

PLANTS OF MAGNETIC ISLAND

3rd EDITION

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QUEENSLAND

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Plants of Magnetic Island

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GUIDE TO THE PLANTS OF MAGNETIC ISLAND MANGROVES, DUNES AND WOODLANDS

Betsy R. Jackes

Magnetic Island (19° 08 S, 148° 50 E), offshore from the north Queensland city of Townsville, was first named by Captain James Cook in 1770. He called it "Magnetical Point, land which has the appearance of an island", because his compass moved erratically as he passed it.

This large island, about 5,000 ha in area, rises to 493 m at Mt Cook, the highest point. Much of the island is composed of granodiorite. This is reflected in the prominent, large granite boulders present around most headlands. The rocks in the West Point area, which are mainly acid agglomerates, are volcanic in origin.

Much of the terrain is rugged with numerous valleys and gullies. Lowland areas are found behind most of the popular bays. The latter are mostly fringed by beach ridges and dunes.

The dominant vegetation of the island is mixed eucalypt woodland with closed forest occurring in moist protected gullies, such as along Gustav Creek at Nelly Bay. Between West Point and Huntingfield Bay there are extensive areas of semi-deciduous dry rainforest. Mangrove forests are well developed on the leeward side between Cockle Bay and West Point, as are saltmarshes and samphire flats. Small areas occur elsewhere, particularly near Horseshoe Bay.

The vegetation units on the island were described by Carolyn Sandercoe (1990). They are also reproduced in detail on a 1:15 000 map of the Island published by QPWS and the Townsville City Council (Anon.1989).

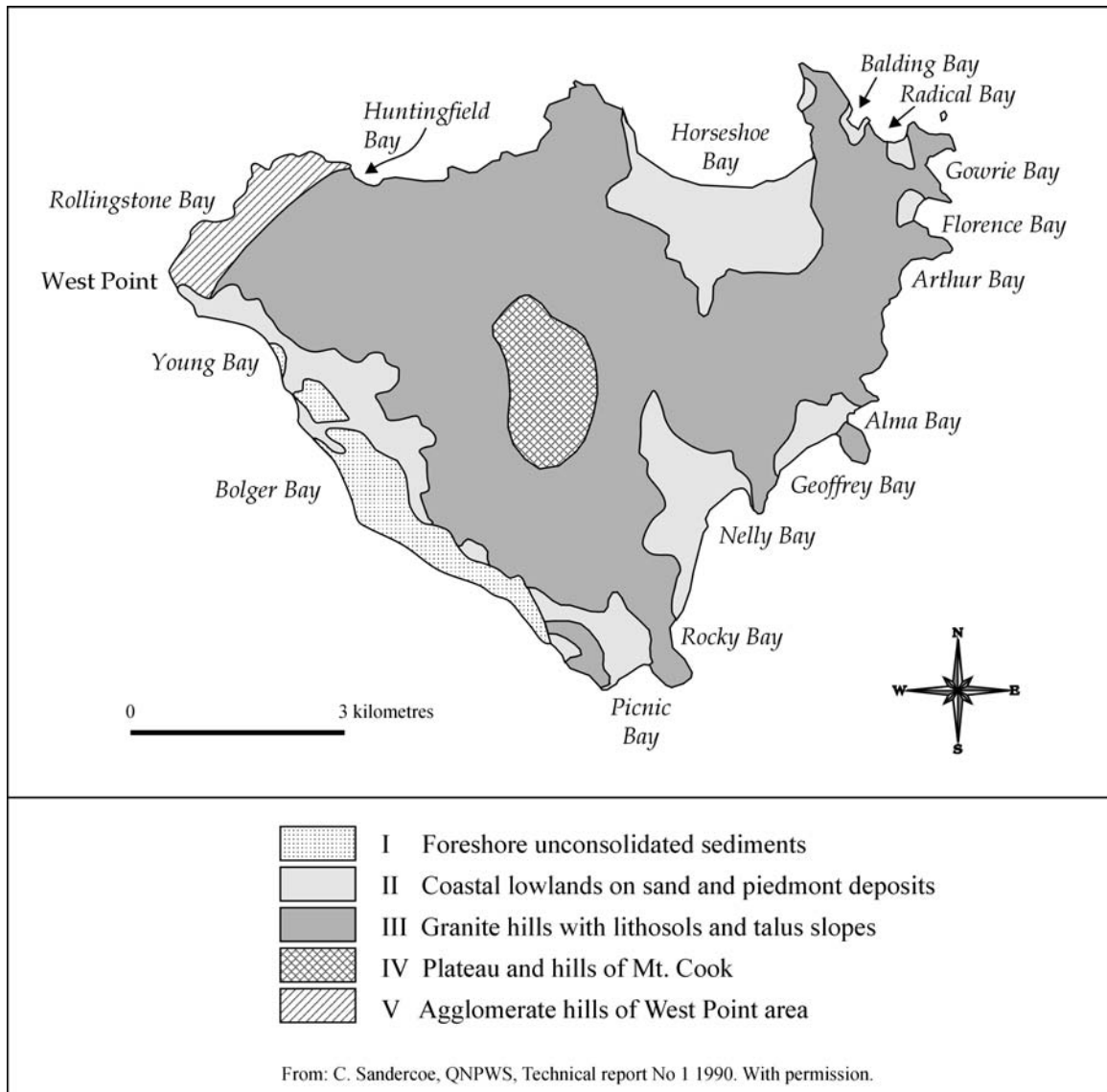
These units relate to the various landforms and hence with the underlying geology. Sandercoe (1990) recognised 23 vegetation types largely associated with the five landform divisions (Map 1). These results are summarised as follows:

