

# ANNOTATED LIST OF SEED PLANTS OF SINGAPORE (VI)\*

by

HSUAN KENG

*Department of Botany, University of Singapore*

## CONTENTS

									<i>Page</i>
Bombacaceae	...	...	...	...	...	...	...	...	336
Burseraceae	...	...	...	...	...	...	...	...	345
Daphniphyllaceae	...	...	...	...	...	...	...	...	367
Erythroxylaceae	...	...	...	...	...	...	...	...	340
Euphorbiaceae	...	...	...	...	...	...	...	...	353
Linaceae	...	...	...	...	...	...	...	...	340
Malvaceae	...	...	...	...	...	...	...	...	333
Meliaceae	...	...	...	...	...	...	...	...	347
Oxalidaceae	...	...	...	...	...	...	...	...	341
Polygalaceae	...	...	...	...	...	...	...	...	351
Rutaceae	...	...	...	...	...	...	...	...	342
Simaroubaceae	...	...	...	...	...	...	...	...	345
Sterculiaceae	...	...	...	...	...	...	...	...	337
Tiliaceae	...	...	...	...	...	...	...	...	330

\* Continued from Gdns' Bull. Sing. 31: 113. 1978.



## II. ANGIOSPERMAE-DICOTYLEDONS (continued)

## 80. TILIACEAE

## KEY TO THE GENERA

- A. Herbs or undershrubs; fruit capsular,
  - B. Fruit spiny or bristly ..... *Triumfetta*
  - B. Fruit smooth or rough, but not bristly ..... *Corchorus*
- A. Shrubs or trees; fruit various,
  - C. Fruit fleshy or pulpy,
    - D. Fruit a berry, with many seeds inside ..... *Muntingia*
    - D. Fruit a drupe,
      - E. Leaves 3-nerved at base; fruit with 1-4 stones inside ..... *Grewia*
      - E. Leaves with 1 main vein at base; fruit with one large stone (with 3-5 seeds embedded inside) ..... *Elaeocarpus*
  - C. Fruit dry,
    - F. Fruit indehiscent (a 3-winged samara) ..... *Pentace*
    - F. Fruit dehiscent,
      - G. Fruit of 1-5 free-carpelled follicles, smooth ..... *Brownlowia*
      - G. Fruit of a 4-valved capsule, spiny ..... *Sloanea*

*Brownlowia argentata* Kurz

Shrub or small tree. Leaves cordate, spiral, silvery scaly beneath. On brackish tidal sandy soil, rare. Kranji (*Ridley* 6364), Bukit Timah.

*Brow. tersa* (L.) Kosterm.

Formerly called *Brow. lanceolata* Benth. Leaves lanceolate, alternate, golden scaly beneath, in mangroves, rare. Kranji (*Sinclair* 40685).



*Corchorus acutangulus* Lam.

Herb or shrubby. Flowers small, yellow, in axillary pairs. Weed, in open ground by sea. Choa Chu Kang. 野黄麻

*Elaeocarpus ferrugineus* Steud.

Formerly called *Elaeo. jackianus* Wall. Branches and petioles covered with thick, brown, velvet hair; leaves elliptic. Tanglin, Seletar (*M. Shah & Shukor* 2373), Bukit Mandai.

The *Elaeocarpus* species are large or small trees; buds often coated with resin; young and falling leaves pinkish red or purplish; flowers in racemes; flower parts mostly in 5s (but some species in 4s), the petals usually fringed or laciniate at tip; drupe green or greyish, with a large stone containing 1-5 seeds inside. Malay name is called 'Mendong'.

*Elaeo. floribundus* Bl.

Leaves ovate-elliptic, entire; petiole pinkish. Fruit oblong. Rare, Bukit Timah (*Corner s.n.* in 1937).

*Elaeo. griffithii* Mast.

Leaves lanceolate to ovate-lanceolate. In lowland woods, Choa Chu Kang, Tanglin, Seletar. Botanic Gardens (*Burkill* 5978).

*Elaeo. hullettii* King

Leaves lanceolate. Not common, Bukit Timah, Bukit Mandai, Reservoir woods (*Corner* 32537).

*Elaeo. macrocerus* Merr.

Called *Elaeo. littoralis* Kurz by Corner. Leaves obovate-spathulate. Tree with stilt roots and knee-shaped pneumatophores, in swamps and mixed forests. Jurong (*Ridley* 5588).

*Elaeo. mastersii* King

Leaves oblong-lanceolate, relatively small (5-10 x 2-4 cm). Flower parts in 4s. Fruit ellipsoid, greyish blue. Common, Tanglin, Bukit Timah, Kranji, Changi. Reservoir woods (*Burkill* 1228).

*Elaeo. nitidus* Jack

Formerly called *Elaeo. parvifolius* Wall. Leaves oblong-lanceolate, serrulate. Like *E. mastersii*, but with flower parts in 5s and larger fruits dull green in colour. Bukit Timah (*Corner* 34665).



*Elaeo. obtusus* Bl.

Formerly called *E. rugosus* var. *singaporensis* Ridl. Leaves obtuse. Bukit Timah Road (*Ridley* 5727).

*Elaeo. paniculatus* Wall.

Leaves oblong-lanceolate. Inflorescences very long (20–25 cm). Common, Bukit Mandai (*Corner* 32522), Seletar.

*Elaeo. pedunculatus* Wall.

Leaves oblanceolate, often crowded near the tip. Fruit oblong, greyish blue. Near seashores, Loyang, Tuas, Jurong, Pulau Tekong, Pulau Bayan (*Ridley* 10434).

*Elaeo. petiolatus* Wall.

Leaf-buds thickly coated with resin; leaves elliptic, entire. Common in low-land woods, Gardens' Jungle, Bukit Timah, Seletar, Reservoir woods (*M. Shah* 3861), Changi.

*Elaeo. polystachyus* Wall.

Branches silky; leaves elliptic-lanceolate. Common in woods, Bukit Timah (*S. Ahmad* 1353), Jurong, Changi.

*Elaeo. sphaericus* K. Schum.

Leaves lanceolate. Large tree, native of the Malay Peninsula, occasionally planted. Formerly called *Elaeo. ganitrus* Roxb.

*Elaeo. salicifolius* King

A slender tree; leaves narrow lanceolate. Not common; Bukit Timah, Choa Chu Kang. Reservoir Jungle (*Corner* 29225 A).

*Elaeo. stipularis* Bl.

Tree, pubescent all over with velvet hair. Leaves ovate with a large triangular stipule, often with 2–5 points. Fruit round. In woods, Tanglin, Bukit Timah, Changi. Choa Chu Kang (*Hullett* 8).

*Grewia blattaefolia* Corner

Formerly called *G. latifolia* Auct. non Muell. Small tree; leaves densely hairy below. Fruit pear-shaped, orange yellow. Bukit Timah (*Ridley* 4943), Choa Chu Kang.



*Grew. hirsuta* (Korth.) Kochum.

Small tree; formerly called *Grew. omphacarpa* Miq. Rare, Tanglin.

*Grew. acuminata* Juss.

Stout climber. Flowers white. Tanglin, Geylang. Formerly called *Grew. umbellata* Roxb.

*Muntingia calabura* L.

Shrub or small tree. Leaves alternate, in one plane, the blades unequal-sided, densely woolly. Flowers white; berry red, edible. Native of Brazil, commonly found in villages, called 'cherry tree' (the true cherry tree of the Orient belongs to the genus *Prunus* of Rosaceae).

*Pentace triptera* Mast.

A gigantic tree with prominent buttresses. Flowers white, in panicles. Fruit pink, with 3 membraneous wings. In woods, Bukit Timah (*Ridley* 6363a), Ang Mo Kio, Choa Chu Kang. Vern. Melunak Pusat Beludu.

*Sloanea javanica* Szysz. ex K. Schum.

Large tree. Flowers white, in axillary panicles. Fruit a woody and spiny capsule. Very rare, Kranji (*Mat* 6174).

*Triumfetta rhomboidea* Jacq.

Shrublet; stem glabrescent. Flowers yellow. Fruit small round, densely hairy. A weed in waste ground, Tanglin (*Hullett* 292), Changi. Plant in vegetative state can be easily confused with *Urena lobata* L. (Malvaceae), the leaves of the latter, however, bear a gland on lower surface near base of midrib. Erroneously called *Trium. bartramia* L.

*Trium. pseudocana* Spr. & Craib

Shrublet; stem velvety hairy; fruit tomentose, with straight long hairs. A weed, not common.

