protection from endangerment; and a strong will to implement conservation programmes.

Relative abundance of Myrtaceae in Kerala

<table>
<thead>
<tr>
<th>Genus</th>
<th>Percentage</th>
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<td>Callistemon</td>
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<td>Melaleuca</td>
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<tr>
<td>Meteoromyrtus</td>
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<td>Pimenta</td>
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<td>Rhodomyrtus</td>
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<td>Psidium</td>
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<td>Eucalyptus</td>
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<tr>
<td>Eugenia</td>
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<td>Syzygium</td>
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**XI SYSTEMATIC TREATMENT**

**MYRTACEAE** Juss.,

Gen. Pl. 322. 1789, *nom. cons.*

Type genus: *Myrtus* L.

Trees and shrubs contain essential oils; bark smooth, or frequently thinly scaly; white, grey, yellowish, or, most often, pale rusty brown; branchlets quadrangular or terete. Leaves usually opposite or alternate, coriaceous, pellucid-punctate with the nerves curving and anastomosing distally into more or less prominent intramarginal nerves, or sometimes absent. Inflorescence axillary or terminal, sometimes solitary; bracteoles two, sometimes deciduous. Flowers
four or five merous, calyptrate or non calyptrate, actinomorphic, hermaphrodite, greenish white, creamish or pink. Calyx-tube campanulate, urceolate or subglobose, persistent or caducous, adnate to the inferior ovary, sometimes produced beyond the ovary, lobes 4 or 5, free or connate into a lid (calyptra) in bud, caducous. Disc usually thick, lining above the calyx. Stamens usually numerous, inserted on the margin of the disc, included in bud; filaments free or basally connate; connective often glandtipped; anthers 2-celled, white or yellow, dorsifixed, versatile, dehiscing longitudinally, introrse; pollen grains 2 to 4 aperturate, colpate, colporate or porate. Ovary inferior, 2 to 5 celled; ovule one, many on axile placenta, pendulous; style simple, columnar; stigma small. Fruit a drupe, capsule or an indehiscent berry. Seed(s) solitary or numerous.

In Kerala nine genera, 59 species and three varieties are found, of which 10 species are introduced and 26 species are endemic to Peninsular India. This includes recently described and newly recorded taxa. The largest genera of this family found in the study area are Syzygium with 35 species and three varieties, followed by Eugenia with 12 species; Eucalyptus with four species and Psidium with three species. The following genera Callistemon, Melaleuca, Meteoromyrtus, Pimenta and Rhodomyrtus with single species each. Among these Meteoromyrtus is monotypic. With the depletion of forests, some species like Eugenia argentea, E. discifera, E. singampattiana, and Syzygium bourdillonii etc are now under threat and these have been enlisted in the Red Data book of Indian plants (Nayar & Sastry, 1987, 1988).

Bentham & Hooker (1862), Duthie (1879), Gamble (1919), and others included the genera such as Barringtonia, Careya, and Couropita in this family.
But now *Barringtonia* is treated as distinct family Barringtoniaceae; and the two are later treated in the family Lecythidaceae.

**Classification of the family**

A.P. de Candolle (1827, 1828, 1842) first formally divided the family Myrtaceae into three tribes, on the basis of fruit structure: (1) Chamaelauciae, with unilocular, dry, indehiscent fruit; (2) Leptospermae, with multilocular, dry, mainly dehiscent (capsular) fruits; and (3) Myrteae, with multilocular, fleshy, indehiscent (mainly baccate) fruits. De Candolle also included two additional tribes in Myrtaceae, namely, Barringtonae and Lecithideae, though all modern systems of classification relegate these to Lecythidaceae *sensu lato*. His taxonomy of Myrtaceae was widely adopted by many of the later workers, notably Baillon (1880), Bentham and Hooker (1865), Bentham (1867, 1868), Berg (1855-1856), Eichler (1878). Blume (1849-1852), Endlicher (1836-1840), Luerssen (1882), and Walpers (1843) maintained de Candolle’s grouping but elevated his tribes to subfamilial status or 'subordo’. In 1841 Schauer divided the Myrtaceae into two groups, later (Schauer, 1845) designated as subfamilies (subordines), strictly on the basis of consistency of the fruit that is dry fruited Xerocarpicae and fleshy fruited Chymocarpicae. Walper (1843) and Mueller (1857-1858) were among the few other taxonomists to use this terminology.

Niedenzu (1893) formally reorganized the Myrtaceae into two subfamilies: (1) fleshy fruited, mainly baccate Myrtoideae concentrated in the Americas and in the Old World tropics, and (2) dry fruited, chiefly capsular Leptospermoidae, including the tribes Leptospermeae and Chamaelauciae,
largely limited to Australia. Neither Niedenzu (1893) nor Schauer (1841, 1845) ever explained why they united Leptospermeae and Chamaelauciae into single subfamily; apparently they considered the dry versus fleshy fruit to be of paramount importance in the Myrtaceae.

Subsequent workers have almost universally accepted Niedenzu’s (1893) broad classification of Myrtaceae; the two subfamilies have been regarded as fairly natural taxa. Kausel (1956) recognized an independent family Leptospermaceae although very few workers later accepted this rather drastic segregate. In contrast, the familiar and now traditional divisions of Myrtaceae into two subfamilies, on the basis of the fruit types, have hardly been questioned (Pick, 1956; Matcalf & Chalk, 1950; Schmid, 1972b; Gibbs, 1974; Corner, 1976). In Schmid’s (1980) opinion the use of their anatomical and morphological characters delimits the main taxonomic groups in the Myrtaceae. Andrew (1913) proposed that Myrtoidea were ancestral to Myrtaceae. Corner (1976), Ludwig (1952), Melchior (1964), and others believed that the capsular and perigynous / semi-epigynous leptospermoideae sensu stricto, would be closer to the ancestral forms of Myrtaceae. Based on the embryo characters Mc Vaugh (1968) subdivided the family into three or four subtribes, namely, Euginiinae, Myrciinae, Myrtinae or Pimentinae, and Orthostemoninae. Kausel (1967) used additional embryo characters to make a more natural subdivision of the Myrtaceae, and advanced six groups which were later designated as subfamilies. Mc Vaugh (1968) abandoned the traditional subtribes; on the basis of a number of inflorescence, and floral and seed / embryo characters, he realigned the American genera of Myrteae into six lines...
of ‘supposed evolutionary affinities’. Schmid (1980) rejected Kausel’s (1956, 1957a, b. 1967) subfamilies of the Myrtaceae, or Melchior’s (1964) tribes of Myrtoideae, and retained a single tribe, Myrteae in Myrtoideae. He also questioned the naturalness of some of Kausel’s group such as Eugenia and Syzygium, which are fairly closely related, and have often been treated as Eugenia sensu lato in separate subfamilies Eugenioidae and Plinioideae respectively. Furthermore, Kausel (1956, 1967) disposed most of the Old World segregates of Syzygium in Plinioideae with his subfamilies Acmenoideae and Myrtoideae.

Briggs and Johnson (1979) tentatively divided Myrtales into (1) Myrtales sensu stricto, comprising Myrtaceae, Psiloxylaceae, Melastomataceae, Oliniaceae, and Penaceae; (2) Lythrales, comprising Lythraceae, Sonneratiaceae, Punicaceae, Trapaceae, Combretaceae, Onagraceae, and Crypteroniaceae, also (3), excluding from either order a number of other families, such as Haloragaceae, Rhizophoraceae (s.l), Thymelaceae, and Lecythidaceae. Their Myrtaceae recognize two subfamilies with various alliances (approximating to tribes), suballiances, and infra-alliances that await formal designation. Subfamily Leptospermoideae with seven alliances, namely, Meterosiders, Heteropyxis, Backhousia, Eucalyptosis, Eucalyptus, Leptospermum, and Chamelaucium with a total of about 72 genera. The subfamily Myrtoideae with six alliance namely, Myrcia, Myrtus, Cryptorrhiza, Osbornia, Acmena and Eugenia with a total of about 72 genera. Schmid (1980) proposed four subfamilies namely Myrtoideae, Psiloxyleideae, Leptospermoideae, and Chamelaucioideae. He also emphasized the utility of
anatomical and morphological characters, such as inflorescence, fruit, embryo, cotyledons, germination, and trichome features to characterize the main groups in the Myrtaceae. Johnson and Briggs (1994) proposed a new phylogenetic classification for Myrtales and Myrtaceae, and recognized the following groups, namely, Metrosideros, Backhousia, Arillastrum, Angophora, Symphyomyrtus, Eucalyptus, Leptospermum, Chamelaucium, Acmena. The previously recognized subfamilies Myrtoideae and Leptospermoideae, were abandoned; and the alliance Heteropyxis was excluded from the Myrtaceae.

Key to the Genera

1. Inflorescence resembling a bottle brush, the flowers in heads or spikes near the end of branches .................................................................2

   1. Inflorescence otherwise, the flowers are solitary or in pairs or in terminal panicles........................................................................3

2. Stamens free .................................................................Callistemon

2. Stamens united into bundles opposite to petals .......................Melaleuca

3. Fruit a dehiscent capsule ....................................................Eucalyptus

3. Fruit otherwise .....................................................................4

4. Leaves with 3-5 basal ribs ......................................................Rhodomyrtus

4. Leaves pennis nervet ............................................................5

5. Ovules pendulous from apex of ovary cell .............................6

5. Ovules otherwise ....................................................................7

6. Flowers solitary .................................................................Meteoromyrtus

6. Flowers in terminal panicle .......................................................Pimenta
7. Ovary many celled ...........................................Psidium

7. Ovary two celled ...........................................8

8. Calyx-tube produced beyond the ovary, young shoot glabrous .....Syzygium

8. Calyx-tube not produced beyond ovary, young shoot pubescent...Eugenia

Callistemon R. Br.

The name *Callistemon* derived from the Greek word, ‘kalos’ meaning beautiful and ‘stemon’ meaning stamen, referring to the scarlet colour of the stamens. This is a genus of trees and shrubs native of Australia, known as bottle brush. This genus was established by Robert Brown, one of the versatile British botanist and later the keeper of botany at British Museum, in 1814 with *C. rigidus* as the type species. Only *C. citrinus* is cultivated in Kerala as an ornamental plant.

Callistemon citrinus (Curtis) Skeels
*Callistemon citrinus* (Curtis) Skeels

A) Habit B) Flower C) Petal D) Style with Calyx-tube E) Ovary C. S F) Fruit

Trees 20-30 ft. tall; bark pale brown-black; branchlets slender, subterete at base, subangular at apex, floccose, aromatic. Leaves, simple, alternate, 5-8.5 x 0.5-1.0 cm, linear elliptic, attenuate at base, acute at apex, entire, thick, densely punctate on both sides, flocculent, yellowish-brown when dry, pubescent; midrib slender, raised beneath; nerves many, subequal, not distinctly elevated on both sides, petiole 0.2-0.3 cm long, slender, floccose. Inflorescence intercallary on the slender stem. Flowers axillary, solitary, ebracteate, ebracteolate, bisexual, actinomorphic, pentameric, epigynous. Calyx-tube 0.2-0.3 x 0.3-0.4 cm, floccose, green in colour, dumbbell shaped; lobes-5, 3-5 x 3-4 cm, imbricate, subround, obovate cup, obtuse at base, obtuse at apex, yellowish-green, flocculent, gland-dotted. Stamens 1.5-2 cm long, many; filaments 1.4-2 cm long, slender, red; anther dithecus. Ovary inferior tricarpellary, sincarpous, axile placentation, ovules many; style 1.8-2.2 cm long, red in colour; stigma subround, pale red. Capsule 0.3-0.5 x 0.3-0.4 cm, subgloboïd, pale brown at dry.

Fl. & Fr.:— Round the year.

Verna.:— Bottle brush.

Specimen Examined:- Thiruvananthapuram Dist: Palode, Santhosh Kumar, 49765 (TBGT); ibid., Vinod Kumar, 2881 (RHK). Kottayam Dist: Changanacherry, 03-05 -1985, M.C. Lukose, 1105 (RHK); Changanacherry, 11-05-1984, V.T.Antony, 484 (RHK).

Uses:- It is locally known as bottle brush. Planted in garden and on road sides for ornamental purposes. Wood is used locally as a fuel.

**Eucalyptus L' Her**

Commonly known as ‘blue gum’ or ‘gum tree’, the *Eucalyptus* got its name from the Greek words, ‘eu’ meaning well and ‘kalypto’ meaning to cover, referring to the united calyx lobes and petals forming a lid. This genus was created by Charles Louis L’ Heritier de Brutelle, with *E. oblique* as the type in 1789. He was a French magistrate and an amateur botanist at Paris. He was murdered in an unclarified circumstance and after his death, his herbarium of over 8000 specimens later came into the hands of a book seller called Garney and who sold it to A.P. de Candolle. This was the basis of his private herbarium in Conservatoire et Jardin botaniques, Geneva (G).

The genus has about 600 species and is mainly distributed in Australia to southern Philippines. Many species are widely cultivated throughout the tropical countries for a variety of uses.

Medium to large trees, generally with twisted unbuttressed trunk and more or less oblong crown of twisted branches bearing frequently pendent leaves. Bark surface either white, grey, copper or brown mottled, overall smooth and scroll-marked and exfoliating in large strips, often hanging as ribbons on branches; or flakes persistent at least on bud, bark surface fibrous, pale or dark greyish-brown. Parts glabrous or sometimes shortly pubescent. Leaves red when young, more or less aromatic, and pellucid-punctate, hertero blastic; variable but frequently rotundate and sessile or even perfoliate, frequently glaucous; intermediate stage leaves larger, thicker, alternate; mature stage leaves alternate, diverse but most generally narrow and more or less falcate, usually coriaceous with prominent midrib and more or less obscure nervation, petiolate. Flower large or small, in dense or diffuse terminal or axillary umbels or panicles, usually pedunculate; bracts fugacious. Flower calyx variable but most frequently campanulate, sessile or shortly pedicellate, smooth or costate, truncate or with 4 minute teeth, closed apically in bud by a short or prolonged more or less leathery petaloid operculum distinguishable by and opening along a fine transverse line; operculum frequently also covered by a membranous outer operculum; stamens many, all fertile or the outer lacking anthers, filaments slender and folded in bud; anthers various, latrorse or end-porous, versatile or adnate at base, usually with a distal adaxial gland. Ovary inferior, adnate to the calyx at base or occasionally to the apex, flat to conical at apex, 2-7-celled, each cell with many ovules in 2-4
axile rows; style simple, subulate or subelavate; stigma small. Fruit a dry capsule more or less deeply sunk within the enlarged and wood calyx-tube and adnate to it, the dehiscent valves becoming exserted or remaining concealed.

Key to the species of Eucalyptus

1. Flower bud usually solitary, warty..............................E. globulus
   1. Flower bud 3 or more per peduncle, rather smooth......................2

2. Flowers in terminal panicle..............................................E. torelliana
   2. Flowers in axillary or subterminal umbels ........................................3

3. Flower bud ovoid-turbinate; Fruits pyriform.................................E. grandis
   3. Flower bud pyriform; fruit cylindrical-urceolate..........................E. robusta

Medium sized to large tree; bark smooth, decorticating above in long strips, bluish, seedling and juvenile stem glaucous. Seedling leaves opposite, sessile, amplexicaul, 6-12 x 2.5-7 cm, bluish-green, glaucous, strongly discolourous; juvenile leaves opposite, elliptic-ovate, 7-15 x 4-9 cm, bluish green, glaucous, strongly discolourous, amplexicaul; intermediate leaves alternate, petiolate, broad-lanceolate, green, concolourous; mature leaves alternate, petiolate, falcate or lanceolate and more or less falcate, acuminate, 10-30 x 3-4 cm, green; flower buds usually solitary rarely 3, axillary, subsessile; peduncle much reduced; buds sessile, turbinate, 3 x 2 cm. Calyx warty, glaucous, upto 30 x 20 mm, turbinate, quadrangular, verrucose; operculum, verrucose, more or less shorter than calyx-tube. Stamens 0.5-1.5 cm; anthers versatile, obovoid, opening in broad parallel slits, with globose gland visible from front. Fruit depressed globoid to broadly turbinoid, sessile, 4-ribbed with more or less prominent shorter intermediates, verrucose; disc large, convex, smooth, sometimes extending over the thick valves; valves 3-5. Fruit 1-1.5 x 1.5-3 cm.

Fl. & Fr.:- Round the year.

Verna:- Karpura maram

Distribution:- Native of Australia widely cultivated in the tropics.


Uses:- Wood is suitable for ship building, agricultural implements, spokes, rims, plough bars, axe-handle and wood-pulp. Used in India mostly as fuel. Essential oil derived from the leaves is used as an anti-sceptic, expectorant, febrifuge, diaphoretic. Also used for the treatment of asthma, inflammation of mucous membrane with a free discharge, bronchitis, whooping cough, dysentery, fever, cold, malaria, inflammation of kidneys, wounds, sores, ulcers, inflammation of joints and rheumatism. Largely used as a mosquito and vermin repellent. Also used in the diseases of the respiratory tract. Successfully introduced in the hills.

Eucalyptus grandis Hill ex Maiden
A) Habit  B) Flower  C) Ovary L.S.  D) Stamen
Eucalyptus saligna Maiden I. c. 20: 58, pl. 99, fig. 10, 16, pl. 100, figs. 9-13, non Smith.

Large trees, up to 50 m; bark almost smooth except at base, very white; branchlets apically glabrous. Leaves thick-coriaceous, scented, petiolate, mostly alternate, (dark) green, discolourous at all stages; seedling leaves opposite for 4 or 5 pairs, becoming alternate, ovate, 4-9.5 x 2-4 cm. Juvenile leaves ovate, 10-14 x 5.5-8.5 cm; intermediate leaves ovate to broad-lanceolate; adult leaves lanceolate, 10-16 x 2-3 cm, strongly penninerved, glabrous, base obtuse-subacute, sometimes oblique and inequilateral, apex acuminate, margin entire; petiole up to 3 cm long. Umbels axillary, 7-11 flowered; peduncles flattened, 0.8-1.5 cm long; pedicel up to 3.5 mm long, angled. Flower buds 7 x 5 mm, ovoid-turbinate. Hypanthium obconical, up to 5 mm long, glaucous, ribbed; operculum hemispherical or beaked, up to 4 mm long. Stamens 2-7 mm long; anthers obovoid. Fruits 5-8 x 4-6 mm, sessile or pedicellate, pyriform, often glaucous; disc narrow, level to descending; valves 4 or 5, exserted, incurved.

Fl. & Fr.:- Sept.- Feb.

Verna.:- Flooded gum.

Distribution: Native of Australia, cultivated in India.

Specimen Examined: Idukky Dist: Munnar, Santhosh Kumar, 37689 (TBGT).

Uses: Wood is used for pulp industry.

Medium sized, dense crowned tree with persistently rough fibrous bark. Juvenile leaves petiolate; lamina 11 x 7 cm, broadly lanceolate to elliptic, coriaceous. Mature leaves petiolate, 2.2-21.5 cm long, lamina 10-18 x 4-8 cm, broadly lanceolate, slightly unequal sided, glabrous, lustrous, prominently acuminate; venation slender, almost parallel. Inflorescence an axillary to subterminal 5-10 flowered umbel; peduncle upto 30 mm long, compressed, stout, angular; flower buds upto 20 x 10 mm, pyriform, rostrate, long pedicellate; operculum rostrate at least as long as calyx-tube, at base conical and wider than calyx-tube suddenly narrowed towards the tip; anthers versatile, obovate, with large ovate dorsal gland. Fruit 15 x 12 mm, cylindrical to urceolate; disc oblique, valves usually deeply enclosed. Calyx at mouth 0.6-0.9 cm wide.