- Foreshore unconsolidated sediments. Mangrove, saltmarsh and samphire units were recognized for this landform.
- Coastal lowlands on sands and piedmont deposits. Here the vegetation units range from mixed eucalypt open woodland to teatree swamp, bulkuru swamp, she-oak woodland on some of the dunes to littoral closed forest. The latter is also variously known as scrub, dry rainforest or low vine forest and good examples can be found around Florence Bay and the southern end of Nelly Bay.
- Granite hills of lithosols and talus slopes. This landform represents most of the area covered by National Park. Ten vegetation units are recognized indicating the range of habitats present. These units are: Araucaria forest; mixed low coastal forest; low vine forest amongst boulders; vine forest (closed forest or rainforest); mixed semi-deciduous woodland; mixed semi-deciduous low open woodland; mixed eucalypt woodland; Acacia shrubland; grassland ± sparse trees and shrubs and mallee brush box forest (*Lophostemon confertus* – mallee form).
- Plateau and hills of Mt Cook. This area mostly above 300 m altitude is often cooler and moister because of more frequent cloud cover. It is in this area that patches of cabbage tree palm (*Livistona*) and forest she-oak

(*Allocasuarina*) occur as well as grass tree shrubland (*Xanthorrhoea*) on exposed ridges.

- Agglomerate hills of the West Point area. Here mixed low open scrub mingles with large boulders. Many of the species are dry season deciduous, representing semi-deciduous dry rainforest.

Map of Magnetic Island



WHAT IS INCLUDED IN THIS BOOK?

This book is designed to introduce both visitors and residents of Magnetic Island to some of the flora of Magnetic Island, particularly those areas readily accessed by walking tracks. Species restricted to the more inaccessible areas such as around Rollingstone Bay, as well as many relatively inconspicuous species, or ones difficult to identify, e.g. grasses, have been excluded. Because the identification of grasses and sedges often require technical expertise, only the common, or prominent, species have been included in this key. Although many introduced plants have been included it is impossible to cover all those that occur in gardens. A list of all plants known to occur, or that have been collected, on the island are included as an appendix. Most garden plants are excluded from this list unless they have escaped into surrounding areas.

Many of the plants that occur on Magnetic Island are also found on the adjacent mainland wherever similar habitats exist. However, a greater diversity of plants, particularly species considered to be weeds, will be found in the Townsville environs, largely because there is a greater range of potential habitats. Some species similar to ones that occur on the mainland have been included for comparison.

HOW IS THE BOOK STRUCTURED?

There are **three points of entry** into identifying the plants in this book after you have read these introductory words!

1. Guide to Genera based on the DOMINANT flower colour. Here each genus is listed under its flower colour, following the name is a number which indicates in what group and subgroup you will locate that genus. In some cases the same genus will appear under several different colours e.g., *Melaleuca*, both cream and red forms occur, so it will be in two places and melaleuca can be found in 8C, *that is* Group 8 subgroup C.

2. Guide to Genera based on OBVIOUS fruit features, here very small dry fruits are excluded. Here genera that have fleshy or indehiscent fruits are grouped by colour and dry or fruits that are dehiscent and split open to release the seeds, are included if they are more than 1 cm long at maturity. Most dry fruits are green to brown.

3. Key to the Groups based chiefly on leaf features

Initially the species are arranged into groups using a basic key format. This key is based on obvious external features. Similar features are grouped together. For example, leaves present would be grouped with leaves absent and you choose the character or feature that best fits your specimen and follow the prompts (e.g., go to Group A). The idea is to carefully read through the alternatives and go to the group that best fits your specimen. (See below on How to Use a Biological Key). A similar format has been used within these groups to recognise subgroups whose component species may be identified by comparing the brief descriptions with the illustrations.

A number of small sketches have been included to indicate what is meant by some of the botanical terms where their use could not be avoided. Against some terms in the description you will find a small vertical arrow (↑); a corresponding arrow will be found on the illustration pointing to the position of the structure to which the term applies.

All measurements included in the descriptions have been made from mature material. Since considerable variation in size is frequently found, a range has often been given. Plants growing in a favoured habitat and not showing signs of stress will often be larger than similar plants growing under adverse conditions.

Most of the illustrations are photocopies or scans of fresh specimens unless this was impractical, usually because of size. For the same reason only 1-2 leaflets of large compound leaves have been shown. All illustrations have been reduced in size, for many a scale bar is inserted. The scale bar represents 1 cm. Habit sketches do not have an indication of scale. Where a flowering time is given it is meant only as a guide and only represents a date when a flowering specimen was collected.