## 81. MALVACEAE

### KEY TO THE GENERA

A. Herbs or shrubs,

B. Flowers small (less than 3 cm across); fruit 5-lobed, separating into 5 1-seeded split fruits.



- C. Leaves densely hairy; flowers pink ..... *Urena*
- C. Leaves glabrous or nearly so; flowers yellow ..... *Sida*
- B. Flowers large (usually over 5 cm across); fruit globose, dehiscent by 3–5 or more valved,
  - D. Calyx splitting on one-side, apathe-like ..... *Abelmoschus*
  - D. Calyx cup-shaped,
    - E. Flowers remaining closed; filamental tube twisted ..... *Malvaviscus*
    - E. Flowers open, bell-shaped, filamental tube erect,
      - F. Epicalyx absent; capsule 15–20 parted ..... *Abutilon*
      - F. Epicalyx present; capsule 3–10 parted,
        - G. Epicalyx of 5– many bracts; capsule 5–10 chambered ..... *Hibiscus* (in part)
        - G. Epicalyx of 3 large bracts; capsule 3-chambered ..... *Gossypium*
- A. Trees; fruit globose, dehiscent by 5– many valves,
  - H. Style undivided; bracts of epicalyx deciduous early ..... *Thespesia*
  - H. Style divided into 5-branches; bracts of epicalyx persistent ..... *Hibiscus* (in part)

*Abutilon indicum* (L.) Sweet

Erect herb. Weed, sometimes found in waste ground. Geylang (*Teruya* 1280).

*Abelmoschus esculentus* Moench (= *Hibiscus esculentus* L.)

Annual herb, erect, stout. Leaves 5–7-lobed or -divided. Epicalyx 10–16-lobed, lineate. Flowers yellow with a red centre. Probably native to Africa, cultivated for its long ribbed edible fruits known as 'Lady's finger' or okra.  
黄秋葵

*Abelm. moschatus* Medic. (= *Hibiscus abelmoschus* L.)

Annual hairy herb, the musk mallow, native of India, formerly cultivated.

*Gossypium barbadense* L.

The sea-island cotton, a native of Peru, together with one or two other species, occasionally cultivated as an ornamental.



*Hibiscus mutabilis* L.

Shrub or small tree with large pink, multipetalous flowers (called 'cotton rose'). Native of China, propagated by cuttings. 木芙蓉

*Hibis. rosa-sinensis* L.

Shrub or tree-like. Flowers mostly rose-red, sometimes double or varying into other shades. Never produce any fruit or seed under tropical climate, native of continental Asia, prob. China. Vern. Bunga-raja. 扶桑花, 朱槿

*Hibis. schizopetalus* (Mst.) Hook. f.

Shrub. Flowers drooping; petals red, rarely orange, multisect, recurved. Native of tropical E. Africa, commonly cultivated.

*Hibis. surattensis* L.

Herb or scrambling shrub, pickly. Leaves lobed. Flowers yellow with a maroon eye. Tanglin, Changi, Pulau Ubin, Alor Gajah (*Sinclair* 8930).

*Hibis. syriacus* L.

Shrub. Flowers purple ('rose of sharon'). Native of continental Asia, occasionally cultivated. 木槿

*Hibis. tiliaceus* L.

A common sea-coast tree. Leaves heart-shaped, whitish beneath. Flowers yellow with a maroon eye, turning pink soon after opening. Changi (*M. Shah* 762). 黄槿

*Malvaviscus arboreus* Cav.

A shrub of tropical American origin, cultivated for its red, hardly opened flowers.

*Sida acuta* Brum. f. (= *Sida carpinifolia* L.)

Herb or subshrub. Leaves linear lanceolate. A weed, with yellow flowers. Geylang. (*Teruya* 1263).

*Sida cordifolia* L.

Leaves ovate, thick, tomentose, with dordate base. Geylang. (*Teruya* 1979).

*Sida rhombifolia* L.

Leaves rhomboid.



*Thespesia populnea* (L.) Soland. ex Correa

Tree of the sea-coast, very similar to the sea *Hibiscus* (*H. tiliaceus* L.) but can be easily distinguished from the latter by its truncate, cup-shaped calyx and the round, non-splitting fruits. Changi (Hullett 92).

## 82. BOMBACACEAE

### KEY TO THE GENERA

- A. Leaves palmately compound; leaflets 5-9 ..... *Ceiba*
- A. Leaves simple,
  - B. Leaf-tips round or notched; fruit wall hairy inside, splitting completely before falling ..... *Neesia*
  - B. Leaf-tips pointed; fruit wall glabrous inside,
    - C. Midrib raised above; fruit with short stout spines ..... *Coelostegia*
    - C. Midrib sunken above; fruit with long sharp spines ..... *Durio*

*Ceiba pentandra* (L.) Gaertn.

Large tree, trunk and twigs thorny. Leaves palmately compound, native to tropical America, probably carried by current to Africa in remote times. The tree yields kapok which is the floss derived from the inner fruit wall, in which the seeds lie loose when ripen. Vern. *Kapok*. 吉貝

*Coelostegia griffithii* Benth.

Large tree. Flowers small, on old wood. Fruit large, round; woody fruit wall covered with thorn and black on the outside, orange on the inside. Gardens' Jungle, Bukit Timah (Ridley 4738).

*Durio griffithii* (Mst.) Bakh.

Medium-sized tree. Flowers small, white. Fruit small, scarlet. Gardens' Jungle, Bukit Timah (Ridley s.n. in 1894)

*Durio singaporensis* Ridl. (= *D. oblongus* Auct. Corner, non Mast.)

Flowers white, large. Fruit green, not edible. In woods, rare; Bukit Timah (Ridley 3704, type), Bukit Mandai. Reservoir woods.



*Durio zibethinus* L.

Large tree. Fruit large, thorny; the pulp (aril) surrounding the seeds edible. Possibly wild in Malaya, Sumatra and Borneo, often cultivated. Vern. *Durian*. 榴槤

*Neesia altissima* Bl.

Large tree. Leaves hairy beneath. Fruit woody, large, partly open, the walls inside covered with yellow stinging hair. Seeds black, with a yellow waxy aril. Rare, Bukit Timah, Seletar (*Corner s.n.* in 1941)

*Nees. malayana* Bakh.

Leaves glabrous beneath, in fresh water swamp forest, Mandai (*Corner 37138*). Kranji, Choa Chu Kang.

**83. STERCULIACEAE****KEY TO THE GENERA**

- A. Woody climbers ..... *Byttneria*
- A. Erect shrubs or tree,
  - B. Shrubby, shrubs or small trees,
    - C. Shrubby ..... *Melochia*
    - C. Shrubs or small trees,
      - D. Fruit a capsule,
        - E. Capsule bristly with long woolly hairs ..... *Commersonia*
        - E. Capsule membranaceous, inflated ..... *Kleinhovia*
      - D. Fruit a leathery follicle ..... *Sterculia* (in part)
  - B. Tall trees,
    - F. Fruit woody; seeds winged,
      - G. Fruit a capsule; leaves yellow-brown beneath ... *Pterospermum*
      - G. Fruit a follicle, leaves usually whitish beneath ..... *Heritiera*
    - F. Follicles not woody; seeds not winged,



H. Follicle leathery ..... *Sterculia*

H. Follicle large, membranaceous, green ..... *Scaphium*

*Byttneria maingayi* Mast.

Big woody climber; flowers white or pink, small; fruit a prickly capsule, opening by 5 valves, with 1 seed in each locule. Gardens' Jungle (*Ridley 6016*), Changi, Bukit Mandai. Vern. Akar Kachubong.

*Commersonia bartramia* Merr.

Small tree, spreading; flowers white, in large branched cymes; capsule globose, with long soft grey hairs. In open jungle, Tanglin, Jurong.

*Heritiera borneensis* (Merr.) Hosterm.

Tree. Bukit Timah (*Ngadiman 34617*).

*Heritiera elata* Ridl.

Gigantic inland tree; petiole over 2.5 cm long. Gardens' Jungle.

*Herit. littoralis* Dryand. ex W. Ait

Tree, in mangrove swamps; lower surface of leaves silvery grey to brown; petiole to 2.5 cm long; follicles 2–5, winged on one side. Bajau, Kranji, Pulau Jahat (*Ridley 2049*). Pulau Tekong. Vern. Dungun, 銀葉樹

*Heritiera simplicifolia* (Mast.) Kosterm. (= *Tarrietia simplicifolia* Mast.)

Large tree; leaves elliptic, usually with a broad apical notch. Bukit Timah. Gardens, Jungle (*Md. Nur 1026*).

*Kleinhovia hospita* L.

Shrub or small tree, with a dense crown; flowers pink in terminal panicles, fruit a bladder-like, 5-shouldered capsule. Formerly recorded as wild, now only occasionally found in cultivation.

*Melochia corchorifolia* L.

Shrubby weed; flowers small, pink, in waste places.

*Pterospermum diversifolium* Bl.

Large sea-shore tree, with short buttresses; leaves oblong, with a heart-shaped base or peltate and palmately lobed; fruit a woody capsule, oblong. Pulau Ubin (*Ridley 387*).



*Pterosp. javanicum* Jungh.

Slender inland tree, with much smaller leaves than the above species. Bukit Timah, Sungei Buloh (*Ridley 61101*).

*Scaphium linearicarpum* Pierre

Large tree; leaf-base heart-shaped; flowers small, in scurfy panicles; fruit a large papery follicle, dehiscing early becoming boat-shaped and exposing the single seed. Jurong (*Mat 6761*).

