internal report **245**

Draft field key to the trees and shrubs of the Jabiru Area

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supervising scientist

A FIELD KEY TO THE TREES AND SHRUBS IN THE JABIRU AREA

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Contents

1. Introduction

The aim of this field key is to provide a practical tool for identifying trees and shrubs in the Jabiru area. It has been developed for the staff at ***eriss***, the Ranger Uranium mine and in Kakadu National Park who need to know the local vegetation. However, it should also be useful to other residents and visitors in the area including teachers, students, special interest tour groups or anyone else with a natural history bent and an interest in plants. A formal botanical background is not required to be able to use the key.

A feature of the key is that identification is achieved by using characters associated with leaves, bark, plant form and the habitat of each species. This approach is very different from traditional taxonomic keys where identification is highly dependent on characters [often microscopic] associated with flowers and fruit. While such keys work well for research taxonomists backed by extensive herbarium facilities, they are usually a major source of frustration to the rest of us, faced with the unfortunate reality that at any one time only a small number of the species in an area will be flowering or fruiting. The case for developing this field key was further driven by my own conviction as a field botanist, that almost all trees and shrubs can be confidently identified either to species, or to a manageable group containing a small number of species, before needing to use floral characters.

Finally I hope that this key, by providing a capacity to recognise the diversity of trees and shrubs in the Jabiru area, will also help to foster a greater appreciation of the richness of the plant-life throughout the rest of the Kakadu region.

2. The Jabiru Area

The Jabiru area is a triangular area of around 160 km^2 bounded by the Ranger Uranium Mine to the east, the Kakadu National Park Bowali visitor centre to the west, and the Magela Creek crossing on the East Alligator Road to the north. The dominant plant communities throughout this area are lowland eucalypt woodlands and open forest. These are intersected by a network of seasonal streams supporting corridors of riparian woodland characterised by whitegums and paperbarks.

One should be cautious about using this key outside the Jabiru area. If you do, restrict it to lowland woodland and forest, and lowland streambank vegetation types. Even so, be aware of the possibility that you could find yourself trying to identify species not included in this key. In these instances you may get a name but it wont be right. Hopefully the illustrations provided in the key will allow you to confirm each identification. The Jabiru area does not contain mangrove, monsoon forest or rocky sandstone habitats so this key should not be used in or around them.

3. Getting started

3.1 The equipment you'll need

Before starting anything get a ruler marked in millimetres and a hand lens of at least 8 times magnification. And don't think you'll manage without the hand lens! There are characters used in the key that are clearly distinguished using a lens, yet without one, could be missed or interpreted wrongly.

3.2 Selecting the best plant

When choosing a plant to identify it is important to realise that characters concerned with plant form, habit, bark and stems are from adult plants. Therefore assume initially that every shrubby plant could be an immature tree and make some effort to inspect the immediate area for larger examples of the same species. Similarly, the characteristics of leaves, unless otherwise indicated, are from mature, undamaged foliage. Do not select leaves with high levels of insect damage or the leaves of seedlings. While insect damage clearly distorts shapes and alters margin patterns, other important diagnostic features like the presence of particular types of glands could also be obscured or obliterated. The leaves of seedlings can be very different from adult foliage.

3.3 The concepts, characters and terms you'll need to know

Every discipline has its own specialised terminology and in this respect botany is richly endowed. However, in these keys I've made every effort to avoid using complex, potentially intimidating technical language, but there are still a number of concepts, characters and terms that need to be learned and understood. This section defines all the terms and characters used in the key together with tips on how best to distinguish them in the field.

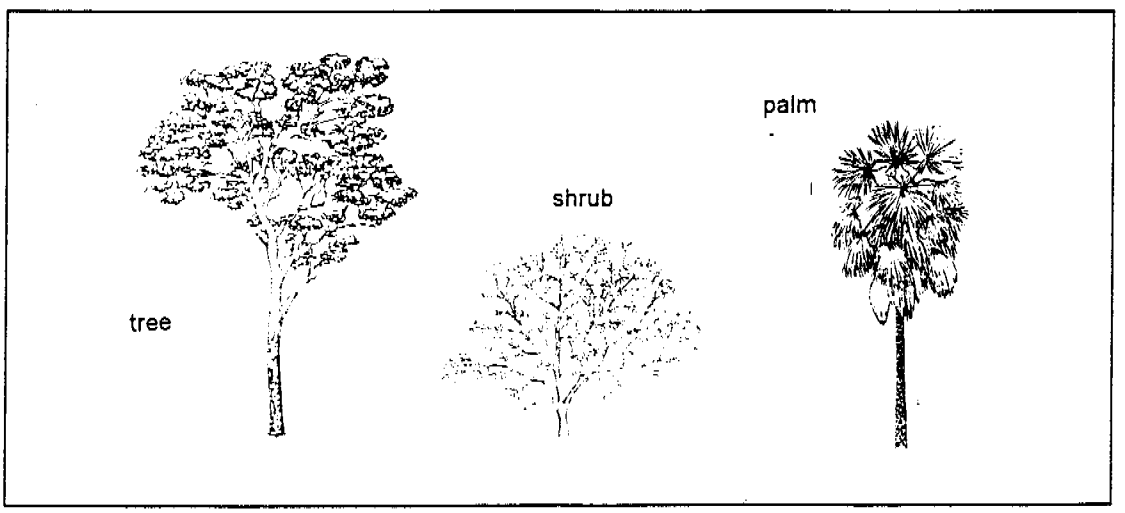
3.3.1 Trees, shrubs and palms: are a group of free-standing plants with hard woody stems.

a) **Trees** have an unbranched trunk at least 2m high.

b) **Shrubs** have major branching lower than 2m, often close to the ground.

c) **Palms** have distinctive unbranched or few-branched stems topped by dense clusters of fan-shaped, feather-shaped or linear leaves.

d) While definition of these groups may appear clear-cut, decisions about whether some species should be classed as shrubs (and included in the key) or herbs (non-woody plants, not covered by this key) were difficult. These problems were resolved by including every species seen in the Jabiru area with a shrub-like habit. Thus the key includes a range of species that are normally regarded as herbaceous but which may become shrub-like in favourable situations.



3.3.2 Trunk, branches, branchlets and twigs:

a) The **trunk** of a tree or shrub is the unbranched section of stem that emerges from the ground.

b) Any offshoot from, or division of the trunk is called a **branch**.

c) **Branchlets** are the small, outer, leaf-bearing branches.

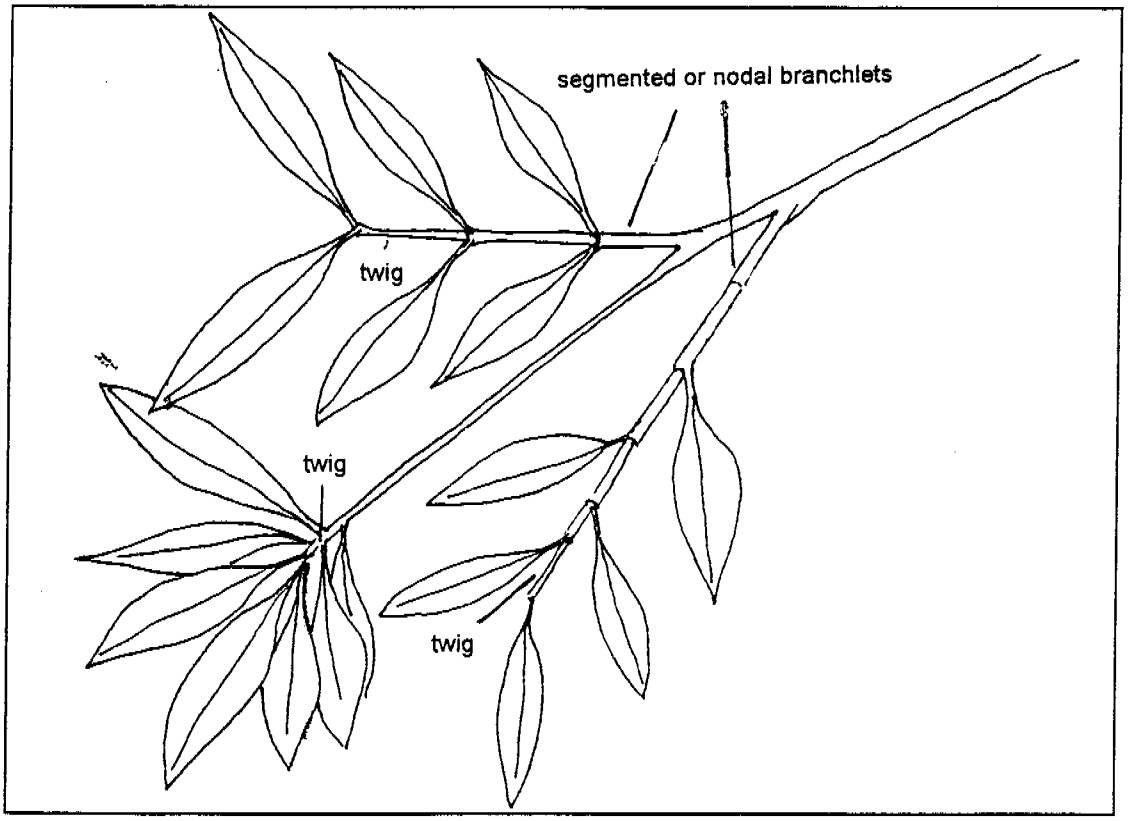
d) **Segmented** or **nodal branchlets** are divided into discrete sections by prominent scars or thickened collars of tissue encircling the branchlets at each leafing point.

e) A branch is **columnar** if it is clothed by many, more-or-less uniform, short branchlets.

f) The term **twig** refers to the outermost segment of a branchlet, between the last two, the last pair or the last set of fully developed leaves. When leaves are densely clustered at the end of a branchlet, the twig is the bit of stem in the middle of the cluster.

g) The cross-sectional shape of twigs is usually circular (**terete**) or elliptic but could be angular (square, rectangular or triangular).

h) Any twig or branchlet edged with prominently raised ridges or narrow leafy flaps is described as **winged**.



3.3.3 Plant habit: refers to the general posture of a tree or shrub.

a) **Prostrate** shrubs sprawl across the ground.

b) **Pendulous** trees and shrubs are upright with weak, dangling branchlets.

c) Plants with **rambling** or **trailing** habits have vine-like qualities. They grow free-standing and upright initially, but their slender stems must eventually prop against other plants for support or else they arch to the ground and sprawl.

d) Most trees and shrubs have erect, spreading habits.

3.3.4 Bark: is the protective skin on the stems of trees and shrubs.

a) Bark is described as **smooth** if the surface is not split or cracked. However, some species with smooth bark replace their bark annually, and during the period of replacement the old bark splits, and flakes or peels off. Be careful to recognise this for what it is, and not as a bark type that is chronically rough or flaky.

b) Rough barks are described as either **loose** or **tight** according to how strongly the outer layers are fused to the inner layers.

c) Bark with a predominance of vertical furrows is **fissured** while bark with regular or irregular vertical and horizontal splitting is **flaky**.

d) There are a few specific bark types: **paperbark** is composed of thin, many-layered, often loose, papery sheets.

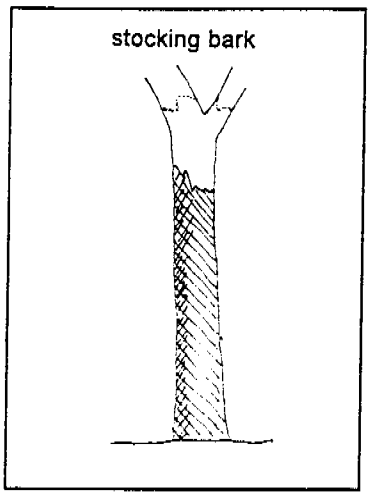
c) **Stringybark** is a long-fibred bark that pulls off in long strips.

d) **Box bark** is short-fibred with a close wavy grain.

e) **Tessellated bark** is a composed of squarish flakes layed like tiles.

f) **Scaly bark** has a loose outer layer of smallish thin flakes.

g) Some trees have **stocking barks**; a distinct 'stocking' of rough bark on the trunk (or to the main branches) that terminates abruptly and is replaced by smooth bark which persists throughout the branches.



h) Many species with smooth, or only slightly roughened bark have **lenticels.** These are small pits or swellings on the bark surface used for gas exchange. They can be sparse to dense and are usually circular or elliptical in shape.

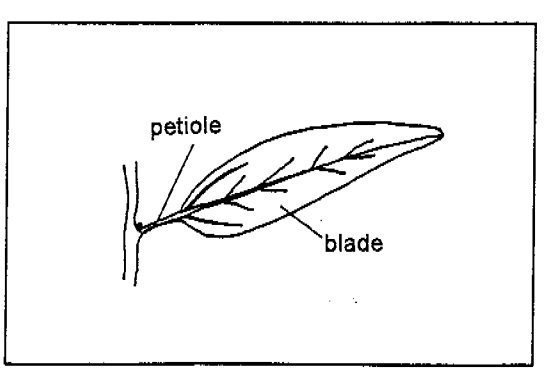
3.3.5 Leaves: are the photosynthetic organs of a plant.

a) For this key **the term leaf includes phyllodes** (specialised leaf stalks with the form and function of leaves) **and cladodes** (specialised branchlets with the form and function of leaves).

b) In most cases, leaves, or at least the components of them, are recognised easily because they are flat and green. You may have difficulty deciding whether or not some plants are **leafless**. Shrubs with branchlets covered by tiny green 'scales' are not leafless; each 'scale' is a tiny leaf. Distinguishing leafless plants with thin, green, needle-like branchlets from leafy plants with similarly slender, needle-like leaves could be more problematic. However, needle-like leaves nearly always have leaf stalks. Although sometimes very short, these stalks may be thicker or more narrow than the leaf and/or have a different texture. There would be no recognisable stalk at the base of a needle-like branchlet.

c) To use this key successfully **you must be able to distinguish simple leaves from compound leaves**.

d) A **simple leaf** accords with the usual concept of a leaf. It consists of an expanded or flattened green **blade** attached to a branchlet by a **petiole** (the leaf stalk). However, the blades of some leaves may be narrow and needle-like, or much reduced and scale-like. The simple leaves of some species lack petioles.



e) All **lengths and widths of simple leaves** are of the blade only and therefore do not

include the petiole.

f) **Compound leaves** are leaves composed of two or more **leaflets**. The difficulty is, that individual leaflets of compound leaves often look like simple leaves! Perhaps the easiest way to learn to identify compound leaves is to use the illustrations of compound leaves in GROUP KEYs C and D to stimulate an awareness of their presence in the field. Recognising some compound leaves can be as easy as noticing 'leaves' that always occur in three's. More elaborate compound leaves have feather-like or fern frond-like qualities, with highly symmetrical, distinctly layered patterns. The individual leaflets of compound leaves are often asymmetric (ie the blade on one side of the leaflet is not a mirror image of the other side) which contrasts with the symmetry of the blades of many simple leaves.

g) Like simple leaves, the set of leaflets comprising a compound leaf is attached to the branchlet by a **petiole**. The petioles of compound leaves are nearly always conspicuously swollen at the branchlets.

h) Each leaflet of a compound leaf usually has a flat **blade** and a leaflet stalk called a **petiolule**. However, some species have narrow, needle-like leaflets while others may lack petiolules.

i) All **lengths and widths of leaflets** are of the blade only and therefore do not include the petiolule.

j) **Trifoliate leaves** have three leaflets attached to the end of a petiole. If the blades are all more or less the same distance from the petiole then the leaf is **digitately trifoliate,** whereas if the central leaflet is much further from the petiole than the others then the leaf is **pinnately trifoliate**.

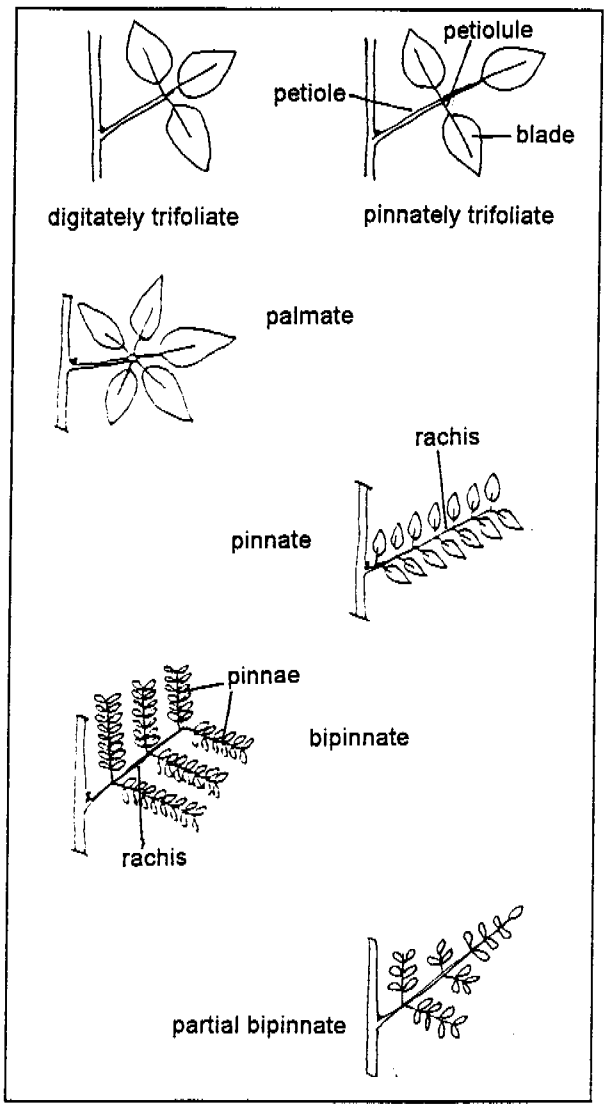
k) **Palmate leaves** have at least 4 leaflets attached directly to the end of the petiole (spreading like fingers from the palm of a hand).

l) **Pinnate leaves** also have at least 4 leaflets but they are attached to the sides of a central stem, the **rachis,** which extends from the petiole. In this context the petiole stops and the rachis starts at the first leaflet. Leaflets may have opposite or alternate arrangement along the rachis (see definitions of these terms below at 3.3.8 Leaf arrangement).

m) A **winged rachis** is edged by prominently raised ridges or thin strips of leafy tissue.

n) In **bipinnate leaves** the rachis has pairs of branches off it called **pinnae** and the leaflets are attached to these. The petiole stops and the rachis starts at the first pair of pinnae.

o) **Partial bipinnate leaves** have some



leaflets attached to pinnae (which branch from near the base of the rachis) and others attached directly to the rachis (towards the end of the rachis).

Become familiar with the various types of compound leaves by studying the illustrations in the keys for GROUPs C and D.

3.3.6 Blades (of simple leaves or leaflets):

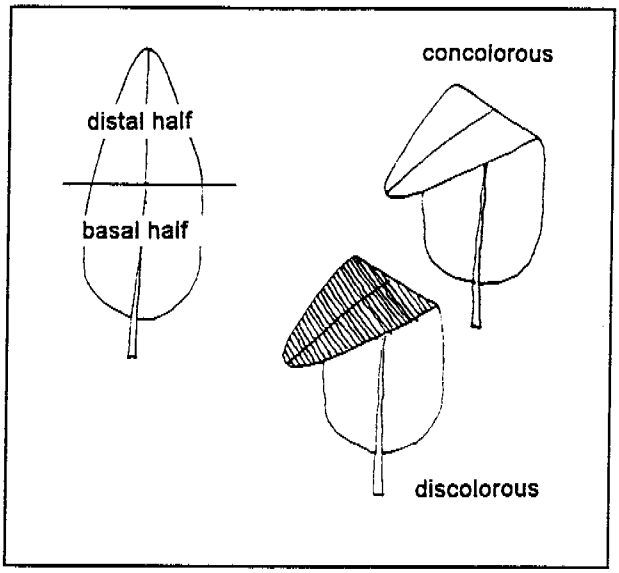
a) The **basal half** of a blade is the region from the base to a point halfway along its length.

b) The **distal half** of a blade is the region from the point halfway along its length to the tip.

c) If the upper and lower surfaces of the blade have the same colour and shine then the leaf is **concolorous**.

d) **Discolorous** leaves are differently coloured or have different amounts of shine on the upper and lower surfaces.

e) The **brittleness** of a blade is determined by folding it a couple of times. Brittle blades will break or snap into discrete pieces whereas more supple blades will not.



3.3.7 Petiole: is the stalk of a leaf.

a) The **basal end** of the petiole is the end attached to the branchlet while the **distal end** is attached to the blade.

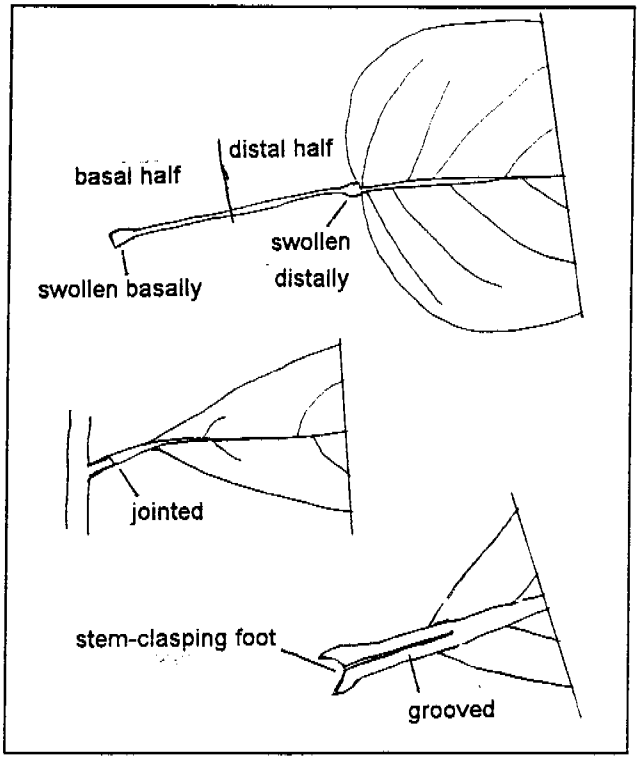
b) A petiole can be swollen basally (at the branchlet) and/or distally (at the leaf blade). A short, rounded, onion-like swelling is **bulbous** while a more elongated, sausage-like swelling is **tuberous**.

c) A **grooved** petiole has a distinct furrow down the centre of its upper surface.

d) If a petiole has several longitudinal furrows and ridges it is **ribbed**.

e) **Winged** petioles are edged with prominent raised ridges or thin strips of leafy tissue.

f) A **jointed** petiole has a distinct joint part-way along its length. The leaves will detach at this joint leaving a short section of petiole protruding from the branchlet.



g) A petiole with a **stem clasping foot** has an expanded base that partially wraps around the branchlet.

h) A petiole with a **sheathing base** has a base that wraps completely around the branchlet

3.3.8 Leaf (or leaflet) arrangement: is way leaves are located along a branchlet (or way leaflets are located along a rachis or pinna).

a) If leaves arise singly along the branchlets they are **alternate**.

b) Where alternate leaves form two rows along opposite sides of a branchlet the arrangement is **distichous**.

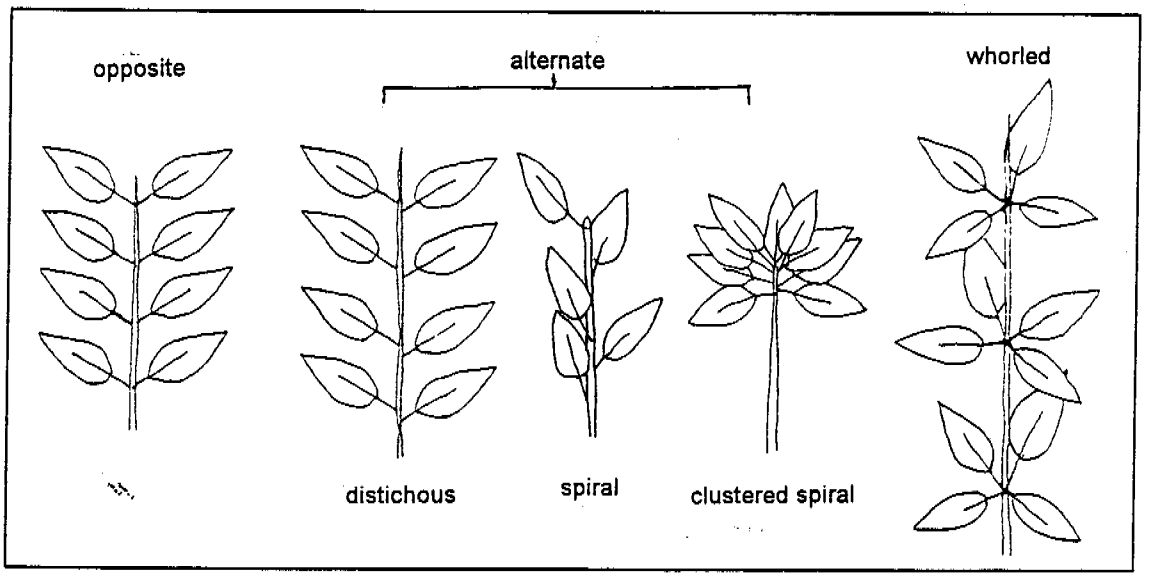
c) Alternate leaves not aligned in two rows are **spiral**.

d) A **clustered spiral** arrangement is a dense aggregation of alternate spiral leaves, usually at the end of a branchlet.

e) Leaves with **opposite** arrangement occur in pairs opposite each other along the branchlets.

f) **Sub-opposite** leaves occur in pairs that are slightly offset from each other.

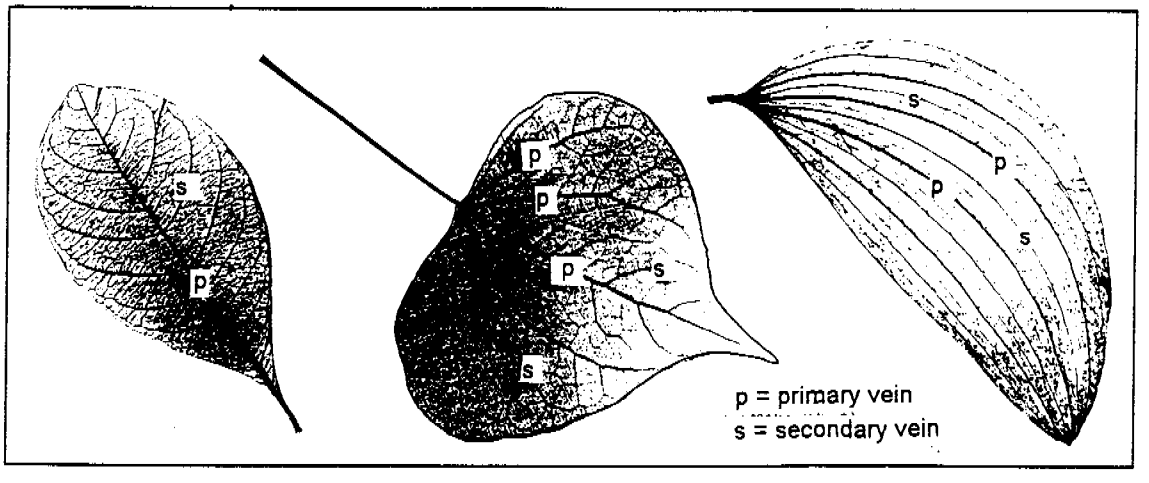
g) If three or more leaves arise from each leafing point along a branchlet the leaves are arranged in **whorls**.



3.3.9 Leaf veins:

a) **Primary veins** are the most prominent veins of a leaf; arising from the end of the petiole at the base of the blade.

b) **Secondary veins** either branch off, or run between primary veins and are clearly less prominent.



c) Secondary veins that branch off primary veins are called **lateral veins**. The lateral veins may not all be equally prominent. They could occur in two or more ranks of prominence. In this respect **counts of lateral veins** refer to the number of lateral veins in the most prominent rank (ie excluding the less prominent lateral veins interspersed amongst them).

d) The smaller, progressively more obscure set of veins branching from, or running between secondary veins are termed the **fine veins**. **Reticulate fine veins** form networks across leaf blades while **parallel fine veins** run closely parallel to each other along the blades. To see the fine veins of some species it may be necessary to hold a leaf toward the light and view it with a hand lens. Use this technique with a ruler placed across the middle of a blade to determine the **density of fine parallel veins**.

e) Most leaves have at least one primary vein running from the base to the tip. Leaves without an identifiable primary vein have **obscure venation**.

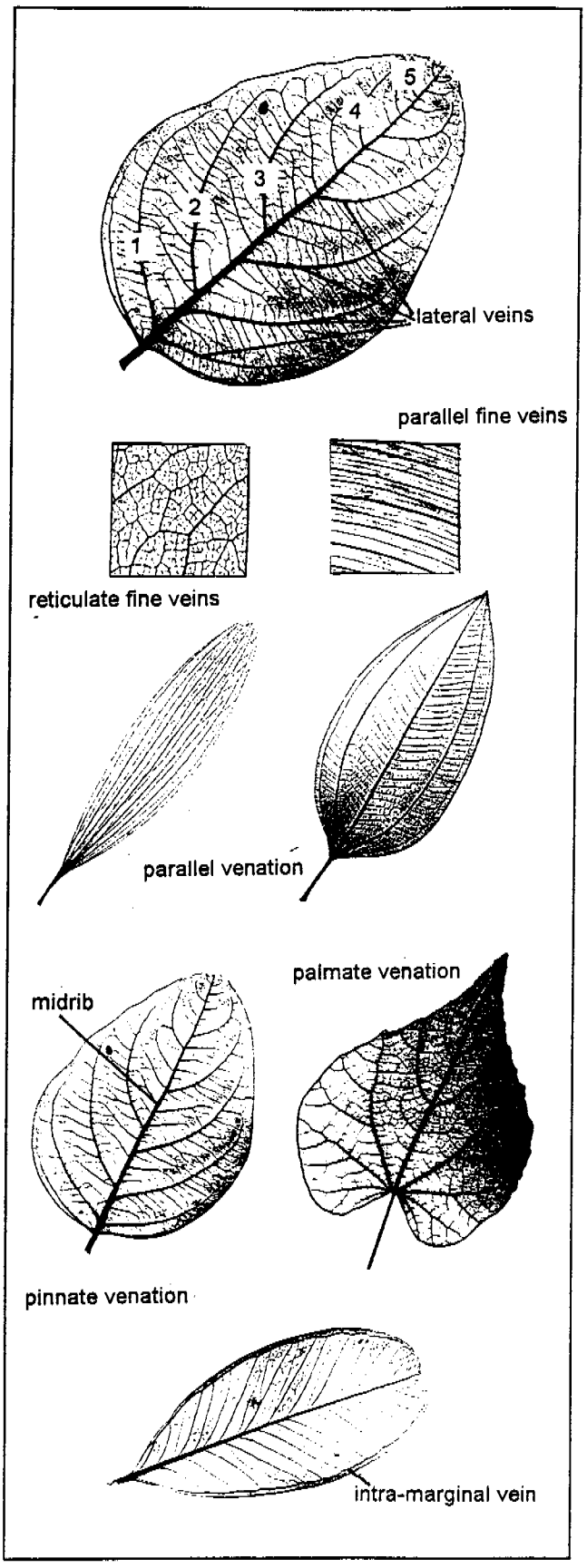
f) Leaves with **parallel venation** have either numerous fine veins or, failing that, at least two primary or secondary veins diverging from the base of the leaf and converging at the tip.

g) A **midrib** is a primary vein running down the centre of the blade.

h) Leaves with **palmate venation** have a midrib and at least two other primary veins diverging from the leaf base to the margin of the blade.

i) Leaves with **pinnate venation** have a midrib, the only primary vein from the base, with a well defined set of lateral veins, branching from it like ribs.

j) An **intra-marginal vein** is a thin vein that runs around the edge of a blade just inside the margin.



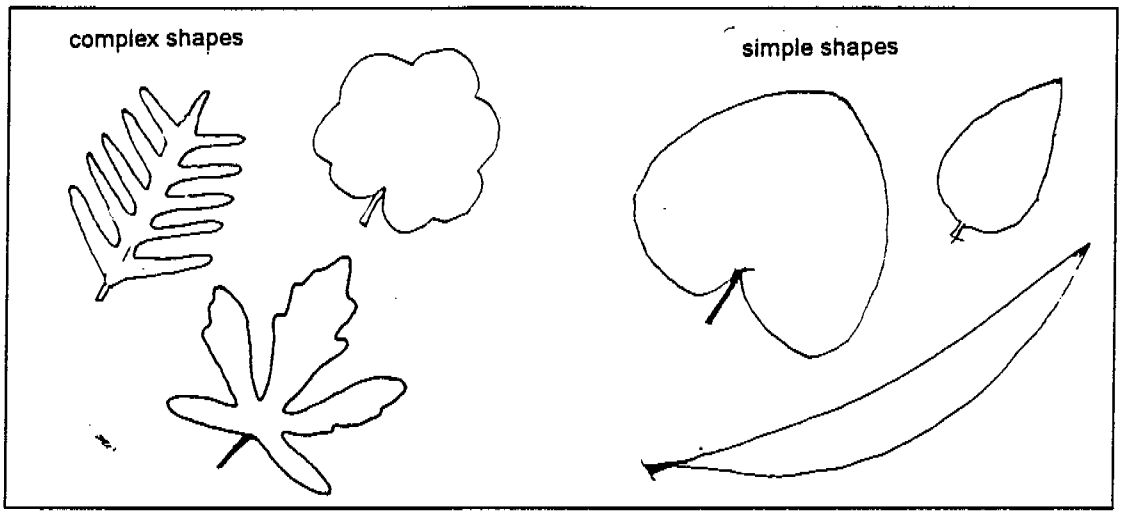
k) Leaf veins may be **raised** from, **flush** with, or **sunken** into the surface of the blade. When reticulate fine veins are sunken into the blade they impart a distinctive **wrinkled** surface texture.

l) Leaf veins may appear lighter than, darker than, or the same colour as the blade. However, this colour contrast can vary according to light conditions and it should be determined in shade with leaves placed flat in the palm of ones hand.

m) Secondary veins and fine veins are obscure if they are difficult to see or difficult to count because they are the same colour as the blade (see 3.3.9l above), are flush with the blade surface and are not conspicuous when the blade is held to the light (with or without a hand lens).

3.3.10 Leaf shapes:

a) Leaves with prominent lobes or fingers have **complex shapes** whereas unlobed, undissected leaves have **simple shapes**.



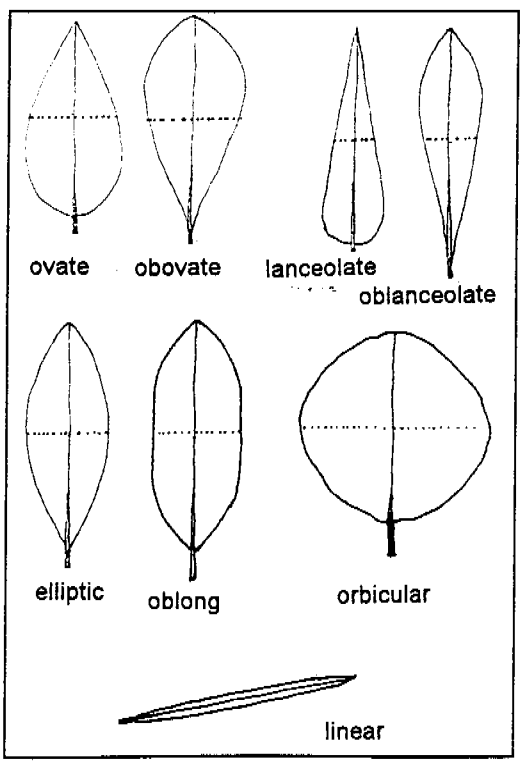
b) The terms for several simple leaf shapes are determined by the length to width ratio of the blade (L/W: calculated as Length divided by Width) and the region in which it is widest. Leaves with L/W < 3, are **ovate** if widest in basal half, or **obovate** if widest in the distal half.

c) If L/W > 3 the leaves are **lanceolate** if widest in the basal half or **oblanceolate** if widest in the distal half.

d) Leaves that are widest midway are **elliptic** if the margins curve uniformly from the midpoint to the tip and the base. However, if the margins are parallel for some distance though the midregion the leaf is **oblong**.

e) Leaves widest in the mid-region and almost circular (L/W < 1.2) are **orbicular**.

f) Flat-bladed leaves, widest in the mid-region, with L/W > 12 are **linear**.



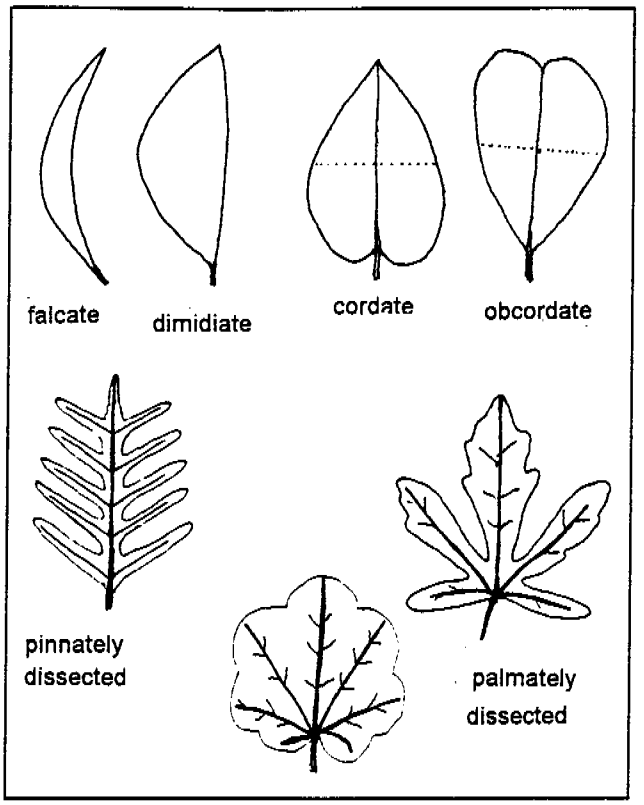
g) Leaves with crescent-shaped or curved blades are **falcate**. The **inner margin** of a falcate blade is the shortest, inward-facing margin while the **outer margin** is the longer, outward-facing margin.

h) **Dimidiate** leaves have a somewhat semi-circular shape.

i) **Cordate** leaves are heart-shaped and widest in the basal half, while **obcordate** leaves are heart-shaped and widest in the distal half.

j) Leaves with complex shapes are **pinnately dissected** if the lobes or fingers are aligned with lateral veins.

k) **Palmately dissected** leaves have lobes or fingers aligned with a set of palmate primary veins radiating from the base of the leaf.



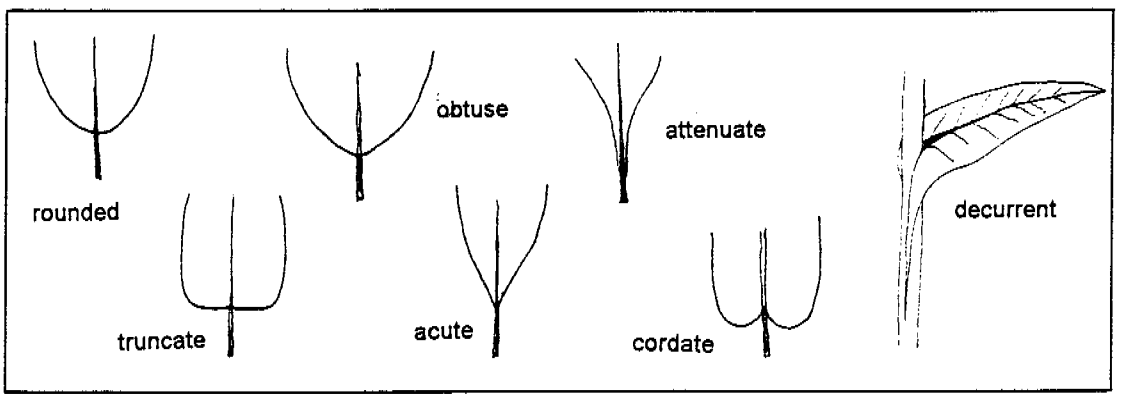
3.3.11 Leaf bases:

a) If the margin of a blade diverges from the leaf base in a smooth, upswept arc the leaf base is **rounded**.

b) Some terms for leaf bases are determined by the angle at which the margin of the leaf diverges from the midrib. If the angle of divergence is around 90° then the base is **truncate**; if it is between 90° and 45° the base is **obtuse**; and if it is < 45° then the base is **acute**. Leaf margins that diverge from the midrib at very shallow angles are **attenuate**.

c) Leaf bases with broad rounded lobes (like a bum!) are **cordate.**

d) **Decurrent** leaf bases are attached to, and form wings down the edges of branchlets

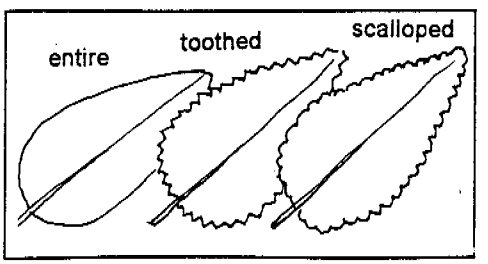


3.3.12 Leaf margins:

a) **Entire** leaf margins are smooth, without any nicks or indentations.

b) **Toothed margins** are edged by small angular lobes.

c) **Scalloped margins** are edged by small rounded lobes.



d) If all indentations are about the same size and evenly spaced around the margin the pattern is **uniform,** whereas if the size of the indentations is variable, or they are not uniformly spaced around the margin, the pattern is **irregular**.

e) The descriptors **shallow** and **deep** describe how deeply the indentations cut into the blade.

f) The terms **broad** and **narrow** may be used to describe the relative width of indentations.

3.3.13 Leaf smell:

Is determined by first giving a few leaves a good 'mince' in ones fingers to release any aromatic compounds.

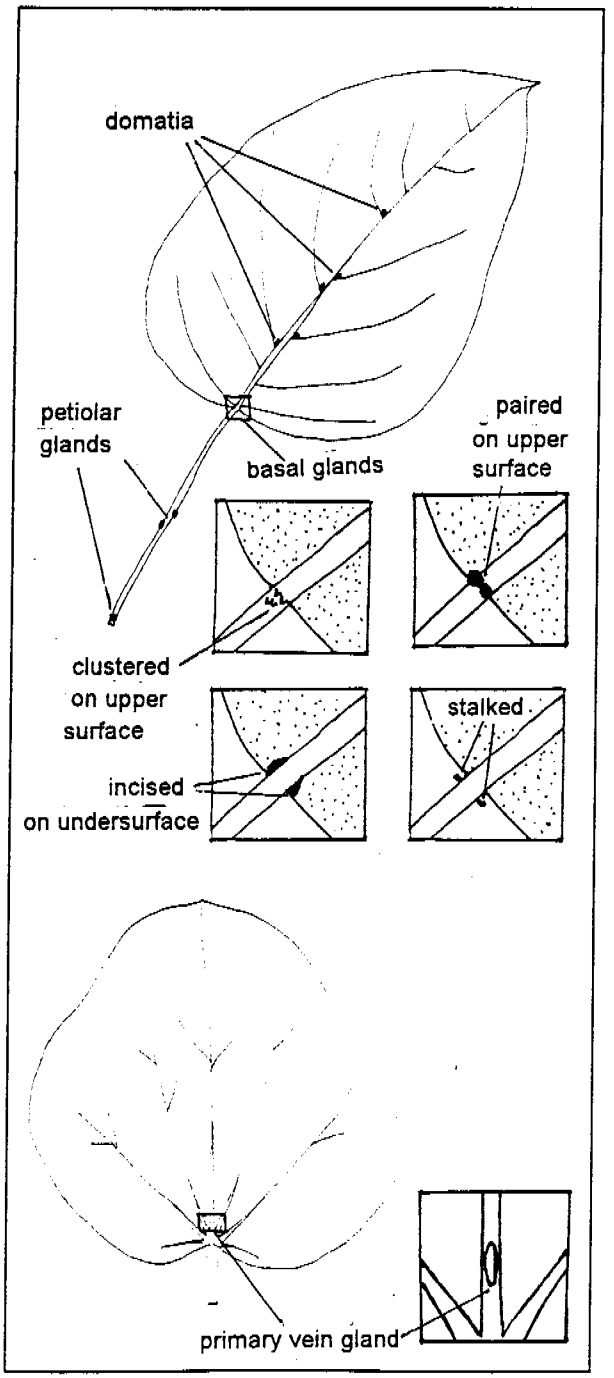
3.3.14 Leaf glands: are the diverse array of pits, pores, dots and swellings located on leaf surfaces or embedded in leaf tissue. They are often small and to see them properly you'll need a hand lens.

a) **Petiolar glands** occur on the petiole anywhere from its base to within a short distance of the junction of the petiole with the leaf blade. They could be single or paired; paired glands sometimes being offset from each other midway along the petiole.

b) **Basal glands** are found at the base of the leaf blade, in the region where the petiole joins the blade. They could be single, paired or appear as a cluster of tiny projections at the end of the petiole. They could be on the top surface of the leaf, attached to the sides of the petiole, or only visible on the undersurface of the leaf.

c) **Domatia** are small but distinct pits or pockets occurring on the undersurface of a leaf in the angles where lateral veins branch from the midvein. They could be covered by tufts of hair. On the upper surface of the leaf, domatia may be expressed as small raised blister-like patches either side of the midvein. Always check a number of leaves before deciding that a plant does not have domatia; they may not be present on every leaf.

d) **Glands on primary veins** can occur on the undersurface of a leaf, in the basal half, on the midrib or any other primary palmate vein spreading from a leaf base. If present they are usually quite conspicuous, being raised, and elliptic to long, narrow elliptic in shape.



