1864 (as '*anamalaiense*'); Bourdillon, For. Trs. Travancore 76. 1908; Gamble, Fl. Pres. Madras 1: 130. 1957 -*Mal.*: Chinna akil (Fam.: Maliaceae).

Medium sized trees: *h* -15 m, *d*-30 cm. **Bark** 2-3 mm thick. **Bark** surface grey. **Branchlets** 2-3 mm thick, lenticellate. **Leaves** alternate, 15-22.5 cm long, simply imparipinnate, leaflets 5, alternate or opposite, petiolules 5-8 mm long, leaflet blade 5-10 x 2.5-5 cm, lanceolate, tip acuminate, base attenuate, margin entire, lateral nerves 8-10 pairs; glabrous. **Flowers** 3-4 mm across, yellowish white, polygamodioecious, male in panicles, female in spikes or racemes. **Fruit** a berry, 16-18 mm long, ovoid, grey. **Seeds** 1-2.

Evergreen and semievergreen forests between 450-900 m. Throughout Kerala.

Ricinocarpodendron polystachyum (Wallich) Mabberley in Malays. For. 45: 454. 1982. **Syn.:** *Aglaia polystachya* Wallich in Roxburgh, Fl. Indica 2: 429. 1824. *Amoora rohituku* (Roxburgh) Wight et Arnott, Prod. 119. 1834; Bourdillon, For. Trs. Travancore 77. 1908; Gamble, Fl. Pres. Madras 1: 130. 1957 -**Mal.:** Chemmaram (Fam.: Meliaceae).

Moderate sized evergreen trees: *h* -12 m, *d* -30 cm. **Crown** spreading. **Bark** thick, brownish grey, corky, cracked, oblong-rectangular; blaze red. **Branchlets** 6-8 mm thick, lenticellate. **Leaves** alternate, 45-60 cm long, simply imparipinnate, leaflets 9-17, opposite, petiolules 5-7 mm long, leaflet blade 15-22 x 6-9 cm, oblong, tip acuminate, base asy-

mmetric, margin entire, lateral nerves 8-12 pairs; glabrous.

Evergreen and semievergreen forests up to 1,000 m. Throughout Kerala.

Sageraea grandiflora Dunn in Kew Bull. 1914: 182. 1914; Gamble, Fl. Pres. Madras 1: 8. 1957 (Fam.: Annonaceae).

Trees. **Leaves** alternate, simple, petioles 8-9 mm long, blade 25-35 x 7-10 cm, oblong, apex shortly acuminate, base round, lateral nerves 10-12 pairs; glabrous. **Flowers** bisexual, in axillary fuscicles.

Evergreen forests. Confined to South Kerala.

Sageraea laurifolia (Graham) Blatter in J. Bombay Nat. Hist. Soc. 34: 293. 1930. **Syn.:** *Guatteria laurifolia* Graham, Cat. Pl. Bombay 4. 1839. *Sageraea dalzellii* Beddome, Ic. Pl. Indiae Orient. t. 42. 1874; Bourdillon, For. Trs. Travancore 12. 1908; (Gamble, Fl. Pres. Madras 1: 8. 1957 -**Mal.:** Kana kaitha, Manjanjara (Fam.: Annonaceae).

Evergreen trees; *h* -18m, *d* -30 cm. **Bole** pyramidal. **Bark** surface black. **Leaves** alternate, drooping, simple, petioles 10-12 mm long, blade 10-30 x 3.5-10 cm, narrowly elliptic, tip acute, base obtuse, nerves 10-14 pairs; glossy, coriaceous. **Flowers** bisexual, in fascicles in the axils of fallen leaves, 15-18 mm across, yellow. **Fruit** a berry, 7-7.5 cm long.

Evergreen forests up to 600 m. Throughout Kerala.

Salix tetrasperma Koxburgh, Pl. Coast Coromandel 1: t. 97. 1798; Bourdillon, For. Trs. Travancore 335. 1908; Gamble, Fl. Pres. Madras 3: 973. 1957 -*Mal.*: Vanji (Fam.: Salicaceae).

Large deciduous, dioecious trees; *h* -25 m, *d* -90 cm. **Bark** 10-12 mm thick, surface greyish brown, rough, deeply vertically fissured. **Leaves** alternate, simple, stipules ovate, caducous, petioles 12-25 mm long, blade 5-15 x 2.5-5 cm, lanceolate, tip acuminate, base narrowed or obtuse, margin serrulate, lateral nerves 8-11 pairs; glabrous, shining above, glaucous beneath. **Flowers** unisexual, in catkins, minute, male yellowish, female greenish. **Fruit** a capsule, 5-6 mm long, ovate. **Seeds** 4-6.

Semievergreen forests near streams. Throughout Kerala.

Santalum album Linnaeus, Sp. Pl. 349. 1753; Bourdillon, For. Trs. Travancore 275. 1908; Gamble, Fl. Pres. Madras 2: 883. 1957 -*Mal.*: Chandanam (Fam.: Santalaceae).

Small evergreen trees; *h* -10 m, *d* -20 cm. **Bark** surface dark grey, nearly black, rough, with short vertical cracks. **Leaves** opposite simple, petioles 12-18 mm long, blade 3.7-7.5 x 2.5-3.7 cm, ovate-lanceolate, tip acute, base tapering, margin entire, lateral nerves 8-12 (-13) pairs; glabrous, shining above, glaucous beneath. **Flowers** bise-

xual, in axillary or terminal paniculate cymes, 5-8 mm across, reddish purple. **Fruit** a drupe, 8-12 mm across, subglobose, blackish purple. **Seeds** subglobose.

Sporadic in the dry deciduous forests up to 900 m. Throughout Kerala; fairly common at Marayur.

Sapindus laurifolia Vahl, Symb. Analect. 3: 54. 1794; Gamble, Fl. Pres. Madras 1: 178. 1957 (as '*laurifolius*') Svn.: *Sapindus trifoliatus* Hiern in Hooker f., Fl. Brit. India 1: 682. 1875 *p. p.*, non Linnaeus; Bourdillon, For. Trs. Travancore 97. 1908 -*Mal.*: Pasha kotta, Sopinkaya, Urulunchi (Fam.: Sapindaceae).

Moderate sized trees; *h* -18 m, *d* -45 cm. **Bark** 4-6 mm thick, surface greyish brown; brittle or semifibrous; blaze creamy yellow. **Leaves** alternate or subopposite, 12.5-30 x 10-20 cm, simply paripinnate, leaflets 2-3 pairs, opposite or subopposite, 10-15 x 5-7 cm, petiolules 2-3 mm long, blade lanceolate, tip acuminate, base rounded or acute, asymmetric, margin entire, lateral nerves 6-10 pairs; glabrous above, pubescent beneath. **Flowers** polygamous, in axillary or terminal panicles, 5-6 mm across, greenish white. **Fruit** drupaceous, 16-18 mm across, globose, greenish yellow. **Seeds** 2-3, globose, black.

Semievergreen and moist deciduous forests up to 600 m. Throughout Kerala.

Saraca asoca (Roxburgh) De Wilde in *Blumea* 15: 393. 1968. *Syn.*: *Jonesia asoca* Roxburgh, *Asiat. Res.* 4: 365. 1795. *Saraca indica* sensu Bourdillon, *For. Trs. Travancore* 129. 1908, non Linnaeus; Gamble, *Fl. Pres. Madras* 1: 289. 1957, *-Mal.*: Ashokam (Fam.: Caesalpiniaceae).

Small trees; *h* -10 m, *d* -35 cm. **Bark** 2-3 mm thick, surface brown, lenticellate; blaze greenish pink. **Leaves** alternate, simply paripinnate, *stipules* intrapetiolar 7-12 mm long, ovate-oblong, connate, rachis 15-22.5 cm long, leaflets 8-12, opposite, blade 7-25 x 3-7 cm, ovate-oblong, tip acute, margin entire: glabrous; young leaves pink-red. **Flowers** bisexual, in corymbose panicles, orange-yellow, turning to red. **Fruit** a pod, 10-125 x 2-5 cm, flat, oblong. **Seeds** 2-8, 3.7 cm long, slightly compressed, ovoid.

Sporadic in the evergreen forests. Throughout Kerala.

Schefflera capitata (Wight et Arnott) Harms in Engler et Prantl, *Natur. Pflanzfam.* 3(8): 36. 1894; Gamble, *Fl. Pres. Madras* 1: 403. 1957. *Syn.*: *Paratropia capitata* Wight et Arnott, *Prod.* 378. 1834 (Fam.: Araliaceae).

Small trees. **Leaves** alternate, digitate-cornpound, leaflets 6-8, petiolules 2.5-5 cm long, blade 10-15(-30) cm long, oblong, tip acute or acuminate, base somewhat rounded; glabrous. **Flowers**

bisexual, in terminal racemose panicles.

Evergreen forests between 1,000-2,000 m. South and Central Kerala.

Schefflera racemosa Harms in Engler et Prantl, *Natur. Pflanzenfam.* 3(8): 38. 1894; Gamble, *Fl. Pres. Madras* 1: 402. 1957 (Fam.: Araliaceae).

Medium sized trees; *h* -10 m, *d* -20 cm. **Leaves** alternate, digitate-pinnate, rachis 15-22 cm long, sheathing at base, leaflets 4-8, petiolules 2.5-5 cm long, tip of the blade subacute, base rounded, margin entire or wavy; glabrous. **Flowers** bisexual, in paniculate racemes. **Fruit** a berry, 5-6 mm across, ovoid.

Evergreen forests between 1,000-2,000 m. South and Central Kerala.

Schefflera wallichiana (Wight et Arnott) Harms in Engler et Prantl, *Natur. Pflanzenfam.* 3(8): 38. 1894; Gamble, *Fl. Pres. Madras* 1: 403. 1957. *Syn.*: *Paratropia wallichiana* Wight et Arnott, *Prod.* 377. 3834 (Fam.: Araliaceae).

Medium sized trees, some times epiphytic on other trees; *h* -12 m, *d* -30 cm. **Bark** 5-8 mm thick, surface grey, rough. **Leaves** alternate, digitate-pinnate, stipules intrapetiolar, rachis 17-37 cm long, sheathing at base, leaflets 4-8, petiolules 3.5-5 cm long, blade 5-10 cm long, oblong, tip acute, base

rounded, lateral nerves thin, nearly horizontal; coriaceous flowers bisexual, in panicles, 6-8 mm across, pale green. **Fruit** a berry, 5-6 mm across, globose, ribbed, crowned by the enlarged disc.

Evergreen forests between 600-1,800m. Throughout Kerala.

Schleichera oleosa (Loureiro) Oken, Allg. Naturgesch. 3(2): 1341. 1841. **Syn.:** *Pistacia oleosa* Loureiro, Fl. Cochinchin. 615. 1790. *Schleichera trijuga* Willdenow, Sp. Pl. 4: 1096. 1805; Bourdillon, For. Trs. Travancore 96. 1908; Gamble Fl. Pres. Madras 1: 177. 1957 -**Mal.**; Poovam (Fam.: Sapindaceae).

Large deciduous trees; **h** -15 m, **d** -1.2 m. **Crown** broadly round, spreading. **Bole** fluted. **Bark** 10-12 mm thick, surface brown, smooth; brittle; blaze reddish brown. **Leaves** alternate, 20-30 cm long, simply paripinnate, leaflets 2-8 pairs, opposite or subopposite, lower pair smallest, sessile, blade 5-15 x 1.8-3.7 cm, oblong, tip obtuse, base symmetric, margin entire, lateral nerves 9-16 pairs; glabrous. **Flowers** polygamodioecious, in axillary spicate panicles, 5-6 mm across, greenish yellow. **Fruit** a berry, 16-18 mm across, globose, greenish. **Seeds** 1-2, oblong, aril pulpy.

Semievergreen and moist deciduous forests up to 900 m. Throughout Kerala.

Scolopia crenata (Wight et Arnott) Clos, Ann. Sci. Nat. Bot. 4, 8: 250. 1857, excl. specimen Philip.;

Bourdillon, Far. Trs. Travancore 15. 1908; Gamble, Fl. Pres. Madras 1: 38. 1957. **Syn.:** *Phoberos crenatus* Wight et Arnott, Prod. 29. 1834 -**Mal.**; Charalu (Fam.: Flacourtiaceae).

Medium sized evergreen trees; h-15 m, d-30 cm, armed with straight spines. **Bark** rufous grey, smooth. **Leaves** alternate, simple, petioles ca. 1 cm long, blade 5-10 x 2.5-5 cm, lanceolate, tip acuminate, margin crenate, lateral nerves 3-5 pairs, not very prominent; glabrous. **Flowers** bisexual, in axillary racemes, 6-7 mm across, white. **Fruit** a berry, 16 mm diam., globose, green.

Semievergreen forests above 600 m. Throughout Kerala.

Semecarpus anacardium Linnaeus f., Suppl. Pl. 182. 1781; Bourdillon, For. Trs. Travancore 105. 1908; Gamble, Pl. Pres. Madras 1: 190. 1957 -**Mal.**; Cherkkuru, Thenkotta (Fam.: Anacardiaceae).

Moderate sized trees; **h** -12 m, **d**-45 cm. **Bark** 5-6 mm thick, surface grey or blackish, with tessellate scales, furrows longitudinal and horizontal; juice acrid. **Branchlets** 3-6 mm thick. **Leaves** alternate, crowded at the ends of branchlets, simple, petioles 25-45 mm long, blade 15-50 x 10-75 cm, obovate-oblong, tip obtuse or round, base acute, obtuse, round or truncate, margin entire, midrib depressed above, lateral nerves 12-20 pairs; glabrous above, pubescent beneath. **Flowers** poly-

gamodioecious, in terminal panicles, 6-8 mm across, greenish yellow. *Fruit* a drupe, 2.5 cm long, purplish black.

Moist deciduous forests up to 320 m. Throughout Kerala.

Semecarpus auriculata Beddome, Fl. Sylv. 2: t. 187. 1872; Bourdillon, For. Trs. Travancore 106. 1908; Gamble, Fl. Pres. Madras 1: 190. 1957 -*Mal.*: Cheru (Fam.: Anacardiaceae)].

Large trees: *h* -24 m, *d* -60 cm. *Bark* 5-6 mm thick, surface grey, smooth. *Branchlets* 4-7 mm thick. *Leaves* alternate, simple, petioles 2-6 mm long, blade 10-20 x 1.8-3.7 cm, oblanceolate, tip acuminate, base auriculate, margin entire, lateral nerves 12-17 pairs; glabrous. *Flowers* polygamodioecious, in axillary panicles, male 4 mm across, female larger, yellow. *Fruit* a drupe, 18 x 12 mm. oblique.

Evergreen forests up to 1,000 m. Confined to South Kerala.

Semecarpus travancorica Beddome, Fl. Sylv. 2: t. 232. 1872; Bourdillon, For. Trs. Travancore 106. 1908; Gamble, Fl. Pres. Madras 1: 190. 1957 -*Mal.*: Avukkaram (Fam.: Anacardiaceae).

Large trees; *h*-30 m, *d*-90cm. *Bark* surface grey, blotched with black. *Branchlets* 10-15 mm thick. *Leaves* alternate, clustered at the tips of branchlets, simple, petioles 4-7 cm long, blade 25-60 x 10-13 cm,

obovate-oblong, tip round or emarginate, base acute or obtuse, margin entire, lateral nerves 12-25 pairs; glabrous. *Flowers* polygamodioecious, in axillary and terminal panicles, 5 mm across, greenish yellow. *Fruit* a drupe, 3-3.7 cm long, obliquely oblong.

Evergreen forests up to 1,200 m. Confined to South Kerala.