*Scaph. macropodum* (Miq.) Beuinee ex Heyne (= *Scaph. affine* Pierre)

Like the above, but leaf-base rounded. Gardens' Jungle, Bukit Mandai, Bukit Timah (*M. Shah & Samsuri 3910*).

*Sterculia bicolor* Mast.

Tree; flowers apetalous, in hanging racemes; fruit follicles 1-5, leathery, pink or scarlet, radiating from a common stalk, splitting open along the inner suture; seeds hanging from the split edges. Bukit Timah, Seletar (*Sinclair S.F. 40637*).

*Sterculia coccinea* Jack (= *Sterc. laevis* Wall.)

Shrub; flowers green; follicles 3-5, scarlet; seeds blue black. Common in woods, Tanglin, Bukit Timah (*Ridley s.n.* in 1903), Pulau Ubin.

*Sterc. cordata* Bl. (= *Sterc. javanica* R. Br.)

Large tree. Bukit Timah.

*Sterc. elongate* Ridl.

Shrub. Bukit Timah (*Goodenough s.n.* in 1890).

*Sterculia foetida* L.

Tree, the only Malayan species of *Sterculia* with palmately compound leaves (the others being all simple-leaves). Native of E. Africa and India, occasionally planted.

*Sterc. macrophylla* Vent

Big tree; follicles 3-5, red, large. Choa Chu Kang, Nee Soon (*Samsuri 1455*), Reservoir woods.



*Sterc. nobilis* Smith

Small tree. Native of S. China, occasionally planted for its edible seeds.  
 蘋婆樹

*Sterc. parviflora* Roxb.

Big tree; flowers pink, follicles orange red. Gardens' Jungle, Grange Road  
 (Corner 31479).

*Sterc. rubiginosa* Vent

Small tree; flowers pink. Tanglin, Bukit Timah, Choa Chu Kang (*Ridley*  
 6082), Bukit Mandai.

**84. LINACEAE**

## KEY TO THE GENERA

A. Woody climber, spiny; fruit drupaceous ..... *Indorouchera*

A. Erect trees, not spiny; fruit capsular ..... *Ixonanthes*

*Indorouchera griffithiana* (Planch.) Hallier

Formerly called *Roucheria griffithiana* Planch. Woody climber, with stiff  
 woody tendrils; flowers small, yellow; drupe red. In thickets and woods.  
 Tanglin, Bukit Timah (*Ridley* 4629), Bukit Mandai.

*Ixonanthes icosandra* Jack

Tree; leaf-margin wavy or toothed; stamens 14–18; fruit a thinly woody  
 capsule, opening by 5 valves. In woods. Water Catchment Areas, Changi  
 (*Ridley* 130).

*Ixon. reticulata* Jack

Leaf-margin entire; stamens 8–12. In woods, Gardens' Jungle, Bukit Timah,  
 Jurong, Pulau Bukom (*Md. Nur s.n.* in 1947).

**85. ERYTHOXYLACEAE***Erythroxylum cuneatum* Kurz

Shrub or small tree; flowers white or yellow; fruit drupe-like, bright red.  
 In woods near the sea; Changi (*Sinclair* 37935).

*Eryth. nova-granatense* Heiron.

The cocaine bush of Colombia, formerly grown as a hedge plant, now  
 prohibited. 古柯



## 86. OXALIDACEAE

## KEY TO THE GENERA

- A. Herbs; leaves 3-foliolate ..... *Oxalis*
- A. Woody climbers or trees,
  - B. Climbers; leaves simple, leathery ..... *Dapania*
  - B. Trees,
    - C. Leaves simple ..... *Sarcotheca*
    - C. Leaves pinnate ..... *Averrhoa*

*Averrhoa bilimbi* L.

Small tree; leaves pinnate; flowers in tufts on stem and large branches; fruit green, warty, more or less rounded in cross section, very acidic, edible. Cultivated in villages; origin unknown, probably of S. India. Vern. Bilimbi.

*Averrh. carambola* L.

Fruit with 5 prominent ribs, star-shaped in cross section (hence 'star fruit'), light green or yellow, edible. Probably of S. Indian origin; cultivated. Vern. Kembola, 陽桃, 五斂子

*Dapania racemosa* Korth.

Climber; leaves leathery, simple. Bukit Timah (*Sinclair* 39648), Jurong.

*Oxalis barrelieri* L.

Small herb, erect, 10–30 cm high; leaflets ovate; flowers pale blue. A weed of S. American origin.

*Oxalis corniculata* L.

Small herb, creeping; leaflets 3, rounded, notched; flowers yellow. A weed in gardens and waste places. 黄花酢漿草

*Oxalis corymbosa* DC

Creeping herb; leaves and flowers both larger than those of *C. coniculata*; flowers pink. Native of Brazil, occasionally cultivated or running wild.

*Sarcotheca griffithii* Hall. f. (= *Connaropsis griffithii* Planch.)

Tree, leaves 3-foliolate; flowers black. Gardens' Jungle, Bukit Timah Mandai Road (*Sinclair* 39536).



**87. RUTACEAE****KEY TO THE GENERA**

- A. Herbs; leaves divided into 2–3 times pinnate ..... *Ruta*
- A. Woody climbers, shrubs or trees,
  - B. Woody climbers, prickly or spiny,
    - C. Leaves simple ..... *Paramignya*
    - C. Leaves pinnate, with 5–9 leaflets ..... *Zanthoxylum*
  - B. Shrubs or trees,
    - D. Leaves always simple or 1-foliolate,
      - E. Leaves opposite ..... *Acronychis*
      - E. Leaves alternate,
        - F. Shrubs or trees with round or ovoid fruits, mostly cultivated ..... *Citrus*
        - F. Shrubs with 3-angled fruit, in mangroves ..... *Merope*
    - D. Leaves often 3-foliolate (sometimes also 1-foliolate),
      - G. Fruit with a thick, hard shell, cultivated ..... *Aegle*
      - G. Fruit small, with soft rind,
        - H. Flowers in large inflorescence; wild ... *Glycosmis* (in part)
        - H. Flowers solitary, axillary; hedge plant ..... *Triphasia*
  - D. Leaves pinnate, usually with 5–9 or more leaflets,
    - I. Fruit of dry follicles ..... *Euodia*
    - I. Fruit of small berries,
      - J. Style less than 1 mm long,
        - K. Ovary sessile, on a cushion-like disk ..... *Glycosmis*
        - K. Ovary on a stalk-like disk ..... *Clausena*
      - J. Style 4–9 mm long ..... *Murraya*



*Acronychia porteri* Hook. f.

Tree; leaves simple, opposite; flowers 4-merous, on an expanded inflorescence; stamens 8; fruit a small drupe. In woods, Gardens' Jungle, Bukit Timah, Changi, Jurong (Ridley 7285).

*Aegle marmelos* Correa

Deciduous tree; flowers with many stamens; ovary 8-12 chambered; fruit subglobose, with hard woody shell. Native of India, cultivated for medicine, called Bel-fruit tree.

*Citrus aurantifolia* Swingle

Small tree or shrub; leaves smaller than lemon (*C. limon* Burm. f. 檸檬) the fruit is also smaller, nearly rounded and with thinner rind, very sour ('limau asam' or lime, 酸橘). Bukit Timah Road (Furtado 10567). Besides some imported citrus fruits such as sweet orange (*C. sinensis* Osb., 'limau potong' 甜橙), mandarin orange (*C. reticulata* Blanco, 'limau kupas' 柑) grapefruit (*C. paradisi* Macf. 葡萄柚), the following species are sometimes cultivated in private gardens: *C. grandis* Osb. (pomelo, 'limau besar' 柚, 文旦), *C. hystrix* DC. (Mauritius papeda, 'limau purut'), *C. medica* L. (citron, 'limau sus' 枸橼), *C. microcarpa* Bunge (musk lime, 'limau kesturi'), and others.

*Clausena excavata* Burm. f.

Shrub, with foetid odour; leaves odd-pinnate with numerous leaflets; flowers white; fruit pink. In open woods, Tanglin (Goodenough 223), Pulau Ubin.

*Claus. lansium* Skeels

Shrub or small tree. Fruit (wampi 黄皮) edible. Native to S. China, occasionally planted.

*Euodia glabra* Bl.

Small tree; leaflets 3, obovate; flowers with 4-5 stamens, in large panicles; fruit folliculate. Bukit Timah (Liew 37255), Tanglin, Choa Chu Kang, Seletar.

*Euodia robusta* Hook. f.

Tall tree; leaflets 3, broadly elliptic. Reservoir woods, Tuas, Bukit Mandai, Bukit Timah (Hullett 455).

*Euodia roxburgiana* Benth. ex Hook. f.

Tree; leaflets 3, oblong elliptic; flowers white. Tanglin, Jurong, Bukit Timah, Kranji, Botanic Gardens (Ridley 11264).



*Glycosmis chlorosperma* Spr. (= *G. malayana* Ridl.)

Tree or large shrub; leaves with 5–7 leaflets; flowers and fruit white. Gardens' Jungle, Bukit Timah, Seletar, Changi, Choa Chu Kang (*Ridley 3912*).