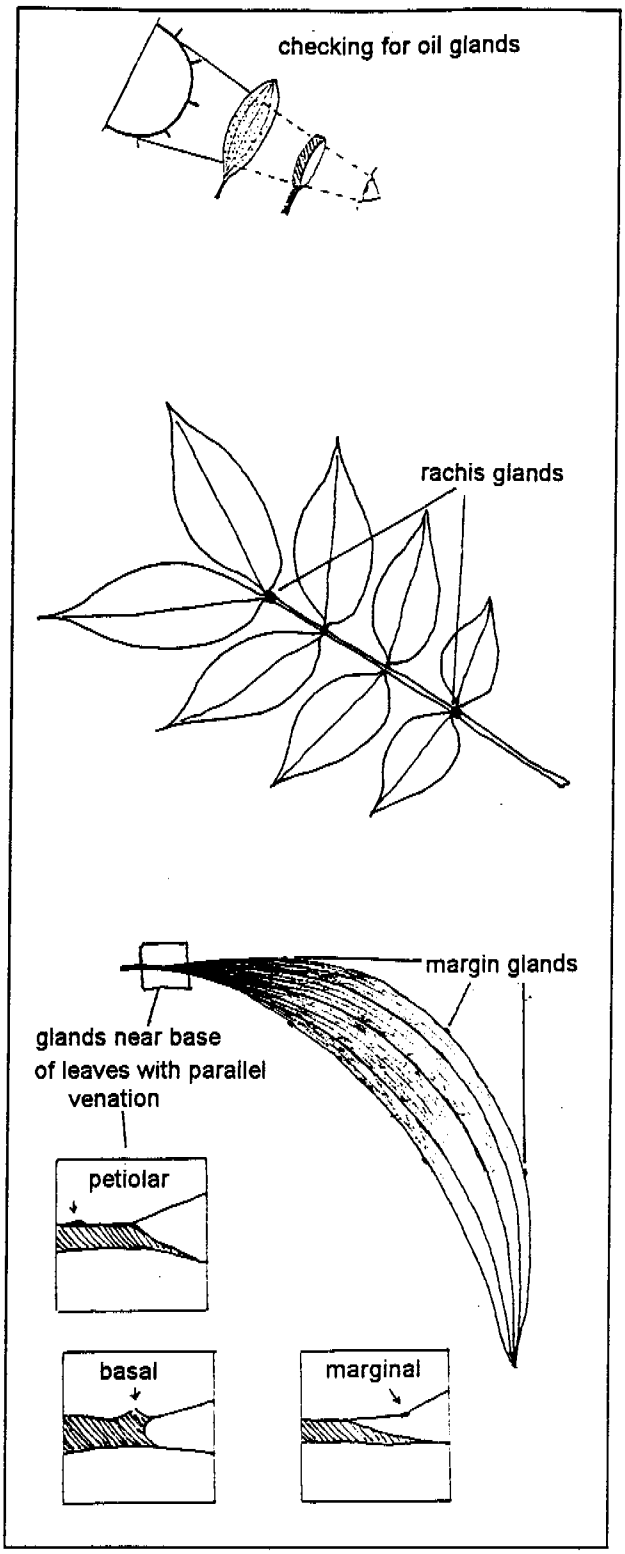
e) **Oil glands** are usually embedded in the blade and should be viewed with a hand lens while the blade is held to the light. They always appear as small translucent dots. Any small, dark or opaque dots seen using this technique could be indicative of laminar glands or clusters of hairs.

f) **Laminar glands** usually occur on the undersurface of the blade. They are opaque, may be very sparse or extremely dense, and are often tiny and could be missed without the aid of a hand lens. Inspect for laminar glands by viewing each surface of the blade in good light while it is placed in the palm of your hand. Always be wary of dark-speckling on the undersurface of a leaf, it could be caused by insects. Establish whether it is insect-derived or natural by examining a number of different leaves.

g) **Margin glands** are located around the edge of the blade. They could be inserted between, or at the tips of marginal teeth. On entire margins they could be slightly raised from, or incised into the edge of the blade. Some margin glands are only visible on the undersurface of the blade just inside the edge. They are often small and should be viewed with a hand lens.

h) **Rachis glands** occur on the rachis of compound pinnate or bipinnate leaves. They are usually between the first pair of leaflets on pinnate leaves or between the first pair and / or the last pair of pinnae on bipinnate leaves.

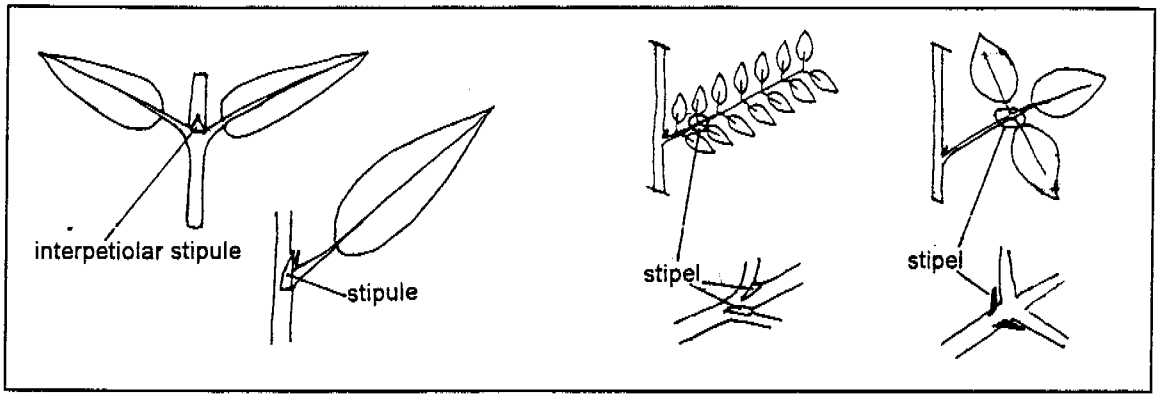
i) **On leaves with parallel venation** it is important to correctly classify margin, petiolar and basal glands, especially in the region at the base of the blade. Always examine the basal region carefully. Basal glands occur almost exactly at the junction of the petiole and the blade, petiolar glands are clearly on the petiole side of this junction while margin glands, though sometimes close to the junction, are clearly on the blade. Margin glands are usually only present on one margin.



3.3.15 Stipules and stipels:

a) **Stipules** are small, often leafy appendages that grow from the base of a petiole, or on the branchlet where the petiole is attached. They could be in pairs on either side of the petiole or wedged in the cleft where the petiole meets the branchlet.

b) Some plants with opposite leaf arrangement have **inter-petiolar stipules**. These occur on the sides of the branchlets, straddling the space between opposing leaves. In plants with alternate leaf arrangement the stipules may encircle the branchlets. The stipules of many species are not persistent but fall off. However, after they have fallen characteristic scars on the branchlets may remain. These scars cause some branches and/or branchlets to appear distinctly segmented or nodal.



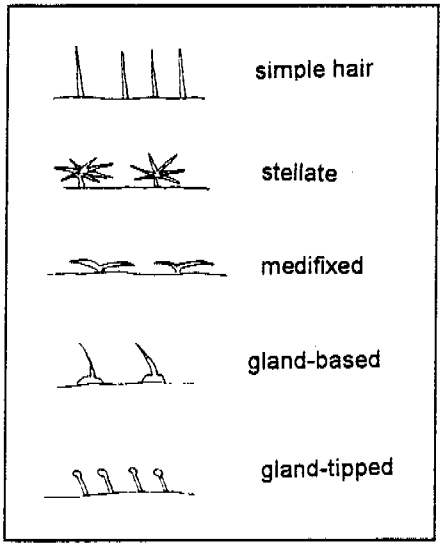
c) **Stipels** are small appendages like stipules that can occur at the bases of petiolules on compound leaves.

3.3.16 Hairs and scales: are mostly confined to the surfaces of leaves, twigs and branchlets and should always be observed using a hand lens.

a) Viewing hairs on leaf blades can be made easier by wrapping the blade around ones finger. Light conditions are important and it may be necessary to experiment with illumination angles and using shade for contrast.

b) Hairs composed of a single filament are **simple hairs**.

c) **Stellate hairs** (star-like) have three or more arms radiating like the spokes of a wheel either from points on the leaf surface or from the tops of short supporting stalks.



d) **Medifixed hairs** (attached in the middle) are a type of stellate hair having just two arms.

e) The surfaces of some leaves and branchlets are covered by highly distinctive, tiny, circular **scales**.

f) Hair types can be further described according to their density, length, orientation, colour and the texture they impart to a surface.

g) **Adpressed hairs** lie flat across the surface of the leaf or branchlet.

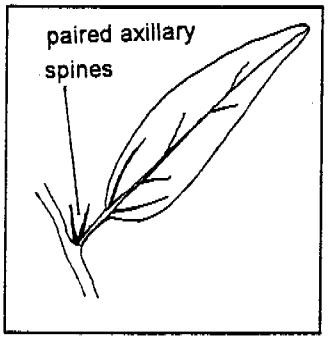
h) Hairs that ascend vertically are **patent**.

i) **Spreading hairs** rise obliquely from leaf or branchlet surfaces.

j) **Gland-based hairs** emerge from swollen bases.

k) **Gland-tipped hairs** are tipped by globular swellings.

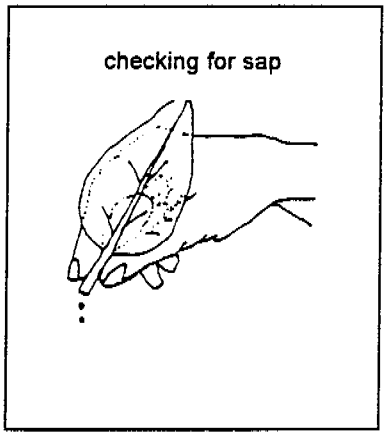
3.3.17 Spines, thorns and prickles: are any sharp-pointed outgrowths from the trunk, branches,, branchlets or leaves. On a leaf they could project from the surface of the blade, be restricted to the margin, or occur as a single hardened point at the tip.



a) **Axillary spines** occur at points of leaf attachment (usually in pairs) on the branchlets.

3.3.18 Sap and latex:

While all plant species have sap, in only some does it well up or leak out from damaged tissue. To check this character in the field, cleanly snap a young, fully expanded leaf from a branchlet. (If the break is not clean, the sap of some potentially sap-yielding species may not flow, so repeat on another leaf.) Check the end of the petiole on the detached leaf and the scar on the branchlet for signs of sap accumulation. The sap could be opaque white or creamy, or clear and watery. It could flow profusely or merely ooze, but should at least form a moist glistening layer across the branchlet scar or the end of the petiole. If there is no initial response, massage the petiole of the detached leaf and look for signs of opaque white or creamy sap. Ignore any accumulation of clear liquid that only appears after massaging the petiole. Confirm a 'no sap' result by repeating the process on a few more leaves. Alternatively 'nip' the bud from the growing tip of a twig and look for a sap response there. The smell of some saps is diagnostic.



3.4 Making an identification - how to negotiate the keys

Identification is made by a process of elimination. You start by first working through the KEY TO GROUPS to get to an appropriate GROUP KEY. The end points in the GROUP KEYs are species determinations.

With your unknown plant, begin at the top of the KEY TO GROUPS. You are presented with a set of options '1-' and '1*-':

1- **Palms** [3.3.1c] or palm-like plants.....	[Go to] GROUP A
1*- Trees or shrubs [3.3.1a,b].....	[Go to] 2

Read both options and decide which one best describes your plant . If you're not sure what a palm is then note that '**Palms**' is printed in bold type. Any term in bold type is illustrated nearby (on the facing page or the same page), against the number of the point in the key where the term appears. Therefore, by inspecting the illustrations associated with '1-' you should be able to make a decision. The column to the right of your chosen option will direct you to either a GROUP KEY (eg GROUP A) or to a point further along the current key (eg 2). If directed to a point further down the current key go to this point and repeat the process: read all the options presented (there are usually two but occasionally there are three), select the one that best describes your plant and proceed as indicated by the right hand column. Eventually you will be directed to one of the GROUP KEYS. These are ordered alphabetically after the KEY

TO GROUPS. The process of working through each GROUP KEY is exactly the same as for the KEY TO GROUPS. Always begin at the top of the key. **Never go directly to a GROUP KEY without first working through the KEY TO GROUPS.** Your end point in a GROUP KEY will be the species name of your plant. Nearby (on the same page or on the facing page) you'll find an X-ray illustration of a typical leaf of that species. Compare this with your specimen to confirm your identification. It maybe useful to keep a record of your passage through the keys. For *Eucalyptus miniata* [Darwin Woollybutt], this would look something like:

1*, 2*, 3*, 5*, 6*, 7*, 8*, 9*, 10 - group J, 1*, 4*, 7, 8*- *Eucalyptus miniata*

If the leaves of your plant don't look reasonably similar to the X-ray illustration then, in the first instance, assume that you made an error (a call for a little humility here!). You could use the record of your pathway through the keys to help find it. Pay particular attention to any points where you weren't confident about your choices (note these with '?'s against points on your track record). It may also be useful to reconfirm that the 'bits' of the plant you used to make the identification were in fact typical of the rest of the plant.

If you are certain that your pathway through the key is correct and you are convinced that the X-ray illustration doesn't match the leaves on your plant then: 1) you've found an error in the key; or 2) you've found an unusual variation of a species in the Jabiru area; or 3) you've found a species not previously recorded in the Jabiru area. In any of these cases, if possible, please send to ***eriss*** a sample of the plant with an attached note stating where it came from and showing the record of your pathway through the key. This will help greatly to improve future versions.

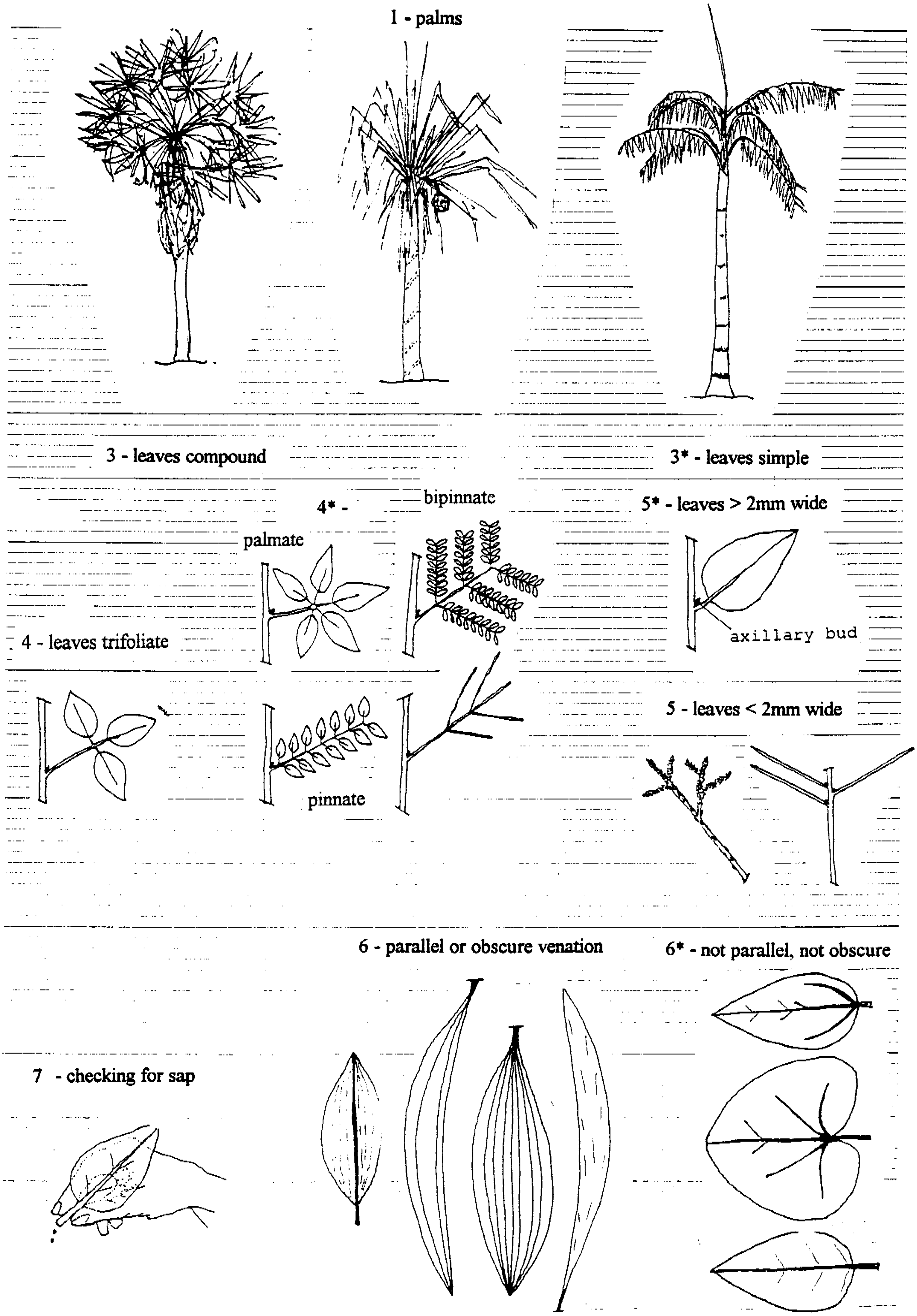
3.5 The field notes you'll need if you're taking samples to identify later

Because this key is designed to be used in the field on live plants, attempting to identify collected specimens could be difficult without supporting field notes. The list below gives the field characters to record if you're taking collections to identify later on. This list assumes that the minimum collection will consist of a set of mature, relatively undamaged leaves still attached to a section of branchlet.

Characteristics to note are:

- habitat (what type of environment was it found in)
- plant form (palm, tree or shrub)
- plant habit (note any distinctive habits such as plants with highly pendulous outer branches, prostrate plants, etc)
- presence of aerial roots
- bark texture, colour and distribution on the trunk, main branches and small branches to 2cm diameter (note any 'stocking' barks)
- presence, abundance and colour of lenticels on trunk and main branches
- presence, distribution and shape of any thorns, spines or prickles on the trunk and main branches
- presence, colour, opacity and odour of sap or latex from leaves and/or growing tips
- presence and description of aromatic, pungent or fragrant odours from crushed leaves
- overall colour and shine of the foliage (from a distance in full sunlight - note shiny canopies or those with distinctive colours ie bluish or grey-green)

- relative, and actual colour and gloss on upper and lower leaf surfaces
- colour of twigs
- colour of leaf stalks (petioles)
- brittleness and stiffness of fresh leaves (are they thick, stiff and leathery or supple and thin textured, do they 'snap' into discrete pieces when folded or do they more or less withstand folding)
- visibility of primary, secondary and fine veins in the leaves on upper and lower surfaces (raised vs unraised on both surfaces as well as colour contrasts ie darker, lighter or the same colour as the blade)
- flower description/ collection if present
- fruit description/collection if present - especially look for and collect any persistent woody seed capsules or pods attached to the plant or on the ground around the plant


1 - palms
3 - leaves compound
3* - leaves simple
4* -
bipinnate
palmate
5* - leaves > 2mm wide
axillary bud
4 - leaves trifoliate
pinnate
5 - leaves < 2mm wide
6 - parallel or obscure venation
6* - not parallel, not obscure
7 - checking for sap

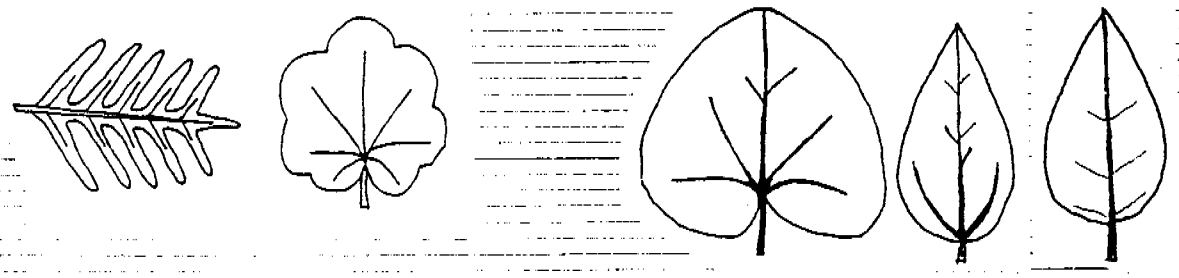
KEY TO GROUPS

Important Note: Terms in **bold** are illustrated on the facing page or the same page against the number of the point in the key where the term appears. **Numbers in square brackets**, ie. [3.3.1c], refer to text definitions in section 3.3 of the introduction. A text reference preceded by a '♂', ie. [♂3.3.14e], includes a specific field method for distinguishing that character. Failure to use suggested field methods could result in errors.

1 -	**Palms** [3.3.1c] or palm-like plants	[Go to] GROUP A
1* -	Trees or shrubs [3.3.1a,b]	[Go to] 2
2 -	Plants with spines, thorns or prickles on trunk, branches or leaves [3.3.17]	GROUP B
2* -	Plants without spines, thorns or prickles	3
3 -	Leaves **compound** [3.3.5f-o]	4
3* -	Leaves **simple** [3.3.5d] *or* leaves absent [3.3.5b]	5
4 -	Most leaves **trifoliate** [3.3.5j]	GROUP C
4* -	Leaves **palmate** [3.3.5k] *or* **pinnate** [3.3.5l] *or* **bipinnate** [3.3.5n] *or* partial bipinnate [3.3.5o]	GROUP D
5 -	Leaves absent *or* **leaves ≤ 2mm wide**	GROUP E
5* -	Leaves > **2mm wide**	6
6 -	Leaf **venation parallel** [3.3.9f] *or* **obscure** 3.3.9e]	GROUP F
6* -	Leaf **venation not parallel, not obscure**	7
7 -	Leaves or apical buds exude **sap** [♂3.3.18]	GROUP G
7* -	Leaves and apical buds do not exude sap	8

8 - complex shapes

8* - simple shapes

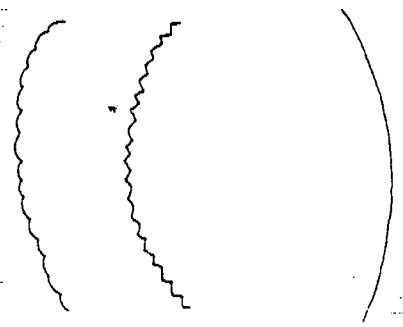


9 - margins

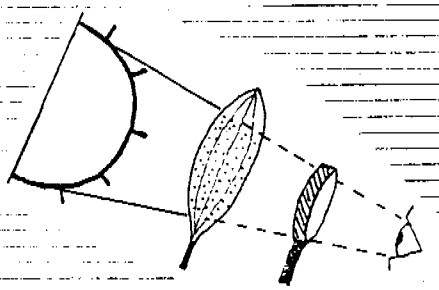
scalloped

toothed

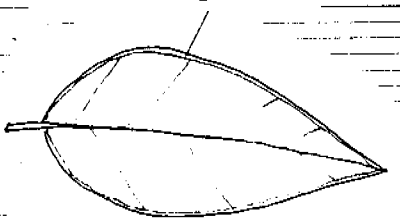
9* - margins entire



10 - checking for oil glands



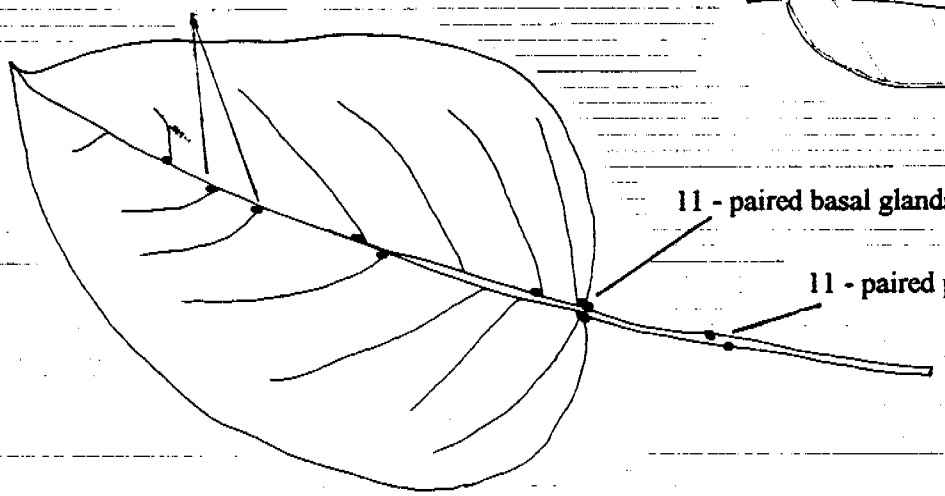
10 - intramarginal vein



11 - domatia

11 - paired basal glands

11 - paired petiole glands



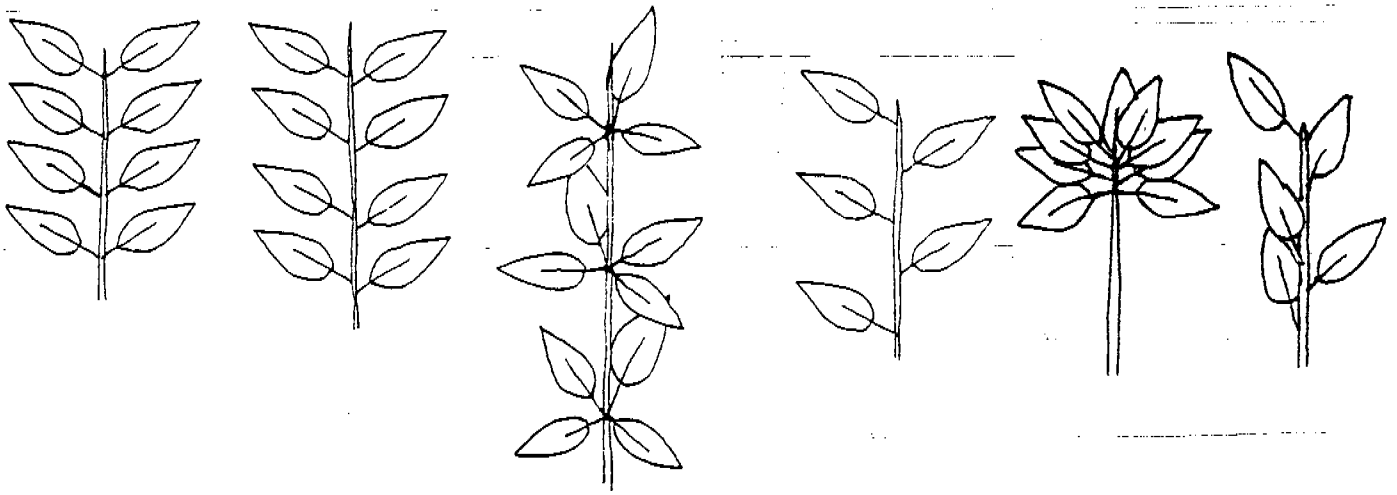
12 - opposite

subopposite

whorled

12* - alternate

spiral



8 - **Leaf shape complex** [3.3.10a,j,k] ..... GROUP H
8* - **Leaf shape simple** [3.3.10a-i] 9

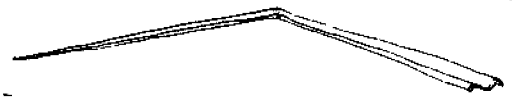
9 - Leaf **margins scalloped** [3.3.12c] *or* **toothed** [3.3.12b] *or* with raised outgrowths ..... GROUP I
9* - Leaf margins smooth, **entire** [3.3.12a] 10

10 - Leaves with **oil glands** [3.3.14e] *or* an **intra-marginal vein** [3.3.9j] ..... GROUP J
10* - Leaves without oil glands, without an intra-marginal vein 11

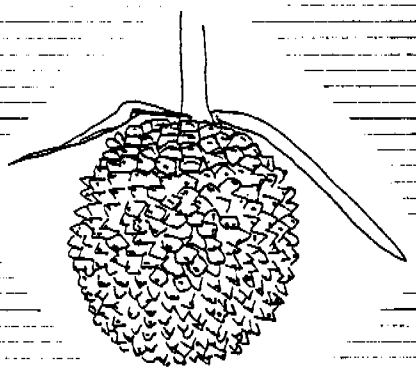
11 - Leaves with **domatia** [3.3.14c], *or* with **paired petiole glands** [3.3.14a] *or* with **paired basal glands** [3.3.14b] ..... GROUP K
11* - Leaves without domatia, without paired petiole glands, without paired basal glands 12

12 - Leaves **opposite** *or* **sub-opposite** *or* **whorled** [3.3.8e-g] ..... GROUP L
12* - Leaves **alternate** *or* **spiral** [3.3.8a-d] ..... GROUP M

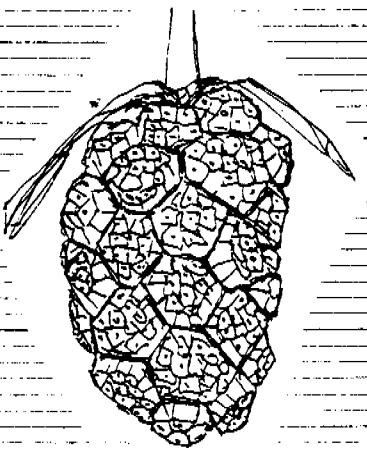
1 - without a petiole, blades narrow linear



2 - Pandanus aquaticus fruit



2* - Pandanus spiralis fruit

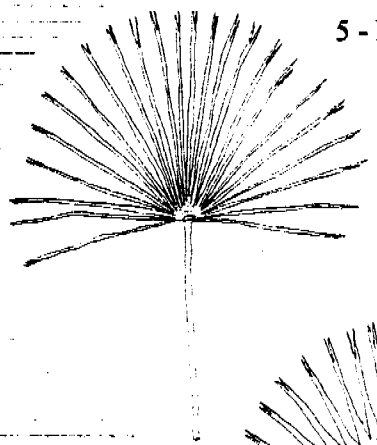


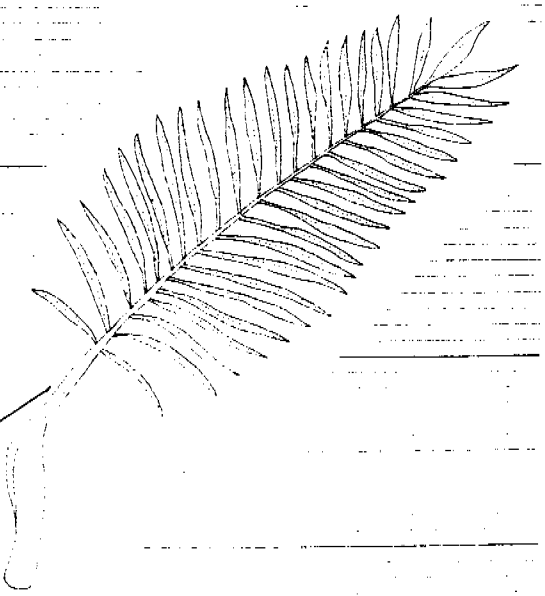
1* - with a petiole, blades not linear

3 - palmately dissected

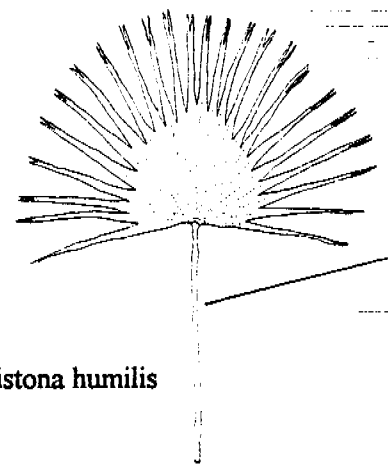
3* - pinnately dissected

5 - Livistona inermis





petiole



5* - Livistona humilis

GROUP A

Palms

1 - **Leaves without a petiole** [3.3.7]; **blades narrow, linear** [3.3.10f], not divided into fingers or leaflets 2

1* - **Leaves with a petiole**; **blades not narrow linear**, at least partially divided into narrow fingers or leaflets..... 3

2 - **Fruit** large spherical, composed of many small pointed segments, somewhat jackfruit-like; plants restricted to sandy creek lines and the margins of billabongs where they may form dense thickets ..... *Pandanus aquaticus* [Water Pandan]

2* - **Fruit** large spherical or slightly cylindrical, composed of many fused segments, somewhat pineapple-like; plants not restricted to creek channels and billabong margins..... *Pandanus spiralis* [Screw Palm]

3- Leaves **palmately dissected** (fan-like) [3.310k] 4

3* - Leaves **pinnately dissected** (feather-like) [3.3.10j] ..... *Carpentaria acuminata* [Carpentaria Palm]

4 - Robust palms, stems > 200mm diameter; always associated with swamp forests or floodplains ..... *Livistona benthamii* [Cabbage Palm]

4* - Relatively slender palms, stems mostly < 100mm diameter; associated with woodlands and open forests in well drained situations 5

5 - Blades **divided almost to the base**; lobes < 2cm wide; flowers white; inflorescence and fruit clusters contained within the leaf canopy ..... *Livistona inermis* [Fine-leaved Fan Palm]

5* - Blades undivided in the **basal 1/4 to 1/3** [3.3.6a]; lobes usually > 2cm wide; flowers yellow; inflorescence and fruit clusters on a long stalk extending out of the leaf canopy ..... *Livistona humilis* [Common Fan Palm]

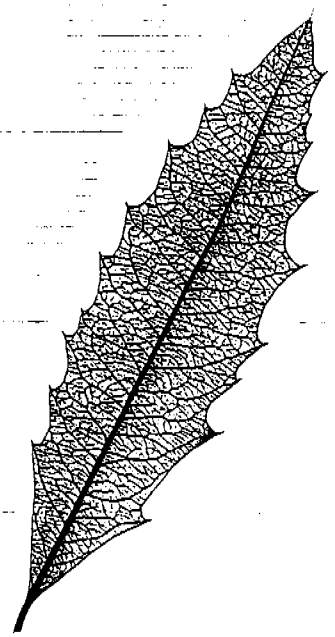
1 - Leaves compound

2 - Erythrina vespertilio

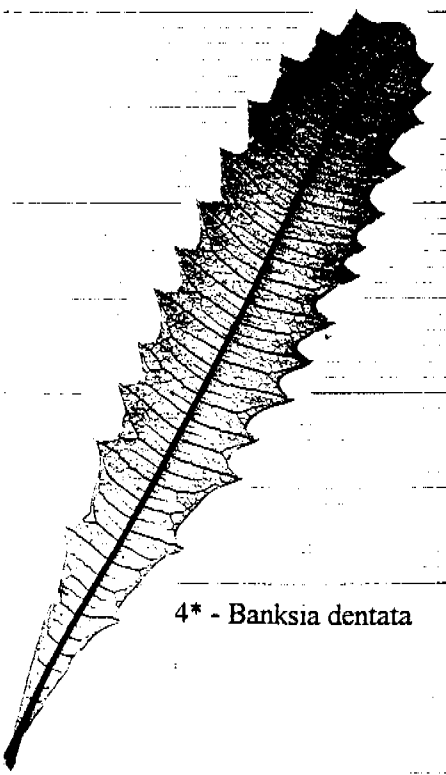
2* - Mimosa pigra

1* - Leaves simple

3 - Capparis umbonata



4 - Denhamia obscura



4* - Banksia dentata

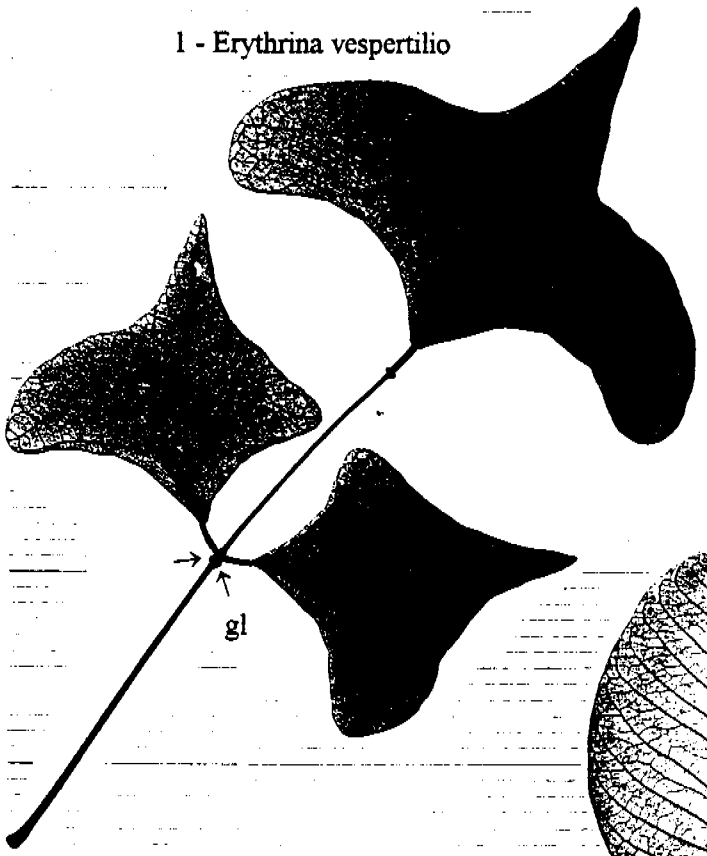
GROUP B

Tree or shrub, with prickles

NB Species names preceded by an '*' and underlined are noxious weeds and any infestations should be reported to environmental staff at Kakadu N.P., *eriss*, or the Ranger Mine

1 -	**Leaves compound** [3.3.5f-o] 2	
1* -	**Leaves simple** [3.3.5d] 3	
2 -	Leaves **trifoliate** [3.3.5j]	*Erythrina vespertilio* [Coral Tree]
2*-	Leaves **bipinnate** [3.3.5n]	*Mimosa pigra* [Giant Sensitive Plant]
3 -	Prickles axillary [3.3.17a]; leaf margins entire [3.3.12]	*Capparis umbonata* [Northern Wild Orange]
3* -	Prickles on leaf margins; leaf margins broadly toothed (holly-like) [3.3.12b,f] 4	
4 -	Leaves < 3cm wide, widest in the middle; undersurface of leaves not hairy; fruit, if present, not a cone	*Denhamia obscura*
4* -	Leaves > 3cm wide, widest in the distal half [3.3.6b]; undersurface of leaves covered with minute matted hairs; fruit a large woody persistent cone held vertically on the branches	*Banksia dentata* [Northern Banksia]

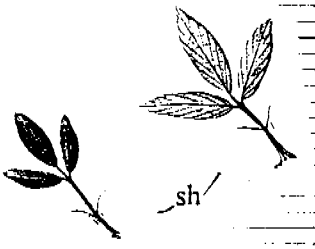
1 - Erythrina vespertilio



2 - petiole attached to a membranous sheath

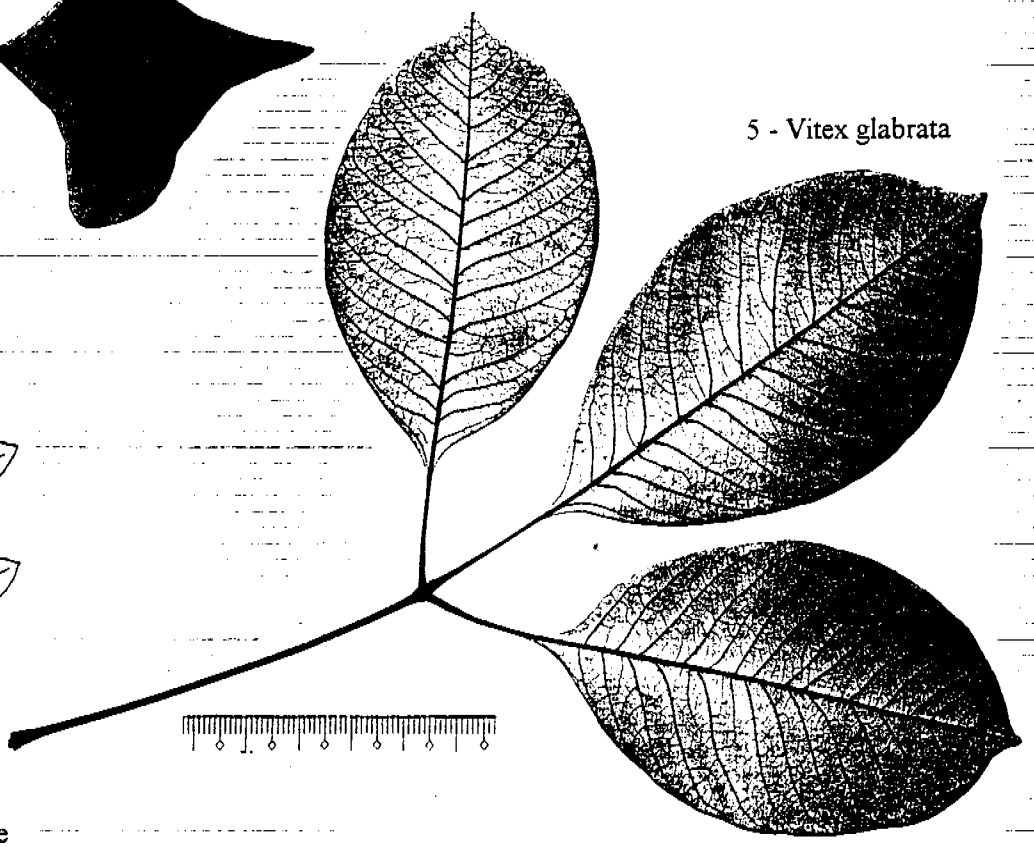
3 - Stylosanthes humilis

4 - Stylosanthes scabra

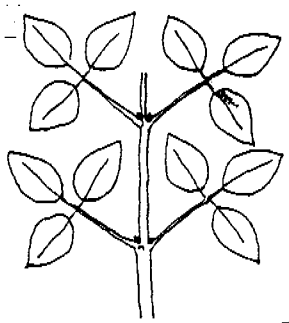


4* - Stylosanthes viscosa

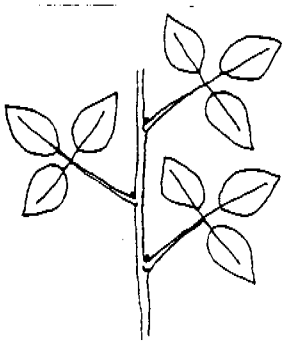
5 - Vitex glabrata



5 - Leaves opposite

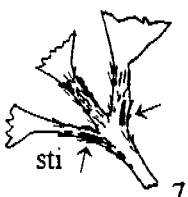


5* - Leaves alternate

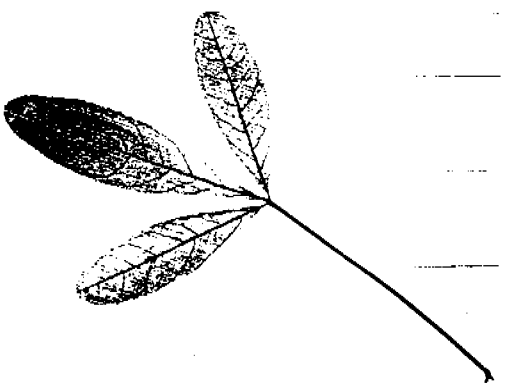


6 - digitately trifoliate

7 - Desmodium biarticulatum



7* - Crotalaria goreensis



GROUP C

Tree or shrub, no prickles, leaves trifoliate

NB Species names preceded by a '*' are naturalised, weeds

1 - Leaves with a **pair of raised glands (gl)** at the distal end of the petiole [3.3.7a] ..... *Erythrina vespertilio* [Coral Tree]

