Trees and Shrubs of Black Mountain, Mt. Ainslie and Mt. Majura

A KEY BASED ON VEGETATIVE CHARACTERISTICS

Laurence G. Adams

Centre for Plant Biodiversity Research

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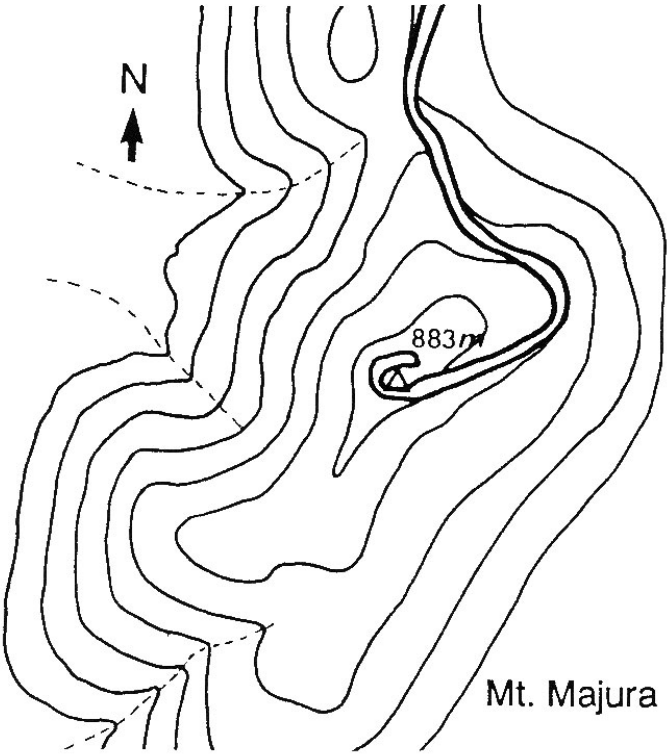
N
Belconnen Way
Black Mountain
Caswell Drive
Barry Drive
CSIRO
National Botanical Gardens
810m
Telecom Tower
ANU
Clunies Ross Street
Lady Denman Drive
Lake Burley Griffin
Black Mountain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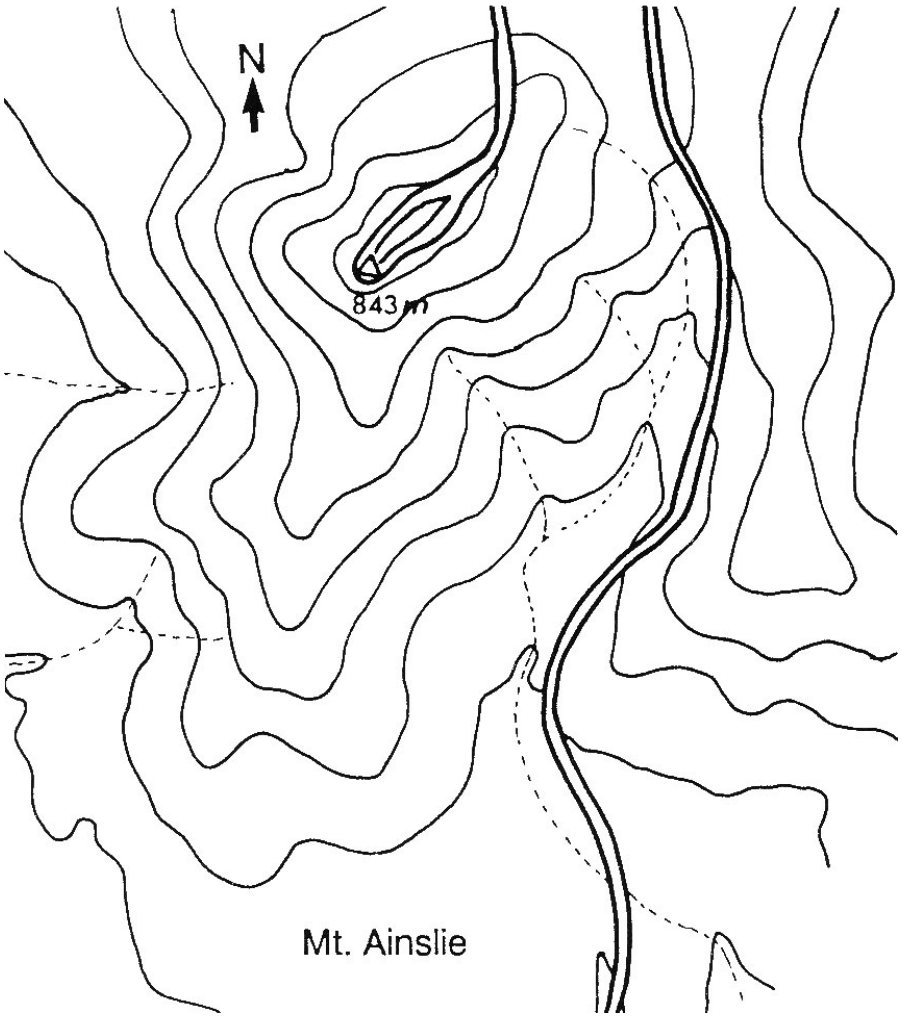
N
843m
Mt. Ainslie