Shorea roxburghii G. Don, Gen. Syst. I: 813. 1831. *Syn.*: *Shorea talura* Roxburgh (Hort. Bengal. 93. 1814, *nom. nud.*) Fl. Indica 2: 618. 1832; Gamble, Fl. Pres. Madras 1: 60. 1957 -*Mal.*: Thaluram (Fam.: Dipterocarpaceae)].

Medium sized trees; *h* -25 m, *d*-70 cm. *Bark* surface grey, longitudinally fissured. *Branchlets* glabrous. *Leaves* alternate, simple, petioles 10-25 mm long, blade 6-13 x 3.5-6 cm, elliptic-ovate, tip obtuse or emarginate, base rounded, lateral nerves 12-16 pairs; glabrous. *Flowers* in drooping axillary panicles, 10-13 mm long, light pink.

Dry deciduous forests in North Kerala.

Spondias indica [Wight *et* Arnott] Airy Shaw *et* Foreman in Kew Bull. 21: 16. 1967, *Syn.*: *Solenocarpus indica* Wight *et* Arnott, Prod. 171. 1834; Bourdillon, For. Trs. Travancore 111. 1908; Gamble, Fl. Pres. Madras 1: 387. 1957 (Fam.: Anacardiaceae).

Small deciduous trees. *Leaves* alternate, 15-30 cm long, simply

imparipinnate, leaflets 9-15, leaflet blade 5-7.5 x 1.2-1.8 cm, lanceolate, tip acuminate, margin crenulate, intramarginal nerve present; glabrous. **Flowers** bisexual, in terminal panicles, 3-4 mm across, white. **Fruit** a drupe, 5-6 mm long, ovoid.

Evergreen and semievergreen forests up to 700 m. Throughout Kerala.

Spondias pinnata (Linnaeus f.) Kurz, Pegu Rep. A. 44. 1985. *Syn.*: **Mangifera pinnata** Linnaeus f., Suppl. Pl. 156. 1781. **Spondias mangifera** Willdenow, Sp. Pl. 2: 754. 1799; Sourdillon, For. Trs. Travancore 112. 1908; Gamble, Fl. Pres. Madras 1: 261. 1957 -*Mal.*: Ambazharm. (Fam.: Anacardiaceae).

Large trees: *h* -24 m, *d* -75 cm. **Bark** 15-25 mm thick, surface grey, smooth, vertically striated: outer bark 1 mm thick, dark, dead, corky, inner bark thick, semi-fibrous, pink, streaked with white. **Leaves** alternate, 30-45 cm long, simply paripinnate, leaflets 18-22, opposite, 8-23 x 4-10 cm, oblong or elliptic, tip acuminate, margin entire, glabrous, intramarginal nerve present, **Flowers** polygamous, in terminal panicles, 3-4 mm across, greenish white. **Fruit** a drupe, 3.8-5 cm long! yellow. **Seeds** 1-3.

Evergreen, semievergreen and moist deciduous forests up to 600 m. Throughout Kerala.

Sterculia guttata Roxburgh ex De Candolle, Prod. I: 482. 1824; Bour-

dillon, For. Trs. Travancore 45. 1908; Gamble, Fl. Pres. Madras 1: 76. 1957 -*Mal.*: Kavalam (Fam.: Sterculiaceae).

Large to moderate sized deciduous trees; *h* -18 m, *d* -60 cm. **Bark** 15-25 mm thick, surface brownish, smoothish, exfoliating in scales; blaze pink, radially streaked, peels from the inner surface netted. **Branchlets** 3-6 mm thick. **Leaves** alternate, simple, petioles 2.5-5 cm long, tomentose, blade 13-25 x 8-15 cm, broadly elliptic-oblong, tip acuminate, base subtruncate or obtuse, margin entire, lateral nerves 5-7 pairs; glabrous above, densely tomentose beneath. **Flowers** polygamous, in axillary racemes, 10-12 mm across, pinkish brown. **Fruit** of 3-5 follicles, each 6-7.5 cm long, obovoid, red. **Seeds** ovoid, black, shining.

Moist deciduous and semievergreen forests up to 600 m. Throughout Kerala.

Sterculia urens Roxburgh, Pl. Coast Coromandel 1: t. 24. 1795; Sourdillon, For. Trs. Travancore 44. 1908; Gamble, Fl. Pres. Madras 1: 75. 1957 -*Ma/.*: Thondi (Fam.: Sterculiaceae).

Small or medium sized deciduous trees; *h* 10-12 m, *d* 30-45 cm. **Bark** 10-12 mm thick, surface white or greenish grey, smooth, exfoliating in large, thin, papery flakes. **Branches** horizontal. **Branchlets** 5-12 mm thick, **Leaves** alternate, clustered at the tips of branchlets, simple, petioles 10-20 cm

long, blade 20-30 x 18-30 cm, oval, 5-7 lobed, base rounded or cordate, lobe tips acuminate, margin entire; densely tomentose beneath. **Flowers** polygamous, in axillary panicles, 6-8 mm across, greenish yellow. **Fruit** of 4-6 follicles, each 3-7.5 cm long, red. **Seeds** 3-6, brown.

Rocky hills in dry and moist deciduous forests. Throughout Kerala.

Sterculia villosa Roxburgh (Hort. Bengal. 50. 1814, *nom nud.*) ex De Candolle, Prod. 1:483. 1824; Bourdillon, For. Trs. Travancore 45. 1908; Gamble, Fl. Pres. Madras 1: 77, 1957 -*Mal.*: Vakka (Fam.: Sterculiaceae).

Medium sized deciduous trees; *h* -10 m, *d*-30 cm. **Bark** surface grey-white, blaze red. **Leaves** alternate, crowded at the ends of branchlets, simple, petioles 15-25 cm long, blade 30-45 x 30-45 cm, palmately 5-7lobed, base cordate with a divergent sinus, lobes acuminate at the tip, margin entire, palmately 5.7 nerved from base; softly pubescent. **Flowers** polygamous, in axillary racemes, 10-12 mm across, cream coloured. **Fruit** of 2-7 follicles, each 3.7-7.5 cm long, brown. **Seeds** many.

Moist deciduous forests at low elevations. Throughout Kerala.

Stereospermum chelonoides (Linnaeus f.) De Candolle in Bibl. Univ. Genev. 17: 134 1838. *Syn.*: **Stereospermum suaveolens** De Candolle in

Bibl. Univ. Genev. 17: 124. 1838; Bourdillon, For. Trs. Travancore 243. 1908; Gamble, Fl. Pres. Madras 2: 701. 1957 -*Mal.*: Kariyam (Fam.: Bignoniaceae).

Large trees; *h* 15-30 m, *d*-90 cm. **Bark** 10-12 mm thick, pale brown. **Leaves** opposite, 30-45 cm long, simply odd-pinnate, rachis 15-20 cm long, leaflets 5-11, petiolules 10-13 mm long, blade 10-15 x 5-7.5 cm, elliptic, tip acute, base acute, margin entire; glabrous. purple when young. **Flowers** bisexual, in drooping panicles, 18 mm long, yellow, veined with red. **Fruit** a capsule, 30-60 x 0.5 cm curved **seeds** 3 m long, wedge-shaped.

Moist deciduous forests. Throughout Kerala.

Stereospermum colais (Buchanan-Hamilton ex Dillwyn) Mabblerley in Taxon 27: 533. 1978. *Syn.*: **Bignonia colais** Buchanan-Hamilton ex Dillwyn, Ref. Hort. Mal. 28. 1839 -*Mal.*: Karim koora, Pathiri (Fam.: Bignoniaceae).

Large trees; *h* -30 m. **Bark** 20-23 mm thick, surface greyish brown, rough, exfoliations irregular; outer layer thin, green, inner layer thick, concentrically striate, creamy yellow. **Leaves** opposite, simply imparipinnate, rachis 15-20 cm long, leaflets 5-11, petiolules 8-13 mm long, blade 10-15 x 2-7.5 cm, oval, tip caudate acuminate, margin entire; glabrous, purple when young. **Flowers**

bisexual, in drooping panicles, 2 cm long, yellow, veined with red. *Fruit* a capsule, 30-00 x 1.3 cm, spirally twisted, 4-angled. *Seeds* wedge-shaped.

Moist deciduous forests up to 900 m. Throughout Kerala.

Strombosia ceylanica Cardner in Calcutta J. Nat. Hist. 6: 350. 1845; Bourdillon, For. Trs. Travancore 84. 1908; Gamble, Fl. Pres. Madras 1: 137. 1957 -*Mal.*: Kal kadaniba (Fam.: Olacaceae).

Large trees; *h* -20 m. *Bark* 3-4 mm thick, surface greenish grey, mottled with green; blaze deep pink-red, lamellate: with concentric lighter striations. *Leaves* alternate, simple, petioles 10-12 mm long, blade 10-15 x 3.7-5 cm, lanceolate, acute at both ends, margin entire, lateral nerves 4-5 pairs: glabrous, coriaceous, shining. *Flowers* bisexual, in axillary cymes, 1.5-2 mm across, greenish white. *Fruit* a drupe, 2.5 cm long, pyriform, deep purple.

Evergreen and semievergreen forests. Throughout Kerala.

Streblus asper Loureiro, Fl. Cochinch. 2: 615. 1790; Bourdillon, For. Trs. Travancore 329. 1908; Gamble, Fl. Pres. Madras 3: 947. 1957 -*Mal.*: Paruva, Undi parukku (Fam.: Moraceae).

Small evergreen, dioecious or rarely monoecious trees; *h* -10 m, *d* -30 cm. *Bark* 10-15(-20) mm thick, surface light grey, smooth, lenti-

cellate; fibrous; blaze creamy yellow; latex milky white. *Branchlets* 1-1.5 mm thick. *Leaves* alternate, spiral, simple, stipules 2-5 mm long, lanceolate, petioles 1-3(-5) mm long, blade 3-10 x 1.2-5 cm, ovate or rhomboid, tip acute, base acute, margin coarsely toothed from above the middle, sub-triply nerved from base, lateral nerves 4-6 pairs; scabrid. *Flowers* unisexual, greenish yellow, male in axillary heads, female solitary or 2-4 together. *Fruit* a drupe, 6-8 mm across, globose, obscurely 8-humped, yellow to orange. *Seed* 1, 4-5 mm across, globose, greyish white.

Moist deciduous, semievergreen arid secondary forests up to 600 m. Throughout Kerala.

Strychnos nux-vomica Linnaeus, Sp. Pl. 189. 1753; Bourdillon, For. Trs. Travancore 237. 1908; Gamble, Fl. Pres. Madras 2: 610. 1957 -*Mal.*: Kanjiram (Fam.: Loganiaceae).

Moderate sized deciduous trees: *h* -30 m, *d* -90 cm. *Bark* 3-4 mm thick, surface blackish grey, smoothish, outer bark dead, corky, turmeric yellow, inner bark brittle, creamy. *Leaves* simple, opposite, petioles 6-12 mm long, blade 6.2-15 x 5-10 cm, broadly ovate or suborbicular, tip obtuse or acute, base obtuse or round, 5-ribbed from base; glabrous, shining. *Flowers* bisexual, in cymes, 10-12 mm long, greenish. *Fruit* a berry, 4-5 cm across, globose,

orange-red, pericarp hard. **Seeds** 3-4, 16-18 mm across, flat, circular, greyish white.

Moist and dry deciduous forests up to 300 m. Throughout Kerala.

Strychnos potatorum Linnaeus f., Suppl. Pl. 148. 1781; Bourdillon, 'For. Trs. Travancore 238. 1908; Gamble,' Fl. Pres. Madras 2: 610. 1957 -**Mal.**: Thettamparal (Fam.: Loganiaceae).

Medium sized trees; **h** -15 m, **d**-45 cm. **Bark** 10-12 mm thick, surface brownish black, corky deeply cracked. **Leaves** opposite, simple, petioles very short, blade 5-15 x 3.7-7.5 cm, ovate-lanceolate, tip tapering, base acute or round, margin entire, 3-5 nerved from base, lateral nerves from the midrib 4 pairs; glabrous, shining. **Flowers** bisexual, in short axillary cymes, 6-8 mm long, white. **Fruit** a berry, 1%-18 mm across, globose, black, pericarp hard. **Seeds** 1-2, 10-12 mm across, flat, round, yellowish.

Dry deciduous forests up to 600 m. South Kerala.

Symplocos beddomei C. B. Clarke in Hooker f., Fl. Brit. India 3: 582. 1882; Gamble, Fl. Pres. Madras 2: 551. 1957 (Fam.: Symplocaceae).

Moderate sized trees. **Leaves** alternate, simple, blade 10-15 x 4-6 cm, elliptic, tip acute or acuminate margin crenate-serrate, obscurely revolute, lateral nerves 6-10 pairs;

shining above, glabrous. **Flowers** bisexual, in spikes. **Fruit** a drupe, 10-12 mm long, ovoid, stones woody. **Seeds** 1-2, oblong.

Evergreen forests between 600-1,200 m. North Kerala.

Symploeos cochinchinensis (Loureiro) Moore ssp. **laurina** (Retzius) Nootboom in Dassanayake, Rev. Hbk. Fl. Ceylon 3: 458. 1981. **Syn.**: **Myrtus laurina** Retzius, Obs Bot. 4: 26, 1810. **Symplocos spicata** var. **laurina**. (Retzius) Clarke in Hooker f., Fl. Brit. India 3: 573. 1882; Gamble, Fl. Pres. Madras 2: 549. 1957 (Fam.: Symplocaceae).

Medium sized trees; **h** -18 m, **d**-40 cm. **Bark** surface light grey, smooth; blaze creamy white. **Leaves** alternate, simple, petioles 6-8 mm long, blade 7.5-15 x 2.5-5 cm **ovate-lanceolate**, tip obtuse or shortly acuminate, base narrowed, margin crenate-serrate, lateral nerves 6-7 pairs, shining, glabrous. **Flowers** bisexual, in compound axillary spikes, small, white. **Fruit** a drupe, 6-8 mm across, globose, purple, ribbed.

Evergreen forests above 500 m. Throughout Kerala.

Symplocos foliosa Wight, Ic. Pl. Indiae Orient. t. 1234. 1848; Gamble, Fl. Pres. Madras 2: 550. 1957 (Fam.): Symplocaceae).

Moderate sized trees. **Branchlets** strigose. **Leaves** alternate, simple, blade 10-12 x 2.5-3.5 cm, elliptic or oblong, tip acuminate,

margin serrate, midrib hispid beneath, lateral nerves 8-12 pairs. *Flowers* bisexual, in spikes, large. *Fruit* a drupe, 10-12 mm long, cylindrical.

Evergreen forests above 3,500 m. South and Central Kerala.

Symplocos macrocarpa Wight *ex* C. B. Clarke in Hooker f., Fl. Brit. India 3: 582. 1882; Bourdillon, For. Trs. Travancore 226. 1908; Gamble, Fl. Pres. Madras 2: 549. 1957 (Fam.: Symplocaceae).

Moderate sized trees; *h*-15 m, *d*-30 cm. *Bark* surface smooth. *Branchlets* rusty pubescent; *Leaves* alternate, simple, petioles 6-8 mm long, blade 5-15 x 2.5-5 cm, oblong, lanceolate or oblanceolate, narrowed to both ends, margin serrate or crenulate, lateral nerves 8-10 pairs; glabrous, shining. *Flowers* bisexual, in axillary or terminal spikes, 6-8 mm across, white. *Fruit* a drupe, 2-2.5 x 1.2-1.6 cm, ovoid, cylindrical, white.

Evergreen forests between 600-900 m. South Kerala.