SELECTING YOUR SPECIMEN

Firstly, select a representative adult specimen, then note such things as;

- The **habitat** where the plant is growing e.g., in mangroves or a salt pan.
- **Habit**, for instance, is it a tree? Trees usually have a single trunk whereas a shrub is usually multi-stemmed and shorter. However, it may be difficult to decide, in which case both alternatives should be tried.
- What is the **leaf arrangement etc.**? Are the leaves opposite one another on the stem, or alternate?
- Is there a **milky sap** present or not when a stem or leaf is broken? Note, you may have to squeeze the broken end. This milky sap is also called latex.
- Any features of the **fruit or flower**.
-

If you pick a specimen, please make sure that you are not in a National Park. Take no more than is really necessary and do leave the roots in the ground so that the plant may continue to live for others to enjoy.

A hand lens and a notebook will be useful, as will a camera.

HOW TO USE A BIOLOGICAL KEY?

A key is the means of unlocking information, in this case how to find out the name of a plant.

A key is usually a dichotomous key, unless it is an interactive key and these are normally based on a CD-ROM or DVD. A dichotomous key should only have 2 alternatives. These are usually referred to as a **couplet**. You must always read both alternatives of the couplet **carefully** before proceeding as directed.

NOTE: Frequently the word USUALLY is used; this is to alert the user to the fact that exceptions are known. If you are at a particular couplet in the key when a problem like this arises, always try the alternative just in case.

HOW TO USE THIS KEY?

Starting on KEY TO THE GROUPS, decide

What is the habitat? In most cases it won't matter.

What is the pattern of the veins in the leaves? A network or more or less parallel to one another or?

What is the habit of the plant? Is it a vine etc.?

Has it got a milky sap that is reasonably obvious when the stalk of the leaf (petiole) or the base of the stem is squeezed? In dry times this can be difficult. If it is present, then handle with care.

What is the nature of the leaves and how are they arranged (e.g., alternate or opposite)?

Assume that you have a specimen from a tree growing in the lowland, woodland area near a creek which has simple leaves, that arise opposite to one another, the veins form a network, or at least they are not all parallel to one another and that there is no milky sap present. A Leichhardt tree would fit this description. The keying out process at “Key to the Groups” would be:

- At couplet 1, you will select the alternative 1* which directs you to couplet 2.
- At couplet 2, you will select 2* and then go to couplet 3.
- At couplet 3, since the hypothetical plant is a tree go to couplet 4.
- There is no milky sap so go to couplet 5.
- At couplet 5 the first alternative is leaves opposite and the other (5*) is leaves alternate. The hypothetical tree has opposite leaves so proceed to **Group 5**.

NOTE: There are some small sketches included at the beginning of each key to remind you what is meant by some of these terms.

At **Group 5**, you will have another key which includes all those plants fitting the above description, but this key now includes **letters** as well as numerals on the right hand side. These represent the **subgroups**. Thus the hypothetical tree would be found under **Group 5.D or Group 5.E** depending on whether the leaves are hairy or not. Since the leaves of the Leichhardt Tree are hairy, it will be in **Group 5.D**. Another example would be the Townsville wattle (*Acacia leptostachya*), a shrub, which occurs on the hillslopes often on gravelly soil, leaves (technically phyllodes) have pseudoparallel veins, but it is woody and the floral parts are not in multiples of 3. The plant lacks milky sap, the leaves alternate with one another along the stem (in fact they are in a spiral arrangement and they are not divided). Thus the steps would be “Couplet 1, go to 2, select 2* and go to 3, select 3* and go to 4. Select 4* and go to 5, select 5* and go to 6 and select 6* which takes you to 7. The plant is usually well over 1 m tall so try **Group 8**, but first make sure your plant is not just a small one growing up to maturity. In fact you will find it in **Group 8.E**.

In each of these subgroups a number of species are listed. Read each brief description and compare the illustration with your specimen. If it doesn't match then reverse your steps in case you have selected the wrong alternative. Unfortunately in trying to keep the key as simple as possible there will be some overlap in the alternatives at times, particularly where height or leaf length has been used as a separating character. (e.g., **Group 8.N and 8.O**) If in doubt check out both. If you are confident you have selected the right alternatives, you might have a specimen that doesn't conform.

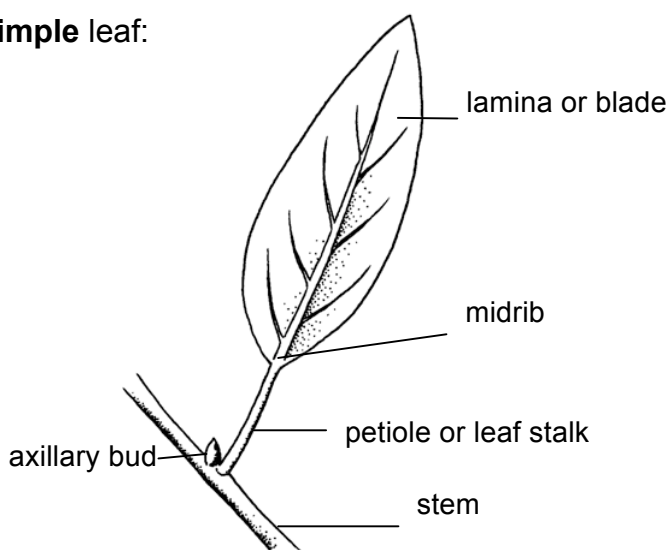
NOTE: if you cannot find your plant in here it may not have been included.

