

Mangrove

Guidebook for Malaysia



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Mangrove

Guidebook for Malaysia



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2015



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True Mangrove Species

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Introduction

This guidebook is designed as an easy and practical field guide for those involved in the field management of mangroves, for students and those who are interested to learn more about mangrove plants. This guidebook uses simple descriptions and a lot of photos to help distinguish species more easily. Photos were taken from many locations in Malaysia over the last 10 years and through contribution from various experts.

Mangroves can be defined as woody vegetation types occurring in marine and brackish environment. They are restricted to the tidal zone, which is the strip of coast starting from the lowest low water level up to the highest high water level (spring tide).



Mangrove plants are generally divided into two groups, namely, i) **True Mangrove Species** and ii) **Mangrove Associate Species**. True mangrove species thrive mainly in a mangrove environment and do not extend into terrestrial plant communities and are morphologically, physiologically and reproductively adapted to saline, waterlogged and anaerobic condition. Generally, True Mangrove Species are categorized as 'exclusive' species that are limited to the mangrove environment and Mangrove Associate Species are categorized as 'nonexclusive' species that are mainly distributed in a terrestrial or aquatic habitat but also occur in the mangrove ecosystem.

Hence, this book has been split into two parts: part one highlights the True Mangrove Species, part 2 deals with Mangrove Associate Species. We hope the readers will find this guidebook helpful in identifying mangrove species in the field and will be inspired by the rich biodiversity of our mangroves. Dedicated botanists may refer to various reference books available for detail description of each species especially "Mangrove Guidebook for Southeast Asia" by Giesen et al. which is available for free download at the Food and Agriculture Organisation website.



Acanthus ebracteatus Vahl.

(ACANTHACEAE)

Local name:
Jeruju (hitam)

Uses:

Medicine: Fruit used as blood purifier and dressing for burns, application on snake bites and arrow poisoning. Leaves used to relieve rheumatism. Seeds to treat internal worms.

Ecology:

Almost constantly found in or near mangrove areas and seldom inland. Usually found together with *Acanthus ilicifolius*.

Distinctive Features:

Very similar to *A. ilicifolius* but with strong toothed leaves and flowers have only one main enveloping leaflet (secondary ones are usually rapidly shed). Flowers usually white in colour.



Shrubs

- An erect mangrove shrub



Leaves

- Young leaves or leaves on ends of branches may not have spines, while older branches may have.
- Shiny leaves.
- Holly-like shaped leaves, where leaf edge is toothed and deeply lobed with sharp spines.



Flowers

- Usually white flowers.



Fruits

- Fruit slightly flattened like nuts. Green in color.

Acanthus ilicifolius L.

(ACANTHACEAE)

Local name:
Jeruju puteh

Uses:

- Has similar uses to *Acanthus ebracteatus*.
- Agriculture: fodder.

Ecology:

It is a short but robust sprawling herb that spread vegetatively through rooting of its horizontal stems. Found in or near mangrove area, seldom found towards inland.

Distinctive Features:

Flowers have one main enveloping leaflet subtended by two secondary ones. The leaflets remain attached throughout the life of the plant. Flowers are mauve or violet in colour.



Shrubs

- *Acanthus ilicifolius* forming a large and thorny (and also inaccessible) vegetation patch.



Leaves

- Young leaves or leaves on ends of branches may not have spines, while older branches may have.
- Smooth leaves.
- Has the distinctive holly-shaped leaves similar to *Acanthus ebracteatus*. However the leaf edge is less lobed.



Flowers

- Normally pale mauve or violet in color.
- Infrequently in white color.
- Bird and insect pollinated.



Fruits

- Fruit slightly flattened like nuts.
- Green in color.

Acanthus volubilis Wall.

(ACANTHACEAE)

Local name:
Jeruju



Ecology:

Acanthus volubilis is a climbing herb or shrub with many branches. Stems twining around other trees and are thin, smooth, green, and usually spineless. Found in tidal mud among grasses and herb plants in tidal mud area.

Uses:

- Medicine: Powdered seeds for blood cleansing and ulcer cure.

Distinctive Features:

Flowers are smaller and white in colour. Differs from *A. ebracteatus* and *A. ilicifolius* by the absence of spines on stems and leaves. It has slender, sprawling to twining stems.

Shrubs

- Often have tap root system developed and at times stilt roots grows from base stem to support the plant.



Leaves

- Usually has smooth leaf edge and no spines (young leaves), but some are slightly lobed and have spines (older leaves).
- Leaves are succulent to leathery.



Flowers

- White petals but turns brown when older.



Fruits

- Fruits rarely formed, slightly flattened like nuts.
- Green in color.

Acrostichum aureum Linne.

(PTERIDACEAE)

Local name:
Piai Raya



Ecology:

A large, clump-forming terrestrial fern that can grow up to 4m tall. Found along brackish creeks, rivers and canals at the rear-mangrove zone. Preference to normal tides but does not tolerate sea-water flooding as much as *Acrostichum speciosum*. It prefers bright, sunny areas.

Uses:

- Medicine: Rhizome and leaves.
- Construction: Roofing material.

Distinctive Features:

Prefers bright and sunny area as compared to *Acrostichum speciosum*; commonly found in disturbed areas. As compared to *A. speciosum*, *A. aureum* is taller, the young plants are more reddish (brownish in *A. speciosum*). The leaf tips are blunt with a small short tip.



Shrubs

- A large, clump-forming terrestrial fern that can grow up to 4m tall.
- Leaves stalks are long and distinctive, about 1-3m long.

Leaves

- Tips of the longer, sterile leaflets are abruptly rounded or blunt, with a short tip.



Leaves

- Young plants are more reddish in color than *Acrostichum Speciosum*.



Leaves

- Tops of fertile leaves are rusty-brown in colour but turn into dark brown later.

Acrostichum speciosum Willd.

(PTERIDACEAE)

Local name:
Piai Laut

Uses:

Construction: It used as roofing material.

Ecology:

Found on muddy substrate, especially on heaps of mud raised by mangrove crabs above general ground. It prefers shaded area and often inundated by the tides.

Distinctive Features:

Differs from *A. aureum* by its smaller total size, brownish-green young leaves, pointed leaflets, and the dark brown lower surface of fertile leaflets covered with sporangia.



Shrubs

- It is a terrestrial fern, forming coarse clumps and grows to about 1.5m tall.



Leaflets

- Rusty, fertile leaflets at the top of the plant.
- Dark brown under surface of fertile leaflets covered with sporangia.



Leaves

- Brownish-green young leaves.



Leaves

- Leaf are elongated-pointed.
- Sterile leaflets have small and narrowly pointed tip.

Aegiceras corniculatum (L.) Blanco (MYRSINACEAE)

Local name:
Kacang-kacang; Kuku helang



Shrubs or small trees

- Erect, evergreen shrub or small tree.



Leaves

- Leathery rounded-notched leaves.
- Bright and glossy green above and paler green below, often with slight red midrib below.
- Salt excretion glands on leaf surface and stalk (whitish and covered with salt).

Ecology:

Shrub or small tree grows up to 6 m tall. Found at fringes of brackish or almost fresh water mangrove forest zone. It has been reported tolerant of a wide range of salinity and soil, but prefers sandy substrate.

Uses:

- Fishing: Bark contains saponin used to stupefy fish.
- Ornamental: Flowers have strong fragrance so often used as ornaments and source of nectar.
- Food: Young leaves are edible.

Distinctive Features:

Fruits are strongly curved and pointed like small bananas.



Flowers

- Insect pollinated.
- White color.
- Sweet-scented.
- Rich with nectar.



Roots

- Roots running along the soil surface, no obvious above ground roots.



Fruits

- Strongly curved and pointed like small bananas.
- Green to pink in colour.
- Fruit and seed well adapted to water dispersal.
- Seeds semi-viviparously.



Barks

- Bark is grey to brown, fissured and has numerous lenticels.

Aegiceras floridum

Roemer & Schultes
(MYRSINACEAE)

Local name:
Teruntum



Shrubs or tree

- An erect mangrove shrub.



Leaves

- Leathery rounded leaves.
- Bright and glossy green above and paler green below, often with slight red midrib below.
- Salt excretion glands on leaf surface and stalk (whitish and covered with salt).
- Has smaller leaves than *Aegiceras corniculatum*.

Ecology:

Shrub or small tree grows up to 4 m tall. Found on rocky or gravelly substrates. So far, not recorded in Peninsular Malaysia but recorded in Sabah.

Uses:

- Construction: Source of construction wood.
- Fuel: Source of fuelwood.

Distinctive Features:

This species is similar to *A. corniculatum* but distinguished by having smaller leaves, branched flower clusters and smaller, slightly curved fruits.



Flowers

- The flowers have a sour odour and the petals are white.



Roots

- Roots running along the soil surface.



Fruits

- Green to red in color.
- Slightly curved and smaller than *A. corniculatum*.



Barks

- Bark is grey to brown, fissured and has numerous lenticels.

Avicennia alba Blume (AVICENNIACEAE)

Local name:
Api-api putih



Shrubs or trees

- Shrub or tree grows up to 10 m tall.

Ecology:

Shrub or tree grows up to 10 m tall. Occurs as pioneer species at sheltered shores, along tidal river banks and seashore, but has preference at the bay entrances. *A. alba* tolerant very high salinity.

Uses:

- Medicine: Sap used for pregnancy prevention. Resin and ointment from seeds used for treating skin diseases and wounds.
- Food: Seedlings are eaten as a vegetable after cooked.

Distinctive Features:

Long slender leaf, chili-shaped fruits with pronounced beak, pioneer species. The tree looks silvery-white from a far distance.



Leaves

- Long pointed leaves.
- Glossy green color on top and very pale whitish undersurface. Hence from a far distance, the tree looks silvery-white in appearance.



Flowers

- Yellow to orange color.
- Flowers smallest of the *Avicennia*.



Fruits

- Elongated and thin chili-shaped fruits.
- Light green in color and surface wooly hair.
- Sometimes fruits germinate while still on tree.



Roots

- Pneumatophores roots that are thin and finger-like, covered with lots of lenticels.
- It aids in land building process by accumulating mud through its complex horizontal root system.



Barks

- Bark is grayish or brownish.
- Surface maybe warty or smooth.
- Pale, powdery mould often grows on older stems.

Avicennia lanata Ridley (AVICENNIACEAE)

Local name:
Api-api berbulu, Api-api bulu



Trees

- Tree has cylindrical stem, not buttressed.



Leaves

- Leaves are round in shape and has no pointed tip.
- Upper surface dark green, under surface has dense yellowish-white powdery hairs.
- The dense hair on leaves reduce water loss by trapping a layer of insulating air.

Ecology:

Tree grows up to 30 m tall. Found growing in groups along the east coast of Peninsular and also at Johor. Prefer grow on sandier soil.

Uses:

- Medicine: sap used for pregnancy prevention; resin and ointment from seeds to treat skin diseases and wounds.
- Fuel: Wood used as firewood.
- Food: Fragrant flowers produce nectar and is good to produce quality honey. Seeds eaten as vegetables after boiled.

Distinctive Features:

Leaves under surface with yellowish-white hairs, fruits covered with dense woolly hair.



Flowers

- Fragrant flowers covered with very fine hairs.
- Orange-yellow in color.



Roots

- Pencil-like pneumatophores.



Fruits

- Fruit shaped more like heart shape than chili fruits. Fruit flatten and more wrinkly in appearance.
- Green to yellowish in color.
- Covered with dense woolly hair texture.



Barks

- Dark grey and smooth bark.

Avicennia marina (Forssk.) Vierh. (AVICENNIACEAE)

Local name:
Api-api jambu



Shrubs or trees

- Shrub or tree grows up to 10 m tall.



Leaves

- Leaf with salt glands, salt crystals form on upper surface of leaves to exclude excessive salts.

Ecology:

Shrub or tree grows up to 10 m tall. Occurs as pioneer species on sheltered shores. High salinity tolerance and colonises many tidal habitat types.

Uses:

- Medicine: Leaves used to treat burns and resin from bark used as contraceptive.
- Paper: wood served as good-quality pulp for paper production.
- Food: Edible fruits.

Distinctive Features:

Leaves elliptical with round tip, grayish-light green fruits with fine hair.



Leaves

- Leaves elliptical with round tip.
- Leaves dark green upper surface, white to light grey lower surface.
- Lots of sunken granular dots on upper surface.



Fruits

- Fleshy, grayish-light green color fruit (never yellow), covered with fine hair.
- Shape more of small tear-drops with a short beak.
- Sometimes fruit germinate on parent plant
- Fruit opens when ripe either after absorption of water or consumption by ants.



Flowers

- Petals yellow to orange in colour.
- Waxy surface with strong odour and abundant nectar.



Barks & Roots

- Bark is green-grey in colour, mottled and peeling in patches.
- The roots has pencil-like pneumatophores with lots of lenticels.
- Complex horizontal roots system aids in speeding up land-building process.

Avicennia officinalis L.

(AVICENNIACEAE)

Local name:
Api-api ludat



Ecology:

Tree grows up to 12 m, commonly occurs along tidal river banks and river mouths.