Symplocos macrocarpa Wight *ex* Clarke ssp. *kanarana* (Talbot) Nooteboom in Leiden Bot. Ser. 1, 221. 1975. *Syn.*: *Symplocos kanarana* Talbot in J. Bombay Nat. Hist. Soc. 11: 238, t. 9. 1897; Gamble, Fl. Pres. Madras 2: 550. 1957 (Fam.: Symplocaceae).

Moderate sized trees. *Leaves* alternate, simple, blade 10-12.5 x 4-5 cm, elliptic-ovate or obovate,

tip long acuminate, margin crenate-serrate, lateral nerves 5-8 pairs; glabrous. *Flowers* bisexual.

Rare in the evergreen forests up to 600 m. South Kerala.

Symplocos macrophylla Wallich (Num. List. Dried Pl. E. India Co, Mus. [Cat.] no. 443. 1831, *nom. nud.*) *ex* De Candolle, Prod. Syst. Nat. Veg. 8: 257. 1844. *Syn.*: *Symplocos gardneriana* Wight, Ic. Pl. Indiae Orient. 4: 10, t. 1231. 1848; Bourdillon, For. Trs. Travancore 226. 1908; Gamble, Fl. Pres. Madras 2: 550. 1957 (Fam.: Symplocaceae).

Small trees; *h*-12 m, *d*-30 cm. *Branchlets* rusty pubescent. *Leaves* alternate, simple, petioles 10-12 mm long, villous, blade 7.5-17.5 x 3.7-7.5 cm, ovate or elliptic, tip acuminate, base cuneate, margin subentire or subcrenulate, lateral nerves tomentose; glabrous above, softly pubescent beneath, coriaceous. *Flowers* bisexual, in axillary spikes, 6-8 mm across, white. *Fruit* a drupe, 10-12 mm long, cylindrical, purple.

Evergreen forests above 900 m. South Kerala.

Symplocos pendula Wight, Ic. Pl. Indiae Orient. 4: 10, t. 1237. 1848; Bourdillon, For. Trs. Travancore 228. 1908. *Syn.*: *Symplocos sessilis* C. B. Clarke in Hooer f., Fl. Brit. India 3: 587. 1882; Gamble, Fl. Pres. Madras 2: 551. 1957 (Fam.: Symplocaceae).

Medium sized trees; *h* -12 m, *d* -30 cm. *Leaves* alternate, simple, petioles 4-6 mm long, blade 2.5-6 x 1.2-2.5 cm, spatulate, tip obtuse or emarginate, base tapering, margin entire, lateral nerves 4-5 pairs; glabrous, coriaceous. *Flowers* bisexual, axillary, solitary, 6-8 mm across, white. *Fruit* a drupe, 18-18 x 3-4 mm, cylindrical, black.

Evergreen forests between 1,200-2,600 m. South Kerala.

Syzygium arnottianum Walpers, Rep. 2: 180. 1843; Gamble, Fl. Pres. Madras 1: 338. 1957. *Syn.*: *Eugenia arnottiana* Wight, Ill. Indian Bot. 2: 17. 1841: Bourdillon, For. Trs. Travancore 188. 1908. -*Mal.*: Vellanjal (Fam.: Myrtaceae).

Large trees; *h*-25 m, *d*-75 cm. *Crown* spreading. *Bark* surface blackish grey, rough. *Branchlets* 4-aregular. *Leaves* opposite, simple, 2.5-3.7cm, petioles 1-2 cm long, blade 3.7-7.5x 2.5-3.7 cm, elliptic-lanceolate, tip acuminate, base round, margin entire, coriaceous, lateral nerves numerous, parallel, intramarginal nerve present; glabrous. *Flowers* bisexual, in dense terminal cymes, 10-12 mm long, creamy. *Fruit* a herry, oblong-ovoid, dark purple, fleshy.

Evergreen shola forests between 1,000-1,800 m. South Kerala.

Syzygium bourdillonii (Gamble) Rathakrishnan et Nair in J. Econ. Taxon. Bot. 4: 287. 1983. *Syn.*: *Jambosa bourdillonii* Gamble in Kew Bull.

1918: 239. 1918 et Fl. Pres. Madras 1: 335. 1957 (Fam.: Myrtaceae).

Medium sized trees. *Leaves* opposite, simple, petioles 2-3 mm long, blade 7.5-11 x 2.5-3.7 cm, narrowly elliptic or elliptic-oblongate, acuminate at both the ends, margin entire, lateral nerves 8- 10 pairs, intramarginal nerve present. *Flowers* bisexual, in terminal few flowered cymes. *Fruit* a berry, small.

Reported to occur in the evergreen forests of South Kerala.

Syzygium calophyllifolium [Wight] Walpers, Rep. 2: 180. 1843; Gamble, Fl. Pres. Madras 1: 339. 1957. *Syn.*: *Eugenia calophyllifolia* Wight, Ill. Indian. Pl. 2: 17. 1831 (Fam.: Myrtaceae).

Large evergreen trees. *Crown* umbrageous. *Bark* thick, surface brown, rough. *Branchlets* terete. *Leaves* opposite, simple, blade 2-2.5 x 1.5-2 cm, suborbicular, obovate, tip slightly emarginate, margin entire. *Flowers* bisexual, in close terminal corymbs. *Fruit* a berry, 10-12 mm long, oblong or obovoid.

Evergreen forests above 1,800 m. Throughout Kerala; but not common.

Syzygium chavaran (Bourdillon) Gamble, Fl. Pres. Madras 3: 480. 1919 et 1: 340. 1957 *Syn.*: *Eugenia chavaran* Bourdillon, For. Trs. Travancore 167. 1908 -*Mal.*: Chavaran [Fam.: Myrtaceae).

Large trees; *h* -25 m, *d* -90 cm. **Branchlets** terete. **Leaves** opposite, simple, 10-12.5 x 5-7.5 cm, petioles 12-16 mm long, blade ovate, tip shortly acuminate, base round, margin entire, lateral nerves numerous, close; glabrous. **Flowers** bisexual, 10-12 x 10-12 mm, white, in axillary and terminal compound cymes.

Reported from the evergreen forests of South Kerala.

Syzygium cumini (Linnaeus) Skeels in U S D A Bur. Pl. Indust. Bull. 248: 2. 1912. **Syn.:** *Myrtus cumini* Linnaeus, Sp. Pl. 471. 1753. *Eugenia jambolana* Lamarck, Encycl. Meth. 3: 198. 1789; Bourdillon, For. Trs. Travancore 163. 1908; *Syzygium jambolanum* (Lamarck) De Candolle, Prod. Syst. Nat. Veg. 3: 259. 1828; Gamble, Fl. Pres. Madras 1: 340. 1957 -**Mal.:** Njaval (Fam.: Myrtaceae).

Large evergreen trees: *h* -25 m, *d* -60 cm. **Bole** often crooked. **Bark** 5-6 mm thick, surface light grey, mottled with dark grey, smooth, with shallow exfoliated depressions; blaze red. **Leaves** opposite, simple, 7.5-15 x 3.7-6.2 cm, petioles 12-24 mm long, blade oblong-oval, tapering to both ends, margin entire, lateral nerves numerous, faint, parallel, intramarginal nerve distinct; glabrous. **Flowers** bisexual, in compound divaricate cymes from the axils of fallen leaves, greenish white. **Fruit** a berry, 1.2-3.7 cm long, ovoid, black, pericarp dark pink within, fleshy. **Seed** 1.

Evergreen and semievergreen forests up to 1,800 m. Through-out Kerala.

Syzygium gardneri Thwaites, Enum. Pl. Zeylan. 117. 1859; Gamble, Fl. Pres. Madras 1: 339. 1957. **Syn.:** *Eugenia gardneri* Duthie in Hooker f., Fl. Brit. India 1: 489. 1879; Bourdillon, For. Trs. Travancore 187. 1908 -**Mal.:** Kari njara (Fam.: Myrtaceae).

Large evergreen trees; *h* -30 m, *d* -90 cm **Bark** 8-70 mm thick, surface grey-white, smooth; outer part of the inner bark fibrous, pale pink. **Leaves** opposite, simple, petioles 5-6 mm thick, blade 5-7.5 x 2.5-3 cm, ovate-lanceolate, tapering to both ends, margin entire, lateral nerves numerous, parallel; glabrous, pellucid gland-dotted. **Flowers** bisexual, in axillary and terminal cymes, 4-5 mm across, white. **Fruit** a berry, 5-8 mm across, ovoid, rarely globose, purple.

Evergreen and semievergreen forests up to 1,200 m. South and Central Kerala.

Syzygium hemisphericum Alston in Trimen, Hbk. Fl. Ceylon 6: 115. 1931 **Syn.:** *Eugenia hemispherica* Wight, Ic. Pl. Indiae Orient. t. 525. 1812; Bourdillon, For. Trs. Travancore 162. 1908. *Jambosa hemispherica* (Wight) Walpers, Rep. 2: 191. 1843; Gamble, Fl. Pres. Madras 1: 335. 1957 -**Mal.:** Ven njara (Fam.: Myrtaceae).

Large trees; *h* -27m, *d* -60 cm. **Bark** surface blackish, smooth. **Leaves** opposite, simple, petioles

0-12 mm long, blade 7.5-12.5 x 2.5-5 cm, ovate-lanceolate, tip acuminate, base narrow, margin, entire, lateral nerves inconspicuous; glabrous. **Flowers** bisexual, in axillary and terminal compound cymes, 15-18 mm across, white or rose. **Fruit** a berry, 23-25 mm across, globose, purple, crowned by calyx lobes.

Evergreen forests up to 900 m. Throughout Kerala.

Syzygium laetum (Hamilton) Gandhi in Saldanha *et* Nicolson, Fl. Hassan Dt. 282. 1976. **Syn.:** *Eugenia laeta* Hamilton, Mem. Wern Nat. Hist. Soc. 5: 338. 1826; Bourdillon, For. Trs. Travancore 162. 1908. *Jambosa laeta* (Hamilton) Blume, Mus. Bot. 1: 104. 1849; Gamble, Fl. Pres. Madras 1: 335. 1957 (Fam.: Myrtaceae).

Medium sized trees; *h* -15 m, *d*-45 cm. **Bark** white, smooth. **Leaves** opposite, simple, 6-12.5 x 2.5-6 cm, petioles 5-6 mm long, blade elliptic-lanceolate, tapering to both ends, margin entire, lateral nerves indistinct: glabrous. **Flowers** bisexual, solitary or in pairs at the tips of branchlets, 3.7 x 2.5 cm, crimson or lemon yellow. **Fruit** a berry, 23-25 mm long, ovoid, crowned by calyx lobes.

Evergreen forests up to 1,200 m. Throughout Kerala.

Syzygium lanceolatum (Lamarck) Wight *et* Arnott, Prod. 330. 1834. **Syn.:** *Eugenia lanceolata* Lamarck, Encycl. Meth. 3: 200. 1789. *syzy-*

gium wightianum Wallich *ex* Wight *et* Arnott, Prod. 330. 1834; Gamble, Fl. Pres. Madras 1: 338. 1957. *Eugenia wightiana* Wight, Ill. Indian Bot. 2: 15. 1841; Bourdillon, For. Trs. Travancore 165. 1908 (Fam.: Myrtaceae).

Moderate sized trees; *h* -12 m, *d* -30 cm. **Leaves** opposite, simple, petioles 5-6 mm long, blade 7.5-12.5 x 2.5-3.7 cm, lanceolate, tip acuminate, base tapering, margin entire, lateral nerves very numerous, thin, parallel; glabrous. **Flowers** bisexual, in axillary and terminal cymes, 16-16 mm long, white. **Fruit** a berry, 10-12 mm long, ovoid-turbinate, bright scarlet.

Evergreen forests between 600-1,200 m. South Kerala.

Syzygium malabaricum (Beddome) Gamble, Fl. Pres. Madras 3: 481. 1929 *et* 1: 340. 1957. **Syn.:** *Eugenia malabarica* Beddome, Fl. Sylv. t. 199. 1872 [Fam.: Myrtaceae].

Medium sized trees. **Leaves** opposite, simple, petioles 5-10 mm long, blade 5-12.5 x 2.7-7 cm, obovate or obcordate, tip obtuse or retuse, base narrowed, margin entire, lateral nerves absent or obscure; glaucous beneath. **Flowers** bisexual, small, in short branching cymes. **Fruit** a berry, 5-6 mm across, globose.

Swampy forests between 600-1,200 m. North Kerala (Wynad).

Syzygium mundagam (Rourdillon) Chitra in Fl. Tamil Nadu, India, ser. 1, Analysis 1: 157. 1983. *Syn.*: *Eugenia mundagam* Bourdillon, For. Trs. Travancore 182. 1908. *Jumbosa mundagam* (Bourdillon) Gamble; Fl. Pres. Madras, 3: 473. 1919 *et* 1: 335. 1957 -*Mal.*: Mundakam (Fam.: Myrtaceae).

Medium sized trees: *h* -15 m, *d*-45 cm. *Bark* 6-8 mm thick, surface brown, smooth. *Branchlets* terete. *Leaves* opposite, simple, petioles 5-6 mm long, blade 15-30 x 6-12.5 cm, oblong, tip obtuse, base cordate, margin entire, lateral nerves 18-22 pairs. very. thin, secondary laterals present, intramarginal nerve conspicuous; glabrous. *Flowers* bisexual, 2.5 cm across, white. *Fruit* a berry, 2.5 cm across, ovoid, greenish pink.

Syzygium myhendrae (Beddome *ex* Brandis) Ganible, Fl. Pres. Madras 9: 478. 1919 *et* 1: 338. 1957. *Syn.*: *Eugenia myhendrae* Beddome *ex* Brandis, Indian Trs. 325. 1906; Bourdillon, For. Trs. Travancore 167. 1908 (Fam.: Myrtaceae).

Medium sized trees; *h* -12 m, *d*-30 cm. *Branchlets* quadrangular. *Leaves* opposite, simple, petioles 10-12 mm long, blade 18-30 x 8-16 mm, oblanceolate, tip obtuse, base narrow, margin entire, lateral nerves very numerous, slender, close together; glabrous. *Flowers* bisexual, in terminal compound cymes, small, white.

Reported to occur in the evergreen forests between 900-1,200 m. South Kerala (Peermade).

Syzygium palghatense Gamble in Kew Bull. 1918: 240. 1918 *et* Fl. Pres. Madras 1: 339. 1957. (Fam.: Myrtaceae).

Large trees. *Branchlets* terete. *Leaves* opposite, simple, blade 4-5 x 1.5-1.8 cm, obovate, tip abruptly obtusely acuminate, base cuneate, margin entire, lateral nerves distant; coriaceous, pellucid gland-dotted. *Flowers* bisexual, in lax terminal and axillary cymes.

Evergreen forests up to 1,500 m. North Kerala.

Syzygium ramavarmae (Bourdillon) Chithra in Fl. Tamil Nadu, ser. 1, Analysis 1: 157. 1983. *Syn.*: *Eugenia ramavarma* Bourdillon in Indian For. 30: 147, t. 2. 1904 *et* For. Trs. Travancore 161. 1908. *Jambosa ramavarma* (Bourdillon) Gamble, Fl. Pres. Madras 3: 474. 1919 *et* 1: 335. 1957 (Fam.: Myrtaceae).

Medium sized trees; *h* -18 m, *d* -45 cm. *Bark* surface brown; brittle; blaze dull blackish. *Leaves* opposite, simple, petioles 5-6 mm long, blade 10-17.5 x 5-10 cm, elliptic-ovate or elliptic-lanceolate, tip long acuminate, base cordate, margin entire, pellucidgland-dotted, lateral nerves 15-20 pairs, intramarginal nerves present, conspicuous; glabrous. *Flowers* bisexual, solitary or in few flowered cymes on the old wood, 3.3-3.7 mm across. *Fruit* a berry, 32-37 mm

across, globose, greenish pink.
Seeds 1-2.