**Fl. & Fr.:-** Aug.–Dec.

**Verna.:-** Eucalyptus.

**Distribution:-** Native of Australia widely cultivated in India.


**Note:-** Of superior timber quality but inferior form to *E. grandis*. 
Eucalyptus torelliana F. Muell

A) Habit  B) Flower  C) Stamen  D) Gynoecium
Uses:- Wood is used in fuel and pulp industry.


Small trees upto 10 m tall. Bark grey-black, scaly and sub-tessellated at base, smooth above. Branchlets hirsute. Leaves simple, alternate, green, discolourous, sometimes peltate in seedling and juvenile stages, hirsute, petiolate: seedling leaves opposite, then alternate, broadly ovate, 5-12 x 3-8 cm; juvenile leaves broadly ovate; intermediate leaves ovate to broad-lanceolate; adult leaves broad-lanceolate, 8.5-14 x 5-8 cm, base subcordate or obtuse-rotund, margin entire, apex acute, mucronate, petiole upto 2 cm long. Panicles terminal upto 10 cm long, corymbose; peduncle upto 4 cm, terete; pedicel upto 3 mm long; buds 8 x 4 mm, obovoid. Flowers upto 1 cm across, white. Hypanthium upto 4.5 mm, campanulate; operculum hemispherical, apiculate, upto 4 mm; stamens 0.5-1 cm long; anthers upto 1 mm long, obovoid. Fruits subsessile, ovoid, to 6 mm; valves enclosed.

Fl. & Fl.:–Oct.–Mar.

Distribution:- Native of Australia, widely cultivated in the tropical countries.

Changanacherry, 03-04-1985, Antony Kadavil, 1151 (RHK); Changanacherry, 03-04-1985, M.C. Lukose, 715 (RHK).

Uses: Wood is used in pulp industry.

**Controversy between *Eugenia* and *Syzygium***

The segregation of *Syzygium* from the genus *Eugenia* has been a matter of discord and still continues to be so. Merril and Perry (1938) favoured the separation, mainly based on seed characters. According to them, the 'naked embryo' with two distinct cotyledons and the seed coat remains loosely attached to the pericarp represented *Syzygium*; whereas the embryo of *Eugenia* is 'not naked' but with a definite seed coat. They have geographically delimited the two genera, *Syzygium* to include most of the Old World species and *Eugenia* characteristically confined to Tropical America.

Henderson (1949) and Wilson (1957) did not favour this treatment and preferred to follow Bentham and Hooker's concept of the genus *Eugenia* to include everything. According to their studies the degree of fusion of cotyledons and extent of adherence of the testa to the pericarp is quite variable and several intermediate forms were also met with.

However, Schmid (1972) have presented the totality of the difference between the two genera and has concluded "...on the basis of the facts from the vegetative and especially reproductive anatomy; it is difficult to escape the
conclusion that are at least two largely allopatric, co-ordinate groups embraced by *Eugenia* (s.l.); the strictly Old World genus *Syzygium* (s.l.) and the mainly New World genus *Eugenia* (s.s.)". In the present treatment, the treatment of Schmid (1972) is followed.

**Eugenia** L.

The name *Eugenia* is for commemorating Prince Eugene of Savoy (1663-1736), who was a great patron of botany and he spent 50 years of his active life in military campaigns and got wounded thirteen times.

The genus was originally described by Carl Linnaeus in 1753, based on a single species *E. uniflora*. Since then, several additional species have been discovered and described, mainly from Pantropical countries especially Americas. Nearly 1000 species are known in records now. In Kerala the genus is represented by 12 species.


Trees or shrubs, generally tomentose at least on innovations or inflorescence. Leaves opposite, with prominent intramarginal nerve (excl. *E.*
uniflora), entire, pellucid-dotted. Flowers solitary or in clusters, moderately-sized, long pedicelled, mostly axillary, sometimes in racemes, flowering in centripetal sequence, bracteoles 2, below the calyx-tube, usually persistent; calyx-tube not produced beyond the ovary, ±prominently persistent, 4-merous rarely 5-merous, obtuse at base; petals 4, rarely 5, distinct staminal disc, if present, broad. Stamens numerous, distinct; ovary 2-celled, the cells often again divided by tube partitions, ovules several in each cell; style slender; stigma simple. Fruit a nearly globoid, 1- or 2-celled berry, crowned with the calyx-lobes. Seeds, 1-2, large; cotyledons thick, partially combined; radicle very minute, scarcely distinguishable.

Key to the species

1. Young shoots glabrous or nearly so. ........................................... 2

1. Young shoots fulvous or silvery pubescent or hairy ..................... 4

2. Lamina without distinct intramarginal nerves;
   calyx segments longer than broad .................................. E. uniflora

2. Lamina with distinct intramarginal nerves; calyx not as above........ 3

3. Leaves cordate at base; flowers in short terminal
   crowded racemes.................................................. E. singampattiana

3. Leaves rounded or acute at base; flowers
   solitary or in pairs, axillary...................................... E. thwaitesii

4. Staminal disc broad and enlarged....................................... 5

4. Staminal disc not enlarged............................................. 8

5. Flowers 2-3 cm across.................................................. 6
5. Flowers upto 1.5 cm across .................................................. 7

6. Leaves elliptic-ovate, obtusely and abruptly acuminate at apex.........................................................E. calcadensis

6. Leaves broadly elliptic-suborbicular; retuse, obtuse or subacute at apex.................................................................E. cotinifolia

7. Flowers axillary, solitary or crowded at the end of branches;
   calyx-tube 5-6 mm long...................................................E. indica

7. Flowers in pairs on the young branchlets below the leaves;
   calyx-tube upto 2 mm long..................................................E. discifera

8. Leaves obovate-spathulate..................................................E. mabaeoides

8. Leaves otherwise........................................................................... 9

9. Flowers solitary in the leafaxils..................................................E. argentea

9. Flowers in axillary clusters or in very short axillary or terminal cymes.................................................................10

10. Flowers in reduced terminal racemes .....................................E. heynei

10. Flowers in axillary or lateral clusters............................................11

11. Leaves narrowly lanceolate; berry ellipsoid.........................E. rotteriana

11. Leaves elliptic-lanceolate; berry globoid..............................E. terpnophylla

Eugenia argentea Bedd. (Type)
Eugenia argentea Bedd.  A) Habit
Small trees; branchlets slender, pubescent when young, bark peeling off, clothed with puberulus hairs, grey, terete at base, angled or subterete at apex, terete portions brown in colour. Leaves simple, opposite, 8-13 x 2-3.5 cm, ovate-elliptic to lanceolate, rounded at base, with a long narrow acumen at apex, pubescent above; midrib prominent beneath, channelled above, grey or brown when dry; main nerves parallel, ascending, numerous, prominent beneath and above, slender, looped with intramarginal nerve; intramarginal vein 0.1-0.2 cm away from the margin; petiole 0.4-0.6 cm long, slender, pubescent when young, channelled above, glabrous in the lower portion, black or grey when dry. Peduncle 2.3-3 cm long. Bracts absent, bracteoles 2, filiform or linear. Flowers 0.8-1.3 cm across, axillary, solitary; pedicel 1.5-2.2 cm long, terete, pubescent. Fruits 0.5-1.4 cm across, globose, 1.5-2 cm diam. crowned with the persistent calyx lobes, black when dry.

Fl. & Fr.: Jun.—Jul.

Distribution:—Endemic to Southern Western Ghats.

Specimen Examined:—Type-Wynaad, Beddome, s.n. (MH).

Note:—This species is considered endangered or possibly extinct by Nayar & Sastry (l.c) and not been collected after the type collection made by Beddome in the later half of last century.
Eugenia calcadensis Bedd. (Type)

Small trees, upto 10 m tall; young parts rusty pubescent. Leaves simple, opposite, 4.5-7 x 2.3-3.5 cm, elliptic-obovate, obtusely and abruptly acuminate, coriaceous; very rugose on the upper surface but glabrous in aging except the channelled midrib; midrib prominent beneath, channelled above, rugose when mature; main nerves 8-12 pairs, secondary and tertiary nerves reticulate, inconspicuous above, slightly prominent beneath, the main nerves joining within the margin; intramarginal nerves inconspicuous above, 1-1.5 mm away from the margin; petiole 0.5-0.9 cm long, rugose, brown when dry. Inflorescence axillary, 2 flowered, rarely one flowered; peduncle as long as or little longer than petiole. Bracts 2, linear, 0.3 cm long, rugose; pedicel 1-2 cm long, thin, rugose, terete, brown when dry, with a substitute bract at the base of each. Flowers 1-2.5 cm across, white. Calyx-tube 0.3-0.5 x 0.4-0.7 cm, cup shaped, greenish-white, pubescent at apex, rugose; lobes 3-6 x 3-4 mm, obtuse. Petals 1.2-1.8 x 0.8-1.4 cm, oblong, ciliate, suborbicular, densely woolly. Stamens 0.2-0.4 cm long, many, inserted all over the disc, thin. Ovary 2 celled, hairs covering the whole top of the ovary; ovule 4 in each locule; style 0.6-0.8 cm long; stigma simple.

Fl. & Fr.:— Jan.-May

Distribution:— Endemic to Southern Western Ghats.
Specimen Examined:- Calcad hills, Tirunelveli, Beddome, s.n. (MH). Idukki


A much branched bush; branchlets terete, pale grey. Leaves simple, opposite, 3-6 x 2-5 cm, broadly elliptic to suborbicular, base broadly cuneate, apex retuse, obtuse or subacute, margin entire, prominently revolute, coriaceous, concave, drying chocolate-brown beneath; midrib stout, prominent beneath; main nerves 6-8 pairs, very slender, ascending, hardly elevated on either surface; intramarginal nerve about 1 mm within the margin, obscure; petiole 5-10 mm long, stout. Flowers solitary, axillary, white to pale yellow, very large; pedicels 2-3.2 cm long, very slender. Calyx-tube 7-8 mm diam., 6-7 mm long, shallowly cup-shaped, puberulent. Petals 11-14 x 8-10 mm, elliptic-spathulate, obtuse, very large. Stamens 10 mm long. Fruits 2.5 cm diam., globoid, ripening green flushed with crimson, with prominent 12 mm long terminal rim bearing the persisting calyx segments.
Eugenia discifera  Gamble
**Eugenia discifera** Gamble  A) Habit  B) Flower  C) Flower L.S.  D) Sepal  E) Petal  F) Stamen
Fl. & Fr.:– Dec.–Mar.

Distribution:– Western Ghats, Sri Lanka and also in Mauritius.

Specimen Examined:– Thiruvananthapuram Dist: Chemunji mottai, E.S.Santhosh Kumar, 43567 (TBGT).


Trees, 7-10 m tall; branchlets slender, subterete at the tip, grey. Leaves simple, opposite, 3-6 x 1.5-3.3 cm, elliptic-ovate, acute-narrowly attenuate at base, shortly acuminate at apex, margin entire, coriaceous, grey above and pale grey beneath when dry; midrib prominent beneath, channelled above, reddish brown when dry; main nerves numerous, parallel, ascending, slightly prominent beneath, looping at the margin; intramarginal nerve 1 mm within the margin; petiole 0.5-0.8 cm long, slender, glabrous, channelled above, reddish brown when dry. Bracteoles 2, near to the base of calyx-tube. Flowers in pairs, on the young branchlets below the leaves, 1 cm across, white, small, disk of the flowers broad and conspicuous; pedicel 0.4-0.8 cm long, slender. Calyx-tube 2 mm long, lanceolate; lobes 2.5 mm long, rounded, pubescent, having fine hairs. Petals 0.4-0.6 cm long, orbicular, translucent dotted, nearly glabrous. Stamens numerous, conspicuous; filaments 3-5 mm long. Ovary 1-3 mm across, 2 celled,
placentation axile; ovule numerous; style 3.5-4 mm long; stigma simple. Fruits 2-2.5 x 1.7-2.2 cm, globose, or ellipsoid, crowned by calyx lobes, glabrous.

Fl. & Fr. :- Mar.–Aug.

Distribution: - Endemic to Southern Western Ghats.

Specimen Examined: - Thiruvananthapuram Dist: Agasthyamala Top, 30-03-1989, N. Mohanan, 5144 (TBGT); Chemunji, Vinod Kumar, 2884 (RHK).


Note: - This endangered species is so far known only from Agasthyamalai hills in Thiruvananthapuram district and Kottamalai of Periyar Tiger Reserve. Its occurrence in Sethur hills by Nair & Srinivasan (1980) represented an undescribed species of the genus.

Eugenia heynei (Spreng.) Rathakrishnan & Nair

A) Habit  B) Flower  C) Flower L.S. 
D) Sepal  E) Petal  F) Stamen  G) Ovary C.S.

A much branched shrub or small trees 2-6 m tall; bark smooth, pale grey-brown; young branchlets slender, glabrous at base, pubescent at apex, all young parts rusty pubescent, brown in colour. Leaves simple, opposite, 4-8 x 2-4 cm, elliptic-ovate, acute at base, acuminate at apex, entire, with narrowly sub-revoluted margin, glabrous; midrib slender, prominent below, channelled above; main nerves numerous, parallel, ascending, prominent below; intramarginal vein ±1 mm within the margin, smelling of cloves when bruised, drying rufous brown; petiole 0.4-0.8 cm long, thin, glabrous beneath, rusty pubescent above. Peduncle 0.5-1 cm long, small, rusty pubescent, terete, brown when dry. Bracteoles 2 in each flower, 2 cm long, rusty pubescent; pedicel 3.5-4.5 mm, pubescent, terete, thin. Flowers 1-1.3 cm across, terminal or axillary, solitary or in cyme, creamish or white, showy, pubescent. Calyx-tube 2.5-3.5 x 2.1-2.8 mm,
*Eugenia indica* (Wight) Chitravardi

A) Habit  B) Flower  C) Flower L.S.  D) Petal  E) Stamen
companulate, pubescent; lobes 5, 1.3-2 x 1.3-1.9 mm, ovate, acuminate or round at base, acute at apex. Petals 5, 2.1-2.6 x 1.8-2.5 mm, obovate-round, pubescent, gland-dotted, hairy at back, rounded at apex, ciliate at margin, fragrant. Stamens 0.4-0.7 cm long, numerous, white, delicate; filaments 2.5-3.5 mm long; anther 0.3-0.4 mm long, small, white-yellow. Ovary 2 celled, 1.5-2 mm across, pubescent, syncarpous; ovule numerous, placentation axile; style 0.5-0.6 cm long, yellowish-white, inserted in the stamen; stigma small, simple, pointed. Fruits 1.7-2.7 cm across, globoid, scarlet red, crowned by calyx segments. Seeds 1 or 2.

Fl. & Fr.:- Feb-Jun.

Verna.:- Kayya (Tamil).

Distribution:- Peninsular India and Sri Lanka.

Specimen Examined:- Thiruvananthapuram Dist: Veli, 21-06-1971, T.A.Rao, 8023 (CAL); Near Chimungi, evergreen forest, 13-04-1903, T.F.Bourdillon, s.n. (IFGTB); Kollam Dist: Quilon, 18-12-1979, C.N.Mohanan, 63795 (CAL); Quilon, 18-12-1979, C.N.Mohanan, 63795, 63798, 18-12-1979 (MH).

Uses:- The tree is not used in any way, but it is ornamental.

Trees 5-8 m tall. Leaves simple, opposite, 4-7 x 1.5-2.5 cm, elliptic-obovoid, acute-cuneate at base, obtuse-broadly acuminate at apex, entire, coriaceous, glabrous; midrib channelled above, raised below, blackish-brown when dry; main nerves slightly evident on both sides, not prominent, parallel, looping at margin; intramarginal vein below 1 mm away from the margin; petiole 3-8 mm long, rusty puberulus at apex ones, glabrous at age, channelled above. Peduncles 1.5-2 cm long, rusty pubescent, subterete or terete. Flowers 0.8-1 cm across, axillary, solitary or crowded at the end of the branches, white; pedicel 1.2-1.8 cm long. Calyx-tube 0.5-0.6 x 0.3-0.5 cm, subglobose, rusty pubescent; lobes 4, 0.5-0.7 cm long. Petals 0.8-1 cm long, hairy. Stamens 0.8-1 cm long, numerous; filaments thin. Ovary 2-celled; ovule numerous, placentation pendulous; style 1-1.3 cm long, thin, narrow at above; stigma simple. Fruits 2 celled, berry, globose with persistent calyx lobes. Seeds numerous.

Fl. & Fr. :- Mar.-Jun.

Distribution:- Endemic to South Western Ghats.


Note:- An endangered species of Western Ghats.

Eugenia mabaeoides Wight, Ill. 2: 13. 1850; Duthie in Hook. f., Fl. Brit. India 2. 503. 1879; Trimen, Handb. Fl. Ceylon 2: 186. 1894; Alston in Trimen,
Eugenia mabaeoides Wight A) Habit B) Flower C) Petal D) Ovary L.S. E) Fruit
Much branched shrubs, 2-4 m tall; branchlets terete, glabrous; young shoots fugacious. Leaves simple, 2-3.5 x 1.2-1.6 cm, obovate-spathulate, tapering at base, obtuse at apex, rigid, glabrous, coriaceous, usually distinctly punctate beneath, shining above, pale beneath; midrib prominent beneath, tapering towards apex, channelled above, yellowish or reddish brown when dry; main nerves 7-8 pairs, ascending, slender, obscure or equally elevated on both surfaces, tertiary nerves obscurely reticulate; intramarginal nerve very close to the margin, clearly evident beneath, obscure above; petiole 0.1-0.3 cm long, thin, channelled above, young one rusty pubescent. Flowers 0.6-0.7 cm across, axillary, solitary or fascicled, greenish white with rosy tinge; flower buds greenish purple; pedicel 0.7-1.2 cm long, pubescent when very young, glabrous when mature, slender. Calyx-tube 2.8-3.5 mm, including the 4 deltoid acute segments, pubescent, cup-shaped; lobes 1-2.5 x 1.7-2.3 mm, round or obtuse at apex, pubescent. Petals 2-3 x 2-2.8 mm, elliptic, concave. Stamens 3 mm long. Ovary 0.3-0.5 x 0.3-0.4 cm; style 2.5-3 mm long; stigma simple. Fruits 5-8 mm across, ellipsoid, subgloboid or ovoid, crimson or greenish purple, apical ring of prominent persisting calyx segments.

Fl. & Fr. :- Dec.–Jun.

Distribution:- South India and Sri Lanka.
Eugenia rottleriana Wight & Arn. (Type)
Eugenia rottleriana  Wight & Arn. A) Habit B) Flower C) Petal


Small trees, 5-10 m tall; branchlets terete at base, slender, grey, angled at apex, all young parts including inflorescence rusty pubescent. Leaves simple, opposite, 4-9 x 0.8-1.5 cm, narrowly lanceolate, acute at base, acute-obtuse at apex, entire, young leaves pubescent, mature leaves glabrous; midrib slender, slightly channelled above, prominent beneath, drying chocolate brown; main nerves numerous, obscure above, slightly prominent below, looping with intramarginal nerve, very slender; intramarginal nerve very close to the margin, prominent below, obscure above; petiole 0.2-0.6 mm long, slender, channelled above, brown when dry, glabrous above, greyish-brown above and pale grey beneath when dry. Bracteate, 1-2 mm. Flowers axillary or terminal clustered cymes, greenish yellow, usually paired, large, showy, variant in number; pedicel 1-2.5 cm long, thin, rusty pubescent. Calyx-tube 2-3.5 mm long, cup shaped, pubescent; lobes 4, 1-1.5 mm long, round at base, acute at apex, rusty pubescent. Petals 4, 1-2.3 x 0.6-0.8 cm, elliptic, obtuse, shortly acuminate,
Eugenia singampattiana Bedd.  A) Habit B) Flower L.S. C) Sepal D) Petal E) Stamen F) Fruit
longer than calyx, villous on the margin, white. Stamens numerous; filaments 0.5-0.7 cm long, slender; anthers pale, brown. Ovary hairy at the tip; style hairy; stigma simple. Fruits 0.4-1 x 0.4-0.6 cm, ellipsoid, green, yellow at ripening.