Uses:

- Food: Edible fruits.
- Fuel: Wood as source of firewood.
- Medicine: Resin used as contraceptive.

Distinctive Features:

Young leaves hairy, flower larger than other *Avicennia* spp.



Leaves

- Rounded leaf tip and leaves shape slightly elongated.
- Dark green color on upper surface, and yellowish-green or bluish-grey under surface on mature leaf.



Flowers

- Rancid smell.
- Orange-yellow in colour.
- Covered with soft short hairs on surface.
- Larger flower than other *Avicennia* spp.



Fruits

- Fruit roundest of all *Avicennia* mangrove species found in Malaysia.
- Densely covered short hair on surface, yellowish and with short beak.



Roots

- Has pencil-like pneumatophores.



Barks

- Bark is smooth, yellowish-green to brownish-grey. Lenticels are also found on the bark.

Brownlowia argentata

Kurz.

(TILIACEAE)

Local name:
Dungun, Durian laut



Shrubs or small trees

- At low tide, the roots exposed. The high tide mark can be observed from the whitish leave during low tide.



Leaves

- Stiff but thin, ovate and heart-shaped with pointed tip.
- Upper surface is glossy and smooth.
- Under surface covered with brownish hairy scales.

Ecology:

Shrub or small tree with much-branching. Found in the landward margins of mangroves and along brackish river. It trailing in the water and during low tide, the roots exposed.

Uses:

- Wood used as timber.

Distinctive Features:

The leaves shape very similar to *Hibiscus tiliaceus* and *Thespesia populnea*. The difference is the leaves of *Hibiscus* are ashen white underneath, *Brownlowia* are brownish and *Thespesia* are green.



Flowers

- Tiny flowers (less than 1 cm).
- Emerging at the terminal flower head.
- Pale orange to salmon pink in colour.



Roots

- Photo showing high tide water mark, the roots exposed during low tide.



Fruits

- Woody and buoyant fruit, dispersed by water.
- Scaly and heart-shaped.



Barks

- Greyish-brown or grey-mottled, flaky smooth bark.

Brownlowia tersa (L.) Kosterm. (TILIACEAE)

Local name:
Dungun air

Uses:

- Fuel: Sometimes used as fuelwood.
- Wood: Sometimes used for fencing.

Ecology:

Found in mangrove swamps and along stream where mud accreting. Also found on sandy shores or firm mud, along with *Nypa*. Normally grows in groups.

Distinctive Features:

Lanceolate leaves with lower surface covered with a dense layer of tiny, hairy scales.



Shrubs

- A shrub with branches covered with dense layer of scales.



Photo: J.H. Primavera

Flowers

- Tiny flowers (less than 1 cm).
- Emerging at the ends of branches in clusters on stalks..
- With five pink petals with yellow base.



Fruits

- Woody and buoyant fruit, dispersed by water.
- Scaly and heart-shaped.



Leaves

- Thin or leathery, lanceolate in shape, rounded base and pointed tip.
- Upper surface is glossy and smooth.
- Lower surface is grey-green and covered with a dense layer of tiny, hairy scales.

Bruguiera cylindrica (L.) Bl. (RHIZOPHORACEA)

Local name:

Berus-berus, Berus putih, Beus, Bakau belukap, Bakau berus, Bakau puteh, Bakau kecil, Bosang

Ecology:

Tree grows up 15 m tall. Grows in groups on firm clay substrate behind the *Avicennia* zone (on the seaward side of mangrove). Able to grow on newly established substrate which is not well-drained.

Uses:

- Fuel: Source of firewood.
- Food: Young roots of the embryos are eaten with sugar and coconut in some places.

Distinctive Features:

Small white flowers, with 8 calyx lobes in flowers and fruits.



Trees

- Grows into huge tree.



Leaves

- Pointed leaves.
- Thin.



Flowers

- Flower cluster consists of 3 flowers.
Flowers are white but turn brown with age.



Fruits (hypocotyls)

- Slightly curved cylindrical fruits.
- Green to purplish green in colour.
- 8 calyx lobes detaches with calyx.
- Lots of fruits with high regeneration potential but growth is slow.



Roots

- Kneel pneumatophores with small buttress.



Barks

- Grey bark with few small corky lenticel.

Bruguiera gymnorhiza (L.) Lamk. (RHIZOPHORACEA)

Local name:
Tumu merah, Berus merah, Bakau
besar, Betut, Tumbus, Tumu, Tumus



Trees

- Tree grows up to 30 m tall.

Ecology:

Tree grows up to 30 m tall. Often found in the transition zone between mangrove and inland forest. Grows well in areas with low salinity and well-aerated soil, especially along coastal fish ponds, brackish and tidal rivers.

Uses:

- Timber: Red and hard timber, used for foundation piling, mine timbers, house posts, furniture and cabinet works.
- Fuel: Wood is source of firewood and charcoal.

Distinctive Features:

Big red calyx on flowers and fruits, leaves smooth and thick, under surface no black dots, pointed tip but without an abrupt slender tip.



Leaves

- Red young shoots.
- Leathery and thick leaves with pointed tip.
- No black dot under surface and often reddish as well.



Flowers

- Large flowers with reddish to pink calyx. Light to bright red in color, covered with "powder".
- Petals white but turn brown as it ages.
- Pollinated by birds and insects.



Fruits (hypocotyls)

- Spirally-rolled and round in cross section.
- Straight, blunt hypocotyls, round in cross-section or slightly ridged.



Roots

- Stem based buttress with numerous knee roots.



Barks

- Bark dark grey to brown, usually smooth with lenticels.

Bruguiera hainessii
C.G. Rogers
(RHIZOPHORACEA)

Local name:
Berus Mata Buaya



Photo: Ron Yeo

Ecology:

Occurs at relative dry areas where it is inundated for only a few hours a day. Bark is brown to grey with corky, with yellow-brown lenticels.

Uses:

- Fuel: Wood is source of firewood.
- Construction: Construction material.

Distinctive Features:

Bark is brown to grey with corky, yellow-brown lenticels.



Leaves

- Pointed leaves.



Photo: Ron Yeo

Flowers

- 10-lobed pale green to pinkish sepals.
- Petals are white and hairy.



Photo: Ron Yeo

Fruits (hypocotyls)

- Cigar-shaped and slightly thickened towards the end, slightly curved up.



Photo: Ron Yeo

Roots

- Short buttress often with lenticels, and knee roots.



Photo: Ron Yeo

Barks

- Brown to grey with corky, yellow-brown lenticels.

Bruguiera parviflora
(Roxb.) W. & A.
ex Griff.
(RHIZOPHORACEA)

Local name:
Lenggadai, Lenggadis, Mengkadai



Shrubs or Trees

- Slender evergreen shrub or small tree.



Leaves

- Pointed leaves with black dots on the undersurface and turns yellowish-green as it ages.

Ecology:

Shrub or small tree grows up to 5 m tall. Tend to associate with Rhizophora species towards the seaward part of the forest zone. The species typically forms single species stands at infrequently inundated areas, along tidal waterways and coastal fish ponds. Grows on consolidated mud, sands, calcareous sands, brackish and hyper saline soils.

Uses:

- Wood is source of firework, charcoal and pulp.

Distinctive Features:

Tiny flowers with slender calyx lobes, hypocotyls thin, cylindrical and smooth.



Flowers

- Yellowish-green petals.
- Calyx lobes are straight, not curved.
- Insect pollinated.



Fruits (hypocotyls)

- Light hypocotyls allow easy water dispersal.
- Thin, cylindrical and smooth.



Roots

- Knee roots.



Barks & Roots

- Grey, fissured bark and a slightly flanged base.

Bruguiera sexangula (Lour.) Poir. (RHIZOPHORACEA)

Local name:
Tumu berau, Busing,
Tumu mata buaya

Ecology:

Tree may grow up to 30 m tall. Occurs along tidal waterways and coastal fish ponds in wetter conditions. Grows on a variety of substrate types that are infrequently submerged.

Uses:

- Fuel: Wood is source of firewood & charcoal.
- Medicine: Roots and leaves used to treat burns. Fruit used in application for shingles (herpes virus disease).

Distinctive Features:

Greenish yellow calyx.



Tree

- Tree may grow up to 30 m tall.



Leaves

- Leathery leaves with black dots on the under surfaces.



Fruits

- Hypocotyls dispersed by water.
- Spirally-rolled and ridged. Angular hypocotyls.



Flowers

- Bird pollinated.
- Large, downward pointing flowers.
- Calyx is yellow, yellowish-brown or reddish.
- White petals but turn brown with age.



Barks & Roots

- Flanged stem base.
- Knee roots, stilt roots occur as well.

Photo: Ron Yeo

Ceriops decandra (Griff.) Ding Hou (RHIZOPHORACEA)

Local name:
Tengal, Tengar, Landing-landing



Ecology:

Small tree or shrub grows up to 5 m tall. Occurs scattered throughout tidal forest but commonly at tidal waterways and bordering coastal ponds. Prefers sand or mud substrate.

Uses:

- Timber: The timber is most durable of all mangrove species. Used for house construction, railway sleepers, paving blocks and tool handles.
- Dye: Bark used for tannin and dye.

Distinctive Features:

Fruits erect and shorter than *C. tagal*, cotyledonary collar dark red in mature fruit.



Leaves

- Rounded glossy green leaves
- Leaf shape and size very variable depending on light and water conditions experienced by the plant.

Shrubs or small trees

- Small tree to shrub.



Flowers

- White petals but turns brown as it ages.



Fruits (hypocotyls)

- Calyx is covered with lenticels or is warty.
- Slender hypocotyls is sharply ridged, only warty towards the tip.
- Dark red cotyledonary collar (see inset).



Barks & Roots

- Brown, rarely grey or cream, smooth to flaky bark.
- Small stilt roots.

Ceriops tagal (Perr.) C. B. Rob. (RHIZOPHORACEA)

Local name:
Tengar, Tengah



Shrubs or small trees

- Small tree or shrub. The species degenerates into a bushy shrub under unfavourable growth condition.



Leaves

- Rounded, glossy green leaves.
- Often have an inwardly curled margin.

Ecology:

Small tree or shrub up to 6 m tall. Grows at freshwater influence area, where it is inundated by spring tides with well-drained soils. Also occurs along brackish-water fish ponds and prefer clay substrate. May coexist with *Ceriops decandra* but usually more abundant.

Uses:

- Medicine: An extraction of the bark is used in obstetrical and haemorrhage cases.
- Dye: Dye from the bark used in batik industry.

Distinctive Features:

Fruit hanging, longer than *C. decandra*, cotyledonary collar yellow in mature fruits. Calyx lobes recurved in fruits.



Flowers

- White petals but turn brown as it ages.
- Calyx lobes are erect in flower.



Roots

- Knee roots.
- Low buttress.



Fruits (hypocotyls)

- Warty, smooth or slightly ridged, angular, slender and often rather short.
- Calyx lobes recurved in fruits.
- Yellow cotyledonary collar.



Barks

- Grey, occasionally brown, smooth bark.

Excoecaria agallocha

L.
(EUPHORBIACEAE)

Local name:
Buta-buta, Kayu buta-buta



Trees

- Small deciduous tree. Leaves turn orange to bright red before shedding. This gives the entire tree a reddish appearance.



Leaves

- Toothed leaf edges.
- Two glands at the base of each leaf.
- The white sap is poisonous and used to kill fish, also causes blistering and temporary blindness to humans (local name "buta-buta" or blind refer to this property).

Ecology:

Small deciduous trees grows up to 10 m tall. Commonly found in the landward margins of mangrove and river banks, it required freshwater input. Particularly common as regenerating species in logged over forest or disturbed forest.

Uses:

- Medicine: The roots are used to treat toothache and swellings.
- Wood: useful for carving and produce sulphate-paper pulp.

Distinctive Features:

White latex is present in trunk, stems and leaves (poisonous), leaves turn orange and red before shedding.



Male flowers

- Male flowers are catkin like, elongated flower clusters.
- Has sticky pollen and nectar producing glands present at end of the leaflets below the flowers .

Female flowers

- Female flowers much smaller.



Fruits

- 3-lobed fruit (a capsule).



Roots

- Roots run along the surface of the soil.
- Knotted roots and covered with lenticels.



Barks

- Smooth but somewhat warty, grey bark.

Heritiera globosa

Kostermans

(STERCULIACEAE)

Local name:
Dungun besar



Trees

- Tree grows up to 25 m tall.

Ecology:

Tree grows up to 25 m tall. It occurs behind the tidal zone of mangrove belt, mostly on freshwater river systems that are less influenced by tides.

Uses:

- Wood: The wood is heavy and hard and is used as construction material.

Distinctive Features:

Snake-like buttress, woody and rounded fruits.



Leaves

- Stiff, leathery leaves.
- Dark green upper surface and grayish-white under surface.



Fruits

- Woody, rounded, shiny-brown fruit, with a shallow ventral crest that is extended at the far end into a beak or wing, slightly recurved.



Roots

- Roots with buttressed trunk.
- The buttresses are well developed and snake-like.



Barks

- Dark or grey fissured bark.

Heritiera littoralis Dryand. (STERCULIACEAE)

Local name:
Dungun laut



Trees

- Tree grows up to 25 m tall.