Evergreen forests at ca. 1,200 m. South Kerala.

Syzygium rubicundum Wight *et* Arnott, Prod. 330. 1834; Gamble, Fl. Pres. Madras 1: 339. 1957. *Eugenia rubicunda* Wight, Ill. Indian Bot. 2: 15. 1841; Bourdillon, For. Trs. Travancore 186. 1908 (Fam.: Myrtaceae).

Medium sized trees; *h* -15 m. *d* -30 cm. *Bark* thin, surface pale brown, smooth. *Branchlets* 4-angular. *Leaves* opposite, simple, petioles 5-6 mm long, blade 5-10 x 5-5.5 cm, ovate-lanceolate, tip caudate-acuminate and obtuse; base tapering, margin entire, lateral nerves numerous, thin; glabrous. *Flowers* bisexual, in axillary and terminal cymes, small, pinkish white. *Fruit* a berry, small, globose.

Evergreen forests up to 900 m. South and Central Kerala.

Syzygium stocksii (Duthie) Gamble, Fl. Pres. Madras, 3: 481. 1919 *et* 1: 340. 1957. *Syn.*: *Eugenia stocksii* Duthie in Hooker f., Fl. Brit. India 2: 498. 1679 (Fam.: Myrtaceae).

Lofty trees. *Branchlets* 4-angular, dark. *Leaves* opposite, simple, blade 10-15 x 4-7.5 cm, elliptic-oblong, tip round or obtusely acuminate, margin entire, lateral nerves few, pellucid gland-dotted. *Flower.*, bisexual, in axillary corymbose cymes, small.

Evergreen Forests at ca. 900 m. North Kerala.

Syzygium tamilnadensis Rathakrishnan *et* Chithra, Fl. Tamilnadu, ser. 1, Analysis 158. 1983. *Syn.*: *Syzygium montanum* (Wight) Gamble in Kew Bull. 1919: 479. 1919 *et* Fl. Pres. Madras 1: 339. 1957. *Eugenia montana* Wight, Ic. Pl. Indiae Orient. t. 1060. 1846; Bourdillon, For. Trs. Travancore 186. 1908 -*Mul.*: Poriyil (Fam.: Myrtaceae).

Large trees: *h* -18 m, *d* -60 cm. *Bark* surface dark brown, peeling off in small flakes. *Branchlets* quadrangular. *Leaves* opposite, simple, petioles 8-16 mm long, blade 7.5-12.5 x 5-7.5 cm, ovate, elliptic or obovate, base narrow, margin entire, glabrous, lateral nerves 10-15 pairs. *Flowers* bisexual, in axillary or terminal corymbose panicles, small, white. *Fruit* a berry, 6-8 mm across, globose, purple, succulent, crowned by calyx lobes.

Evergreen forests above 1,500 m. South Kerala.

Syzygium travancoricum Gamble in Kew Bull. 1918: 240. 1918 *et* Fl. Pres. Madras I: 339. 1957 (Fam.: Myrtaceae).

Small trees: *h* -12 m. *Bark* surface greyish brown. *Leaves* opposite, simple, petioles 15-25 mm long, blade 10-17 x 5-10 cm, ovate, elliptic, tip acuminate, acumen folded, obtuse, base narrowed,

decurrent, margin entire, lateral nerves 10-12(-15) pairs, distant, joining in loops. **Flowers** bisexual, in axillary corymbose cymes.

Evergreen forests; mostly confined to swampy areas.

Syzygium zeylanicum (Linnaeus) De Candolle, Prod. Syst. Nat. Veg. 3: 260. 1828; Gamble, Fl. Pres. Madras 1: 338. 1957. **Syn.:** *Myrtus zeylanica* Linnaeus, Sp. Pl. 422. 1753. *Eugenia zeylanica* Wight, Ill. Indian Bot. 2: 15. 1841. Bourdillon, For. Trs. Travancore 185. 1908 (Fam.: Myrtaceae).

Small trees; *h* -10 m, *d* 20-25 cm. **Leaves** opposite, simple, petioles 5-6 mm long, blade 2.4-5 x 0.8-2.4 cm, ovate or linear-lanceolate, tip caudate-acuminate, base tapering, margin entire, lateral nerves numerous faint: shining. **Flowers** bisexual, in axillary and terminal cymes, small, white. **Fruit** a berry, 5-6 mm across, globose, white, crowned with calyx segments.

River banks at low elevations. Throughout Kerala.

Tectona grandis Linnaeus f., Suppl. Pl. 153. 1781; Bourdillon, For. Trs. Taavancore 249. 1608; Gamble, Fl. Pres. Madras 2: 765. 1957 -**Mal.:** Thekku (Fam.: Verbenaceae).

Large deciduous trees; *h* -45 m, *d* 1-2.4m. **Bark** 10-20 mm thick, surface yellowish brown, roughish, shallowly vertically fissured; fibrous; blaze pale yellowish, concentrically lamellate. **Branchlets**

5-8(-10) mm thick, quadrangular **Leaves** opposite, simple, petioles 2.5-3.7 cm long, blade 90-60 x 15-30 cm, ovate or obovate, tip obtuse, base narrowed, margin entire, wavy, lateral nerves 6-7 pairs; glabrous and rough above, white tomentose beneath. **Flowers** bisexual, in terminal panicles, 6-8 mni long, white. **Fruit** a nut, 6-8 mm across, enclosed in accrescent cupular calyx. **Seeds** 1-3(-4), oblong.

Moist deciduous forests up to 900 m. Throughout Kerala.

Terminalia arjuna (Roxburgh ex De Candolle) Wight et Arnott, Prod. 314, in text. 1834; Bourdillon, For. Trs. Travancore 157. 1908; Gamble, Fl. Pres. Madras 1: 329. 1957. **Syn.:** *Pentaptera arjuna* Roxburgh ex De Candolle, Prod. Syst. Nat. Veg. 3: 14. 1828 -**Mal.:** Neer maruthu (Fam.: Combr.aceae).

Large evergreen trees; *h* -25 m, *d* -1.5 m. **Bole** often buttressed. **Bark** 6-8 mm thick, surface pinkish grey, smooth, flaking off in thin layers; blaze pink. **Leaves** subopposite, simple, petioles 5-6 mm long, tip with 1-2 glands, blade 7.5-15 x 3.7-7.5 cm, oblong or elliptic, rounded at both ends, margin entire, subcrenulate; glabrous. **Flowers** bisexual, in short spikes, 2-3 mm across, dull yellow. **Fruit** drupaceous, 2-2.5 cm long, with 5-7 longitudinal wings. **Seed** 1.

A rare tree along river banks at low elevations. North Kerala.

Terminalia bellirica (Gaertner) Roxburgh, Pl. Coast Coromandel 3: t. 198. 1805 (as '*bellerica*'); Bourdillon, For. Trs. Travancore 154. 1908; Gamble, Fl. Pres. Madras 1: 328. 1957. *Syn.*: *Myrobalanus bellirica* Gaertner, Fruct. 2: 90, t. 97. 1791. (as '*bellirina*') -*Mal.*: Thani (Fam.: Combretaceae).

Large deciduous trees; *h* -35 m, *d* 1-1.5 m. **Bole** often buttressed, **Bark** 10-20 mm thick, surface blackish grey, smoothish, vertically fissured, exfoliations small; semi-fibrous: blaze yellow. **Branchlets** 3-7 mm thick, sympodial. **Leaves** alternate, clustered at the tips of branchlets, simple, petioles 4-8 cm long, blade 10-18 x 6-12 cm, obovate, tip round or rarely emarginate, base acute, margin entire, lateral nerves 8-10 pairs: glabrous. **Flowers** bisexual, in axillary spikes, 5-6 mm across, greenish yellow. **Fruit** drupaceous, 2-2.5 cm long, ovoid or ellipsoid, not winged, yellowish brown. **Seed** 1, ellipsoid, yellow.

Moist deciduous and semi-evergreen forests up to 900 m. Throughout Kerala.

Terminalia chebula (Gaertner) Retzius, Obs. Bot. 5: 31. 1788; Bourdillon, For. Trs. Travancore 154. 1908; Gamble, Fl. Pres. Madras 1: 328. 1957. *Syn.*: *Myrobalanus chebula* Gaertner, Fruct. 2: 91, t. 97. 1791 -*Mal.*: Kadukka (Fam.: Combretaceae).

Medium sized to large deciduous trees; *h* -15 m, *d* -45 cm. **Bark**

5-6 mm thick, surface dark brown, fissures shallow, vertical, exfoliating in thick scales. **Branchlets** pubescent. **Leaves** opposite or subopposite, simple, petioles 1.2-2.5 cm long, tip with 2 glands, blade 10-17 x 8-10 cm, ovate or elliptic, tip obtuse, base round or subtruncate, margin entire, lateral nerves 6-12 pairs; pubescent, tawny villous beneath. **Flowers** bisexual, in terminal spikes, 5-6 mm across, greenish white. **Fruit** drupaceous, 3-3.5 cm long, obovoid, woody, obscurely angled.

Dry deciduous forests up to 900 m. Throughout Kerala.

Terminalia crenulata Roth, Nov. Pl Sp. 380. 1821; Gamble, Fl. Pres. Madras 1: 329. 1957. *Syn.*: *Terminalia tomentosa* sensu Bourdillon, For. Trs. Travancore 156. 1908, non Wight *et* Arnott -*Mal.*: Kora maruthu, Thempav (Fam.: Combretaceae).

Large deciduous trees: *h* -30 m *d* -90 cm. **Bark** 15-20 mm thick, surface grey-black, very rough, deeply vertically fissured, horizontally cracked arid subtessellate; blaze pink-red. **Leaves** subopposite or alternate, bifarious, simple, petioles 5-8 mm long, blade 15-20 x 6-7 cm, oblong, tip obtuse or acute, base obtuse, margin subcrenulate, midrib with 2 glands at the base beneath, lateral nerves 15-20 pairs, parallel: glabrous. **Flowers** bisexual, in terminal panicles, 2-3 mm across, dull yellow. **Fruit** drupaceous, 4-5 cm long, longitudinally 5-winged. **Seed** 1.

Moist and dry deciduous forests up to 600 m. Throughout Kerala.

Terminalia paniculata Roth, Nov. Pl. Sp. 383. 1821; Bourdillon, For. Trs. Travancore 157. 1908; Gamble, Fl. Pres. Madras 1: 329. 1957 -*Mal.*: Pilla maruthu (Fam.: Combretaceae).

Large deciduous trees; *h*-30 m, *d*-90 cm, **Bark** 15-20 mm thick, surface brawn, roughish, vertical fissures shallow: fibrous: blaze reddish pink. **Leaves** alternate, bifarious, simple, petioles 12-15 mm long, blade 10-18 x 5-6 cm, elliptic or elliptic-oblong, tip acute or acuminate, base rounded or cordiform, margin entire, lateral nerves 5-9 pairs; glabrous. **Flowers** bisexual, in terminal panicles, 6-12 mm across, white. **Fruit** drupaceous, 6-12 mm long, with one large and two small wings, brownish red. **Seed** 1.

Dry, moist deciduous and semievergreen forests up to 600 m. Throughout Kerala.

Terminalia travancorensis Wight et Arnott, Prod. 314. 1834; Bourdillon, For. Trs. Travancore 155. 1908; Gamble, Fl. Pres. Madras 1: 329. 1957 -*Mal.*: Chula maruthu, Kattu kadukka (Fam.: Combretaceae).

Large trees; *h* -30 m. *d*-75 cm. **Bark** 5.6 mm thick, surface yellowish brown, smooth. **Leaves** opposite or subopposite, simple, petioles 12-18 mm long, blade

8-10 x 2.5-5 cm, ovate-lanceolate, tip acuminate, base round, margin entire, lateral nerves regular; glabrous. **Flowers** bisexual, in terminal and axillary spikes, 3-4 mm across, white. **Fruit** drupaceous, 3-3.5 cm long, ellipsoid, 5-angled, yellowish brown.

Evergreen forests up to 600 m. South Kerala.

Ternstroemia japonica (Thunberg) Thunberg in Trans. Linn. Soc. 2: 335. 1794; Bourdillon, For. Trs. Travancore 29. 1908; Gamble, Fl. Pres. Madras 1: 56. 1957. **Syn.**: **Cleyera japonica** Thunberg, Fl. Jap. 224. 1784 (Fam.: Theaceae).

Small evergreen trees; *h*-12 m, *d* -30 cm. **Bark** 10-12 mm thick, surface brown, smoothish, subterresate. **Leaves** alternate, simple petioles 4-6 mm long, red, blade 5-10 x 1.8-2.5 cm, lanceolate or oval, tip acute, base narrowed, margin entire, lateral nerves 7-11 pairs glabrous coriaceous. **Flowers** bisexual axillary, solitary or fascicled, 6-8 mm across. greenish yellow. **Fruit** a berry, 16-18 mm long, ovoid. fleshy, brown. **Seed** oblong or horse-shoe shaped.

Evergreen forests above 900 m. South and Central Kerala.

Tetrameles nudiflora R. Brown in Bennett, Pl. Jav. Rar. 79, t. 17. 1838; Bourdillon, For. Trs. Travancore 180. 1908; Gamble, Fl. Pres. Madras 1: 384. 1957 -*Mal.*: Cheeni (Fam.: Datisceae).

Large deciduous dioecious trees; *h* 40-45 m, *d* 1.5 m. **Bole** buttressed. **Bark** 5-6 mm thick, surface pale grey, smooth, tuberculate lanceolate; outer bark thin, corky, dead, middle bark thin green, inner bark thick, fibrous, creamy white. **Leaves** alternate, simple, petioles 5-15 cm long, blade 7.5-17.5 cm across, orbicular-ovate, tip acuminate, base cordate, margin irregularly dentate, palmately 5-nerved from base; glabrous above, pubescent beneath. **Flowers** unisexual, 6 mm across, yellowish green, female in pendulous racemes, male in panicles. **Fruit** a capsule, 5-6 mm long, urceolate.

Moist deciduous, semievergreen and evergreen forests up to 750 m. Throughout Kerala.

Toona ciliata Roemer, Syn. Hesper. 139. 1846. *Syn.: Cedrela toona* Roxburgh ex Kottler, Ges. Naturf. Freunde Berlin Neue Schriften 2: 198. 1803; Bourdillon. For. Trs. Travancore 81. 1908; Gamble, Fl. Pres. Madras 1: 133. 1957 **-Mal.:** Chuvanna akil (Fam.: Meliaceae).

Large evergreen trees; *h* 30 m, *d* 1 m. **Bark** 10-15 mm thick, surface reddish brown, rough, exfoliating in large flakes; fibrous; blaze pink-red. **Leaves** alternate, clustered at the tips of branchlets, 30-90 cm long, simply imparipinnate, leaflets 20-30, opposite or subopposite, petiolules 10-20 mm long, leaflet blade lanceolate, tip acuminate, base asymmetric, oblique, margin entire or serrate, lateral nerves 10-15 pairs; glossy

above, pale beneath. **Flowers** bisexual, in drooping panicles, 5-6 x 5-6 mm, white. **Fruit** a capsule, 15-18 mm long, ovoid, brown. **Seeds** many, flat, winged at both ends brown.

Evergreen arid semievergreen forests up to 1,800 m. Throughout Kerala.

Trema orientalis (Linnaeus) Blume, Mus. Bot. 2: 61. 1856; Bourdillon, For. Trs. Travancore 312. 1908; Gamble, Fl. Pres. Madras 3: 945. 1957. *Syn.: Celtis orientalis* Linnaeus, Sp. Pl. 1044. 1753 **-Mal.:** Amathali, Pottamathali (Fam.: Ulmaceae).