Fl. & Fr.:—April-June

Distribution:-Endemic to South West India.

Specimen Examined:-Type:-Herb.R.Wight Prop,. 1026 (MH).

Thiruvananthapuram Dist: Travancore, 1872, Beddome, s.n. (MH);
Travancore, Bourdillon, 20822 (MH), Athymallay, Bourdillon, 20820 (MH)

Uses:-Use of this tree is unknown.


Small trees; branchlets terete, glabrous. Leaves simple, decussate, 5-8 x 2.5-5 cm, ovate or elliptic-oblong, cordate or rounded at base, obtuse or acuminate at apex, entire, coriaceous, quite glabrous; midrib prominent below, glabrous; nerves 13-15 pairs, forming a continuous looping near the margin; petiole very short, deep green above, pale beneath. Inflorescence a terminal short cymes. Bracts and bracteoles 0.8-1 cm long, pubescent. Flowers 1.25 cm
Eugenia terpnophylla Thw. (Type)
across, white; pedicel 1 cm long. Calyx-tube 3 mm long, slightly pubescent; lobes 4, upto 4 mm long, suborbicular, persistent. Petals 4, upto 12 mm long, ovate, glandular, inconspicuously dotted and prominently nerved, disc small. Stamens numerous, erect or incurved; filaments 1-1.5 mm long. Ovary subgolobose, 2 celled; ovule numerous; style upto 8 mm long. Fruits 2 x 2 cm, subglobooid-globoid, crowned with calyx lobes.

**Fl. & Fr.:-** Dec.—Apr.

**Verna.:-** Kattukoiyya (Tamil).

**Distribution:** Endemic to Southern Western Ghats.

**Specimen Examined:** Thiruvananthapuram Dist: Athirumala, 14. 02. 1999, Vinod Kumar, 2861 (RHK)

**Note:** Since its original collection from the Singampatti hills of Tamil Nadu made by Beddome in 1864-1874, it has been recollected after a long gap of over 100 years from the Papanasam hill by Daniel (1989 ). This endangered species was endemic to Tamil Nadu State until its discovery from Kerala by Vinod & Antony (*I.e.*).


Medium sized trees, much branched, crown dense, irregular; bark smooth, pale grey-brown; branchlets terete, extreme tip quadrangular, rusty pubescent at apex, slender, brown in colour. Leaves simple, opposite, 4.5-8.5 x
1.5-2.5 cm, linearly elliptic, acute at base, acuminate at apex, entire, thinly chartaceous; midrib channelled above, prominent beneath, brown when dry, pubescent in upper leaves; main nerves numerous, parallel, ascending, slightly channelled above, looping at the margin, slightly evident above, prominent beneath; intramarginal nerves 2 tiered, outer one is very close to the margin, inner one 2.5-3.5 mm away from the margin; petiole 0.4-0.9 cm long, slender, pubescent at apex, glabrous in the mature leaves, drying pale brown, reddish brown or black when dry. Peduncle 3-4 mm long, slender, rusty pubescent. Bracts small, linear. Flowers 0.3-0.5 cm across, on short bracteate peduncle in dense axillary clusters, small, bracteate, tetramerous, puberulus, greenish-white; pedicel 0.5-0.8 cm long. Calyx-tube ±3 x 2 mm, campanulate, rusty pubescent; lobes 4, acute, deltoid segments. Petals 4, 4 x 2 mm, narrowly elliptic-oblong, acute-obtuse at apex, white. Stamens 0.3-0.5 cm long, many. Ovary 2 celled; ovules numerous; style 0.4-0.45 cm long, narrow at the tip. Fruits 7 mm diam., globoid, crowned with a ring bearing the persisting lyrate reflexed calyx segments, ring 2 mm in diam., berry. Seed 1.

Fl. & Fr.:-- Jun.-Oct.

Distribution: - South India and Sri Lanka.

Specimen Examined: - Isotype: -Ceylon, Bourdillon, 23 (MH); Panachi Teak plantation, 19-03-1913, Rama Rao, 03016 (TBGT).

Note: This species hitherto considered endemic to Sri Lanka (Ashton, l. c.). However a collection by Rama Rao in 1913 from Panachi Teak Plantation in Pathanamthitta district form a new distribution record for India.

Uses: Fruits edible.
Eugenia thwaitesii  Duthie  A) Habit  B) Flower  C) Flower L.S.  D) Fruit

Small trees, 3-7 m tall; branchlets slender, much branched; bark dark grey, terete, pubescent at apex, otherwise glabrous. Leaves simple, opposite, 5-11 x 2.5-5 cm, elliptic-ovate, narrowly or broadly cuneate at base, acuminate at apex, acumen 1-2 cm long, very variable in size and shape, margin undulate, chartaceous or occasionally thinly coriaceous, mature leaf glabrous; midrib slender but prominent beneath, usually drying brown, glabrous, channelled above; main nerves 7-10 pairs, diverging or ascending, very slender, prominent beneath; intramarginal nerve distinct, ±1-2 mm within margin, dark brown above and yellowish beneath when dry; petiole 4-8 mm long, channelled above, young ones pubescent; buds caducous, puberulent. Flowers 1-1.5 cm across, small, bracteolate, white turning pink, fragrant, puberulent, in lax terminal or axillary clusters. Young buds densely puberulent, red, rusty pubescent; pedicel 1.5-4 cm long, slender. Calyx-tube 2 x 2 mm, cup shaped, yellowish-green; lobes-4, 0.4-0.6 x 0.3-0.5 cm, oblong, acute to round at apex, rusty pubescent
outside, brown when dry. Petals 4, 5-8 x 4-5 mm, broadly elliptic or obovate or round, obtuse at apex, glandular. Stamens numerous; filaments 4-7 mm long, thin; anther brown. Ovary 2 celled, placentation axile; ovule numerous; style 4-6 mm long, narrow; stigma simple. Fruits 1.8-2.1 x 1.8-2.1 cm diam., ellipsoid to globoid, solitary, scarlet or crimson when matured, glabrous, shining, calyx ring persistent. Seeds 2-3.

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

**Distribution:** South India and Sri Lanka.


**Uses:** Yellowish wood is used to make special walking-sticks.

**Eugenia uniflora** L., Sp. Pl. 470. 1753; Duthie in Hook.f., Fl. Brit. India 2: 505. 1879; Woodr. in Bombay Nat. Hist. Soc. 11: 637. 1898; Alston in Trimen,

Shrubs or small trees, upto 10 m tall, much branched, bud puberulent; branchlets terete, slender, subterete at apex, glabrous beneath, extreme tip pubescent, pale brown. Leaves simple, opposite, 3.6-5 x 1.5-3 cm, elliptic-ovate, with broadly cuneate or obtuse base, bluntly acuminate at apex, margin entire, chartaceous, densely punctate, shining above, glabrous, dark green above, pale yellow beneath, grey above and chocolate brown beneath when dry; midrib slender, elevated beneath, glabrous, raised above and beneath, narrowly prolonged, slightly channelled above, brown when dry; main nerves 5-7 pairs, arching and branching within the margin but not uniting to form a distinct intramarginal nerve, slender, distinctly elevated beneath; petiole 2-3 mm long, brown, black when dry, channelled above, glabrous. Flowers 1-1.3 cm across, axillary or terminal fascicles, white or pale yellow, slightly fragrant; peduncles 1.5-2.3 cm long, slender. Ebractiate and bracteoles-2; pedicel 3-4 cm long, slender, terete, glabrous, yellowish green, brown when dry. Calyx-tube 1.5-2 x
1.5-2 mm, funnel shaped, lobes 4, ovate or oblong, obtuse at base, acute at apex, greenish or pinkish tinged, glabrous, becoming reflexed at anthesis. Petals 4. Stamens 4.5-6 mm long, numerous, white. Ovary 2 celled; style 0.5-0.6 cm long, thin; stigma simple. Fruits 2-2.5 cm diam, depressed globoid, prominently 8 ribbed, deep crimson when ripe, fleshy, having spicy flavour, succulent, shining.

Fl. & Fr.: May-Sept.

Verna.: Mulakunelli.

Distribution: Native of Brazil, widely cultivated in the tropics for its edible fruits.


Uses: Fruit is edible, eaten fresh or made into jellies, jams, sarbaths and pickles. Seeds yield an essential oil. Tree is ornamental.

**Melaleuca L.**

The name Melaleuca is derived from the Greek word ‘melas’ meaning black and ‘leukos’ meaning white, referring to the black trunk and rather whitish branches. This genus was established by the Swedish botanist Carl Linnaeus in 1767 with the lone species *Melaleuca leucadendron.*

**Melaleuca Linn.**

Mant. Pl. 1: 105. 1767.

Tree or shrubs. Leaves alternate or opposite, quite entire, equal at base, laccolate or linear, coriaceous. Flowers in spikes or heads, penta-merous,
perfectly sessile or somewhat combined with the branch, whitish or yellowish or
purplish. Calyx-tube sub-globulous, lobes 5. Petals 5, white. Stamens numerous,
combined into five elongated bundles, that alternate with the petals. Anthers
incumbent. Style fili-form, slender. Stigma obtuse. Ovary 0.5 cm inferior.
Capsule dehiscing by three valves. Seeds numerous, minute, angular, cuneate.

Melaleuca leucadendron L., Mant. Pl. 1: 105. 1767; Bailey, Man. Cult. Plants
726. 1721; Duthie in Hook. f., Fl. Brit. India 2: 465. 1878; Brandis, Indian Tr.
Bhopal 167. 1977; Nair & Henry, Fl. Tamil Nadu 1: 154. 1983; Kirtikar & Basu,
iii. 394. 1832.

Trees about 15 m tall, bark papery whitish, peeling off in layers.
Branchlets slender, pendulous, terete, glabrous. Leaves simple, alternate, 2.5-7 x
1-1.5 cm, oblong or linearly elliptic, acute at base, linear acute at apex, entire,
coriaceous, aromatic, glabrous; midrib slightly prominent below, midrib and
main nerves of same size; main nerves 2-3 in each side of the midrib, horizontal,
parallel to the midrib, slightly elevated on the upper surface, inconspicuously
joined at the tip of the leaf, branched; intramarginal vein inconspicuous or
absent; petiole 0.2-0.7 cm long, flattened, no separation of upper and lower side,
thin, brownish black when dry, glabrous. Inflorescence in terminal spikes;
peduncle 5-15 cm long, terete, the axis growing into a leafy shoot after
flowering. Flowers white, numerous, in whorl, axillary but leaves suppressed,
sessile, whitish or yellowish or purplish. Calyx-tube ±0.2 x 0.12 cm, ovoid, ±0.2 cm long, densely pubescent; lobes 5, 0.1 x 0.1 cm, rounded and often scarious at the margin, pubescent acute-obtuse at apex, yellowish-green to yellowish-white. Petals 5, 0.2-0.4 x 0.18-0.45 cm, cup-shaped or spathulate, white-yellowish white or creamish white, glabrous. Stamens 1-1.25 cm long, numerous, united at the base in 5 groups, each with 5-8 filaments, thin, white or creamish white. Ovary 3 celled, ovules many, on peltate placentae; style 1.2-1.5 cm long, slender, white or creamish white or greenish yellow; stigma capitate. Fruits 0.3-0.35 cm diam., subgloboid, loculicidally dehiscent at apex.

Fl. & Fr.: - Round the year.

Verna: - Kaiyappudai (Tamil)

Distribution: -Native of Malaysia, cultivated as an ornamental tree in other countries.

Specimen Examined: - Kozhikkodu Dist: Calicut University campus, Vinod Kumar, 2863 (RHK).

Uses:- Planted in gardens as an ornamental tree, source of Cajaput oil, used in medicine for larungitis and bronchitis and as carminative, anthelmentic and relatives to tooth ache. It is aslo used as a mosquito repellent. The tree yields valuable timber which is used in ship building.

The oil is used internally and also as an external application in rheumatism. It is stimulant and spasmodic in cholera diarrhoea. It is prescribed on chronic pityriasis, psoriasis, eczema, and acne. It has the advantage over oil of citronella of volatilising more slowly. The essential oil from the leaves is a powerful stimulant and analgezic.
The genus *Meteoromyrtus* was originally discovered by Richard Henry Beddome in 1871 as a species of *Eugenia* viz. *E. wynaadensis*. It was later recognized as a new genus, *Meteoromyrtus* by James Sykes Gamble in 1918. The name *Meteoromyrtus* is from the Greek word ‘*mêter*o’ meaning atmosphere influence and ‘*myrtos*’ the Greek name for myrtle meaning a myrtle of different climate. The genus has only one species and is found endemic to the southern Western Ghats.

**Meteoromyrtus** Gamble,


Trees. Leaves simple, opposite, glabrous; brown when dry; marginal nerves numerous, petiole thin, glabrous, channelled above. Flowers white, axillary, thin, terete. Calyx-tube campanulate or cup-shaped, acute or obtuse at apex. Petals 4, pellucid-dotted and ciliate. Stamens numerous, thin. Fruits scarlet red when ripe, fleshy, globoid, calyx lobes persistent. Seed 1.

Meteorymyrtus wynneadensis (Bedd.) Gamble

A) Habit B) Flower C) Flower L.S. D) Petal E) Stamen
Trees 2-5 m tall; branchlets terete, brownish black, glabrous bark, peeling off from top to bottom. Leaves simple, opposite, 5-11 x 2.5-4 cm, elliptic to ovate, acute at base, acuminate at apex, entire, revolute, glabrous; midrib slender, channelled above, prominent beneath, brown when dry; marginal nerves numerous, slender, evident above, prominent beneath, looping with intramarginal vein, ascending, sometimes branching; intramarginal vein evident above, prominent beneath, 1-1.15 cm away from margin; petiole 0.3-0.5 cm long, thin, glabrous, channelled above. Flowers 0.4-0.6 cm long, white, all parts rusty pubescent, axillary, thin, terete. Calyx-tube 0.3-0.4 mm long, com panulate or cup shaped; lobes 4, 0.3-0.4 x 2-2.5 mm, acute or obtuse at apex. Petals 4, 0.4-0.6 x 0.3-0.35 cm, obtuse, oblong to elliptic pellucid-dotted and ciliate. Stamens 0.4-0.7 cm long, numerous, thin. Style 0.5-0.6 cm long. Fruits scarlet red when ripe, fleshy, globoid, persistent calyx lobes present. Seed 1.

Fl. & Fr: - Feb-Aug.

Distribution: - Endemic to Southern Western Ghats.

Specimen Examined: - Kannur Dist: Therrthundamala, 88 m, Ramachandran 5399 (MH).

Note: - This monotypic and endemic species was rediscovered by Ramachandran & al. in 1982 after a long gap of over 110 years of its first collection.
John Lindley (1799 - 1865)

Taxon 1973 230
Pimenta officinalis Lindl.
Pimenta officinalis Lindl.  A) Habit  B) Flower  C) Flower bud  D) Flower L.S.
Pimenta Lindl.

The name *Pimenta* derived from *Pimento* is the Spanish name for *Pimenta dioica*. This genus was established by John Lindley, a British botanist in 1821, with a lone species *P. officinalis*.


Trees 10-15 m tall, frequently branched, branchlets terete at base, quadrangular at apex, dark brown when dry. Leaves simple, opposite, 5-11 x 2-4 cm, elliptic, acute at base, obtuse at apex, margin revolute, glabrous, leathery, dark brown above, pale yellowish brown beneath when dry; midrib channelled above, prominent beneath, brown when dry, glabrous; main nerves 12-16 pairs, evident above, prominent beneath, looping at the margin; intramarginal vein not clear; petiole 1.5-2.3 cm long, thin, glabrous, channelled above. Inflorescence 5-7 cm across, axillary cymes; peduncle 5-8 cm long, glabrous, quadrangular or angled, thin, brown when dry. Flowers 0.5-0.7 cm across, white; pedicel 0.2-0.3 cm long, thin, glabrous. Calyx-tube 0.1 cm long, cup shaped; lobes 4, cup shaped. Fruits 0.5-0.8 cm across, globoid, dark brown.

Fl. & Fr.: - Nov. – Mar.

Verna.: All spice

Distribution: - Native of Central America, now widely cultivated for its oil.
Specimen Examined: - Thiruvananthapuram Dist: Bonaccord, 16-11-1994, E.S.Santhoshkumar, 21427 (TBGT); Top Bonaccord, 20-02-1979, M.Mohanan, 59334 (MH).

Uses - The oil obtained from the leaves is used for flavouring. The taste of the ground spice resembles a mixture of cinnamon, cloves and nutmeg. The unripe dried berries are used in pickles, souces and ketchups. It is used medicinally as a stimulant.

Psidium L.

The genus name Psidium came from the Greek word ‘psidion’ meaning pome granate and ‘psidium’ is the Latin name, is luding to the shape of the fruit with that of the pome granate. In 1753, Carl Linnacus, the Sweedish physican-botanist established the genus with P. guajava as the type.

It has about 140 species and are mainly the native of the New world tropics, but several have been planted widely as ornamental and fruit trees. It is estimated that 3 species were known to occur in India, of which 3 species were recorded from Kerala.


Trees or shrubs with drooping branches; branchlet ±sharply 4-angled
Leaves opposite, lamina with prominent leaf-glabrous or tomentose, pinnate-veined. Intramarginal nerve prominent. Flowers large, white, 1-3, axillary. Calyx urceolate or obovate, limb undivided in aestivation, separating valvately into 4-5
lobes when in flower. Petals 4-5, free, large and broad. Stamens many, inserted in several series on a wide disc; ovary 4-5 celled rarely many celled with numerous ovules in each cell; style subulate; stigma peltate or capitate, Fruit a globoid ovoid or pyriform berry, usually crowned by the calyx-limb. Seeds many, subreniform, testa hard; embryo horseshoe shape small, cotyledons and long radicle.

Key to the Species of Psidium
1. Leaves weakly nerved beneath, glabrous or glabrescent: Leaves & Fruits very small.................................................................P. cattleyanum
   1. Leaves strongly nerved beneath, pubescent beneath........................2
2. Branchlets sharply angled or even subulate; fruit more than 3 cm in diameter ...............................................................P. guajava
   2. Branchlets not sharply angled; fruit less than 2 cm in diameter ...............................................................P. guineense

Small trees, up to 6-10 m tall; branches slender, grey and scaly, smooth, young branchlet terete, glabrous. Leaves simple, opposite, decussate, 5-10 x 3-6 cm, elliptic-obovate, cuneate at base, obtuse to shortly acuminate at apex, entire, subcoriaceous, dark green and shiny above, glabrous; nerves thick and leathery, ascending, slender but elevated on both surfaces. Flowers 2.2-2.8 cm across, axillary, solitary. Calyx cup short; lobes 4. Petals 4, ovate. Stamens 0.8-1 cm long, numerous, white, thin. Fruits 2-2.5 cm diam., subgloboid-globoid, depressed globose, persistent calyx ring above, juicy, tasting rather like strawberries, purplish-red, the flesh-white.

Fl. & Fr.: - Round the year.

Distribution: - Native of Brazil, widely cultivated for its fruits.

Specimen Examined: - Thiruvanathapuram Dist: Pangode, A. Nazrudeen, 18676 (TBGT). TBGRI Campus, Vinod Kumar, 2864 (RHK).

Uses: - Fruits edible.