Ecology:

Tree grows up to 25 m tall. It occurs in the landward margin of mangrove, on sandy and rocky coasts.

Uses:

- Wood: The heavy and durable wood is used as building material for canoes, house posts and boat planking.
- Medicine: The fruits and seeds are used for treating diarrhoea and dysentery.
- Poison: the roots are used as fish poison.

Distinctive Features:

Similar like *H.globosa*, distinguished by the elongated, larger fruit and shorter leaf stalk.



Leaves

- Stiff, leathery leaves.
- Dark green upper surface and greyish-white under surface.



Fruits

- Woody, green to purplish or brown fruit. Central ridge or keel.



Photo: J.H. Primavera

Flowers

- Without petals. Cup-shaped sepal, reddish and hairy inside and green and hairy outside.



Photo: J.H. Primavera

Barks and Roots

- Buttressed trunk and dark or grey, fissured bark.

Kandelia candel (L.) Druce (RHIZOPHORACEA)

Local name:
Berus-berus, Beras-beras, Pulut-pulut,
Mempisang, pisang-pisang laut



Shrubs or small trees

- Shrub or small tree, up to 7 m tall.



Leaves

- Leaves narrowly oblong-elliptic to obovate-oblong with a margin that is usually curled inward.

Ecology:

Shrub or small tree, up to 7 m tall. Found scattered along the banks of tidal rivers among other mangroves plant species. It is rare and occupy a narrow niche.

Uses:

- Fuel: Wood is source of firewood.

Distinctive Features:

White flowers with numerous stamens.
Calyx lobes are recurved.



Flowers

- White flowers with numerous stamens.



Fruits (hypocotyls)

- Green long cylindrical and may have reddish tint.
- Calyx lobes are recurved.



Barks

- Grayish to reddish-brown bark.
- Smooth and has lenticels.

Roots

- Most times does not have proper buttress or pneumatophores.
- Roots may appear braided at the base of the trunk.

Lumnitzera littorea

(Jack) Voigt.
(COMBRETACEAE)

Local name:
Teruntum Merah



Trees

- Tree grows up to 10m tall.
- The tree in the above photo has developed extensive knee-shaped pneumatophores.



Leaves

- Upper and lower surface of the leaves are almost the same.
- Slightly fleshy and leathery.
- Has distinctive red color stems.

Ecology:

A spreading evergreen tree grows up to 10 m tall or more. Commonly found on soft and muddy substrates at the landward fringe of mangroves. Occasionally found at sheltered rocky coast. This tree produced highly durable timber.

Uses:

- Timber: highly durable timber. Suitable for making bridges, wharves, cart axles, flooring and sleepers. The rose-like scent and attractive wood texture is good for making furniture.

Distinctive Features:

Red flowers, small leathery leaves.



Flowers

- Bisexual red flowers.
- Bird pollinated.
- Strongly scented.



Roots

- Knee-shaped pneumatophores.



Fruits

- Vase-shaped fruits, corky and buoyant.
- Water dispersal.



Barks

- Fissured and dark brown bark.
- Fissured along the long axis of the trunk.

Lumnitzera racemosa Willd. (COMBRETACEAE)

Local name:
Teruntum putih

Uses:

- Timber: Durable timber. It is suitable used as construction material such as to build bridges, ship building and furniture.
- Tanning: Bark has tanning properties.

Ecology:

Evergreen shrub or small tree grows up to 8 m tall. Usually found on sandier and consolidated mud substrate areas.

Distinctive Features:

White flowers, found on sandier substrate. *Lumnitzera littorea* and *Lumnitzera racemosa* are rarely found in the same area.



Shrubs or small trees

- Evergreen tree to small tree (smaller than *Lumnitzera littorea*).



Leaves

- Upper and lower surface of the leaves are almost the same.
- Slightly fleshy and leathery.



Flowers

- Bisexual stalkless white flowers.
- Weakly scented but rich with nectar.
- Insect pollinated.



Fruits

- Fibrous and woody fruit.
- Distinctively compressed.
- Water dispersal.



Barks

- Longitudinally fissured rough bark.

Nypa fruticans Wurmb. (ARECACEAE)

Local name:
Nipah



Ecology:

Grows on soft and fine substrate. Found between tidemarks up estuaries with considerable mixture of freshwater and rarely inundated mangrove zone. Sweet syrup extracted from stem to produce alcohol, sugar and vinegar; fruits called “buah atap” or attap chee are used in local desserts. Fronds used as roofing material and also made into umbrellas, hats, mats, baskets and cigarette papers; leaf stem fibers as ropes, brooms and brushes.

Uses:

- Food: Sweet syrup extracted from stem to produce alcohol, sugar and vinegar. Fruits called “buah atap” or attap chee are used in local desserts.
- Construction: Fronds used as roofing material and also made into umbrellas, hats, mats, baskets and cigarette papers.
- Household: Leaf stem fibers used to make ropes, brooms and brushes.

Distinctive Features:

Palm, form pure communities along river side.

Shrubs

- Nipah appears not to have trunks with leaves growing directly out of the ground.



Leaves

- Long erect fronds and slightly curved. About 4 - 9m long.
- About 100 - 120 leaflets per palm frond.
- Upper surface of leaflet is shiny green and lower surface is sort of powdery green in color.



Flowers

- Sticky pollen and pollinated by *Drosophila* flies.
- Bisexual flower clusters sprout from near the top of stem.
- Flowers yellow to orange colour.
- Female flower is a spherical head.
- Male flower is bright yellow catkins, found at the lower branches.

Spherical cluster of female flowers, protected by bracts. Flower heads with mainly male flowers.



Seedling



Fruits

- Spherical fruiting body. Individual fruits are brown and fibrous.
- One white, egg-shaped seed per fruit.
- Fruits are fibrous and disperse by water. Sometimes, seeds germinate on the parent plant (viviparous).

Osbornia octodonta F. Muell. (MYRTACEAE)

Local name:
Myrtle Mangrove



Ecology:

Occurs at fringing tidal waterways and exposed sites as well but not in freshwater flooded area. Not specific to substrate type but associated with *Avicennia* and *Sonneratia* species on sandy or gravelly shores.

Uses:

- Medicine: The crushed leaves can be used as insects repellent. The bark used to treat toothache and as a cooking herb.
- Timber: Durable, extremely heavy, very hard and strong; durable wood even when contact with soil.
- Construction: Bark occasionally used for caulking wooden boats; used as railroad sleepers, posts and housing construction.

Shrubs

A shrub or small tree grows up to 7 m tall.

Distinctive Features:

Crushed leaves with aromatic smell, the only true mangrove species with such a characteristic, flowers with no petal.



Leaves

- Thin- leathery leaves with swollen leaf stalks.
- The leaves when crushed have a distinctive aromatic smell.



Fruits

- The fruit is encased by the calyx tube, does not open when ripe, contains 1 - 2 seeds.
- Covered with silky hair that trap air to aid in buoyancy and disperse by water.



Flowers

- Flowers appear in groups of 1 - 3, with no petals.
- There are 8 calyx lobes and white in colour.
- Pollinated by insects.



Roots & Barks

- Barks are brown in colour and smooth.
- Roots sometimes has pneumatophores, but are usually absent.

Pemphis acidula

J.R. Forst. & G. Forst.
(LYTHRACEAE)

Local name:
Bungor

Uses:

Material for tools: Hard and durable wood used for hand tools, anchors, walking canes, fence posts and novelties.

Ecology:

Shrub or small tree. Occurs at the landward margin of mangrove, above the high tide level on sandy beach and rocky outcrops.

Distinctive Features:

Small and thick leaves.
White flowers and bell-like fruits.



Leaves

- Small and fleshy leaves are densely covered with silky hairs.

Flowers

- White flowers.

Fruits

- Reddish fruits turn brown when matured.
- Fruits are encased in a bell-like structure.



Rhizophora apiculata

Blume

(RHIZOPHORACEA)

Local name:

Bakau minyak, Bakau tandok,
Bakau akik, Bakau puteh, Akik.



Trees

- Tree grows up to 30 m tall.



Leaves

- Dark green leaves with light green zone along the midrib.
- Young shoot is red in colour.

Ecology:

Tree grows up to 30 m tall. It is dominant mangrove species forming pure stands at exposed mangrove forest area where frequently flooded with normal high tides. Grows on deep, soft, and muddy soils; does not like firm substrates mixed with sand.

Uses:

- Wood: The wood is heavy and hard used for foundation piles, beams, furniture, firewood and making of charcoal.
- Reforestation: This species commonly used in mangrove rehabilitation and plantation forestry.

Distinctive Features:

New leaf shoots are red.



Flowers

- Yellow flowers grow on very short stalk.



Roots

- Arching stilt-roots and sometimes aerial roots from the branches.



Fruits

- The fruit is cylindrical, green in colour with purple tinge.
- The calyx tube is brownish yellow to reddish and recurved.



Barks

- Dark grey and chequered.

Rhizophora mucronata

Lamk.

(RHIZOPHORACEA)

Local name:

Bakau belukap, Bakau gelukap,
Bakau jankar, Bakau hitam,
Bakau kurap.



Ecology:

Tree grows up to 27 m tall. Found in same localities as *R. apiculata*, but tolerate to sandier and firmer substrate. Most times growing in groups near or on the banks of tidal creeks and in estuaries, rarely far from tidal water. Grows best in deeply inundated areas, on firm soil rich in humus.

Uses:

- Fuel: Main source of fuel wood and charcoal.
- Fishing: Tannin in the bark used for dyeing especially fisherman nets and ropes.

Distinctive Features:

“Collar” of hypocotyls is green. New leaf shoot is green but tinted with a little red.



Leaves

- Leathery leaves.
- Young shoot is light green in colour.

Trees

- Tree grows up to 27 m tall.



Flowers

- Yellow calyx 4 white petals with densely hairy margins.
- Long flower stalks.



Fruits (hypocotyls)

- Dull brownish-green fruit is elongated to egg-shaped. Very rough at base.
- Cylindrical hypocotyls, rough and warty.
- Seedlings often predated by crabs.



Roots

- Stilt roots and aerial roots growing from lower branches.



Barks

- Gray to black bark.
- Horizontally fissured.

Rhizophora stylosa

Griff.
(RHIZOPHORACEA)

Local name:
Bakau belukap, Bakau gelukap,
Bakau jankar, Bakau hitam,
Bakau kurap.



Trees

- Tree grows up to 10 m tall.



Leaves

- Leathery leaves.
- Regularly spotted on under surface. Pointed leaf tip.

Ecology:

Tree grows up to 10 m tall. Grows on a variety of tidal habitats on mud, sands, coarse grits and rock, preferring bank of tidal rivers.

Uses:

- Fuel: Source of firewood and charcoal.

Distinctive Features:

Very similar with *R. mucronata*, can be distinguished by the longer styles in *R. stylosa*, larger leaves and fruit (hypocotyls) in *R. mucronata*.



Flowers

- Whitish to yellowish petals.
- With long slender style.



Roots

- It has prominent stilt roots and well developed rooped branched stilt-roots.



Fruits (hypocotyls)

- Elongated pear shaped brown fruits.
- Cylindrical hypocotyls.



Barks

- Smooth grey to black, fissured bark.

Scyphiphora hydrophyllacea Gaertn. f. (RUBIACEAE)

Local name:
Chengam, Cingam.



Shrubs

- Small Tree or shrub grows up to 3 m tall.

Ecology:

Small Tree or shrub grows up to 3 m tall. It is commonly found on mud, sand and rocky substrates on riverbanks influenced by tides, and inland edges of mangroves.

Uses:

- Wood: Used for carving utensils and for fence posts and firewood.
- Medicine: The leaf extract is used to treat stomach problems.

Distinctive Features:

Small whitish pink flowers. Twigs and leaf stalk are reddish and resinous young shoots. Fruits with ridges.



Leaves

- Twigs and leaf stalks are reddish. Resinous young shoots.
- Leathery and shiny leaves on the upper surface.



Flowers

- Whitish pink flower.
- Insect or self-pollinated.



Fruits

- The fruit is a capsule with 6 - 8 ridges, green, in tight bunches.
- The fruit turns whitish when mature.
- Fruits disperse in large quantity but germination rate is low.



Roots

- Prop-roots in larger trees.



Barks

- Rough, brown bark.

Sonneratia alba

J.E. Smith

(SONNERATIACEAE)

Local name:
Perepat , Pedada, Pidada.



Trees

- Evergreen spreading tree.



Leaves

- Leathery leaves, broadly obovate and round.

Ecology:

Tree grows up to 20 m tall. It is a pioneer species in the seaward mangrove zone, grows on consolidating mud and sands, rock, coral and gravel at coastal locations that are sheltered from strong wave, also in estuarine areas and around offshore island. Fireflies congregate on the trees at night. Lots of morphological variation.

Uses:

- Wood: The wood is considered strong construction material for all kinds of interior work (furniture, musical instruments, cabinet making).
- Food: The sour fruit is edible.

Distinctive Features:

Mature leaf petiole is yellow, calyx lobes spread in fruit (*S. ovate* calyx lobes erect in fruit).