Medium sized trees; *h* 15 m, (*d* 45 cm, **Bark** 15-20 mm thick, surface blackish grey, smoothish, lenticellate, lenticels in longitudinal rows; fibrous; blaze deep red, radially streaked. **Leaves** alternate, bifarious, simple, petioles 8-12 mm long, blade 7.5-15 x 2.5-6.5 cm, oblong-lanceolate, tip acuminate, base unequal, one side round, margin crenate-serrate, 3-ribbed from base; grey or white pubescent beneath. **Flowers** polygamous, in axillary clusters, greenish. **Fruit** a drupe, 3-4 mm across, ovoid or subglobose, black. **Seeds** small.

Moist deciduous and secondary forests up to 2,400 m. Throughout Kerala.

Trewia polycarpa Benth et Hooker f., Gen. Pl. 3: 318. 1880; Gamble, Fl. Pres. Madras 2: 923. 1957 **-Mal.:** Pambarakumbil (Fam.: Euphorbiaceae).

Small dioecious trees; *h*-15 m, 61-30 cm. *Bark* surface grey, smooth. *Leaves* opposite, simple, petioles 2.5-7.5 cm long, blade 5-20 x 3.7-12.5 cm, ovate, tip acuminate, base cordate or truncate, margin entire. 3-5 ribbed from base; glabrous above, stellate hairy on the nerves beneath. *Flowers* unisexual, in axillary pendulous racemes, 5-6 mm across, pale green. *Fruit* a drupe, 15-18 mm across, globose, pericarp fleshy. *Seeds* ovoid, brown.

Evergreen forests and along streams up to 300 m. Throughout Kerala.

Trichilia connaroides (Wight et Arnott) Bentvelzen, Acta Bot. Neerl. 11: 13. 1962. *Syn.*: *Zanthoxylum connaroides* Wight et Arnott. Prod. 148. 1834 (as '*Zanthoxylon*'). **Heynea trijuga** Roxburgh, Hort. Bengal. 33. 1814; Bourdillon, For. Trs. Travancore 78. 1908; Gamble, Fl. Pres. Madras 1: 131. 1957 -*Mal.*: Korakadi (Fam.: Meliaceae).

Small trees; *h* -10 m, *d* -30 cm. *Bark* surface rough, warty. *Branchlets* 8-10 mm thick, lenticellate. *Leaves* alternate, 10-30 cm long, simply imparipinnate, leaflets 5-11, petiolules 10-17 mm long, leaflet blade 5-15 x 2.5-7 cm, ovate, tip acuminate, base asymmetric, oblique, margin entire, lateral nerves 7-10 pairs; glabrous, glaucous beneath. *Flowers* bisexual, in axillary panicles, 6-8 mm across, white. *Fruit* a capsule, globose, bright red. *Seed* yellowish brown, surrounded by a white fleshy aril.

Evergreen forests up to 1,800 m. Throughout Kerala.

Turpinia nepalensis Wallich ex Wight et Arnott, Prod. 156. 1834; Bourdillon, For. Trs. Travancore 100. 1908; Gamble, Fl. Pres. Madras 1: 172. 1957 -*Mal.*: Pampa vetti (Fam.: Staphyleaceae)

Large trees; *h* -20 m, *d* -60 cm. *Bark* thin, surface brown. *Leaves* opposite, 15-45 cm long, simply imparipinnate. leaflets 3-9, opposite, petiolules 10-28 mm long, leaflet blade 5-15 x 2.5-6 cm, oblong, tip acuminate, base acute, margin serrate, lateral nerves 6-8 pairs; glabrous. *Flowers* bisexual, in terminal panicles, 3-4 mm across, cream coloured. *Fruit* a berry, 12-18 mm across, globose, purplish brown. *Seed* 1, dark brown.

Evergreen forests between 1,200-1,500 m. South Kerala; perhaps also extends to Central Kerala.

Turpinia malabarica Gamble in Kew Bull. 1916: 135. 1916 et Fl. Pres. Madras 1: 173. 1957 -*Mal.*: Pamha vetti (Fam.: Staphyleaceae).

Large trees. *Leaves* opposite, 22-30 cm long, simply imparipinnate, leaflets 4-6, petiolules 0.5-1.5 (-3-5) cm long blade 13-12 x 4-5 cm, elliptic, tip abruptly cuspidate or acuminate, margin serrate, lateral nerves 5-6 pairs. *Flowers* bisexual, in terminal and axillary panicles with opposite branches, 8-10 mm across. *Fruit* a drupe, subglobose. *Seeds* complanate.

Evergreen forests up to 800 m.

Vateria indica Linnaeus, Sp. Pl. 515. 1753; Bourdillon, For. Trs. Travancore 37. 1908; Gamble, Fl. Pres. Madras 1: 61. 1957 -*Mal.*: Payin, Vella payin (Fam.: Diptero-
carpaceae).

Large evergreen trees; *h* -25 m, *d* -1m. **Bark** 10-12 mm thick, surface greyish, blotched with green and white, smooth. **Leaves** alternate, simple, petioles 2.5-3.5 cm long, swollen at the tip, blade 12-20 x 6-9 cm, oblong, tip obtuse or acute, base round or emarginate, margin entire, lateral nerves 12-14 pairs; glabrous. **Flowers** bisexual, in panicles, 14-16 mm across, white. **Fruit** a capsule, 4-5 x 3-3.7 cm. **Seed** 1.

Evergreen forests up to 1,000 m. Throughout Kerala.

Vateria macrocarpa Gupta in Indian For. 55: 231. 1929 (Fam.: Diptero-
carpaceae).

Large evergreen trees: *h* -20 m, *d* -1 m. **Bark** surface grey, mottled with white and green, smooth. **Leaves** alternate, simple, petioles 2.5-6 cm long, swollen at the tip, blade 15-25(-37)x6-12(-27) cm, oblong or oblong-lanceolate, tip obtuse or shortly acuminate, base rounded or subcordate, glabrous, coriaceous, lateral nerves 15-17(-20) pairs. **Flowers** bisexual, in panicles, white. **Fruit** a capsule, 11-15 x 5-6 cm, cylindrical, lanceolate, tip acuminate. **Seed** 1.

Evergreen forests. North Kerala (Muthikulam in Palghat Dist.)

Vepris bilocularis (Wight *et* Arnott) Engler *et* Prantl, Pflanzenfani. 3(4): 178. 1896; Gamble, Fl. Pres. Madras 1: 108. 1957. *Syn.*: **Toddalia bilocularis** Wight *et* Arnott, Prod. 149 1834; Bourdillon, For. Trs. Travancore 58. 1908 (Fam.: Rutaceae).

Large evergreen dioecious trees: *h* -25 m, *d* -60 cm. **Bark** 4-6 mm thick, surface grey-brown, warty; brittle: blaze dull yellow, outer bark corky. **Leaves** alternate, trifoliate, rachis 7.5-10 cm long, leaflets subsessile, leaflet blade 7.5-25 x 3.7-10 cm, lanceolate or ovate, tip acuminate, base acute, margin entire, lateral nerves numerous, thin, intramarginal nerve present: glabrous, pellucid gland-dotted. **Flowers** unisexual, in axillary and terminal panicles, 5-6 mm across, yellowish white. **Fruit** a berry, globose, fleshy. **Seeds** 4, flat, oblong.

Evergreen and semievergreen forests between 200-1,200 m. South and Central Kerala.

Vernonia arborea Harms in Trans. Linn. Soc. London 14: 218. 1824; Bourdillon, For. Trs. Travancore 200. 1908. *Syn.*: **Vernonia monosis** Clarke in Comp. Indicae 24. 1876; Gamble, Fl. Pres. Madras 2: 473. 1957 -*Mal.*: Eerakarthika, Kadavari, Malamperuva (Fam. Asteraceae).

Small trees; *h* -10 m, *d* -22 cm. **Bark** 5-6 mm thick, surface grey,

mottled with white and green, rough, marked with vertical cracks, exfoliations small, squarish; outer bark dead, dark, corky, inner bark semifibrous, creamy. **Leaves** alternate, blade 10-20 x 5-7.5 cm, obovate or oblong-lanceolate, tip acuminate, base attenuate, margin entire, lateral nerves 10-15 pairs, intercostae subscalariform; glabrous above, tomentose beneath. **Flowers** bisexual, in heads arranged in terminal tomentose panicles, purplish. **Fruit** an achene, 2 mm long, with white pappus hairs at one end.

Evergreen forests above 800 m. Throughout Kerala.

Vernonia travancorica Hooker f., Fl. Brit. India 3: 240. 1881; Bourdillon, For. Trs. Travancore 200. 1908; Gamble, Fl. Pres. Madras 2: 473. 1957 (Fani.: Asteraceae).

Small trees; *h* -10 m, *d* -22 cm. **Leaves** alternate, simple, petioles 6-8 mm long, blade 5-15 x 2.5-10 cm, ovate or obovate, tip acute, base tapering, margin entire, undulate towards the tip, nerves 6-8 pairs; glabrous. **Flowers** bisexual, in terminal glabrous panicles. **Fruit** an achene, 5-6 mm long, with white pappus hairs at one end.

Evergreen forests above 900 m. Confined to South Kerala.

Vitex altissima Linnaeus f., Suppl. Pl. 294. 1781; Bourdillon, For. Trs. Travancore 247. 1908; Gamble, Fl. Pres. Madras 2: 772. 1957 -**Mal.**: Mayilellu (Fam.: Verbenaceae).

Large trees: *h* -30 m, *d* -1.2 m. **Bark** 10-13 mm thick, surface greyish brown, roughish; fibrous, blaze turmeric yellow. **Leaves** opposite, trifoliate, rachis 5-6 cm long, winged in sapling leaves, wing auriculate at base, leaflets 6-15 x 2.5-3.7 cm, sessile or subsessile, leaflet blade lanceolate, tip acuminate, base tapering, margin entire, lateral nerves 10-12 pairs; glabrous above, glabrous or thinly pubescent beneath. **Flowers** bisexual, in terminal panicles, 5-8 mm long, pale violet. **Fruit** a drupe, 6-8 mm across, globose, purplish black.

Semievergreen, evergreen and moist deciduous forests up to 1,200 m. Throughout Kerala.

Vitex pubescens Vahl. Symb. Bot. 3: 85. 1794, non Heyne; Bourdillon, For. Trs. Travancore 248. 1908; Gamble, Fl. Pres. Madras 2: 772. 1957 -**Mal.**: Attu mayila (Fam.: Verbenaceae).

Medium sized trees; *h* -12 m, *d* -40 cm. **Bark** surface greyish. **Branchlets** 4-angled. **Leaves** opposite, digitate compound, rachis 5-10 cm long, quadrangular, leaflets 3-5, sessile, leaflet blade 10-22.5 x 5-10 cm, ovate or oblong, tip acuminate, base round, margin entire; tawny pubescent beneath. **Flowers** bisexual, in terminal panicles, 6-8 mm long, pale purple. **Fruit** a drupe, 6-8 mm across, black.

Moist deciduous forests up to 900 m. South Kerala.

Walsura trifolia (A. Jussieu) Harms in Engler et Prantl, Pflanzenfam., ed. 2, 19 B: 119, 177. 1940. *Syn.*: *Heynea trifolia* A. Jussieu in Mem. Mus. Hist. Nat. Paris 19: 235. 1830. *Walsura piscidia* Roxburgh, Fl. Indica 2: 387. 1832: Bourdillon, For. Trs. Travancore 77. 1908; Gamble, Fl. Pres. Madras 1: 131. 1957 (Fam.: Meliaceae).

Moderate sized or lofty trees: *h* -27 m, *d* -60 cm, **Bark** thin, surface dark. rough, **Leaves** alternate. 5-17.5 cm, long, trifoliolate, petiolules 1-3 cm long, leaflet blade 2.5-7.5 x 1.2-3.7 cm, obovate, tip acute, base narrowed, margin entire, lateral nerves 7-6(-8) pairs; glabrous, pale beneath. **Flowers**. bisexual, in axillary and terminal corymbose panicles, 3-4 mm across, greenish yellow. **Fruit** a berry, 10-12 mm long, ovoid. **Seeds** 1-2, enclosed in a fleshy white aril.

Evergreen forests at low elevations. South Kerala (Kulathupuzha).

Wrightia tinctoria (Roxburgh) R. Brown in Mem. Wern. Nat. Hist. Soc. 1: 73. 1811, prep. 1810, eniend. Mabberley in Taxon 26: 524. 1977; Bourdillon, For. Trs. Travancore 235. 1908; Gamble, Fl. Pres. Madras 2: 573. 1957. *Syn.*: *Nerium tinctorium* Roxburgh in Dalrymple Orient. Rep. 1: 39. 1791 -**Mal.**: Neelappala (Fam.: Apocynaceae).

Small trees; *h* -10m, *d* -30 cm. **Bole** crooked. **Bark** 8-10 mm thick, surface pale, smooth; outer layer

thin, green, inner layer thick, brittle, creamy; latex copious, milky white. **Leaves** opposite, 7.5-17.5 x 2.5-5 cm, simple, petioles 3-4 mm long, blade oblong-lanceolate, tip acuminate, base obtuse; glabrous, glaucous beneath. **Flowers** bisexual, in terminal dichasial cymes, 15-18 mm across, white. **Fruit** of 2 follicles, each 15-45 cm long, 5-6 mm thick, slender, cylindrical, cohering at the tip. **Seeds** 16 mm long, black, comate at one end.

Moist and dry deciduous forests up to 1,200 m. Throughout Kerala.

Xanthophyllum flavescens Roxburgh, Hort. Bengal. 88. 1814 *et* Pl. Coast. Coromandel 3: t. 248. 1815; Bourdillon, For. Trs. Travancore 19. 1908; Gamble, Fl. Pres. Madras 1: 42. 1957 -**Mal.**: Madakka (Fam.: Xanthophyllaceae).

Small trees; *h* -10 m, *d* -25 cm, **Bark** 5-6 mm thick, surface greenish grey; semifibrous; blaze dull yellow, smelling *Polygala*. **Leaves** alternate, simple, petioles 4-7 mm long, blade 5-15 x 2.5-7.5 cm, ovate-lanceolate or oblong-lanceolate, base acute or obtuse, margin entire, lateral nerves 4-6 pairs: glossy, yellowish. **Flowers** bisexual, in axillary racemes, 8-12 mm long, yellowish white. **Fruit** 12-18 mm across, globose, green.

Evergreen and semievergreen forests up to 1,200 m. Throughout Kerala.

Xylia xylocarpa (Roxburgh) Taubert, Rot. Centrabl. 47: 397 1891; Gamble, Fl. Pres. Madras 1: 295 1957. *Syn.* *Mimosa xylocarpa* Roxburgh, Pl. Coast Coromandel. 100. 1798. *Xylia dolabriformis* Bentham in Hooker's J. Bot. 4: 417. 1852; Bourdillon, For. Trs. Travancore 134. 1908 -*Mal.*: Irul, Irumullu (Fam.: Mimosaceae).

Medium sized deciduous trees; *h* 18 m, *d* -60 cm. *Bole* often fluted. *Bark* 10-15 mm thick, surface reddish brown, mottled with white, rough, exfoliations irregular; brittle; blaze yellowish with orange tinge. *Branchlets* 6-10 mm thick. *Leaves* alternate, bipinnate, rachis 4-6 cm long, with an orbicular gland at the tip; pinnae 1 pair, opposite, paripinnate, rachilla 16-24 cm long, pulvinate at base, glandular in between the petiolules, leaflets 12-20, opposite, petiolules 3-4 mm long, blade 7.5-22.5 x 2.5-5 cm, oblong, tip acuminate, base obtuse, margin entire, lateral nerves 8-10 pairs; glabrous. *Flowers* bisexual, in axillary globose heads. *Fruit* a pod, 10-15 x 5-6 cm, flat, broadly falcate, woody, dark brown. *Seeds* 6-10, compressed, oblong, brown, shining.