*Glyc. lanceolata* Spr. (= *G. citrifolia* Auct. Ridl.)

Small tree; leaves 1- or 3-foliolate, lanceolate-elliptic. Tanglin (*Ridley 10835*).

*Merope angulata* Swingle (= *Paramignya longispina* Hook. f.)

Shrub or small tree with stout single or paired spines; flowers axillary, solitary, 5-merous; fruit yellow, like a small pear, 3-angulate, aromatic, used in native medicine. In mangrove swamps, Jurong Kranji. Vern. Limau lelang.

*Murraya koenigii* Spr.

Small tree or shrub; leaflets 9–23, stinging when bruised ('curry bush'). Native of India, cultivated.

*Murraya paniculata* Jack (= *M. exotica* L.)

Shrub or small tree; leaflets 3–7; flowers white, strong-scented. Native of continental Asia, cultivated as an ornamental. Vern. Kumuning, mock orange, 九里香

*Paramignya scandens* Craib var. *ridleyi* Swingle (= *P. griffithii* Hook. f.)

Prickly climber; fruit globose, not lobed. Rare, Changi.

*Ruta graveolens* L.

Perennial herb, rue, from S. Europe; leaves 2–2 times subdivided. Occasionally planted for medicine and flavouring. 芸香

*Triphasia trifolia* P. Wils.

Spiny shrub; leaves of 1–3 leaflets; flowers white; fruit ovoid, red. Prob. a native of S. China, planted for hedges. Vern. Limau keah.

*Zanthoxylum nitidum* DC (= *Z. hirtellum* Ridl.)

Climbing shrub; leaflets usually 5–9. Yio Chu Kang (*Ridley 11291*), 山椒



**88. SIMAROUBACEAE****KEY TO THE GENERA**

- A. Leaves simple,
  - B. Gigantic tree, in inland forest ..... *Irvingia*
  - B. Shrub or small tree, in tidal swamps ..... *Quassia*
- A. Leaves pinnately compound, shrubs or small trees,
  - C. Leaflets sessile or nearly so, attached to the rachis with a conspicuous joint ..... *Eurycoma*
  - C. Leaflets stalked, joint indistinct ..... *Brucea*

*Brucea javanica* Merr. (= *B. sumatrana* Roxb.)

Shrub or small tree; leaves with 3–15 coarsely-toothed leaflets, aromatic; flowers small, purple; drupe black, bitter, used in native medicine for many purposes. Changi (*Kiah* 2603). Vern. lada pahi. 鴉胆子

*Eurycoma longifolia* Jack

Shrub or small tree; bark bitter, used in native medicine against fever; leaves with many opposite leaflets plus a terminal one. In primary and secondary forests, Tanglin, Changi (*Hullett* 51), Bukit Timah. Vern. Bidara pahit.

*Irvingia malayana* Oliv. ex Benn.

Large tree with steep plank buttresses; flowers small, green; fruit like a small mango. In Reservoir woods, Bukit Timah (*Ridley* 6356). Vern. Pauh kijang.

*Quassia indica* (Gaertn.) Nooteb. (= *Samadera indica* Gaertn.)

Shrub or small tree; leaves with few to many scattered, pitted glands on the lower surface; fruit laterally compressed, sharp-edged. Formerly reported from tidal swamps, extinct.

**89. BURSERACEAE****KEY TO THE GENERA**

- A. Fruit a winged capsule ..... *Triomma*



- A. Fruit a drupe, not winged,
  - B. Fruit with an apical stigma, wrinkled when dry,
    - C. Calyx enlarged in fruit; stone wall thickly woody ..... *Canarium*
    - C. Calyx not enlarged in fruit; stone wall thinly woody ..... *Dacryodes*
  - B. Fruit with a lateral stigma, smooth when dry ..... *Santiria*

*Canarium grandifolium* (Ridl.) Lam (= *Trigonochlamys grandifolia* Ridl.)

Large tree, buttressed; leaves pinnate, with 5–7 leaflets; inflorescence terminal or axillary; flowers unisexual, 3-merous; drupe seated on an enlarged calyx; stone woody, 3-angulate in section. Changi.

*Canar. littorale* Bl.

A common but variable species formerly considered as several separate species (*C. purpurascens* Benn., *C. rufum* Benn., *C. secundum* Benn.). Medium-sized tree; flowers creamy yellow; fruit large, greyish green; stone 3-angled. Tanglin, Bukit Timah, Changi, Seletar, MacRitchie (*Corner* 33553). Vern. Kedondong.

*Canar. patentinervium* Miq. (= *C. nitidum* Benn.)

In open woods, Reservoir woods, Bukit Timah, Changi (*Ridley* 5001).

*Canar. pilosum* Benn. (= *C. grandiflorum* Benn.)

Flowers orange. Changi, Bukit Mandai, Bukit Timah (*Corner* 34995).

*Canar. vulgare* Leenh. (= *C. commune* L.)

Native of Celebes and Molucca, the kenai nut tree is valued for its oily kerneel of fruits. One time planted as a roadside tree.

*Dacryodes laxa* (Benn.) Lam (= *Santiria laxa* Benn.)

Large tree with spreading crown; leaves with 7–9 leaflets; flowers deep red, in a lax hanging hairy panicle; drupe rosy, plume-like. Bukit Timah (*Ngadiman* 37037), Gardens' Jungle.

*Dacryodes rostrata* (Bl.) Lam (= *Canarium kadondon* Benn.)

Big tree, fruit pink. Gardens' Jungle; Bukit Timah (*Ridley* 6359), Changi.

*Santiria apiculata* Benn.

Small tree; leaves with 3–9 leaflets; flowers whitish green; fruit rosy, obliquely ellipsoid. Bajau (*Ridley* 6361), Bukit Timah.



*Santiria griffithii* (Hook. f.) Engl. (= *Trigonochlamys griffithii* Hook. f.)

Tree; leaflets 9–15; flowers whitish yellow; fruit blue. Kranji, Seletar, Tanjong Gul, Mandai (*Corner 34904*).

*Santiria laevigata* Bl.

Large tree; flowers green. Seletar, Gardens' Jungle; Bukit Timah (*Ngadiman 34772*).

*Triomma malaccensis* Hook. f.

Large tree, exuding aromatic resin; leaflets 9; fruit a 3-winged capsule, green, opening by 3 woody valves; seed 1 in each locule, flatly winged. Gardens' Jungle, Bukit Timah (*Corner 34956*), rare.

## 80. MELIACEAE

### KEY TO THE GENERA

- A. Leaves simple, small shrubs ..... *Turraea*
- A. Leaves compound,
  - B. Leaves imperfectly 2–3 times pinnate ..... *Melia*
  - B. Leaves 3-foliolate or once pinnate,
    - C. Flowers with a prominent glandular disc, cup or tube shaped, surrounded but free from the ovary,
      - D. Leaves 3-foliolate ..... *Sandoricum*
      - D. Leaves once pinnate ..... *Dysoxylum*
    - C. Flower disc inconspicuous or absent, or if prominent, then fused with the ovary,
      - E. Petals globosely connivent,
        - F. Flower parts in 3s, trees ..... *Amoora*, *Aphanamixis*
        - F. Flower parts in 5s, trees or shrubs,
          - G. Inflorescence spike-like, ovary 3–5 loculed ... *Lansium*
          - G. Inflorescence paniced, ovary 1–3 loculed ..... *Aglaia*
      - E. Petals not globosely connivent,



## H. Flower parts in 4s,

I. Calyx deeply 4-lobed; capsule not dehiscent, many seeded; trees of mangrove swamps ..... *Xylocarpus*I. Calyx subentire; capsule dehiscent, 1-4-seeded; disc absent ..... *Chisochetum*

## H. Flower parts in 5s,

J. Leaflets serrate; drupe globose, 1.5-2 cm long ..... *Azadirachta*J. Leaflets entire; capsule ovoid, 7-17 cm long ..... *Swietenia**Aglaia cordata* Hiern.

Small tree; leaflets 7-9; flowers minute, in axillary panicles; berry globose or ovoid, 1-2 seeded; seeds with a yellow pulpy coat. Seletar (*Ridley* 333).

*Aglaia glabriflora* Hiern.

Shrub; leaflets 9 or more. Edge of woods; Tanglin, Changi, Bukit Timah (*Sinclair* 40189).

*Aglaia odorata* Lour.

Shrub with very small yellow fragrant flowers (exclusively male ones). Native of S. China, often cultivated; propagated by marcots. 樹蘭, 米仔蘭

*Aglaia odoratissima* Bl.

Shrub or small tree; leaflets 5-7; fruit yellow; fruit ovoid. Bukit Mandai, Bukit Timah, Reservoir woods, Choa Chu Kang (*Ridley* 3919).

*Aglaia oligophylla* Miq.

Small tree; leaflets 3-5; fruit globose. Singapore, formerly recorded by *Wallich* 4887.

*Aglaia palembanica* Miz,

Shrub or small tree; leaflets 5-9; fruit ellipsoid. Stagmount.