SOME BASIC TERMS:

LEAF

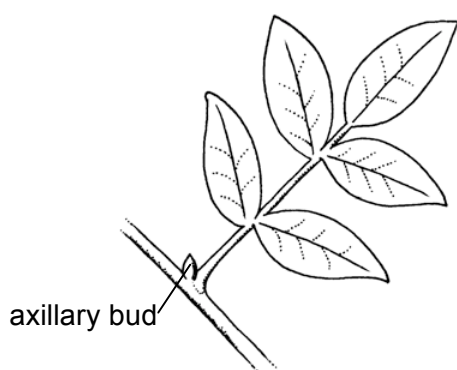
A **simple** leaf is one that is undivided so that the leaf blade does not separate into separate leaflets. There will be a bud, maybe small, in the axil between the stem and the leaf stalk. An example is a gum leaf or a fig leaf.

A simple leaf:

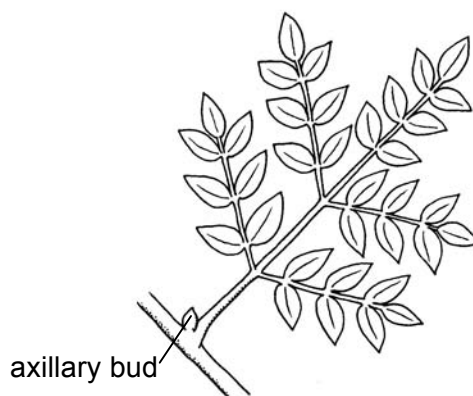


A **compound** leaf for the purposes of this book, is a leaf with 2 or more distinct leaflets. These leaflets do not have a bud in their axils. The bud is adjacent to the stem and the common stalk or rachis. Sometimes a terminal leaflet is present. At other times it may be absent or represented by a projection or spine. Some examples of compound leaves are the African Tulip Tree, Poinciana, and the Rain Tree.

A **pinnate** leaf is a compound leaf, which has a single set of leaflets, arranged on opposing sides of the rachis e.g., African Tulip Tree. A **bipinnate** leaf is one where the first set of leaflets has been divided again, i.e., the leaf is twice divided, as in the Jacaranda and the Poinciana.



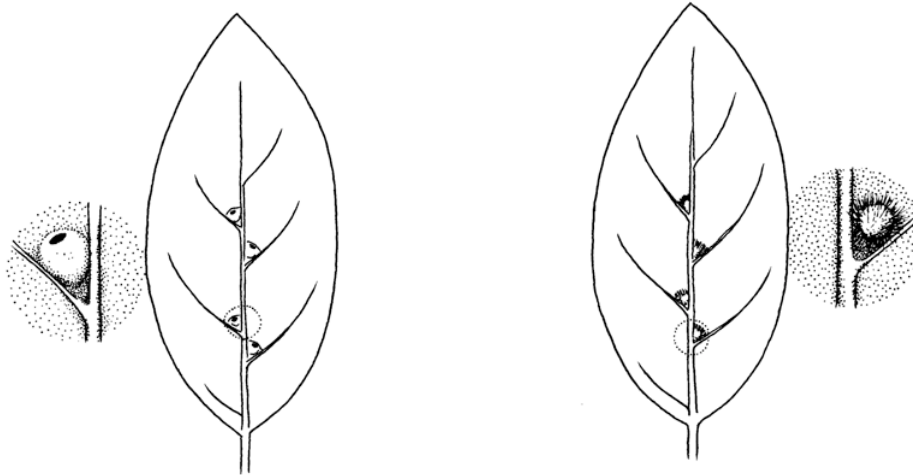
A pinnate leaf



A bipinnate leaf

Oil glands usually appear as small translucent dots when the leaf is held to the light and/or viewed with a hand lens. They secrete oil and the ones that are referred to in the key will be those that produce an aromatic or distinct smell when crushed as in a leaf of a eucalypt. Suggest you practice with a lemon leaf, a gum leaf and one from a bottlebrush or paperbark tree.

Domatia are structures in the axil of the midrib and some lateral veins, occasionally elsewhere. Mites often live in them. They take two basic forms: small hooded structures or flaps of tissue, quite variable in size and shape, and hair tufts, formed by a cluster of hairs.