Moist deciduous and semi-evergreen forests up to 600 m. Throughout Kerala.

Xylopiia parvifolia Hooker f. et Thomson, Fl. Indica 125. 1855; Bourdillon, For. Trs. Travancore 8. 1908; Gamble, Fl. Pres. Madras 1: 15. 1957 -*Mal.*: Kalpottan, Chanthumaram (Fam.: Annonaceae).

Tall, slender evergreen trees; *h*-24 m, *d* -45 cm. *Bole* often buttressed. *Bark* 5-6 mm thick, surface brown, *Leaves* alternate, simple, petioles 5-6 mm long, blade 3.8-12.5 x 2-3 cm, narrowly elliptic, tip acuminate, base acute, nerves 5-6 pairs; glabrous. *Flowers* bisexual, in axillary fascicles, 15-18 mm across. *Fruit* a berry, 3.7 x 1.8 cm, ovoid, green.

Evergreen forests at ca. 600 m. Confined to South Kerala.

Zunthoxylum rhetsa (Roxburgh) De Candolle, Prod. Syst. Nat. Veg. 1: 728. 1824; Bourdillon, For. Trs. Travancore 57. 1908; Gamble, Fl. Pres. Madras 1: 107. 1957. *Syn.*: *Fagara rhetsa* Roxburgh, Fl. Indica 1: 438. 1820 -*Mal.*: Mullilam (Fam.: Rutaceae).

Large deciduous trees: *h* -15 m, *d* -45 cm. *Bark* 15-20 mm thick, brown, mottled with white, armed with conical prickles; outer bark dead, corky, pale yellow, inner bark sulphur yellow. *Branchlets* armed with conical prickles. *Leaves* alternate, clustered at the tips of branchlets, -45 cm long, simply imparipinnate, leaflets 8-20 pairs, petiolules 1-5 mm long, leaflet blade 6-13 x 4-6.5 cm lanceolate, tip acuminate, base asymmetric, margin entire, lateral nerves 6-12 pairs; glabrous, pellucid gland-dotted. *Flowers* polygamous, in terminal paniculate cymes, 2-3 mm across, greenish yellow. *Fruit* of 1-4 cocci, purplish, aromatic. *Seeds* globose, black.

Moist deciduous forests at low elevations. Throughout Kerala.

GLOSSARY

achene: a small, hard, dry, indehiscent, one seeded fruit.

acute: ending in a sharp point (Fig. 76).

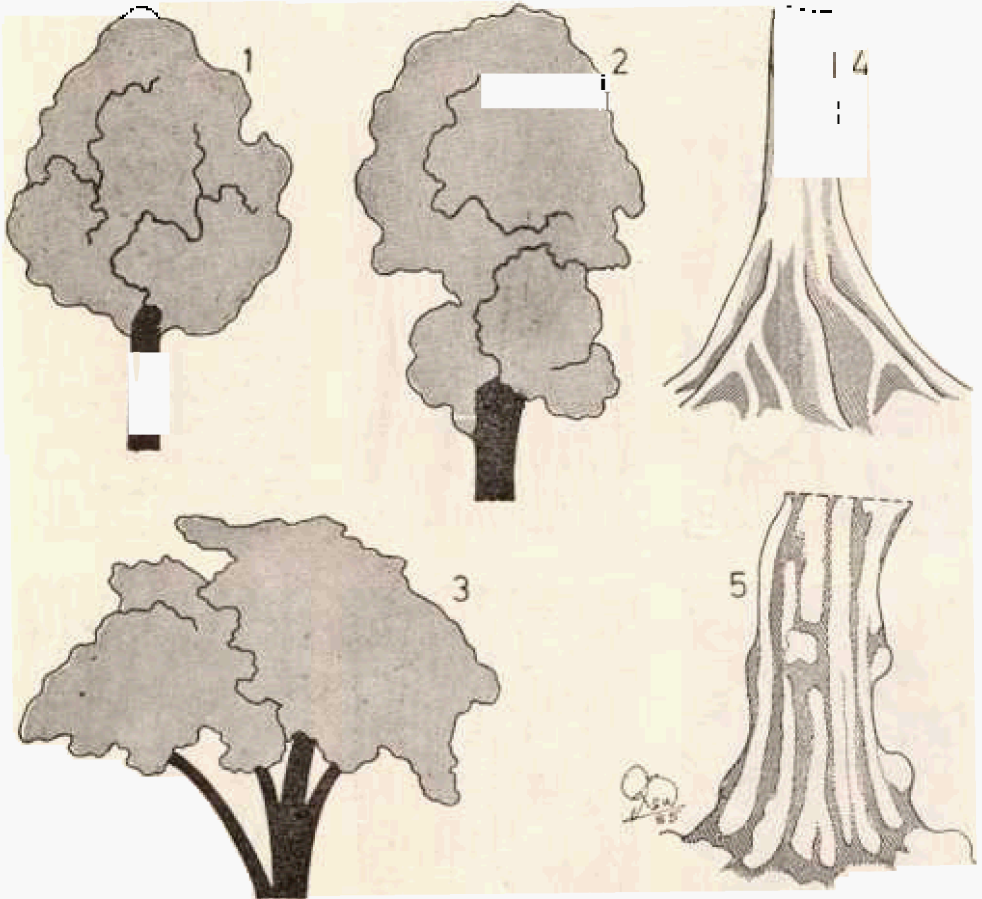
apiculate: ending in a short, sharp but not rigid point (Fig. 73).

areolate: a small space bounded by an outline, as the space formed by the reticulation of a leaf.

aril an accessory appendage of the seed arising from the hilum and often covering the seed.

attenuate: a gradual tapering, as the base or apex of the leaf blade (Fig. 65).

auriculate: having round or ear like lobes (Fig. 60).



Figures 1-5. Tree crown and bole types. 1. Conical crown. 2. Ovoid crown. 3. Spreading crown. 4. Buttressed bole. 5. Fluted bole.



berry: a pulpy fruit with immersed seeds.

bipinnate: doubly pinnate (Fig. 39).

blade: the foliar, flat portion of leaf; also termed lamina.

blaze: a slash or cut (face) on the bark of a tree.

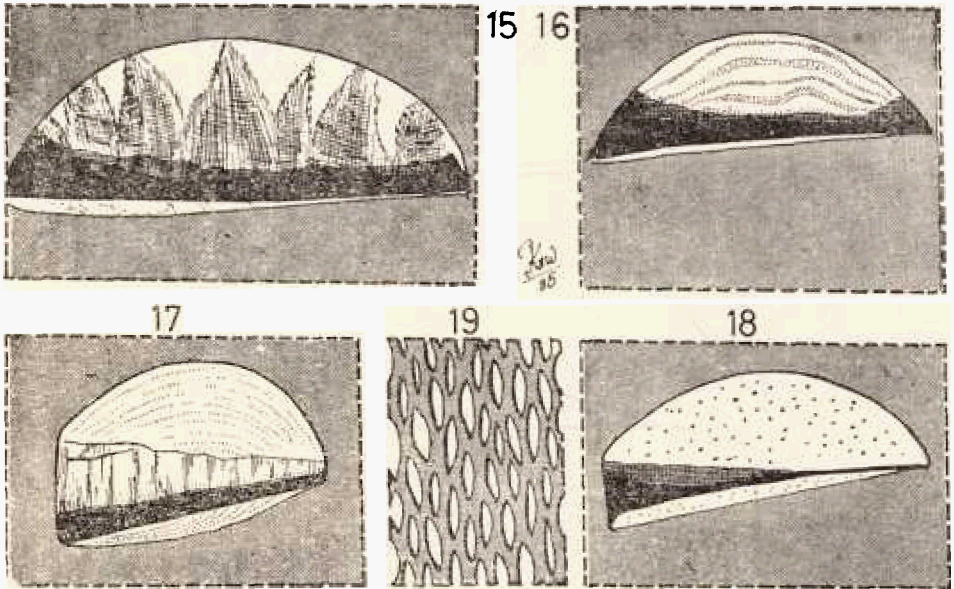
bole: the thick, often unbranched trunk of a tree.

bifarious: in two opposite, vertical rows (Fig. 30).

branch: primary divisions of a trunk.

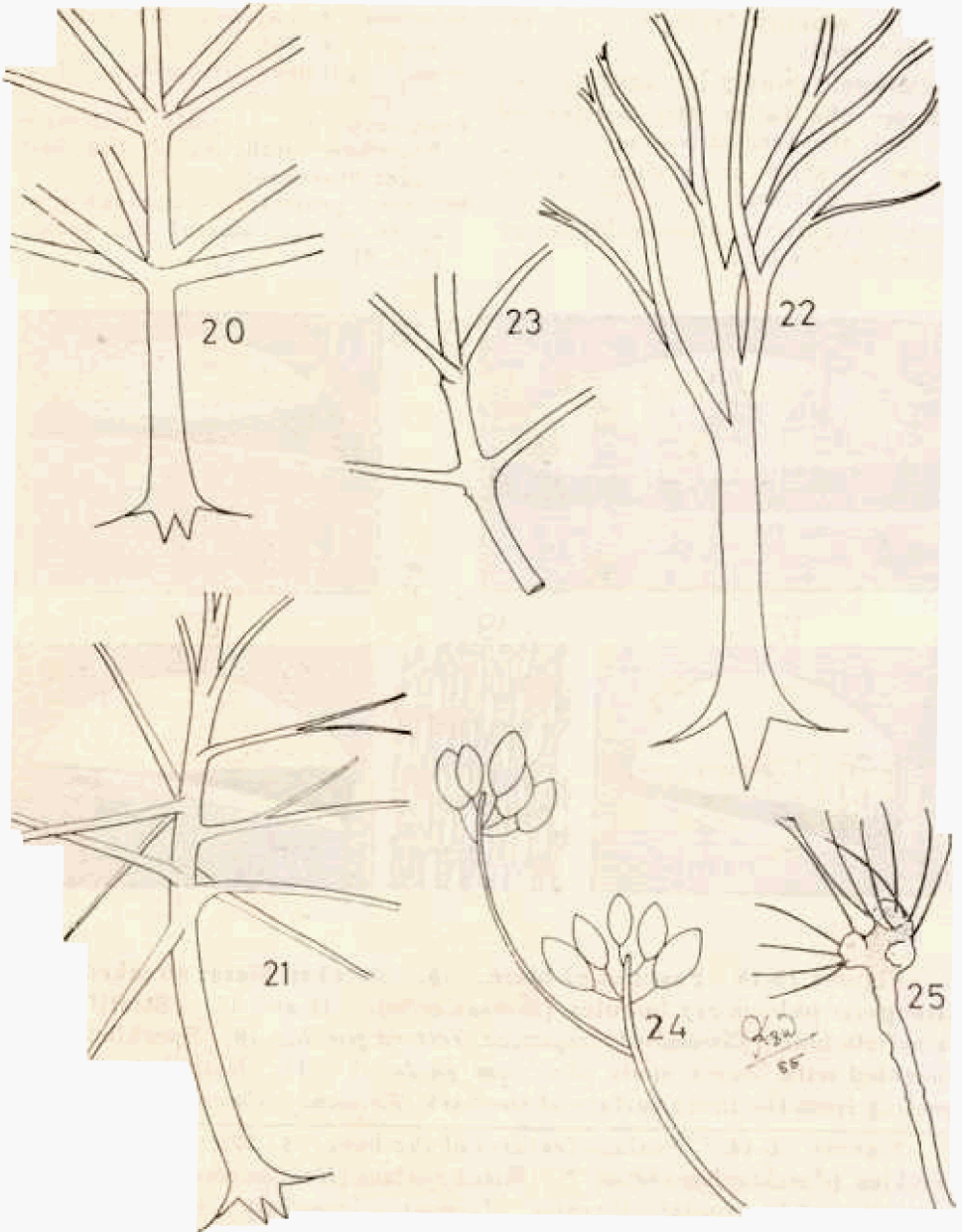
branchlets: the small ultimate branches; branches of the last order branching.

buttress: projecting upright supports at the base of the trunk (Fig. 4).



Figures 15-19. Features of blaze. 15. Streaked blaze; streaked with triangular phloem ray bundles (*Bombax ceiba*). 16 and 17. Stratified or lamellate blaze (*Strombosia ceylanica*, *Tectona grandis*). 18. Speckled blaze; speckled with brown spots (*Syzygium gardneri*). 19. Netted (reticulate) peeling from the inner surface of the bark (*Firmiana colorata*).

Figures 6-14. Surface features of the bark. 6. With conical bossed prickles (*Zanthoxylum rhetsa*). 7. Pitted surface (*Haldina cordifolia*). 8. With vertical and horizontal furrows (*Terminalia crenulata*). 9. With large scales attached at the tip (*Melia dubia*). 10. With vertical striations (*Mitragyna parvifolia*). 11. Muriculate-tuberculate surface (*Vepris bilocularis*). 12. With subcircular scales (*Cleistanthus collinus*). 13. With pustular lenticels in vertical rows (*Ficus callosa*). 14. Irregularly flaking bark (*Albizia procera*).



Figures 20-25. Branching in trees. 20. Whorled branches. 21. Horizontal branches. 22. Ascending branches. 23. Opposite branchlets. 24. Sympodial branching of the branchlets. 25. Knots on branchlets (*Legerstroemia microcarpa*).

caducous: falling off in early stages as in stipules, sepals etc.

capsule: a dry dehiscent, syncarpous longitudinally splitting fruit.

catkin: a pendulous inflorescence of sessile unisexual flowers on an elongate axis.

caudate: with a slender tail-like appendage (Fig. 72).

cauliflorous: with flowers or inflorescence arising on the trunk or older branches.

chartaceous: of papery texture.

ciliate: of thick marginal hairs forming a fringe (Fig. 92).

cinnamomeous: with a light yellowish brown tint.

circinate: coiled.

clavate: club-shaped.

cocci: separating segments of a lobed fruit.

compound: of leaves when the blade is separated into many parts or leaflets.

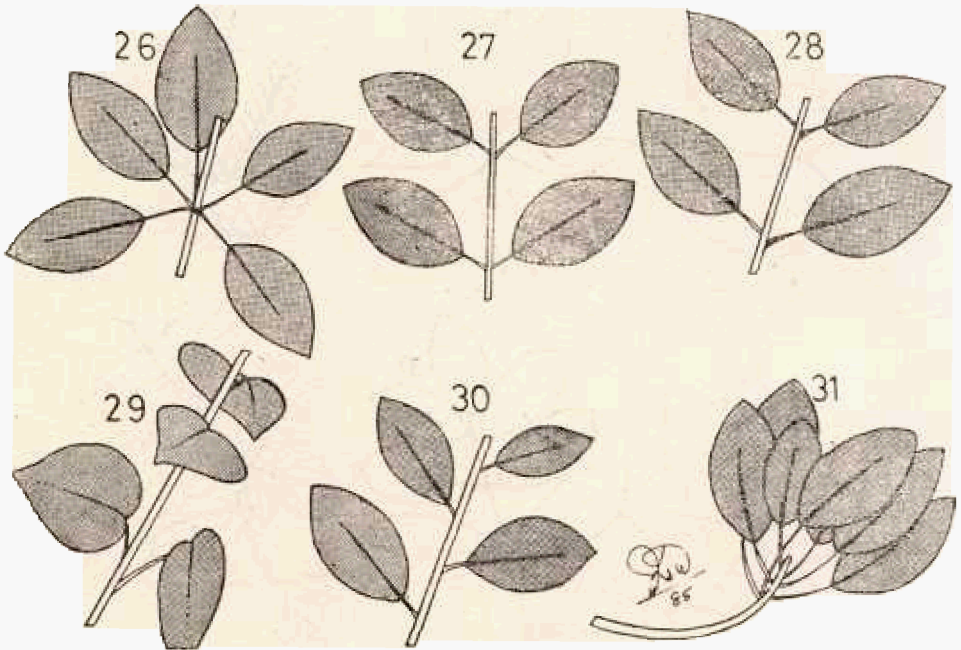
connate: united to one another.

convolute: rolled up from one or both margins.

cordate: heart-shaped: of the leaf base when deeply notched (Figs. 55, 68).

coriaceous: of leathery texture.