Psidium guajava  L.
Psidium guajava L.  A) Habit B) Flower C) Petal D) Stamen E) Ovary C.S. F) Fruit

Trees, 5-8 m tall, bark greyish brown, smooth, peeling off, wood reddish brown; branchlets round at base, quadrangular at apex, pubescent on the young branches. Leaves simple, opposite, 4-17 x 2.5-7 cm, elliptic-oblung, cordate at base, acute-obtuse at apex, slightly revolute, entire or obscurely crenate, margin undulate, coriaceous, gland-dotted beneath, with peculiar aromatic smell, pubescent beneath and above; midrib evident above, channelled above, thick, prominent below, thinly pubescent, green, brown when dry; main nerves thick 12-19 pairs, channelled above, prominently distinct above, raised below, ascending, parallel, looping at the margin; intramarginal vein obscure at the margin, green, brown when dry; petiole 0.5-0.7 cm long, thick, pubescent, channelled above. Inflorescence 1-3 flowered; peduncle 2.5-3.75 cm long, axillary, pubescent, angled, green, brown when dry. Flowers 1.5-2.7 cm across, white, fragrant, gland-dotted; pedicel 1 cm long, round, pubescent, light green, brown when dry. Calyx-tube adnate to the ovary, produced above it, ovate, pubescent; lobes 4, 8-10 mm long, ovate, acute or obtuse, green, pubescent.
Petals 4, ovate-oblong or orbicular, gland-dotted, white, exceeding the calyx. Stamens 1 cm long, numerous, yellowish white, slender. Ovary upto 1 cm wide, ovate; style 1.5 cm long. Fruits 5-10 cm across, depressed globoid or obovoid, green, light yellowish when ripe, fleshy, white or rosy-purple pulp. Seeds globoid, hard, smooth, pale brown.

Fl. & Fr.: Round the year.

Verna: - Adakka pazham, Perakai, Pala pazham.

Distribution: - Native of Tropical America, widely cultivated in the tropics.

Specimen Examined: - Thiruvananthapuram Dist: Ponmudi, 13-09-1977, N.C. Nair, 51021 (MH); Ponmudi, 25-05-1979, N. Mohanan, 63264 (MH); Kurisumala, 30-04-1985, Sunny Mathew, 1067 (RHK); Ponmudi, 07-12-1970, Sivadasan, 513 (CALI); Athirumala, 02-04-1989, N. Mohanan, 5519 (CALI); TBGRI medicinal garden 20-05-1993, Mathew Dan, 14505 (TBGT); Thiruvananthapuram, 13-10-1954, A Kerala Varma, s. n (UCT). Pathanamthitta Dist: Pamba Dam, 26-03-1978, C. N. Mohanan, 54393 (MH). Kottayam Dist: Perunna, Changanachery, 10-1981, N. C. Nair, 62522 (MH); ibid., Vinod Kumar 2865 (RHK); Peerumedu, 08-12-1970; Dhanalakshmi, 712 (CALI).

Malappuram Dist: CU Campus, 01-06-1975, Maria Florence, 6097 (CALI); CU Campus, 04-04-1989, Sunathi, 2212 (CALI); CU Campus, 10-10-1983, Reghunath, 1109 (CALI); CU Campus, 10-03-1980, Baby Ushakiran, 8663 (CALI); CU Campus, 01-06-1975, Maria Florence, 6097 (CALI). Kozhikode Dist: Devagiri, 04-10-1976, Ramesh M, 20554 (CALI); Chathamangalam, 20-03-1976, Devagiri, 20310 (CALI); Calicut, 03-11-1967, Kamalakshi, 68 (CALI).
Psidium guineense Sw.  A) Habit B) Flower C) Fruit

Uses: Fruits are edible and are rich source of vitamins.


Shrubs 1-5 m tall; branchlets terete, pubescent, brown, slender. Leaves simple, opposite, 7-11.5 x 4-5 cm, broadly elliptic-oblong, acute at base, acute at apex, entire, subcoriaceous, pellucid-dotted, grey when dry; midrib thick, pubescent, brown, channelled above, highly prominent beneath; main nerves 8-10 pairs, ascending, parallel, looping at the margin, visible above, highly prominent beneath, brown when dry, pubescent; intramarginal nerve inconspicuous; petiole 0.7-1.5 cm long, slender, channelled above, pubescent. Flowers 1.5-2.5 cm across, axillary, solitary, sometimes more than two, slightly fragrant, white; peduncle 0.8-1 cm long, pubescent, slender, terete; pedicel 0.4-0.6 cm long, slender, rusty pubescent. Calyx-tube 0.6-0.8 x 0.2-0.3 cm, elliptic, acute-obtuse at apex, adnate to the ovary; lobes imperfectly 5, green, rusty pubescent. Petals 5, 1.5 x 1 cm across, spatulate, caducous, white. Stamens white; filaments 1-1.2 cm long; anthers 0.1-0.5 cm long, oblong, introrse,
Heinrich Gustar Reichenbach (1824 - 1889)

Taxon 1973 - 231
dehiscing longitudinally. Ovary many-celled with many ovules in each locule; style 1.3 cm long, white; stigma capitate. Fruits 2-3 cm diam., globoid-ellipsoid, berry, pubescent, yellow flesh creamish yellow when ripened, persistent calyx-ring at apex. Seeds numerous.

Fl. & Fr.:– Jan–Oct.

Verna.:– Guinea guava.

Distribution:– Native of Tropical America, widely cultivated in the tropics for the edible fruits.


Uses:– Ripe fruits are edible and also good for making jam and jellies. Main trunk used as stumps.

Rhodomyrtus (DC.) Reichb.

The genus Rhodomyrtus was originally proposed by de Candole as a section of the genus Myrtus. It was later erected as a genus by Heinrich Gustava Reichenbach, a German physician-botanist and an ornithologist in 1841. The name Rhodomyrtus came from the Greek word, ‘rhod’ meaning rose and ‘myrtos’ meaning myrtle, in allusion to the rosy myrtle like flowers. R. tomentosa is the type species.
Rhodomyrtus (DC.) Reinchb.,
Nom. 117. 1841.

Trees or shrubs, rarely herbs. Branchlets terete. Genus remarkable for the tomentose young parts. Leaves opposite, 3-5 ribbed, with depressed nervation above and prominent greyish velutinate tomentum beneath. Flowers rather large in axillary 1-7 flowered cymes; bracteoles small, deciduous; calyx-tube turbinate, oblong or subglobose, hardly produced beyond the ovary; lobes 5 rarely 4, persistent; petals 5 rarely 4, spreading. Stamens indefinete, free, in many series; ovary 1-2-3 celled, but appearing 2-4-6- celled by spurious partition between the pairs of ovules which are arranged in vertical rows; style filiform; stigma capitate. Fruit a globoid or ovoid berry with numerous horizontal seeds. Seeds compressed, exalbuminous, reniform or nearly orbicular, horizontal, testa hard; embryo curved or spiral with small cotyledons, radicle very long.

Rhodomyrtus tomentosa (Aiton) Hassk. var. parviflora (Alston) Schott.

Habit B) Flower C) Petal D) & E) Stamen F) Ovary C.S. G) Fruit
Small trees about 3-8 m tall, bark thin, reddish, papery peeling off in thin flakes, wood dark red or reddish-brown, very hard; branchlets brown, young parts densely greyish ochrous velutinate, terete at base, quadrangular at apex, rusty pubescent. Leaves simple, opposite, 2-8 x 1.4-4 cm, elliptic or sometimes obovate, acute at base, obtuse-mucronate at apex, subrevolute margin, coriaceous, drying dark purple above, yellowish green beneath, tender leaves rusty pubescent on both sides, mature leaves glabrous above, rusty pubescent beneath; midrib slender, slightly channelled above, very prominent beneath, rusty pubescent, brown when dry; petiole 0.7-1.0 cm long, thick, rusty pubescent when young, pubescent at mature, reddish-brown when dry. Inflorescence axillary or terminal, solitary or 3 or -3 in a 1.2-1.5 cm long pedunculate cymes; bract 0.3-0.9 mm long, linear, paired, small, deciduous, rusty pubescent. Flowers large in axillary cymes, white-rose or pink, 1.2-1.7 cm across, subsessile. Calyx-tube 0.5 x 0.5 cm, subglobose, turbinate, rusty pubescent, adnate to the ovary and not produced beyond it, greenish-white; lobes 4-5, 0.4-0.5 x 0.3-0.4 cm, obtuse. Petals 5, 0.8-1 x .3-0.6 cm, elliptic, obtuse at apex, tomentose on back, reddish brown when dry. Stamens 0.5-0.7 cm long, numerous, free, red; filaments crimson red, slender; anther yellow. Ovary pubescent; style pubescent beneath, glabrous above. Fruits 1-1.2 x 0.7-0.8 cm, rusty pubescent or vellvety.
fruit, taste like gooseberry, berries dark purple. Seeds compressed, embedded in purple pulp.

Fl. & Fr.:– Round the year.

Distribution:– Peninsular India to Fukien and Southeastwards to Austalia.


Uses:– Fruits are edible, make an excellent jam. Wood use to make good walking stick.

Syzygium R. Br.

The name ‘Syzygium’, is possibly derived from Greek word, ‘suzugos’ meaning jointed, in allusion to the manner in which the branches and leaves united by pairs in the Jamaican species Calyptranthes Syzygium.

The genus was originally conceived by Robert Brown, but validly published by Joseph Gaertner, a German physician-botanist in the year 1788, with S. caryophyllaeum as the type. Now the genus has about 1000 species and
is mainly distributed in the tropical region of Africa and Asian continents. In India altogether 50 species were reported (Santapau & Henry, 1979), of which 38 species are represented in Kerala.


Trees or shrubs, glabrous. Leaves opposite, entire, glabrous, often pellucid dotted, with prominent intramarginal nerve. Flowers small, or large in terminal, axillary or lateral cymes, usually corymbose, flowering in centrifugal sequence; bracteoles small, fugacious or 0; calyx-tube turbinate or funnel-shaped, the limb rarely 5 lobed, lobes small or large, fugacious or persistent, obscure or distinct; no thickened staminal disc. Petals 4-5, round, concave, usually falling off as a calyptrate lid, sometimes single. Stamens very numerous, free, bent inwards at the middle when in bud. Ovary 2-3 celled, loculi distal with several ovules in each cell; style 1; stigma simple. Fruit a 1-celled, 1 or few-seeded berry, globoid, pyriform or oblongoid, crowned by the calyx-limb. Seeds globoid; Embryo subgloboid, cotyledons fleshy; radicle small, concealed between the cotyledons; seed coat rough.
Key to the species of *Syzygium*

1. Calyx-tube with a thickened staminal disc at the mouth; flowers showy with large petals.................................................................2
1. Calyx-tube not as above; flowers not showy; petals small.................12
2. Leaves cordate, obtuse or rounded at base........................................3
2. Leaves cuneate or narrowed at base..................................................7
3. Leaves acute or obtuse at apex ..........................................................4
3. Leaves acuminate or shortly caudate at apex.....................................5
4. Flowers white, pedicellate; calyx-tube 0.9-1.4 cm long..................*S. mundagam*
4. Flowers pink, sessile or subsessile; calyx-tube 1.5-3 cm long ........*S. aqueum*
5. Flowers in lateral cymes from the old wood.................................*S. rama-varmae*
5. Flowers in terminal or subterminal-axillary cymes..........................6
6. Leaves elliptic, with 8-16 pairs of lateral nerves; calyx-tube cup shaped... .................................................................*S. samarangens*
6. Leaves elliptic-lanceolate, with 20-24 pairs of lateral nerves;
   calyx-tube bell shaped.................................................................*S. munronii*
7. Leaves linear-lanceolate.................................................................8
7. Leaves otherwise..........................................................................9
8. Leaves with prominent lateral and intramarginal nerves; calyx-tube funnel shaped.........................................................*S. jambos*
8. Leaves with conspicuous lateral and intramarginal nerves; calyx tube broadly turbinate.........................................................*S. occidentale*
9. Leaves with lateral and intramarginal nerves prominent..................10
9. Leaves with lateral and intramarginal nerves not prominent or obscure........................................................................................................................................ 11
10. Leaves with single tier of intramarginal nerves; flowers pale yellow or creamish white in terminal corymbose cymes; calyx-tube 1 cm long ................................................................. S. bourdillonii
10. Leaves with 2 tiers of intramarginal nerves; flowers crimson red in lateral cymes; calyx-tube more than 1.5 cm long .................................................. S. malaccensis
11. Flowers usually 1-3, axillary; calyx-tube funnel shaped ............... S. laetum
11. Flowers more than 3 in terminal cymes;
    calyx-tube cup shaped ............................................................... S. hemisphericum
12. Petals usually free and deciduous ....................................................... 13
12. Petals usually falling in one piece (calyptrate) ................................. 19
13. Leaves obovate, obcordate at apex ................................................. S. malabaricum
13. Leaves otherwise ............................................................................... 14
14. Calyx-tube elongate; funnel shaped .................................................. 15
14. Calyx-tube not as above ..................................................................... 16
15. Petiole to 5-8 mm long; flowers in short cymed, axillary racemes.........
    ........................................................................................................ S. lanceolatum
15. Petiole to 4 mm long; flowers in terminal and axillary panicles ....
    ........................................................................................................ S. zeylanicum
16. Leaves elliptic or elliptic-ovate; acuminate or caudate-acuminate at apex ......................................................................................................................... 17
16. Leaves otherwise; obtuse or obtusely acute at apex ......................... 18
17. Petiole upto 3 mm long; fruit oblong ............................................... S. densiflorum
17. Petiole more than 8 mm long; fruit globoid ...................... \textit{S. neestianum}

18. Leaves oblanceolate; cuneate or acute at base .................. \textit{S. myhendraceae}

18. Leaves ovate; cordate at base.................................... \textit{S. benthamianum}

19. Calyx-tube long, usually more than 8 mm long, bugle shaped................................................................. 20

19. Calyx-tube short, usually less than 7 mm long; cup or funnel shaped....... 23

20. Leaves oblanceolate, narrowly attenuate at base ................ \textit{S. aromaticum}

20. Leaves otherwise, leaf base acute, obtuse or rounded-subcordate ......... 21

21. Leaves upto 3 cm long, ovate, rounded at base............ \textit{S. parameswaranii}

21. Leaves more than 4 cm long, leaf base otherwise ..................... 22

22. Leaves obovate or broadly elliptic, acute-obtuse at base; acute-acuminate at apex; calyx-tube less than 12 mm long ......................... \textit{S. periyanense}

22. Leaves ovate-elliptic or elliptic-oblong, obtuse or subcordate at base, subacute or emarginate at apex; calyx-tube more than 15 mm long ............

.......................................................... \textit{S. chandrasekharanii}

23. Cymes axillary...................................................... 24

23. Cymes terminal, sub terminal or lateral.................................... 26

24. Peduncle less than 3 cm long; leaves elliptic or broadly elliptic... \textit{S. chavaran}

24. Peduncle more than 5 cm long; leaves ovate or broadly ovate-elliptic...... 25

25. Leaf apex obtuse-plicate; branchlets winged ................. \textit{S. travancoricum}

25. Leaf apex acute-acuminate; branchlets not winged ....... \textit{S. shivakshetranum}

26. Flowers in terminal or subterminal corymbose cyme ..................... 27

26. Flowers in lateral cymes, usually from the scars of fallen leaves, rarely axillary ............................................................... 33
27. Branchlets terete; fruits subglobose, ellipsoid-obovoid, ovoid or oblongoid.

..............................................................29

27. Branchlets tetragonous; fruits globose..........................28

28. Leaves elliptic-obovate; petiole thick; branches of inflorescence stout

..............................................................S. tamilnadensis

28. Leaves ovate-lanceolate or narrowly elliptic; petiole slender; branches of inflorescence slender ..............................................................S. rubicundum

29. Leaves upto 4.5 cm long, suborbicular-obovate or obovate, obtuse-emarginate or obtuse to acuminate at apex; fruits ovoid or oblongoid ..........30

29. Leaves more than 5 cm long; lamina other than suborbicular-obovate; acute-acuminate or obtusely acuminate at apex; fruit subglobose or ellipsoid or obovoid..............................................................31.

30. Leaves obovate, 3.6-4.5 cm long; calyx infundibuliform ......S. palghatense

30. Leaves suborbicular-ovate; upto 3 cm long; calyx not infundibuliform

..............................................................S. calophyllifolium

31. Lamina base obtuse or subcordate ..................................S. neesiunum

31. Lamina base cuneate ..................................................32

32. Branchlets grey or brown in colour; leaves obovate-oblancoate

..............................................................S. caryophyllatum

32. Branchlets creamish white; leaves otherwise....................33

33. Leaves chartaceous, drying pale grey green; acuminate at apex ...S. gardneri

33. Leaves coriaceous; drying chocolate-brown beneath; apex plicate (twisting over on pressing) ..............................................................S. maku

34. Branchlets tetragonous; intramarginal nerves inconspicuous ......S. stocksii
34. Branchlets terete; intramarginal nerves conspicuous

35. Plants usually seen along the streams; leaves less than 3 cm broad; calyx-tube more than 5 mm across in flower .................................. S. heyneanum

35. Plants usually in the forests occasional in cultivation; leaves more than 3 cm broad; calyx-tube less than 2.5 mm across in flower .................................. S. heyneanum

36. Leaves elliptic-ovate to lanceolate, coriaceous .................................. S. cumini

36. Leaves obovate, membranous ......................................................... S. axillare

**Syzygium aqueum** (Burm.f.). Alston, Ann. R. Bot. Gard. Pered. 11: 204. 1929;


**Eugenia aquea** Burm. f., Fl. India 114. 1768; Rumphius, Herb. Humboin 1: 126. t. 38, f. 2. (1741); Hermann, Mus. Zeyl. 67. 1717; Burm., Thes. 125. 1747;

Wight, Ic. t. 216. 550. 1843; Duthie in Hook. f., Fl. Brit. India 2: 473. 1879;


**Eugenia sylvestris** (non Wight) Moon, Cat. 38. 1824. **Eugenia grandis** Wight, Ill. 2: 17. 1850 p. p. excl syn. **Jambosa aquea** (Burm.f.) DC., Prod. 3: 288. 1828;


**Eugenia javanica** Lam., Dict. iii. 20, in part; **Syzygium montanum** Thw., Enum. Pl. Zeyl. 116. 1859 excl. syn.

A medium sized tree, upto 20 m tall, less than 4 m grith, with short ribbed trunk, tawny-brown flaky bark, dark, glabrous; branchlets stout, much
Syzygium aquem (Burm.f.) Alston.
Syzygium aquem (Burm.f.) Alston A) Habit B) Flower bud C) Sepal D) Petal E) Flower L.S F) Stamen
branched, pale rusty brown, at first bluntly quadrangular, quickly becoming terete. Young leaves crimson. Leaves simple, opposite, 11-23 x 5-11 cm, elliptic-obovate, subcordate at base, acute or acuminate at apex, coriaceous; midrib stout, prominent beneath, channelled above; main nerves 8-10 pairs, slightly prominent beneath, distinctly elevated and slightly channelled above, frequently with more than one pair arising from near lamina base; intramarginal nerve irregularly 2-tiered, inner 0.4-0.6 cm away from the margin; tertiaries densely reticulate, distinctly elevated on both surfaces, though more prominently so beneath; petiole 0.9-1.1 cm long, stout, channelled above. Peduncle up to 14.5 cm long, slightly quadrangular. Flowers up to 10, 2.5 cm across; white, in short terminal or subterminal, axillary cymes, subsessile or shortly pedicellate, pedicel up to 2.7 cm long. Calyx-tube 1.5-3 cm long, funnel-shaped, segments up to 0.9 cm long and broad, ovate, obtuse, becoming rotate, forming a ring of 1.5 cm diam. at anthesis. Petals up to 12 x 8 mm, oblong, obtuse at base, concave, gland-dotted, pinkish white. Stamens up to 1.5 cm long, folded in bud; filaments brilliant pink. Ovary 2-locular, about 30-40 ovules per locule, placenta central; ovules radiating, ascending; style about 10-20 mm long, usually exceeding anthers, white; stigma simple. Fruits up to 2 cm across, globose, crowned with a prominently necked persistent calyx ring of to 8 mm diam., pink.