*Aglaia trichostemon* DC

Small tree; leaflets 9-13; fruit ovoid. Gardens' Jungle (*Corner* 33582), Jurong.



*Amoora cucullata* Roxb.

Tree, leaves pinnate; leaflets 5–11; racemes supra-axillary; petals yellow; capsule pear-shaped, 6–6.5 cm across, 3-valved, with 1 seed in each locule; aril orange. Seletar, Mandai, Pandan.

*Amoora rubescens* Hiern.

Tree; leaflets 13–15. Singapore (Maingay ?), Seletar.

*Amoora rubiginosa* Hiern.

Large tree; leaflets 17–21, of copper colour beneath; fruit subglobose, apiculate, 5–7 cm across. Choa Chu Kang, Bukit Timah (*Corner* 37277).

*Aphanamixis rohituka* Pierre (= *Amoora aphanamixis* Schultes)

Tree; leaflets 9–15; male flowers in panicles; female flowers in racemes; capsule globose, 3-valved; seeds arillate, scarlet. Tuas, Seletar, Bukit Timah, Jurong (*Corner* 36036).

*Azadirachta indica* Juss. (= *Melia indica* L.)

Trees; leaves pinnate; leaflets 8–16; flowers yellowish white; fruit greenish yellow. Wild in India, known as nim tree, a valuable medicinal plant.

*Chisocheton patens* Bl. (= *Chis. divergens* Bl.)

Laticiferous tree; leaflets 20–30; flowers in supra-axillary panicles; petals yellowish white; capsule pear-shaped, red, 2–4 valved; seed 1 in each chamber. black with orange aril as base. Tanglin, Mandai (*Corner* 36292), Changi.

*Chisocheton erythrocarpus* Hiern.

Big tree; leaflets 8–12. Pulau Ubin, Tampines River (*Ridley* 5963).

*Chis. macrophyllum* King

Tree; leaflets many. Pulau Ubin (*Ridley* 4767, type 1).

*Chis. pauciflorus* King

Shrub or small tree; leaflets 4–6; fruit fusiform. Reservoir woods.

*Chis. pentandrus* Merr. Subsp. *paucijugus* Mabberley (= *Chis. spicatus* Hiern.)

Tree; leaflets 4–6; fruit spear-head shaped; seeds 2. Bukit Timah (*Ridley* 8448).



*Dysoxylum acutangulum* Miq.

Tree, glabrous; leaflets 6–8, entire; flowers axillary or on old woods, in panicles or racemes; capsule globose, pear shaped, 3-loculate; seeds black with an orange aril. Changi, MacRitchie (*Corner* 34950).

*Dysox. cauliflorum* Hiern.

Tree, leaflets 9–13; flowers and fruits clustered on the trunk; fruit ovoid, split by 4 valves; seeds black with a red aril. Tanglin, Bukit Timah, Changi, Choa Chu Kang, Pulau Ubin (*Hullett* 392).

*Dysox. costulatum* Miq.

Tree; leaflets 8–9; fruit depressed globose, tapering below, 4-valved. Seletar, Changi, Bukit Timah (*Ngadiman* 36424).

*Dysox. flavescens* Hiern.

Tree; leaflets 9–13; fruit ovoid, on large branches. Bukit Timah, Changi, Seletar (*Ridley* 6127).

*Dysox. macrothyrsum* Miq.

Tree; leaflets 6–8; fruit turbinate, with 4 shallow grooves and 4 round angles. Choa Chu Kang.

*Dysox. thyrsoideum* Griff.

Large tree; leaflets 6–8; fruit globose, shortly narrowed at based. Bukit Timah (*Ngadiman* 35586).

*Dysoxylum tubinatum* King

Small tree; leaflets 4–6; fruit depressed glabrous. Bukit Timah, Choa Chu Kang (*Goodenough* 3468).

*Lansium domesticum* Carr.

Tree; leaflets 3–8, flowers in axillary racemes; simple, branched or in fascicles; flowers pale yellow; berry globose, 5-loculate, but usually only 1 or 2-seeded; seeds with a fleshy gelatinous edible aril. Vern. Langsat, duku.

*Melia azedarach* L.

Tree; leaves imperfectly 2–3 times pinnate; leaflets crenate or incised; petals lilac (hence the common name “Persian lilac”); fruit a yellow-brown berry, as if with a porcelain-like coating (hence “China berry tree”). Native of N. India, sometimes cultivated. 楝, 苦楝



*Sandoricum koetjape* (Burm. f.) Merr. (= *S. indicum* Cav.)

Laticiferous tree; leaflets 3, entire or shallowly serrate; petals reddish yellow; drupe yellow, depressed globose, 5–7.5 cm across, with 2 to 5 pyrenes. Vern. Sentol.

*Swietenia macrophylla* King

Tree; leaves even-pinnate; leaflets 9–15; capsule ovoid, woody, greyish brown, 15–17 cm long, 5-loculate, dehiscing by 5 valves from the base. The broad-leaved mahogany tree is a native of Honduras, often cultivated as a roadside tree.

*Swietenia mahogani* Jacq.

This is the mahogany tree which differs from the above species in smaller leaflets with distinctly recurved margins at base, and in smaller capsule (7.5–10 cm long). Native of tropical America, only occasionally planted. 桃花心木

*Turraea breviflora* Ridl.

Small shrub; leaves simple; flowers in axillary cymes. In woods, Serangoon.

*Xylocarpus granatum* Koen. (= *Carapa obovata* Bl.)

Tree with smooth, peeling reddish bark, in mangrove swamps; leaflets 2–4(–6), obovate oblong, thick leathery; fruit globose, 10–20 cm across, brown; seeds several, cocky. Kranji, Serangoon, Pulau Seletar (*Samsuri 1204*). Vern. Nireh.

*Xyloc. moluccensis* (Lamk.) Roem. (= *Carapa moluccensis* Lamk.)

Tree with dark brown bark; leaflets 1–7, ovate-oblong, thin leathery; fruit broadly ellipsoid, 8–15 cm across. Pulau Pawai (*Sinclair 38898*). Ulu Pandan.

## 91. POLYGALACEAE

### KEY TO THE GENERA

- A. Herbs; petals 3, fused at base and adnate to the staminal tube,
  - B. Stamens 8 ..... *Polygala*
  - B. Stamens 4–5 ..... *Salomonina*
- A. Trees; petals 5, free,
  - C. Stamens 5; fruit of 3 samaras ..... *Trigonistrium*
  - C. Stamens 8; fruit a drupe ..... *Xanthophyllum*



*Polygala brachystachya* Bl.

Small trailing herb; leaves small narrow; flowers yellow, in racemes. St. Michael's Road (*Sinclair* 38867).

*Polygala paniculata* L.

Flowers white or pale violet, in terminal simple or branched racemes. Native of Brazil, common in road borders in certain areas.

*Salomonina cantoniensis* Lour.

A very thin herb; flowers very small, pink, found in open grassland. Choa Chu Kang (*Goodenough* 3838).

*Trigonostemon hypoleucum* Miq.

Small tree; leaf underneath white from a layer of twisted hairs; flowers irregular, in panicles; fruit winged. Bukit Timah (*Ridley* 10379).

*Xanthophyllum affine* Korth.

Tree, flowers white or yellow, in branched racemes; fruit soft woody, round, 2–2.5 cm across, seed 1.

*Xanth. discolor* Chodat

Fruit round, 1.2 cm across.

*Xanth. ellipticum* Korth. (= *X. kingii* Chodat)

Fruit round, 1.4–2 cm across.

*Xanth. griffithii* var. *curtissi* (King) Ng

Fruit round, 1–1.2 cm across.

*Xanth. maingayi* Benn. (= *X. palembanicum* Auct.)

Small tree; fruit round, 1.2–1.5 cm across. Common understorey tree. Bukit Timah (*Md. Shah & Samsuri* 3956).

*Xanth. obscurum* Benn.

Fruit round or obovoid, 8–12 cm across.



## 92. EUPHORBIACEAE

## SYNOPTIC KEY TO THE NATIVE GENERA\*

- A. Each ovary-locule with 2 ovules; flowers mostly in dense clusters (at least in staminate ones); inflorescences always axillary; sepals overlapping or not; stamens usually equal to or double sepal number, outer ones opposite sepalous; fruit usually a capsule, sometimes fleshy to leathery, slowly splitting. (Subfamily Phyllanthoideae).
- B. Flowers with petals,
- C. Calyx lobes not overlapping in bud; stamens joined in a column ..... (*Bredelia*, *Cleistanthus*)
- C. Calyx lobes overlapping in bud; stamens free ..... (*Actephila*)
- B. Flowers apetalous,
- D. Leaves opposite ..... (*Austrobuxus*)
- D. Leaves alternate (spiral or in 2 ranks),
- E. Staminate flowers in axillary clusters or solitary,
- F. Staminate flowers with ring-like disc, or of separate glands, or absent; styles slender, divided or not ..... (*Breynia*, *Glochidion*, *Phyllanthus*, *Sauropus*, *Securinega*, *Synostemon*)
- F. Staminate flowers with a broad, plate-like disc; style and stigma flattened, fan-shaped ..... (*Drypetes*)
- E. Staminate flowers in axillary racemes, spikes or panicles ..... (*Antidesma*, *Aporosa*, *Baccaurea*)
- A. Each ovary-locule with only 1 ovule; inflorescence a spike, raceme or panicle, sometimes terminal; sepals in male seldom overlapping; stamens often numerous; fruit usually a capsule. (Subfamily Euphorbioideae).
- G. Flowers naked, without petals or sepals, crowded and surrounded by a calyx-like involucre, the whole resembling a single flower ... (*Euphorbia*)
- G. Flowers with sepals, and sometimes petals, not clustered within in involucre,
- H. Inflorescence of terminal cymes, with a central female surrounded by male flowers ..... (*Aleurites*)

\* Based on T. C. Whitmore in Tr. Fl. Mal. 2 (1973): 40-43, modified.