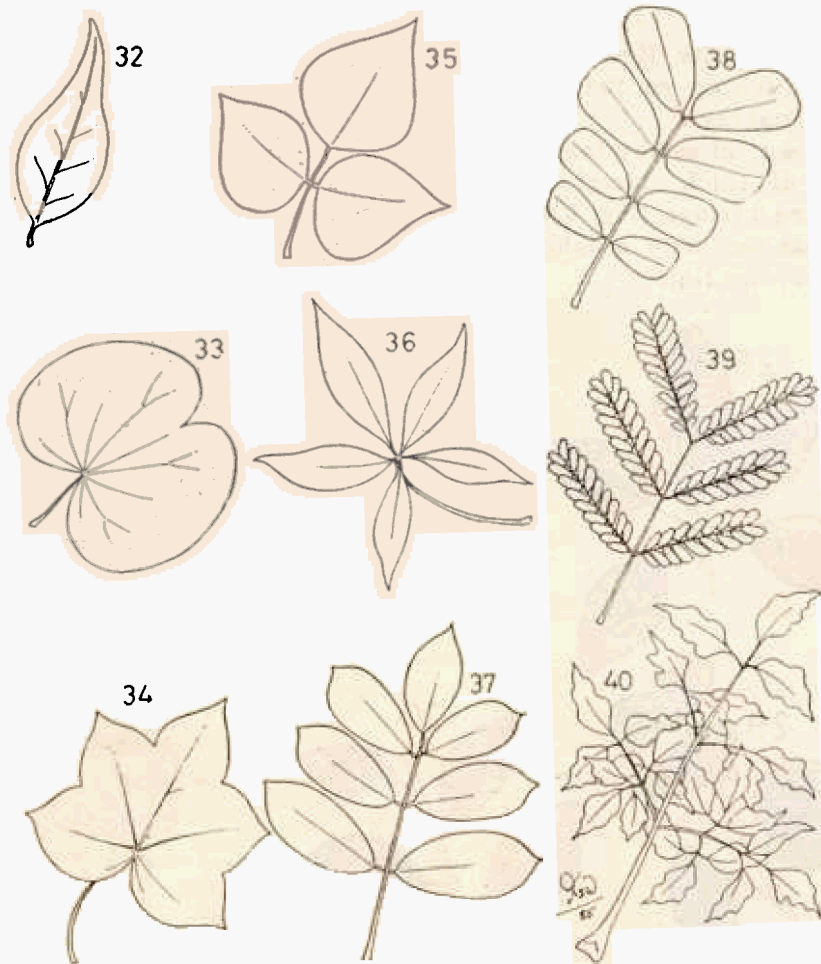
corymb: an inflorescence with flowers arranged in a flat-topped or slightly domed fashion-



Figures 26-31. Patterns of leaf arrangement. 26. Whorled. 27. Opposite. 28. Subopposite. 29. Alternate, spiral. 30. Alternate, bifarious. 31. Leaves clustered at the tips of branchlets.

crenate: toothed with rounded teeth (Fig. 86).
crestaceous: of an irregularly crested, often hard surface.
crown: the foliar head of a tree.
cuneate: wedge-shaped (Fig. 64).
cuspidate: gradually tapering to a rigid point.

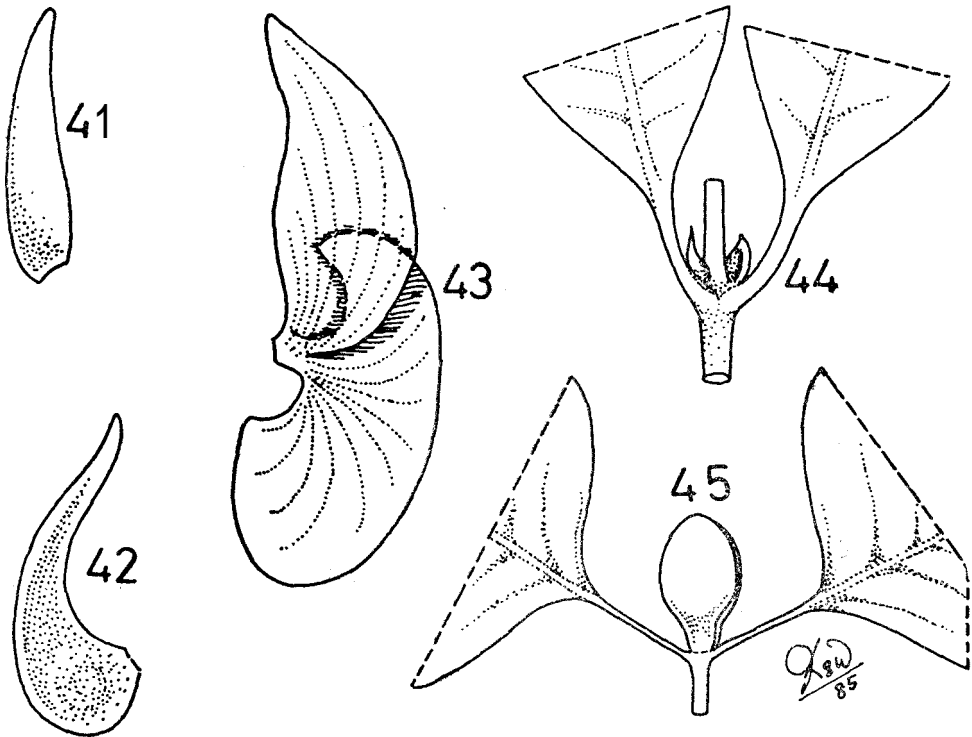
cyme: an inflorescence in which, the lateral branches dominate the main axis in growth.
decurrent: prolonged downwards from base.
deltoid: triangular in outline.
dentate: sharply or triangular-toothed (Fig. 87).



Figures 32-40. Leaf forms. 32. Simple. 33. Simple, bifid. 34. Simple, lobed. 35. Trifoliate. 36. Palmately compound. 37. Simply (once) compound, imparipinnate. 38. Simply compound, paripinnate. 39. Bi (twice)-pinnate. 40. Tripinnate.

denticulate: minutely dentate.
dichasial: a cymose inflorescence with two lateral axes.
didymous: slightly two lobed.
digitate compound: palmately compound (Fig. 36).
dioecious: unisexual with male and female flowers on separate plants.
distichous: arranged in two vertical rows in one plane (Fig. 30).
divaricate: spreading widely apart.
downy: covered with very short and weak, soft hairs.
drupe: an indehiscent fruit with a stony endocarp.

echinate: with sharp bristles, prickles or spines.
elliptic: oval in outline with narrowed rounded ends (Fig. 57).
emarginate: deeply notched (Fig. 82).
entire: margins when even and unitoroothed (Fig. 84).
epiphyte: a non parasitic plant attached to another plant.
falcate: sickle-shaped (Fig. 62).
ferruginous: rust-coloured.
fig: the fruit-syconium-of a banyan tree.



Figures 41-45. Stipules. 41. Subsubulate (*Vateria indica*). 42. Sagittatiform (*Grewia tiliifolia*). 43. Foliar stipules with a reniform appendage (*Humboldtia vahliana*). 44. Intrapetiolar stipule (*Ixora arborea*). 45. Interpetiolar stipule (*Mitragyna parvifolia*).

fluted: of trunk when grooved deeply (Fig. 5).

follicle: a monocarpellary fruit dehiscent along the ventral suture.

fulvous: orange yellow.

furfuraceous: covered with bran-like scales.

geminate: in pairs.

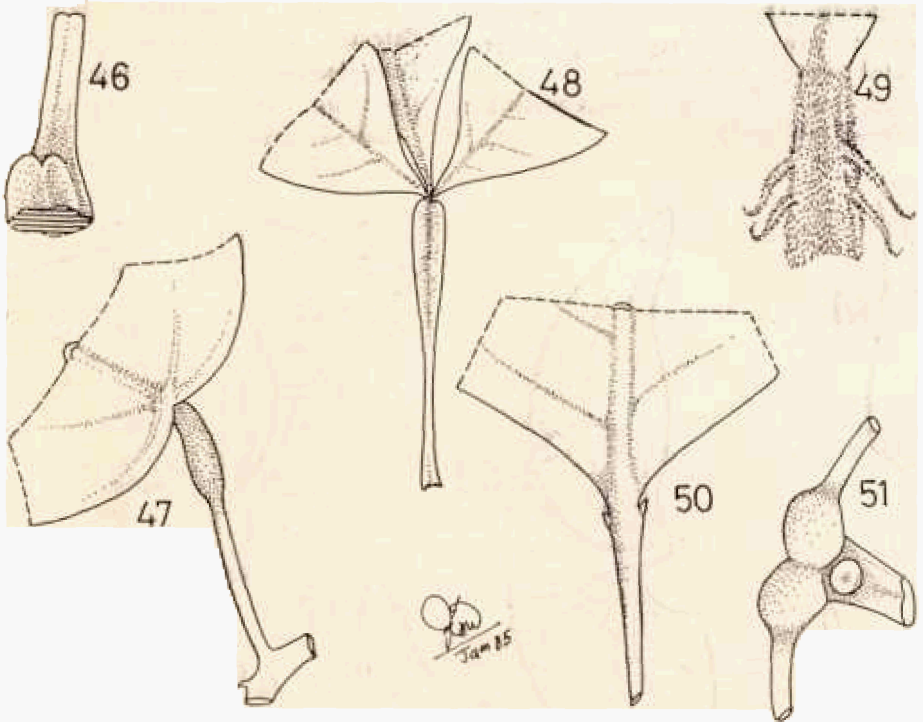
glabrous devoid of hairs.

glaucous: with a bluish grey tinge

head: a composite inflorescence. on a very condensed, flat or globose axis.

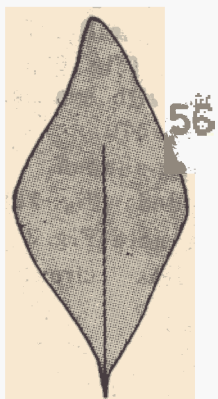
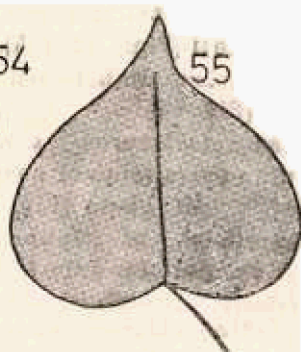
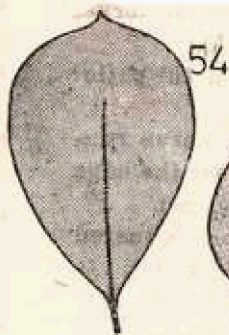
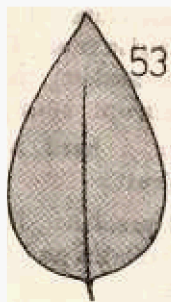
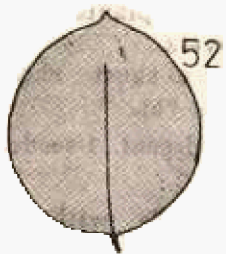
hirsute: bearing long hairs.

hispid: thickly covered with long, stiff, bristly hairs,

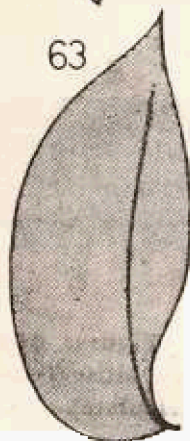
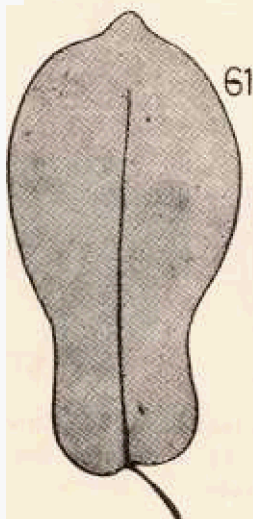
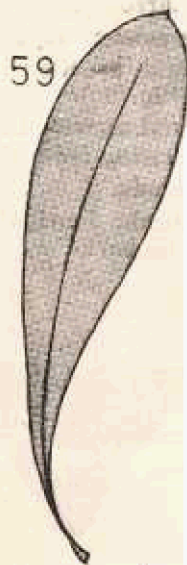
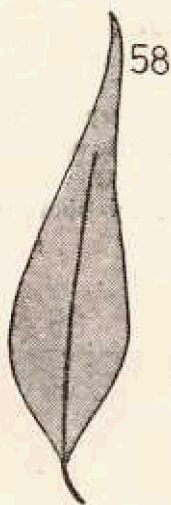


Figures 46-51. Features of the petiole, rachis and petiolule. 46. Rachis swollen at the base (pulvinate; *Xylia xylocarpa*). 47. Petiole swollen at the tip (*Vateria macrocurpa*). 48. Winged rachis (*Vitex altissima*). 49. Petiole with two pairs of appendages (*Holigarna grahamii*) 50. Petiole with two gland-like protuberances at the tip (*Elaeocarpus serratus*). 51. Rachis with a gland in between the pinnae (*Xylia xylocarpa*).

Figures 52-63, General shape of the leaf/leaflet blade. 52. Suborbicular. 53. Ovate. 54. Obovate. 55. Cordate. 56. Rhombate. 57. Elliptic. 58. Lanceolate. 59. Oblanceolate. 60. Oblong. 61. Pandurate. 62. Falcate. 63. Asymmetric.



ABW
85



intercostae: interconnections between the primary lateral nerves of a leaf (Figs. 99, 100).

Interpetiolar: In between the petioles (Fig. 45)

Intramarginal nerve: a nerve running parallel to or near the edge of a leaf blade (Fig. 97).

intrapetiolar: of stipules situated in the petiolar axis (Fig. 44).

involucre: the whorl of bracts subtending a flower cluster.

lacinate: irregularly cut into narrow segments.

lanceolate: tapering at both ends and broader near the base (Fig. 58).

lateral nerves: the primary nerves arising from the midrib of a leaf blade.

lenticel: lenticular corky spots on the bark.

lepidote: scurfy with minute scales.

monoecious: bisexual plants with unisexual flowers.

mucronulate: with a short sharp abrupt spur (Fig. 75).

nut: a hard indehiscent, 1-seeded fruit.

oblanceolate: lanceolate with the broader end towards the tip (Fig. 59).

oblong: longer than broad, with sides more or less parallel for most of their length (Fig. 60).