1* - Leaves without paired glands at the distal end of the petiole 2

2 - Petiole attached to a **membranous stem-sheathing base (sh)** [3.3.7h] at least 3/4 the length of the petiole 3

2* - Petiole attached directly to the branchlet 5

3 - Undersurface of blades hairy 4

3* - Undersurface of blades not hairy ..... **Stylosanthes hamata* [Verano Stylo]

4 - Lateral veins [3.3.9c] on the undersurface lighter than the blade [♂3.3.9l], almost white; leaves sometimes sticky ..... **Stylosanthes scabra* [Shrubby Stylo]

4* - Lateral veins on the undersurface darker than the blade; branchlets and leaves very sticky ..... **Stylosanthes viscosa* [Sticky Stylo]

5 - **Leaves opposite** [3.3.8e] ..... *Vitex glabrata* [Black Plum]

5* - **Leaves alternate** [3.3.8a-d] 6

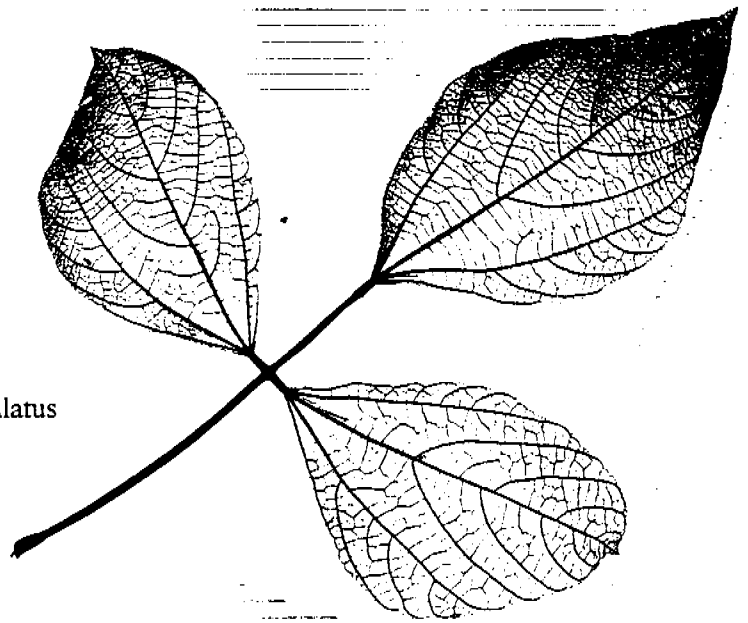
6 - **Leaves digitately trifoliate** [3.3.5j] 7

6* - **Leaves pinnately trifoliate** [3.3.5j] 8

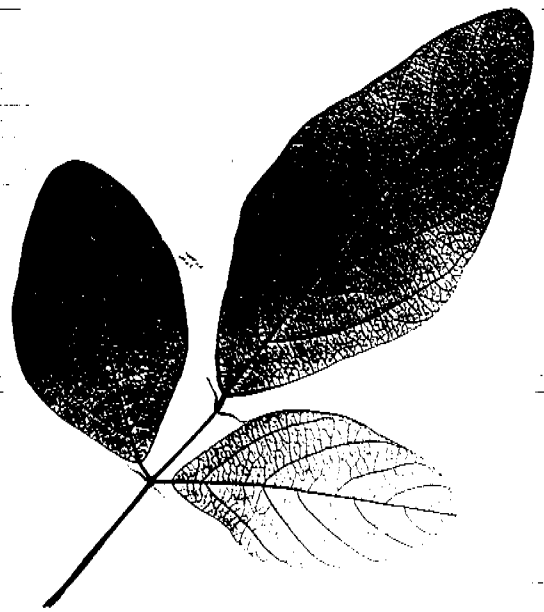
7 - **Stipels (sti)** [3.3.15c] present at the distal end of the petiole [3.3.7a]; petioles on most fully developed leaves < 20mm long ..... *Desmodium biarticulatum*

7* - Stipels absent; petioles of many fully developed leaves > 30mm long ..... **Crotalaria goreensis* [Gambia Pea]

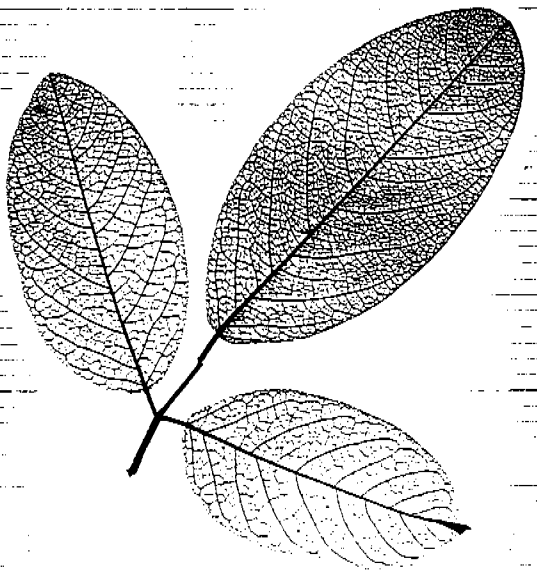
6* - pinnately trifoliate



8 - Cajanus reticulatus



9 - Desmodium tortuosum



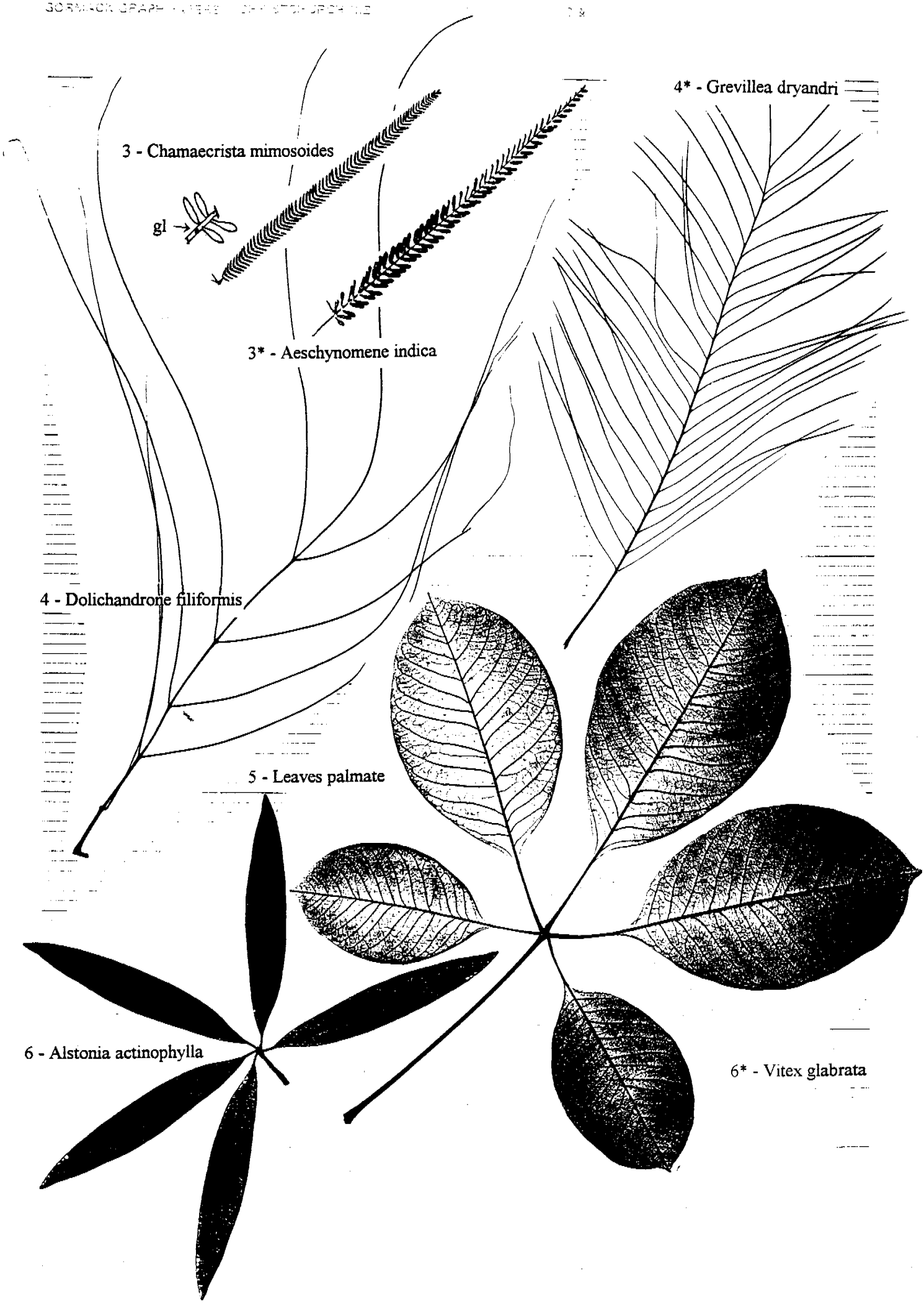
9* - Galactia megalophylla

8 - Petiole ribbed [3.3.7d] ..... *Cajanus reticulatus*

8* - Petiole not ribbed 9

9 - Hairs on twigs patent [3.3.16h] or spreading [3.3.16i]; leaves and branchlets somewhat sandpapery ..... **Desmodium tortuosum* [Florida Beggarweed]

9* - Hairs on twigs adpressed [3.3.16g]; leaves and stems not sandpapery ..... *Galactia megalophylla*


3 - Chamaecrista mimosoides
gl
3* - Aeschynomene indica
4* - Grevillea dryandri
4 - Dolichandrone filiformis
5 - Leaves palmate
6 - Alstonia actinophylla
6* - Vitex glabrata

GROUP D

Tree or shrub, no prickles, leaves compound, > 3 leaflets

NB Species names preceded by an '*' and <u>underlined</u> are noxious weeds and any infestations should be reported to environmental staff at Kakadu N.P., *eriss*, or the Ranger Mine

1 - Most leaflets ≤ 2mm wide 2
1* - Leaflets > 2mm wide 5

2 - Leaflets < 10mm long [♂3.3.5i]; many leaves with > 40 pairs of leaflets 3
2* - Many leaflets > 40mm long; leaves with < 25 pairs of leaflets 4

3 - **Leaves with 1-3, small raised glands (gl) at the distal end of petiole** [3.3.7a] near the first pair of leaflets; hairs on twigs adpressed, [3.3.16g] ..... *Chamaecrista mimosoides* [Fine-leaved Cassia]

3* - No glands at the distal end of the petiole; hairs on twigs patent [3.3.16h], gland-based [3.3.16j] ..... *Aeschynomene indica* [Budda Pea]

4 - Most leaves with < 6 pairs of leaflets ..... *Dolichandrone filiformis*
4* - Leaves with > 10 pairs of leaflets ..... *Grevillea dryandri* [Dryander's Grevillea]

5 - Leaves **palmate** [3.3.5k] 6
5* - Leaves **pinnate** [3.3.5l] 7
5** - Leaves **bipinnate** [3.3.5n] *or* **partial bipinnate** [3.3.5o] 18

6 - Leaflets with white latex [♂3.3.18] ..... *Alstonia actinophylla* [Milkwood]
6* - Leaflets without white latex ..... *Vitex glabrata* [Black Plum]

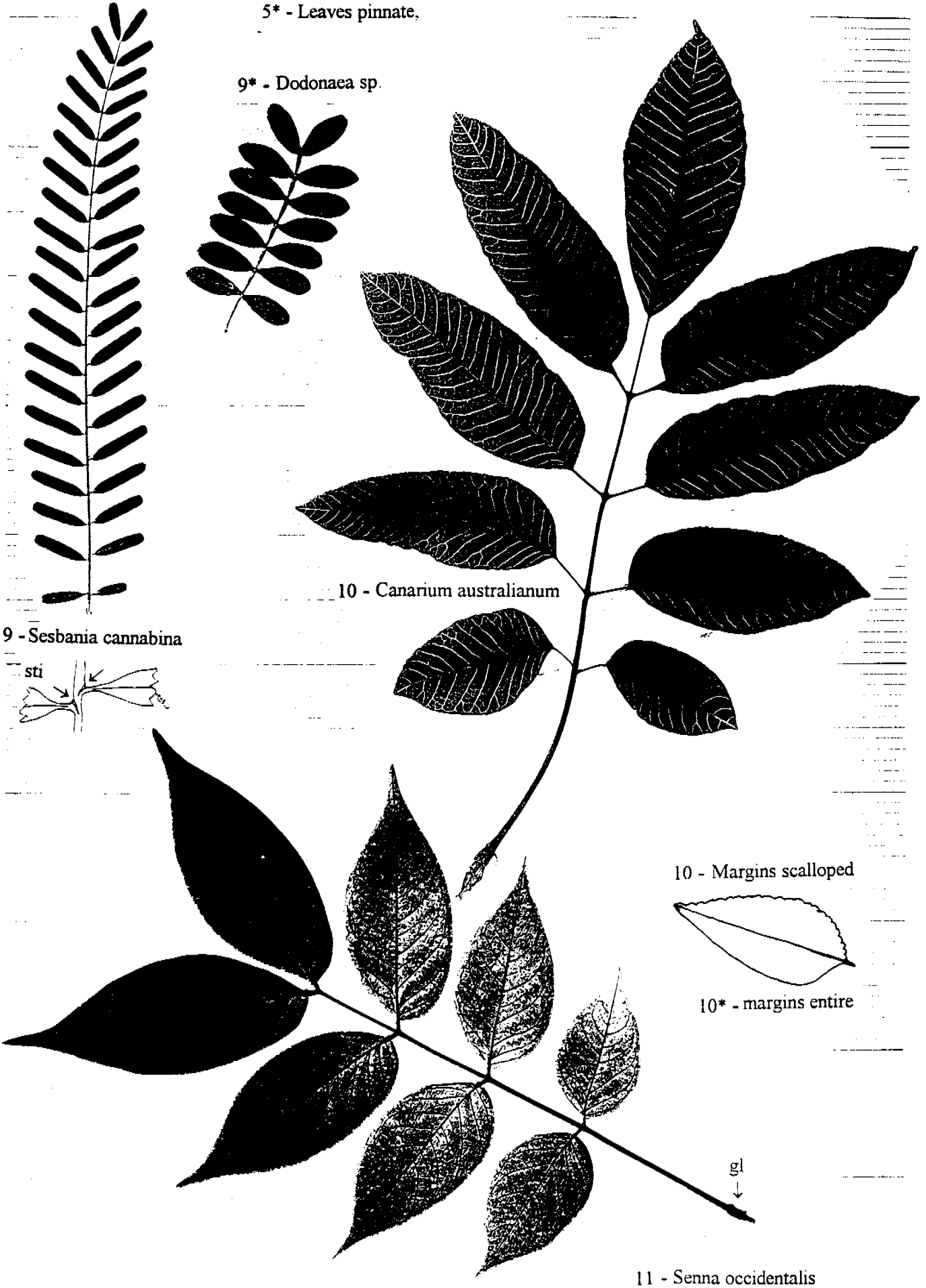
7 - Most leaflets < 7mm wide 8
7* - Most leaflets > 7mm wide 10

8 - At least some leaflets > 120mm long [♂3.3.5i] ..... *Grevillea pteridifolia* [Fern-leaved Grevillea] (see Fig. 19)
8* - Leaflets < 40mm long 9

5* - Leaves pinnate,

9* - Dodonaea sp.

9 - Sesbania cannabina



10 - Canarium australianum

10 - Margins scalloped

10* - margins entire

11 - Senna occidentalis

9 - Rachis [3.3.5l] with a tiny, **spine-like stipel (sti)** [3.3.15c] at the base of each leaflet; most leaflets 15-25mm long; rachis not winged [3.3.5m]; plants annual, associated with swampy areas ..... *Sesbania cannabina* [Yellow Pea Bush]

9* - Rachis without stipels; most leaflets 10-15mm long; rachis often narrow winged between leaflets near the end of the rachis; plants perennial, in well-drained lowland woodlands ..... *Dodonaea* sp.

10 - Leaflet **margins shallow toothed or scalloped** [3.3.12b,c] ..... *Canarium australianum* [Mango Bark]

10* - Leaflet **margins entire** [3.3.12a] 11

11 - Basal end of petiole [3.3.7a] with a **prominent, single, raised gland (gl)** ..... *Senna occidentalis* [Coffee Senna]

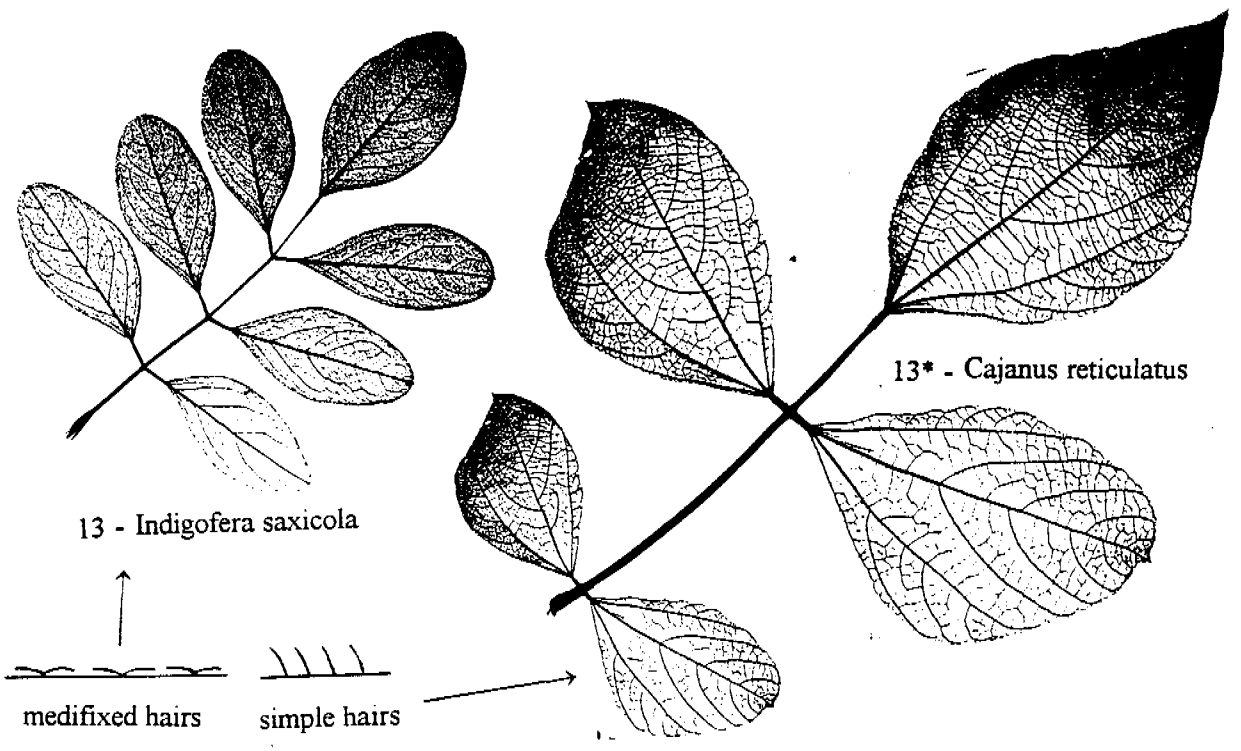
11* - Basal end of petiole without a raised gland 12

12 - Almost all leaves with ≤ 7 leaflets (total) 13

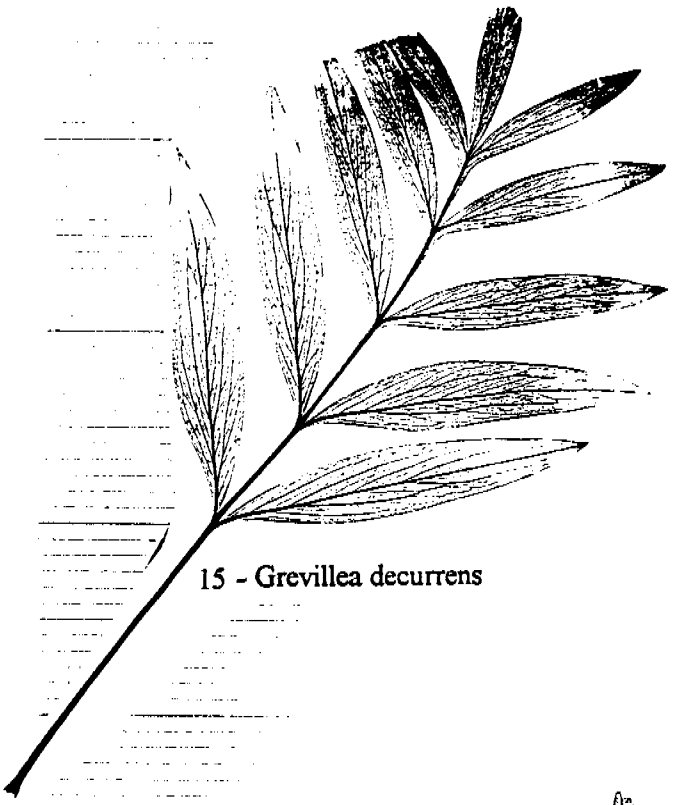
12* - Many leaves with > 7 leaflets 14

13 - Most leaves with 7 leaflets; **hairs on blades medifixed** [3.3.16d]; lateral veins [3.3.9c] and fine veins [3.3.9d] not raised on the under surface ..... *Indigofera saxicola*

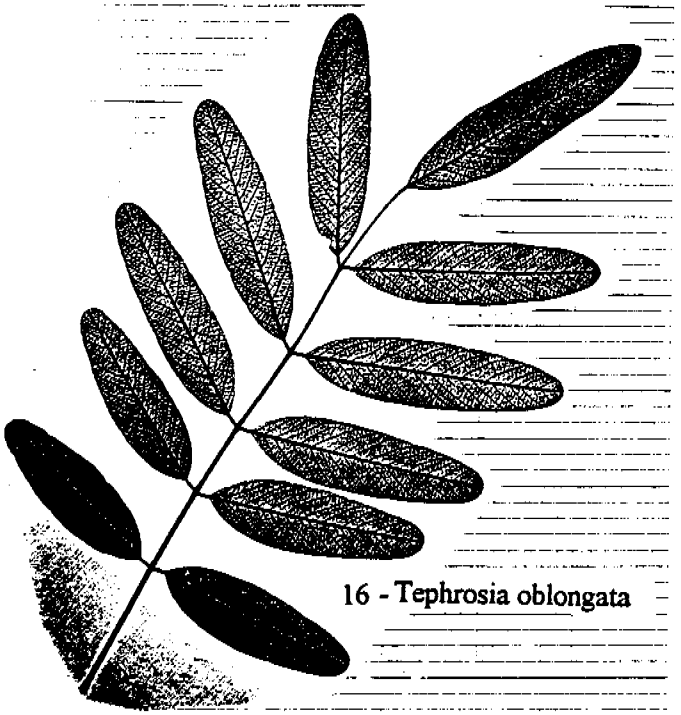
13* - Most leaves with 5 leaflets; **hairs on blades simple** [3.3.16b]; lateral veins and fine veins raised on the under surface ..... *Cajanus reticulatus*



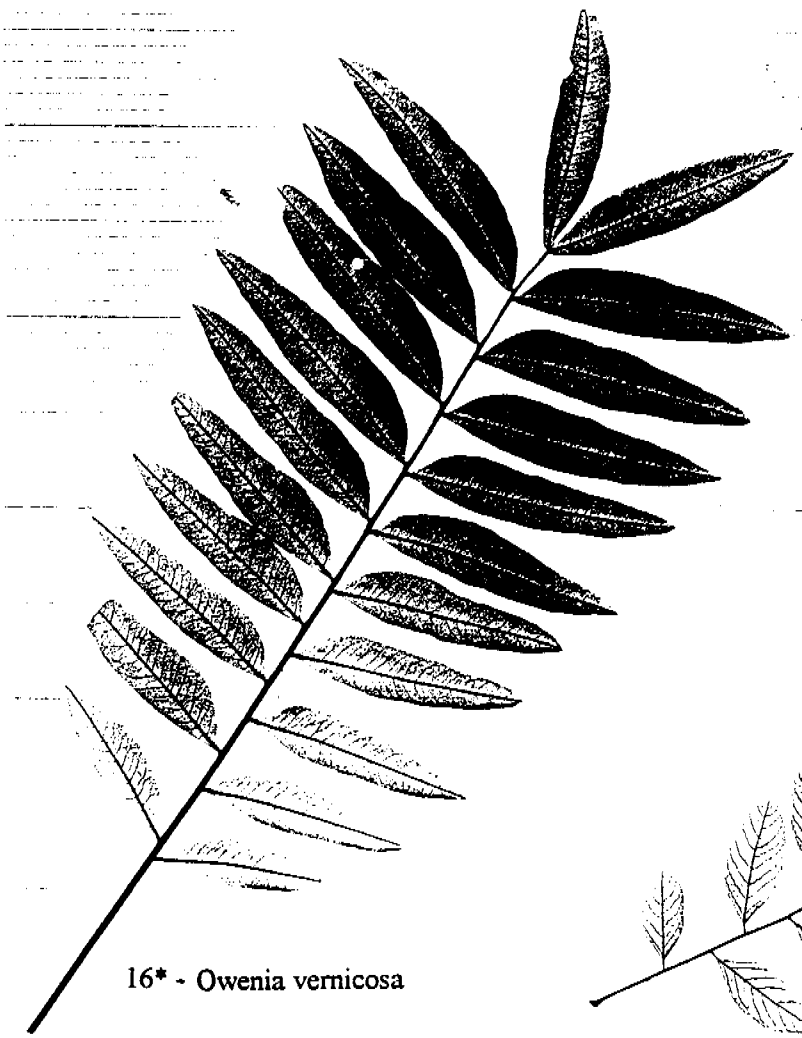
14 - blades > 3 times longer than wide



15 - Grevillea decurrens



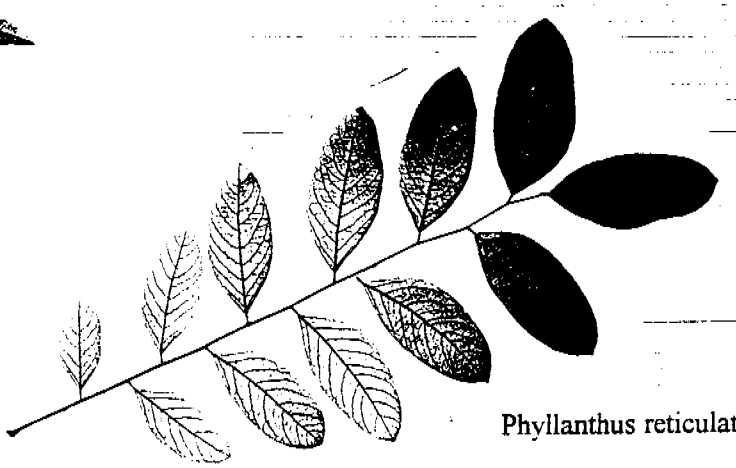
16 - Tephrosia oblongata



16* - Owenia vernicosa

14* - blades < 3 times longer than wide

17 - Leaflets alternate



Phyllanthus reticulatus

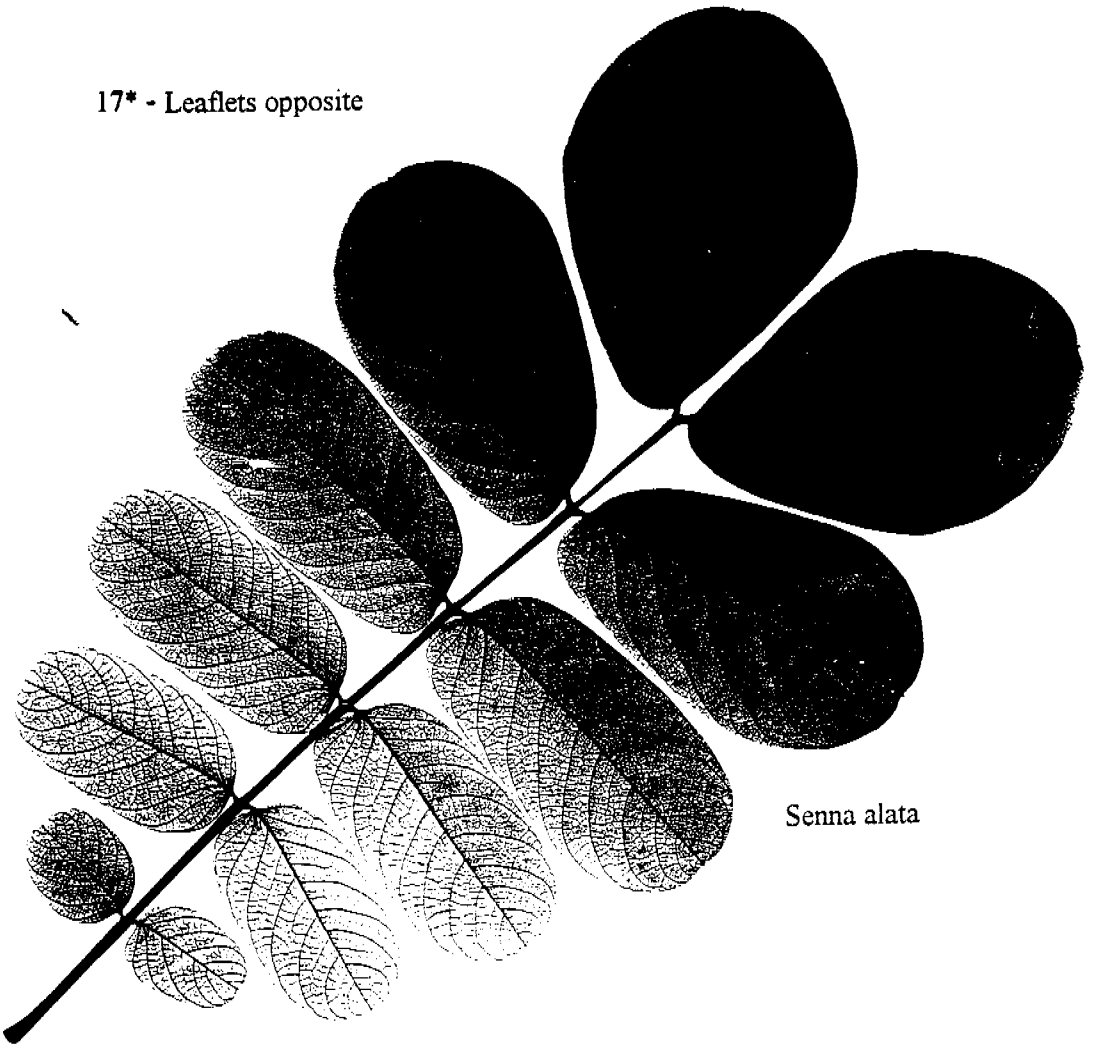
14 - **Most blades > 3 times longer than wide** 15
14* - **Most blades < 3 times longer than wide** 17

15 - Lateral veins [3.3.9c] of leaflets becoming parallel with the midrib [3.3.9g] for much of their length ..... *Grevillea decurrens*
15* - Lateral veins not parallel to the midrib 16

16 - Leaflets hairy on the undersurface ..... *Tephrosia oblongata*
16* - Leaflets not hairy on the undersurface ..... *Owenia vernicosa* [Emu Apple]

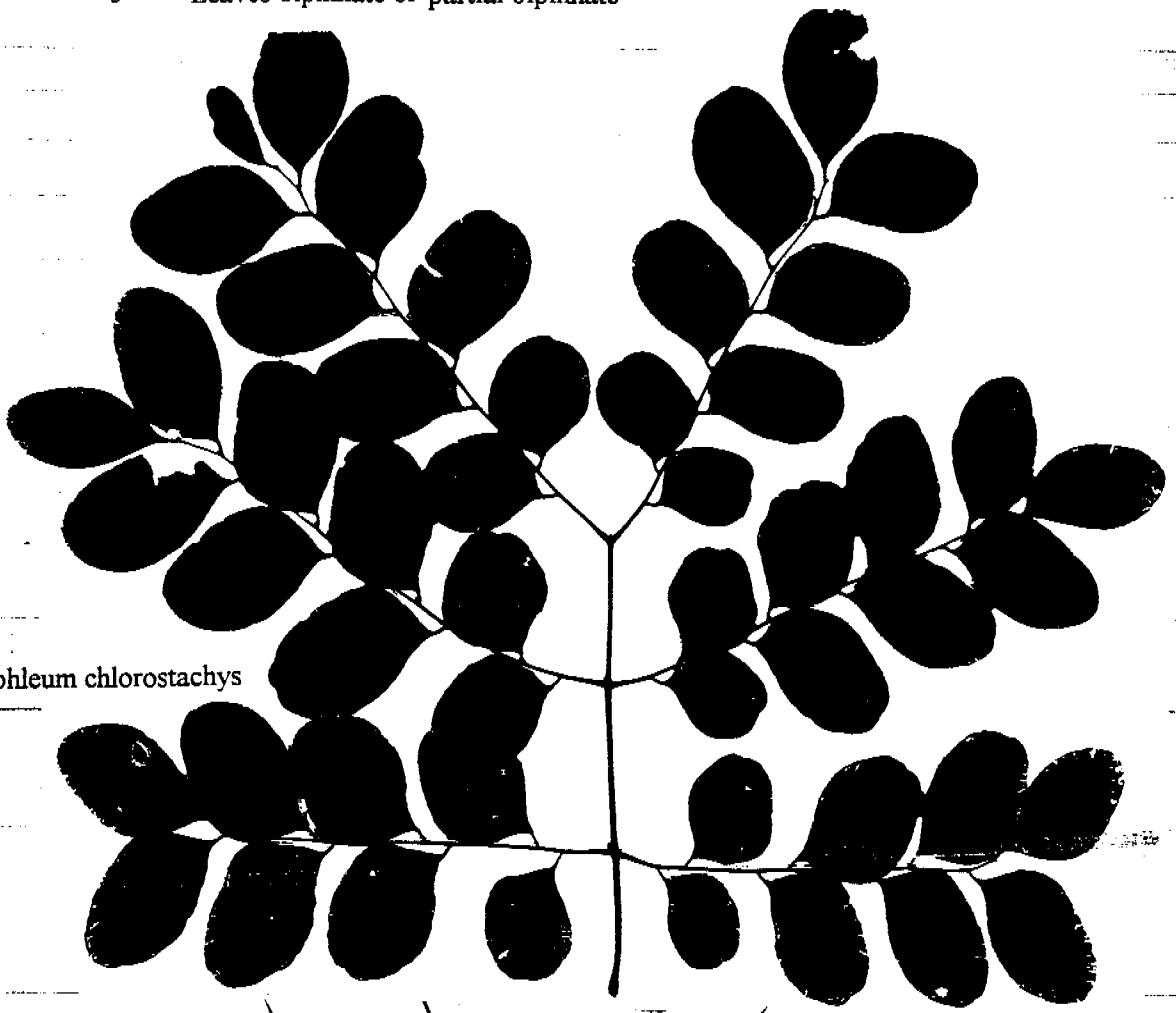
17 - **Leaflets alternate** [3.3.8a,b] ..... *Phyllanthus reticulatus*
17* - **Leaflets opposite** [3.3.8e] ..... **Senna alata* [Candle Bush]

17* - Leaflets opposite

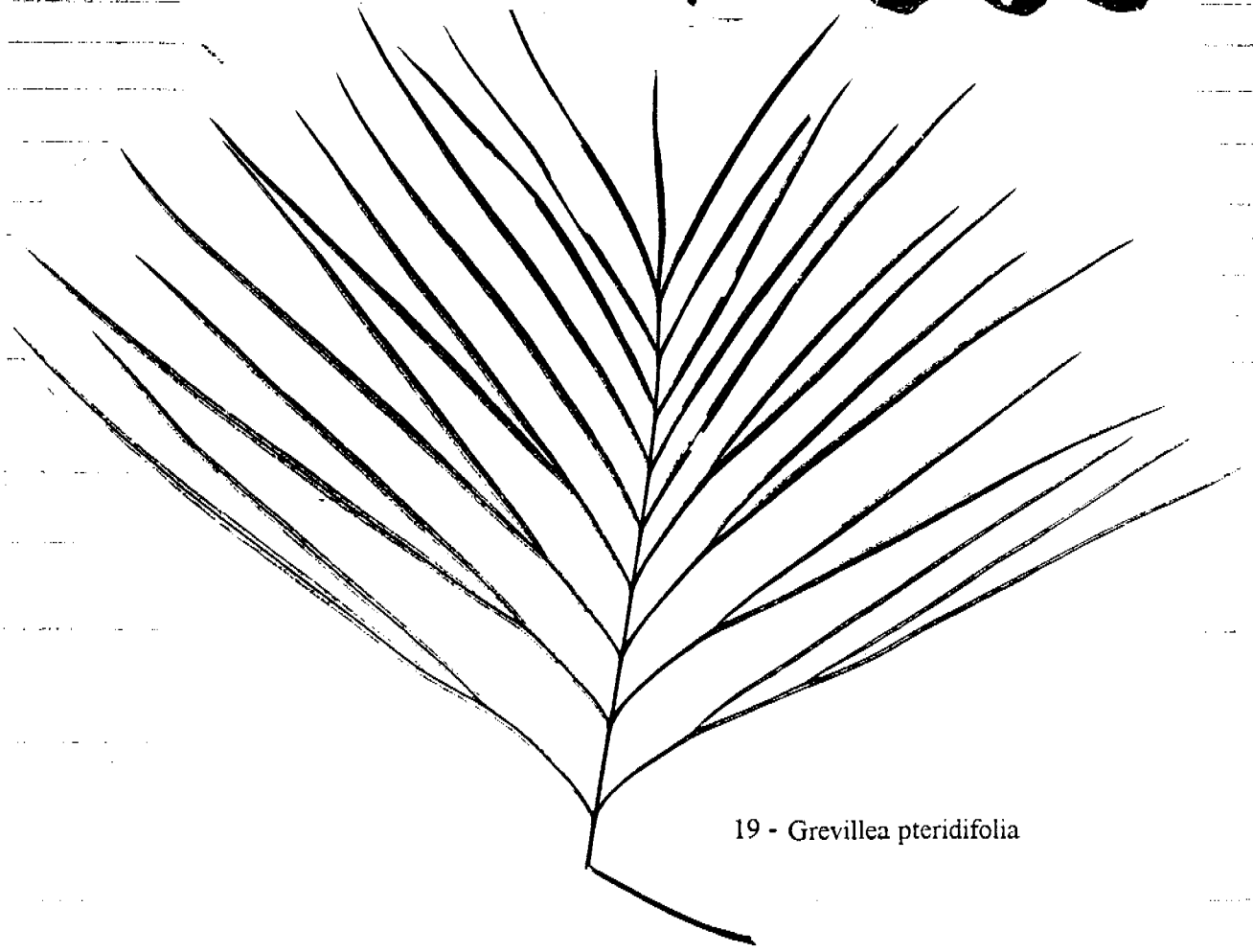


Senna alata

5*** - Leaves bipinnate or partial bipinnate



18 - Erythrophleum chlorostachys



19 - Grevillea pteridifolia

18 - Leaves bipinnate [3.3.5n]; blades < 2 times longer than wide ..... *Erythrophleum chlorostachys* [Cooktown Ironwood]

18* - Leaves partial bipinnate [3.3.5o]; blades mostly > 4 times longer than wide 19

19 - Leaflets linear [3.3.10f] ..... *Grevillea pteridifolia* [Fern-leaved Grevillea]

19* - Leaflets narrow elliptic [3.3.10d] to lanceolate [3.3.10c] 20

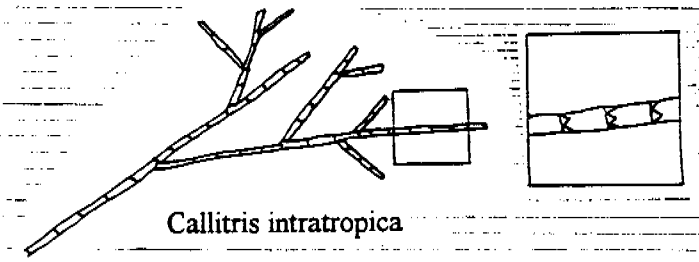
20 - Leaflets mostly > 15mm wide; a rather sparse spreading shrub to 2m; flowers pink ..... *Grevillea decurrens*

20* - Leaflets mostly < 15mm wide; a small tree 4 to 6m tall, foliage rather dense; flowers red ..... *Grevillea heliosperma* [Rock Grevillea]

20* - Grevillea heliosperma

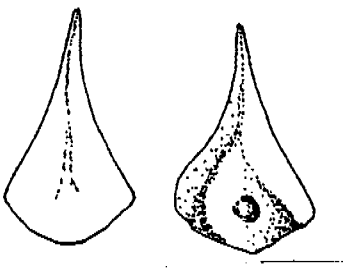
20 - Grevillea decurrens

1 - branchlets segmented



Callitris intratropica

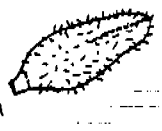
4 - Leaves without a petiole, stem-clasping base



Calytrix arborescens

4* - Leaves with a petiole

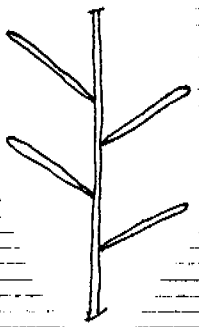
5 - Calytrix achaeta



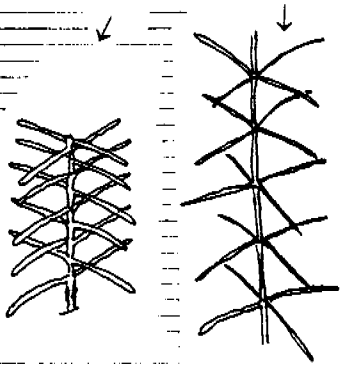
petiole

5* - Calytrix exstipulata

7 - Leaves alternate



7* - Leaves opposite or whorled



GROUP E

Tree or shrub, no prickles, leaves absent, or simple and ≤ 2mm wide

1 - **Branchlets segmented** [3.3.2d], segments 2-3mm long, each with a whorl of 4 tiny scale leaves < 1mm long; mature plant a tree ..... *Callitris intratropica* [Cypress Pine]

1* - Branchlets not segmented; shrubs to tall shrubs 2

2 - Leaves absent [3.3.5b]; stems sub-divide into long, smooth, erect, slender, green twigs ..... *Pachynema junceum*

2* - Leaves present 3

3 - Most leaves < 3mm long [☝3.3.5e] 4

3* - Most leaves > 4mm long 6

4 - **Leaves without petioles** [3.3.7]; **leaf bases stem-clasping** ..... *Calytrix arborescens*