H. Inflorescence axillary or if terminal, not cymose,

I. Staminate flowers with petals,

J. Outer (or all) stamens opposite sepals; fruit a strongly sculptured or flattened stone; stipules arising from different levels ..... (*Galearia*, *Microdesmis*)

J. Outer (or all) stamens alternate with sepals; fruit without a stone; stipules arising on same level,

K. Stamens numerous, strongly inflexed in bud; flowers in terminal, bisexual spikes; commonly stellate hairy; leaves with 2 large glands at base of blade ... (*Croton*)

K. Stamens erect in bud; flowers and leaves not as above ..... (*Agrostistachys*, *Trigonostemon*, *Fahrenheitia*)

I. Flowers without petals,

L. Slender twiners; styles joined in a usually massive column ..... (*Pterococcus*, *Megistostigma*)

L. Shrubs, trees, or rarely herbs; styles not as above,

M. Sepals of staminate flowers not overlapping in bud, or calyx bursting irregularly .....  
(*Acalypha*, *Alchornea*, *Blumeodendron*, *Claoxylon*,  
*Endospermum*, *Koiloceras*, *Macaranga*, *Mallotus*,  
*Ptychopyxis*)

M. Sepals of staminate flowers overlapping in bud,

N. Disc or glands present; flowers in small dense clusters ..... (*Suregada*)

N. Disc or glands absent; flowers mostly in spikes or racemes ..... (*Excoecaria*, *Pimelodendron*,  
*Sebastiania*, *Sapium*)

*Acalypha godseffiana* Mast.

Shrub; leaves heart-shaped, coarse-toothed, green with creamy edge; sometimes planted; native of New Guinea.

*Acal. hispida* Burm. f.

Shrub; spikes long, cylindrical, hairy, bright red; sometimes cultivated; prob. native of Indonesia.

*Acal. indica* L.

A hairy herb; females flowers few, enclosed in a large bract. Widely distributed in the Old tropics; Bajau, Geylang (*Ridley in 1896*), Pulau Ubin, etc.



*Acal. siamensis* Oliv. ex Gage

Shrub, glabrous; leaves rhomboid, coriaceous; racemes slender, 3 cm long. Native of Thailand and N. Malaya, often as a hedge plant. Vern. *Tumput*.

*Acal. wilkesiana* M.A.

Shrub; leaves ovate, red or in several colour forms or markings. Native of Fiji, commonly planted as a roadside ornament.

*Actephila excelsa* M.A. var. *javanica* (Miq.) P. & H.

Shrub or small tree; leaves elliptic, spiral; fruit a woody capsule, seated on the persistent calyx with a long stalk. Gardens Jungle, Bukit Timah (*Samsuri* 820), Bukit Mandai.

*Agrostistachys longifolia* Benth. (= *A. sessilifolia* P. & H.)

Shrub or small tree; leaves always clustered at twig tips, blades leathery, very narrowly obovate, 30–60 cm long, the base decurrent to twig. Common in understorey of forests; Tanglin, Sungei Buluh, Gardens Jungle (*Burkill* 129), Choa Chu Kang, etc.

*Alchornea rugosa* M.A. (= *A. javensis* M.A.)

Shrub or small tree; leaves obovate; fruit the size of a pea. Changi (*Ridley* 3605), Serangoon.

*Alch. villosa* M.A.

Shrub, coated with long soft golden hairs; leaves ovate, toothed. In thickets; Bukit Timah, Reservoir Woods, Bukit Mandai, Choa Chu Kang (*Ridley* 3452), etc.

*Aleurites moluccana* Willd.

Tree, occasionally planted. Fruit with a thick rind and 1–2 seeds; seeds with a stony coat, though poisonous, used to a small extent for food; oil from the kernel was formerly used for making candle (hence 'candle nut tree'). Vern. *buah keras*, 石栗

*Antidesma coriaceum* Tul.

Small tree, glabrous; leaves spirally arranged; flowers tiny, on slender spikes or panicles; drupe small red, roundish but compressed. Bukit Timah, Tanglin, Gardens Jungle, Nee Soon (*Samsuri* 1452).



*Ant. cuspidatum* M.A.

Tree, pubescent. Changi, Bukit Timah, Gardens Jungle, Choa Chu Kang (Ridley 3908).

*Ant. neurocarpum* Miq. (= *A. alatum* Hook.)

Small tree, glabrous. Changi (Ridley 1840), Jurong, Bukit Timah.

*Ant. velutinosum* Bl.

Shrub or small tree, tomentose. Pulau Ubin (Hullet 629), Changi.

*Aporosa benthamiana* Hook. f.

Small tree; leaves oblong, with very big, crescentic stipules; dioecious, male flowers in short catkins; females in clusters or short spikes; fruit red. Bukit Timah (Ridley 6259), Tanglin, Choa Chu Kang. A genus of shrub, small to medium tree, the generic name *Aporosa* means 'difficult', formerly misspelt as *Aporosa*.

*Apor. bracteosa* P. & H.

Small to medium tree; leaves elliptic. Bajau (Ridley 6484).

*Apor. confusa* Gage

Small tree. Bukit Mandai (Ridley 6490).

*Apor. falcifera* Hook. f.

Medium tree. Bukit Timah, Gardens Jungle (Sinclair 40697), Kranji.

*Apor. frutescens* Bl.

Bushy tree; male catkins yellow, 1–2 cm long. Bukit Timah (Ridley 4443).

*Apor. lunata* (Miq.) Kurz

Shrub. Jurong (Ridley 6098).

*Apor. microstachya* M.A. (= *A. maingayi* Hook. f.)

Shrub. Gardens Jungle (Cantley 8), Seletar, Kranji, Jurong.

*Apor. nervosa* Hook. f.

Medium tree. Tuas (Ridley 6488).



*Apor. nigricans* Hook. f.

Small tree. Tanglin, Bukit Timah (*Md. Shah & Samsuri 3903*), Choa Chu Kang.

*Apor. prainiana* King ex Gage

Small tree. Bukit Mandai, Seletar (*Sinclair 40217*), Kranji.

*Apor. symplocoides* (Hook. f.) Gage

Small tree. Seletar (*Ridley 6173*).

*Austrobuxus nitidus* Miq. (= *Longetia malayana* P. & H.)

Shrub or small tree; leaves opposite, elliptic; flowers small in short panicles; fruit elliptic, splitting into 3 parts. Sungei Bupuh, Serimbun.

*Baccaurea bracteata* M.A.

Small tree. Bukit Mandai, Nee Soon (*Samsuri 1450*), Holland Road, Kranji. *Baccaurea* is a genus of small trees, with flowers in long racemes which are in tufts on the knotted stem. Male racemes are usually borne above and females at the base of the tree. Fruit a globose capsule, orange or brown, usually splitting and exposing the pulpy seeds. The pulp is edible, though often acidic. The Malay name for this group is *tempoi* or *rambai*.

*Baccaurea griffithii* Hook. f.

Seletar (*Ridley 6125*).

*Bacc. hookeri* Gage

Small tree. Seletar (*Sinclair 40305*).

*Bacc. kunstleri* King ex Gage

Medium tree. Gardens Jungle, Seletar, Tanjong Bul.

*Bacc. lanceolata* M.A.

*Bacc. macrophylla* M.A.

Small to medium tree. Gardens Jungle, Seletar (*Corner s.n.*).

*Bacc. maingayi* Hook. f.

Bukit Timah (*Tamby H9*).



*Bacc. minor* Hook. f.

Gardens Jungle, Bukit Timah, MacRitchie (*Md. Shah & Samsuri 3944*).

*Bacc. motleyana* King

This is a well-known fruit tree, 'rambai', common in cultivation.

*Bacc. parviflora* M.A.

Tanglin, Bajau, Changi (*Ridley 1896*).

*Bacc. pyrifomis* Gage

Kranji (*Ridley 6491*, type).

*Bacc. racemosa* M.A. (= *B. wallichii* Hook. f.)

Seletar (*Ridley 6258*).

*Bacc. reticulata* Hook. f.

Kranji (*Ridley 6146*), Seletar.

*Bacc. summatrana* M.A. (= *B. kingii* Gage)

*Blumeodendron tokbrai* J.J. Sm.