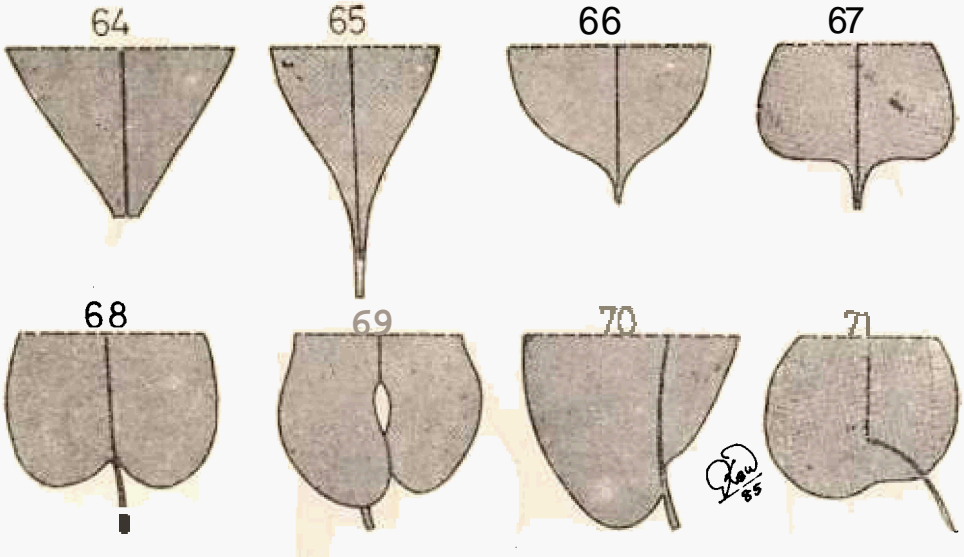
obovate: egg-shaped with broader towards the tip (Fig. 54).

obovoid: inversely egg-shaped.

obtuse: blunt or rounded [Fig. 78].

odd-pinnate: imparipinnate (Fig. 37).

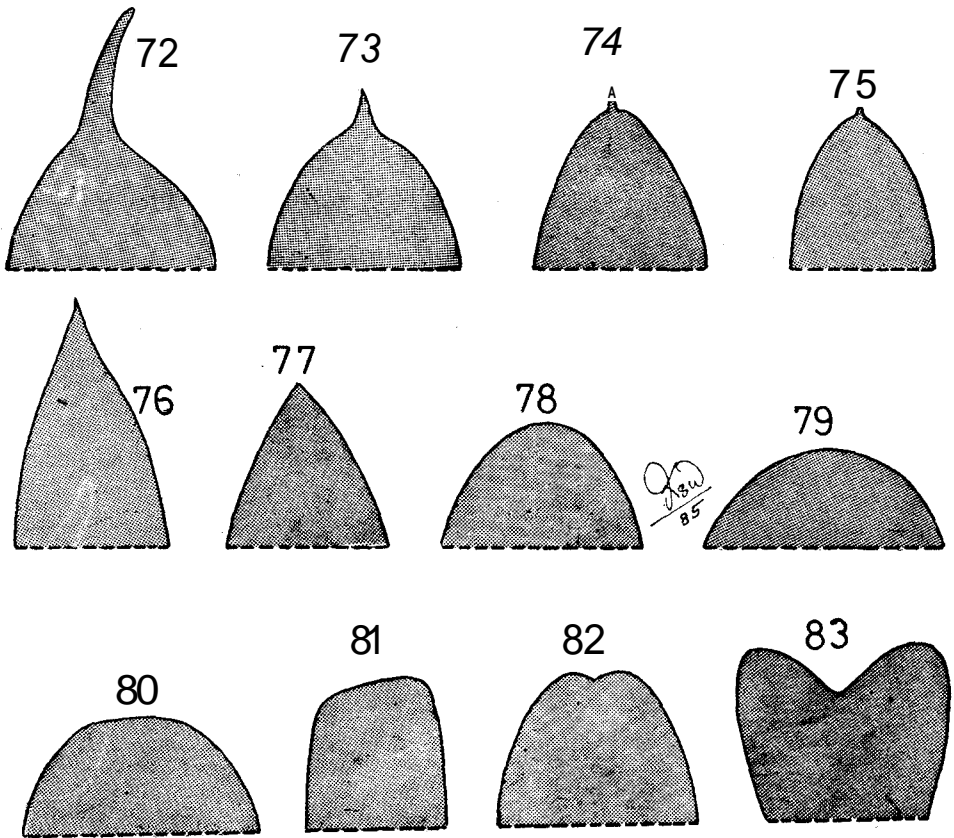
orbicular: more or less circular (Fig. 52).



Figures 64-71. Features of the leaf base. 64. Cuneate. 65. Attenuate. 66. Obtuse (round). 67. Truncate. 68. Cordate. 69. Sagittate (sagittate-auriculate). 70. Oblique. 71. Peltate.

ovate: egg-shaped (Fig. 53).
palmate: with segments diverging like the fingers of palm (Fig. 36).
pandurate: fiddle-shaped [Fig. 61].
panicle: a much branched inflorescence.
pappus: tufts of hairs at the tip of same achenes
paripinnate: pinnately compound with an odd terminal leaflet [Fig. 38].
pellucid: transparent.
peltate: stalk when attached to the lower surface and riot to the

margin. as in some leaves arid hairs, scales etc. (Fig. 71).
pentapli-nerved: palmately 5-nerved from base.
pericarp: fruit-wall.
perianth: the sterile envelopes (whorls) of a flower.
petiole: stalk of a leaf.
petiolule: stalk of a leaflet.
pilose: with long soft simple hairs.
pinnate: a compound leaf with leaflets arranged on either side of the leaf axis.



Figures 72-83. Features of the leaf tip. 72. Caudate-acuminate
 73. Apiculate. 74. Mucronate. 75. Mucronulate. 76. Acuminate. 77.
 Acute. 78. Obtuse. 79. Round. 80. Subtruncate. 81. Truncate.
 82. Emarginate. 83. Retuse.

pisiform: pea-shaped.

pod: a dry dehiscent fruit characteristic of the legumes.

polygamous: with unisexual and bisexual flowers on the same or different plants of the same species.

pruinose: with waxy powdery secretions.

pseudocarp: a false fruit.

puberulous: with short soft hairs.

pubescent: with soft straight hairs.

pulvinate: of petioles or rachis thickened at the base.

punctate: dotted with small glands (Fig. 105).

pustular: with small blister-like crests.

pyrene: one seeded segments of a drupe.

pyriform: pear-shaped.

raceme: a continuously growing inflorescence with stalked flowers.

rachis: the axis of a compound leaf.

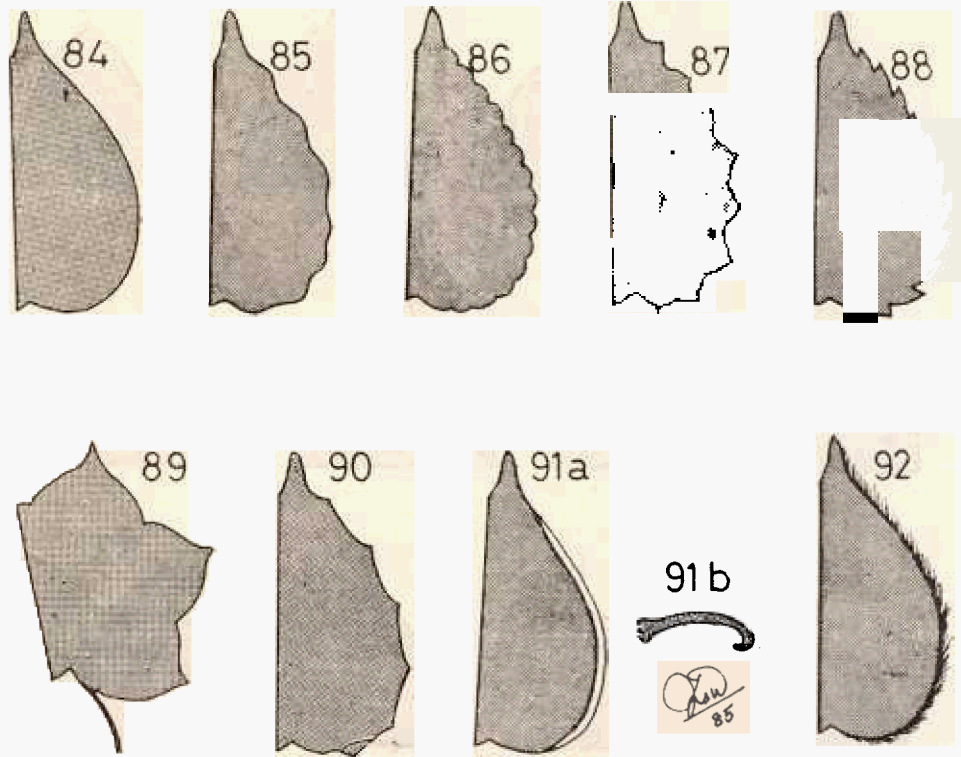
receptacle: an invaginated, cup-like structure bearing many other organs.

reniform: kidney-shaped.

revolute: rolled back from the margins.

rhomboid: rhombus-like (Figs. 91 a and b).

sagittate: arrow-head shaped (Figs. 48, 64).



Figures 84-92. Features of the leaf margin. 84. Entire. 85. Wavy. 86. Crenate. 87. Dentate. 88. Serrate. 89. Lobed. 90. Distantly dentate/serrate (repand). 91 a. Revolute. 91 b. Revolute margin in transection. 92. Ciliate.

samara: a flattened indehiscent fruit with marginal wing.

scabrous: rough to touch, owing to the scattered stiff hairs or tubercles.

scalariform: of intercostae when arranged like the cross bars of a ladder (Fig. 99).

scarious: thin, dry, stiff, transparent.

serrate: of margin toothed like a saw with teeth directed forward (Fig. 88).

serrulate: minutely serrate.

secondary laterals: less prominent lateral nerves in between the primary lateral nerves (Fig. 98).

sessile: without a stalk.

simply pinnate: compound leaves with one degree of pinnation (Figs. 37, 38).

sinuate: of wavy margins (Fig. 85).

spatulate: spatel like a spatula

spike: an inflorescence with sessile flowers on a long axis.

stellate: star-shaped.

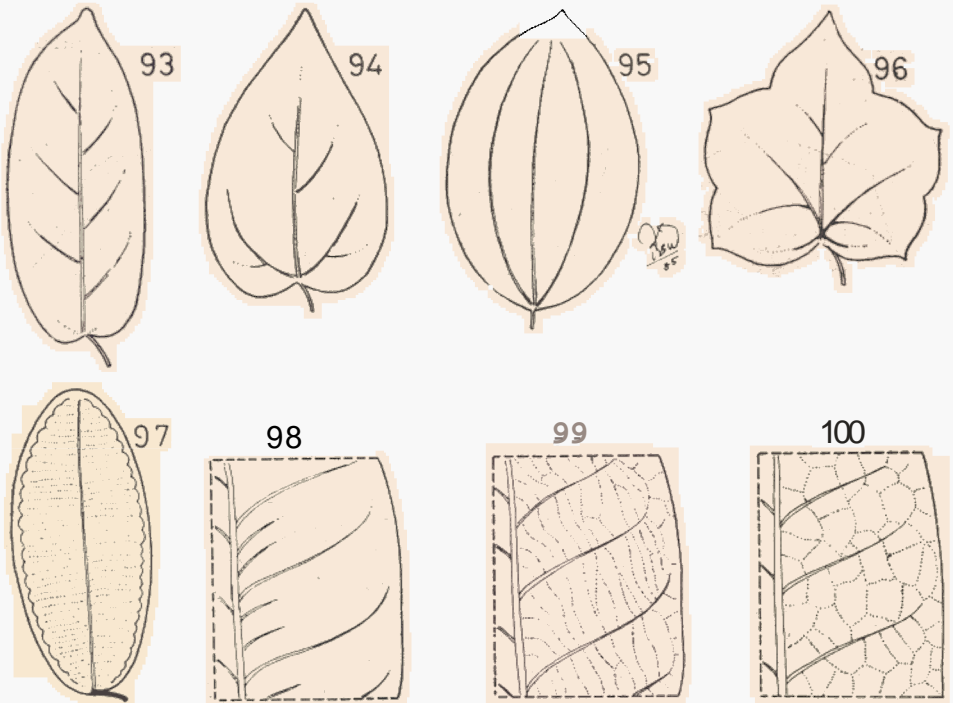
stipel: stipules of a leaflet.

stipule: petiolar, often flat appendage.

stone: a one seeded drupelet.

strigose: with sharp, stiff, straight appressed hairs.

subopposite: of the leaves when neither strictly opposite nor strictly alternate (Fig. 28).



Figures 93-100. Leaf nervation patterns. 93. Pinnate nerved. 94. Three nerved from base. 95. Three-ribbed. 96. Palmately nerved. 97. With an intramarginal nerve. 98. A piece of the leaf showing secondary laterals. 99. A piece of the leaf showing parallel (scalariform) intercostae. 100. A piece of the leaf showing reticulate intercostae.

succulent: with soft, juicy cellular tissue.

sympodial: of branching, when the terminal bud ceases to grow and growth continues by axillary branches (Fig. 24).

tawny: yellowish brown.

terete: cylindrical, circular in cross section.

tesselate: marked with small squares.

testa: the outermost coat of a seed.

tomentulose: thinly tomentose.

tomentose: densely covered with soft, tangled hairs.

trigonous: three-angled.

trifoliolate: with three leaflets (Fig. 35).

triquetrous: three-angled and three faced.

triply nerved: three-nerved from base (Fig. 94).

truncate: ending abruptly as though cut off [Fig. 81].

turbinate: top-shaped.

umbel: an inflorescence in which the pedicels of the flowers radiate from a common point.

umbellule: a second order umbel in a compound umbel.

umbrageous: yielding much shade.

undulate: of margins when wavy (Fig. 85).

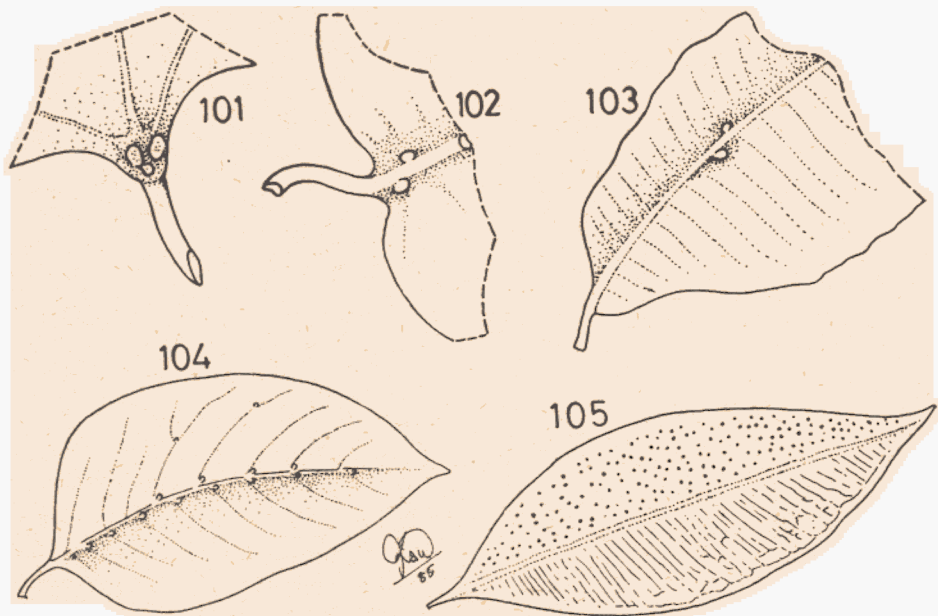
urceolate: urn-shaped, tubular and contracted at or below the mouth.

verrucose: warty.

verticillate: whorled (Fig. 26).

villous: covered with long, soft, weak hairs.

whorled: arranged in a ring around an axis (Fig. 26).



Figures 101-105. Glands on the leaf blade. 101. At the base of the blade (*Gmelina arborea*). 102 and 103. On the midrib beneath (*Terminalia paniculata*, *T. crenulata*). 104. In the axils of lateral nerves. 105. With pellucid gland-dots [visible when held against light: (*Vepris bilocularis*).

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