4* - **Leaves with petioles**; leaf bases not stem-clasping 5

5 - Leaves with minute patent hairs [3.3.16h] on all surfaces; outer branches columnar [3.3.2e], often pendulous [3.3.3b]; flowers white ..... *Calytrix achaeta*

5* - Leaves with only a few minute (barely detectable) hairs on the margins; outer branches not columnar, erect spreading; flowers bright pink ..... *Calytrix exstipulata* [Turkey Bush]

6 - Leaves < 10mm long ..... *Calytrix brownii* [Kerosene Bush]

6* - Most leaves > 10mm long 7

7 - **Leaves alternate** [3.3.8a-d] 8

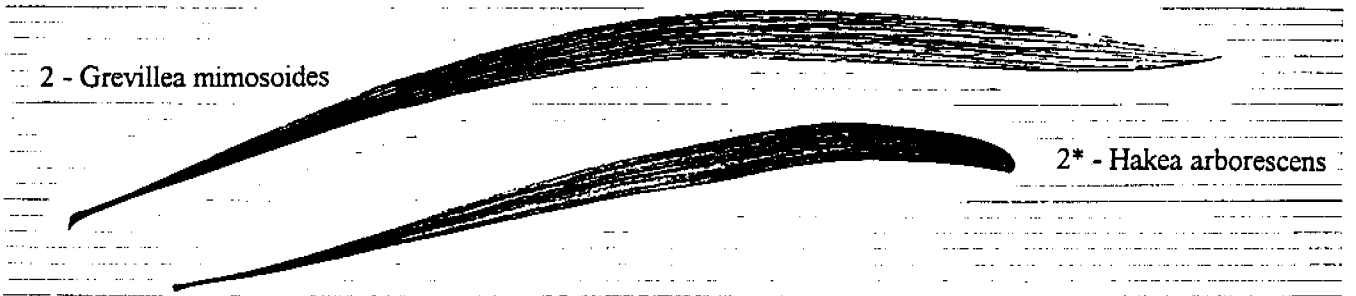
7* - **Leaves opposite** [3.3.8e] *or* **whorled** [3.3.8g] 9

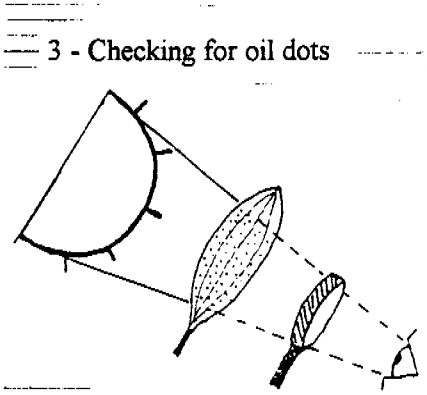
8 - Leaves and stems smooth, not scaly [3.3.16e] ..... *Acacia gonocarpa*

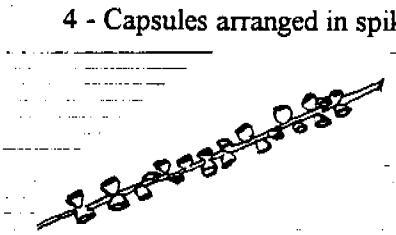
8* - Leaves and stems densely encrusted with tiny circular scales ..... *Hibbertia lepidota*

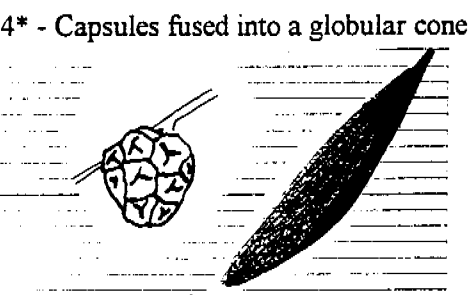
9 - Leaves opposite [3.3.8e] *or* in whorls of 3 [3.3.8g]; most older leaves < 17mm long ..... *Verticordia cunninghamii* [Cunningham's Featherflower]

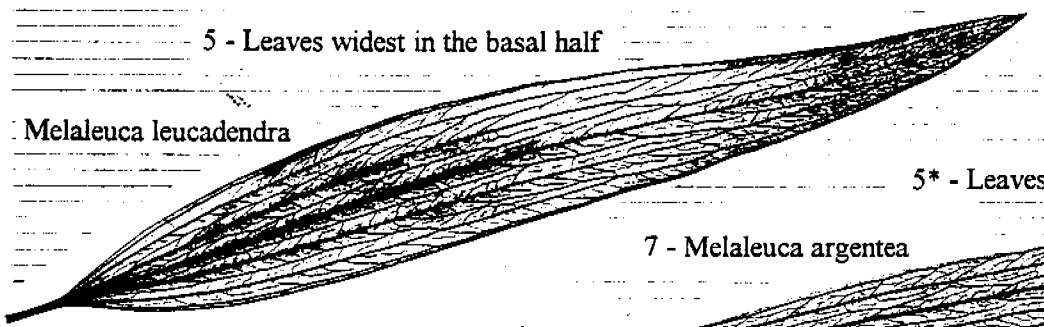
9* - Leaves in whorls of 4; most older leaves > 17mm long ..... *Verticordia verticillata* [Featherflower]

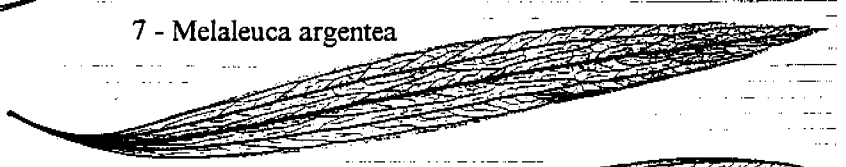

2 - Grevillea mimosoides
2* - Hakea arborescens

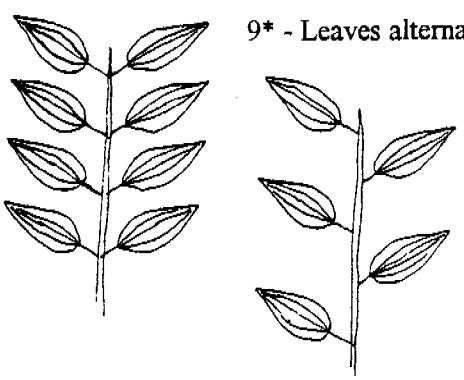

3 - Checking for oil dots

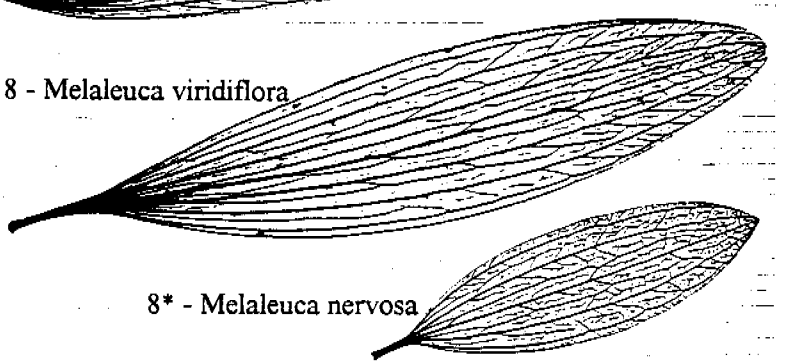

4 - Capsules arranged in spikes


4* - Capsules fused into a globular cone
Asteromyrtus symphyocarpa


5 - Leaves widest in the basal half
Melaleuca leucadendra


5* - Leaves widest in the middle
7 - Melaleuca argentea


9 - Leaves opposite
9* - Leaves alternate


8 - Melaleuca viridiflora
8* - Melaleuca nervosa

GROUP F

Tree or shrub, no prickles, leaves simple, > 2mm wide, venation parallel or obscure

1 - Leaves with obscure venation [3.3.9e] 2
1* - Leaves with parallel venation [3.3.9f] 3

2 - Bark on trunk corky; most leaves > 12mm wide ..... *Grevillea mimosoides*
2* - Bark on trunk hard, not corky, leaves < 12mm wide ..... *Hakea arborescens*

3 - Leaves with **oil glands** [☝3.3.14e] 4
3* - Leaves without oil glands 9

4 - Trees with paperbark [3.3.4d]; **fruit capsules arranged in spikes** 5
4* - Shrubs or small trees; bark rough, not papery; stems often fluted; **fruit capsules fused into globular cones** ..... *Asteromyrtus symphyocarpa* [Liniment Tree]

5 - **Blades widest in the basal half** [3.3.6a] ..... *Melaleuca leucadendra* [Weeping Paperbark]
5* - **Blades widest in the middle** 6

6 - Most blades ≥ 6 times longer than wide 7
6* - Most blades < 6 times longer than wide 8

7 - Foliage (from a distance) silvery or bluish grey-green; leaves usually slightly aromatic [☝3.3.13] ..... *Melaleuca argentea* [Silver Paperbark]
7* - Foliage green; leaves not aromatic ..... *Melaleuca leucadendra* [Weeping Paperbark]

8 - Leaves > 3cm wide ..... *Melaleuca viridiflora* [Green Paperbark]
8* - Leaves < 3cm wide ..... *Melaleuca nervosa* [Yellow-barked Paperbark]

9 - **Leaves opposite** [3.3.8e] 10
9* - **Leaves alternate** [3.3.8a] 11

10 - Osbeckia australiana

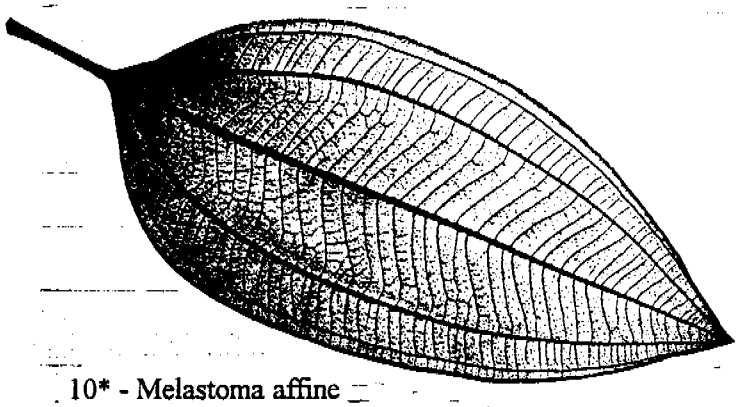
12 - basal gland

12, 14 - margin glands

15* - Outer margin

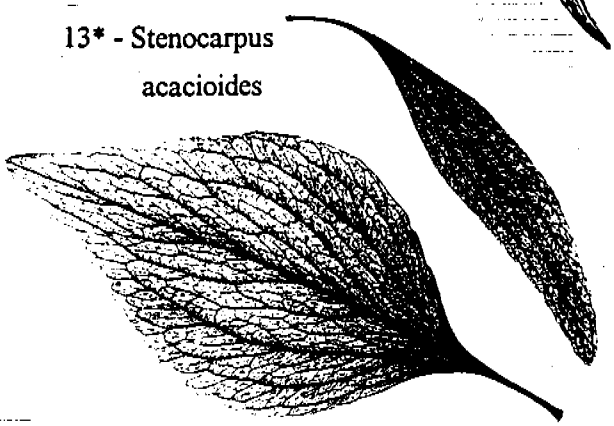
12 - petiolar gland

15 - Inner margin

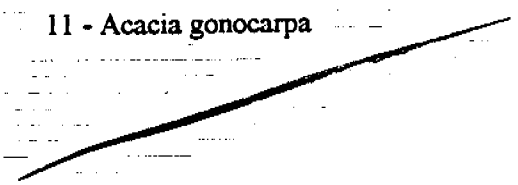


10* - Melastoma affine

13* - Stenocarpus acacioides

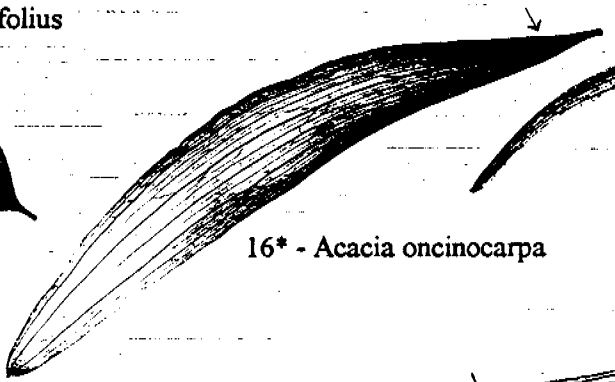


11 - Acacia gonocarpa



13 - Exocarpus latifolius

gl

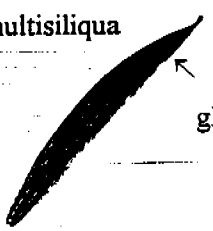


16* - Acacia oncinocarpa

gl

17 - Acacia latescens

15 - Acacia multisiliqua



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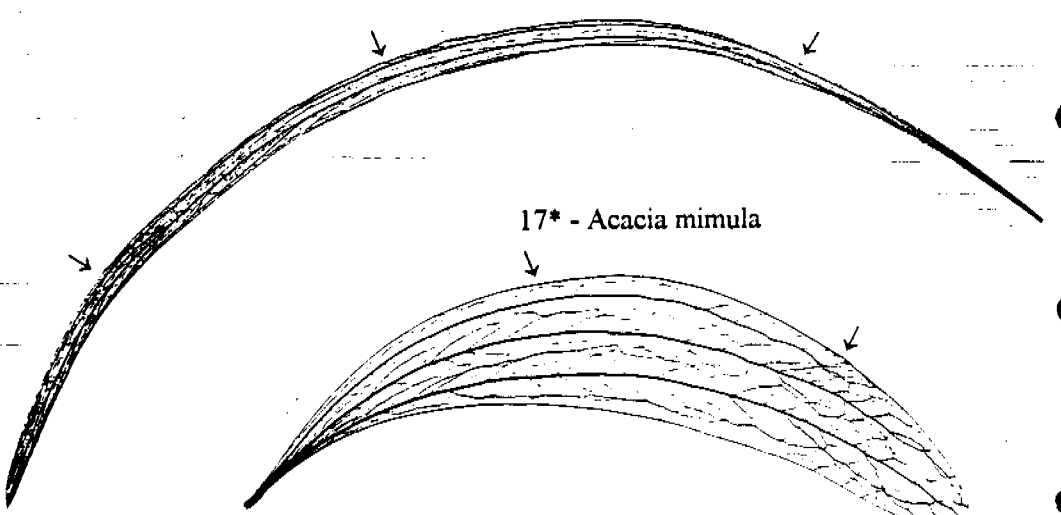


17* - Acacia mimula

18 - Fine veins reticulate

18* - Fine veins parallel

10 - Leaves < 15mm wide; blades mostly > 3 times longer than wide; secondary veins [3.3.9b] not prominent, not raised on the undersurface ..... *Osbeckia australiana*

10* - All or most leaves > 20mm wide; blades < 2 times longer than wide; secondary veins prominent, slightly raised on the undersurface, forming ladder-like rungs between the primary veins [3.3.9a] ..... *Melastoma affine* [Native Lasiandra]

11 - Leaves < 4mm wide ..... *Acacia gonocarpa*

11* - Leaves ≥ 4mm wide 12

12 - Leaves with **one or more margin glands (gl)** [3.3.14g] *or* **a single petiolar gland** [3.3.14a] *or* **a single basal gland** [♂3.3.14b,i] 14

12* - Leaves with no margin glands, no petiolar glands, no basal glands 13

13 - Twigs and petioles pale green; new growth with dense stellate hairs [3.3.16c]; blades brittle [3.3.6e] ..... *Exocarpus latifolius* [Native Cherry]

13* - Twigs brown, petiole very pale green; new growth not hairy; blades not brittle ..... *Stenocarpus acacioides*

14 - Most leaves with **one or more margin glands > 1.5mm from the petiole** 15

14* - Leaves without margin glands > 1.5mm from the petiole 18

15 - Margin glands on the **inner margin** [3.3.10g] of any curved blades ..... *Acacia multisiliqua*

15* - Margin glands on the **outer margin** of any curved blades 16

16 - Fine veins open reticulate [3.3.9d] or obscure [♂3.3.9m]; **leaves with ≥ 2 widely spaced, slightly raised glands (gl) along the margin** 17

16* - Fine veins parallel [3.3.9d]; **leaves with a single margin gland (gl) slightly incised into the margin close to the petiole** ..... *Acacia oncinocarpa*

17 - Blades > 10 times longer than wide ..... *Acacia latescens*

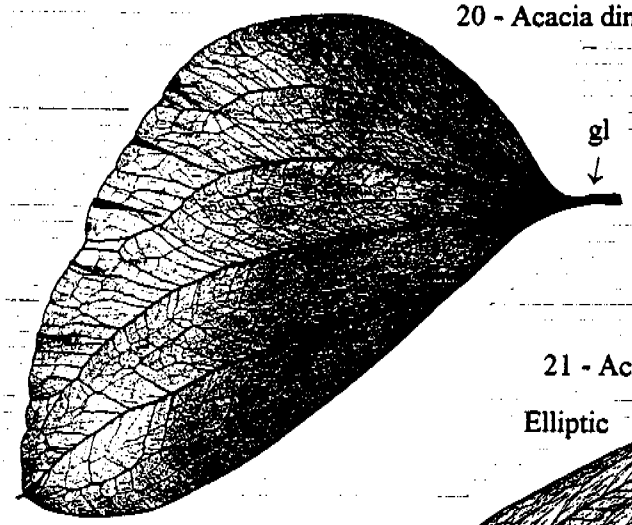
17* - Blades < 10 times longer than wide ..... *Acacia mimula*

18 - **Fine veins reticulate** [3.3.9d] 19

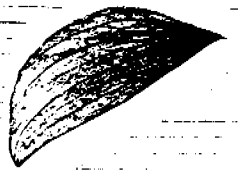
18* - **Fine veins parallel** [3.3.9d] 22

19 - Broadly dimidiate

20 - Acacia dimidiata

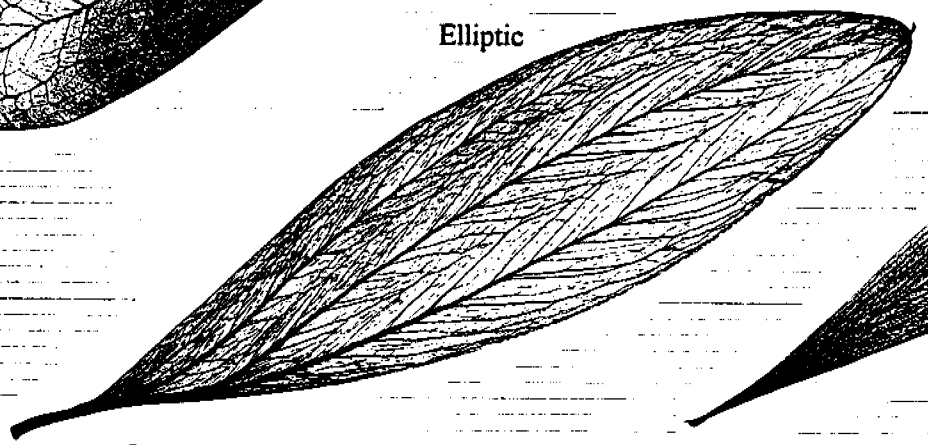


20* - Acacia mountfordiae

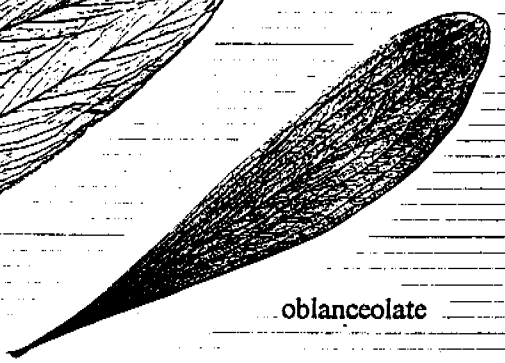


21 - Acacia holosericea

Elliptic

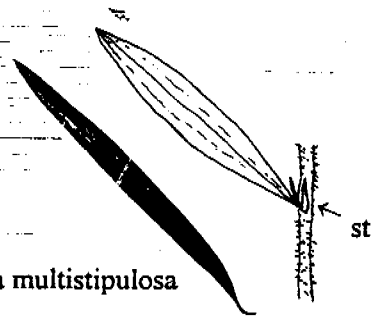


21* Acacia hemignosta

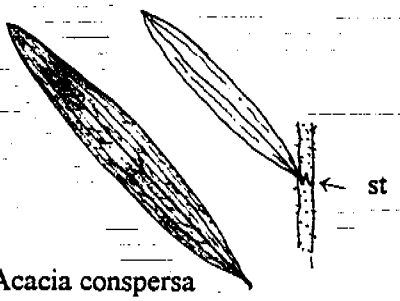


oblanceolate

22 - Leaves with a single primary vein

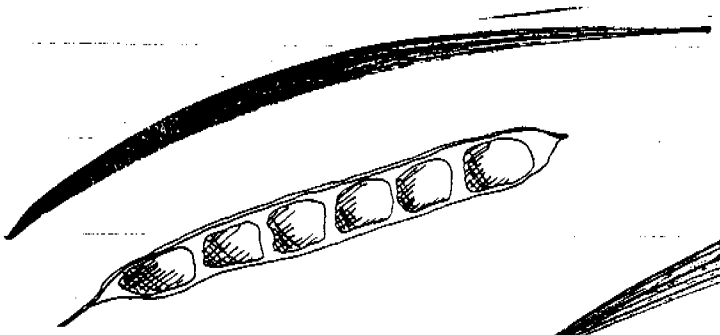


23 - Acacia multistipulosa



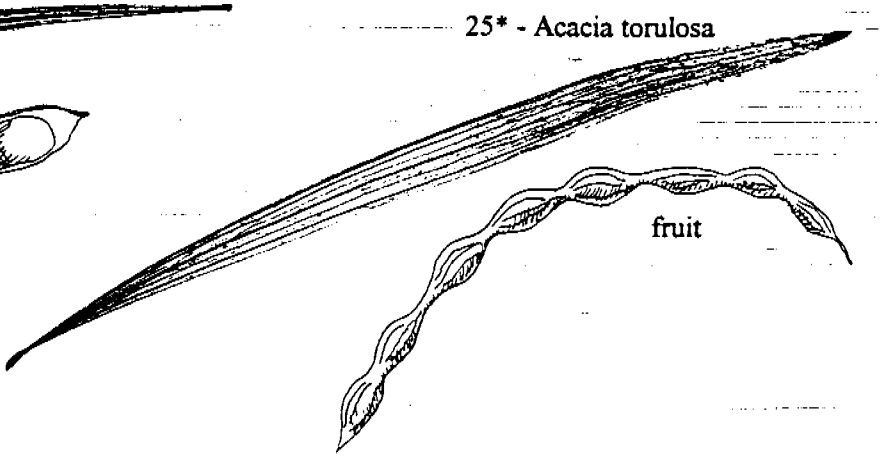
23* - Acacia conspersa

22* - Leaves with more than 1 primary vein



25 - Acacia plectocarpa

25* - Acacia torulosa



19 - Leaves **broadly dimidiate** [3.3.10h] 20
19* - Leaves not dimidiate 21

20 - Petiole with a **prominent yellow gland (gl)**; primary veins [3.3.9a] often strongly raised; foliage green; many leaves > 100mm long ..... *Acacia dimidiata* [Swamp Wattle]
20* - Petiole without a prominent yellow gland; primary veins not raised, foliage often pale greyish or bluish-green; most leaves < 50mm long ..... *Acacia mountfordiae* [Mountford's Wattle]

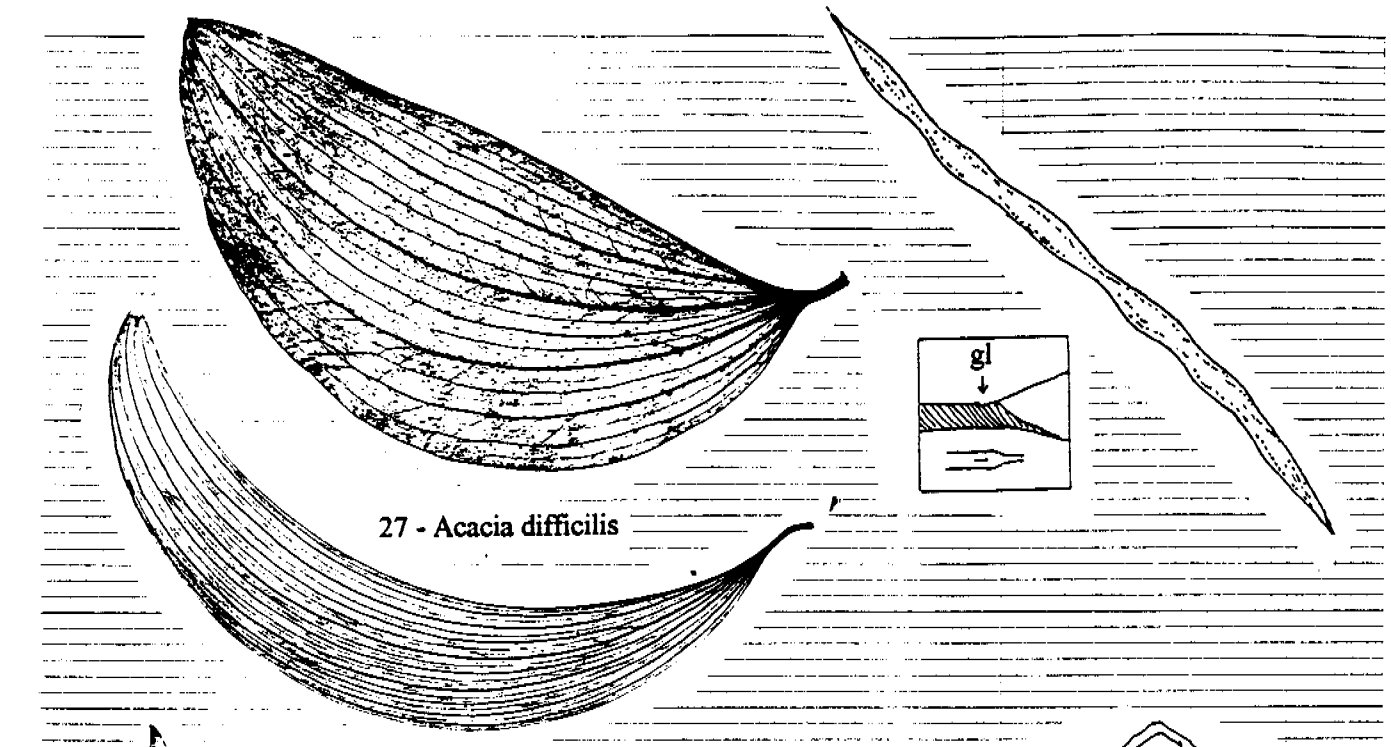
21 - Twigs hairy [3.3.2f]; leaves **elliptic** [3.3.10d] ..... *Acacia holosericea* [Candelabra Wattle]
21* - Twigs not hairy; most leaves **oblanceolate** [3.3.10c] ..... *Acacia hemignosta* [Club-leaf Wattle]

22 - Twigs [3.3.2f] hairy, leaves with a single primary vein [3.3.9a] 23
22* - Twigs not hairy *or* twigs hairy and leaves with more than 1 primary vein 24

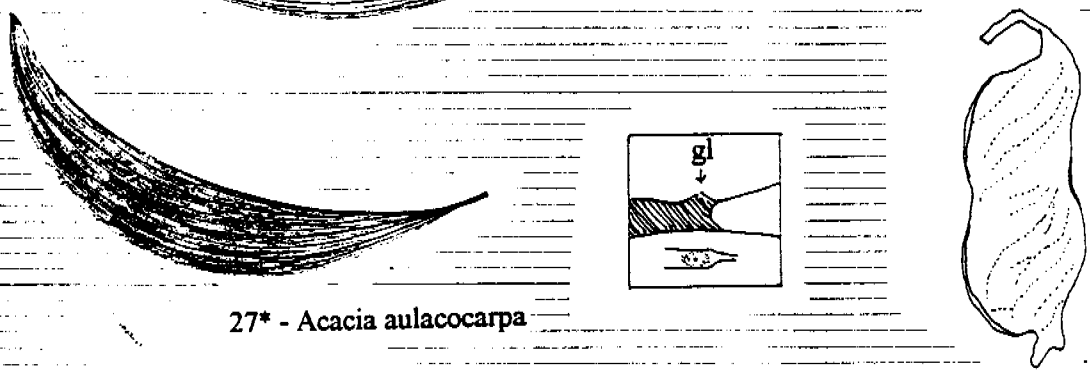
23 - **Stipules (st)** [3.3.15a] > 4mm long, narrow, linear ..... *Acacia multistipulosa*
23* - Stipules to 2mm long, triangular ..... *Acacia conspersa*

24 - Blades > 10 times longer than wide 25
24* - Blades < 10 times longer than wide 26

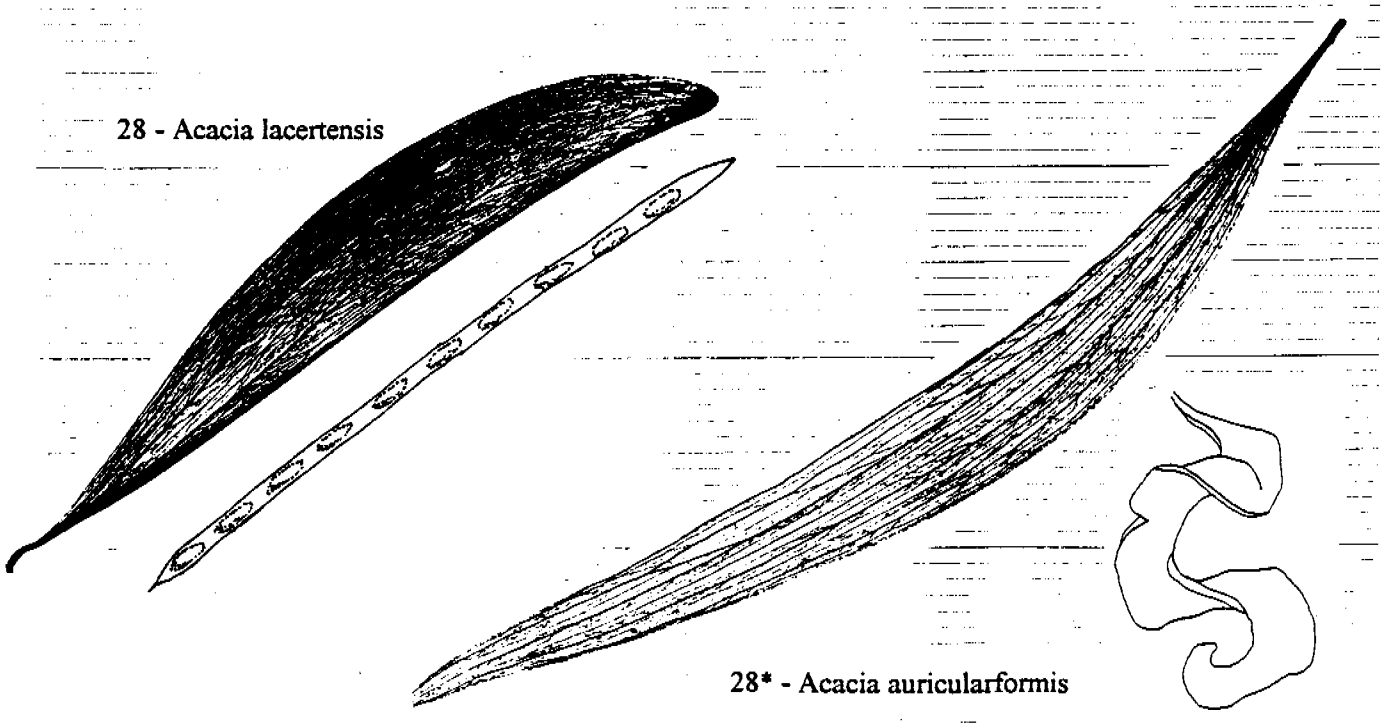
25 - Fruit a flat undulate pod; leaves often with a resinous sheen, growing tips resinous, sometimes sticky; no yellow powder produced when the leaf is drawn between lightly clamped fingers ..... *Acacia plectocarpa*
25* - Fruit a cylindrical pod constricted between each seed; leaves dull, growing tips not sticky; leaves often yield a yellowish powder when drawn between lightly clamped fingers ..... *Acacia torulosa* [Torulosa Wattle]



27 - Acacia difficilis



27* - Acacia aulacocarpa



28 - Acacia lacertensis

28* - Acacia auricularformis

26 - Leaves with 4-5 fine veins per mm across the middle of the blade [♂3.3.9d] 27

26* - Leaves with 2-3 fine veins per mm across the middle of the blade 28

27 - **Gland (gl) not swollen; pore of gland, a slit or oval shaped**; fruit a cylindrical pod 4-5mm wide ..... *Acacia difficilis*

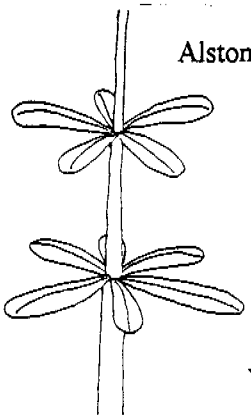
27* - **Gland swollen; pore of gland a circular dot**; fruit a flat oblong, often twisted pod > 14mm wide ..... *Acacia aulacocarpa* [Hickory Wattle]

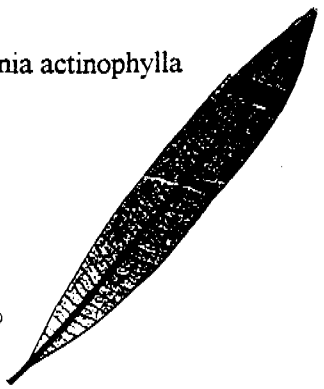
28 - Branchlets erect, spreading; leaves erect and spreading, often strongly angled toward the tips of the branchlets; leaves dull; fruit a narrow, flat, more-or-less straight pod < 5mm wide ..... *Acacia lacertensis*

28* - Branchlets somewhat pendulous; leaves tend to hang from the branchlets; leaves often slightly shiny; fruit a flat, coiled pod > 10mm wide ..... *Acacia auricularformis* [Black Wattle]

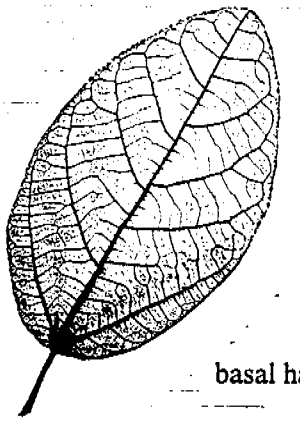
2 - Leaves in whorls

Alstonia actinophylla



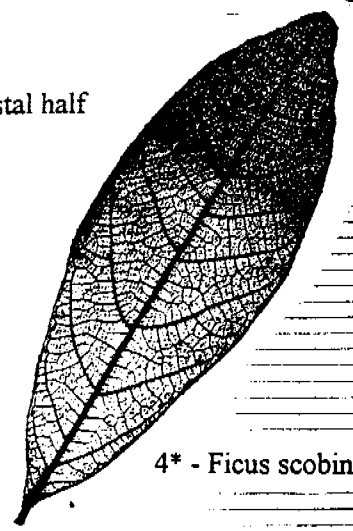


4 - Ficus opposita



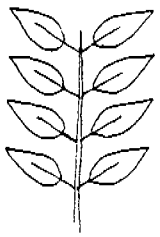
basal half

distal half

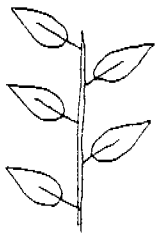


4* - Ficus scobina

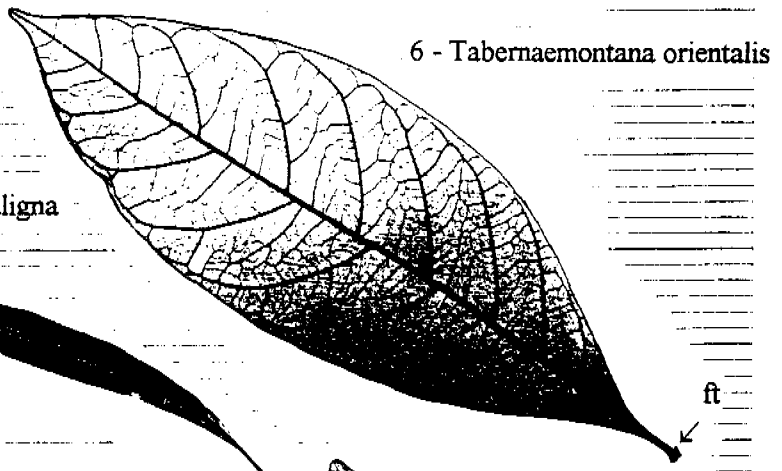
5 - Leaves opposite



5* - Leaves alternate

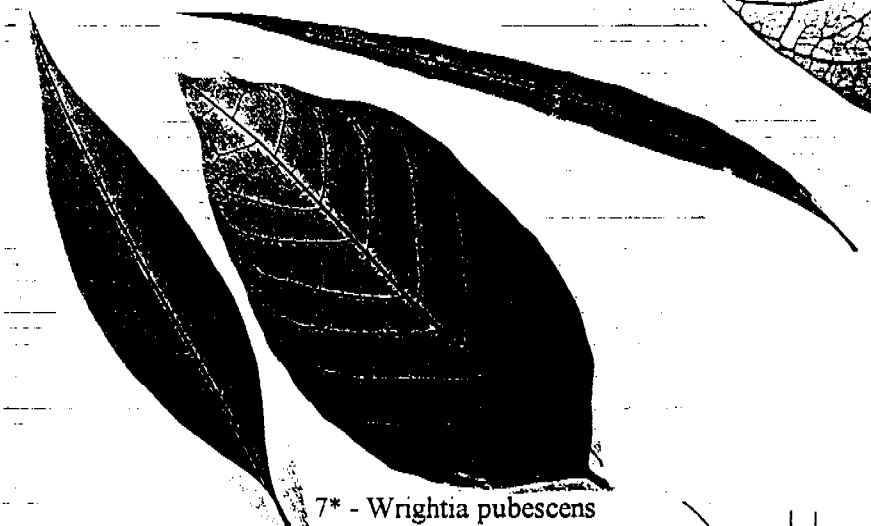


6 - Tabernaemontana orientalis

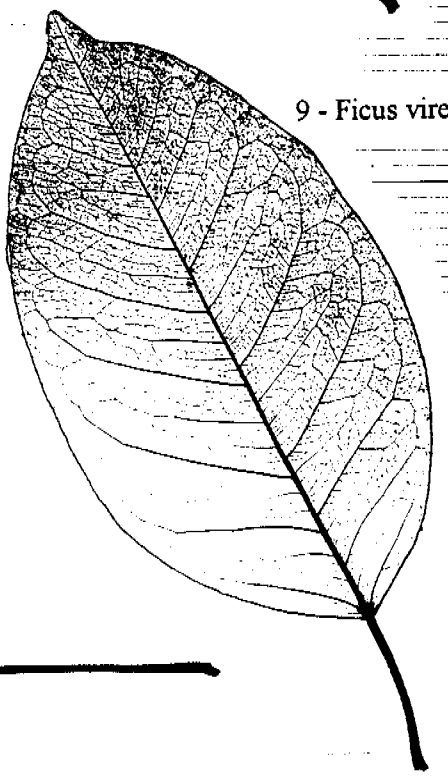


ft

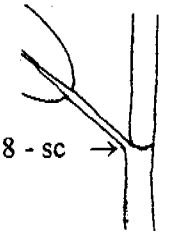
7 - Wrightia saligna



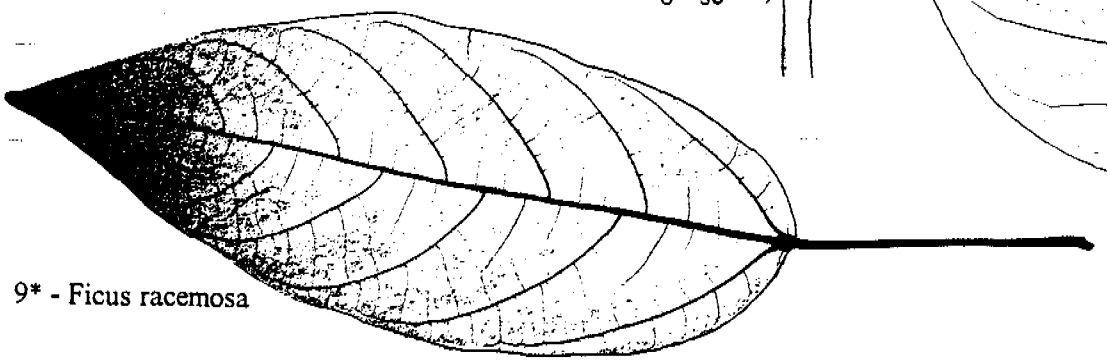
7* - Wrightia pubescens



9 - Ficus virens



8 - sc



9* - Ficus racemosa

GROUP G

Tree or shrub, no prickles, leaves simple, > 2mm wide, venation not parallel or obscure, leaves with sap exudate

NB Species names preceded by an '*' and underlined are noxious weeds and any infestations should be reported to environmental staff at Kakadu N.P., *eriss*, or the Ranger Mine

1 - Sap opaque; creamy white *or* yellowish 2
1* - Sap clear; watery *or* cloudy 14

2 - Leaves in **whorls** [3.3.8g] ..... *Alstonia actinophylla* [Milkwood]
2* - Leaves not in whorls 3

3 - Leaves rough, sandpapery to touch 4
3* - Leaves not sandpapery to touch 5

4 - Plant with dark, rough bark; **leaves usually widest in the basal half** [3.3.6a] ..... *Ficus opposita* [Sandpaper Fig]
4* - Plant with pale, unfissured bark; **leaves usually widest in the distal half** [3.3.6b] ..... *Ficus scobina* [Sandpaper Fig]

5 - **Leaves opposite** [3.3.8e] 6
5* - **Leaves alternate** [3.3.8a-d] 8

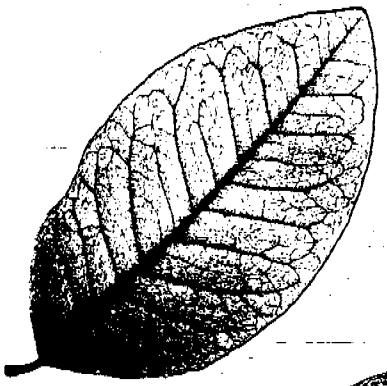
6 - Petiole with a small **stem-clasping 'foot' (ft)** [3.3.7g] ..... *Tabernaemontana orientalis* [Iodine Plant]
6* - Petiole not stem-clasping 7

7 - Leaves not hairy; most blades > 10 times longer than wide ..... *Wrightia saligna* [Milk Bush]
7* - Leaves sparsely to densely hairy; most blades < 5 times longer than wide ..... *Wrightia pubescens*

8 - **Branchlets encircled by a scar (sc)** at each leaf point 9
8* - Branchlets not encircled by a scar at each leaf point 10

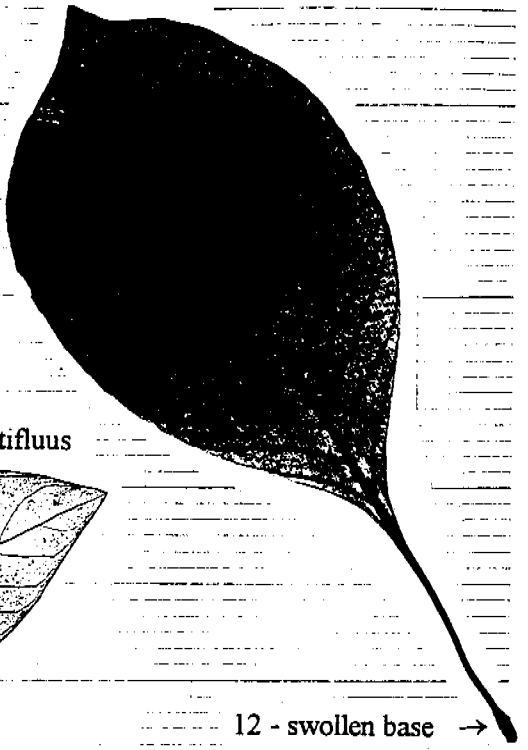
9 - Tree with aerial roots from branches; lateral veins [3.3.9c] not raised or only slightly raised on the undersurface of the leaves ..... *Ficus virens* [Banyan]
9* - Tree without aerial roots; lateral veins prominently raised on the undersurface of the leaves ..... *Ficus racemosa* [Cluster Fig]