Flowers

- Flowers bloom at night and last for short time. Normally shed in the next morning.
- Pollinated by hawk-moths, birds and fruit eating bats.
- It has numerous long white stamens.



Roots

- Conical and corky pneumatophores.



Fruits

- Calyx lobes spread with 6-7 prominent sepal.
- Green sepals outside and red inside, the red inside faded away as the fruit developed.
- Buoyant fruits as the seeds have air-bearing tissue.
- Long stamens are soon shed as fruit developed.



Barks

- Cream color to brown, with smooth fine longitudinal fissures.

Sonneratia caseolaris (L.) Engl. (SONNERATIACEAE)

Local name:
Berembang



Trees

- *Sonneratia caseolaris* with very strong, vertical pneumatophores.



Leaves

- Leaves variable in size.
- Tip of most leaves has a minute recurved tip.
- Mature leaf petiole with reddish-pink base.

Ecology:

Tree grows up to 15 m tall with weeping branches. Occurs in less saline parts of mangrove forest, near the banks of tidal rivers in brackish water where tidal influence is still present.

Uses:

- Food: The sour young fleshy fruit is edible or made into pickle.
- Household: Pneumatophores also used as a substitute for corks and making wooden soles of shoes.

Distinctive Features:

Mature leaf petiole with reddish-pink base, red and white stamen (red on lower part, white in upper part), pneumatophores well developed, glossy fruits.



Flowers

- Flowers white pom-pom like.
- Thread-like stamen are pink to gradually white color.



Roots

- Slender and pointed like spear pneumatophores.



Fruits

- Sepals are spreading away from the fruit horizontally flat.
- Very big berry fruits, almost like small melon.
- When fruit is very mature and big, sepals can hardly "grip" the fruit.



Barks

- The bark light to dark brown, cracked on old trunk and lenticellate on young tree.

Sonneratia ovata Backer (SONNERATIACEAE)

Local name:
Gedabu



Trees

- Small tree grows up to 5 m tall.



Leaves

- Leaf shape almost round.
- Shiny, dark green leaves which are slightly bulging.

Ecology:

Small tree grows up to 5 m tall. It grows on muddy soil at brackish mangrove zone, less saline areas.

Uses:

- Fuel: Source of firewood.
- Food: Young fruits can be eaten.

Distinctive Features:

White pom pom flowers. Leaves are almost round shape. The calyx lobes of fruit grip to the fruit.



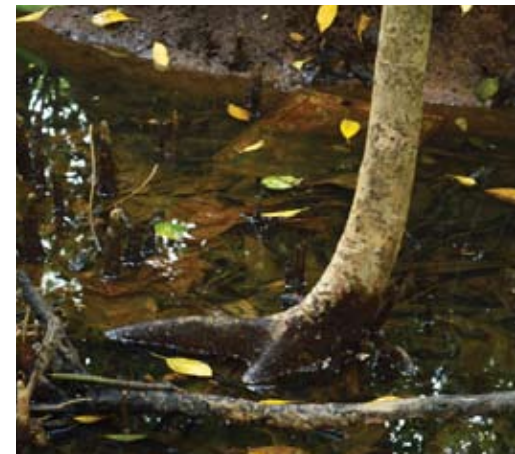
Flowers

- Flowers have no petals.



Fruits

- Big berry shaped fruit.
- The calyx lobes enfold/grip to the fruits.



Roots

- Vertical pneumatophores.



Barks

- Cream-coloured to brown.

Xylocarpus granatum

Koen.

(MELIACEAE)

Local name:
Niri, Nyireh, Nyiri, Nyireh Bunga



Trees

- Tree grows up to 20 m tall.



Leaves

- Leaves are round to egg-shaped.
- Leaf tips are rounded to very blunt, seldom with short point.
- Thick, leathery leaves.

Ecology:

Tree grows up to 20 m tall. Found at brackish or low salinity mangrove areas and along banks of tidal creeks. Often grows fairly gregariously.

Uses:

- Timber: The wood is used to produce high quality furniture and cabinet works.
- Household: Oil from seeds can be used for lamp oil and in hair grooming.
- Medicine: Bark used to treat cholera, fruit and seed used to treat diarrhoea.

Distinctive Features:

Undulating snake-like roots, big hard melon-like fruit.



Flowers

- Oval shaped petals and white in color.



Fruits

- Fruits are huge and heavy (1 - 2 kg), woody and round like melon.
- Yellowish brown color.
- Fruit with four compartments filled with 6 - 16 big, tetrahedrally-shaped woody seeds. It is interesting to see how the seeds are arranged like a puzzle.



Roots

- Saucer-shaped horizontal pneumatophores.
- Undulating snake-like roots.



Barks

- Yellowish-light brown color.
- Thin, flaking bark.
- On young stems, bark is wrinkled.
- Trunks are often hollow especially on older trees.

Xylocarpus moluccensis (Lamk) M. Roem. (MELIACEAE)

Local name:
Nyireh batu



Ecology:

Tree grows up to 20 m tall. Preferred sandier substrate, found at sandy coast and banks of tidal creeks.

Uses:

- Wood: The wood has very nice texture and used by Mah Meri group from Carey Island, Selangor to make beautiful craft.
- Medicine: Seeds used to treat stomachaches. Bark to treat intestinal problems.
- Tanning: Bark as tannin source to treat fishing nets.

Distinctive Features:

Fruit smaller than *X. granatum* and green in colour, pointed pneumatophores.



Leaves

- Oval to egg-shaped.
- Thin and leathery leaves.



Flowers

- Yellowish petals.
- Oblong to egg-shaped petals.



Fruits

- Fruit smaller than *X. granatum*, contains 4 - 10 seeds.



Roots

- Has small buttress.
- Pneumatophores are pointed, conical- and saucer-shaped.



Barks

- Trunk has deeply fissured surface.

Xylocarpus rumphii (Kostel.) Mabb. (MELIACEAE)

Local name:
Niri, Nyireh



Trees

- Tree grows up to 10 m tall.



Leaves

- The leaves are oval to nearly heart-shaped with prominent pale veins.
- Thick and leathery.

Ecology:

- Occurs at exposed shores, rocky cliffs, often near the surf.
- Prefers to sandy substrate and high tides.

Uses:

- Household items: Used as patterned wood for handles of traditional knives (Kris).
- Fishing, textile, leather: Bark used for tannin and dyeing cloth.
- Medicine: kernel of seeds to treat stomach aches.
- Construction: Wood for boat making.

Distinctive Features:

Usually found on sandy or rocky beaches, fruit green in colour and smaller than *X. granatum* and *X. moluccensis*.



Flowers

- Flowers tiny white to pinkish in clusters.



Fruits

- Fruits are small compared to *X. granatum* & *X. moluccensis*.
- Fruits are shiny green, turn brown as it ripens.



Roots

- With neither conspicuous buttresses nor pneumatophores.



Barks

- Finely fissured bark.
- Greyish on surface, inner bark bright pink to red.

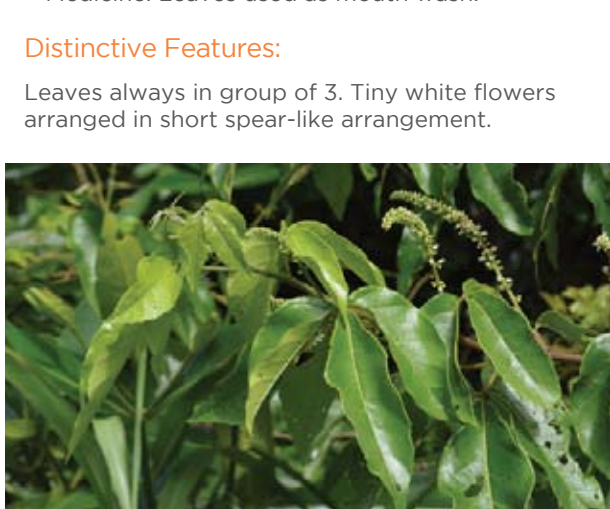
The background of the slide is a dense, teal-colored image of mangrove leaves. The leaves are oval-shaped with prominent veins and are arranged in a way that creates a textured, layered appearance. The color is a uniform, muted teal.

*Mangrove
Associate
Species*

Allophyllus cobbe (L.) Raeusch SAPINDACEAE

Local name:
Tumbit kayu, Sepoh

English name:
Tit-berry



General Description:

Erect or scrambling shrub. Leaves always in groups of 3, has sharply and deeply indented leaf edge. Flowers are white, small and arranged in a short spear-like flower cluster. Fruits are green, smooth and round, hang in bunches. As it ripens, it gradually turns from orange to red. Those plants occupying mangrove and along muddy coasts are found to have shrubby habit. It also grows on sea-shores, secondary forest, brushwood and hedges.

Uses:

- Food: Edible fruit.
- Medicine: Leaves used as mouth wash.

Distinctive Features:

Leaves always in group of 3. Tiny white flowers arranged in short spear-like arrangement.

Ardisia elliptica Thunberg MYRSINACEAE

Local name:
Jambulan pantai, Mata pelanduk,
Mata itek, Mata ayam, Penah,
Periah

English name:
Sea-shore Ardisia



General Description:

Shrub. Twigs are swollen at the base and detachable. Leaves are fleshy. Flowers are non-fragrant, white or pink color, and star-shaped. Flowers and fruits are arranged in umbrella-like cluster. Fruits are round reddish-purple berries, and turns black as it ripens. Commonly found at estuarine, sandy and muddy coasts.

Uses:

- Medicine: Leaves used to treat scabies; fruits to treat intestinal worms.

Distinctive Features:

Flowers are white or pink and star-shaped. Berry fruits, reddish-purple and turns black as it ripens.



Asplenium nidus

Linné

ASPLENIACEAE

Local name:

Paku sarang burung, Paku pandan, Paku langsuyar

English name:

Bird's-nest fern

General Description:

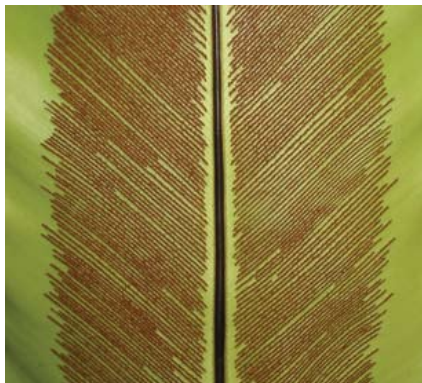
Epiphytic fern with a stout, erect rhizome. Leaves are rose-petal-like arranged to collect leaf debris as nutrient source, hence the distinctive bird's nest shape. It has dense root structure with numerous fine brown root hairs. Leaves are long green ribbon-like with black midrib, leaf edge is wavy. Linear spore sacs are found on the surface of mature leaf. It is found at shaded and dry habitat.

Uses:

- Household: Common ornamental plant.
- Leaves used in combination with rasped coconut as shampoo.

Distinctive Features:

Bird's nest shaped fern.



Barringtonia asiatica

(L.) Kurz

LECYTHIDACEAE

Local name:

Butong, Butun, Pertun, Putat laut

English name:

Sea Putat

General Description:

Small to medium sized tree, young leaves are pinkish olive with pink leaf venation. Leaves are also rather thick and leathery. Leaf tip is blunted. Flowers are large, sweet scented, pom-pom-like (numerous stamens) with greenish-white petals. Stamens are white at base, gradually turn to pink at tip. Flowers bloom in the night and pollinated by nocturnal animals (especially moths). Fruits are green, cubic, blunt pyramid-like, browns as it matures. It has fibrous corky husk to aid in water buoyancy. Found at many sandy substrate areas, such as coastal forest, sea shores, beaches, and sandy coasts. Also found at rocky shores and occasionally in mangroves. Likewise, grows well when planted inland.

Uses:

- Medicine: Juiced seeds used to kill ecto-parasites, such as lice.
- Fuel: Seed oil used for burning.

Distinctive Features:

Pink to white pom-pom flowers. Fruit cubic, pyramid-like shape. Young leaves are pinkish olive with pink leaf venation.



Barringtonia conoidea

Griff

LECYTHIDACEAE

Local name:
Putat ayer

English name:
River Putat

General Description:

A dense bush or short tree scarcely branched. Found on submerged mud banks and standing in water during high tide. Leaf tip pointed. Flowers are white and pom-pom like (numerous white stamens, only style is pink). Flowers bloom from night to midday or later. Fruit is buoyant to aid in water dispersal, and has a conical shape with 8 blunt protruding edges fruit shape. A riverine species, but also found in brackish, tidal estuaries and estuarine mangroves.

Uses:

- Fishing: Seed, bark or root contains saponins, used as fish poison in combination with Derris (tuba).

Distinctive Features:

Flowers all white (except pink style). Fruit are inverted conical shape with 8 blunt protruding edges.



Barringtonia racemosa

(L.) Spreng

LECYTHIDACEAE

Local name:
Putat ayam

English name:
Common Putat

General Description:

Shrub or a small tree. Leaf edge is toothed. Leaves cluster at end of branches. Flowers are large, strongly scented and arranged in spear-like arrangement. Petals are green or pale rose-color, edges are recurved and pale pink. Lots of white stamens that may be tipped with either red, white or yellow. Flowers bloom in the night and pollinated by small bats and moths. Fruit is water buoyant, egg or oval-shaped with 4 to 6 faint grooves. It occurs along tidal rivers and areas with regular sea water input. Also found at beaches, freshwater swamps, edge of peat swamp forests and hillsides. It grows well when planted inland.