Fl. & Fr.: - December-April

Verna.: - Jambakka

Distribution: - Cultivated

Syzygium aromaticum (L.) Merr. & Perry

A) Habit  B) Flower  C) Petal  D) Flower

L.S

Note:- Very variable in leaf and flower dimensions, those with the smallest size being collected towards the upper altitudinal limits.

Uses:- The timber is hard and durable. Ripe fruits eaten as such or used for making syrups and beverages. Wood is used for making small objects.


Pyramidal or conical evergreen tree, 8-12 m tall. Bark smooth, pale, glabrous. Branchlets slender, terete at base, sub-round at apex, grey-brown. Leaves simple, opposite, 5-11x 2.5-3.3 cm, elliptic-obovate, narrowly attenuate-cuneate at base, shortly broadly acuminate at apex, margin entire, thinly coriaceous, glabrous, lustrous, densely punctate beneath, grey above and grey brown beneath when dry; midrib prominent below, channelled above, brown
when dry; main nerves many, parallel, ascending, slightly prominent below, evident above, looping at the margin; intramarginal vein 1 mm within the margin; petiole slender, 0.7-1 cm long, glabrous, channelled above, reddish brown when dry. Inflorescence terminal or axillary cymes, 3-4.5 cm long. Flowers terminal, rarely axillary, pinkish-white, fragrant, mature buds red; bractioles 4; pedicel 0.6-1.1 cm long, glabrous, terete. Calyx-tube 11-15 x 5-6 mm, tubular, verrucose, pale purplish, with 4 hook-like, involute ascending segments; lobes 4. Petals 7-10 x 5-6 mm, elliptic, calyptrate. Stamens many, 5 mm long, incurved in bud. Ovary 2-celled. Fruits globoid or ellipsoid, 2-2.5 x 1.7-2.2 cm, glabrous, green, persistent calyx ring present on the top.

**Fl. & Fr. :-** Dec.–Jul.

**Verna :-** Karampu, Karayampo, Grampu.

**Distribution :-** Native of Moluccas a part of Indonesia, now widely cultivated in many tropical countries as a spice.


**Uses :-** The flower buds are the cloves of commerce. They are esteemed as flavouring; also used as spice, in spiced wines, for scenting chewing tobacco, and
as an ingredient of betle-chew. Cloves are aromatic, stimulant and carminative used for dyspepsia and gastric irritation. Essential oil called clove oil is extensively used for flavouring food products and fermented beverages. It is an ingredient of dentifrices, gargles and chewing gums and also used for scenting soaps and toilet waters, in perfumery and as a clearing agent in histological work. Oil is employed as a local analgesic.


Trees, 3 m tall. Leaves simple, opposite, alternate at base, 10-13 x 2-4 cm obovate, obtuse-acute at apex, glabrous. Inflorescence axillary or lateral cymes. Flowers white. Fruits 5 mm across, globoid.

**Fl. & Fr.**:-Feb.–Jun.

**Distribution:**- Endemic to the Southern Western Ghats.

**Specimen Examined:**-Kollam Dist: Kulathupuzha, C.N. Mohanan 72899 (MH).

**Note** :- This plant is closely allied to *Syzygium cumini* (L.) Skeels. However, the short habit, obovate thin leaves, obtuse to acute at apex, smaller flowers and fruits are distinct. Moreover, it prefers the banks of low level streams in evergreen forests whereas its close relative *S.cumini* (L.) Skeels, prefers tropical humid forests. This plant was hitherto considered as a variety under *S. cumini*
Syzygium benthamianum (Wight ex Duthie) Gamble

A) Habit  B) Flower bud  C) Flower L.S.  D) Petal  E) Stamen  F) Fruit  G) Seed
(L.) Skeels, that status of which must be raised and hence the stat. nov. The cited collection is the first after type from the type locality.


Large or medium sized trees, 15-30 m tall; bark grey, rough, usually well covered by lichens; branchlets round at base, quadrangular at apex. Leaves simple, opposite or nearly so, 4.5-8.0 x 1.5-3.2 cm, ovate or ovate-elliptic, slightly cordate at base, obtusely acute at apex, margin entire, hard and shining, coriaceous, finely dotted on both sides, glabrous; midrib prominent below, channelled above; main nerves numerous, obscure on both sides, very closed; petiole 0.2-0.4 cm long, stout, freshly opened leaves are pinkish-red and erect, soon drooping. Inflorescence a terminal cymose, 6-9 cm across. Bracteoles caducous; peduncle 3.0-8.5 cm long, quadrangular or round. Flowers sessile or sub-sessile, 0.4-0.5 cm across, in umbel like cyme, creamish–white, showy, crowded in dense clusters; flower buds crimson-red, glabrous. Calyx-tube 0.3-0.5 x 0.4-0.5 cm, broadly funnel shaped, small; lobes 4. Petals 4, 1-2.5 x 1-2 mm, free, dull white or creamish. Stamens upto 2 cm long, white, spreading
Syzygium bourdillonii (Gamble) Rathakrishnan & Nair (Type)
Syzygium bourdillonii (Gamble) Rathakrishnan & Nair
A) Habit B) Flower bud C) Flower L.S. D) Stamen E) Fruit
stuffy. Ovule 2-celled; ovule numerous; style 0.4-0.6 cm long; stigma simple.
Fruits 0.8 x 0.6 cm, oblongoid, berries, dark purple when ripe or deep violet, succulent, crowned by persistent sepals.

Fl. & Fr.: Dec-Jun.

Distribution: Endemic to Southern Western Ghats.

Verna.: Nawal, Naga, Ayri.


Uses: Timber used for building purposes. Fruit is eaten but astringent. Wood is sometimes used for rough building constructions.

Trees, 5-10 m tall; branchlets terete, woody, glabrous, rounded at base, quadrangular at apex, grey. Leaves simple, opposite, 8-12 x 3-4.5 cm, elliptic-oblanceolate, cuneate at base, acuminate and plicate at apex, margin entire, glabrous, reddish brown above and yellowish brown beneath when dry; midrib channelled above, prominent beneath, glabrous, brown when dry; main nerves 8-10 pairs, parallel, ascending looping at the margin with intramarginal nerve, prominent on both sides, nearly 3-5 mm away from the margin; petiole 1-2 cm long, glabrous, more or less thick. Inflorescence terminal or rather fixed near cymes; peduncle 3-4 cm long, thick, quadrangular, glabrous; pedicel 0.4-0.6 cm long, thick, subterete, glabrous. Calyx-tube 0.8-1.0 cm long, complanate, glabrous; lobes 4, 1.5-2.3 x 2-3 mm obtuse, glabrous. Petals 4, 7 mm diam., orbicular, obtuse, gland-dotted. Stamens 0.5-0.8 cm long, thin, narrow at apex. Fruits 1.5-2 x 1.2-1.5 cm, ellipsoid, have a prominent calyx ring with persistent lobes.

Fl. & Fr.:- Feb.–Apr.

Distribution:- Endemic to the Southern Western Ghats.


A large tree, upto 8 m tall; bark rough, brown; branchlets brownish black, quadrangular when young, suberete at maturity, glabrous. Leaves simple, opposite or sub-opposite, 1.5-4 x 1.5-2.5 cm, elliptic, acute at base, obtuse at apex, bifurcated, entire, coriaceous, aromatic, green above, yellowish green below, glabrous; midrib prominent below, channelled above; main nerves parallel, numerous, ascending, looping at the margin; marginal vein very clear, 0.1-0.15 cm away from the margin; petiole 0.3-0.7 cm long, slender, glabrous. Inflorescence a terminal cymes; peduncle 1.25-3 cm long, green-greenish brown, glabrous. Flowers white-creamish, ebracteate and ebracteolate; flower buds greenish with a tinge of red; pedicel 0.3-0.7 mm long. Calyx-tube upto 2.9 x 3.5 mm, green or pale green in colour, companulate, lobes 4, 0.5-0.8 x 0.6-1 cm, ovoid, round at base, acute at apex, imbricate, glabrous. Petals 1.5-2 x 1.8-2.1 mm, sub-round or ovoid, round at base, acute at apex, white or yellowish white, gland-dotted, calyptrate sometimes free, lobes 4. Stamens numerous; filaments 1.5-2 mm long, white, slender; anthers 0.3-0.5 mm long, brown, dithecus. Ovary 1.5 x 1.9 mm, 2-celled; ovule numerous; style 2.9-4 mm long; stigma simple. Fruits 1.25-1.9 x 0.9-1.25 cm, ovoid or oblongoid, dark purple or pigmented purple. Seed one, cotyledons thick.
Fl. & Fr.: – Feb.- July.

Distribution:- South India and Sri Lanka.


Uses:– Fruits are juicy and edible, cotyledons very thick. The wood is good and strong and used for building purposes.


Small trees, 20-30 m tall; bark pale grey brown, smooth or minutely grid-cracked; branchlets ascending; slender, rounded, glabrous, brown in colour.
Leaves simple, frequently subopposite or opposite, 6.8-11.5 x 2.4-5.8 cm, obovate-oblanceolate, cuneate at base, obtuse or shortly acuminate at apex, entire, densely punctate on both surfaces, green above, yellowish-green below, drying reddish brown; midrib slender, prominent below, narrowly channelled above, glabrous, drying dark brown or black beneath; nerves many, slender, not clearly elevated beneath, obscure on the upper side; intramarginal nerve ± 1 mm within margin; petiole 0.3-0.6 cm long, slender, glabrous. Inflorescence terminal, subterminal or axillary cyme; peduncle 2.5-5 cm long, slender, quadrangular, ascending, dense, much branched, glabrous. Flowers 2.5-3 mm across, small, bisexual, bracteate, bractcolate, white, fragrant. Actinomorphic, tetramerous; flower buds pinkish-brownish; pedicel about 1 mm long. Calyx-tube 2-2.5 x 2-2.4 mm, campanulate, glabrous, light green, lobes shallowly 4 segmented, very small. Petals 4, 1.9-2.3 x 1.9-2.4 mm, imbricate, calyptrate, white or yellowish white, gland-dotted, glabrous. Stamens 3-4 mm long, numerous, slender, yellowish white; filament 2.6-2.9 mm long, slender, inserted in the stamen, yellowish-white or yellowish-green. Ovary 1-1.5 mm, bilocular; ovule many in axile placentation; stigma very small, pointed. Fruits 8 mm diam., small, globoid or subgloboid, with prominent, unlobed apical collar, 2 mm diam., young fruits green in colour, ripening dark purple, succulent.

Fl. & Fr.: - Feb-Aug.


Distribution: - South India, Sri Lanka and Western Malaysia, Cherunjara, Kurungani.
Tender leaves are given to improve appetite, roots and leaves for purification of blood. The black fruit is eaten.


Trees, 10-15 m tall; bark greyish black; branchlets tetragonus. Leaves simple, usually opposite, rarely alternate, 4-10 x 4-5.5 cm, ovate-elliptic, elliptic or elliptic-oblong, obtuse and subcordate at base, obtuse, subacute or emarginate.
Syzygium chandrasekharanii Chandrabose & Chandr. (Isotype)
Syzygium chandrasekharanii Chandrabose & Chandr.  A) Habit B) Flower L.S. C) Sepal D) Petal E) Fruit
at apex, entire, recurved along margins, coriaceous, glabrous; midrib prominently channelled above, slender, prominent below; secondary nerves many, thin, prominently reticulate, slightly channelled above, parallel and branched, slightly ascending, looping at the margin; intramarginal nerve 6 mm away from the margin, obscure in the lower side, slightly prominent above; petiole 1-2 mm thick, glabrous, drying black or reddish black. Peduncle 3.7-4 cm long. Flowers 1.7-3 cm long, dull white, sessile, 20-30 in terminal or lateral corymbose cymes, 8-12 cm across. Bracts $3.2 \times 0.7$ mm, spatulate, concave; bracteoles $2 \times 1.2$ mm ovate-elliptic. Calyx 1.7-2.5 cm long, greenish pink, narrowly obconical, glabrous, adnate with the ovary to about half of its length, mouth produced beyond the ovary; lobes 4, $\pm 2 \times 3$ mm, broadly triangular, subacute. Petals 8, each 3-5 x 3-5 mm, unequal, outer 4 larger than the inner, suborbicular, subentire, glabrous, gland-dotted, calyptrate. Stamens 1.3-1.8 cm long, numerous, unequal, free; filaments white, slender, incurved in bud; anthers versatile. Ovary inferior, usually 2 celled; ovules many, axile; style 1.7-2 cm long, thick, glabrous; stigma simple. Fruits 2.5-2.8 x 1.7-2.5 cm, obovoid, berries, purple, depressed at apex with persistent calyx lobes. Seed 1, $\pm 1.3 \times 1$ cm, obovoid, truncate at apex, longitudinally striate, brown, glabrous, cotyledons fused together.

Fl. & Fr.:-- Nov.–Apr.

Distribution:-- Endemic to Kerala and Tamil Nadu.

Syzygium chavaran (Bourd.) Gamble  (Isotype)
Syzygium chavaran Gamble
A) Habit  B) Flower bud  C) Flower  D) Stamen  E) Ovary
C.S.  F) Fruit L.S.

Note: This newly described species were known endemic to Tamil Nadu. A recent collection from Kerala region hence form an extended distribution to the State also.

_Syzygium chavaran_ (Bourd.) Gamble, Fl. Madras 1: 480. 1919. _Eugenia chavaran_ Bourd., For. Tr. Travancore. 188. 1908.

A very large tree; branchlets slender, glabrous, terete, brown in colour. Leaves simple, opposite, 8.5-13.5 x 4.2-6 cm, elliptic or broadly elliptic, acute-rounded at base, shortly acuminate–mucronate at apex, entire, coriaceous, fragrant, glabrous, dark brown above and yellowish beneath when dry; midrib channelled above, prominent beneath; main nerves numerous, parallel and branching, looping with the intramarginal vein, ascending, slightly channelled above, prominent beneath, glabrous; petiole 1.1-1.9 cm long, slender, glabrous, black when dry. Inflorescence in many fold compound trichotomous terminal and axillary cymes; peduncle 3-5.2 cm long, terete, green at base, with brown shade, glabrous. Flowers 3.8 cm across, bisexual, actinomorphic, white, fragrant, sessile or very shortly pedicellate; pedicel 0.1-0.15 cm long. Calyx-tube 3-4 mm long, turbinate-truncate, glabrous; lobes 4, 0.14-0.27 x 0.27-0.4 mm, acute at apex, glabrous. Petals 4, 0.7-1.1 x 0.7-1 mm, calyptrate, acute–round at apex, acute–round at base, glabrous, gland-dotted, white. Stamens 1.1-1.32 mm long, numerous, yellowish-white, delicate; anther 0.4-0.5 mm. Ovary bilocular,
syncarpous; ovule many, axile placentation; style upto 2.4 mm long; stigma simple. Fruit 4.8 x 2.4 cm, globoid-ellipsoid, berry. Seed 1, small.

**Fl. & Fr.:** Nov.–Jun.

**Distribution:** Endemic to Southern Western Ghats.


**Note:**- A very large wild handsome tree of the evergreen forests on the periyar river at low elevation.

**Uses:**- The wood is said to be strong and serviceable, and trees are sometimes hollowed into boats.

Syzygium cumini (L.) Skeels
*Syzygium cumini* (L.) Skeels

A) Habit  B) Flower  C) Flower L.S  D) Fruit

Flower bud  E) Stamen  F) Ovary C.S.  G) Fruit

Large tree upto 10 m tall; bark smooth or rough with cracks and pits in old stem; blaze red or reddish brown, fibrous. Branchlets slender-woody, subterete-round, glabrous. Leaves simple, 6.4-11.3 x 2.1-5 cm, elliptic to ovate-lanceolate, acute, acuminate or subobtuse at base, acuminate at apex, margin entire, distinctly undulate, thinly coriaceous, minutely though distinctly punctate beneath, and pitted above, pale yellowish green, shinning; midrib slender, elevated beneath, shallowly channelled above; main nerves numerous, close, parallel, fine, veins obscurely channelled above; secondary nerves united to form
an intramarginal vein; intramarginal vein straight, ±1 mm within the margin; petiole 1-2.5 cm long, slender, drying black, glabrous. Inflorescence 3.5-10.2 cm long, a terminal or axillary cymes or trichotomous panicle, usually appear from the scars of fallen leaves, but sometimes in the leaf axils. Flowers 7.5-13 mm across, white, fragrant, sessile or very short pedicellate. Calyx-tube 2.3-4.2 x 1.9-2.9 mm, turbinate; limb truncate, green in colour, glabrous; lobes 4, 0.1-0.3 x 0.1-0.2 mm, yellowish or greenish-white. Petals ± 3 x 2 mm, elliptic, concave, gland-dotted, calyptrate, white. Stamens upto 5 mm long, numerous; filaments ± 4 mm long, slender, white. Ovary 1.3 x 1.3 mm, 2 celled; ovules numerous; style 5 mm long; stigma simple. Fruits 1.6 x 1 cm, berries, elliptic-oblong, lilac-purple, nearly black, glabrous, shining, usually crowned by the calyx limbs; each locule contain one single nut like seed.

Fl. & Fr.: - April–October.


Distribution: - India, Sri Lanka and eastwards to South China, Malaysia and Pacific.

Specimen Examined:- Thiruvananthapuram Dist: Attayar, 22-12-1988, N.Mohanan, 7988 (CALI); Travancore State, C.C.Caldar & M.S.Ramaswami, 1504 (CAL); Travancore, Bourdillon, 23 (CAL), 798 (CAL), 172-Oct-1894. Kollam Dist: Quilon, 10.05.1913, Rama Rao, 1118 (UCT); ibid., 20.05. 1903, Bourdillon, 1409 (UCT); Pathanapuram, 28.03. 1915, Vencoba Rao, 2772 (UCT); Pamba Dam, 24-03-1978, C.N.Mohanan, 54360 (CAL). Kottayam Dist: Changanacherry, 02-03-1984, V.T.Antony, 315 (CAL), 315 (RHK); ibid., Vinod Kumar, 2876 (RHK); Changanacherry, 25-02-1985, Sunny Mathew, 937
(RHK); **Thrissur Dist:** Ponmudi, 17-01-1989, N.Sasidharan, 5267 (KFRI); Trichur, 23-02-1979, Renuka, 710 (KFRI); Sholyar, 21-04-1982, N.G.Nair, 1769 (KFRI). **Palakkad Dist:** Tengippalam, 15-01-1977, C.R.Suresh, 22115 (CALI); Dam site- Silent Valley, 10-03-1982, T.Sabu, 10401 (CALI); Poovancholai, 08-03-1984, N.C.Nair, 81156 (CAL); Muthikulam-Olavakote Range, 24-03-1976, K.N.Subramanian, 5802 (IFGTB). **Malappuram Dist:** CU campus, 22-03-1971, V.V.Sivarajan, 1029 (CALI); Vallakadavu, 14-07-1983, K.N.Subramanian, 9445 (IFGTB). **Kollam Dist:** Avalam, 27-04-1979, V.S.Ramachandran, 61617 (CAL). **Wayanad Dist:** Mananthodi-on the way to Kartikulam, 26-04-1986, R.T.Balakrishnan, 41994 (CAL); Kumbam - Beyur Range, Wynaad Forest Division, 06-05-1983, N.Venkata Subramanian & K.R.Sasidharan, 9411 (IFGTB); Ambalakkidi, 10-01-1986, Sunny Mathew, (RHK). **Idukki Dist:** Mukkali, 16-02-1975, Surendran, 8688 (CALI); Peermedu, April 1894, Bourdillon 1118 (UCT); Vallakkadavu, 25-04-1994, Jomy Augustinc, 13472 (CALI); Idukki, 20-02-1983, C.N.Mohanan, 76283 (CAL); way to Painavu, 18-02-1984, A.G.Pandurangan, 78028 (CAL); Munnar to Bodi Road, 25-03-1980, K.Ramamurthy, 66361 (CAL).