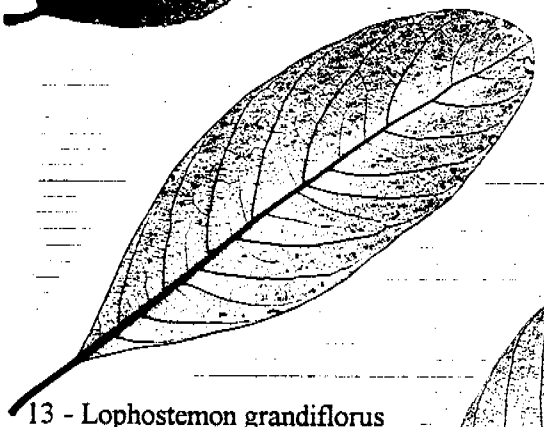
10 - Pouteria sericea



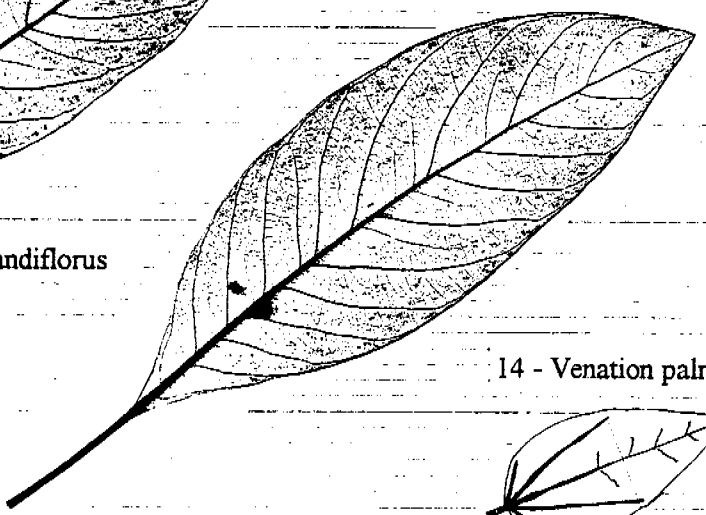
11 - Phyllanthus grandisepalus

12 - Planchonella pohlmaniana





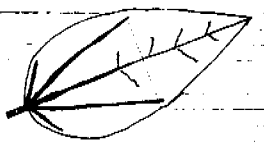
13* - Lophostemon lactifluus



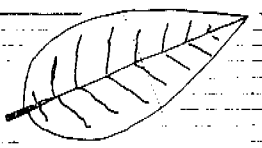
13 - Lophostemon grandiflorus

12 - swollen base →

14 - Venation palmate

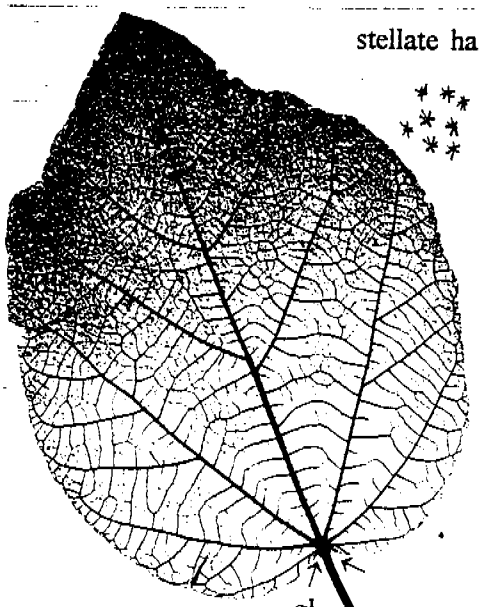


14* - venation pinnate



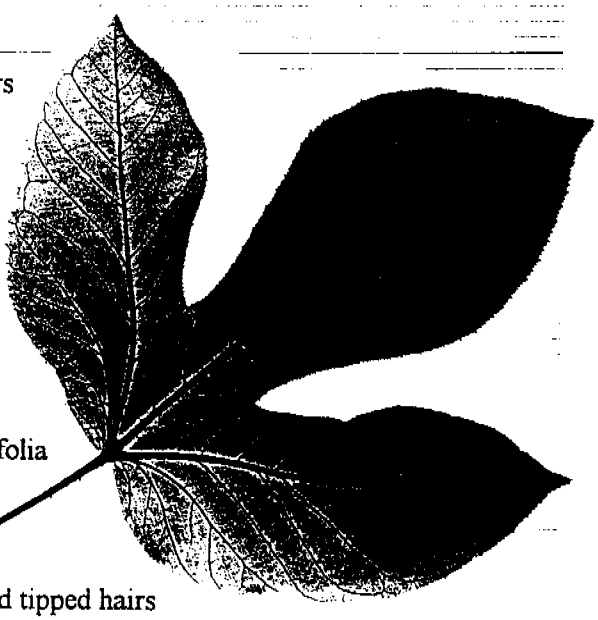
stellate hairs

simple hairs

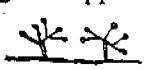


gl

15 - Jatropha gossypifolia



gland tipped hairs



15* - Croton arnhemicus

16 - Sebastiana chamelea

10 - Leaf undersurface completely covered with adpressed [3.3.16g], shiny, rust-coloured hairs ..... *Pouteria sericea* [Black Plum]

10* - Leaf undersurface without rusty hairs 11

11 - Slender shrub; leaves < 40mm long; petiole [3.3.7] < 5mm long ..... *Phyllanthus grandisepalus*

11* - Trees; leaves > 50mm long; petiole > 5mm long 12

12 - **Petiole becoming basally swollen** [3.3.7b]; trunk bark often deeply cross-fissured into thick squarish chunks ..... *Planchonella pohlmaniana* [Yellow Boxwood]

12* - Petiole not swollen at the base; bark not cross-fissured 13

13 - Box bark on trunk [3.3.4d] ..... *Lophostemon grandiflorus* [Northern Swamp Box]

13* Bark on trunk loose, fibrous-papery [3.3.4b,d] ..... *Lophostemon lactifluus*

14 - Leaf **venation strongly palmate** [3.3.9h] 15

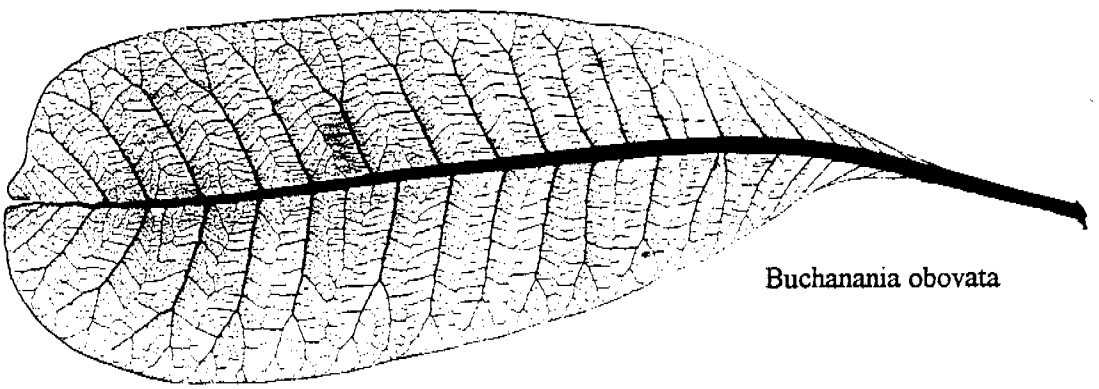
14* - Leaf **venation pinnate** [3.3.9i] 16

15 - Sap cloudy; leaves deeply dissected, mostly 3-lobed; without basal glands [3.3.14b] on the undersurface; petioles [3.3.7] deep red with branched, **gland-tipped hairs** [3.3.16k]; blades with sparse **simple hairs** [3.3.16b] or without hairs ..... *Jatropha gossypifolia* [Bellyache Bush]

15* - Sap clear; leaves not deeply dissected; with a **pair of basal glands (gl)** on the undersurface; petioles not red; blades with a cover of tiny **stellate hairs** [3.3.16c] ..... *Croton arnhemicus*

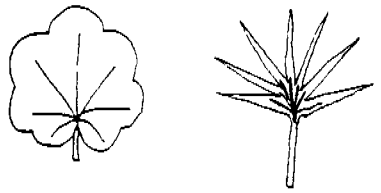
16 - Sap cloudy; leaves soft, herbaceous < 15mm wide; leaf margins finely toothed [3.3.12b] ..... *Sebastiana chamelea*

16*- Sap clear; leaves leathery, mostly > 50mm wide; leaf margins entire [3.3.12a] ..... *Buchanania obovata* [Green Plum]

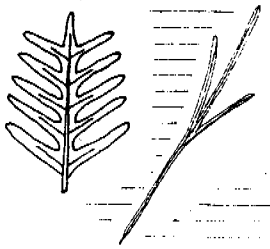


Buchanania obovata

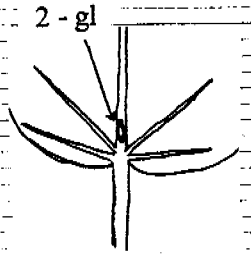
1 - Palmate venation



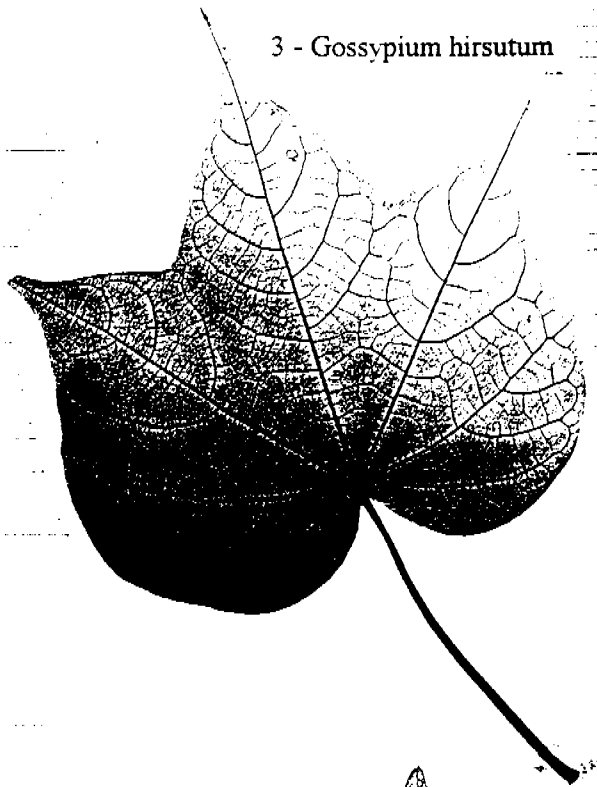
1* - Pinnate venation



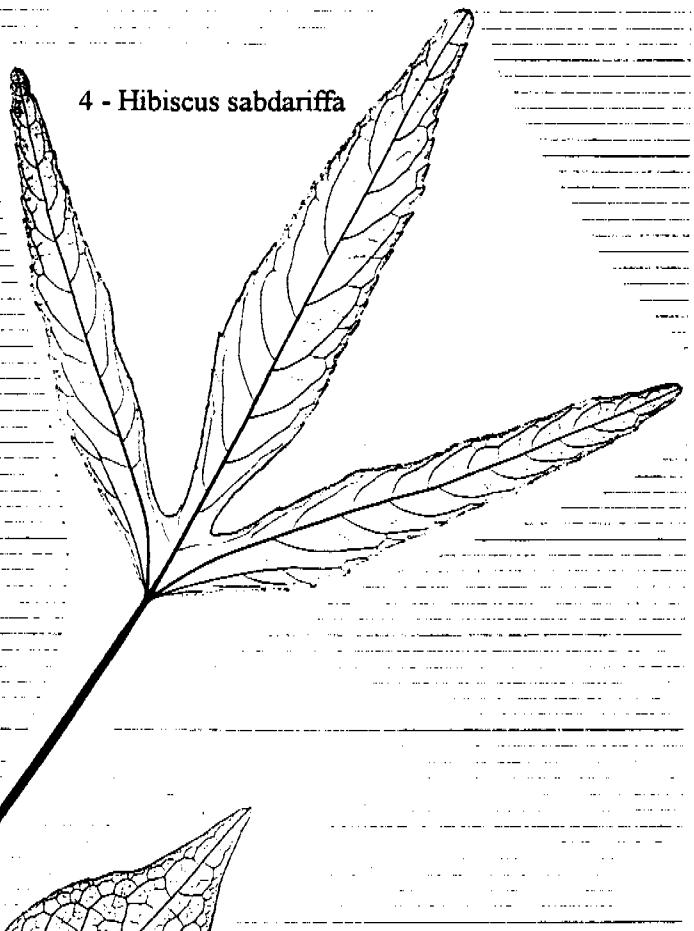
2 - gl



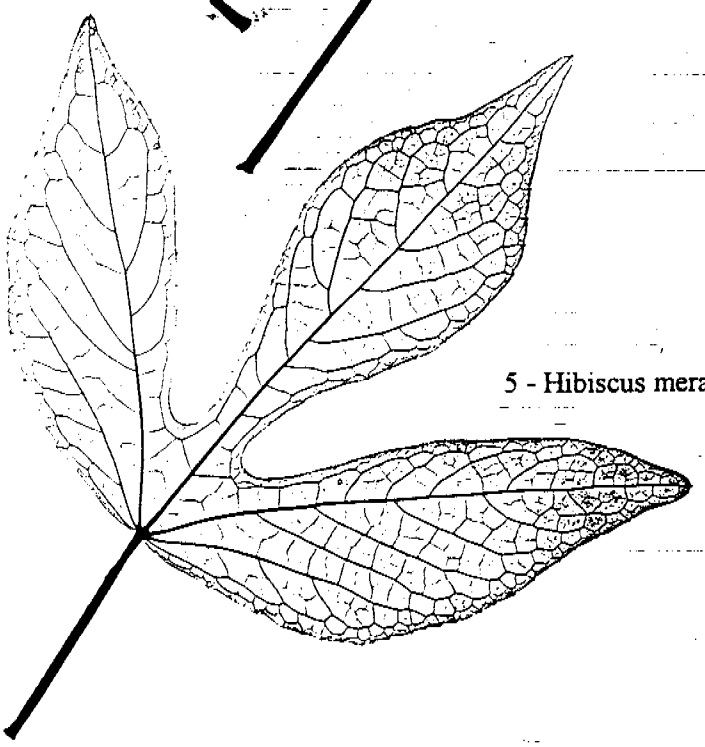
3 - Gossypium hirsutum



4 - Hibiscus sabdariffa



5 - Hibiscus meraukensis



GROUP H

Tree or shrub, no prickles, leaves simple, > 2mm wide, no sap exudate, venation not parallel, leaf shape complex

NB Species names preceded by an '*' and <u>underlined</u> are noxious weeds and any infestations should be reported to environmental staff at Kakadu N.P., *eriss*, or the Ranger Mine. Species names preceded by a '*' and <u>not</u> underlined are naturalised weeds.

1 - **Leaf venation palmate** [3.3.9h] 2
1* - **Leaf venation pinnate** [3.3.9i] 11

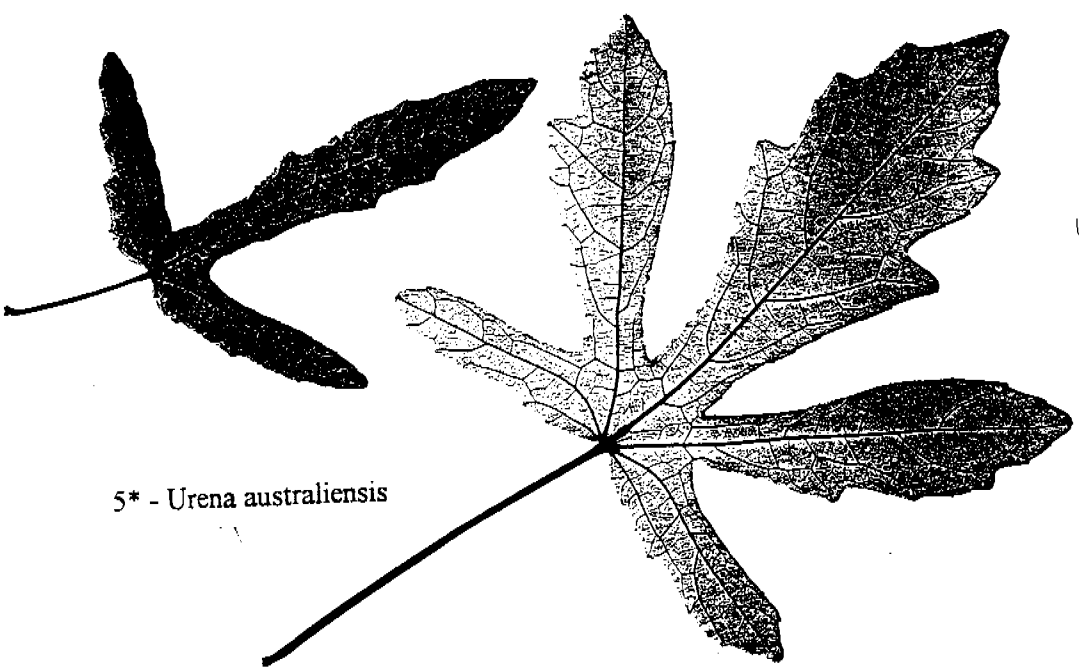
2 - **Leaves with a primary vein gland (gl)** [3.3.14d] 3
2* - Leaves without a primary vein gland 6

3 - Undersurface of leaves densely speckled ..... *<u>*Gossypium hirsutum*</u> [Upland Cotton]
3* - Undersurface of leaves not speckled 4

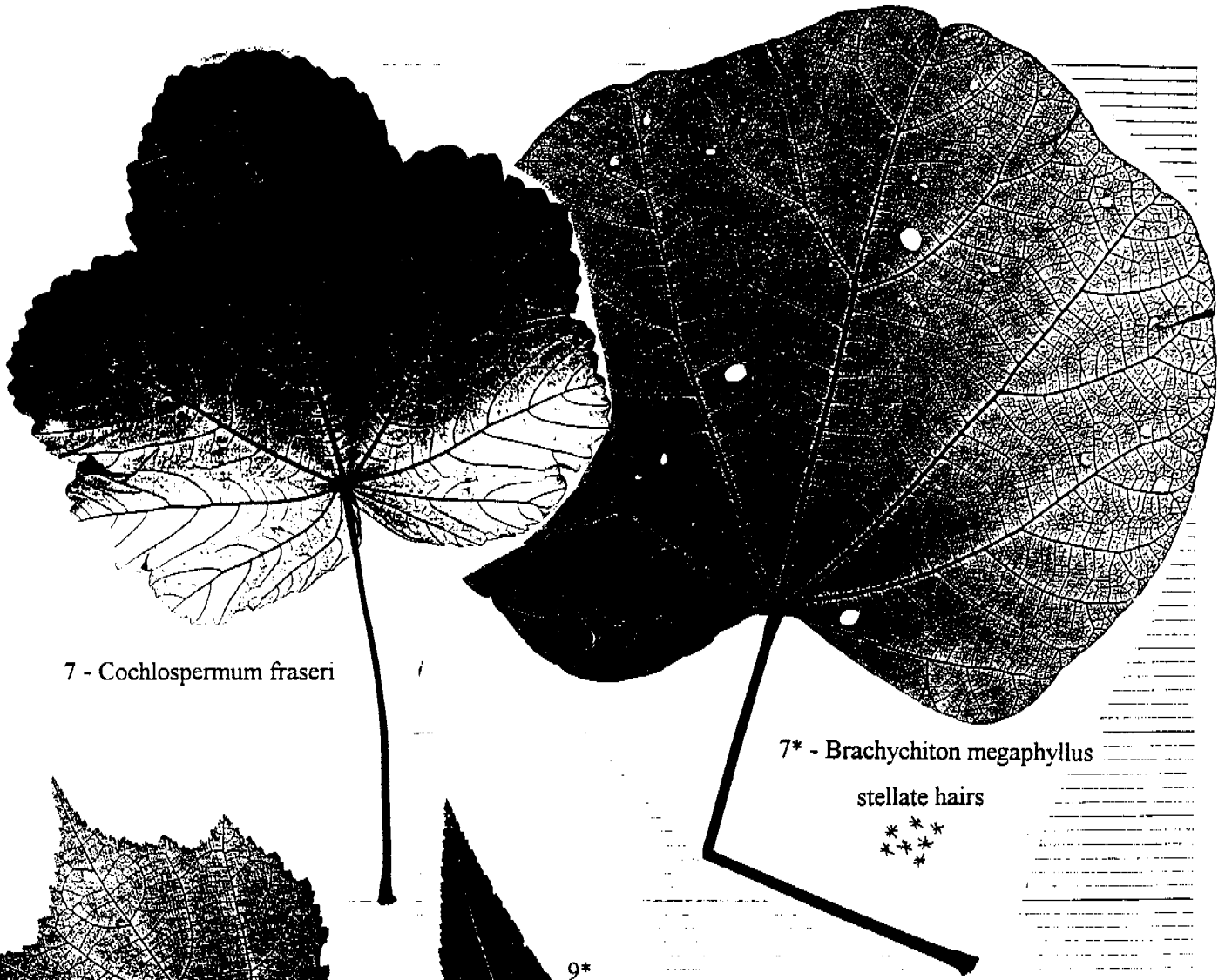
4 - Branchlets deep red; petiole [3.3.7] fully or partially red ..... *<u>*Hibiscus sabdariffa*</u> [Rosella]
4* - Branchlets and petioles not red 5

5 - Margin of central lobe shallow toothed with no broad pinnate lobes [3.3.10j]; bark at base of plant without lenticels [3.3.4h] ..... *Hibiscus meraukensis* [Merauke Hibiscus]

5* - Margin of central lobe shallow toothed with prominent broad pinnate lobes; bark at base of plant with dense small raised (whitish) lenticels ..... *Urena australiensis*



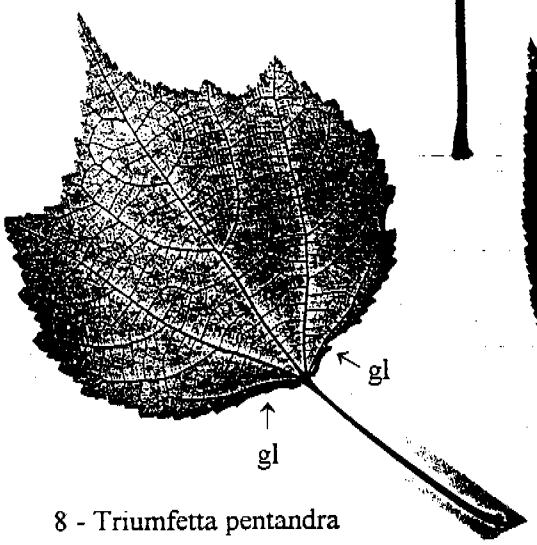
5* - Urena australiensis



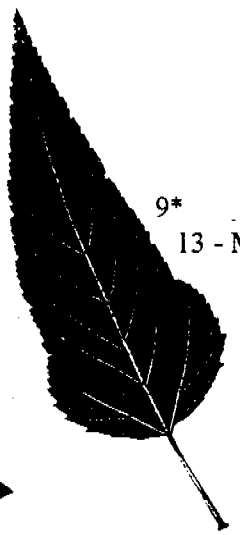
7 - Cochlospermum fraseri

7* - Brachychiton megaphyllus

stellate hairs



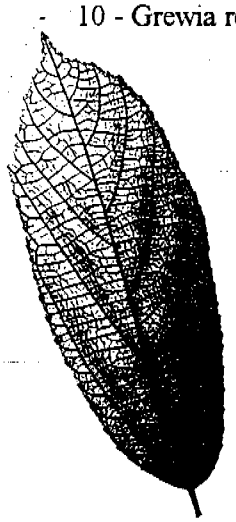
8 - Triumfetta pentandra

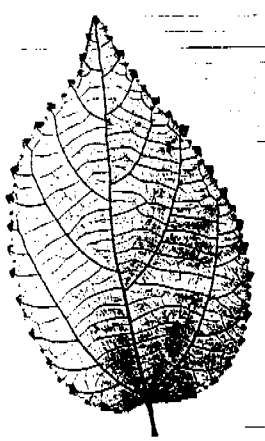


9*

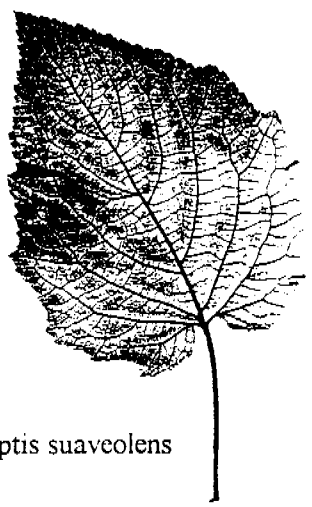
13 - Melochia corchorifolia

10 - Grewia retusa





10* - Grewia sp. D7426



12 - Hyptis suaveolens

stellate scaly hairs

13* - Hibbertia sp. B3229

6 - Small trees; petioles [3.3.7] on mature leaves usually > 90mm long 7

6* - Annual shrubs; petioles rarely longer than 50mm 8

7 - Blades not hairy ..... *Cochlospermum fraseri* [Kapok Tree]

7* - Blades **stellate hairy** [3.3.16c] ..... *Brachychiton megapyhllus* [Red-flowered Kurrajong]

8 - Leaf margins toothed [3.3.12b], the **teeth near the base of the blade tipped with small disc-like glands (gl)** ..... **Triumfetta pentandra*

8* - Leaf margins toothed, the teeth near the base of the blade without glands 9

9 - Twigs [3.3.2f] and blades hairy (often densely) 10

9* - Twigs and blades not hairy ..... *Melochia corchorifolia*

10 - Leaf undersurface almost white ..... *Grewia retusifolia* [Emu Berries]

10* - Leaf undersurface not white ..... *Grewia* sp. D7426

11 - Leaves shallow lobed 12

11* - Leaves deeply lobed, incised almost to the midrib 14

12 - Leaves highly aromatic [♂3.3.13] ..... **Hyptis suaveolens* [Hyptis]

12* - Leaves not aromatic 13

13 - Leaf margin finely toothed and broadly lobed; petioles [3.3.7] often longer than 15mm; blades not scaly ..... *Melochia corchorifolia*

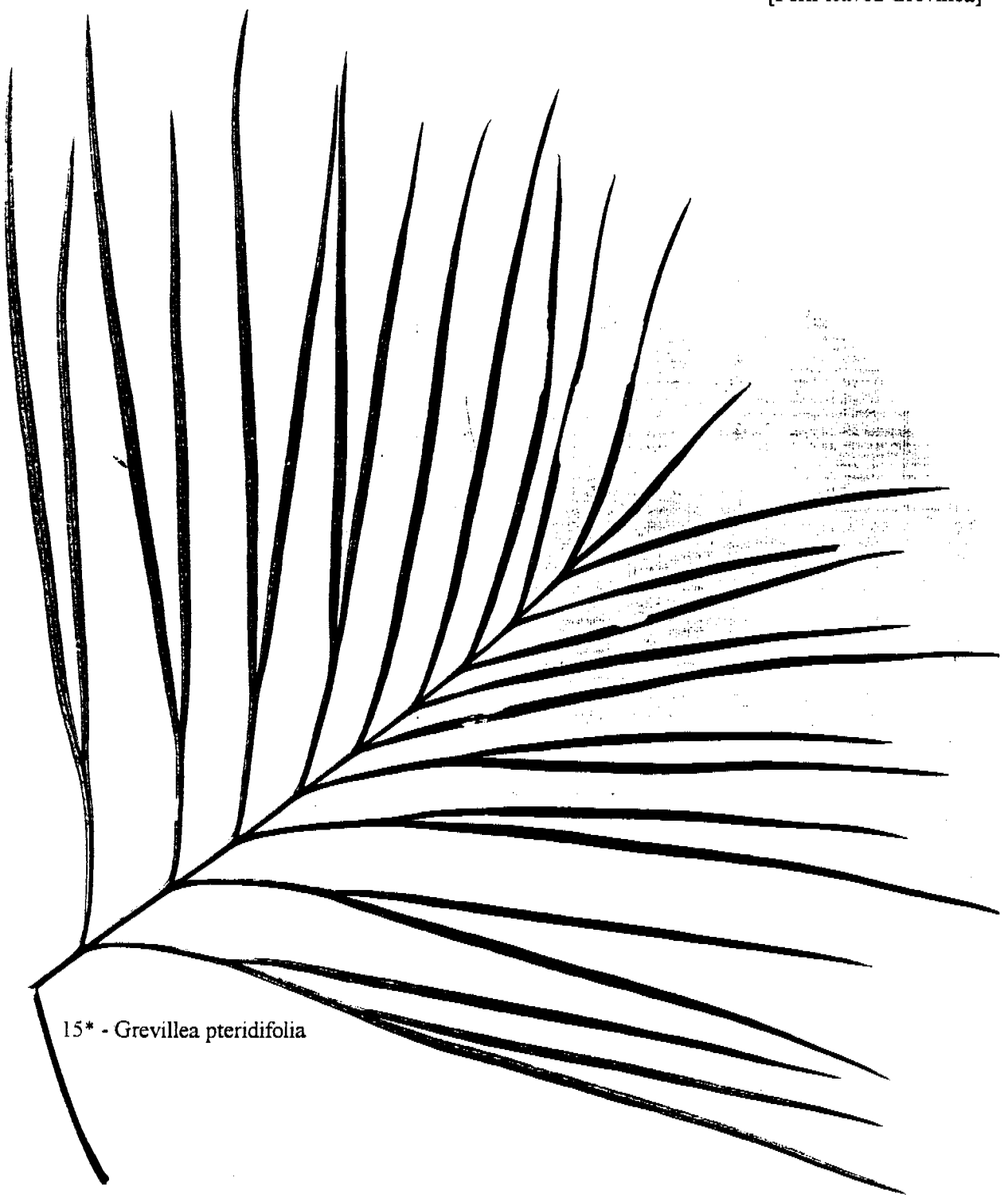
13* - Leaf margin not toothed, the lobes being the only 'teeth'; petioles usually < 5mm long; **blades scaly** [3.3.16e] ..... *Hibbertia* sp. B3229

14 - Leaf lobes linear [3.3.10f], < 5mm wide 15

14* - Leaf lobes narrow elliptic [3.3.10d], > 5mm wide ..... *Grevillea decurrens*

15 - Most mature leaves with < 3 lobes per side; bark on trunk deep fissured to chunky ..... *Grevillea parallela* [Silver Grevillea]

15* - Most mature leaves with > 6 lobes per side, basal lobes often forked; bark on trunk with shallow, fine fissures..... *Grevillea pteridifolia* [Fern-leaved Grevillea]



15* - Grevillea pteridifolia

GROUP I

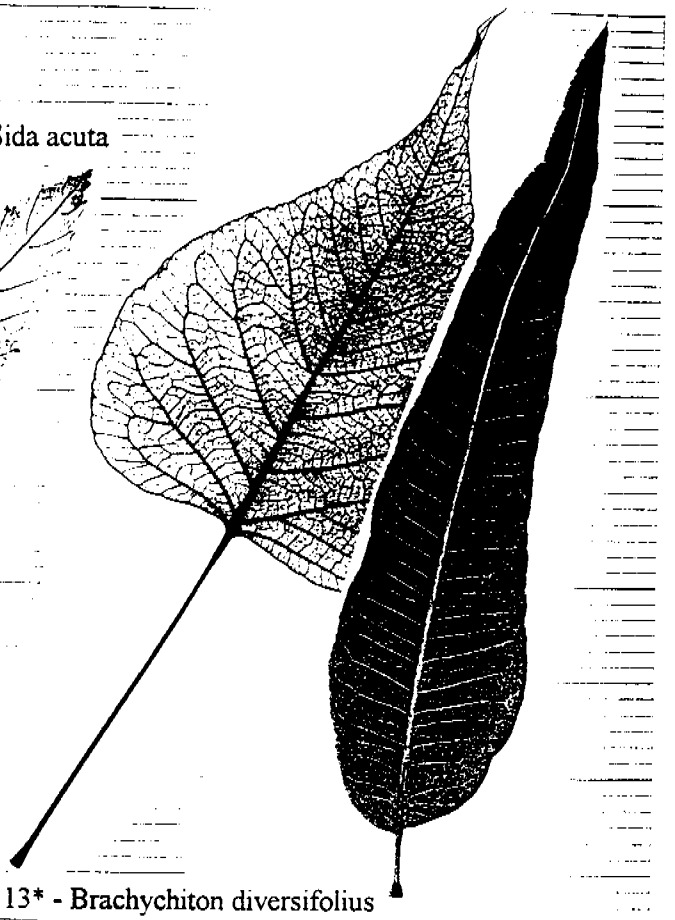
Tree or shrub, no prickles, leaves simple, > 2mm wide, no sap exudate, venation not parallel, leaf shape simple, margins scalloped or toothed

NB Species names preceded by an '*' and <u>underlined</u> are noxious weeds and any infestations should be reported to environmental staff at Kakadu N.P., *eriss*, or the Ranger Mine. Species names preceded by a '*' and <u>not</u> underlined are naturalised weeds.

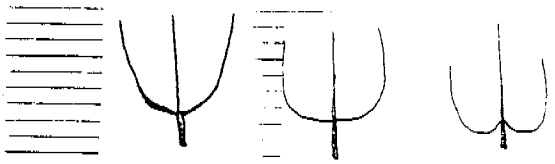
1 -	**Leaves opposite** [3.3.8e]	2
1* -	**Leaves alternate** [3.3.8a-d]	5
2 -	Leaves highly aromatic [♂3.3.13]	**Hyptis suaveolens* [Hyptis]
2* -	Leaves not aromatic	3
3 -	Blades not hairy	*Carallia brachiata* [Billabong Tree]
3* -	Blades hairy	4
4 -	Leaves < 15mm wide; lateral veins and fine veins obscure [♂3.3.9c,d,m]	*Gonocarpus leptothecus*
4* -	Leaves > 40mm wide; lateral veins and fine veins not obscure	*Premna acuminata*
5 -	Leaves with a **primary vein gland (gl)** [3.3.14d]	6
5* -	Leaves without a primary vein gland	8
6 -	Branchlets deep red; petioles [3.3.7] usually partly red	**<u>Hibiscus sabdariffa</u>* [Rosella]
6* -	Branchlets and petioles not red	7
7 -	Bark at base with raised (whitish) lenticels [3.3.4h]	*Urena australiensis*
7* -	Bark at base without lenticels	*Hibiscus meraukensis* [Merauke Hibiscus]
8 -	Leaves with an **intra-marginal vein** [3.3.9j]; a prostrate [3.3.3a] shrub	*Grevillea goodii* [Prostrate Grevillea]
8* -	Leaves without an intra-marginal vein; plants erect	9
9 -	Leaves aromatic [♂3.3.13]; **leaf base decurrent** [3.3.11d]	*Pterocaulon*
9* -	Leaves not aromatic; leaf base not decurrent	10

12 - Melochia corchorifolia

12* - Sida acuta



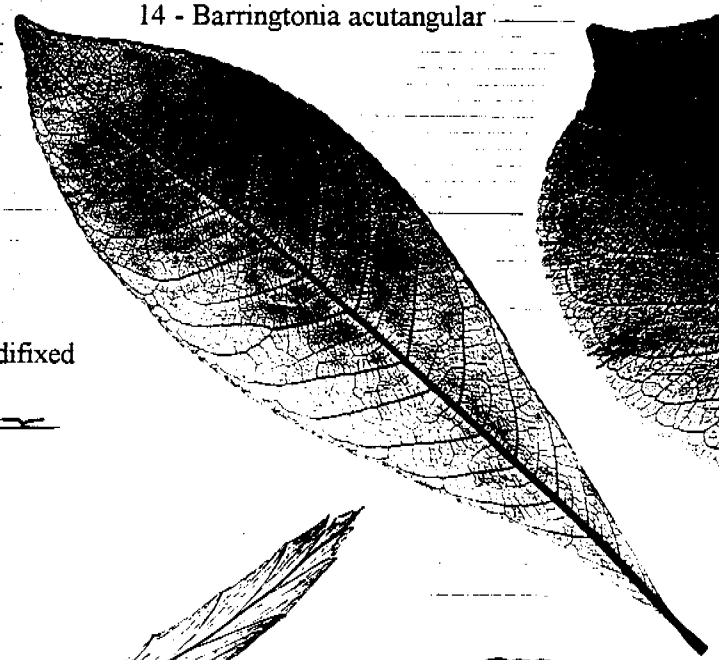
13* - Leaf base obtuse, truncate or shallow cordate



13* - Brachychiton diversifolius

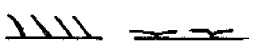
13 - attenuate base

14 - Barringtonia acutangular



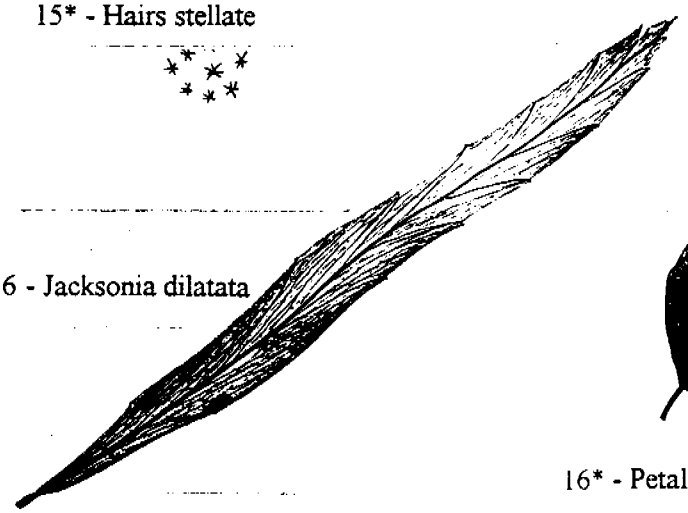
14* - Planchonia careya

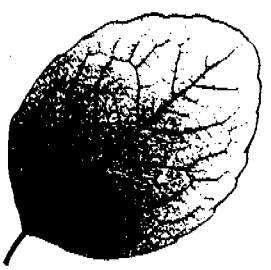
15 - Hairs simple or medifixed



15* - Hairs stellate

16 - Jacksonia dilatata





16* - Petalostigma quadriloculare

17 - Hibbertia sp. B3229

10 - Undersurface of leaves not hairy 11
10* - Undersurface of leaves hairy 15

11 - Annual shrubs, petiole [3.3.7] *or* twigs [3.3.2f] with at least a few scattered hairs 12
11* - Perennial shrubs or trees; petiole and twigs not hairy 13

12 - Petiole grooved [3.3.7c] ..... *Melochia corchorifolia*
12* - Petiole not grooved ..... **Sida acuta*
[Spiny-head Sida]

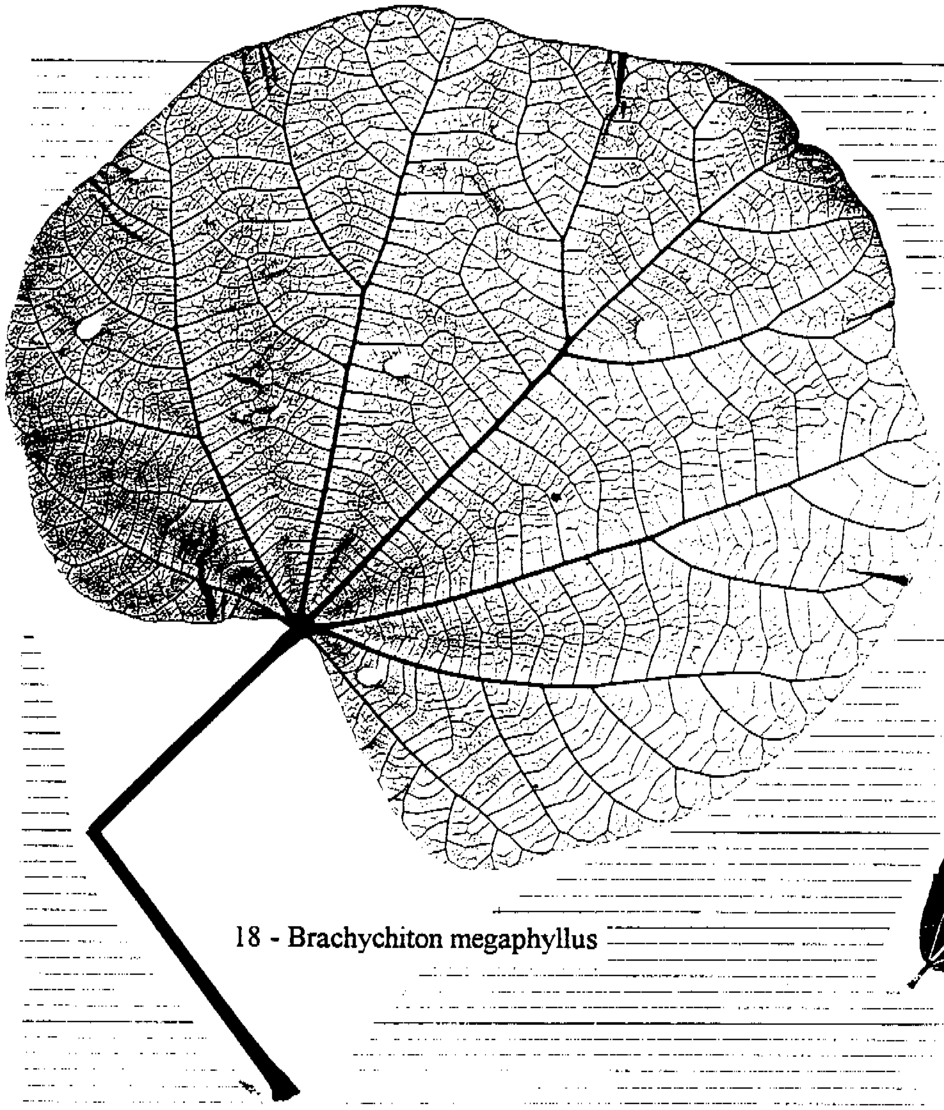
13 - Blades widest in the middle or in the distal half [3.3.6b]; **leaf base attenuate** [3.3.11b] 14
13* - Leaves widest in the basal half [3.3.6a]; **leaf base obtuse** [3.3.11b] *or* **truncate** [3.3.11b] *or* **shallow cordate** [3.3.11c] ..... *Brachychiton diversifolius*
[Northern Kurrajong]

14 - Most blades > 3 times longer than wide; basal end of petiole [3.3.7a] often flushed red or pink ..... *Barringtonia acutangular*
[Freshwater Mangrove]
14* - Blades < 3 times longer than wide; petiole pale green, never flushed red ..... *Planchonia careya*
[Cocky Apple]

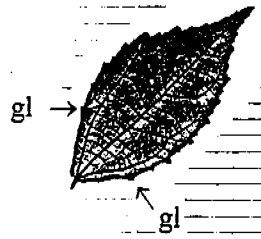
15 - Hairs on twigs and leaves **simple** [3.3.16b] *or* **medifixed** [3.3.16d], no stellate hairs [3.3.16c] 16
15* - Hairs on twigs and leaves all **stellate** *or* a mixture of stellate and simple 17

16 - Blades concolorous [3.3.6c]; > 4 times longer than wide; some lateral veins [3.3.9c] clearly intersect the margin; a shrub to 2.5m tall ..... *Jacksonia dilatata*
[Cladode Pea]
16* - Blades discolorous [3.3.6d]; < 3 times longer than wide; all lateral veins disintegrate before reaching the margin; a shrub < 1m tall ..... *Petalostigma quadriloculare*
[Quinine Bush]