Uses:

- Fishing: Bark and fruits contains saponin, used as fish poison.
- Food: Young leaves and fruits eaten as salad or vegetable.

Distinctive Features:

Attractive spear-like flowers arrangement. Fruit with egg or oval-shaped with 4 to 6 faint grooves.



Caesalpinia bonduc

(L.) Roxb.

LEGUMINOSAE

Local name:
Bonduc, Akar kelinci

English name:
Nicker tree

General Description:

A coarse climbing vine. Small leaves, feather-like arrangement. Young leaves densely covered with yellow hairs and smoothen as it matures. Stems, branches and leaf midribs are armed with hooked prickles. Scented unisexual flowers grow in branched clusters. They are yellow color, often with reddish streaks. The brown thorny pods bear with one or two seeds which are oval shape, pearly-grey or olive-green. It mainly occurs at dry habitat such as beaches and landward edge of mangroves, especially disturbed sites. It forms dense bushes in secondary inland forests as well.

Uses:

- Household: Local celebration ornamental plant.
- Medicine: Root used to treat stomach pain and to improve appetite.

Distinctive Features:

Many plant parts armed with hooked prickles (stems, branches and leaf midrib). Pods have rigid thorns. Seeds are oval shaped, pearly-grey or olive-green in colour.



Caesalpinia crista

L.

LEGUMINOSAE

Local name:
Mata kijang, Kaniker,
Sompini, Bonduc

English name:
Crested fever nut

General Description:

Climbing vine with partially prickly branches. Scented bisexual flowers grow in long clusters. Bright yellow petals, topmost veined with red. The fruits are flat pods with a small beak. Seeds are black and flat. It occurs at landward edge of mangroves and river banks.

Uses:

- Medicine: Seeds used as malaria and parasitic worms treatment; leaves to treat Hepatitis A.

Distinctive Features:

Prickly branches. Fruit is flat pod that has a beak.



Calamus erinaceus (Becc.) Dransfield

ARECACEAE

Local name:
Rotan bakau

English name:
Mangrove Rattan

General Description:

Multiple-stemmed climbing palm (rattan). It has whip-like hooks at leaf tip to aid in climbing. Leaf sheaths are orange to yellowish-green and very densely armed with grayish-brown spines. Leaf edge and leaf veins at bottom of leaves have short bristles. Flowers and fruits are in long clusters. Fruits are round and covered vertically with straw-colored scales. Form as thickets at the landward edge of mangroves or landward margin of coastal sandbars.

Uses:

- Little commercial use as the canes are too stiff and hard.

Distinctive Features:

Climbing palm with spines almost all over the plant.



Calophyllum inophyllum L.

GUTTIFERAE

Local name:
Bintangur laut, Penaga laut,
Naga, Menaga

English name:
Alexandrian Laurel

General Description:

Tree. Grows densely, usually crooked, leaning or even growing along the ground. It contains sticky, yellow or white latex. Leaf tip is rounded or notched. Leaves have very numerous, fine, parallel veins. They are also shiny and dark green above, with a pale midrib. Flowers grow in long cluster and sweet-scented. Petals are white and golden pom-pom-like (numerous stamens). Fruits are round, green and buoyant. Occurs at non-swampy, sandy beaches, and occasionally found at mangrove. Usually found at transitional habitats.

Uses:

- Food: Salted fruit eaten as snack.
- Urban forestry: Common planted in recreation parks and opened air parking lots.
- Medicine: All part of the tree has traditional medicinal uses.

Distinctive Features:

White petals and golden pom-pom-like flower. Leaves with very fine and parallel veins. Round green fruit.



Calotropis gigantea (L) R. Br.

ASCLEPIADACEAE

Local name:
Remiga, Rembiga

English name:
Sodom's Apple



General Description:

Small shrub. Young stems and leaves are densely covered with white, cottony hairs at the bottom. Leaves are fleshy. All plant part exude lots of white irritant latex when cut or damaged that can also cause blindness. Flowers have a distinctive “crown” at the centre. Petals are smooth, white, lilac or purple color. Fruits are round to boat-shape, encapsulating many seeds with long, silky white hair. It occurs as a weed at open waste ground, drier localities, at beaches and sometimes at mangroves.

Uses:

- Household: Stem made into fibre; floss from seeds used in making stuffed pillows.
- Medicine: Fresh leaves used to treat swelling and rheumatic pain; root extract used as tonic. Latex used to treat leprosy, laxative, worm treatment or for wound disinfectant.

Distinctive Features:

Unique “crown” at the center of the purple to white flowers. Seeds have silky, long white hair.



Canavalia maritima Thouars

LEGUMINOSAE

Local name:
Kacang laut, Kekara laut

English name:
Bay Bean



General Description:

Creeping herb. Plant tip sometimes twines. Leaves have three fleshy leaflets. Flowers are in long stalks, reddish-violet color with a white streak down the middle. Fruits are bean-like pods. It occurs at sandy beaches, dunes or nearby areas. Occasionally, it may be found landward edge of mangroves.

Uses:

- Food: Young pods and seeds edible after boiling. Flowers used as spice.
- Soil erosion prevention: Suitable as ground cover crop against soil erosion on eroding coastal land.

Distinctive Features:

Creeping habit. Reddish-violet flowers with white streak at the middle. Bean-like fruit pod.



Cassine
viburnifolia
(Juss.) Ding Hou
CELASTRACEAE

Local name:
Barak laut

English name:
Unknown

General Description:

A small tree or shrub. The leaves are light green, shiny under surface and with notched leaf edge, initially with glands in each notch. The flower clusters occur at the end of the branches. Fruits are corky and narrowed at the base, green and then turn into yellow when matured. It occurs along tidal rivers and mangroves.

Uses:

- Fishing: Husk of fruits used to stupefy fish.

Distinctive Features:

Light green leaf with notched leaf edge and fruits with narrowed base.



Leaf edge
with notch

Cassytha
filiformis
Linn.
LAURACEAE

Local name:
Cemar, Akar pengalasan

English name:
Dodder-laurel,
Devil's Gut, Love Vine

General Description:

Thread-like, semi-parasitic plant that grow in a massive tangle on host plants. It does not root nor does it have visible leaves. The vine produced suckers which attached to host plant. Flowers are tiny and yellowish-white. Fruits are small, round and yellowish-green berries. Found covering many shrub and small tree species at seaside areas.

Uses:

- Household: Juice used in tonic shampoo.
- Medicine: Juice to treat intestinal worm infestation.

Distinctive Features:

Thread-like plant covering the host plant. No visible leaves and does not root.



Casuarina equisetifolia

L.

CASUARINACEAE

Local name:
Aru, Ru, Waru

English name:
Horsetail, Coast She-oak,
Australian oak, Whistling pine



General Description:

Large tree, conifer-like appearance. The leaves are tiny-teeth-like scales arranged in whorls at the joints of the twigs. There is no broad leaves but with needle-like twigs. Male and female flowers grow on separate trees. Female flowers are pink to red puffy-ball-like, male flowers are tiny flowers on long spear-like arrangement. Fruit are spiky spherical head, first green, then brownish. When matures, it releases seeds through wind dispersal. It is common on sandy coasts and low dunes, but also in sandy mangrove areas. Light demanding and nitrogen fixing plant.

Uses:

- Fuel: Source of firewood and charcoal.
- Textile: Resin used for tanning.

Distinctive Features:

Conifer-like tree appearance.



Cerbera manghas

L.

APOCYNACEAE

Local name:
Pong-pong, Buta-buta

English name:
Pink-eyed Cerbera

General Description:

Small tree or shrub. Bark has milky white sap which can cause blindness. Roots are visible, running along the soil surface, but does not have aerial roots and pneumatophores. Leaves cluster at end of branches. Top leaf surface glossy green, pale green below. Withering leaves are orange. Flower is white with a purple to orange-red "eye". Flower trumpet-shape, where petals drop. Fruit is red, mango-like appearance (hence the scientific name) with a blunt beak and when eaten can cause death. This plant is a tree of coastal swamp forest or beach vegetation, preferring well-drained sandy soils.

Uses:

- Medicine: Oil from seeds and young fruits used to cure skin itches, rheumatism and common cold. Bark, sap and leaves used as purgative and abortion inducer.
- Fishing: Poisonous seed oil used to kill fish.
- Fuel: Source of charcoal and firewood.

Distinctive Features:

White flowers with purple to orange-red "eye". Fruit mango-like appearance with blunt beak. Ripe fruit is red.



Cerbera odollam Gaertn.

APOCYNACEAE

Local name:
Pong-pong, Buta-buta, Nyan

English name:
Yellow-eyed Cerbera



General Description:

Small tree. Bark has milky white sap which can cause blindness. Withered leaves are orange brown. Fragrant flowers, white with a yellow centre. Fruits are round mango-like appearance. It is green when unripe; later turns pink and finally dark purple. This plant is found in coastal forest and landward mangrove edge. The roots run along the surface of the soil.

Uses:

- Medicine: To treat intestinal worms.
- Urban forestry: Common roadside tree in Kuala Lumpur .
- Household: Intertwined mesh of fibre from rotted fruit used in dried flower arrangement.

Distinctive Features:

White flowers with a yellow centre. Fruit mango-like appearance. Ripe fruit is dark purple.



Clerodendrum inerme (L.) Gaertn.

VERBENACEAE

Local name:
Gambir laut

English name:
Wild Jasmine, Seaside
Clerodendrum, Indian Privet,
Glorybower



General Description:

Erect, drooping or straggling shrub, sometimes a climbing plant or a small tree. Young twigs are purplish that are heavily covered with short hairs. Leaves are thin and fleshy with pointed leaf tip. Lower leaf surface have dark green dots. Flowers are white trumpet-like, where the tube part is pale lilac. Stamens protrude out from the flowers like reddish to purple upward curved threads. The fruit is round shaped, with flattened top. Upon maturing it blackens, dries and breaks into 4 lobes. Mainly found at brackish or marine areas.

Uses:

- Medicine: Seeds and roots used to treat fish and marine animals poisoning. Wound treatment made from leaves.
- Household: Ornamental plant.

Distinctive Features:

Flowers are white trumpet-like with red to purple “threads” curving up and outwards. Matured fruits are black and breaks into 4 lobes.



Cordia dichotoma

G. Forst

BORAGINACEAE

Local name:
Nona Burung, Petekat,
Sekendal, Sekendai

English name:
Cordia Tree

General Description:

Tree with drooping branches at the ends. Leaves are variable in shape, but rarely almost round with pointed leaf tip. Papery to slightly leathery leaf texture. Secondary leaf veins are mostly whitish and prominent below leaf surface. Young plants' leaf edge is strongly toothed. Flowers are bell-shaped, petals curve backwards; white, cream or green color. Fruits are egg-shaped, with a variety of colors from white, pale green, pink, orange or yellow. It also contains a sticky, slimy pulp. Many plant parts are quite variable in shape and size. Found mainly at low altitudes. Also occurs inland mangrove areas, low coastal hills, inland riverine forests and on limestone.

Uses:

- Household: Fruit used as a glue as it contains a sticky gum.
- Medicine: Fruit and bark for medicinal use.

Distinctive Features:

Fruits are egg-shaped and sticky with slimy pulp.



Cordia subcordata

Lam.

BORAGINACEAE

Local name:
Bala laut

English name:
Sea Trumpet

General Description:

Small tree with dense, round crown. It is usually low, with crooked branches emerging just above the ground. Leaves tip are blunt or rounded, rarely pointed. Flowers are large and trumpet-shaped, clear orange or pinkish orange. Fruit nearly round shaped. It is green color, ripening to yellow. Buoyant fruit aids in water dispersal. Usually found at sandy or gravelly beaches, and landward edge of mangroves.

Uses:

- Medicine: Leaves used to treat stings and bites of fish.

Distinctive Features:

Large light orange flowers and trumpet-shaped.



Crinum asiaticum

L.

AMARYLLIDACEAE

Local name:
Bakong, Bawang hutan

English name:
Poison Lily



General Description:

A ground-dwelling herb. Leaves arrangement is spring-onion-like; leaves are long with a pointed tip. It has a fleshy underground bulb. Flowers are sweet scented and have long white petals with red styles. Fruit is irregularly rounded and white. Usually found in shaded areas, but may also occur in areas fully exposed to the sun. Also found at freshwater swamps and sometimes in sandy mangroves. Tend to be smaller at sandy areas and larger at freshwater and brackish swamps.

Uses:

- Household: Ornamental plant.
- Medicine: Purgative and treating of foot sores.

Distinctive Features:

Flowers with numerous long white petals.



Croton heterocarpus

Müll. Arg.