**Note:**- The tree is cultivated for its succulent fruit but not apparently.

**Uses:**- The heavy timber is used for construction of bridges, post, beams, door and window frames and railway sleepers after treatment. The wood is not touched by white ants. Bark astringent used in the preparation of astringent decoction. It is good for sore throat, bronchitis, asthma, thirst, blood impurities and ulcers. Used also for dyeing, tannin and home remedies. Used as a good fuel. Fresh juice given along with goats milk for diarrhoea of children. Leaves
*Syzygium densiflorum* Wall. ex Wight & Arn.  
A) Habit  B) Flower L.S.  C) Petal  
D) Stamen  E) Fruit L.S.  F) Fruit
are used to feed silk worms. Juice of leaves used in dysentery, carminative and as diuretic. Fruits edible, useful as astringent, in bilious diarrhoea and bladder stones. Used also for dysentery, hemorrhage and leukorrhea. Used in jams and are also made into "a wine with a very fine bouquet" (bircher); Seeds are used for the treatment of diabetics.


Trees, 8-15 m tall; bark grey, rough, with a short bole and widely spreading; branchlets terete at base, quadrangular at apex, usually well covered with lichens. Leaves simple, opposite, 4-9 x 3-4.5 cm, elliptic or elliptic-ovate, obtuse or acute at base, acuminate at apex, plicate at apex, entire, pale red when young, olive green at maturity, finely dotted on both sides, freshly opened leaves erect, but soon drooping, hard and shining, coriaceous, glabrous; midrib channelled above, prominent beneath, brown in colour, glabrous, strong; main nerves numerous, parallel, slightly ascending, inconspicuous on both sides, secondary nerves numerous, closely parallel, looping at the margin; marginal
nerve 0.1 mm away from the margin, lower side yellowish green when fresh, grey when dry; petiole 0.8-1.3 cm long, slender, glabrous, channelled above. Peduncle 1.5-2 cm long, quadrangular, glabrous, green, brown or grey when dry. Flowers 0.6-0.8 cm across, white to pale yellow, bracteolate, fragrant, showy, sessile, crowded in dense clusters, forming a compact terminal compound trichotomous cyme; flower buds crimson. Calyx-tube 0.2-0.3 cm long, compranulate, glabrous; lobes 4, 5-7 mm long, acute at apex. Petals 4, cup-shaped, gland-dotted, free or calyptrate, deciduous. Stamens 0.7-1.2 cm long, numerous, creamish-white, slender. Ovary 2-celled, 2 x 2.6 mm; ovule numerous; style 0.6-0.9 cm long; stigma simple. Fruits 1-1.5 x 0.7-0.9 cm, oblongoid, glabrous, with persistent calyx ring with lobes, clustered, succulent, red, becoming blackish purple at maturity.

Fl. & Fr. :- Dec-June.

Verna:- Nawal, Ayiri.

Distribution:- Endemic to Southern Western Ghats.

*Syzygium gardneri* Thw.  

A) Habit  
B) Flower  
C) Flower L.S.  
D) Flower bud  
E) Petal  
F) Stamen  
G) Fruit

**Kozhikode Dist:** Varalmala, 28-01-1998, Pradeep, 56305 (CALI); Vellarimala, 12-01-1997, A.K.Pradeep, 5491 (CALI). **Kasargod Dist:** Olavaramundi, 18-03-1993, V.Sarojam Menon, 17067 (TBGT); No locality T.F.Bourdillon, Acc No. 3029, 3031.

Uses:- The fruit is edible but astringent. Timber is used for building purposes as posts, beams, door and window frames and also as a fuel.


Medium sized trees, 5-10 m tall, with smooth pale grey or creamish brown bark and fresh green crown, all parts glabrous. Branchlets slender, terete, yellowish-grey. Leaves simple, opposite, 5-8.5 x 1.6-3.9 cm, elliptic-ovate, acute
at base, narrowly acuminate at apex, acumen 1-2 cm long, thick, margin entire, undulate, narrowly subrevolute, densely punctate on both sides, drying dull grey green, young leaves apple red; midrib slender, prominent below, channelled above, slightly yellowish beneath; main nerves many, ascending, distinct and slightly elevated on both surfaces, looping at the margin; intramarginal nerve immediately within margin, some what looped, narrowly raised on both sides; petiole 0.8-1.3 cm long, slender, channelled above, drying reddish brown.

Inflorescence 4-5 cm long, terminal or axillary cymose panicles, slender, much branched. Flowers bisexual, small, actinomorphic, pentamerosus, ebracteate, ebracteolate white or pink, many; flower buds green; pedicel about 0.1-0.3 cm long. Calyx-tube 1.4-2 x 1.5-2.1 mm, funnel shaped; lobes imbricate, 0.1-0.2 mm long, elliptic-ovate, green in colour. Petals 1.5-3 x 1.4-2.6 mm, elliptic, concave, round at base, round at apex, yellowish white, gland-dotted. Stamens many; filaments 1.6-2 mm long, white, very slender; anther 0.7 mm long, pale yellowish green. Fruits 1.4-1.7 cm, berry, globoid, green with shallow about 2 mm diam. terminal ring, mature fruits purple, bluish black when ripe.

Fl & Fr:- Feb.-May

Verna :-Shenyyara, Kattunjaval, Karinyaral

Distribution:- South India and Sri Lanka.

Specimen Examined:- Thiruvananthapuram Dist: Bonaccord 22-3-1978, M.Mohanan, 54739 (MH),M.P.C.A Bonaccord, 19-2-97, T.Shaju & R Rajesh, 33128 (TBGT); Attayar, 3-4-89, N.Mohanan, 5536 (TBGT); Peppara, N.Mohanan & T.Shaju, 2058 (TBGT). Kollam Dist: Naduvanoorkadavu, 17-2-1979, C.N.Mohanan, 61124 (MH); On the way to Thenmala, 17-5-1978,
M.Mohanan, 54844 (MH); Colatoorpolay, 4-3-1895, T.F.Bourdillon 528, 114-26.2.1874 (TBGT); Kulathurpuzha, 26.2.1894, T.F.Bourdillon, A.C.2989 (TBGT); Choodal, 12-5-1913, AC.2990; Rockwood Forest, 3.6.1964, K.N.Subramanian, 1554 (IFGTB). **Thrissur Dist:** Chakkanppara, Pecchi. 7-4-1998, N.Sasidaran, 5041 (KFRI); Kattichampara, Pecchi, 11-3-1988. N. Sasidharan, 4837 (KFRI). **Idukki Dist:** Meenmutty, 20-2-1983, C.N.Mohanan, 76281, 76285 (MH); Kottamalapallam, 22-3-1995, Jomy Augustin 15209 (CALI). **Wayanad Dist:** Thalichola-Nilambur, 7-3-1981, Philip Mathew, 25765 (CALI).

**Uses:-** The timber is used for building or in soft wood industry, for making rafters, scantlings, posts, boards and tool handles. Also used for ship building. Bark yields a dye. The fruit is edible but with very little pulp.

Syzygium hemisphericum (Wight) Alston

A) Habit  B) Flower bud  C) Petal  D) Sepal  E) Stamen

Trees, 15-20 m in tall, bark smooth, pale brown, glabrous. Branchlets stout, terete, glabrous. Leaves simple, opposite, 5-11 x 2-6 cm, elliptic, acute at base, acuminate at apex, entire, coriaceous, pale when young, dark green when mature, drying rufous brown, glabrous, shining; midrib prominent beneath, channelled above, brown when dry; main nerves 10-12 pairs, very slender, elevated on both sides; margin hardly revolute; intramarginal nerves 2-tiered; petiole 1-1.8 cm long. Inflorescence terminal or axillary, rather stout, compound cyme 4-7 cm long, quadrangular. Flowers 1.5-2.5 cm across, white or pinkish, fragrant; flower buds green in colour; pedicel 0.5-0.7 cm long, slender, stout, glabrous. Calyx-tube 0.7-1.3 cm long, cup shaped, green, glabrous, lobes 4, 0.5-0.8 x 0.5-1.25 cm, round, obtuse at apex, deflexed with membranous margins, spreading. Petals 1-2 cm across, sub-orbicular, concave, white or yellowish, fragrant, glabrous. Stamens numerous; filaments 0.2-0.4 cm long. Ovary 2 celled; ovule numerous in axile placentation; style 2.3-4 cm long, thin, narrow at apex. Fruits 1.5 cm diam., crowned with 0.8 cm diam. apical disc bearing the persistent calyx segments, globoid, purple.

Fl. & Fr. :- Jan.-June

Distribution: South India and Sri Lanka.


Note: - Common in evergreen forests of high elevation.

Uses: - Decoction of bark is used in biliousness and syphilis. The timber is useful for various purposes. The buds are sometimes collected and sold in the bugaars in place of cloves. Fruits edible. Birds are very fond of this fruit.

Shrub or small trees, up to 5 m tall; bark grey. Leaves simple, opposite, 6-10 x 1.5-2 cm, elliptic-lanceolate, attenuate at base, acute or linearly acuminate at apex, margin entire, coriaceous, shining, pellucid-dotted, glabrous on both the sides, chocolate brown when dry, pale yellowish beneath; midrib slender, glabrous, slightly channelled above, reddish brown when dry; main nerves numerous, ascending, prominent above and beneath, uniting with intramarginal nerve; intramarginal nerve very close to the margin; petiole 0.6-1 cm long, thin, glabrous, channelled above, reddish brown or black when dry. Inflorescence an axillary cymes, some times from the scars of fallen leaves; peduncle 3-4 cm long, thin, glabrous, reddish brown when dry. Flowers 0.3-0.5 cm across, white, bracteate and bracteolate, sessile; flower buds pale green. Calyx-tube 0.2-0.3 cm long, cup shaped, glabrous, black when dry; lobes 4, unequal, small, acute at apex. Petals 4, 0.2 x 0.2 cm, cup-shaped, white, rounded at apex, calyptrate.
Stamens 0.3-0.4 cm long; filaments white. Fruits 1-2 x 0.5-0.8 cm, oblongoid-ellipsoid, crowned with the cup shaped calyx limb, pale purple to pink, glabrous.

Fl. & Fr.: Nov.-Apr.

Verna:- Vella manji

Distribution:- Endemic to South West India.


Uses:-Fruits edible.

Syzygium jambos (L.) Alston
Small or middle sized trees, 15-25 m tall; bark grey brown or reddish brown; branchlets slightly quadrangular or round, stout, glabrous. Leaves simple, opposite, 9-20 x 1.5-4.5 cm, narrowly lanceolate, oblong or linearly elliptic, rounded-attenuate at base, acuminate at apex, entire, slightly revolute, thin, coriaceous, glabrous; midrib slender but prominent beneath, channelled above, greyish brown when dry, subpendant; main nerves 14-20 pairs, ascending, slender,' but distinctly prominent beneath, inconspicuous above; intramarginal nerve 2-3 mm within the margin, yellowish-green to brown when dry; petiole 5-6 mm long, glabrous, drying black. Inflorescence trichotomously branched, a terminal cyme; peduncle 2-3.5 cm long, subterete, stout, glabrous; pedicel 1.5-2 cm long, terete, glabrous, reddish brown when dry. Flowers 4-5 cm across, creamish-white, fragrant. Calyx-tube 1.5 cm long, funnel shaped, green with purple markings; lobes 4, 0.5-0.7 x 0.8-1 cm, rounded. Petals 1.5 x 1.8 cm,
suborbicular, concave, caducous, free. Stamens numerous, slender; filaments 2-4 cm long, creamish, exserted, basally subconnate, unequal; anthers up to 1.5 mm, creamish-yellow. Ovary 2-celled, 8 mm long; ovule numerous; style 4.5 cm long, filiform, subulate; stigma creamish yellow. Fruits up to 2.5 x 2 cm, obturbinate, greenish, purple, prominently crowned by persisting calyx lobes.

Fl. & Fr. :- Jan.-Oct.

Verna.:- Seemajamba, Malakka chamba, Jambavam, Panineer chamba.

Distribution:- Native of Western Malaysia, now widely cultivated throughout the tropical countries for its succulent edible fruits.

Specimen Examined:- Kollam Dist: Kakki Dam, 22-03-1978, C.N.Mohanan, 54346 (MH); Kulathupuzha, 06-06-1979, C.N.Mohanan, 63128 (MH).


**Note:** This resembles *Eugenia densiflora* in its inflorescence.

**Uses:** The bark is sweet, acid, hot, astringent to the bowels, improves the voice, used in asthma, thirst, fatigue, dysentery, bronchitis. Leaves yield an essential oil. Fruit is sweet and tasty; used for making candid fruits, jellies and sauces. Wood used for construction, and the bark for tannin and dyeing. Any excess may have poisonous effects.

Syzygium laetum (Buch. Ham.) Gandhi
Syzygium laetum  (Buch. – Ham.) Gandhi A) Habit B) Flower C) Flower L.S. D) Sepal E) Petal F) Stamen G) Ovary C.S.
Small trees, 7-12 m tall; branchlets slender, terete, glabrous, grey, pendulous. Leaves, simple, opposite, 3-10.5 x 1-4.4 cm, elliptic-oblancoate, acute at base, acuminate-mucronate at apex, entire, pellucid-dotted, glabrous, yellowish-grey when dry; midrib impressed above, prominent below, thinner towards the end, slender; main nerves 7-15 pairs, parallel, united with the intramarginal vein; petiole 0.4-0.8 cm long, slender, channelled, glabrous. Inflorescence a terminal cymes, glabrous. Flowers 2-7.2 cm across when expanded, single or 3-5 flowered cymes, ebracteate and ebracteolate, dull white, actinomorphic, tetramerous; flower buds globose; pedicel often longer than calyx-tube. Calyx-tube 1.4-2 x 0.4-0.7 cm, almost funnel shaped, slightly widening upward, face portion shallowly-compranulate, suddenly expanded at the mouth; lobes 4, persistent, imbricate, round at base, obtuse at apex. pubescent, yellowish-green, entire, gland-dotted. Petals 4, 0.6-1.1 x 0.7-1.1 cm, concave, round at apex, imbricate, white or crimson-red, entire, gland-dotted, conspicuously veined. Stamens numerous; filaments 1.9-2.7 cm long, crimson red or yellowish white, much exceeding the petals, dithecous, versatile. Ovule 2; style 2-4 cm long, persistent. Fruits 2.7 x 0.87 cm, oblongoid-ellipsoid, pendulous, young fruit greenish, pinkish when mature, dark brown when dry, glabrous, crowned conspicuously with reflexed calyx lobes.


Distribution:- Endemic to Southern Western Ghats.

Specimen Examined:-Thiruvananthapuram Dist: Base of Agasthyamala, 15-10-1988, N.Mohanan, 4435 (CALI); Athirumala, 05-02-1988, N.Mohanan, 8979
(CALI); Kovilthevi Forest Near Bonnecord, 24-08-1975, J. Joseph, 46577 (MH);
Darbhakulam-Ponnudi, 15-09-1977, N.C. Nair, 51093 (MH). **Kollam Dist:**
Alapad-Achancovil, 23-05-1979, C.N. Mohanan, 63034 (MH). **Pathanamthitta Dist:**
Ayyapan Temple - Way to Sabarimala R.F., 25-04-1984, E. Vajravelu, 80586 (MH);
Ayyapan Temple-Way to Sabarimala R.F., 25-04-1984, E. Vajravelu, 80586 (CAL);
Thriveni, A.G. Pandurangan & Raveendran M, 12744 (TBGT). **Idukki Dist:**
Valara R.F–Near Waterfalls, 26-01-1982, K. Ramamurthy, 72999 (MH); Meenmutty, 12-12-1982, C.N. Mohanan, 76024 (MH);
Kanjiyar, 17-12-1982, C.N. Mohanan, 76162 (MH); Kulamavu Forest, 21-12-1983, A.G. Pandurangan, 66438 (MH);
Adimali-Kothamangalam, 27-01-1982, K. Ramamurthy, 73022 (MH); Valva R.F., 07-02-1984, K. Ramamurthy, 80900 (MH);
Meenmutty, 13-12-1983, C.N. Mohanan, 76030 (CAL); Meenmutty, 12-12-1982, C.N. Mohanan, 76024 (CAL);
Kulamavu, 14-12-1982, C.N. Mohanan, 76252 (MH). **Thrissur Dist:**
Peringalkuthu Range-Vazhachal Forest, 19-12-1984, K.N. Subramanian, 10779 (IFGTB); Payampara Area-
Chalakudi Forest, 24-02-1982, K.N. Subramanian et. al. 7973 (IFGTB); Anthalappara-
Peechi, 29-02-1988, N. Sasidharan, 4792 (KFRI); Kummatti, 23-03-1979, Sasidharan, 739 (KFRI). **Palakkad Dist:**
Vajravelu, 77767 (MH); Vattapara R.F., 03-04-1984, E. Vajravelu, 80502 (MH);
Shola below Poochhippara S.V.R.F., 10-12-1980, N.C. Nair, 69513 (MH);
Panthanthode, 17-03-1984, N.C. Nair, 81282 (MH); Kalpaathi Malai–Palghat Forest Division, 20-01-1982, K.N. Subramanian, 78044 (IFGTB); Silent Valley,
11-12-1980, N.G. Nair & Sasidharan, 1365 (KFRI); Dam Site Area-Silent Valley,

Note:- There are two different flower colours are met with, one with pale yellow and the other with scarlet red. However, taxonomically these two are agreeable to one species.

Uses :- Wood is not used. It can be planted as a wild ornamental plant.
Syzygium lanceolatum (Lam.) Wight & Arn.

A) Habit  B) Flower  C) Flower L.S.  
D) Petal  E) Stamen  F) Gynoecium

Small trees, 10-15 m tall; bark smooth, grey; branchlets terete, slender, glabrous. Leaves simple, 6-11 x 1.7-3.5 cm, elliptic-ovate, subacute-attenuate at base, long acuminate at apex, with narrowly subrevolute margins, chartaceous, inconspicuously pellucid-dotted, glabrous; midrib slender, glabrous, channelled above; main nerves numerous, faint, parallel, rather slightly prominent beneath, looping at the margin, inconspicuous above; marginal nerve very close to the margin, inconspicuous; petiole 5-9 mm long, slender, prominently channelled above, glabrous. Inflorescence an axillary or terminal cymes; peduncle 1.5-3 cm long, slender, glabrous. Flowers 1.3-2 cm long, white-yellowish, fragrant; flower buds red in colour; pedicel subsessile or sessile. Calyx-tube 1-1.3 x 0.2-0.6 cm, funnel shaped, broad at base, acute at the apex, pale yellow-light red, glabrous. Petals numerous, 2.8 x 3.5 mm, suborbicular,
white to light pink. Stamens numerous; filaments 0.5-0.6 cm long, slender, yellow; anthers yellowish. Ovary 2-celled; ovule numerous, placentation axile; style 0.6-0.8 cm long, slender, narrow at the apex, greenish. Fruits obturinate, with persistent calyx segments, pale pinkish.

Fl. & Fr.: Jan.–May.

Verna:- Njaval

Distribution:– South India and Sri Lanka.

Syzygium makul  Gaertn..
Syzygium makul Gaertn.  
A) Habit B) Flower bud C) Flower D) Flower L.S. E) Stamen
Uses: - The tree is attractive when in full bloom, hence recommended as a wild ornamental plant.