17 - Blades with < 5-teeth per side ..... *Hibbertia* sp. B3229
17* - Blades with > 10-teeth per side 18

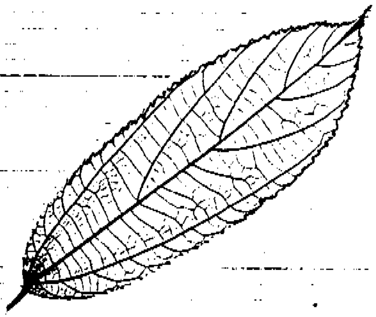


18 - Brachychiton megaphyllus

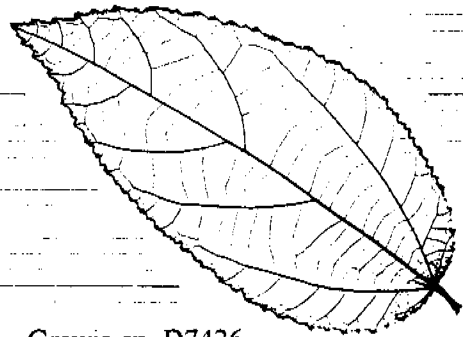


19 - Triumfetta pentandra

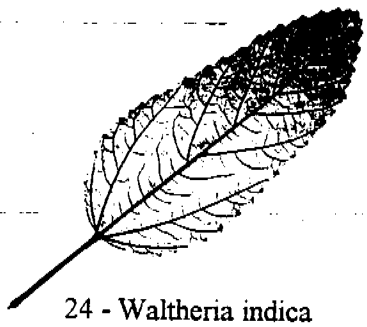
21 - Sida acuta



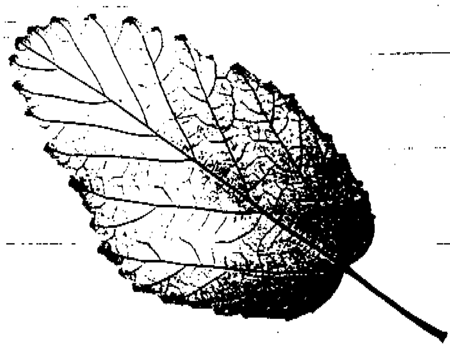
22 - Grewia retusa



22*, 23 - Grewia sp. D7426



24 - Waltheria indica



24* - Sida cordifolia

18 - Small trees; leaves large to very large with petioles [3.3.7] often > 90mm long, blades > 150mm long, twigs [3.3.2f] typically > 5mm diameter ..... *Brachychiton megaphyllus* [Red-flowered Kurrajong]

18* - Annual shrubs; petioles mostly < 50mm, blades < 120mm long, twigs < 2.5mm diameter 19

19 - Margin **teeth near the base of the blade tipped with small flattened circular glands (gl)** ..... **Triumfetta pentandra*

19* - Teeth near the base of the blade not bearing glands 20

20 - Petioles on oldest leaves < 12mm long 21

20* - Petioles on oldest leaves > 12mm long 23

21 - Plants single-stemmed from the base; undersurface of leaves with scattered hairs; fine veins [3.3.9d] not raised on the undersurface ..... **Sida acuta* [Spiny-head Sida]

21* - Plants several-stemmed from the base; undersurface of leaves with moderately to very densely hairy; fine veins raised on the undersurface 22

22 - Undersurface of leaves almost white ..... *Grewia retusifolia* [Emu Berries]

22* - Undersurface of leaves not whitish ..... *Grewia* sp. D7426

23 - Plant several-stemmed from the base; leaves not having a soft velvety texture ..... *Grewia* sp D7426

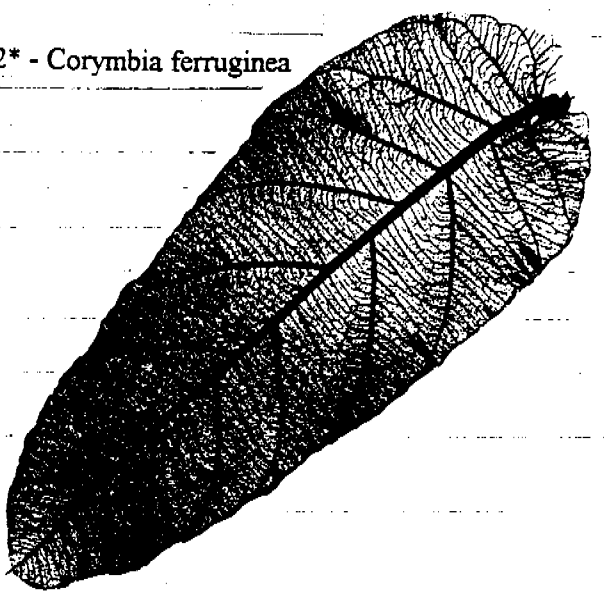
23* - Plants single-stemmed from the base; leaves with a somewhat soft velvety texture 24

24 - Flowers bright yellow, ≈ 5mm diameter ..... *Waltheria indica*

24* - Flowers pale yellow to orange, ≈ 15mm diameter ..... **Sida cordifolia* [Flannel Weed]

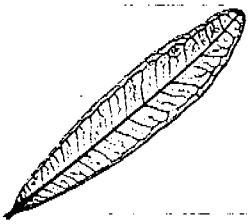
1 - Stellate hairs 1* - Simple or medi-fixed hairs

2* - Corymbia ferruginea



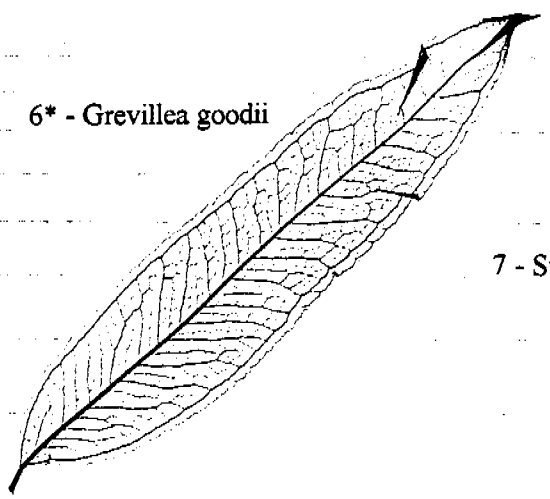
3 - Hibbertia sp. 3230

3* - Hibbertia sp. B3229

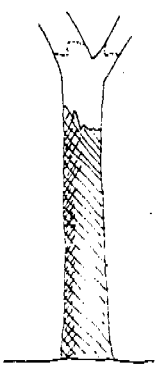


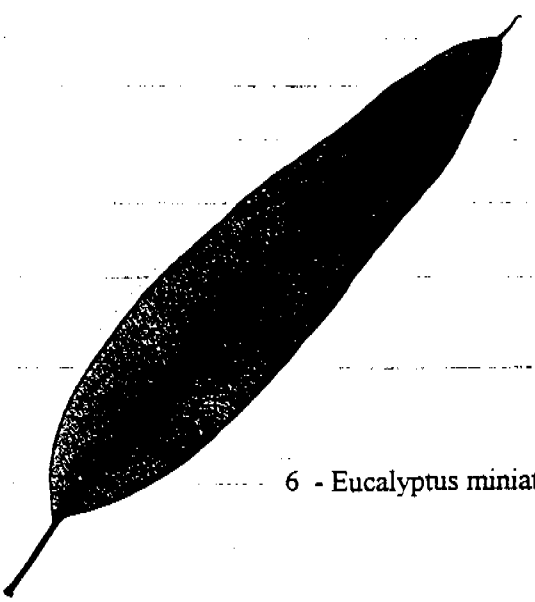
5* - Ludwigia octovalvis

6* - Grevillea goodii

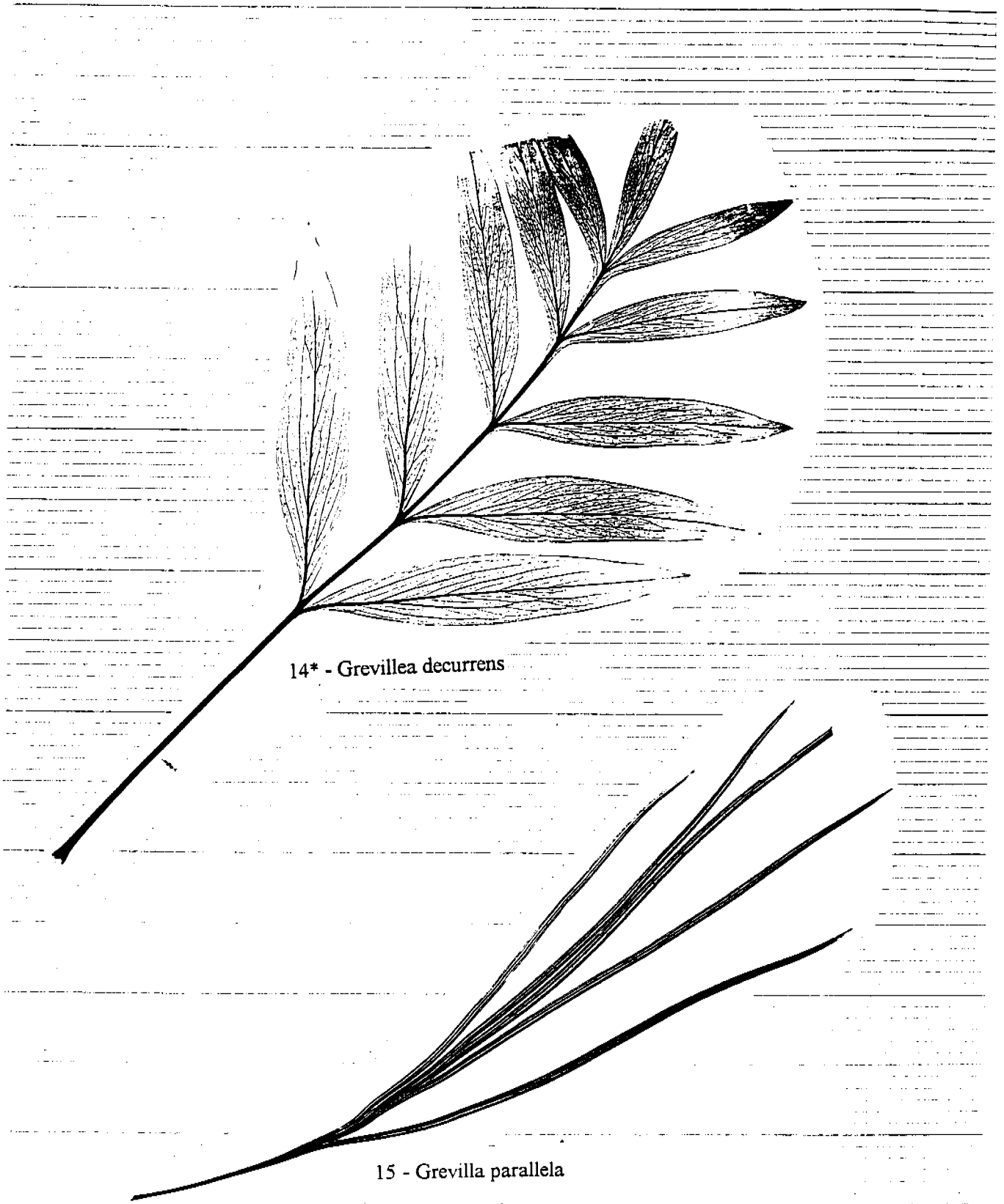


7 - Stocking of bark





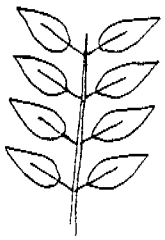
6 - Eucalyptus miniata



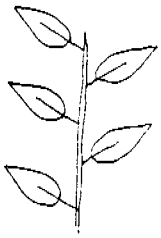
14* - Grevillea decurrens

15 - Grevilla parallela

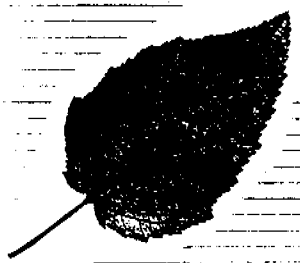
1 - Leaves opposite

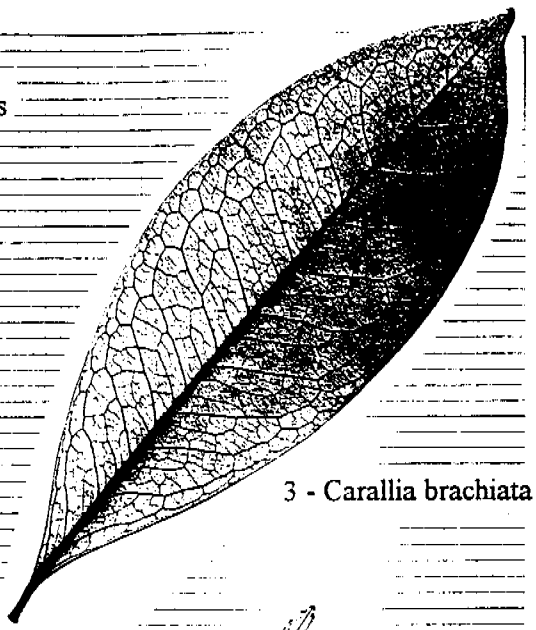


1* - Leaves alternate



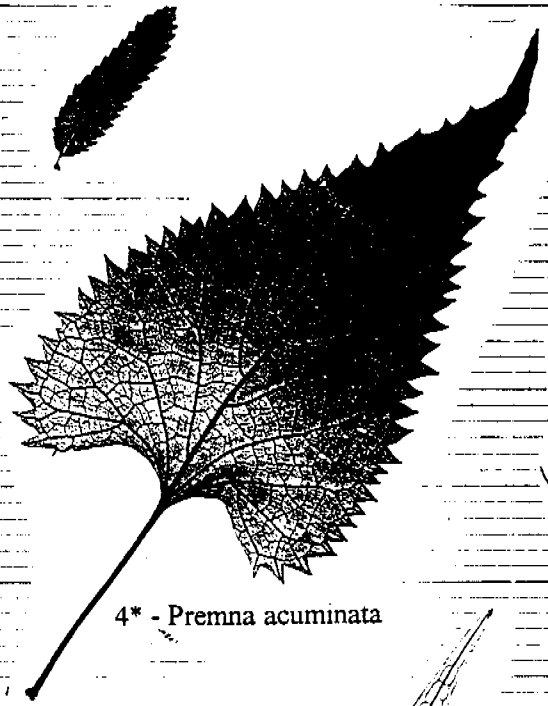
2 - Hyptis suaveolens





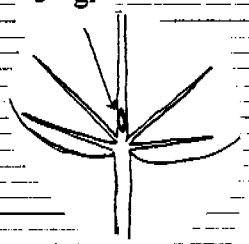
3 - Carallia brachiata

4 - Gonocarpus leptothecus



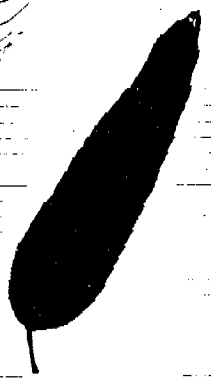
4* - Premna acuminata

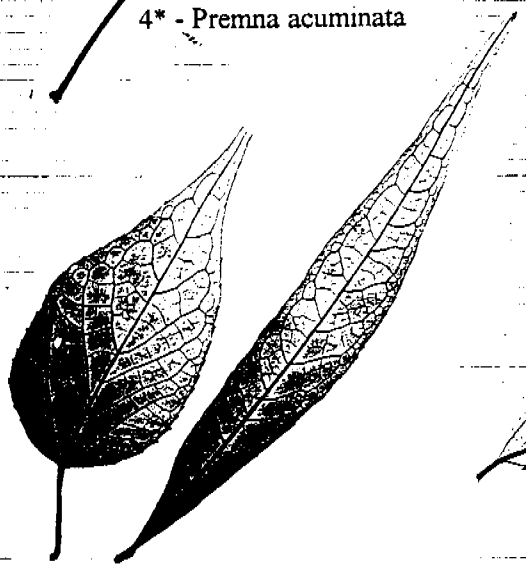
5 - gl



6 - Hibiscus sabdariffa

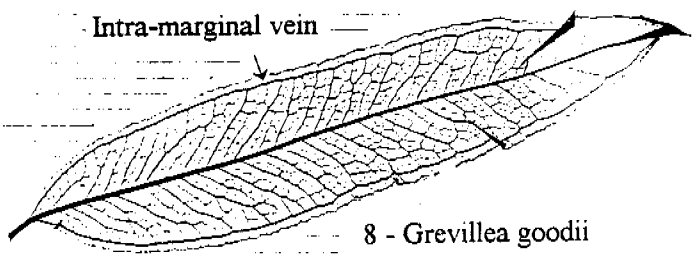
7 - Urena australiensis





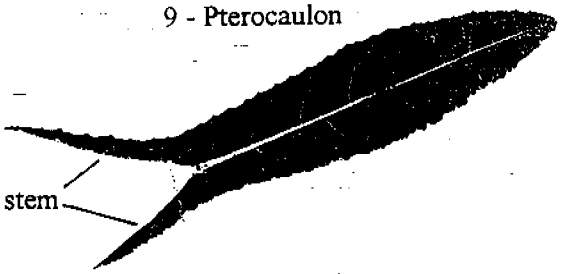
7* - Hibiscus meraukensis

Intra-marginal vein



8 - Grevillea goodii

9 - Pterocaulon



decurrent base,
the inner margin attached to the stem

GROUP J

Tree or shrub, no prickles, leaves simple, > 2mm wide, no sap exudate, venation not parallel, leaf shape simple, margins entire, blades with oil glands or an intra-marginal vein

1 - Leaves and/or twigs [3.3.2f], at least on new growth, with **stellate hairs** [3.3.16c] *or* **scales** [3.3.16e] 2

1* - Leaves and twigs, if hairy, then the **hairs simple** [3.3.16b] *or* **medi-fixed** [3.3.16d], not stellate 4

2 - Most leaves < 20mm wide; mature plant a shrub 3

2* - Leaves > 30mm wide; mature plant a tree ..... *Corymbia ferruginea* [Rusty Bloodwood]

3 - A many-stemmed, semi-prostrate [3.3.3a], pad-forming shrub < 0.2m high; twigs [3.3.2f] and branchlets not highly angular , not winged [3.3.2g,h] ..... *Hibbertia* sp. B3230

3* - A single or few-stemmed shrub to 2m high; twigs and branchlets, highly angular, with narrow wings from the base of each petiole [3.3.7] ..... *Hibbertia* sp. B3229

4 - Prostrate [3.3.3a] shrubs with leathery leaves *or* erect shrubs with soft herbaceous leaves 5

4*- Trees with leathery leaves 7

5 - Prostrate perennial shrubs with leathery leaves 6

5* - Erect annual shrubs with soft, herbaceous leaves ..... *Ludwigia octovalvis* [Willow Primrose]

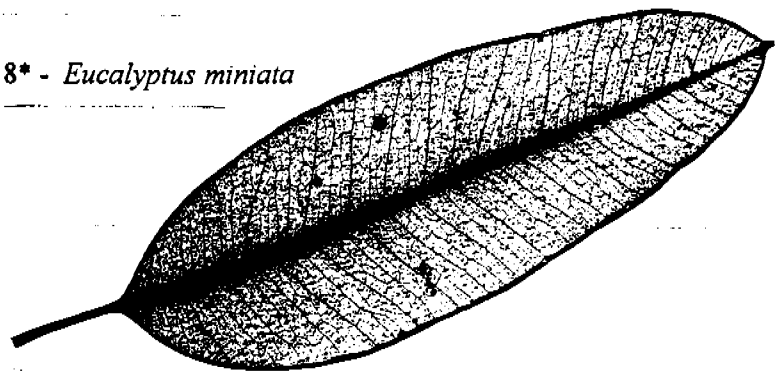
6 - Leaves with oil glands [♂3.3.14e] ..... *Eucalyptus miniata* [Darwin Woollybutt]

6* - Leaves without oil glands ..... *Grevillea goodii* [Prostrate Grevillea]

7 - Trees with **stocking bark** [3.3.4g] covering at least 1/3 of the trunk 8

7* - Trees without stocking bark 11

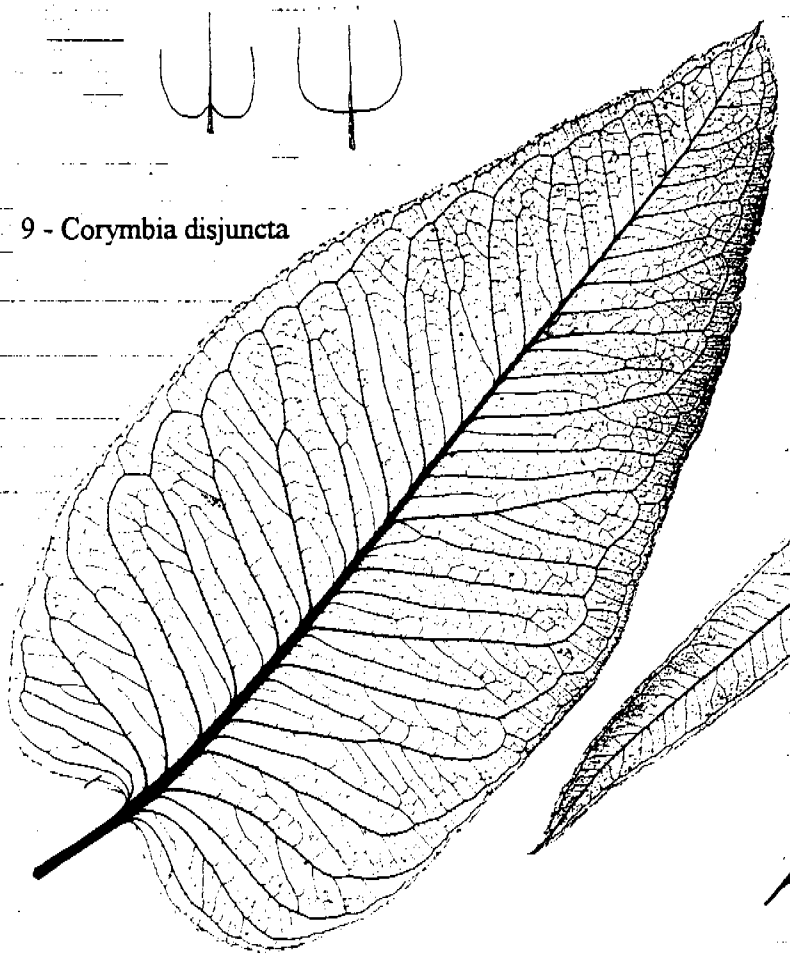
8* - *Eucalyptus miniata*



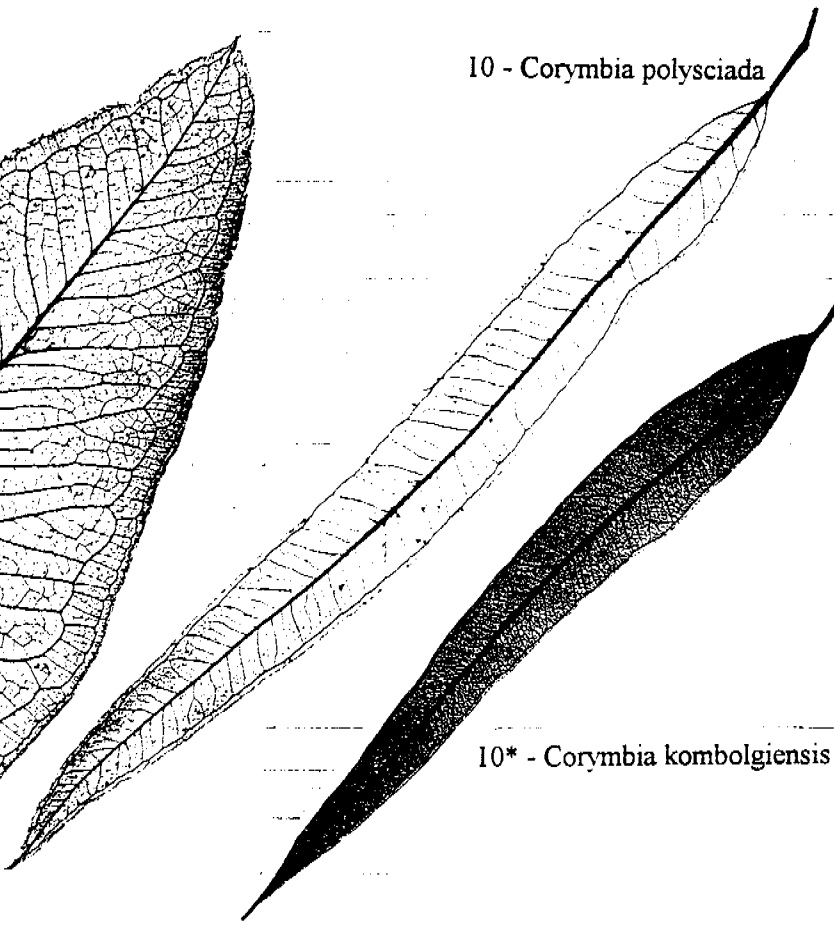
9* - Leaf base obtuse or acute

9 - Leaf base cordate or truncate

9 - Corymbia disjuncta

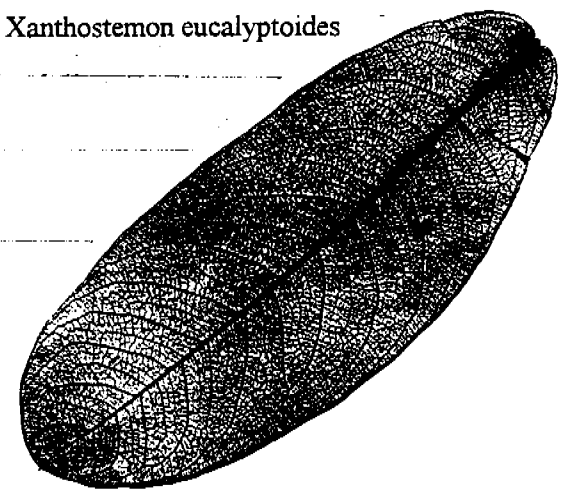


10 - Corymbia polysciada



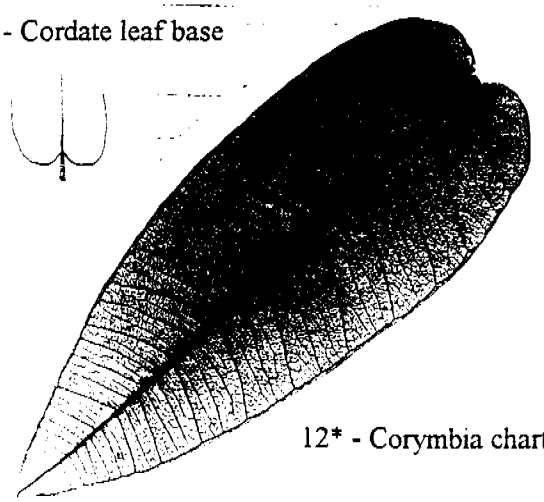
10* - Corymbia kombolgiensis

12 - Xanthostemon eucalyptoides



11 - Cordate leaf base

12* - Corymbia chartacea



8 - Stocking bark grey, often tessellated flaky [3.3.4e]; fruit thin-walled, easily crushed; flowers white 9

8* - Stocking bark dark brown, thick, fibrous, papery flaky; fruit thick-walled, woody, ribbed; flowers orange ..... *Eucalyptus miniata* [Darwin Woollybutt]

9 - Adult leaves hairy or slightly sandpapery to touch; blades usually < 3 times longer than wide; most **leaf bases cordate** [3.3.11c] to **truncate** [3.3.11b] ..... *Corymbia disjuncta* [Broad-leaved Carbeen]

9* - Adult leaves not hairy; blades often > 4 times longer than wide; **leaf bases** usually **obtuse** [3.3.11b] to **acute** [3.3.11b] 10

10 - Most leaves > 25mm wide; ≤ 4 lateral veins per cm along the midrib [♂3.3.9c]; pedicel (stalk) of fruit up to 30mm long ..... *Corymbia polysciada* [Apple Gum]

10* - Most leaves < 20mm wide; ≥ 5 lateral veins per cm along the midrib; pedicel of fruit usually < 15mm long ..... *Corymbia kombolgiensis* [Scarp Gum]

11 - **Leaf bases cordate** [3.3.11c] *or* leaves with a petiole [3.3.7] ≤ 2mm long 12

11* - Leaf bases not cordate; leaves with a petiole > 2mm long 13

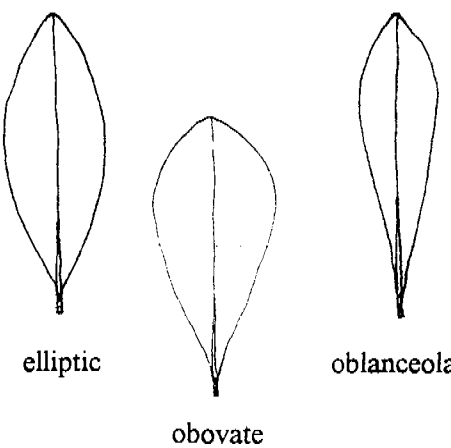
12 - Twigs [3.3.2f] square in x-section; leaves with oil glands [♂3.3.14e] ..... *Xanthostemon eucalyptoides*

12* - Twigs not square in x-section; leaves without oil glands ..... *Corymbia chartacea*

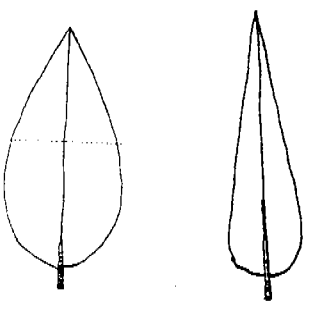
13 - Most blades widest in the middle or the distal half [3.3.6b]; **narrowly to broadly elliptic** *or* **obovate** *or* **oblanceolate** [3.3.10b,c,d] 14

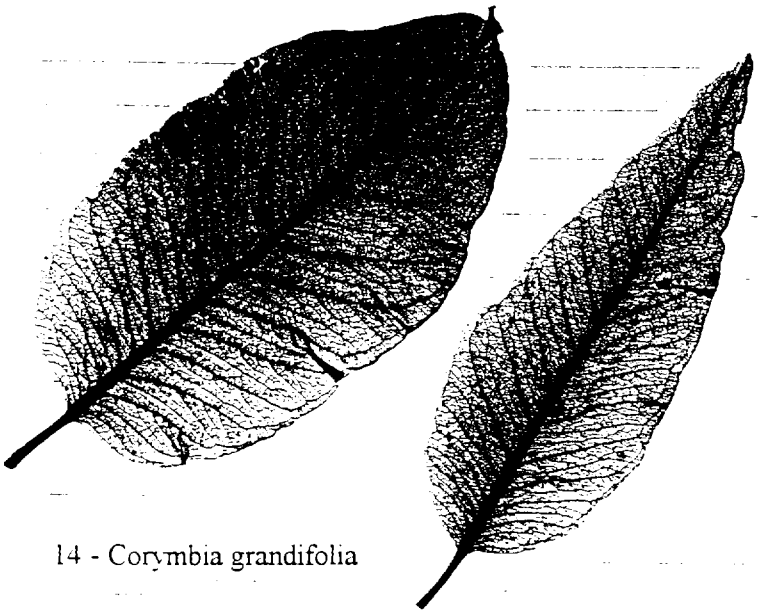
13* - Most blades widest in the basal half [3.3.6a]; distinctly **ovate** to **lanceolate** [3.3.10b,c] 22

13 - Widest in the middle or distal half

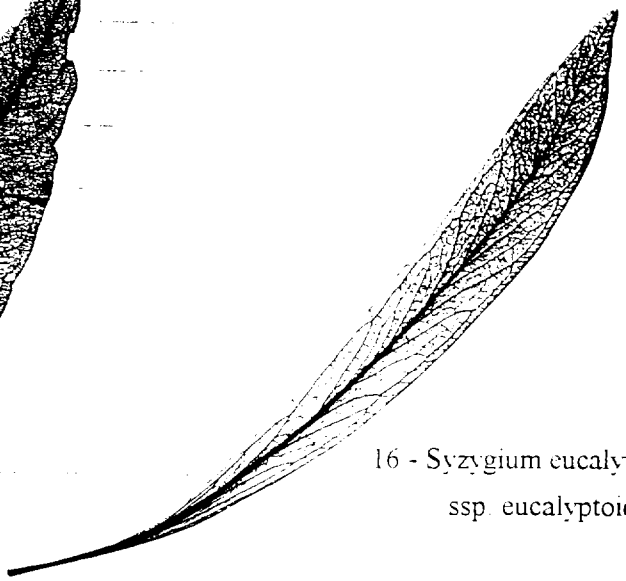


13* - Widest in the basal half





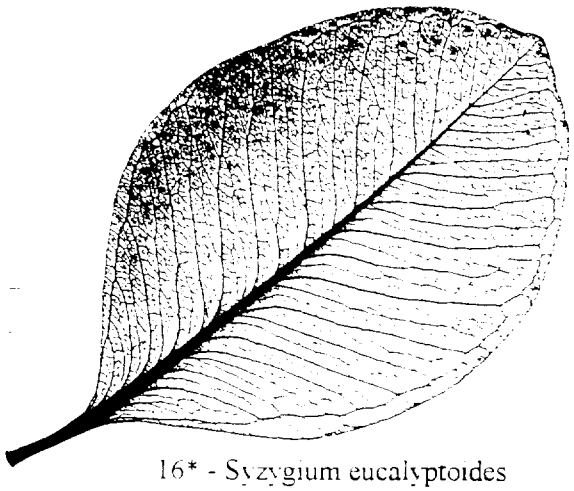
14 - Corymbia grandifolia



16 - Syzygium eucalyptoides ssp. eucalyptoides

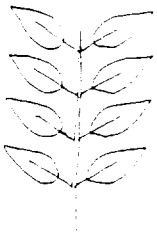
15 - Concolorous

15* - Discolorous

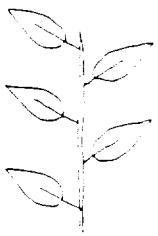


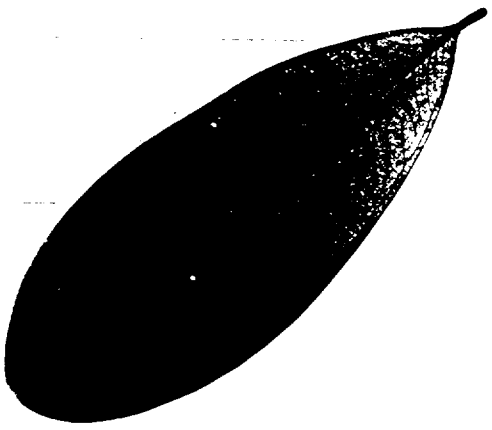
16* - Syzygium eucalyptoides ssp. bleeseri

17 - Leaves opposite

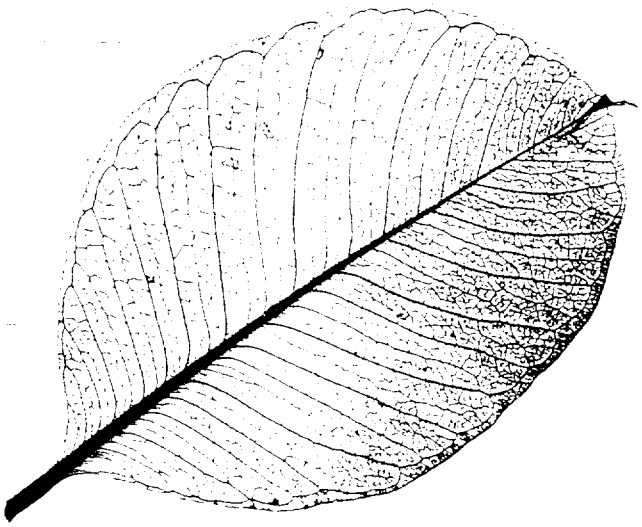


17* - Leaves alternate





18* - Syzygium forte ssp. potamophilum



19 - Syzygium suborbiculare

14 - Bark smooth and white [♂3.3.4a] throughout ..... *Corymbia grandifolia* [Large-leaved Cabbage Gum]

14* - Bark, if pale or whitish then not overly smooth, having a slightly roughened surface 15

15 - Blades **concolorous** [3.3.6c] or very nearly so, pale greyish green 16

15* - Blades **discolorous** [3.3.6d] 17

16 - Leaves narrowly elliptic [3.3.10d] to oblanceolate [3.3.10c], often falcate [3.3.10g]; blades > 3 times longer than wide ..... *Syzygium eucalyptoides ssp. eucalyptoides* [White Apple]

16* - Leaves broadly elliptic [3.3.10d] to obovate [3.3.10b], not falcate; blades < 2 times longer than wide ..... *Syzygium eucalyptoides ssp. bleeseri* [White Apple]

17 - **Leaves opposite** [3.3.8e] 18

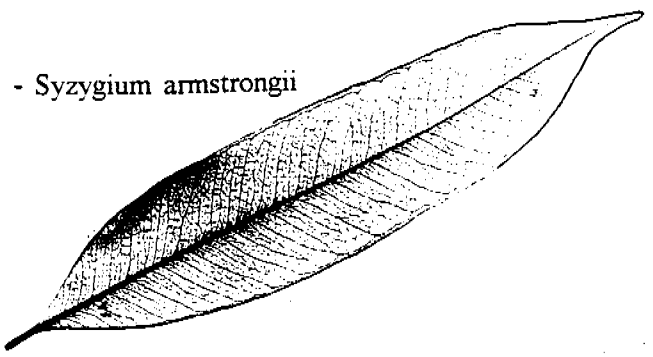
17* - **Leaves alternate** [3.3.8a-d] 20

18 - Lateral veins [3.3.9c] distinct by colour contrast [♂3.3.9l] on the undersurface 19

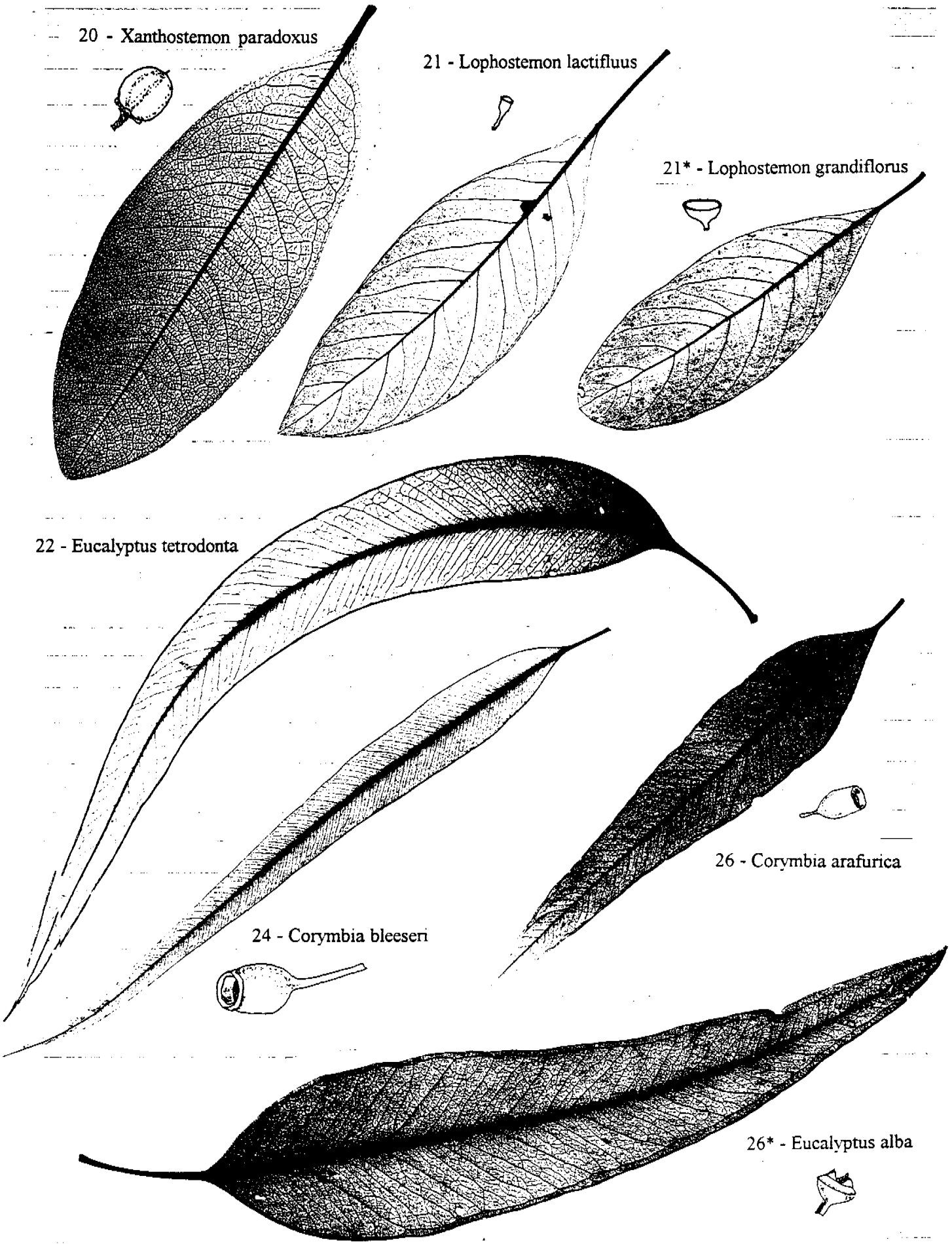
18* - Lateral veins not distinct by colour contrast ..... *Syzygium forte ssp. potamophilum*

19 - Upper leaf surface glossy; leaves broadly elliptic [♂3.3.10d] to orbicular [3.3.10e]; blades < 2 times longer than wide ..... *Syzygium suborbiculare* [Red Apple]

19* - Upper leaf surface not glossy; leaves narrow elliptic [♂3.3.10d] to slightly oblong [3.3.10d]; blades usually > 3 times longer than wide ..... *Syzygium armstrongii*



19* - Syzygium armstrongii


20 - Xanthostemon paradoxus
21 - Lophostemon lactifluus
21* - Lophostemon grandiflorus
22 - Eucalyptus tetrodonta
26 - Corymbia arafurica
24 - Corymbia bleeseri
26* - Eucalyptus alba

20 - **Fruit capsule** thick-walled, woody, globular; petioles of older leaves basally bulbous swollen [3.3.7a,b]; bark on trunk rough, grey to dark grey, coarsely flaky ..... *Xanthostemon paradoxus* [Bridal Tree]

20* - **Fruit capsule** cup-shaped, thin walled, petioles not swollen, bark not coarsely flaky 21

21 - Bark thick, loose, papery, inner bark reddish; mature trees often several-stemmed at the base; **fruit capsule** usually < 5mm diameter; pedicel (stalk) 4-5mm long ..... *Lophostemon lactifluus*

21* - Box bark [3.3.4d] grey, **fruit capsule** usually > 5mm diameter; pedicel 1-2mm long ..... *Lophostemon grandiflorus* [Northern Swamp Box]

22 - Leaves falcate [3.3.10g] ..... *Eucalyptus tetrodonta* [Darwin Stringybark]

22* - Leaves not falcate 23

23 - Bark, at least on some branches, smooth and white or pale pastel coloured *or* if no smooth, pale-coloured bark then the bark only superficially scaly and rusty red 24

23* - Bark on trunk and branches chronically rough throughout, grey, dark grey or grey-brown 29

24 - Leaves with 9 or more lateral veins [♂3.3.9c] per centimetre along the midrib in the middle of the leaf ..... *Corymbia bleeseri* [Smooth-stemmed Bloodwood]