EUPHORBIACEAE

Local name:
Melokan, Sari pelanduk

English name:
Rat-tailed Croton

General Description:

Small tree. Leaf edge is strongly wavy, where upper part is round toothed. Withering leaves are bright orange-red. Flowers are arranged as clusters on spear-like arrange at the end of branches. The flowers are pale green, whitish or slightly pink color. Fruits are round, green, bluish-green to yellowish capsule. Fruit clusters drops like rats' tails. Found at primary forest near the coast, peat swamp, freshwater swamp but especially along tidal creeks and rivers.

Uses:

- Ecology: Host plant for the lac insect.

Distinctive Features:

Strongly wavy leaf edge. Fruit cluster drops like rats' tails.



Cynometra iripa Kostel.

LEGUMINOSAE

Local name:
Kateng, Katong laut

English name:
Unknown

General Description:

Small tree. Leaves grow in pairs. The lower pair of leaf is smaller than the upper pair. The leaf tip notched. Flowers are white, with numerous bent styles, thread-like. The irregular fruit 'pod' is woody, green and turn brown when ripen, with a distinct beak. Its surface is deeply wrinkled and covered with short hairs. Fruit is buoyant. It is found in mangroves, littoral scrub, on or near the beach.

Uses:

- Medicine: Seeds and leaves have medicinal properties.

Distinctive Features:

Leaves grows in pairs. Fruit is deeply wrinkled with a distinct beak. Flower has bent thread-like projections.



Cynometra ramiflora L.

LEGUMINOSAE

Local name:
Kateng, Katong laut

English name:
Unknown

General Description:

Tree with leaves grow in pairs. The lowest pair of leaves is smaller than the upper pair. Young leaves are white or red. The flower clusters. Flowers are white and soon turn brown. Flower styles are straight. Fruit are brown woody 'pod', oval to slightly circular shape. Its surface is deeply wrinkled, often covered with short hairs. Found at landward edge of mangroves, often on heavy, firm soil.

Uses:

- Timber: Source of construction timber.
- Household: Ornamental plant.

Distinctive Features:

Fruit surface is deeply wrinkled and covered with short hairs. Fruits are oval to slightly circular shaped.



Derris trifoliata

Lour.

LEGUMINOSAE

Local name:
Tuba laut

English name:
Derris

General Description:

A woody, often rambling climber. Bark has orange lenticels. Dark red young stems with prominent lenticels as well. Flowers are white or pale pink color, and occur in drooping clusters. Fruit are round and flat coin-like pods, green first, turning brown and woody as they ripen. Air cavities in the fruit pods are adaptation to water dispersal. It grows on muddy and sandy substrates on the landward mangrove edge. It has preference to high freshwater input.

Uses:

- Fishing: Its tuberous roots are well known to use for stupefying fish.

Distinctive Features:

Climber. Fruit are flat coin-like pods.



Dolichandrone spathacea (l.f.) K. Schum.

BIGONIACEAE

Local name:
Poko kulo, Tuj, Kaju pelok

English name:
Mangrove Trumpet Tree

General Description:

Evergreen tree. Trunk often crooked. Leaves have hairy hollow cavities in between the secondary veins for insect inhabitants. Flowers are large, trumpet-shaped, and white to greenish-white or yellow. Flowers are fragrant with frilled petal edge. Blooms at dusk and drops the flowers before sunrise. The fruits are long pods, horn-like and have hard, leathery partitions. Numerous dark grey seeds, rectangular shape and arranged in many rows. This plant is limited to the landward mangrove edge, banks of tidal rivers and estuaries, and beach vegetation.

Uses:

- Medicine: Tea made from leaves used to treat mouth infections.

Distinctive Features:

Large trumpet-shaped flowers, with frilled petal edge. Fruit is long-horn-like pod.



Photo: Jonathan Davies

Excoecaria indica
(Willd.) Muell. Arg.
EUPHORBIACEAE

Local name:
Gurah

English name:
Mock Willow



General Description:

Small tree. It contains white latex. The trunk is short and not buttressed. Bushy crown, branches usually upright and more or less dropping twigs. Leaf stalks are reddish. Leaf edge is finely toothed. Green flowers occurs in clusters on long spear-like arrangement. Fruit is a round with woody capsule, green and turns to almost black as it ripen. Fruits and seeds are poisonous. Found in tidal river banks and sea shore. Also occurs in freshwater swamp forests, along rivers and in evergreen lowland forest.

Uses:

- Dye: Leaves used to make black dye for yarn and rattan.
- Fishing: Young fruits produce latex used to poison fish.
- Food: Ripe seeds used as a vegetable or condiment.
- Household: Hard round seeds are used by children as marbles.

Distinctive Features:

Contains white latex. Branches with drooping twigs and leaf stalks are red.



Fagraea auriculata
Jack
GENTIANACEAE

Local name:
Pelir musang

English name:
Unknown



General Description:

Epiphytic, rarely terrestrial, shrub or climber. It has a pair of "ears" at the bottom of leaf stalk. Leaf midrib is prominent, greenish yellow. Flowers are cream color, huge trumpet shape, petals curls backwards. It has large flower (over 30 cm wide). Fruits are capsule, grayish-white when ripen. Found in primary and secondary rainforests, often along clearings, river-banks, sometimes in mangrove swamps on tidal waterways.

Uses:

- Household: Sticky fluid under the fruit epidermis is used as glue.
- Ornamental.

Distinctive Features:

Large trumpet shaped cream color flowers. Has a pair of "ears" at the base of leaf stalk.

Ficus microcarpa

L.f.

MORACEAE

Local name:
Jawi-jawi, Jejawi, Lunok

English name:
Malayan banyan

General Description:

Medium sized strangler fig tree. Leaves sometimes have reddish tinge. Leaf tip pointed and oval to egg-shaped. The tree often has a spidery appearance, with no real trunk being discernable. This plant possesses many aerial roots which may later develop into pillar roots. Fruits are small and round figs. They are at first pale green later turning blueish-black. Provide fruits for birds and small mammals. It is found in swamp forest, riparian forest, coastal swamps or along the landward mangrove edge. Frequently found at lowlands. At rocky areas it may be in a dwarf form with creeping habit.

Uses:

- Household: Ornamental plant.
- Medicine: Roots used for treatment of toothache. Bark and leaves for headache and juice from the leaves used externally to treat colic.

Distinctive Features:

Extensive aerial roots and pillar roots. Bluish-black figs.



Finlaysonia obovata

Wall.

ASCLEPIADACEAE

Local name:
Daun korpo laki-laki,
Kalak kambing

English name:
Unknown

General Description:

Slender, twinning, woody climber. It releases white latex from broken surfaces. Bark is light brown and papery. Leaf stalk is thick and often red. Many parts of the plant are slight hairy such as flower stalk, flower and fruit. Flowers are noxious-smelling, flower stalks violet, petals greenish yellow, inside purple or brownish-yellow. Fruits are green and fleshy, much like a pair of fleshy horns of a buffalo, smooth, and with a short, curled back tuft of hair. It is found in mangrove and on borders of tidal creeks and fishponds.

Uses:

- Food: Young leaves eaten as vegetable and salad.

Distinctive Features:

Flower parts are mostly purple and yellow color and hairy. Fruit shaped like buffalo horns.



Flagellaria indica

L.

FLAGELLARIACEAE

Local name:
Rotan Tikus

English name:
False rattan, bush cane, whip vine



General Description:

A climber. It has a long stem and long leaves. The leaf tip is curled into a tendril that winds around all available props. Flowers grow in clustered spear-like arrangement. Individual flowers are solitary, and white. Fruits are round, smooth, shiny, pink to orange berry. It is a common climber in a variety of forest from moist forests, swamp forests, peat swamp forests, riparian forests and edge of mangrove.

Uses:

- Household: Used to make baskets.
- Medicine: Young stems and leaves used as shampoo to combat baldness. Leaves used as plaster on wounds.

Distinctive Features:

Climber with leaf tip curved into tendril.
Pink to orange coloured berries.



Gardenia tubifera

Wall.

RUBIACEAE

Local name:
Chempaka utan,
Pekan heran, Mentiong

English name:
Water Gardenia, Canbi Resin Tree



General Description:

A shrub or tree. Resinous twigs and buds, where resin is pale yellow. Flowers are creamy white later orange-yellow, very fragrant. Petals are shaped as a blunted butter knife. Fruits nearly round, pale apple green, splitting open to reveal the orange-red interior. It is found in lowland, hill forests and landward margin of mangroves.

Uses:

- Medicine: Resin used to prepare mosquito repellent.
- Household: Ornamental plant.

Distinctive Features:

Flowers orange-yellow, petals shaped as a blunted butter knife. Fruit interior bright orange-yellow.



Glochidion littorale

Bl.

EUPHORBIACEAE

Local name:
Jambu kera, Selensur

English name:
Monkey apple



General Description:

Erect shrub or small tree. The leaves are leathery and shiny, with blunted tip, almost round shaped. The flowers are small frequently green or yellowish-green colour, occur in clusters. No petals. The fruit is red and partially covered with fine hairs. The top of the fruit is slightly compressed, with longitudinal grooves. It is also pinkish-white to reddish color. Many small and bright red seeds encapsulated in a fruit. Found at coastal shrubs and open forests, on tidal riverbanks, sea cliffs and peat swamp forests.

Uses:

- Medicine: Leaves used to treat blood in stools, dysentery and tonsillitis. Concoction of leaves also used to treat stomachache. Also used for childbirth bathing.
- Food: Edible fruit.

Distinctive Features:

Flowers have no petals. Fruit is pinkish-white to reddish color with flattened top and longitudinal grooves.



Gluta velutina

Bl.

ANACARDIACEAE

Local name:
Rengas ayer, Rengas pantai

English name:
Black Varnish Tree



General Description:

Large shrub or small tree. Occasionally grows numerous and branched stilt roots. It has black-stained trunk as it exude a clear sap that blacken as it exposes to the air, an indication it is of the poisonous family tree, Anacardiaceae. Sap is known to cause blisters and blindness. Leaf veins are slightly raised on both leaf surfaces. The flower clusters at the ends of branches. Petals white, with some pink along the edges. The pale brown fruit has irregular tuber-like ridges, especially near the base, often infested with ants. It occurs along banks of tidal rivers, often found submerged up to trunk in the freshwater or slightly brackish zone. Commonly found at Nypa vegetation area (landward or freshwater edge of mangroves).

Uses:

- Source of timber.

Distinctive Features:

Black-stained trunk. Fruit is pale brown and has irregular tuber-like ridges.



Guettarda speciosa

Linn.

RUBIACEAE

Local name:
Selar Makan

English name:
Sea Randa, Beach Gardenia



General Description:

Spreading shrub or small tree. It has many-stems, crooked, with a rounded crown. Leaves hairy on both sides, leaf shape quite rounded with small pointed leaf tip. Flowers are white, fragrant and trumpet-shaped. Yellow color at base of flower. Flowers bloom at sunset and pollinated by moths. Fruits are acorn-like, with a fruit pith. It is green, and then turns whitish or pinkish as it matures. This plant occurs on rocky, sandy sea shores and edge of mangrove.

Uses:

- Medicine: Bark used to treat dysentery, wounds and abscesses.
- Accessories: Fragrant flowers used as hair accessories and necklaces for women.

Distinctive Features:

Fruit almost acorn-like.



Hernandia ovigera

L.

HERNANDIACEAE

Local name:
Buah keras laut

English name:
Sea Hearse, Jack-in-the-box Tree



General Description:

Tree. Tree trunk is shortly buttressed at the base. Leaves are large and almost heart-shaped. The fragrant flowers are hairy and creamy-white. Fruit has black hard seed encapsulated by a white or pink fleshy and round exterior. The fleshy exterior has a hole on the top, resembling a lantern. This plant is found at lowland rainforest on coastal plains and alluvial flats. Particularly found at Baringtonia vegetation along the seashores.

Uses:

- Household: Oil from the seed used for making candles and lamp oil.

Distinctive Features:

Almost heart-shaped leaves. The fruits are white or pink and fleshy exteriorly, and encapsulate a black seed inside, lantern-like.



Hibiscus tiliaceus

L.

MALVACEAE

Local name:
Baru, Baru-baru,
Bebaru, Bebaru bulu.

English name:
Sea Hibiscus



General Description:

A spreading tree. Leaves are densely hairy with short hair underneath. Broad leaflets at the base of the leaf stalk. Flowers have a distinctive “hibiscus-like” appearance. When blooming (day blooming), the color is pale yellow with a brownish-purple centre. The flowers turn purple upon withering the next day. Fruit when splits, opens into 5 segments with minutely hairy seeds. Very commonly found at all sandy and rocky shores of South East Asia. It tends to also associate with mangrove areas and river banks as well. Characteristics are very similar to *Thespesia populnea*.

Uses:

- Medicine: Roots are used as medicine to treat fever.
- Ornamental: Shade tree in garden.

Distinctive Features:

Tree with yellow hibiscus flower at marine or riverine areas. Fruit also readily open while still on tree.



Horsfieldia irya

(Gaertn.) Warb.