Large trees 25-30 m tall; bark smooth, becoming yellowish-grey, wood reddish brown, moderately hard, becoming thinly papery flaked and dippled, all parts glabrous; branchlets stout, terete, pale creamish-brown, glabrous, angled above. Young leaves bright red. Leaves simple, opposite, 9-17 x 3-7 cm, narrowly obovate-elliptic, base cuneate, shortly decurrent, apex with less than 1 cm long narrow downcurved acumen (twisting over on pressing); margin entire, revolute, glabrous, coriaceous, drying lustrous dark, chocolate-brown beneath; midrib prominent beneath, channelled above; main nerves many, ascending, parallel, with many intermediates, very slender, hardly elevated beneath, looping with the intramarginal vein; marginal vein to 0.1 cm away from the margin; petiole 0.8-1.5 cm long, rather stout, drying black, channelled above. Inflorescence 3-8 cm long, terminal, subterminal or axillary, glabrous, erect; peduncle 2.5-7 cm long, quadrangular, reddish brown when dry, glabrous. Flowers 0.2-0.4 cm across, many, small, white, subsessile. Calyx-tube 0.15-0.25
Syzygium malabaricum (Bedd.) Gamble (Type)
Syzygium malabaricum (Bedd.) Gamble  A) Habit B) Flower bud C) Petal D) Flower L.S. E) Stamen F) Ovary C.S.
x 0.15-2 cm, compundate; lobes 4-5, upto 0.2 mm long, obscure segments. Petals small, concave, fugacious. Stamens 3-4.5 mm long, white. Ovules 4-5 in each carpel. Fruits 10-12 mm diam., globoid-subgloboid. Seeds 1-2, small, 2-3 mm in diam. with terminal unlobbed crown, ripening black-purplish

Fl. & Fr. :- Jan-May.

Distribution:- South India and Sri Lanka.

Specimen Examined:- Palakkad Dist: Silent Valley-Dam site area, 18-02-1982, K.S.Presanna Kumar, 10275 (CALI).

Uses:- The wood is used for building purposes, plywood manufacture, for cart-axles and ploughs. The fruit is eaten by parrot.


Medium sized trees, 6-10 m tall; bark greenish; branchlets stout. Leaves simple, opposite, 5-13 x 2.4-6.5 cm, obovate or spatulate, obtuse or retuse at apex, cuneate at base, margin entire, gland-dotted, brownish black beneath when dry, glabrous; midrib channelled above, prominent beneath, glabrous, pale yellowish beneath; main nerves 8-10 pairs, slender, channelled above, prominent beneath, parallel, ascending, arching at apex, secondary and tertiary nerves reticulate, looping at the margin, light grey above, yellowish brown beneath, light brown when dry; intramarginal nerves inconspicuous; petiole 0.6-1.2 cm
long, slender, channelled above, glabrous. Cymes cauliflorous, then leaves rarely in the lower axils. Peduncle 3-4 cm long, thin, quadrangular, glabrous. Flowers sessile, minute, numerous, pale yellow or green, foetid smell. Bracts and bracteoles thin; pedicel sessile or sub sessile. Calyx-tube 0.1-0.2 cm long, cup shaped; lobes 4, triangular, small. Petals 4, opening separately, calyptrate, white, small. Stamens 1-2 mm long, numerous, very slender, white or yellowish. Fruits 0.4-0.7 cm diam., globoid.


Distribution:—Endemic to Southern Western Ghats.


Note:—Common in evergreen forests and swampy places of the lower ghats.

Syzygium malaccensis (L.) Merr. & Perry
Medium sized beautiful evergreen trees; bark smooth, grey-brown; branches woody, glabrous, greenish-yellow, with brown base. Leaves simple, 20-30 x 6.5-7.8 cm, elliptic-lanceolate, acute at base, acuminate at apex. entire, glabrous, oil dots generally sparsely distributed, visible with a lens or just visible to naked eye; midrib thick, highly elevated below; main nerves 12-14 pairs, parallel, thick, prominent below; intramarginal nerve 2-tiered, the outer one more or less obscure, the inner one 2-6 mm within the margin, tertiary nerves slender but evident on both surfaces, subscabriform, perpendicular to midrib; petiole 1-1.5 cm long, stout, thick. Inflorescence a cauliflorous cymes, shortly peduncled. Flowers 0.2-0.25 cm long, crimson red, actinomorphic, tetramerous; pedicel thick, terete, glabrous, pale green. Calyx-tube 1.7-2.1 x 1-1.3 cm, funnel shaped, purplish green, lobes 4, 0.5-0.8 x 0.8-1.1 cm, imbricate, glabrous, obtuse-round at apex, pale green-pink tinctured. Petals 4, to 10 x 8 mm, ovoid, broadly acute at base, round at apex, imbricate, crimson red-pink, glabrous, entire, gland-dotted. Stamens 2.4-2.7 cm long, numerous, pink, thick at base, narrowed at the apex, delicate. Ovary bilocular, syncarpous; ovule about 30-35 per locule, axile placentation; style 2.7-3.1 cm long, red, thick at base, narrow at
apex, glabrous; stigma small, pointed. Fruit ovoid, berry, green when young, yellow or white-rose when matured.

**Fl. & Fr.** :- Nov.-Mar.

**Verna**:- Natschamba, Panineer chamba.

**Distribution**: Native of West Malaysia, now widely cultivated in the tropics for its edible fruits.


**Note**:- Leaf gall formation in the leaves is the speciality of this species.

**Uses**:- Fruit is edible, eaten raw or cooked also used with other fruits for making jam and pickles. Timber is used for construction purpose. Roots diuretic, also used in the application for itch. Bark astringent, employed in mouth-washes and also used in thrush. Dried and pulverized leaves are applied to cracked tongue.

Syzygium mundagam (Bourd.) Chithra  
A) Habit  B) Flower  C) Sepal  D) Petal
Small trees, 25-30 m tall; branches woody, terete, glabrous. Leaves simple, opposite, 14-30 x 5-11 cm, elliptic to oblong, rounded-cordate at base, acute or acuminate at apex, entire, thickly coriaceous, pink when young, dark green at maturity, glabrous; midrib prominent beneath, brown when dry, glabrous; main nerves prominent beneath, evident above, parallel, ascending, looping at the margin; marginal vein 0.2-0.3 cm away from the margin, not channelled above, prominent beneath; petiole 0.4-0.67 cm long, thick, glabrous. Inflorescence a terminal cyme or from the axils or from the leaf scar; peduncle 5-8 cm long, round, thick, glabrous. Flowers 2.5-3.1 cm across, bisexual, actinomorphic, white-pink, pentameral, fragrant, caducous, glabrous; pedicel 0.1-0.2 cm long, glabrous. Calyx-tube 0.9-1.4 x 0.7-1.1 cm, campanulate, light green, drying black; lobes 4, 5-7 x 5.3-6.5 mm, light green or yellowish, round at base, membranous at apex. Petals 4, 0.8-1.3 x 0.9-1.45 cm, cup-shaped, acute at base, obovate at apex, fragrant, gland-dotted, imbricate. Stamens numerous; filaments 2-2.8 cm long, thin; anthers dithecous. Ovary bilocular, placentation axile; style 3-4.4 cm long, narrow at the apex. Fruit 3 cm in diam., globoid, crowned with persistent calyx lobes, greenish-pink.

Fl. & Fr. :– Feb-August.

Distribution:– Endemic to Southern Western Ghats.

Specimen Examined:– Thiruvananthapuram Dist: Merchiston Evergreen Forest, 15-04-1908, Bourdillon, 1366 (UCT); Athirumala, 13-05-1988, N.Mohanani, 9611 (CALI); Merchiston Estate, 06-03-1980, K.Vivekananthan, 66104 (CALI); On the way to Ponmudi, 24-03-1978, C.N.Mohanani, 54752 (MH); Kottur R.F., 04-04-1973, J.Joseph, 44028 (MH); Chemunji, 04-04-1895,
T.F. Bourdillon, 563 (MH); Way to Ponmudi from Kallar, 16-08-1980, M.Mohanan, 69259 (MH); On the way to Ponmudi, 24-03-1978, M.Mohanan, 54752 (MH); ibid., Vinod Kumar, 2885 (RHK). Merchiston Estate, 06-03-1980, K.Vivekananthan, 66104 (MH); Athirumala, 13-05-1988, M.Mohanan, 9611 (TBGT); Bonaccord, 26-04-1993, E.S.Santhoskumar, (TBGT); Kallar-Ponmudi, 07-08-1985, N.Venkata Subramanian & K.R.Sasidharan, 11221 (IFGTB).


**Note:** Fairly common in evergreen forests of upper ghats.

**Uses:** The use of wood is not known and the trees is too small in size to yield good timber, but younger trees are sometimes used as posts for huts. The tree is very ornamental, especially when covered with its ivory like buds and white flowers. It deserves cultivation.

*Syzygium munronii* (Wight) Chandr.

A) Habit  B) Flower bud  C) Flower  D) Petal  E) Stamen
Small or middle sized trees, 5-12 m tall; branchlets slender, round at base, subround-quadrangular at apex, glabrous. Leaves simple, opposite, 13-27 x 3-8 cm, elliptic-lanceolate, obtuse-cordate at base, acuminate at apex, entire, coriaceous, aromatic, gland-dotted, dark brown when dry, glabrous; midrib thick, prominent below, channelled above, brown when dry; main nerves 20-24 pairs, ascending, slightly channelled above, prominent beneath, joined by conspicuous intramarginal veins; intramarginal vein 2.5-0.7 cm away from the margin; petiole 0.4-0.6 cm long, thick, glabrous. Inflorescence a terminal cyme; peduncle 3.5-7 cm long, sub-round, glabrous. Flowers 1.8-3.8 cm across, bisexual, white or dark pink in colour, mild fragrant, ebracteate and ebracteolate, actinomorphic, tetramerous, syncarpous; flower buds greenish yellow; pedicel 0.5-1.5 cm long, glabrous, pinkish. Calyx-tube 1.5-1.8 x 0.7-0.8 cm, conpanulate, pinkish tincthed, gland-dotted, glabrous, reddish brown when dry; lobes 4, 0.3-0.5 x 0.7-1.0 cm, obovate, imbricate, obtuse at apex, glabrous. Petal 4, 1-1.3 x 1.1-1.5 cm, obovate, obtuse at base, imbricate, gland-dotted, glabrous,
pale green-yellowish or yellowish-brown when dry. Stamens 1.8-2.5 cm long, numerous, white; filaments 1.7-2.4 cm long, slender; anther dithecus, versatile. Ovary sycarpous, placentation axile; style 3.5-4.5 cm long. Fruits 1.5-3 cm long, green or pink, persistent calyx ring present at the apex, ring 1-1.4 cm diam.

Fl. & Fr. :- Dec.–May.

Distribution:- India (Western Ghats and Khasia mountains).


Note :- Fairly Common in the Ghats; and along banks of stream in evergreen forests.

Uses :- Use of the tree or its timber is unknown. It might be planted for ornamental purpose.


Large trees; branchlets quadrangular, glabrous. Leaves 1.5-3.5 x .5-1 cm, oblanceolate, obtuse, narrowed to base, entire, glabrous; nerves numerous,
Syzygium neesianum Arn.  A) Habit B) Flower C) Flower bud D) Flower L.S.E) Stamen
slender, close together; petiole, 1-1.25 cm long. Inflorescence 4-5.5 cm long, a
terminal compound cyme. Flowers sessile, very small, white. Calyx-tube 0.1-0.2
cm long; lobes broad, rounded.

Fl. & Fr.:- Nov.-Apr.

Distribution: - Endemic to the Southern Western Ghats.

Specimen Examined: - Idukki Dist: Periyar Tiger Reserve, Jomy Augustine,
13556 (KFRI); Periyar Tiger Reserve, Jomy Augustine, 13310 (KFRI); Periyar
Tiger Reserve, Jomy Augustine, 13783 (KFRI); Shentanum, N.Sasidharaa,
11070 (KFRI).

Nat. Cur. 18: 335. 1836; Thw., Enum. Pl. Zeyl. 117. 1843; Alston in Trimen,
Wight, Ic. t. 553. 1843; Ill. 2: 15. 1850; Duthie in Hook. f., Fl. Brit. India 2: 493.
1879.

Large trees, 25 m tall, pale brown, shallowly flaking bark and dense
oblong to irregularly hemispherical crown of pendulous branches. Branchlets
slender, terete at base, quadrangular at apex, brown in colour, smooth. Leaves
simple, opposite, 6-10.5 x 2-5 cm, elliptic, obtuse or acute at base, acuminate-
mucronate at apex, entire, margin subrevolute, undulate, thinly coriaceous,
chocolate brown beneath, glabrous; midrib slender, prominent below, channelled
above; main nerves numerous, parallel, ascending, prominent below, evident
above, with short intermediates and densely reticulate tertiaries, looping with the intramarginal vein; intramarginal vein ± 1 cm away from the margin, slender; petiole 0.1-0.3 cm long, short, slender, glabrous, drying black. Inflorescence terminal or axillary cymose panicles; peduncle 4-8 cm long, rounded at base, quadrangular at apex, glabrous, green-brown. Flowers bisexual, tetramerous, white, actinomorphic; pedicel 0.7-0.9 mm long, terete, glabrous. Calyx-tube 3.2-5 x 2-3.6 mm, campanulate or cup shaped, greenish yellow, glabrous; lobes 4, 0.2-0.4 x 0.1-0.15 cm, very small, acute at apex. Petals 4, 2.5-3.4 x 1.1-2.7 mm, elliptic, concave, rounded at base, acute-round at apex, glabrous, gland-dotted, white, entire. Stamens 3.9-4.4 mm long, numerous, slender, white; anthers 0.3-0.5 mm long, white. Ovary bilocular, syncarpous; ovule 1 in each carpel, axile placentation. Fruits 2.5-3.5 mm diam., berry, globoid-ellipsoid, with an unlobed terminal collar.

Fl. & Fr.: - Jan.–May

Verna: Panu-keras(s)

Distribution: - South India and Sri Lanka.


Note: - Though leaf size is variable, the shape, nerves, as well as other characters, are very constant and make this a well defined species.

Uses: - Heavy timber is used for building.
Syzygium occidentale (Bourd.) Gandhi (Isotype)
Syzygium occidentale (Bourd.) Gandhi

A) Habit B) Flower C) Flower L.S. D) Sepal E) Petal F) Stamen

Small trees, 5-10 m tall; branchlets round at base, quadrangular at the apex, glabrous, greenish brown-grey. Leaves simple, opposite, 10-18 x 1.5-2 cm, linear or linear-lanceolate, attenuate at base, linearly acute at apex, margin entire, densely punctate, slightly prominent beneath, inconspicuous above, coriaceous, dark green above, pale yellowish green beneath when dry, glabrous; midrib prominent below, glabrous, channelled above, brown when dry; main nerves many, looping with the intramarginal nerve; intramarginal nerve 0.1 cm away from the margin, prominent beneath, obscure above; petiole 0.8-1.2 cm long, slightly stout, glabrous. Inflorescence 10-15 cm across, terminal or rarely an axillary cymes; peduncle 5-9 cm long, pale green, slender, subround or angular, glabrous. Flowers 2.5-5 cm across, white, 6 or 8 together in one terminal and lateral cymes. Calyx-tube 1.5-2 x 0.8-1 cm long, broadly turbinate, light green, glabrous; lobes 4, 0.7-1.1 x 0.5-0.7 cm, ovate-oblong, round at base, acute at apex. Petals upto 1 x 1.3 cm, clawed at base, white in colour. Stamens 3.8-5 cm long, very numerous, thin; filaments creamish or white, slender. Ovary 2-celled, upto 3 mm long; style 4-4.5 cm long, long, thin, narrow at the tip. Fruits 1.5-2 cm diam., globoid or ovoid, greenish-pink.

Fl. & Fr.:- Jan.-Jul.
Verna: Karinjara, Attasamba, Attuchamba.

Distribution: Endemic to Southern Western Ghats.

Specimen Examined: Isotype: Thiruvananthapuram Dist: Travancore, March 1890, Bourdillon, 550 (MH); Chitaur-Near Palode, 21-04-1904, Bourdillon, s.n (UCT); Travancore, 05-02-1910, M.M.Rama Rao, (MH); Palode, Vinod Kumar, 2878 (RHK). Kollam Dist: Pampa Valley, 18-03-1989, Anilkumar N., 1620 (MH); Kallada River side-Way to Punalur, 08-03-1980, 66156 (MH).


Ernakulam Dist: Malayatoor Division-Kodanad Range, 17-03-1979, Dr. Prasad, 1405 (KFRI); Malayatoor S.F., 19-03-1979, Dr. Prasad, 1409 (KFRI).


Uses: - An ornamental tree often cultivated. Fruits edible. Use of timber is unknown.
Syzygium parameswaranii Mohanan & Henry (Type)
Syzygium parameswaranii Mohanan & Henry

A) Habit  B) Flower  C) Flower L.S.
D) Stamen  E) Petal  F) Flower bud  G) Fruit

Trees; branchlets subtetragonous. Leaves 3.6-4.5 x 1-2 cm, obovate, cuneate at base, abruptly obtuse-acuminate at apex, reflexed at margins, coriaceous, glandular-punctate; lateral nerves 10-12 pairs, prominent. Cymes terminal and axillary, a few flowered, upto 4 cm long; pedicel sub-tetragonal. Calyx-tube upto 1 cm long, elongated, infundibuliform. Petals calyptrate, deciduous. Fruits unknown.

Fl. :- Dec.

Distribution: Southern Western Ghats, endemic.

Specimen examined: Type: Palghat Dist: Palghat hills of Malabar, Beddome 254 (Cibachrome, CAL).


Trees 4-10 m tall, bark smooth, reddish inside; branchlets tetragonous. Leaves simple, opposite, 2.5-3 x 1.8-2.5 cm, ovate, round at base, obtuse or subacute at apex, margins recurved, coriaceous, sessile; midrib channelled above, prominent below drying yellowish brown; main nerves numerous, parallel, evident above, prominent beneath, looping at the margin; marginal vein very close to the margin; secondary lateral nerves close, inconspicuous; petiole 1-1.5 cm long, thin, glabrous, channelled above. Inflorescence 2 x 2 cm, glabrous; subsessile, condensed, many flowered; peduncle 5-7 mm long, slender, sub-round or quadrangular. Flowers 17 x 6 mm, funnel shaped, terminal or
*Syzygium periyarensis* Jomy & Sasidharan  
A) Habit  B) Flower  C) Petal  
D) Flower L.S.  E) Stamen
axillary, clustered pale, yellow; pedicel 3 mm long, slender, glabrous. Calyx-tube 8-10 mm long, glabrous; lobes 4, 1 x 1 mm, ovate, obtuse at apex, glabrous. Petals 4, 3 x 2.5 mm, suborbicular, obtuse at apex, gland-dotted. Stamens 3-5 mm long; filaments dilated at base. Ovary 2 x 1.4 mm, 2-locular with many ovules in each chamber; style 5-6 mm long; stigma simple. Fruits 1.7x 0.5 cm, persistent calyx ring present at the top.

Fl. & Fr:- Jan.–April.

Distribution:- Endemic to the Southern Western Ghats.


Evergreen tree, upto 15 m tall, bark smooth; branchlets terete, ± 4 mm thick. Leaves simple, opposite, 11-15 x 7-9 cm, obovate or broadly elliptic, base acute or obtuse, obtusely acute at apex, acumen ± 0.5 cm long, margin entire,
coriaceous; lateral nerves 7-14 pairs, inconspicuous above and prominent below, irregular, faint towards the margins; intramarginal veins absent or faint, 3-4 mm from the margin, intercostae indistinct, sparingly black, punctate below; petiole 7-15 mm long, stout, dark brown. Inflorescence 5-8 cm across, corymbose, few flowered, cymes, terminal; pedicel 4.5 mm long; pseudo-pedicel 3 mm long. Calyx-tube 12 x 12 mm, tube above the ovary 3-4 mm high; lobes 4, upto 6 x 12 mm, broadly ovate obtuse. Petals 4, more or less 13 mm across, white, orbicular, concave. Stamens numerous, many serrate; filaments 11-18 mm long, inflexed in bud; anthers 1.5 mm long, ovate, obtuse; disk prominent, 2-3 mm, thick, shortly cuneate. Ovary conical, cells 2.5 x 2 mm; ovules many, palcentation axile; style ± 2.2 cm long; stigma indistinct.