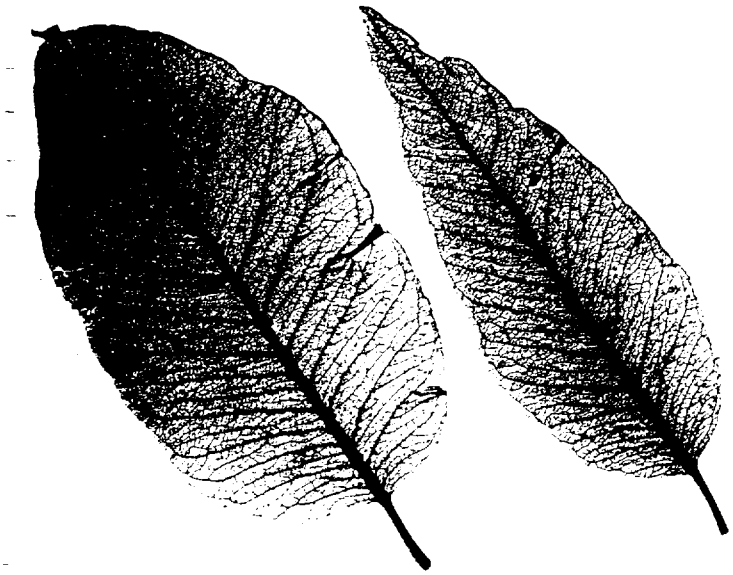
24* - Leaves with < 9 lateral veins per centimetre 25

25 - Leaves with an intra-marginal vein [3.3.9j] 26

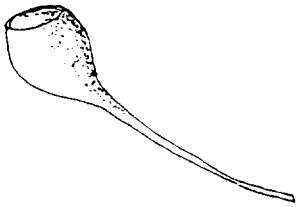
25* - Leaves without an intra-marginal vein 27

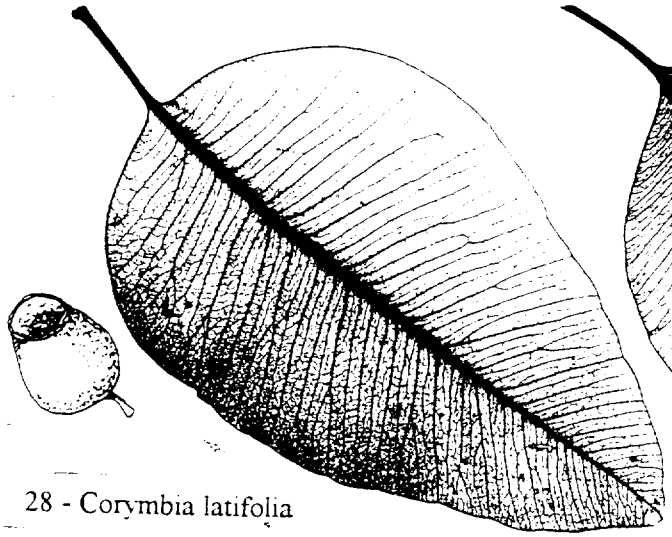
26 - Leaves without oil glands [♂3.3.14e]; not aromatic [♂3.3.13]; leaf margins often wavy; **fruit capsule** thin walled, easily crushed ..... *Corymbia arafurica* [Ghost Gum]

26* - Leaves with oil glands; aromatic; leaf margins not usually wavy; **fruit capsule** thick-walled, woody ..... *Eucalptus alba* [White Gum]

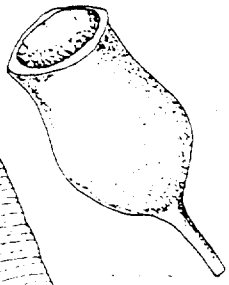


27 - Corymbia grandifolia

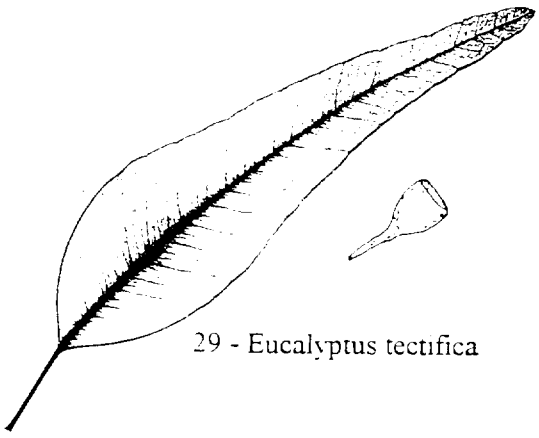




28* - Corymbia foelscheana

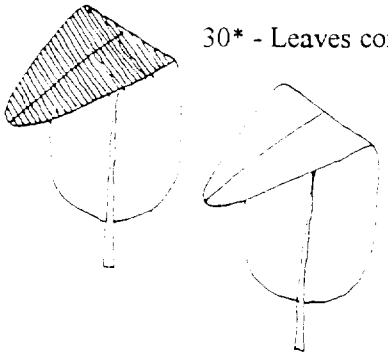


28 - Corymbia latifolia

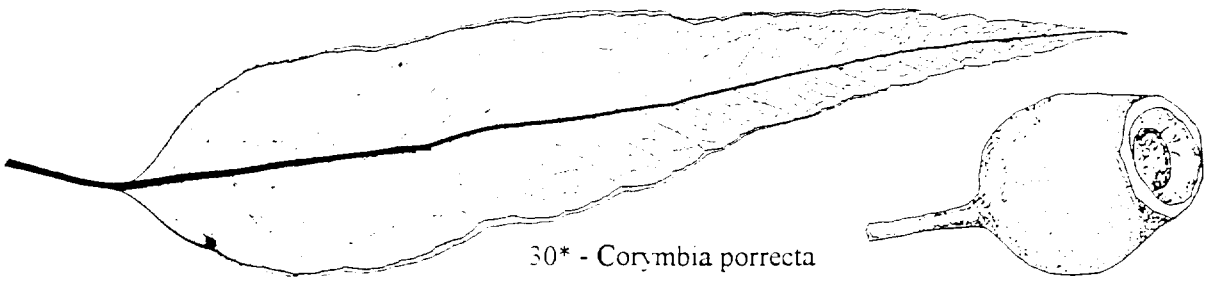


30 - Leaves discolorous

30* - Leaves concolorous



29 - Eucalyptus tectifica



30* - Corymbia porrecta

27 - **Fruit capsule** thin-walled, easily crushed; leaves with highly wavy margins; foliage often shiny ..... *Corymbia grandifolia* [Large-leaved Cabbage Gum]

27* - **Fruit capsule** thick-walled and woody; leaves not with highly wavy margins, foliage dull 28

28 - **Fruit capsule** < 13mm diameter ..... *Corymbia latifolia* [Round-leaved Bloodwood]

28* - **Fruit capsule** > 13mm diameter ..... *Corymbia foelscheana* [Broad-leaved Bloodwood]

29 - Box bark [3.3.4d], grey to ashen grey often with black mottling ..... *Eucalyptus tectifica* [Darwin Box]

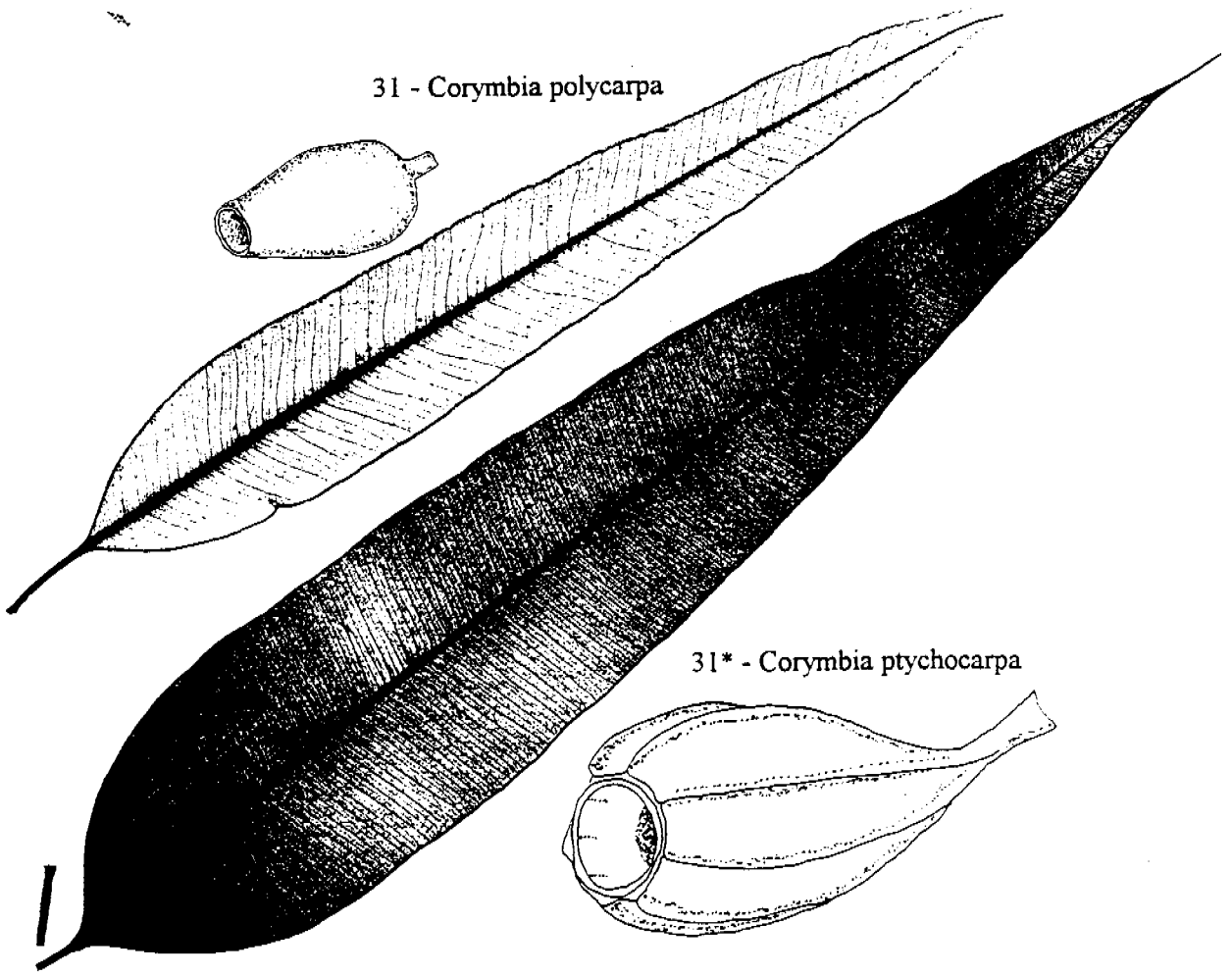
29* - Bark rough and flaky, dark grey to grey brown 30

30 - Blades **discolorous** [3.3.6d] 31

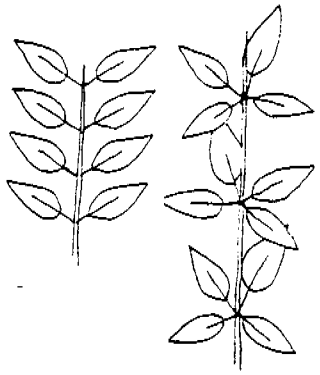
30* - Blades **concolorous** [3.3.6c] ..... *Corymbia porrecta* [Grey Bloodwood]

31 - Adult leaves < 35mm wide ..... *Corymbia polycarpa* [Long-fruited Bloodwood]

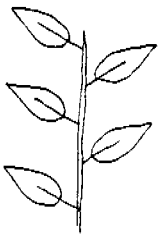
31* - Adult leaves > 50mm wide ..... *Corymbia ptychocarpa* [Swamp Bloodwood]



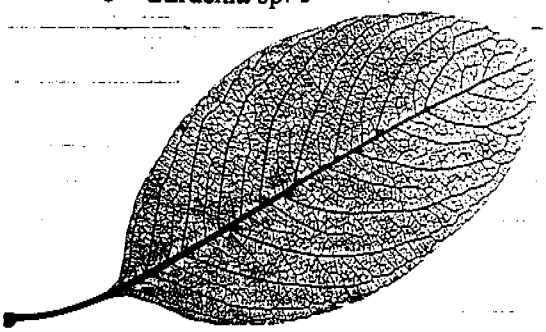
1 - Leaves opposite or in whorls



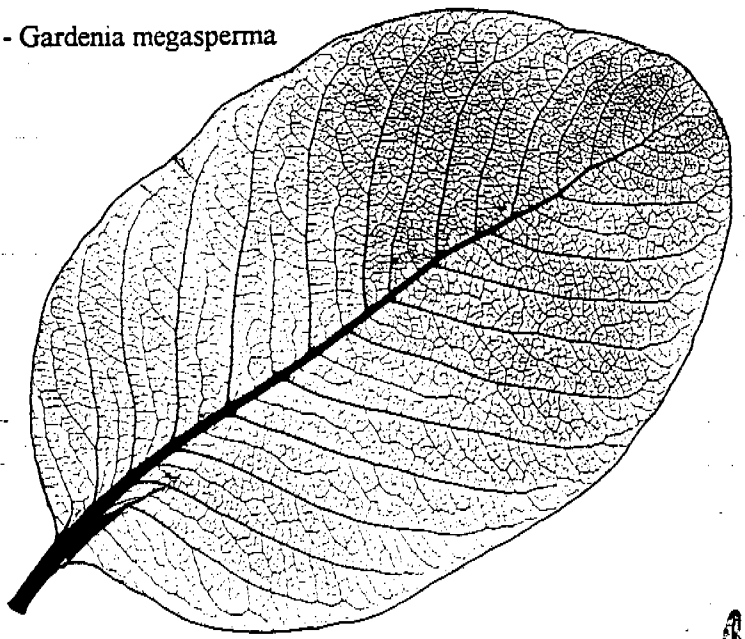
1* - Leaves alternate



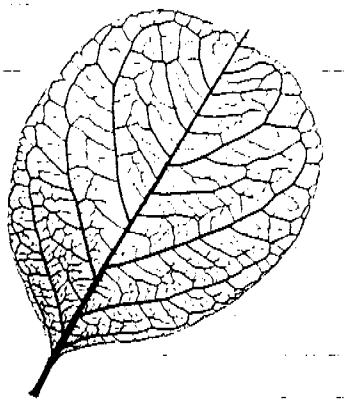
3 - Gardenia sp. 3

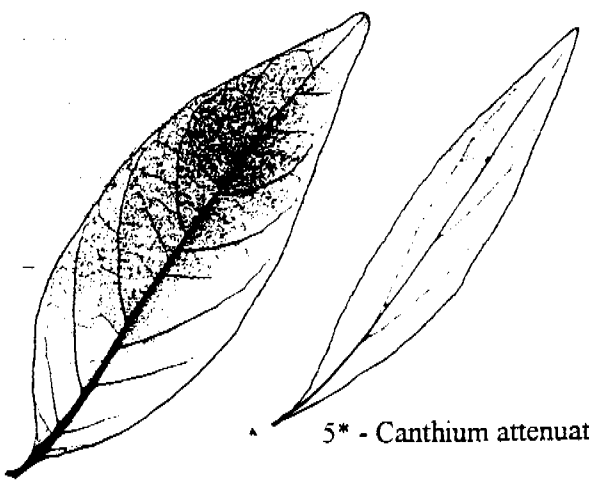


3* - Gardenia megasperma



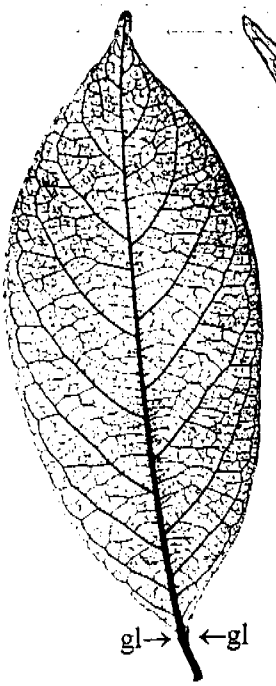
4 - Pogonolobus reticulatus





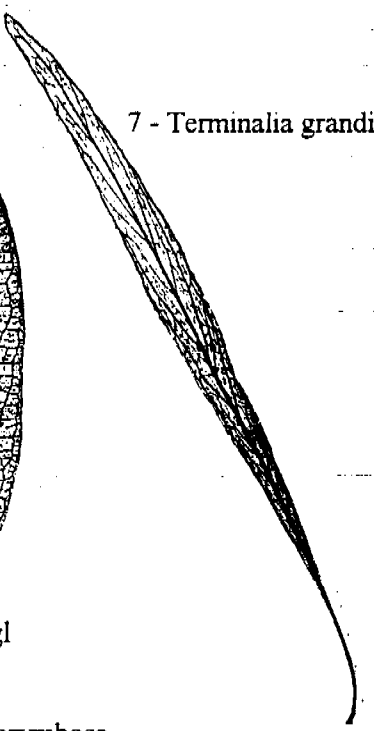
5* - Canthium attenuatum

5 - Canthium schultzii



6 - Maranthes corymbosa

7 - Terminalia grandiflora



GROUP K

Tree or shrub, no prickles, leaves simple, > 2mm wide, no sap exudate, venation not parallel, leaf shape simple, margins entire, blades without oil glands or intra-marginal vein, with domatia or paired petiole glands or paired basal glands

1 - **Leaves opposite** [3.3.8e] or in **whorls** [3.3.8g] 2
1* - **Leaves alternate** [3.3.8a-d] 6

2 - Blades hairy 3
2* - Blades not hairy 4

3 - Petioles [3.3.7] on mature leaves long, slender, > 1.5cm long, ≈ 2mm diameter; trunk bark reddish grey to red-brown ..... *Gardenia* sp. 3
3* - Petioles relatively short, thick, < 1.5cm long and ≈ 3.5mm diameter, if longer then not slender; trunk bark grey, yellowish or creamy ..... *Gardenia megasperma*

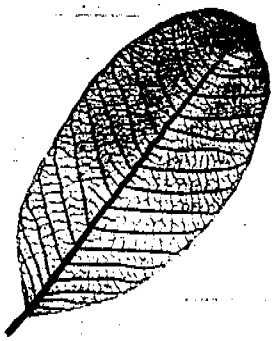
4 - Blades < 2 times longer than wide; fine veins reticulate [3.3.9d], often slightly raised on both sides; trunk bark deep-fissured, corky ..... *Pogonolobus reticulatus*
4* - Most blades > 3 times longer than wide; fine veins not raised on both surfaces; trunk bark not corky 5

5 - Trunk bark grey-brown; leaves with 6-8 pairs of lateral veins [3.3.9c] slightly raised on the undersurface ..... *Canthium schultzii*
5* - Trunk bark creamy white to pale grey, mottled; leaves with 2-4 pairs of lateral veins highly upswept toward the tip, not raised on the undersurface ..... *Canthium attenuatum*

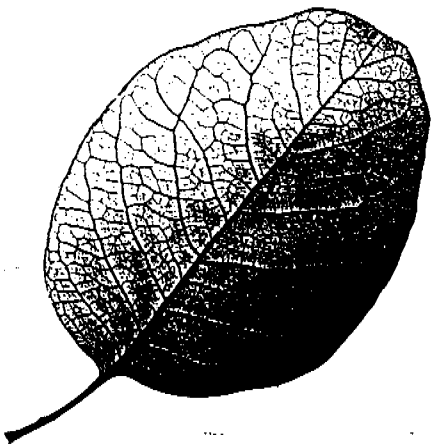
6 - Leaves with a **pair of basal glands (gl)** [3.3.14b] on the upper surface ..... *Maranthes corymbosa*
6* - Leaves without basal glands on the upper surface 7

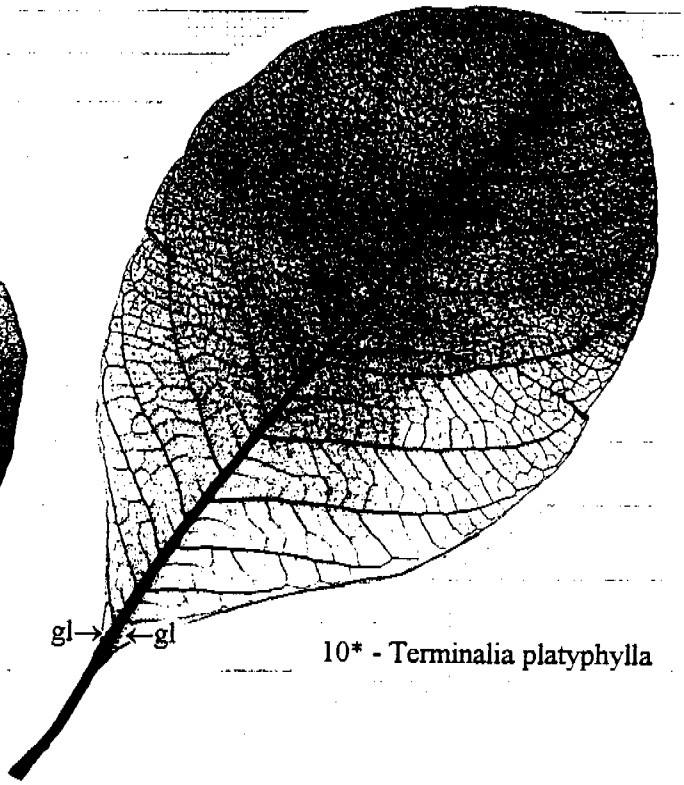
7 - Blades > 5 times longer than wide ..... *Terminalia grandiflora* [Nut Tree]
7* - Blades < 5 times longer than wide 8

9 - Parinari nonda



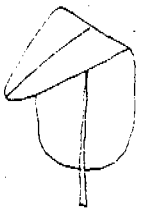
10 - Terminalia carpentariae



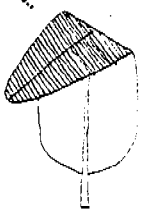


10* - Terminalia platyphylla

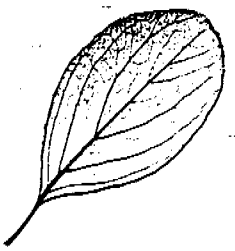
11 - blades concolorous

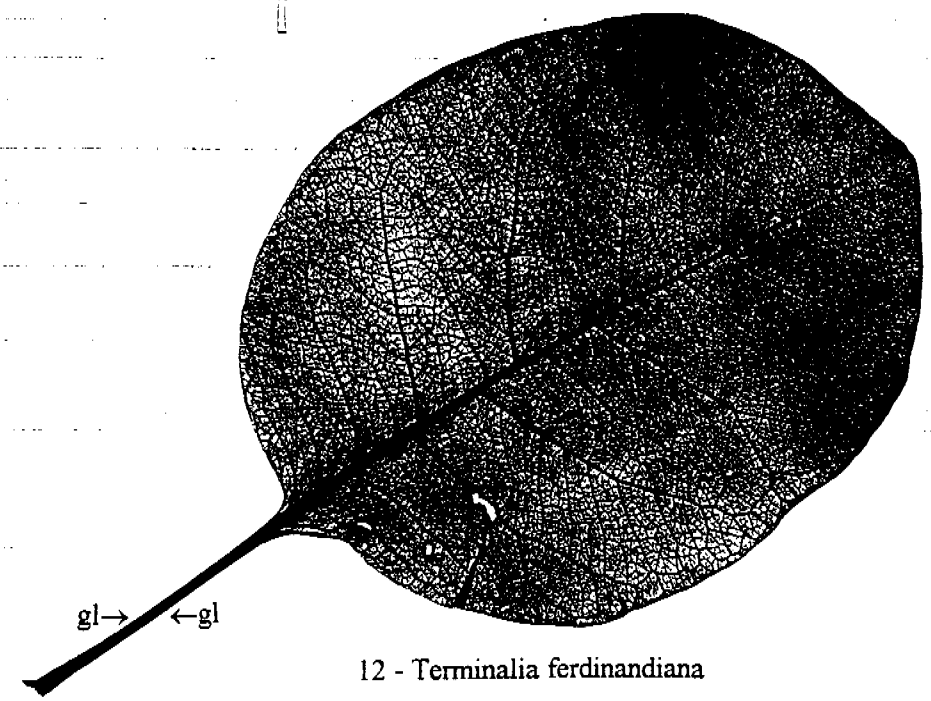


11* - blades discolorous



11 - Terminalia pterocarya





12 - Terminalia ferdinandiana

8 - Older leaves densely hairy on at least one surface 9
8* - Older leaves without hairs *or* only sparsely hairy 11

9 - Petiole [3.3.7] < 10mm long; leaf undersurface whitish to pale grey with dense adpressed [3.3.16g] matted hairs..... *Parinari nonda*
9* - Petiole >15mm long; leaf undersurface not white, hairs patent [3.3.16h] or spreading [3.3.16i]..... 10

10 - Trunk bark grey, smooth or with platey flakes; blades usually **concolorous** [3.3.6c]; leaf undersurface without basal glands [3.3.14b]; fine veins [3.3.9d] not raised on the undersurface; trees in elevated woodland situations ..... *Terminalia carpentariae* [Wild Peach]

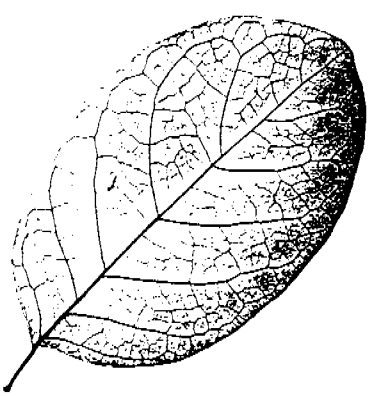
10* - Trunk bark grey to black, rough, deeply fissured or cross-fissured and chunky; blades **discolorous** [3.3.6d], most leaves with a **paired basal glands (gl)** [3.3.14b] **on the undersurface**; fine veins raised on the undersurface; trees of lowlying drainage depressions and creek lines ..... *Terminalia platyphylla* [Wild Plum]

11 - Blades **concolorous** [3.3.6c], pale grey-green ..... *Terminalia pterocarya*
11* - Blades **discolorous** [3.3.6d] 12

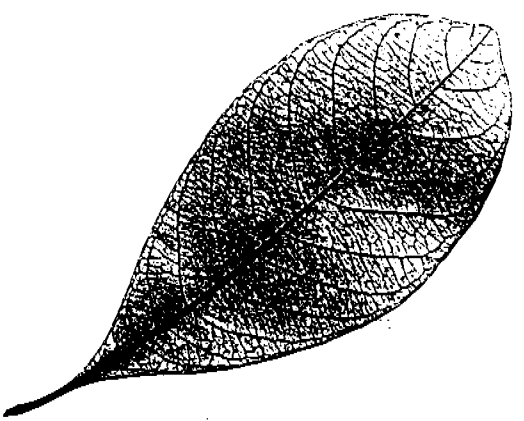
12 - Most leaves with **paired, offset, slightly raised petiolar glands (gl)** [3.3.14a]; leaves often very large..... *Terminalia ferdinandiana* [Billy-goat Plum]
12* - Leaves without petiolar glands; leaves not notably large..... 13

13 - Leaves not clustered spiral [3.3.8d]; domatia [3.3.14c] hairy; plant most commonly a shrub ..... *Antidesma ghesaembilla* [Blackcurrent Bush]
13* - Leaves clustered spiral, domatia not hairy; a tree ..... *Terminalia microcarpa* [Black Plum]

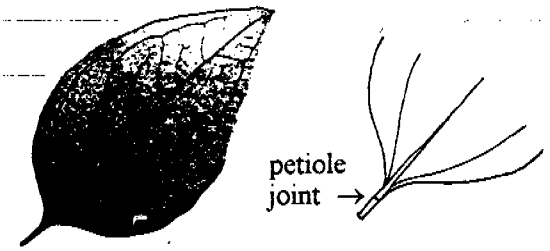
13 - Antidesma ghesaembilla



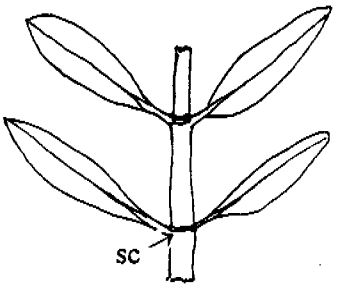
13* - Terminalia microcarpa



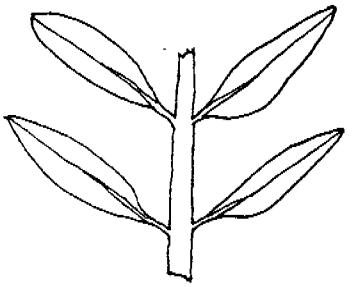
1 - Jasminum molle



2 - Branchlets nodal



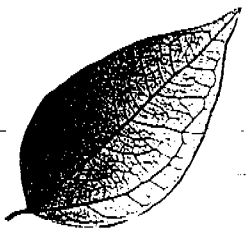
2* - Branchlets not nodal



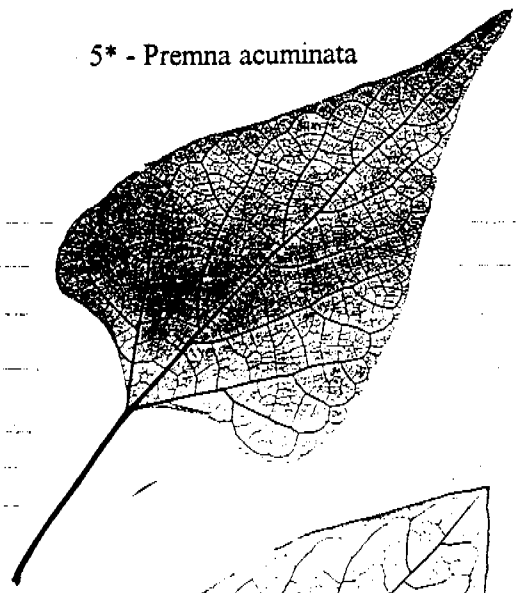
3 - Alternathera dentata

4 - strongly 3-veined at the base

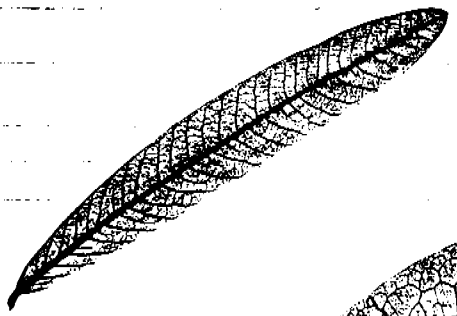
5 - Strychnos lucida

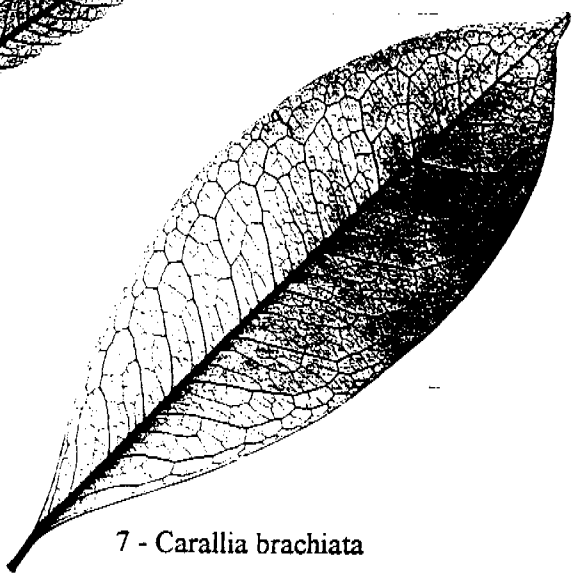


5* - Premna acuminata

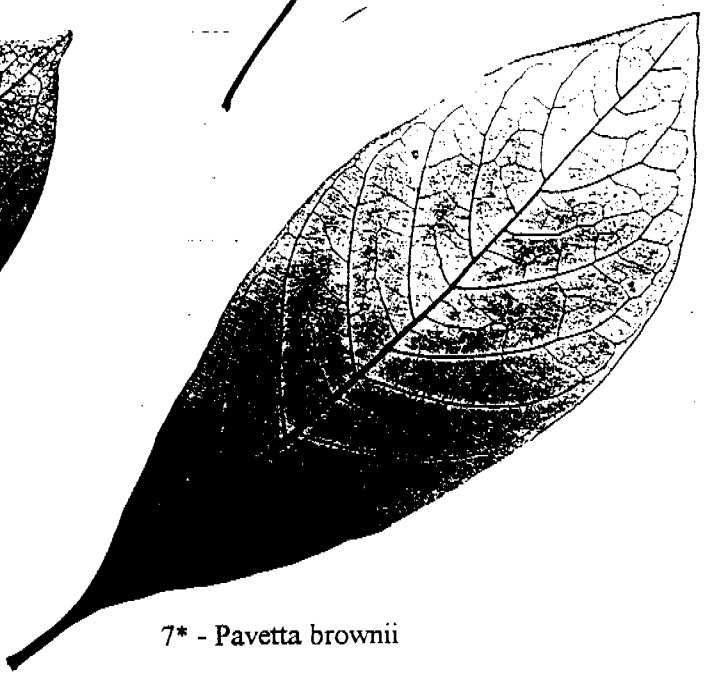


6 - Kailarsenia suffrutucosa





7 - Carallia brachiata



7* - Pavetta brownii

GROUP L

Tree or shrub, no prickles, leaves simple, > 2mm wide, no sap exudate, venation not parallel, leaf shape simple, margins entire, blades without oil glands or intra-marginal vein, no domatia, no paired petiole glands, no basal glands, leaves opposite or in whorls

NB Species names preceded by an '*' and underlined are noxious weeds and any infestations should be reported to environmental staff at Kakadu N.P., *eriss*, or the Ranger Mine.

1 - **Petiole jointed** [3.3.7f] ..... *Jasminum molle* [Native Jasmine]

1* - Petiole, if present, not jointed 2

2 - **Branchlets nodal** [3.3.2d] 3

2* - **Branchlets not nodal** 8

3 - Nearly all leaves and branchlets deep purple-red ..... *Alternanthera dentata*

3* - Leaves and stems not purple-red 4

4 - Leaves strongly **3-veined at the base** 5

4* - Leaves not strongly 3-veined at the base 6

5 - Petiole [3.3.7] usually < 5mm long; leaves not hairy ..... *Strychnos lucida* [Strychnine Bush]

5* - Petiole on mature leaves > 20mm long; leaves finely hairy ..... *Premna acuminata*

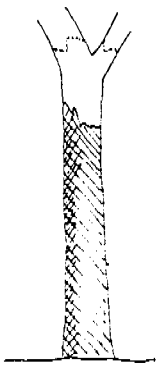
6 - Leaves in whorls [3.3.8g] of three; a several stemmed shrub usually < 20cm high ..... *Kailarsenia suffruticosa*

6* - Leaves opposite [3.3.8e] 7

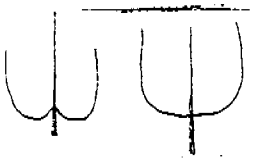
7 - Petiole shallow grooved [3.3.7c], usually < 10mm long; lateral veins on the undersurface of the blade obscure [♂3.3.9c,m] *or* lateral veins very thin, flush with and darker than the blade [♂3.3.9l]; leaf undersurface often densely speckled ..... *Carallia brachiata* [Billabong Tree]

7* - Petiole not grooved, usually > 10mm long; lateral veins on the undersurface of the blade clearly visible, raised, lighter than the blade; leaf undersurface not speckled ..... *Pavetta brownii*

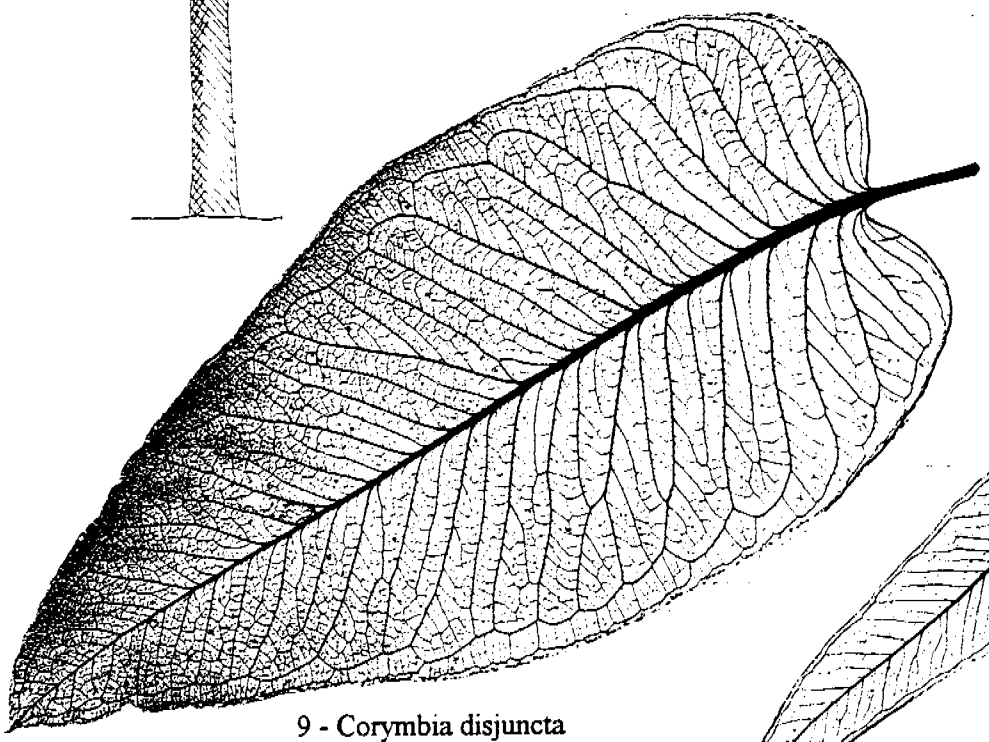
8 - Stocking of bark



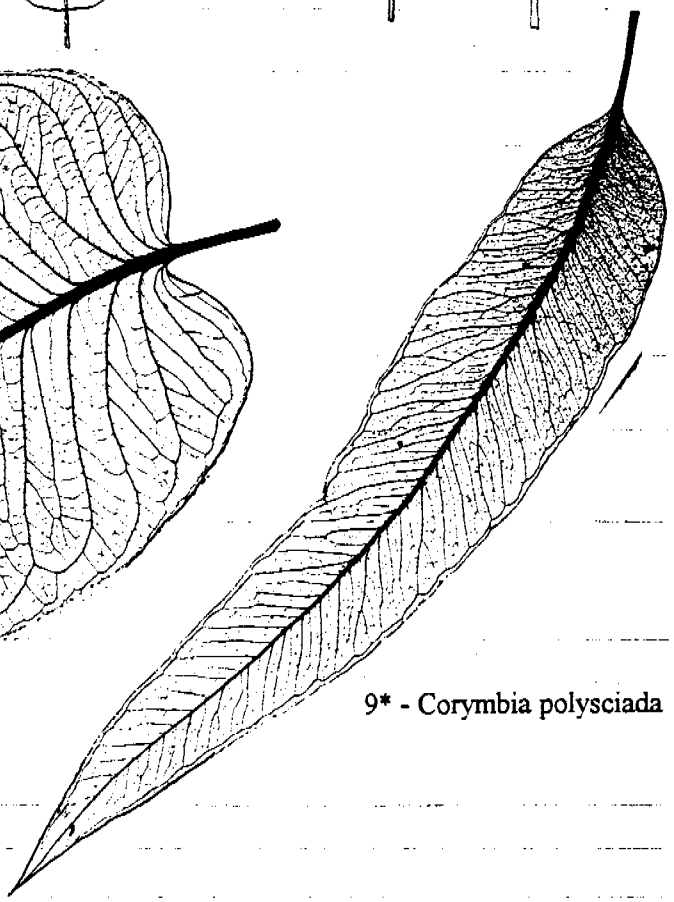
9 - Leaf base cordate or truncate



9* - Leaf base obtuse or acute

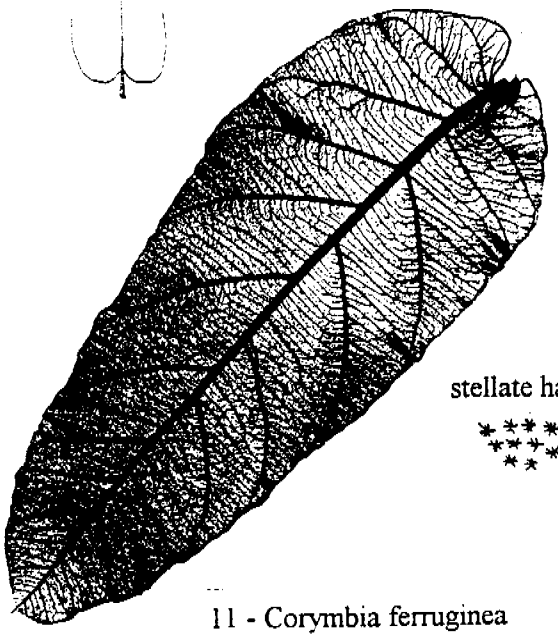


9 - Corymbia disjuncta



9* - Corymbia polysciada

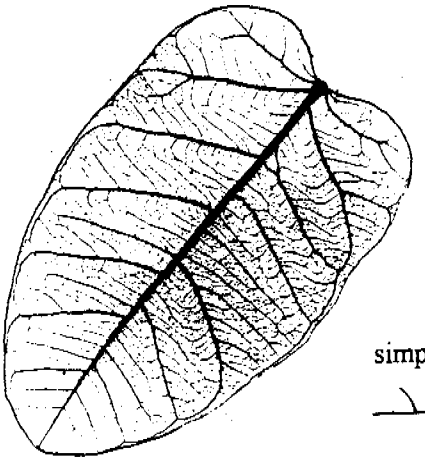
10 - Cordate base



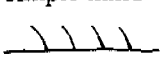
stellate hairs

11 - Corymbia ferruginea

11* - Corymbia chartacea



simple hairs



8 - Trunk with tesselated [3.3.4e] **stocking bark** [3.3.4g] 9
8* - Trunk without stocking bark 10

9 - Leaves hairy or somewhat sandpapery to touch; most blades < 3 times longer than wide; most **leaf bases cordate** [3.3.11c] to **truncate** [3.3.11b] ..... *Corymbia disjuncta* [Broad-leaved Carbeen]

9* - Leaves not hairy; blades often > 4 times longer than wide; **leaf bases obtuse** [3.3.11b] to **acute** [3.3.11b] ..... *Corymbia polysciada* [Apple Gum]

10 - Leaf bases **cordate** [3.3.11c] 11
10* - Leaf bases not cordate 12

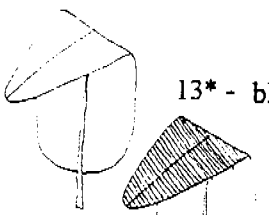
11 - New growth (leaves and twigs [3.3.2f]) densely encrusted with minute, **stellate hairs** [3.3.16c]; leaves or twigs never with conspicuous, erect simple hairs [3.3.16b]; many leaves > 80mm wide ..... *Corymbia ferruginea* [Rusty Bloodwood]

11* - Leaves or twigs usually having at least some conspicuous, erect, bristly, **simple hairs**; leaves rarely > 70mm wide ..... *Corymbia chartacea*

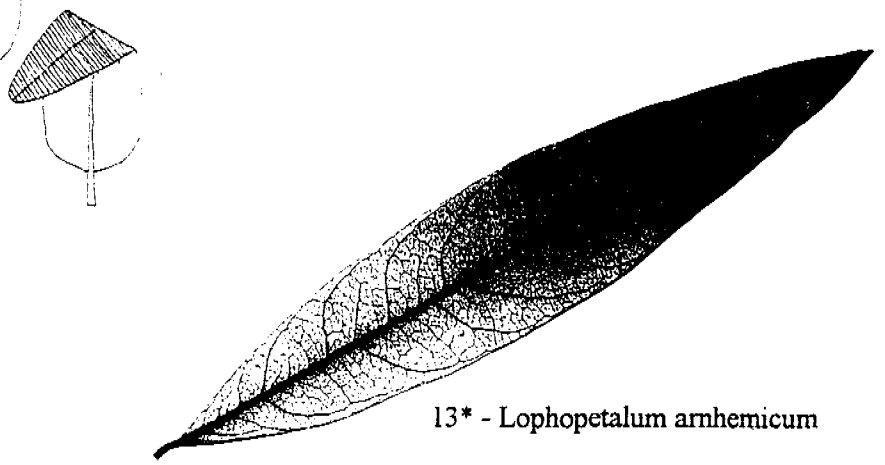
12 - Leaves with > 20 pairs of lateral veins [3.3.9c] 13
12*- Leaves with < 20 pairs of lateral veins 17