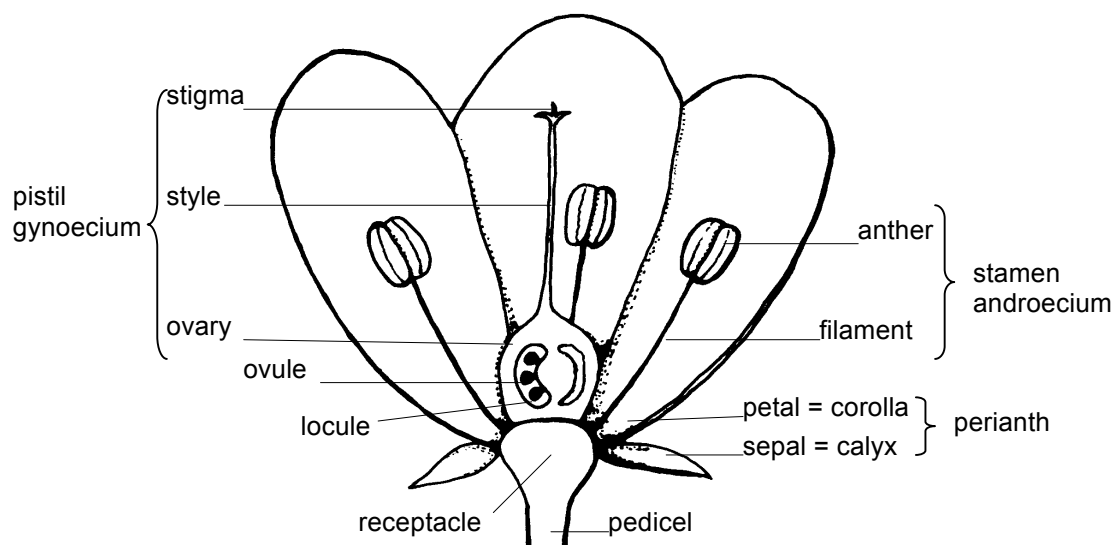
Domatia – hooded structures

Domatia – clusters of hairs

Extra-floral nectaries or glands are structures that produce substances, may be external on the organ or may be internal. Various terms are used, and often interchangeably. Pellucid dots or streaks are within the tissues and they produce a variety of substances, the ones referred to in this book as 'oil glands' are those which produce a distinct smell, recognizable as just not plant! Extra-floral nectaries, to distinguish them from those in the flowers, are on the outside surface of the plant. Unfortunately these are also often referred to as glands.

FLOWERS and FRUITS

Longitudinal section of a regular flower:



FLOWER

Regular or symmetrical flowers are flowers which can be cut in half in more than one way to get two equal halves as in a Hibiscus.

Irregular or asymmetrical flowers are flowers which can only be cut in one direction to get two equal halves as in a pea-flower.

Perianth. This is the collective term used for the sepals/calyx and petals/corolla, particularly when you can't distinguish between sepals and petals. Individual segments maybe free from one another or variously fused.

Stamen. The male part of the flower, each typically consists of a filament and an anther which contains the pollen.

Pistil. The female part of the flower consisting of the ovary at the base which is composed of carpels and develops into the fruit, the ovules when fertilised become the seeds. Attached to the top of the ovary is the style and the stigma where the pollen is received.

FRUIT

Fruit are basically either fleshy and indehiscent as in an apple or dry and dehiscent as in a pea pod. Many types. Most common are:

Fleshy:

Berry – like a tomato where there is no hard central stone;

Drupe – like an apricot, where there is a hard central stone surrounding the seed.

Dry:

Fruit is normally dehiscent and break open to release the seeds.

There are exceptions. A capsule is the most common as in a Hibiscus;

Legume or pod, splits along 2 sides as in a pea or wattle; Follicle splits on one side as in Grevillea.

NAMES

In this publication, the Latin Name, is followed by in brackets – the Common Name(s), if there is one, and then the Family Name.

Many native plants do not have a common name or if there is one it is only of local use. In contrast others have a variety of common names. For example in the Townsville area some of the common names for ***Acacia aulacocarpa* (Group 8E)**, are 'Brown Salwood', 'Black Wattle', 'Hickory Wattle', 'Golden-flowered Salwood' and 'Brush Ironbark'. There are no rules as to which common name is preferred.

Where an asterisk (*) has been placed after the brackets, this indicates that the plant has been introduced at some time in the past. Many of these plants have escaped from the garden and have become weeds.

The Latin Name or binomial is usually the one currently in use by the Queensland Herbarium. However names do change as more knowledge is gained, but as not all botanist agree (we won't go into that discussion) you will find listed an "alternate name" or "/" between family names, which again indicates that there are alternatives. Where a name has changed then the old name is preceded by 'formerly', this name now becomes what is known as a synonym. More details can be found in the Australian Plant Name Index (APNI). The meaning of the names has been based chiefly on Huxley *et al.* (1999). More details are given in the references.

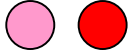
Although photographs have only occasionally been included, photographs of some of the species and certainly of representatives of the families can be found in the Image Gallery on the Centre for Plant Biodiversity Research website.

<http://www.cpbr.gov.au/photo/index.html>

1. Guide to genera based on DOMINANT Flower Colour.

Numbers such as 7A after the Name of the Genus indicates that the genus is in Group 7, Subgroup A.

Flowers Pink to Red



Shrubs and Trees:

Brachychiton 8G, *Euroschinus* 6F, *Hibiscus* 8F, *Indigofera* 6B, *Jatropha* 4A, *Lantana* 5F, *Melaleuca* 8C, *Millettia* 6B, *Nerium* 4C, *Schefflera* 6H, *Tephrosia* 6B, *Urena* 7B, *Xylocarpus* 1H.

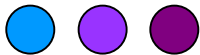
Herbs and Epiphytes. Plants if woody generally less than 1 m tall:

Abelmoschus 7B, *Amyema* 3A, *Anisomeles* 5B, *Aphyllodium* 6B, *Boerhavia* 5B, *Catharanthus* 4B, *Desmodium* 6B, *Drosera* 7E, *Eustrephus* 2B, *Haemodorum* 2B, *Indigofera* 6B, 7D, *Lysiana* 3A, *Macroptilium* 3F, *Murdannia* 2B, *Portulaca* 7D, *Pseudoeranthemum* 5B, *Sesuvium* 1C, *Stachytarpheta* 5B, *Tephrosia* 6B, *Trianthema* 1C, *Urena* 7B.