Fl. & Fr.:- March–June.

Distribution:- This species is known to occur in the Periyar Tiger Reserve. Occasional along the banks of streams in association with Syzygium hemisphericum (Wight) Alston, Gordonia obtusa Wall. ex Wight & Arn., Ternstroemia japonica Thunb., etc.


Syzygium rama-varmae (Bourd.) Chithra (Isotype)
Syzygium rama-varmae (Bourd.) Chithra

A) Habit  B) Inflorescence
Medium sized or large trees, 20 m tall. Leaves simple, opposite, 10-18 x 5-8 cm elliptic-obovate, cordate at base, gradually narrowed into a long acumen, grey above and light yellowish beneath when dry; midrib channelled on the upper surface, very prominent beneath, brown when dry; main nerves 15-20 pairs, distinct, ascending, channelled above, nerves looped by straight intramarginal nerve; secondary nerves strong beneath, more or less channelled above; intramarginal nerve very close to the margin, 0.3-0.4 cm away from the margin, more or less channelled above, prominent below; petiole 0.2-0.7 cm long, stout, glabrous, channelled above. Peduncle 2-3 cm long, terete, glabrous, black when dry. Flowers white, axillary or cauliflorous, solitary or in few flowered racemes; pedicel longer than calyx-tube, 1.5-2 cm long, stout, glabrous, sub-terete. Calyx-tube 0.5-1 cm long, equally wide at the mouth, segments semicircular; lobes 4, 0.5-0.6 x 0.8-1 cm. Petals 1-1.25 cm diam., orbicular. Stamens 0.9-1.2 cm long, numerous, thin. Style short, stout. Fruits 3-3.75 cm diam., greenish-pink, globoid. Seeds 1-2, large.

Fl. & Fr. :- March-Aug.

Distribution:-- Endemic to Southern Western Ghats.

Specimen Examined:-- Isotype: Thiruvananthapuram Dist: Chemungi, 4000 ft, 04-04-1895, Bourdillon (MH); Chemungi, 4000 ft, 04-04-1895, Bourdillon 727 (UCT).

Uses:-- The use of wood is unknown.
Syzygium rubicundum Wight & Arn.  
A) Habit B) Flower C) Flower L.S. D) Petal E) 
& F) Stamen

Large trees, 10-15 m tall, upto 2 m girth, orange brown, overall smooth; branchlets olive-green, feathery, many ascending, slender, lower portion terete, young portion quadrangular, glabrous. Leaves simple, opposite, 3.5-8 x 2-4 cm, ovate-lanceolate or narrowly elliptic, cuneate or attenuate at base, mucronate at apex, entire, coriaceous, glabrous, young leaves rose-pink turning to olive green, margin folding inward, drying rufous to chocolate brown beneath, margin hardly or not revolute; midrib channelled above, prominent beneath, drying black; main nerves many, parallel, slightly ascending, prominent on both sides; intramarginal nerve very close to the margin; petiole 0.3-0.5 cm long, very slender, drying black, glabrous. Inflorescence 5-7.5 cm across, cymes 4.3-8.5 cm long, terminal or subterminal-axillary; peduncle 4-6 cm long, slender, quadrangular, slightly black-brown at base; yellowish brown at apex, brown when dry. Flowers 1.8-2.3
mm across, round or obovate, actinomorphic, bisexual, tetramerous, small, sessile or subsessile, glabrous. Calyx-tube 1.8-2.2 mm, cup shaped, wide; lobes 4, very small, acute at apex. Petals 4, upto 1.3 x 2 mm, elliptic, concave, white, calyptrate, fugacious. Stamens 2-4 mm long, slender. Ovary 2-celled; ovule numerous, upto 1 x 0.9 mm; style 0.3 cm long, thin, narrow at the tip. Fruits 0.4-0.6 cm diam., globose, berry, glabrous, crowned with the persistent calyx limb, black when ripe.

Fl. & Fr.: Feb.–May

Distribution: Rare in the bank along the stream in evergreen forests above 800 m.


Note: This plant much resembles S. gardneri, but can be distinguished by its 4 sided branchlets narrow leaves and shorter petiole.

Uses: An useful wood but not much known.

Syzygium samarengens (Bl.) Merr. & Perry

A) Habit B) Flower C) Flower bud
D) Sepal E) Petal F) Stamen
Small trees, 10 m tall; branchlets slender, terete at base, subround at apex, glabrous, brown in colour. Leaves simple, opposite or subopposite, 8.2-14 x 4.1-8 cm, elliptic, cordate at base, acute or rounded at apex, margin entire, green above, pale green below; midrib slender, prominent beneath, hidden in the cordate leaf base; main nerves 8-16 pairs, parallel, prominent beneath; marginal vein 0.1-0.15 mm away from the margin. Inflorescence axillary rarely a lax terminal, cyme; peduncle 3.5-5.3 cm long, terete, green in colour, glabrous. Flowers 1.5-1.8 cm across, white or creamish-white, bisexual, actinomorphic, pentamerous, glabrous; pedicel 0.42-0.6 cm long, terete, glabrous. Calyx-tube 4-5 mm long, cup shaped, creamish white at young stage, rose-red at maturity, glabrous; lobes 5, 0.3 x 0.3-0.35 cm, elliptic, acute at base, acute-round at apex, creamish white, imbricate aestivation, glabrous. Petals 5, 5.8-6.7 x 5-6 mm, elliptic-obovate, acute at base, acute-round at apex, gland-dotted, white. Stamens numerous; filaments 0.9-1.4 cm long, white; anthers 0.4-0.7 mm long, dithecous. Ovary glabrous; style 0.8-1.1 cm long, greenish white, glabrous; stigma small, pointed. Fruits about 8 mm diam., globoid or subgloboid, red at maturity, persisting sepals about 2 cm long and diam.

Fl. & Fr.: –June-Nov.


Distribution: Native of Western Malaysia, widely cultivated for its fruits.
Syzygium sivakshetranum Vinod et Antony

A) Habit B) Flower bud C) Flower
D) Flower L.S. E) Petal F) Fruit G) Seed
Specimen examined: -Kottayam Dist: Nalukodi-Changanacherry, 16-04-1984, V.T.Antony, 389 (MH), 389 (RHK); ibid., Vinod Kumar, 2879 (RHK).

Note:-- The fruit is succulent and though smaller than that of the, *S. malaccense*, has a particularly delicious clove-scented taste.

Uses:--Fruits are edible. Wood used for building huts.

**Syzygium sivakshetranum**, Vinod et Antony, sp. nov.

*Syzygium travancoricum affinis*, ramulis, sub-tetragonis inalatis, folii apice acuto-acuminato, petiolo braviore, alabastra viride-lutea, fructibus subtetragonis calicis corona ceretibus differt.

Trees over 10 m tall; bark greyish becoming flaky on the trunk; twigs smooth, subtetragonus. Leaves subcoriaceous, opposite or subopposite, rarely alternate; petiole upto 1cm long; lamina broadly ovate to elliptic, 10-25 x 5-9 cm, acute at base, acute-acuminate at apex, secondary veins 8-16, 8-20 mm apart, prominently reticulate, definite intra marginal veins not formed, veins raised beneath, margins entire, glabrous, oil gland numerous, dark green above and pale beneath. Inflorescence 45-140 flowered, axillary, regularly branched corymbose cyme; peduncle 9-15 cm long. Flowers 5-6 mm in diam., sessile, creamy white, fragrant; bracts and bracteoles minute, fugacious. Hypanthium 4 mm long, 5 mm wide, turbinate, greenish yellow, glandular within, glabrous. Sepals 4, upto 1.5 mm long, 1.5-2 mm wide, rounded-triangular, caducous, margine entire, glabrous. Petals 4, subequal, 3 x 3 mm, suborbicular, creamy white, gland-dotted, calyptrate. Stamens 40-60, apparently 2-seriate; filaments 1.5-2 mm long, free, white, incurved in bud, anther subglobose, dorsifixed, pale yellow. Ovary glabrous, 2-locular, ovules 3-5 in each locule; style 2
mm long, erect, glabrous, stigma simple. Fruit 8 x 7 mm, subtetragonal, scarlet or slightly became purplish, apex truncate not crowned with calyx segments. Seeds usually one rarely two, 3-5 mm in diam., subglobose, glabrous.

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

**Distribution:** So far known only from Kerala State.

**Typus:** India, Kerala State: Malappuram District, Thricannapuram Siva temple C. 200 m 15.03.1997, A.K.Pradeep, 5384 (Holotype. K; Iso. RHK, CALI, MH, TGBT).

**Etimology:** The specific epithet from Malayalm, which relate to the plant's type locality, which is close to a Siva temple (Sivakshetram).

**Note:** *Syzygium sivakshetranum* is allied to *S. travancoricum* Gamb., but can easily distinguished by the acute-acuminate leaf apex, shorter petiole, subtetragonal unwinged branches, elongate geenish yellow flower bud and subtetragonal fruits without calyx crown.


Large trees; branchlets slender, glabrous at base, pubescent at apex, tetragonal, brown. Leaves simple, opposite or subopposite, 8-14 x 2-4 cm, elliptic-oblong or elliptic-ovate, acute at both ends, entire, thin, glabrous; midrib prominent; main nerves 10-16 pairs, slender, curving upwards and becoming faint towards the margin, not united into an intramarginal nerve;
Syzygium tami|nadensis  Rathakrishnan & Chithra

A) Habit  B) Flower  C) Flower bud  D) Flower L.S.  E) Stamen  F) Fruit
petiole 0.9-1.3 cm long, thin, glabrous at base, pubescent at apex. Inflorescence corymbose cymes, axillary or from the leafless axils; peduncle 1-5.3 cm long. Flowers 0.3-0.4 cm across, bisexual, pubescent, numerous, actinomorphic, white; pedicel 3.5-7.0 mm long, pubescent, terete, thin. Calyx-tube 2.8-3.7 x 2.1-3.1 cm, bell-shaped, pubescent; lobes 4, 1.4-2.2 x 1.4-1.9 mm, acute at apex, pubescent. Petals 4, 2-3.0 x 1.7-2.8 mm, obovoid-round, round at apex, calyptrate, pubescent, gland-dotted. Stamens 1-1.5 mm long, numerous, white, delicate; anther 0.3-0.5 mm long, small, white-yellowish. Ovary bilocular, 1.7-2.7 mm across, pubescent; ovule numerous, axile; style 4-4.5 mm long, yellowish-white; stigma small, pointed. Fruit unknown.

**Distribution:-** Southern Western Ghats, endemic.

**Note:** During the present study this species has not been located from Kerala. However included in the thesis under the authority of Gamble (l.c.).


Large trees, 7.5 m tall; bark brown, 0.6 cm thick, granulated outside and peeling off in very small flakes; branchlets woody, terete at base, quadrangular
at apex, with wings in the angle, glabrous, slender, brown in colour. Leaves simple, opposite, 7-10 x 3.5-6 cm, elliptic-ovate, acute at both ends, alternate in the peduncle bearing branch, entire, glabrous; midrib prominent below, highly channelled above, thick; main nerves numerous, parallel, diverted at the edge, looping with the intramarginal nerve, ascending, prominent below, channelled above; intramarginal nerve 1-2 mm away from the margin; petiole 0.7-0.9 cm long, thick, slender, glabrous. Inflorescence a terminal corymbose cyme; peduncle 4-5 cm long, quadrangular, thick, slender, green base with brown shade, glabrous. Flowers 0.4-0.6 cm across, bisexual, actinomorphic, white or creamish white, tetramerous, subsessile or sessile; pedicel 0.1 cm long, delicate, green in colour, glabrous Calyx-tube 0.3-0.4 cm long, campanulate, glabrous; lobes 4, 1.4-1.8 x 1.8-2.1 mm, elliptic, broadly round at base, acute at apex, glabrous, greenish-white in colour. Petals 1.5-2.2 x 1.4-1.9 mm, elliptic, acute at apex, white, fragrant, glabrous. Stamens 3.8-4.8 mm long, numerous, white, thin; anther 0.4-0.5 mm. Ovary bicarpellary, syncarpous; ovule-1; style 2.8-3.2 mm long, broad at base, narrow at the apex, glabrous; stigma round, pointed. Fruits upto 1 x 0.9 cm, globoid, berry.

Fl. & Fr :- Feb.–Jun.

Distribution:-Endemic to Southern Western Ghats.


Note:- Scarce in the shola forests. Common in swampy localities in the low land and also in the evergreen forests.
Syzygium travancoricum Gamble  (Type)
Uses: - The wood is used for building purposes. Bark contains tannin.


Trees; branchlets tetragonous. Leaves 8-10 x 5-6 cm, ovate, narrowed at base, obtuse-acuminate and plicate at the very apex, chartaceous, glabrous; lateral nerves 10-15, irregular, conspicuous. Flowers upto 15 cm long, in axillary cymes; peduncle 5-8 cm long, slightly winged. Calyx tube short, upto 1 mm diam. Petals calyptrate, deciduous. Fruits unknown.

Fl.: - Mar.

Verna:- Vatmkolli, Kattunjaval

Distribution: - Southern Western Ghats, endemic.

Specimen examined: - Type: Travancore, 1895, T.F. Bourdillon, 540 (MH)(UCT).

Uses: - Timber is very valuable. Leaf is used for the treatment of rheumatism.

Key to the varieties of zeylanicum:

1. Leaves upto 3 cm long..................................var. ellipticum

2. Leaves more than 3 cm long ................................2

2. Leaves rounded at base..................................var. zeylanicum

2. Leaves cuneate at base..................................var. lineare
Syzygium zeylanicum (L.) DC. var. ellipticum Henry & al.  

A) Habit  B) Flower  
C) Flower L.S.  D) Stamen

An erect shrub; branchlets slender, terete, glabrous, brown at apex. Leaves simple, opposite, 2.5-3 x 1-1.5 cm, elliptic-ovate, acute-acuminated at base, shortly acuminate at apex, margin revolute, entire, gland-dotted, lamina reddish brown above, yellowish green below when dry, glabrous; midrib channelled above, prominent beneath, yellowish when dry; main nerves numerous, ascending, parallel, branched, looping at the margin, slightly channelled above, prominent beneath; marginal nerve upto 1 mm away from the margin; petiole upto 3 mm long, slender, channelled above, black when dry.

Inflorescence axillary or terminal; peduncle upto 2.4 cm long, slender, glabrous, quadrangular. Flowers 0.4-0.5 cm across; pedicel 0. Calyx-tube 0.7-0.8 cm long, conical shaped; lobes 5, obtuse, size small. Stamens 0.5-0.7 cm long, numerous, thin. Style 0.2-0.3 cm long; stigma pointed.

**Fl. & Fr.:-** Apr.–Aug.

**Distribution:-** Endemic to Southern Western Ghats.

**Specimen Examined:-** Isotype:- Way to Agasthymalai Peak, Thiruvananthapuram Dist 01-07-1964, A.N.Henry & Chandrabose 19174 B,C,D,E,F (MH); Chemunji, Vinod Kumar 2880 (RHK).

*Syzygium zeylanicum* (L.) DC. var. *lineare* (Wall.) Alston

A) Habit  B) Flower  
C) Flower bud  D) Flower I.S.  E) Petal  F) Stamen

Trees 5-8 m tall; branchlets slender, glabrous, terete, bark peeling off from the stem, brown when dry, pendent. Leaves simple, opposite, sometimes alternate, 4-9 x 1.5-4.3 cm, linear-lanceolate, entire, cuneate at base, shining above, glabrous; midrib slender, channelled above, prominent beneath, glabrous, grey when dry; main nerves numerous, ascending, parallel, inconspicuous above, slightly prominent beneath, looping with intramarginal vein; intramarginal nerve to 0.1 cm away from the margin; petiole upto 8 mm long, pale yellowish beneath, gland-dotted, having smell. Inflorescence axillary or terminal. Peduncle 4-6 cm long, glabrous, light green to creamish white, quadrangular, brown when dry. Flowers 0.4-0.6 cm across, white-creamish, fragrant; pedicel 0.1-0.2 cm long, slender, glabrous. Calyx-tube obovate-companulate, glabrous, light green; lobes 5, broad at base, acute at apex, imbricate, light green in colour, glabrous. Petals 1.5-1.8 x 1.2-1.5 mm, white-creamish white, cup shaped. Stamens 0.3-0.4 cm long, numerous, yellowish, slender. Ovary 1-2 mm long; style 0.4-0.5 cm long, slender, narrow at the apex, yellowish green, glabrous. Fruits white when ripe.

**Fl. & Fr.:-** Nov.–Jun.

**Distribution:**- Peninsular India, Western Malaysia and Sri Lanka.

**Specimen Examined:-** Thiruvananthapuram Dist: Attayar-Agasthyamala, 24-06-1993, Mohanan, 11468 (CALI); Veli, 30-07-1979, Mohanan, 63325 (MH); Travancore, 10-04-1895, T.F.Bourdillon, 583 (MH). **Kollam Dist:**

Note: This variety clearly represents a series of morphologically similar ecotypes of separate origins.

Uses: Fruits edible.


Myrtus zeylanica L., Sp. Pl. 472. 1753. Eugenia spicata Lam., Enc. 3:
Syzygium zeylanicum (L.) DC. var. zeylanicum

A) Habit  B) Flower  C) Flower bud
D) Flower L.S  E) Stamen  F) Ovary C.S.
201. 1789; Wight, Ic. t. 73. 1840; Bedd., Fl. Sylv. t. 201. 1869; Trimen, Handb. Fl. Ceylon 2: 171. 1894.

Trees upto 10 m tall, less than 2 m grith; bark pale grey-brown, smooth or irregularly cracked, flaky, broad and rather flat; crowned with twisted branches and short crooked trunk; branchlets slender, much branched, pale brown, quadrangular at first, becoming terete. Leaves simple, 2.5-8 x 1-4 cm, ovate or lanceolate, broadly rounded at base, attenuate-acuminate at apex, thinly coriaceous, glabrous; midrib slender, channelled above, prominent beneath; main nerves 12 pairs with shorter intermediates, very slender, ascending, obscure or very slightly elevated beneath, narrowly depressed above; intramarginal nerve 1 mm away from margin, rather straight, frequently obscure; petiole 1-4 mm long, slender, short, lower surface minutely pitted, drying purplish, young leaves pale pink. Flowers 4 cm long, densely clustered, terminal and axillary, white. Calyx-tube ±5 x 3 mm, funnel shaped, glabrous, gland-dotted; lobes 4-5, ovate, obtuse or subacute, gland-dotted, glabrous. Petals small, concave, fugacious, free. Stamens 7 mm long, many, dense. Ovary 1.7-2 mm across; 2-celled; placentation axile; style 0.7-1 cm long; stigma simple. Fruits upto 8 mm diam., broadly ellipsoid or subgloboid, conspicuous, milky white when ripened, crown of persisting segments 2 mm in diam.

Fl. & Fr.:– Feb-Aug

Vern.:– Poochappazham, Nyra, Pula, Poochakka, Chaliyakkani.
Distribution:- Peninsular India, Western Malaysia and peninsular India.


Note:- Very common on the hill slopes. Common in sacred groves.

Uses:- Fruits edible, sweet, aromatic. Bark yields a dye. Wood is used for rafts, constructional work and agricultural implements. Decotion of leaves and roots are used as verminfuge.