13 - Blades more or less **concolorous** [3.3.6c] 14
13* - Blades **discolorous** [3.3.6d] ..... *Lophopetalum arnhemicum*

13 - blades concolorous

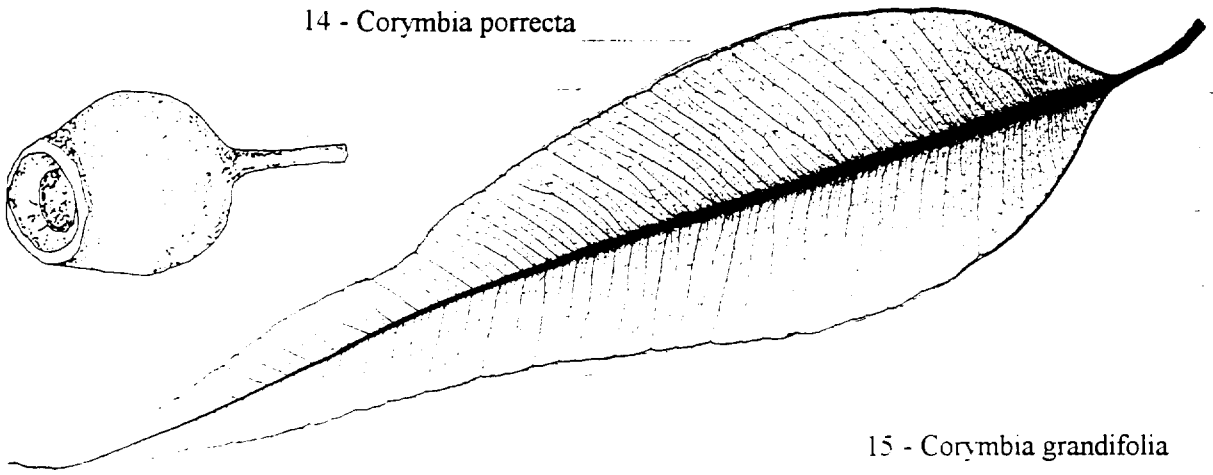


13* - blades discolorous

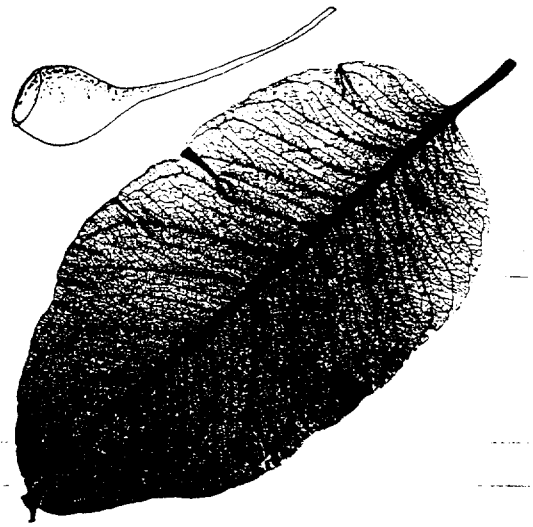


13* - Lophopetalum arnhemicum

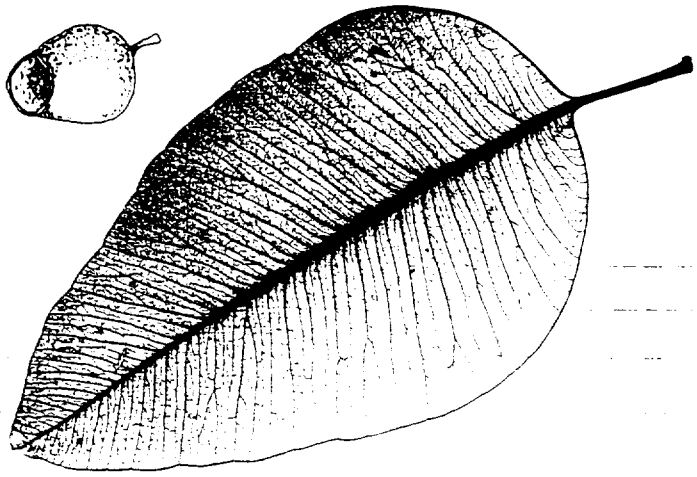
14 - Corymbia porrecta



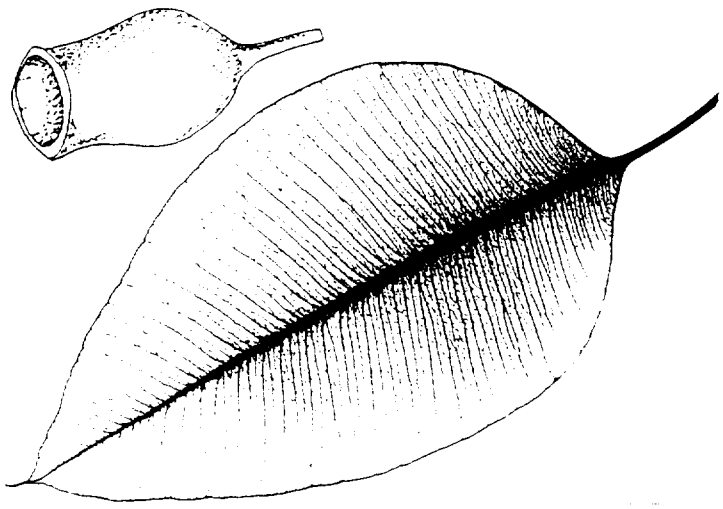
15 - Corymbia grandifolia



16 - Corymbia latifolia



16* - Corymbia foelscheana



17 - Clerodendrum floribundum

14 - Trees with chronically rough, flakey grey-brown to reddish-brown bark throughout ..... *Corymbia porrecta* [Grey Bloodwood]

14* - Trees usually with at least some smooth white or creamy bark in the upper branches 15

15 - **Fruit capsule** thin-walled, easily crushed; foliage often somewhat shiny ..... *Corymbia grandifolia* [Large-leaved Cabbage Gum]

15* - **Fruit capsule** thick-walled, woody; foliage dull, ... 16

16 - **Fruit capsule** < 13mm diameter ..... *Corymbia latifolia* [Round-leaved Bloodwood]

16* - **Fruit capsule** > 13mm diameter ..... *Corymbia foelscheana* [Broad-leaved Bloodwood]

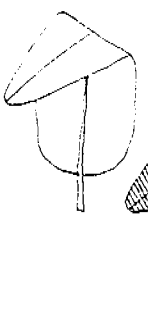
17 - Petiole [3.3.7] length ≥ 1/3 the length of the blade ..... *Clerodendrum floribundum* [Smooth Spiderbush]

17* - Petiole length < 1/6 the length of the blade 18

18 - Blades **concolorous** [3.3.6c], greyish green ..... *Santalum lanceolatum* [Plumbush]

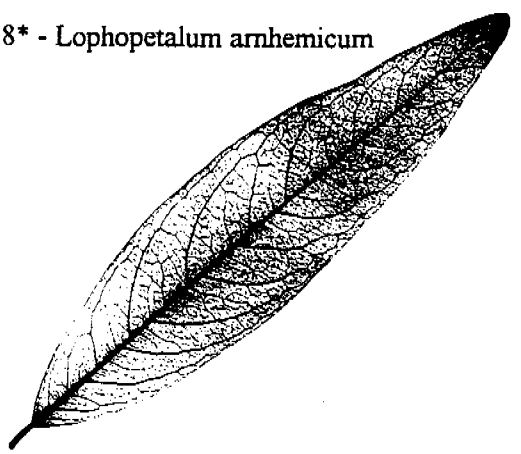
18* - Blades **discolorous** [3.3.6d] ..... *Lophopetalum arnhemicum*

18 - blades concolorous

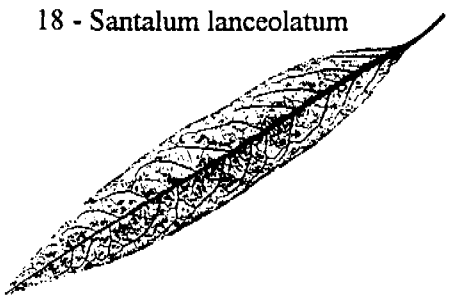


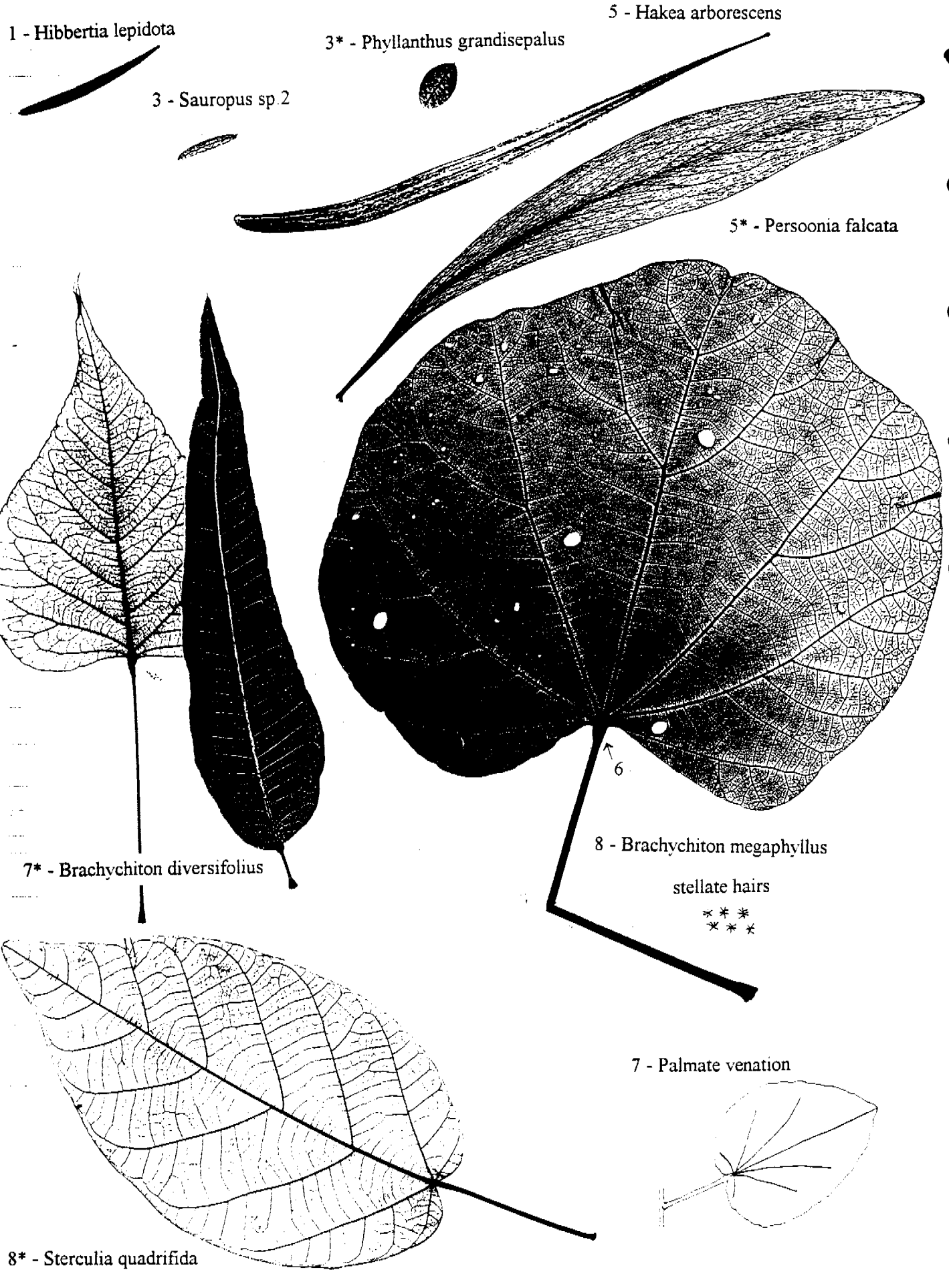
18* - blades discolorous

18* - Lophopetalum arnhemicum



18 - Santalum lanceolatum




1 - Hibbertia lepidota
3* - Phyllanthus grandisepalus
5 - Hakea arborescens
3 - Sauropus sp.2
5* - Persoonia falcata
6
8 - Brachychiton megaphyllus
stellate hairs
7* - Brachychiton diversifolius
7 - Palmate venation
8* - Sterculia quadrifida

GROUP M

Tree or shrub, no prickles, leaves simple, > 2mm wide, no sap exudate, venation not parallel, leaf shape simple, margins entire, blades without oil glands or intra-marginal vein, no domatia, no paired petiole glands, no basal glands, leaves alternate

1 - Leaves and stems encrusted with tiny circular scales ..... *Hibbertia lepidota*
1* - Leaves and stems without tiny circular scales 2

2 - Nearly all mature leaves < 25mm long [♂3.3.5e] 3
2* - Mature leaves > 25mm long 4

3 - Leaves and twigs with tiny patent hairs [3.3.16h]; most blades 2 - 3 times longer than wide ..... *Sauropus sp. 2*
3* - Leaves and twigs not hairy; most blades < 2 times longer than wide ..... *Phyllanthus grandisepalus*

4 - Leaves with obscure lateral veins [♂3.3.9c,m] 5
4* - Leaves with clearly visible lateral veins 6

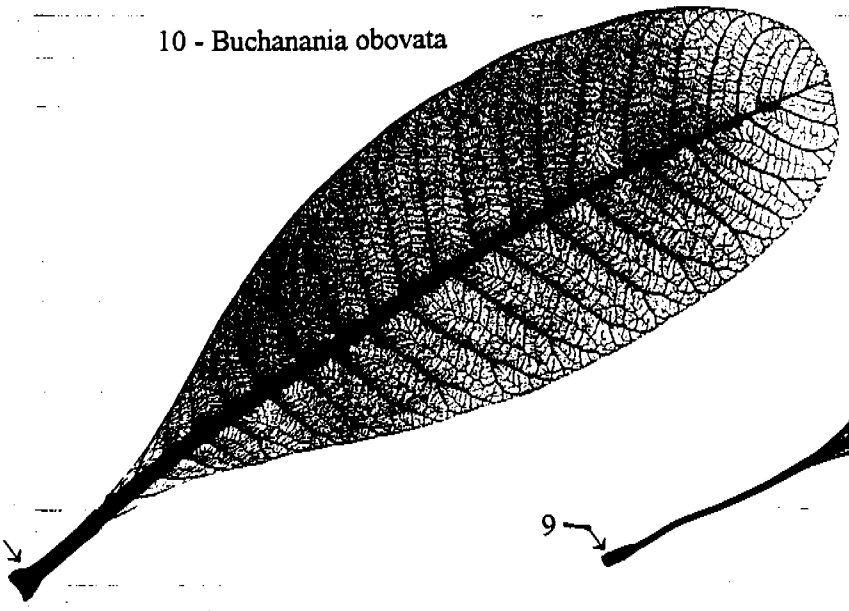
5 - Blades > 10 times longer than wide ..... *Hakea arborescens*
5* - Blades < 10 times longer than wide ..... *Persoonia falcata* [Milky Plum]

6 - Petiole [3.3.7] ≥ 10mm long, becoming **distally swollen** [3.3.7a,b] 7
6* - Petiole, if longer than 10mm then not distally swollen 9

7 - Leaf **venation strongly palmate** [3.3.9h] 8
7* - Leaf venation not palmate ..... *Brachychiton diversifolius* [Northern Kurrajong]

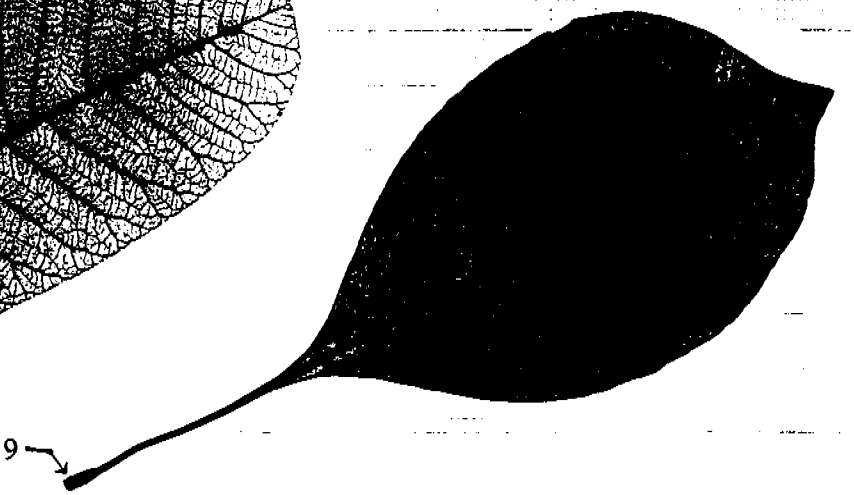
8 - Blades almost as wide as long; leaf tips broadly rounded or notched; leaves with dense short **stellate hairs** [3.3.16c] ..... *Brachychiton megaphyllus* [Red-flowered Kurrajong]
8* - Blades almost 2 times longer than wide; leaf tips narrow rounded; leaves with sparse, minute, stellate hairs *or* without hairs ..... *Sterculia quadrifida* [Peanut Tree]

10 - Buchanania obovata



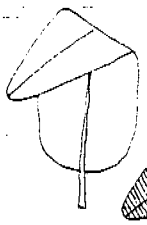
9

10* - Planchonella pohlmaniana

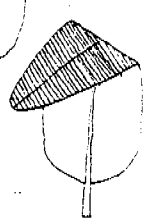


9

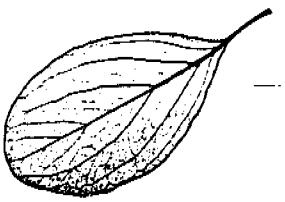
11 - blades concolorous



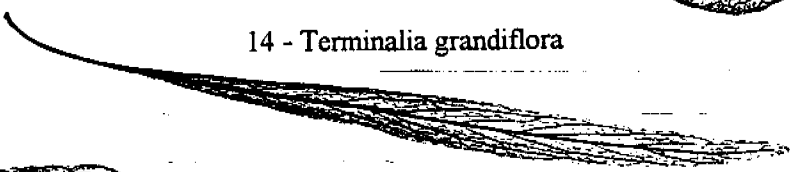
11* - blades discolorous

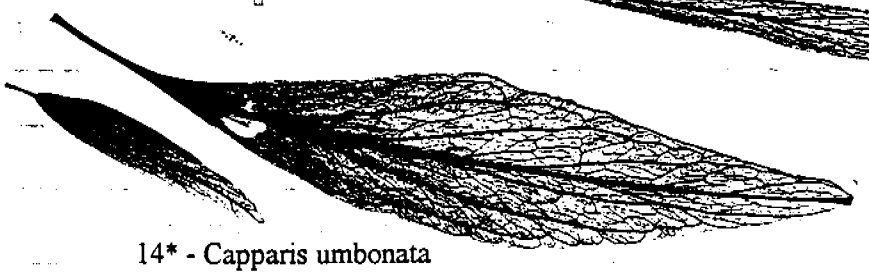


13 - Terminalia pterocarya



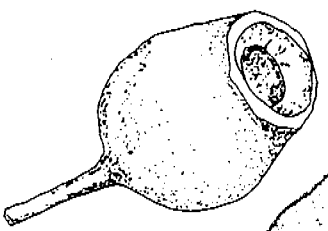
14 - Terminalia grandiflora

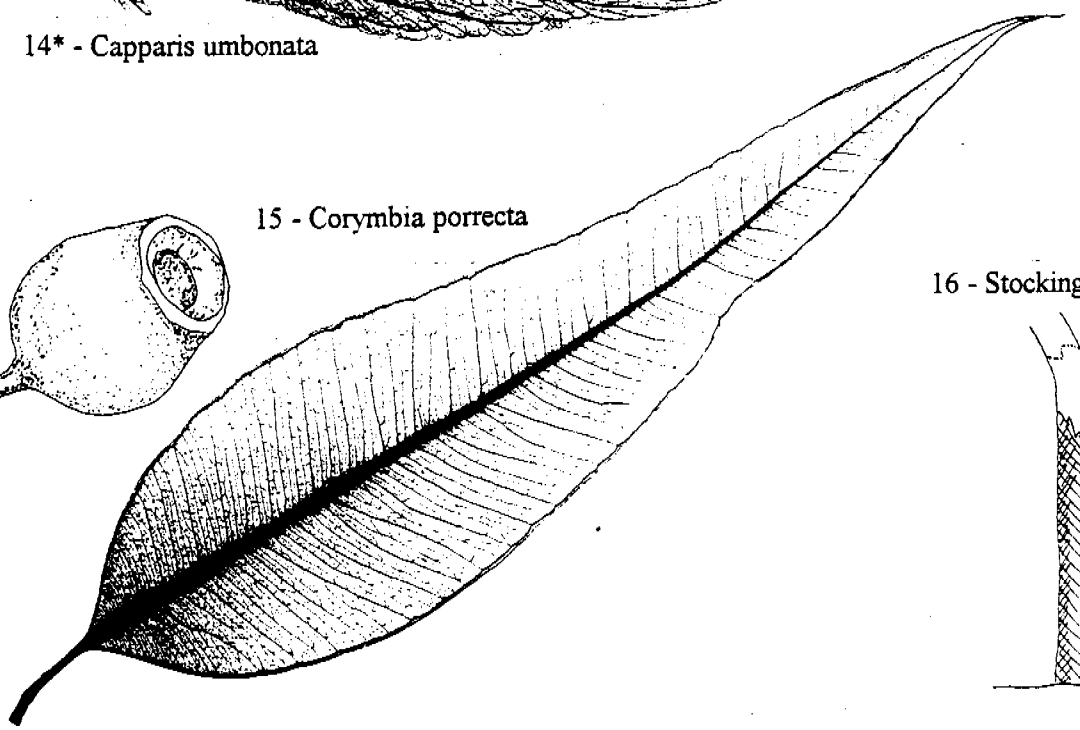




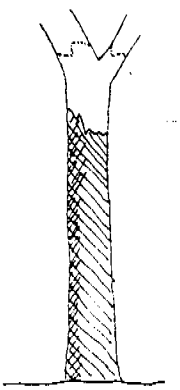
14* - Capparis umbonata

15 - Corymbia porrecta





16 - Stocking of bark



9 - Many **petioles basally swollen** [3.3.7a,b] 10

9* - Petioles not basally swollen 11

10 - Petiole thick ≈ 4mm diameter, and relatively short < 20mm long; leaves oblong [3.3.10d] or obovate [3.3.10b]; larger leaves normally with > 17 pairs of lateral veins [♂3.3.9c] ..... *Buchanania obovata* [Green Plum]

10* - Petiole more slender < 2mm diameter (mid way), and longish > 25mm long; leaves elliptic [3.3.10d] or slightly obovate [3.3.10b]; nearly all leaves with < 17 pairs of lateral veins; bark on mature trees often distinctively deep cross-fissured into squarish chunks, 'crocodile-skin' bark ..... *Planchonella pohlmaniana* [Yellow Boxwood]

11 - **Blades concolorous** [3.3.6c] 12

11* - **Blades discolorous** [3.3.6d] 20

12 - Leaves with < 10 pairs of lateral veins [♂3.3.9c] 13

12* - Leaves with > 10 pairs of lateral veins 15

13 - Blades < 3 times longer than wide ..... *Terminalia pterocarya*

13* - Blades > 3 times longer than wide 14

14 - Leaves clustered spiral [3.3.8d] on short twigs [3.3.2f]; twigs and leaves often with a sparse covering of short, simple [3.3.16b], adpressed [3.3.16g] hairs ..... *Terminalia grandflora* [Nut Tree]

14* - Leaves not spiral clustered; twigs and leaves not hairy ..... *Capparis umbonata* [Northern Wild Orange]

15 - Bark chronically rough, flaky, grey-brown to reddish-brown throughout ..... *Corymbia porrecta* [Grey Bloodwood]

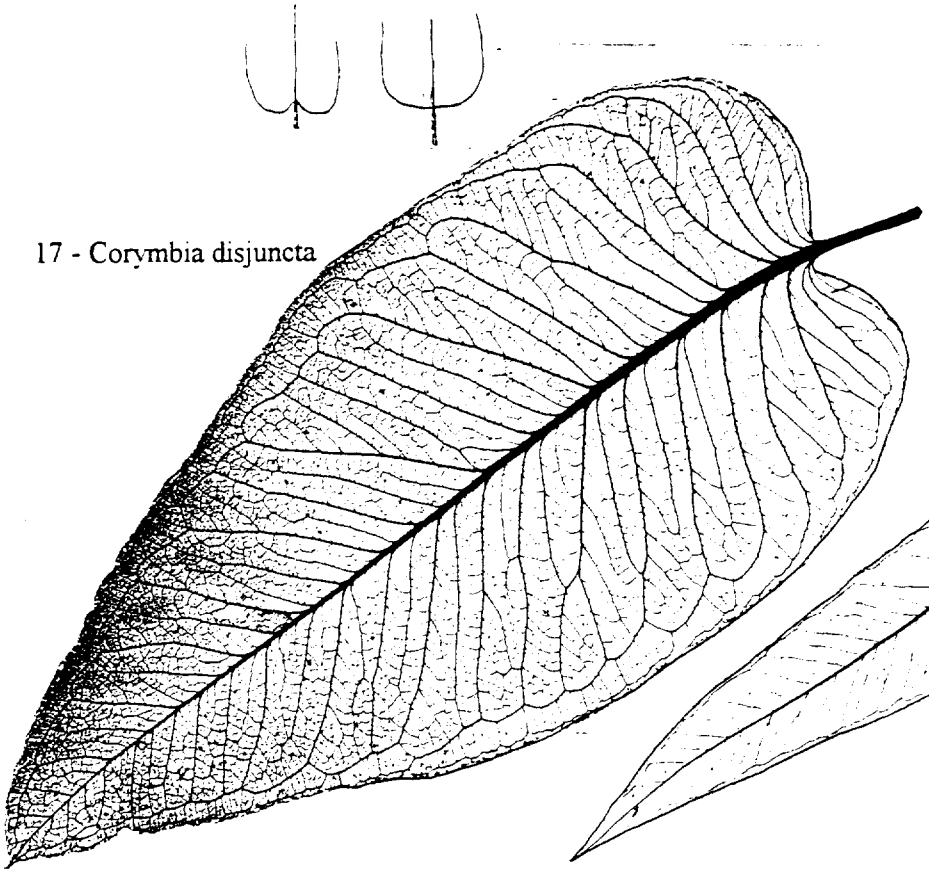
15* - Bark smooth white, cream or pinkish at least in the upper branches 16

16 - Trunk with **stocking bark** [3.3.4g] 17

16* - Trunk without stocking bark 18

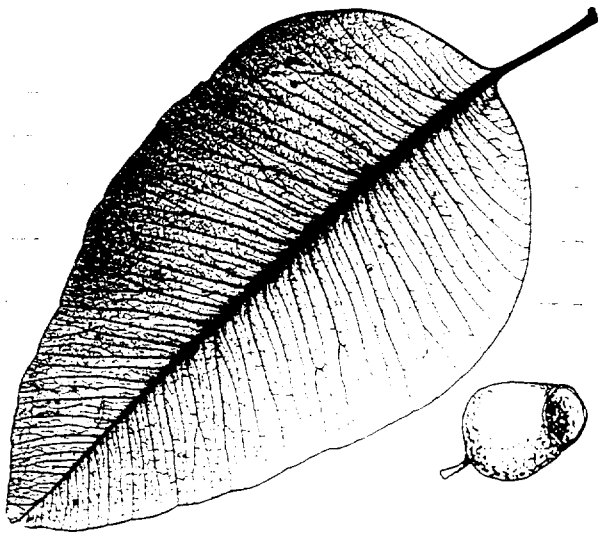
17 - Leaf bases cordate or truncate

17* - Leaf bases obtuse or acute

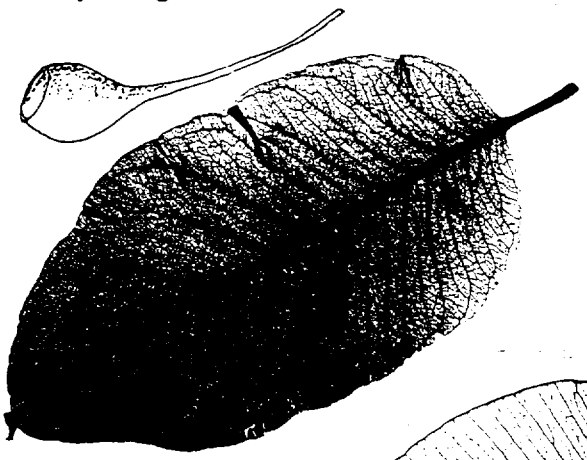


17 - Corymbia disjuncta

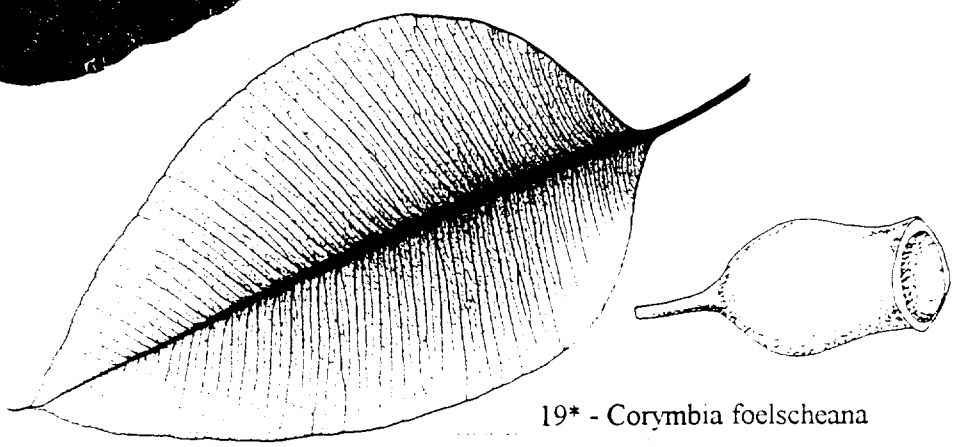
17* - Corymbia polysciada



18 - Corymbia grandifolia



19 - Corymbia latifolia



19* - Corymbia foelscheana

17 - Leaves hairy, somewhat sandpapery to touch; most **leaf bases cordate** [3.3.11c] to **truncate** [3.3.11b]; most blades < 3 times longer than wide ..... *Corymbia disjuncta* [Broad-leaved Carbeen]

17* - Leaves not hairy; **leaf bases obtuse** [3.3.11b] to **acute** [3.3.11b]; most blades > 3 times longer than wide ..... *Corymbia polysciada* [Apple Gum]

18 - **Fruit capsule** thin-walled, easily crushed; foliage often shiny ..... *Corymbia grandifolia* [Large-leaved Cabbage Gum]

18* - **Fruit capsule** thick-walled and woody; foliage dull 19

19 - **Fruit capsule** < 13mm diameter ..... *Corymbia latifolia* [Round-leaved Bloodwood]

19* - **Fruit capsule** > 13mm diameter ..... *Corymbia foelscheana* [Broad-leaved Bloodwood]

20 - Leaf undersurface dull and white or almost white 21

20* - Leaf undersurface not dull and white 24

21 - Leaf undersurface covered with densely matted hairs 22

21* - Leaf undersurface not hairy ..... *Denhamia obscura*

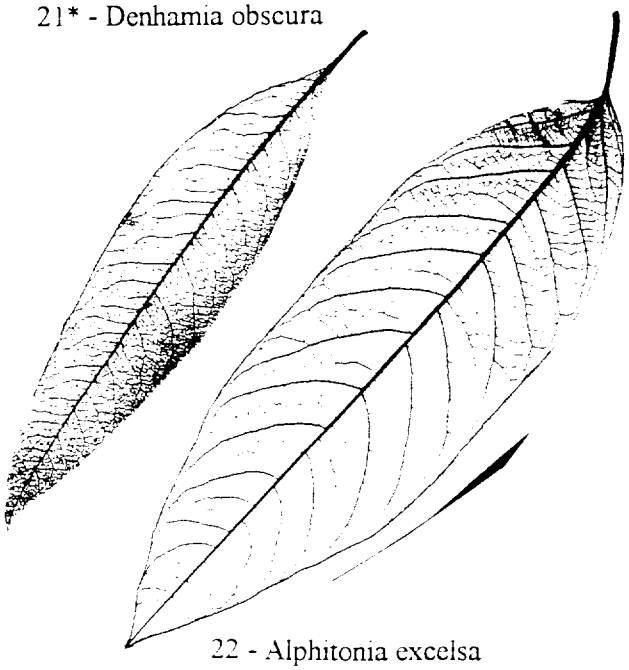
22 - Petiole grooved [3.3.7c] ..... *Alphitonia excelsa* [Red Ash]

22* - Petiole not grooved 23

23 - Leaves > 30mm wide; fine veins reticulate [3.3.9d] clearly visible on the undersurface; most blades < 3 times longer than wide; petiole [3.3.7] distinct; mature plant a tree ..... *Parinari nonda*

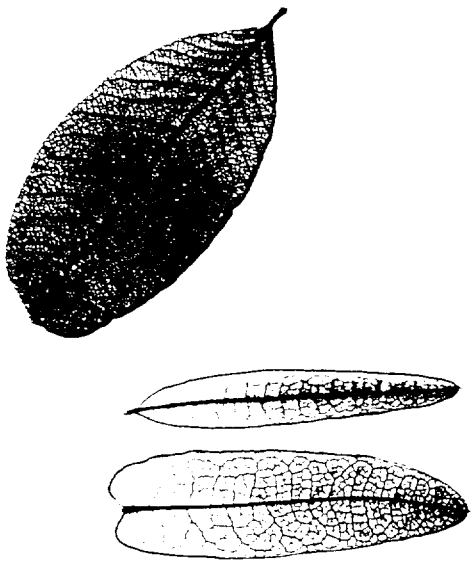
23* - Leaves < 30mm wide; fine veins not clearly visible on the undersurface; most blades > 3 times longer than wide; petiole often absent; mature plant a shrub ..... *Hibbertia brownii*

21* - Denhamia obscura



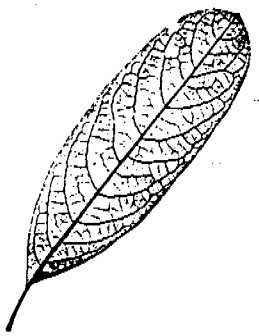
22 - Alphitonia excelsa

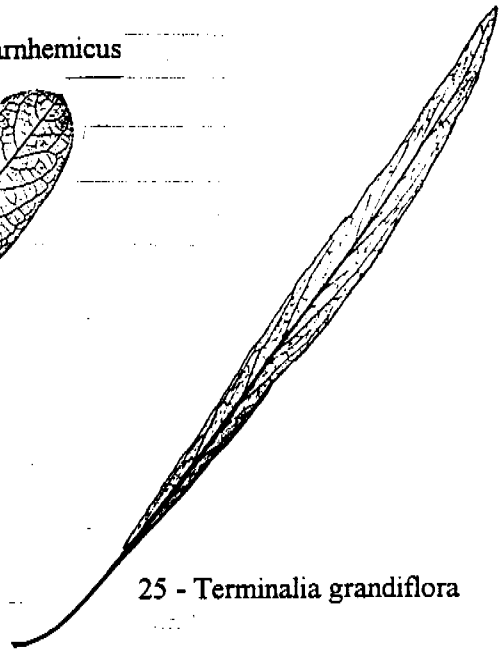
23 - Parinari nonda



23* - Hibbertia brownii

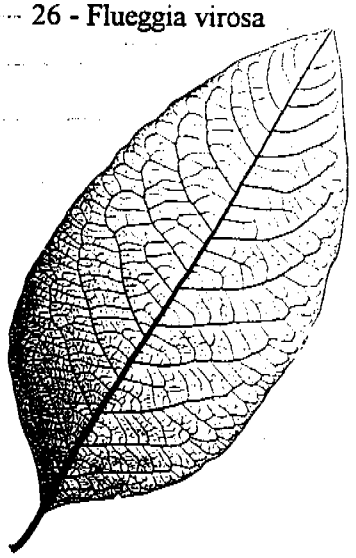
24 - Distichostemon arnhemicus



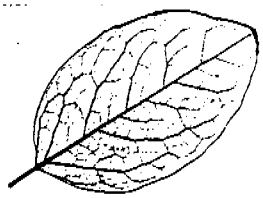


25 - Terminalia grandiflora

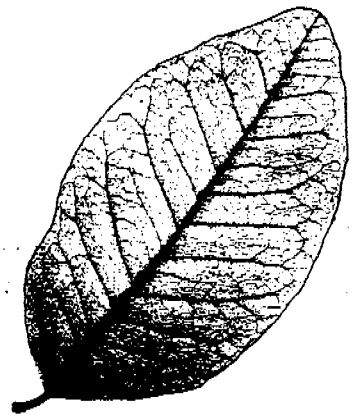
26 - Flueggia virosa



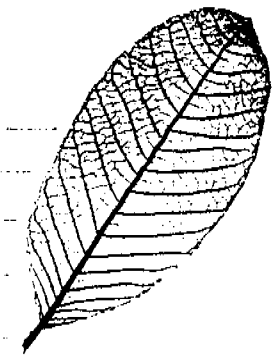
28 - Petalostigma quadriloculare



29* - Pouteria sericea

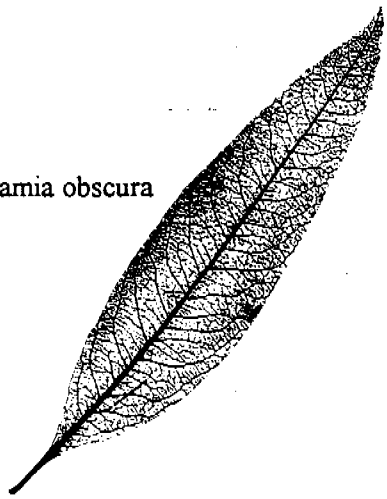


31 - Parinari nonda

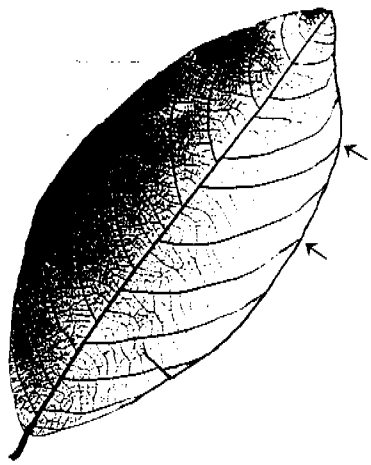


29 - Petalostigma pubescens

31* - Denhamia obscura



32 - Briedelia tomentosa



24 - Leaves covered with very short patent hairs [3.3.16h] on both surfaces, somewhat velvety, spongy or springy to touch ..... *Distichostemon arnhemicus*

24* - Leaves without patent springy hairs on both surfaces 25

25 - Most blades ≥ 5 times longer than wide ..... *Terminalia grandiflora* [Nut Tree]

25* - Blades < 5 times longer than wide 26

26 - Upper surface of leaves finely wrinkled [3.3.9k]; petioles often shallow grooved [3.3.7c] ..... *Flueggia virosa*

26* - Upper surface of leaves not wrinkled; petioles not grooved 27

27 - Leaf undersurface densely covered with somewhat silky, shining hairs 28

27* - Leaves without silky hairs on the undersurface 30

28 - Mature plant a shrub, generally < 1m tall, with many slender stems at the base; abundant in well drained woodlands ..... *Petalostigma quadriloculare* [Quinine Bush]

28* - Plant a small to moderate sized tree; single stemmed 29

29 - Mature leaves < 60mm long [3.3.5e], < 10 pairs of lateral veins [☞3.3.9c]; upper leaf surface often shiny ..... *Petalostigma pubescens* [Quinine Tree]

29* - Mature leaves frequently > 60mm long , > 10 pairs of lateral veins; upper leaf surface usually dull ..... *Pouteria sericea* [Black Plum]

30 - Most mature leaves with > 15 pairs of lateral veins [☞3.3.9c], ... 31

30* - Mature leaves with < 15 pairs of lateral veins 32

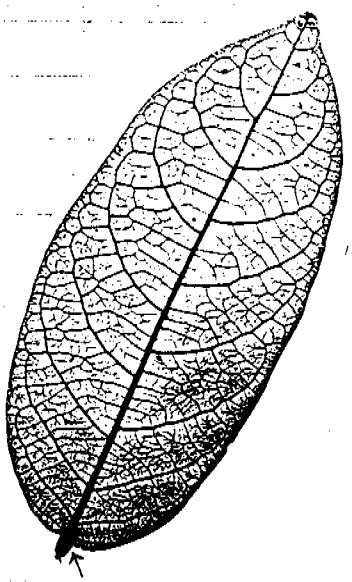
31 - Leaf undersurface with dense matted hairs; most blades < 3 times longer than wide; lateral veins [3.3.9c] having a distinctive 'herringbone' pattern ..... *Parinari nonda*

31* - Leaf undersurface not hairy; most blades > 3 times longer than wide; lateral veins not having a 'herringbone' pattern ..... *Denhamia obscura*

32 - Many lateral veins [3.3.9c] clearly intersecting the margin ..... *Briedelia tomentosa*

32* - All lateral veins looping or disintegrating before reaching the margin 33

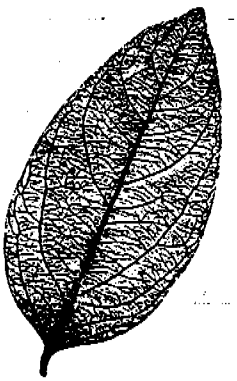
33 - Glochidion apodogynum



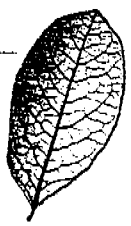
33 - petiole

34 - Petalostigma pubescens

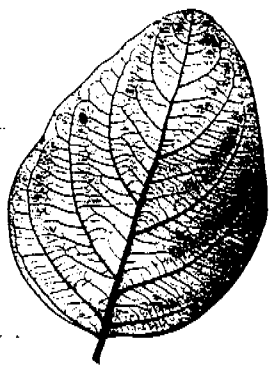
35 - Opilia amentacea



36 - Phyllanthus reticulatus



36* - Breynia cernua



33 - **Petiole** [3.3.7] **short and stout, rather thicker than expected** (viewed from the undersurface), becoming darker than the mid-rib [3.3.9g] on older leaves ..... *Glochidion apodogynum*

33* - Petiole not thicker than expected 34

34 - Leaves hairy on the undersurface ..... *Petalostigma pubescens* [Quinine Tree]

34* - Leaves not hairy on the undersurface 35

35 - Blades of older leaves thickish, brittle [3.3.6e]; leaf undersurface often somewhat shiny; branches weak, trailing or rambling [3.3.3c] ..... *Opilia amentacea*

35* - Blades of older leaves not brittle; leaf undersurface very dull, often greyish green 36

36 - Twigs [3.3.2f] very slender, most ≤ 1mm diameter; bark at base of plant not fissured, often with dense raised lenticels [3.3.4h]; a rambling [3.3.3c] shrub ..... *Phyllanthus reticulatus*

36* - Twigs usually > 1.5mm in diameter, bark at base of plant becoming rough fissured; a spreading shrub or small tree ..... *Breynia cernua*

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Calytrix arborescens - MYRTACEAE E4

Calytrix brownii - MYRTACEAE E6

Calytrix exstipulata - MYRTACEAE E5*

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Corymbia polycarpa - MYRTACEAE J31

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Syzygium eucalyptoides ssp. eucalyptoides - MYRTACEAE J16

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