MYRISTICACEAE

Local name:
Piangu, Penggu

English name:
Unknown

General Description:

Medium to tall tree. It is often with steep buttresses, sometimes stilt roots but produced knee-roots at tidal areas. The tree crown often has drooping branches. Leaves arranged in two rows along a twig, long and narrow with a pointed tip. Flowers are small and bright orange-yellow color, sweet lemon-scented. Fruits are round and smooth, where at first yellow, then turn bright pinkish orange or reddish. The flesh inside the fruit is pink, with a bright red seed coating. Found along rivers and near coast, especially in swampy areas, in the tidal zone and mangrove edge.

Uses:

- Household: Fruit used to extract wax which is suitable for candle making.

Distinctive Features:

Drooping branches. Flowers sweet lemon-scented. Fruit with color range from pinkish orange to red.



Intsia bijuga (Colebr.) Kuntze

LEGUMINOSAE

Local name:
Merbau ipil

English name:
Borneo Teak



General Description:

A deciduous tree. Trunk slightly buttressed, with spreading crown. Leaves are almost round and have hairy lower midrib. Flowers have only 1 petal, with 4 long red styles. Petal is white at first, later turning red or orange. Fruit is flat pod. Grow at mangroves and sandy beaches. A mangrove edge species, often found at drier part of swamp areas.

Uses:

- Timber: Good and hard quality timber, with little shrinkage or warping, used for houses and bridges.
- Medicine: Bark and leaves used to treat diarrhoea.
- Food: Seeds are fried, soaked for a few days, then boiled and eaten.

Distinctive Features:

Flowers with white single petal and 4 long red styles. Tall tree with spreading crown.



Ipomea pes-caprae (L.) Sweet.

CONVOLVULACEAE

Local name:
Batata pantai,
Daun katang, Tapak kuda

English name:
Beach Morning Glory, Railroad Vine



General Description:

Perennial herb. It has a thick taproot. Leaves have a notched tip. Stems are long and creeping on the sandy floor beach, rooted at the nodes. Flowers are funnel-shaped, with colour range from pink, reddish purple or violet. Flowers bloom early morning and wither by the afternoon. Fruit is round to slightly flattened dry capsule. Commonly found on sandy beaches but also at sea shores, occasionally along waysides, ditches and canals.

Uses:

- Medicine: Seeds used to treat stomachache and cramp. Leaves made into a poultice and applied to swellings, boils and ulcers. Juice of stems to treat bites and stings.

Distinctive Features:

Purple "Morning glory" flowers creeping along the sandy beaches.



Kleinhovia hospita

L.

STERCULIACEAE

Local name:
Temahau

English name:
Guest Tree

General Description:

Small to medium sized tree. Trunk has powdery surface. Many plant parts hairy, such as twigs, newly developed fruits and leaves. Leaves are almost heart-shape. Flowers grow in long clusters that protrude out from the tree canopy in pink color, upper flowers are yellowish. Fruit shape is similar to starfruit or carambola (*Averrhoa carambola*), where it has thin walls. Found at open country and along river banks, including tidal areas and landward edge of mangroves. Also found in a variety of forest types such as primary lowland forest, coastal forest and well developed secondary forest.

Uses:

- Medicine: Bark and leaves are poisonous, used for removing ecto-parasites.
- Timber: Some finely patterned wood is used for making much-prized handles of Javanese kris.

Distinctive Features:

Numerous long clusters of pink flowers protrude out from the tree canopy. Leaves almost heart shape. Fruit shape similar to starfruit.



Licuala spinosa

Wurmb.

ARECACEAE

Local name:
Palas, Palas duri

English name:
Spiny licuala palm, Mangrove fan palm, Good luck palm

General Description:

Medium sized palm. Leaves are fan-shaped and heavily armored with spines at leaf stalks. Fruits are round, bright orange to red. It has preference for areas exposed to the sun. It occurs in open, swampy ground and river banks in coastal areas. Also occurs at landward mangrove edge.

Uses:

- Horticulture: Often cultivated in parks.
- Food: Leaves used largely as food wrappers, where young leaves used to make ketupat palas.

Distinctive Features:

Fan-shaped palm leaves.



Limahlania crenulata

Maingay ex Clarke

K.M. Wong &

S. Sugumaran

GENTIANACEAE

Local name:

Malabera, Birah

English name:

Cabbage Tree



General Description:

A large tree with tiers radiating branches. Tree structure similar to Terminalia catappa (Sea Almond). The trunk and branches are thorny but disappear as the tree matures. Large leaves with rounded leaf tip and with tiny, round toothed leaf edge. Leaves clusters at end of twigs. Very prominent leaf veins on lower surface of leaf. Fragrant flowers, cream color, turning yellow with age. Fruits are green, oval and fleshy. It occurs in wet lowland habitats, tolerating full-strength sea water.

Uses:

- Urban forestry and land remediation: Roadside tree in Malaysia. It is also used for afforestation of tin tailing as it is highly tolerant of heavy metals and acidity.
- Wood: Used for piling and a source of firewood.

Distinctive Features:

Trunk and branches have short thorns (young plants). Leaf veins very prominent at leaf bottom.



Melaleuca cajuputi

Roxb.

MYRTACEAE

Local name:

Gelam, Kayu puteh

English name:

Paperbark tree,

White-wood, Melaleuca



General Description:

Large shrub to tall evergreen tree. Crown is grayish-green and bushy. Bark whitish grey or grayish-brown, often tinged with orange-brown color, texture papery flaky. Crushed leaves has the characteristic tea-tree-like smell. Young parts such as twigs and leaves are covered with silky hairs. Flowers are long and white, spear-like arrangement with a fluffy appearance (numerous stamens). Fruits are small brown woody capsule. Found at swampy ground near the coast and landward edge of mangroves. It also coppices readily and can withstand repeated fires.

Uses:

- Horticulture: Roadside plants.
- Fuel: Source of firewood.
- Construction: Wood is hardy and can withstand moist conditions and resist termites. Used in construction.
- Food: Honey production.
- Medicine: Leaves yield cajuput oil (minyat angin in Malaysia).

Distinctive Features:

Flowers long white fluffy appearance. Bark papery texture. Crushed leaves has tea tree oil smell.



Melastoma malabathricum var. *malabathricum*

L.

MELASTOMACEAE

Local name:
Senduduk

English name:
Singapore Rhododendron



General Description:

Shrub. Leaves vary greatly in terms of hairiness and shape, but most times leaves are pointed at both ends (leaf base and leaf tip). Flowers are purple pink or white color (mostly purple), stamen and style are yellow. Fruits are berries that turn deep purple (almost black) when ripe, almost bell-shape. An extremely variable species, with many subspecies, varieties and forms recognized. Found in sunny and moist locations. Also at disturbed areas, secondary scrub, river banks and landward edge of mangroves.

Uses:

- **Medicine:** A poultice of the leaves is used to treat burns. Leaves used to treat diarrhoea and vaginal infections. Roots used to treat rheumatism and arthritis.
- **Food:** Young leaves eaten as vegetable. Fruits edible as well.

Distinctive Features:

Purple pink or white flower with yellow stamen and Style. Fruits are bell-shape, almost black when ripe.

Morinda citrifolia

L.

RUBIACEAE

Local name:
Mengkudu besar, Mengkudu daun besar, Kemedu

English name:
Great Morinda, Indian Mulberry



General Description:

Small evergreen tree. Leaves broad and fleshy. The flower head has many “eyes”, where flowers emerge and turn into fruit after fertilization. Flowers are white. When fruit ripens, is tolerant to a wide range of habitats in terms of moisture conditions, soil fertility to alleviation. Widely cultivated, but commonly found wild along the coast, including rocky coasts and landward mangroves edge. It is often infested with large red weaver ants. Rotting ripe fruit has a terrible stench.

Uses:

- **Medicine:** Leaves used in combination with coconut to treat stomach disorders and childbirth relief. Fruits used to treat wounds and taken as anti-diuretic.
- **Food:** Fruit eaten raw with salt or with curry. Young leaves eaten as vegetable.
- **Dye:** Root bark used to extract yellow to deep orange dye color.

Distinctive Features:

Egg-shaped fruits with many “eyes”.



Oncosperma tigillarum (Jack.) Ridl.

ARECACEAE

Local name:
Nikong, Nibung

English name:
Nibung Palm



General Description:

Erect, very spiny, tall palm forming clumps. Leaves are large, feather-like appearance. Leaves are slightly grayish, giving the palm a silvery appearance. Leaf stalk is brown-scaly and very thorny. Flowers grow in long cluster bunches. Male flower yellow color, shorter bunches and thicker. Whereas the petals of female flowers are almost round. Round fruit, that first dark green, later turning to very dark purple. Often found at the landward edge of mangroves, at the transition zone between mangroves and freshwater swamp forest. Hollow stems are often occupied by small bat species.

Uses:

- Timber: Hard and resistant to sea water, wood borers and termites. It is often used in coastal construction as stakes of large straps and poles supporting stilted coastal villages. Also used for flooring when split into strips.
- Ornamental: Tall clumps of splaying trunks with their fine, feathery crown makes it desirable in a large park.

Distinctive Features:

Palm grow in clumps. Sharp thorns on stem. Fruit dark purple when ripe.



Oxyceros longiflorus (Lam.) T.Yamazaki

RUBIACEAE

Local name:
Akar berdara laut

English name:
Unknown



General Description:

Semi-woody climber with inverted hook-like thorns on the stems. Leaves wrinkled. Flowers are first white and then turn yellow. Fruits are small, round, hard and green in colour.

Uses:

- Medicine: Most plant parts have medical properties. Roots used as insecticidal and insect repellent. Seeds used as a tonic to induce appetite, bark astringent used to treat diarrhoea and dysentery.

Distinctive Features:

White flowers, inverted hook-like thorns on stems, small, round and green fruits.



Pandanus tectorius

Sol.

PANDANACEAE

Local name:
Pandau laut

English name:
Common Sea-shore Srewpine

General Description:

An erect, evergreen, coarsely branched palm-like tree. Stilt roots developed around the stem and aerial roots from the branches. Leaves sword shaped, arranged in spirals and with spiny leaf edge and midrib. These spines are white or with dark tip, slender and slightly curved. Male flower tiny and fragrant, surrounded with large showy white bracts. Female flower head also bract-surrounded, pineapple-like shape. The fruit have many prism-like sections, resembling pineapple, orange or red color. Found growing along the beaches where it prefers sandy substrate.

Uses:

- Food: Edible fruits and leaves.
- Handicraft: Leaves used for weaving baskets, mats, hats and rope.

Distinctive Features:

Fruits orange or red color, pineapple-like structure, with many separate-able prism-like sections.



Passiflora foetida

L.

PASSIFLORACEAE

Local name:
Timun dendang,
Timun padang, Timun hutan

English name:
Stinking Passion Fruit, Wild Water
Lemon, Love in a Mist

General Description:

Ground herb, occasionally a vine. Stems densely covered with long hairs. It has spiraling tendrils that grows next to the leaves. Leaves are 3-lobed, yellowish green and sparsely hairy. Leaves are also foul smelling when crushed. Flowers are white color. Fruits are round berry, glossy yellow to orange enclosed by a "soft feathery cage" (which is actually modified leaves). It is an invasive species at some areas. Occurs both in wet areas and areas with long period of dry season. Also found at hedges, shrubs, wasteland, roadside, plantation and mangrove edges.

Uses:

- Food: Young leaves eaten as vegetable. Seed aril tasty and edible (taste like cultivated passion fruit but slightly bitter). Young fruit poisonous.
- Medicine: Parts of the entire plant used to treat coughs and sore throat.
- Ground cover: Planted to control Imperata grass and erosion.

Distinctive Features:

Yellowish berry enclosed in a "soft feathery cage". Showy white flowers. Leaves are lobed.



Peltophorum pterocarpum (DC.) K. Heyne

LEGUMINOSAE

Local name:
Jemerlang Laut

English name:
Yellow Flame



General Description:

Small to medium tree. Tree crown is umbrella shaped. Brown hairs cover the young twigs. Leaves are feather-like arrangement. Leaves shed after dry spell. Flowers are sweet-scented and bright golden yellow with deep orange pollen. Petals are crinkled and wavy. Fruits are a purplish-brown pod and winged all the way around. Found at rocky and sandy shores, occasionally along mangrove edge or at limestone area.

Uses:

- Ornamental: Planted as an ornamental or shade tree, especially along roadsides and in gardens.
- Dye: Bark provides yellow-brown color used for dyeing batik cloth.
- Medicine: Used to treat gastric disorders and compresses are used to treat sprains.
- Agriculture: Leaves used to feed goats and cattle.

Distinctive Features:

Bright showy yellow flowers. Leaves are feather-like arrangement. Fruit purplish-brown pod and winged all the way round.



Planchonella obovata (R.Br.) Pierre

SAPOTACEAE

Local name:
Menasi, Misi

English name:
Sea Gutta



General Description:

Small to medium sized shrub or tree. White latex is present in trunk and branches. It has a dense crown, also bushy and coppery. The coppery appearance is because the twigs, buds, leaf stalks and undersides of young leaves are rusty brown and scruffy. Leaf tip rounded. Leaves usually velvety below and smooth above. Flowers are small and greenish-white, said to smell like pandan. Fruits are small berry, sometimes woody, green. Commonly found at rocky and sandy sea coasts, inland sandy heaths, limestone hills, secondary forests and occasionally mangroves edge.