Large tree; leaves often with a pale whitish margin; fruit round, orange, 3-shouldered. In lowland and swampy forest. Bukit Timah (*Henderson 37296*).

*Breynia coronata* Hook. f.

Shrub; leaves alternate, in 2 ranks; flowers small in axillary clusters; fruit small, rose-pink, with enlarged calyx.

*Brey. discigera* M.A.

Shrub. Bukit Timah, Mandai (*Burkill 6101*).

*Brey. reclinata* Hook. f.

Shrub; berry red. Common near the sea; Bukit Timah (*Samsuri 1421*), Tanglin, Reservoir Woods, Changi. Vern. *hujan panas*.

*Brey. vitis-idaea* C.E.C. Fisch. (= *B. rhamnoides* M.A.)

Large shrub.



*Bridelia pustulata* Hook. f.

Shrub; leaves ovate; flowers small, in clusters; fruit a small drupe. Jurong (Ridley 3874), Changi.

*Brid. stipularis* Bl.

Bush or small tree; leaves soft velvety below. Pasir Panjang (Sinclair 40195).

*Brid. tomentosa* Bl.

Shrub or small tree; leaves glabrous below. In open places, Garden Jungle, Tanglin (Hullett 692). 土蜜樹

*Claoxylon indicum* Hassk.

Large shrub or small tree; leaves softly velvety below; spikes to 40 cm long. In thickets, Grange Road, Dalvey Road (Sinclair 10922).

*Claoxylon longifolium* Endl. ex Hassk.

Tree; leaves glabrous; spikes less than 10 cm long. In Woods, Bukit Timah, Pulau Ubin, Bukit Mandai (Ridley 5911), Choa Chu Kang.

*Cleistanthus hirsutulus* Hook f.

Shrub or small tree; leaves papery, often glaucous below; flowers like *Bridelia* except ovary 3-loculed; fruit a 3-lobed capsule, hairy. Bukit Timah (Ridley 6514).

*Cleist. macrophyllus* Hook. f.

Leaves large, ovate-elliptic, 14–20 x 69 cm. Bukit Timah (Ridley 6478).

*Cleist. malaccensis* Hook. f.

Leaves glabrous. Choa Chu Kang (Ridley 4586).

*Cleist. myrianthus* Kurz

Bushy tree; leaves coppery. Kranji (Ridley 6375), Jurong, Choa Chu Kang.

*Cleist. sumatranus* (Miq.) M.A. (= *C. heterophyllus* Hook. f.)



*Codiaeum variegatum* (L.) Bl.

Shrub or small tree; leaves bright-coloured, having unlimited variations in form and colour pattern (colours, including red, orange, yellow, green and purple). Horticulturally known as 'Croton' (not to be confused with *Croton* which is a different genus). Native of Fiji. 變葉木

*Croton argyratus* Bl.

Small tree; leaves silvery or bronze beneath. Changi (*Ridley 3638a*). Vern. *Tuku Takal*.

*Croton caudatus* Geisel.

Scandent or erect shrub; flowers white, in erect racemes; capsule globose, yellow. Tanglin, Bukit Timah, Bajau, Choa Chu Kang (*Ridley 3884*), Changi. Vern. *Tuku Takal*.

*Croton heterocarpus* M.A. (= *C. heteropetalum* Ridl.)

Leaves small, strongly wavy. In mangrove swamps. Choa Chu Kang (*Sinclair 38591*).

*Croton laevifolius* Bl. (= *C. griffithii* Hook. f.)

Shrub or small tree. Gardens Jungle, Bukit Timah (*Md. Shah & Samsuri 3890*), Sungei Puluh, Choa Chu Kang.

*Drypetes pendula* Ridl.

Small tree; leaves oblong, leathery, base heart-shaped; young leaves in drooping purplish tassels. Bukit Timah, Reservoir Forests (*Ridley 6124*).

*Euphorbia antiquorum* L.

Cactus-like shrub, to 8 m tall, with milky sap; branches 3-4 angled; leaves oval-shaped, often reduced; spines brown, on ridge-elevations. Native of India and Malaya.

*Euph. atoto* Forst. f.

Small herb, to 1 m tall, glabrous, with white sap; leaves opposite. On seashores, Changi, Katong (*Ridley 10804*).

*Euph. hirta* L.

Hairy herb, to 30 cm tall; leaves opposite, oblong, toothed. Common weed.

*Euph. milii* des Moulin (= *E. splendens* Bojer)

Shrub; stem succulent, bearing long spines mixed with few obovate leaves; involucre bright red (or ivory yellow). Native of Madagascar, vern. Crown of Thorns, 麒麟花



*Euph. neriifolia* L.

Like *E. antiquorum*, but branches 5-angled; leaves obovate. Native of India, known as Indian Spurge tree.

*Euph. pulcherrima* Willd.

The poinsettia is a symbol of the Christmas Season, when in N. temperate countries, it can be found in full bloom; leaves usually green, but the floral leaves at stem-tips are bright red in a rosette. Native of tropical America.

聖誕紅

*Euph. thymifolia* L.

Small herb, prostrate on ground, tinged reddish or purplish. Common weed, on open ground.

*Euph. tirucalli* L.

A large succulent shrub, to 5 m tall; branches slender, green, cylindrical; leaves small or absent. Native of Africa, the milk is used in native medicine.

珊瑚木

*Excoecaria agallocha* L.

Small tree, sap milky, poisonous; leaves ovate-elliptic; flowers small in axillary spikes. Common in mangrove swamps; Kranji (Ridley 6921), Changi, Tuas.

*Excoecaria bilolor* Hassk.

Glabrous shrub; leaves ovate-elliptic, dark green above and reddish purple beneath. Native of southern Indo China. 青紫木

*Fahrenheitia pendula* (Hassk.) Airy-Shaw (= *Ostodes macrophyllus* Benth.)

Small tree; leaves large, narrowly obovate; inflorescence a terminal panicle. In open woods; Choa Chu Kang, Bukit Panjang (Burkill 7619).

*Galearia fulva* (Tul.) Miq.

Shrub or small straggling tree; leaves elliptic, rusty below; flowers small, in slender tail-like pendulous spikes; fruit white pulpy. Very variable, formerly described under a host of binomials. Bukit Timah (Corner 33588).

*Glochidion brunneum* Hook. f.

Small tree; leaves elliptic ovate, in 2 ranks; flowers small, in dense axillary clusters; fruit a stalked, 4-6-lobed capsule. Gardens Jungle, Bukit Timah, Balestier Road (Ridley 10388). Vern. Ubah merak (ubah is the Malay name for *Glochidion*).



*Glochidion glomerulatum* Boerl.

Shrub or small tree; fruit 6-lobed.

*Glochidion hypoleucum* Boerl. (= *G. laevigatum* Hook. f.)

Shrub or small tree; leaves usually glaucous below. Bukit Timah, Bukit Mandai., Tuas (*Ridley* 6519).

*Gloch. littorale* Bl.

Banks of tidal rivers. Choa Chu Kang, Bukit Mandai (*Ridley* 8436).

*Gloch. microbotrys* Hook. f.

Tall tree with flaking bark; flowers small, scented. Gardens Jungle, Reservoir Jungle (*Corner* 32270), Choa Chu Kang, Changi, Pulau Ubin.

*Gloch. rubrum* Bl. (= *G. leiostylum* Kurz)

Shrub or small tree; leaves elliptic to ovate, variable. Gardens Jungle, Seletar, Nee Soon (*Samsuri* 1394).

*Gloch. sericeum* Hook. f.

Leaf undersurface and capsule covered with short velvety hairs. Bukit Mandai (*Ridley* 179).

*Gloch. singaporense* Gage

Shrub, to 3 m tall; leaves rough, with raised dots below; fruit stalk thread-like; capsule shallowly 3-lobed. Reservoir Jungle (*Ridley* 5044, type).

*Gloch. superbum* Baill.

Small tree; leaves large (12–23 x 5–12 cm). In open places, Mandai (*Samsuri* 1385).

*Gloch. wallichianum* M.A. (= *G. desmocarum* Hook. f.)

Leaves scurfy on the main nerves below. Tanglin, Bajau.

*Gloch. zeylanicum* Juss. (= *Gloch. perakense* Hook. f.)

Leaves lanceolate. In coastal swamp places, Cluny Road (*Corner* 32520).

*Hevea brasiliensis* (HBK) M.A.

The latex of the para Rubber tree is the source of most of the world's supply of natural rubber. A native of the Amazon region, Brazil, first successfully planted in Singapore Botanic Gardens in 1877, the seedlings were from the Kew Gardens, England. 橡膠樹, 巴西橡皮樹



*Jatropha curcas* L.

Soft-wooded shrub or small tree with milky sap; leaves heart-shaped, sometimes lobed; flowers with 5 pale-green petals. Native of trop. America.

*Jatr. hastata* Jacq. (= *J. pandurifolia* Andr.)

Slender shrub, 1–1.5 m tall; leaves ovate to fiddle-shaped. Native of Cuba.

*Jatr. multifida* L.