Vines:

Antigonon 3J, *Canavalia* 3F, *Derris* 3G, *Glycine* 3F, *Ipomoea* 3I, 3K, *Macroptilium* 3F, *Passiflora* 3K, *Rubus* 8G.

Flowers Blue to Mauve to Purple



Shrubs and Trees:

Anisomeles 5B, *Brucea* 6G, *Callicarpa* 5F, *Exocarpos* 8I, *Fitzalania* 8N, *Hypoestes* 5B, *Hyptis* 5B, *Indigofera* 6B, *Melastoma* 5H, *Melia* 6G, *Memecyclon* 5H, *Millettia* 6B, *Solanum* 7E, *Tephrosia* 6B, *Vitex* 5A, 5F.

Herbs. Plants if woody then generally less than 1 m tall:

Ageratum 5B, *Catharanthus* 4B, *Commelina* 2B, *Cyantillium* 7E, *Dianella* 2B, *Helicteres* 7C, *Heliotropium* 7C, *Hybanthus* 7D, *Lomandra* 2B, *Murdannia* 2B, *Nymphaea* 7C, *Pseuderantheum* 5B, *Rostellularia* 5B, *Sesuvium* 1C, *Spermacoce* 5B, *Stachytarpheta* 5B, *Striga* 7D, *Trianthema* 1C, *Trichodesma* 5B, *Wahlenbergia* 7D.

Vines:

Abrus 3G, *Aristolochia* 3J, *Canavalia* 3F, *Clitoria* 3G, *Cryptostegia* 3D, *Derris* 3G, *Desmodium* 3F, *Evolvulus* 7D, *Ipomoea* 3K, *Pandorea* 3H, *Passiflora* 3K.

Flowers Yellow to Orange



Shrubs and Trees:

Acacia 6C, 8E, *Avicennia* 1D, *Caesalpinia* 6B, *Cascabela* 4C, *Cassia* 6D, *Chamaechrista* 6D, *Cochlospermum* 8F, *Corchorus* 7A, *Grewia* 7C, *Hibiscus* 8P, 8S, *Labichea* 6D, *Lantana* 5F, *Melhania* 7A, *Melodorum* 8N, *Nauclea* 5C, *Nerium* 4C, *Persoonia* 8I, *Pleiogynium* 6G, *Polyalthia* 8N, *Senna* 6D, *Sida* 7A, *Sophora* 6A, *Tamarindus* 6D, *Tecoma* 5A, *Thespesia* 8P, *Triumfetta* 7A, *Waltheria* 7A.

Herbs and Epiphytes. Plants if woody then generally less than 1 m tall.

Acmella 5B, *Chamaecrista* 6D, *Cleome* 6D, *Crotalaria* 6A, 7A, *Dendrophthoe* 3R, *Helichrysum* 7A, *Hybanthus* 7D, *Ludwigia* 7A, *Tithonia* 8F, *Tribulus* 5A.

Vines:

Cajanus 6A, *Cissus* 3J, *Hypericum* 5B, *Mucuna* 3F, *Rhynchosia* 3F, *Spagneticola* 5B, *Vigna* 3G.

Flowers White to Cream, maybe a greenish tinge present.



Shrubs and Trees:

Acacia 8E, *Acronychia* 5G, *Aegialitis* 1G, *Aegiceras* 1G, *Aidia* 5E, *Alphitonia* 8L, *Alyxia* 4C, *Antidesma* 8O, *Barringtonia* 1G, *Bruguiera* 1E, *Bursaria* 8S, *Capparis* 8N, *Carallia* 5E, *Carissa* 4C, *Cerriops* 1E, *Chionanthus* 5A, *Clerodendrum* 5F, *Cordia* 8K, *Corymbia* 8A, 8B, *Cryptocarya* 8K, *Cyclophyllum* 5E, *Diospyros* 8O, *Emmenosperma* 5H, *Eucalyptus* 8A, 8B, *Eugenia* 5G, *Geijera* 5D, *Glossocarya* 5F, *Gossia* 5G, *Grevillea* 8I, *Grewia* 7D, *Gyrocarpus* 8G, *Hibiscus* 8F, 8S, *Ixora* 5E, *Larsenaikia* 5D, *Lophostemon* 8D, *Lumnitzera* 1G, *Maytenus* 8S, *Melaleuca* 8C, *Mimusops* 4D, *Morinda* 5D, *Myoporum* 8O, *Nerium* 4C, *Osbornea* 1D, *Pavetta* 5E, *Pittosporum* 8O, *Pogonolobus* 5E, *Premna* 5F, *Psychotria* 5E, *Psydrax* 5E, *Scaevola* 8K, *Scolopia* 8K, *Sersalisia* 8L, *Sonneratia* 1E, *Tabernaemontana* 4C, *Tephrosia* 6B, *Terminalia* 8M, *Timonius* 5D, *Turraea* 8R.