Uses:

- Timber: Wood used as timber but cracks easily and not very durable.

Distinctive Features:

Crown coppery in appearance.



Pluchea indica

(L.) Less.

ASTERACEAE

Local name:
Beluntas

English name:
Indian Fleabane, Indian Pluchea,
Indian Camphorweed



General Description:

Erect shrub or dwarf shrub. The whole plant covered with short soft hairs, later becoming smooth. Leaf edge is sharp and fine-toothed. Flowers are tiny, purplish or white, and thread-like. Fruits are also tiny, with a ring of hairs at the top. Seeds are fluffy and winged like silky parachutes to aid in wind dispersal. It grows on clay and saline soils. Also likes sunny or slightly shaded areas. Often found in brackish marshes and other saline habitats including mangroves, occasionally found in forested land at low elevation.

Uses:

- Medicine: Reduce fevers, used as a tonic to treat ulcers, and a diuretic ingredient for herbal baths. Juice of leaves used to treat dysentery

Distinctive Features:

Thread-like tiny purplish or white flowers.



Podocarpus polystachyus

R.Br. ex Endl.

PODOCARPACEAE

Local name:
Podo laut, Jati bukit

English name:
Sea teak



General Description:

Shrub or small tree. A conifer, hence, it produces seeds but not flowers. Leaves often crowded at the twig tips and are narrowly long and pointed. Male plants produce long cream colored cones that release whitish, powdery pollen. Female plants produce cones which has a rounded part attached which eventually becomes the red swollen receptacle eaten by animals. Green ripe seed is attached at the bottom. Primarily found at sandy beaches but at poor soil areas as well such as limestone and coastal heath forest. Also can be found at swampy and landward edge of mangrove forest.

Uses:

- Timber: Excellent timber, used for furniture and house interior.
- Horticulture: Cultivated in gardens.

Distinctive Features:

It has long and pointed leaves. Red swollen receptacle attached to ripe green seed.



Pongamia pinnata

(L.) Pierre

LEGUMINOSAE

Local name:
Kacang kayu laut

English name:
Indian Beech

General Description:

Tree. Crown is irregular in shape, shaggy and dense, but has large and wide canopy. Leaves are almost heart-shape. Bark exude strongly crushed bean pod odor. Flowers are purplish to pinkish-white, typical pea flower shape, and strongly fragrant. Fruits are flat brown, bean-like pods that are somewhat oval with a little beak at the tip, also smooth. Each pod contains one seed. Occurs at non-swampy beaches, occasionally at landward mangrove edge. Flowers are very frequently transformed into round galls which might be mistaken for fruits.

Uses:

- Fishing: Poisonous seeds and roots used as fish poison.
- Medicine: Seeds yields pongam oil used for medicinal purposes. Decoction of the leaves used to treat cough. Juice of leaves used for itches, herpes and gonorrhoea. Young shoots used to treat rheumatism.
- Ornamental: Commonly planted in tropical coastal areas as it is salt and exposure tolerant. Also planted as a shade tree along roads.

Distinctive Features:

Fruits are flat smooth pods, almost oval shape with a little beak at the tip. Canopy is large and wide.



Premna obtusifolia

R. Br.

VERBENACEAE

Local name:
Sayur kambing

English name:
Premna

General Description:

Small to medium tree, occasionally climbing or straggling shrub. At sea shores, it may assume a creeping/low shrub habit. Leaf shape is variable with a pointed tip. Crushed leaves have a unpleasant smell. Small flowers re greenish-white/yellow, grows in large bunched clusters. Fruits are small, round, reddish to black berries. A highly variable species, hence lots of variation in leaves, habit and flower clusters type. Grows in wide range of soil, but prefers well-drained soils. Usually found near the sea. Branches easily root when planted.

Uses:

- Timber: Hard and durable wood, and has an attractive pattern, used for machete handles.
- Medicine: Leaves used to improve lactation. Boiled leaves used to relieve itchiness.
- Agriculture: Used as fodder for sheep and goats (hence the common name in Malay).
- Ornamental: Unique trunk texture make it a preference for bonsai horticulture.

Distinctive Features:

Black berries. Greenish-white small flowers in dense clusters.



Ricinus communis

L.

EUPHORBIACEAE

Local name:
JarakEnglish name:
Castor Oil Plant

General Description:

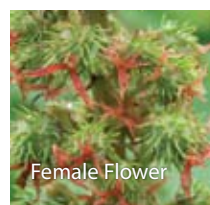
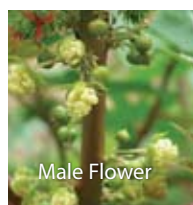
A large, smooth, woody herb or small tree. Leaves are hand-shaped with pointed leaf tip, leaf edge saw-toothed. Leaves and stems are often reddish green. Flowers have no petals and arranged in a spear-like cluster arrangement. Male flowers are yellowish-green and female flower with 3 red stigmas. Fruits are spherical spiny capsules, at first green, later turning brown, covered with soft spines. When ripe, it splits open to release pale-silvery coloured seeds that is marked with many black lines and stripes, zebra-like pattern. Occurs at landward edge of mangroves, and at waste ground as weeds. Seed coat is poisonous to animals.

Uses:

- Medicine: Production of castor oil which is used as a lubricant and purgative. Leaves used to treat headaches, as a poultice for boils and as a cure for rheumatism.
- Agriculture: Oil cake used as fertilizer. Leaves used as fodder. Leaves used to feed silkworms.
- Poison: Seeds have poisonous protein (ricinin).

Distinctive Features:

Leaves hand-shaped and pointed leaf tip, leaf edge saw-toothed. Distinctive zebra-patterned seeds.



Male Flower

Female Flower

Sarcolobus globosus

Wall.

ASCLEPIADACEAE

Local name:
Kambing-kambing,
Peler kambingEnglish name:
Unknown

General Description:

Twining, shrubby climber. It is sparsely hairy on the upper leaf surface, especially on the veins. Flowers are small and starry, yellow with longitudinal purple streaks. Fruits are warty and brown, almost round shape. The thick fleshy part of the fruit is rich in milky latex. Commonly found at muddy mangrove. Seeds that retain their wing-like edge float on water.

Uses:

- Food: The fruit peel is used for making preservatives, after being soaked in salt water for three days and subsequently boiled in syrup. Also used in making sambal.
- Poison: Seeds are poisonous.

Distinctive Features:

Climber with brown warty almost round fruit. Flower starry shape, yellow color.



Scaevola taccada (Gaertn.) Roxb.

GOODENIACEAE

Local name:
Ambong-ambong,
Merambong, Pelampong

English name:
Sea-lettuce Tree



General Description:

Robust, erect or spreading shrub occasionally develops into a small tree. Leaves are succulent and densely crowded at end of branches. Flowers are white or pale yellow and covered with fine white hair, wavy flower edge. It has a distinctive “half flower” shape with style curving over the petals. Petals sometime have violet stripes. Fruits are white and fleshy. Typically found in beach communities, especially at sand dunes. Also occurs on rocky beaches and in mangrove communities but only in sandy, well-drained areas.

Uses:

- Medicine: Many parts of this plant used as ingredient in local medicines.
- Timber: Small wood size but resistant to sea water and used for making nails for canoes.
- Household: Pith of young twigs can be easily carved into ornaments (such as small flowers, birds etc.)

Distinctive Features:

White “half-flower” shape with a style curving over the petals.



Sesuvium portulacastrum (L.) L.

AIZOACEAE

Local name:
Saruni Air

English name:
Sea Purslane



General Description:

Spreading, creeping and succulent perennial herb. Stems are bright red that roots at the nodes. Flower is star-shaped with a yellow pointed tip. Flowers are pink with numerous pink or pinkish-violet stamens, with a yellow center. Fruit is capsule-like, round and smooth. Commonly found in dense patches along landward mangrove edge, mudflats, sand dunes and in areas that are irregularly inundated by tides. Also found at rocky beaches between coastal fish ponds and along tidal creeks.

Uses:

- Food: Edible leaves after washing thoroughly and properly cooked.

Distinctive Features:

Creeping herb. Bright red stems. Flowers are pink with numerous pink stamens.



Stachytarpheta jamaicensis (L.) Vahl.

VERBENACEAE

Local name:
Blue Snakeweed

English name:
Blue Porterweed,
Light-blue snakeweed



General Description:

Erect, large woody herb or dwarf shrub. Old stems often marked with white blotches. Leaves are dark green, with wrinkled appearance between the secondary leaf venation. Leaf edges are saw-toothed-like. Flowers are dark violet arranged on very long spear-like arrangement. Occurs at sunny or slightly shaded areas. Also found at moist areas, waysides, secondary forest, rice field, along streams, landward edge of mangroves, and brackish water fishponds. Often grows gregarious.

Uses:

- Medicine: To treat rheumatism, throat infections, and as an anti-diuretic and for purifying the blood.
- Ornamental: Planted as hedge for fencing of fields.

Distinctive Features:

Dark violet flowers growing on very long spear-like arrangement.



Terminalia catappa L.

COMBRETACEAE

Local name:
Ketapang

English name:
Indian or Singapore Almond



General Description:

Medium to tall deciduous tree. It grows in typical pagoda-shaped tree architecture. Leaves are large spatula-shaped and clusters heavily at branch tip. Leaves turn orange or red before dropping. Flowers are white or pale green (sepals), no petals. It is star-shaped and grow on a long cluster spear-like arrangement. Male flowers at end whereas female at bottom. Fruit is somewhat almond-shaped, green and turns yellow as it ripens. It is thick and has a fibrous outer coating that aids in water dispersal. Occurs at sandy or rocky beaches and on the landward edge of mangroves.

Uses:

- Ornamental: Often planted as shade-tree.
- Timber: Good quality reddish wood, used for house, boat building and planks.
- Food: Edible fruit kernel, has fatty oil similar to almond oil.
- Medicine: Tannin of bark used as an astringent to treat dysentery and leather tanning. Leaves applied to treat rheumatism.

Distinctive Features:

Pagoda-shaped tree where leaves turn orange or red before seasonal shedding. Flowers are star-shaped.



Thespesia populnea (L.) Soland. ex Correa

MALVACEAE

Local name:
Bebaru

English name:
Indian Tulip Tree,
Pacific Rosewood, Portia Tree



General Description:

Tree. Young leaves with brown scale. Leaves heart-shaped and shiny green. Old leaves sometimes have hollow cavity (that may house ants) located between the main leaf veins at leaf base. Main leaf veins are yellowish and distinct. Flowers are bell-shaped, light yellow with a purple center. Fruit is compressed round to broadly egg-shaped, green and turning brown as it ripens. Occurs at sandy and rocky areas, towards the landward edge of mangroves. Seeds are water dispersed and remain dormant in seawater for many months, hence it has wide distribution.

Uses:

- Timber: Light timber source and fibre.
- Medicine: Leaves and fruits used as medicine.
- Ornamental: Planted as roadside tree.

Distinctive Features:

Young leaves have brown scale. Leaf heart-shaped with distinct leaf veins. Fruits not readily opening while still attached to tree.

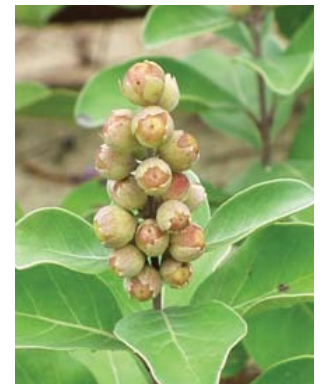


Vitex ovata Thunb.

VERBENACEAE

Local name:
Lenggundi, Lagundi,
Lemuning, Muning, Demundi

English name:
Chaste Beery, Vitex, Chasteberry,
Monk's pepper, Cloister pepper



General Description:

Shrub, ground lying to creeping, occasionally a small tree. Entire plant especially the leaves are strongly aromatic. Leaves covered with silky hairs. Flowers are purplish mauve to lilac blue, surface is hairy. Fruits are dark (reddish) brown when dry and round. It is a highly variable species. Found as beach vegetation, on sandy dunes and sandy landward edges of mangroves.

Uses:

- Medicine: Used as female remedy, to suppress sexual desire, controlling and regulating the female reproductive system. Can help control acne.
- Household: Kept in cupboards to deter cockroaches.

Distinctive Features:

Many plant parts are velvety hairy. Flowers are purple.

Wedelia biflora (L.) DC.

ASTERACEAE

Local name:
Daun Songa

English name:
Beach sunflower, Wedelia



General Description:

Straggling to climbing perennial herb. Stem is angular. Flowers are bright yellow sunflower-like (same family as sunflowers). Occurs mainly along or near the coast, at sandy beaches and mangrove edges. May also occur in coconut plantation, dry rice fields, river banks and in secondary forests.

Uses:

- Medicine: Used for external application such as cuts, insect bites, ulcers, sores, scabies and swelling. Juice from leaves taken internally to treat constipation, stomach pain and abdomen healing after childbirth. Roots to treat gonorrhoea. Flowers a violent purgative.
- Ground cover: To prevent erosion and water loss.

Distinctive Features:

Yellow sunflower-like flowers for climbing herb.

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