Leaves palmately lobed into many long, pointed parts. Called coral plant; native of Trop. America.

*Jatr. podagrica* Hook.

Shrubby; to 1.5 m tall; stem much swollen especially near the base; leaves 5-lobed. Native of central America. 佛肚樹

*Koilodepas longifolium* Hook. f. (= *Coeladepas glanduliferum* P. & H.)

Small tree with stellate hairs on various parts; spikes slender, yellow, often galled; capsule orange, woolly. Gardens Jungle, Kranji (Ridley 6555), Bukit Timah.

*Macaranga conifera* M.A. (= *M. populifolia* M.A.)

Small to medium tree; leaves glabrous, ovate. In secondary forest; Bukit Timah, Nee Soon, Choa Chu Kang (Ridley 3915).

*Macaranga gigantea* M.A.

Tree with spreading crown, dome-shaped; leaves 3-lobed, over 30 cm across. Seletar, Mandai (Sinclair 39255). Vern. Mahang gajah.

*Macar. griffithiana* M.A.

Small bushy tree; leaves leathery, glabrous below. In swampy area, Tanglin (Ridley 14722).

*Macar. heynei* I.M. Johnston (= *M. javanica* Hook. f.)

Small tree; inflorescence reddish, with deeply toothed bracteoles; capsule bilobed, smooth, waxy-coated. Singapore (Hullett 538). Vern. Mahang.

*Macar. hosei* King ex Hook. f.

Tree; leaves 3-lobed. In secondary forest.



*Macar. hullettii* King ex Hook. f. (= *M. cornuta* Corner)

Small tree; leaves glabrous; fruit horned. In primary forest. Reservoir Jungle (*Corner* 32235).

*Macar. hypoleuca* M.A.

Small tree; leaves 3-lobed, intensely white beneath. Common in secondary forest, MacRitchie (*Md. Shah* 3914). Vern. Mahang putih.

*Macar. pruinosa* M.A. (= *M. maingayi* Hook. f.)

Tree; leaves 3-lobed; fruit 2-shouldered. In swamps.

*Macar. punctulata* Gage

Leaves leathery, broadly triangular, peltate. In swamp forest, Jurong (*Corner* 26033).

*Macar. recurvata* Gage

Tree; leaves thick leathery, oblong-triangular, often longer than 20 cm. Mandai Road (*Corner* 34528).

*Macar. triloba* M.A.

Small tree; leaves thin, entire or 3-lobed; stipules persistent, broader than long, thick, recurved. A well-known ant-plant, common in secondary forest; Tanglin, Changi, Choa Chu Kang (*Ridley* 6165), etc. Vern. Pahang merah.

*Macar. trichocarpa* M.A.

Semi-scandent shrub; branches scrambling; leaves ovate, with a long tip; capsules prickly, irritation. In dry wood; Seletar (*Ridley* 3654), Tanglin, Bukit Timah, Changi.

*Mallotus albus* (Roxb.) M.A. (= *Mall. macrostachyus* M.A.)

Small tree; leaves heart-shaped, thinly brown scurfy below, to 20 cm across; fruits woolly, on long spikes. In thickets, Bukit Timah (*Ridley* 3448).

*Mall. paniculatus* M.A.

Bushy tree; leaves smaller than above species, whitish to pale brown and thinly scurfy below; fruit spiny, on large panicles. Tanglin, Kranji (*Goodenough* 5040).



*Manihot esculenta* Crantz (= *M. utilissima* Pohl)

Shrubby; leaves peltate, 3-9 partite. From tropical America, cultivated for edible, starchy roots ('tapioca'). 木薯

*Manihot glaziorii* M.A.

Small tree, laticiferous, native of Brazil; formerly cultivated for rubber production.

*Magistostigma malaccense* Hook. f. (= *Sphaerostylis malaccense* P. & H.)

Slender twiner, with stinging hairs; leaves elliptic; flowers small, in axillary racemes. In woods, climbing on trees; Nassim Road, Gardens Jungle.

*Mircococca mercurialis* Benth.

Herb; leaves ovate; racemes slender; capsules 3-lobed. In open places near the sea.

*Microdesmis caseariifolia* Planch.

Shrub or small tree; leaves oblong-lanceolate; flowers in axillary clusters. In woods; Gardens Jungle, Changi MacRitchie (*Md. Shah* 3950).

*Pedilanthus tithymaloides* Poit.

Shrubby, green succulent; stems straight or zigzag; inflorescence bright red, with a 2-lipped bracts enclosing unisexual flowers inside. Native of tropical America, often grown as ornament.

*Phyllanthus acidus* (L.) Skeels (= *Cicca acida* Merr.)

Shrub or small tree. Native of tropical America, cultivated for the pulpy acidic edible fruits. Vern. Chermai

*Phyl. arnarus* Schum. (= *Phyl. niruri* L.)

Tiny diffuse herb; ovary and fruit smooth. On open ground, weed; Tanglin Geylang (*Teruya* 2018), Changi.

*Phyl. emblica* L. (= *Emblica officinalis* Gaertn.)

Medium tree; leaves small, linear, crowded on slender twigs like a feather; fruits round, fleshy, ripening greenish yellow, sour, used for preserves. Both wild (Bukit Timah (*Goodenough* 411), Choa Chu Kang, Nee Soon) and cultivated, the Malay name is Pukok melakka. The town of Malacca is said to take its name from the tree. 餘甘子。庵摩勒。



*Phyl. pulcher* Wall. ex M.A.

Herb or small shrub; leaves oblong, asymmetric. Sometimes cultivated as a medicinal plant. Tanglin, Geylang (*Teruya* 1312).

*Phyl. urinaria* L.

Tiny diffuse herb; ovary and fruit covered with scales. On open ground. Geylang (*Beker in* 1893). 葉下珠.

*Pimeleodendron griffithianum* Benth.

Tree; leaves elliptic-ovate; racemes short, fascicled below the leaves.

*Pterococcus corniculatus* P. & H. (= *P. glaberrimus* Hassk.)

Slender woody twiner; flowers in axillary spikes. On open ground.

*Ptychopyxis caput-medusae* Ridl.

Small tree; leaves ovate-oblong; flowers in racemes, velvety; fruit spinescent (like a thick, soft, spiny chestnut). Bukit Timah (*Ngadiman* 34800).

*Ptych. costata* Miq. var. *oblanceolata* Airy-Shaw

Leaves oblanceolate, ferruginous. In woods; Gardens Jungle, Choa Chu Kang (*Ridley* 4828), Bukit Mandai.

*Ricinus communis* L.

Perennial herb to small tree; leaves round ovate, 6-11-lobed; flowers in terminal panicles; fruit soft prickly. Native of tropical Africa; oil from the seeds ('castor bean oil') used as a lubricant, for lighting and in medicine and industry. 蓖麻

*Sapium discolor* M.A.

Tree; leaves elliptic, withering bright red; petiole slender, with 2 glands near tip; flowers in solitary spikes. In woods and secondary jungles; Gardens Jungle, Reservoir Woods (*Ridley* 5031), Jurong, Tanglin.

*Sauropus androgynus* Merr. (= *S. ablicans* Bl.)

Shrubby; leaves oblong, 2 ranked. Young branches used as vegetable. Serangoon (*Ridley* 9111). Vern. Chekup manis.



*Sebastiania chamaelea* M.A.

Herb, branched; leaves narrowly oblong; capsule spiny. Open sandy places near the sea; Changi (*Md. Nur* 29744), Blakang Mati.

*Suregada multiflora* Baill. (= *Gelonium glomerulatum* Hassk.)

Small tree; leaves oblong, fleshy. Near the sea; Changi (*Ridley* 1824), Pulau Ubin.

*Synostemon acciformis* G.L. Webster (= *Agyneia bacciformis* L.)

Herb, in grassland near the sea. Teluk Karau.

*Trigonostemon longifolius* Baill.

Shrub; branches golden hairy; leaves oblanceolate, sessile; spikes to 40 cm long; fruit golden scurfy. In woods; Choa Chu Kang, Reservoir woods, Kranji, Bukit Timah (*Ngadiman* 35902).

### 93. DAPHNIPHYLLACEAE

*Daphniphyllum laurinum* (Benth.) Baill.

Small tree; leaves elliptic, clustered; fruit ellipsoid, 1 cm long, warty. In open places or near the sea; formerly found in Changi (*Ridley* 3437), Siglap, Kranji, probably extinct.

(to be continued)





Keng, Hsuan. 1980. "Annotated List of Seed Plants of Singapore (VI)." *The Gardens' bulletin, Singapore* 33(2), 329–367.

**View This Item Online:** <https://www.biodiversitylibrary.org/item/148203>

**Permalink:** <https://www.biodiversitylibrary.org/partpdf/279293>

**Holding Institution**

Harvard University Botany Libraries

**Sponsored by**

BHL-SIL-FEDLINK

**Copyright & Reuse**

Copyright Status: In copyright. Digitized with the permission of the rights holder.

License: <http://creativecommons.org/licenses/by-nc-sa/3.0/>

Rights: <https://biodiversitylibrary.org/permissions>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.