Herbs: and Epiphytes

Abelmoschus 7B, *Alternanthera* 5C, *Catharanthus* 4B, *Coldenia* 7B, *Crinum* 2B, *Drosera* 7E, *Glinus* 5C, *Gomphrena* 5C, *Grewia* 7C, *Helicteres* 7C, *Heliotropium* 7C, *Leucopogon* 7D, *Lomandra* 2B, *Lysiana* 3A, *Nymphaea* 7C, *Nymphoides* 7E, *Oldenlandia* 5C, *Persicaria* 7E, *Proiphys* 2B, *Pseuderantheum* 5B, *Pterocaulon* 7C, *Richardia* 5C, *Scoparia* 5C, *Tacca* 7B, *Thecanthes* 5C, *Tridax* 5C, *Xanthorrhoea* 2A.

Vines:

Abelmoschus 7B, *Abrus* 3G, *Bonamia* 3J, *Cyanchum* 3D, *Diplocyclos* 3K, *Gymnanthera* 3D, *Hoya* 3D, *Ichnocarpus* 3D, *Jasminum* 3H, *Melodinus* 3D, *Merremia* 3I, *Pandorea* 3H, *Parsonsia* 3D, *Sarcostemma* 3C, *Smilax* 3J, *Tinospora* 3J.

Flowers Inconspicuous usually about 2-3 mm diameter, usually greenish to dull yellow.

Shrubs and Trees:

Alchornea 8S, *Allocasuarina* 8H, *Antidesma* 8O, *Araucaria* 8H, *Aphananthe* 8K, *Breynia* 8O, *Bridelia* 8O, *Carallia* 5E, *Casuarina* 8H, *Celtis* 8K, *Colubrina* 8K, *Croton* 8P, *Cryptocarya* 8K, *Cynometra* 1H, *Dendrocnide* 8K, *Dodonaea* 8S, *Drypetes* 8O, *Excoecaria* 1F, *Ficus* 4A, *Flueggea* 8J, *Glochidion* 8Q, *Harpullia* 6F, *Homalanthus* 8K, *Macaranga* 8P, *Mallotus* 8P, *Mangifera* 8N, *Neolitsea* 8K, *Petalostigma* 8S, *Phyllanthus* 8Q, *Pipturus* 8J, *Planchonella* 4A, *Pleiogynium* 6G, *Sterculia* 8P, *Trema* 8K.

Herbs and Epiphytes:

Alternanthera 5C, *Amaranthus* 7B, *Phyllanthus* 7D, 7E, *Salsola* 1C, *Suaeda* 1C, *Tecticornia* 1A, *Viscum* 3A.

Vines:

Cassytha 3E, *Cayratia* 3I, *Cissus* 3J, *Clematicissus* 3J, *Dioscorea* 3J, *Elaeodendrum* 5H, *Pachygone* 3J, *Trophis* 3J.

2. Guide to genera based on OBVIOUS Fruit Features.

A. FLESHY FRUIT

This guide is Based on MATURE colour of the fleshy fruit OR if Dry then they do not split open i.e., indehiscent or very slowly dehiscent. Genera may appear in more than one group.

Numbers such as 7A after the name of the genus indicates that the genus occurs in Group 7 subgroup A.

Purple, Dark Purple to Black



Shrubs and Trees: (P) = usually a definite **Purple**

Acronychia 5G (P), *Alphitonia* 8L, *Alyxia* 4C, *Antidesma* 8O, *Aphananthe* 8K, *Bridelia* 8O, *Brucea* 6G, *Callicarpa* 5F (P), *Carallia* 5E, *Carissa* 4C, *Cascabela* 4C, *Celtis* 8K, *Clausena* 6E (P), *Cryptocarya* 8K, *Dendrocnide* 8K (P), *Euroschinus* 6F, *Ficus* 4A, *Garuga* 6G, *Gossia* 5G, *Ixora* 5E, *Jasminum* 3H, *Lantana* 5F, *Livistona* 2A, *Melastoma* 5H, *Memecylon* 5H, *Myoporum* 8O, *Neolitsea* 8K, *Pavetta* 5E, *Planchonella* 4A (P), *Pleiogynium* 6G, *Pogonolobus* 5E, *Premna* 5F, *Psydrax* 5E, *Schefflera* 6H (P), *Seralisia* 8L, *Terminalia* 8M, *Trema* 8K, *Vitex* 5A, 5F.

Vines:

Cayratia 3I, *Cissus* 3J, *Clematicissus* 3I, *Elaeodendron* 5H, *Passiflora* 3K, *Smilax* 3J, *Tetrastigma* 3I,

Blue



Shrubs and Trees:

Canarium 6G, *Chionanthus* 5H, *Melastoma* 5H, *Myoporum* 8O, *Terminalia* 8M.

Herbs:

Dianella 2B.

Vines:

Pachygone 3J.

Pink to Red



Shrubs and Trees:

Aglaiia 6G, *Aidia* 5E, *Antidesma* 8O, *Archontophoenix* 2A, *Breynia* 8O, *Carallia* 5E, *Cyclophyllum* 5E, *Drypetes* 8O, *Eugenia* 5G, *Ficus* 4A, *Glycosmis* 6E, *Micromelum* 6E, *Mimusops* 4A, *Murraya* 6F, *Myoporum* 8O, *Neolitsea* 8K, *Ochrosia* 4C, *Polyalthia* 8N, *Rubus* 8F, *Schefflera* 6H, *Scolopia* 8K, *Trophis* 3J.

Herbs and Epiphytes:

Dendrophthoe 3B, *Viscum* 3A.

Vines;

Cassytha 3E, *Melodinus* 3D, *Pleogyne* 3J, *Stephania* 3J, *Tinospora* 3J.

Yellow, Greenish-yellow, Orange



Shrubs and Trees:

Aglaiia 6G, *Cordia* 8K, *Cupaniopsis* 6F, *Diospyros* 8O, *Drypetes* 8O, *Exocarpos* 8I, *Ficus* 4A, *Fitzalania* 8N, *Leucopogon* 7D, *Maclura* 4A, *Mallotus* 8P, *Melia* 6G, *Melodorum* 8N, *Mimusops* 4A, *Nauclea* 5D, *Persoonia* 8I, *Solanum* 7E, 8F, *Tabernaemontana* 4C.

Herbs and Epiphytes:

Amyema 3A, *Dendrophthoe* 3B.

Vines:

Passiflora 3K.

Green, maybe with brownish or yellowish tinge (includes Mangrove propagules)



Shrubs and Trees

Avicennia 1D, *Bruguiera* 1E, *Capparis* 8N, *Ceriops* 1E, *Colubrina* 8K, *Ficus* 4A, *Larsenaikia* 5D, *Leucopogon* 7D, *Lumnitzera* 1G, *Morinda* 5D, *Osbornea* 1D, *Persoonia* 8I, *Planchonia* 8N, *Psychotria* 5E, *Rhizophora* 1E, *Solanum* 7E, 8F, *Sonneratia* 1E, *Timonius* 5D.

Herbs:

Tacca 7B.

White



Shrubs and Trees:

Acronychia 5G, *Flueggea* 8J, *Pipturus* 8J, *Scaevola* 8J.

Epiphyte:

Lysiana 3A.

Brown



Trees and Shrubs:

Aegialitis 1G, *Aegiceras* 1G, *Barringtonia* 1G, *Cynometra* 1H, *Grewia* 7C, *Nauclea* 5D, *Tamarindus* 6D, *Thespesia* 8P.

B. DRY FRUIT

Genera included here have dry fruit which split open to release the seeds and are more than 1 cm long and/or wide. A few others have crept in!

Pods or similar, i.e., bean-like

Shrubs and Trees:

Acacia 6C, 8E, *Albizia* 8C, *Bauhinia* 6D, *Brachychiton* 8G, *Cassia* 6D, *Hypoestes* 5B, *Indigofera* 6B, *Labichea* 6D, *Lysiphyllum* 6D, *Millettia* 6B, *Nerium* 4C, *Paraserianthes* 6C, *Samanea* 6C, *Senna* 6D, *Sesbania* 6A, *Sophora* 6A, *Sterculia* 8P, *Tamarindus* 6D, *Tecoma* 5A, *Tephrosia* 6B, *Vachellia* 6C.

Herbs:

Aphyllodium 6B, *Cleome* 6H, *Corchorus* 7A, *Crotalaria* 6A, *Hypoestes* 5B, *Indigofera* 6B, *Pseuderanthemum* 5B, *Tephrosia* 6B.

Vines:

Chief families Apocynaceae, Fabaceae. Genera: *Abrus* 3G, *Cajanus* 6A, *Canavalia* 3F, *Clitoria* 3G, *Cryptostegia* 3D, *Cynanchum* 3D, *Derris* 3G, *Desmodium* 3F, *Glycine* 3F, *Gymnanthera* 3D, *Hoya* 3D, *Ichnocarpus* 3D, *Macroptilium* 3F, *Mucuna* 3F, *Pandorea* 3H, *Parsonsia* 3D, *Rhynchosia* 3F, *Sarcostemma* 3C, *Vigna* 3G.

Chiefly capsules i.e., often rounded as in Hibiscus

Shrubs and Trees:

Abutilon 8P, *Alectryon* 6G, *Allocasuarina* 8H, *Arytera* 6F, *Bursaria* 8S, *Casuarina* 8H, *Clerodendrum* 5F, *Cochlospermum* 8G, *Corymbia* 8A, 8B, *Croton* 8P, *Dodonaea* 8S, *Eucalyptus* 8A, 8B, *Geijera* 8D, *Glochidion* 8Q, *Grevillea* 8I, *Gyrocarpus* 8G, *Harpullia* 6F, *Hibiscus* 8F, 8P, 8S, *Homalanthus* 8K, *Jatropha* 4A, *Lophostemon* 8D, *Macaranga* 8P, *Maytenus* 8S, *Petalostigma* 8S, *Pittosporum* 8O, *Turraea* 8R.

Herbs:

Abelmoschus 7B, *Crinum* 2B, *Grewia* 7C, *Salsola* 1C.

Vines:

Bonamia 3J, *Dioscorea* 3J, *Ipomoea* 3I, *Merremia* 3I.

Insignificant/inconspicuous

The rest such as the grasses and daisies and most herbs.