Contents

Introduction

Black Mountain Reserve on the one hand and Mount Ainslie/Mount Majura Reserve on the other are, geologically speaking, of very different age and material. Black Mtn is entirely derived from sedimentary rocks, mainly fine-grained quartz sandstone (Black Mtn Sandstone - Lower Silurian) with a smaller area on the western and northern side of even older shales and siltstones (Pittman Formation - Middle Ordovician). The Ainslie-Majura ridge, by contrast, is of younger acidic volcanics (Ainslie Volcanics - Middle Silurian [not Lower Devonian as previously thought]). Detailed descriptions of the respective geology can be found in R.S.Abell: “Geology of the Canberra 1:100,000 Sheet Area.” - *BMR Bulletin* 233 (1991).

Despite this very different geology, both reserves carry a generally similar vegetation, the climax community being dry sclerophyll forest and woodland, in the main dominated by *Eucalyptus rossii*, *E. mannifera* and *E. macrorhyncha*. The only significant difference in canopy species is the far greater amount of *E. melliodora*, *E. bridgesiana* and *E. blakelyi* on Ainslie/Majura, predominantly on the lower slopes, reflecting the larger areas of deeper soils within the reserve compared with Black Mtn. One other distinction is that *Allocasuarina verticillata* is unaccountably common in the former but very rare in the latter. On the other hand Black Mtn has a significantly richer shrub and herbaceous flora, no doubt correlated with soils derived from the sandstone. Each has at least one native tree species not found in the other: *Callitris* (Black Mtn, a small colony on the western side), and *Brachychiton* (Mt Majura, purported to have been originally planted, but now thoroughly naturalised).

Both reserves had been subjected to considerable interference since European settlement in the area, mainly from stock grazing, burning and timber harvesting; it is probably unlikely however that, overall, the respective native floristic compositions have been significantly altered except in proportions of individuals of species present. The most obvious change to the casual observer is, of course, the presence of exotic trees, shrubs and weedy herbs; the latter, in particular, becoming dominant over small areas to the exclusion of almost all native species.

Although the Key has been written exclusively around the flora of the two reserves, it will be found to have relevance to most of the indigenous woody flora of Canberra's Nature Park system. The taxa treated are those that have been recorded up to the time of writing. A name that has been used in a leading work in the last 35 years (e.g. Burbidge & Gray: *Flora of the ACT*) but currently reduced to synonymy is given (in parentheses) immediately after the accepted name.

The few deciduous species represented (all introduced) were thought not significant enough to warrant keying out in any other than their full-leaf condition.

Throughout this work all main foliar structures are, for the sake of convenience, treated as leaves or leaflets even though, in the case of certain *Acacia* spp., the 'leaves' are actually phyllodes. Refer to the glossary for definitions of all other terminology used. In the few instances where supplementary flower and fruit characters have been utilized they are always given last [in square brackets].

Certain herbaceous species may on occasion cause difficulty by becoming "woody" and shrub-like when fully grown, and in some instances may even briefly resume growth from aerial stems that have survived the winter. The number of species that have this tendency is very small, and they are fairly readily distinguished in the field from true shrubs by the presence of dead stems from the previous year; they have been ignored for the purposes of this Key.

As an additional aid, a number is given in parentheses immediately following each lead; this represents the earliest month in a normal year in which one could be reasonably sure of finding the taxon in flower. However, depending on seasonal weather variation, time of flowering can fluctuate by up to a month, so this figure should be taken as a rough guide only.

If difficulty is found in reaching a positive identification for a plant, the reason could be that the user has found a taxon previously unrecorded for the area; or possibly the Key itself has not taken sufficient account of the occurrence of aberrant features. Notice of any new records, problems or errors encountered would be gratefully received by the author.

The only tools required are an 8x–10x hand-lens and a metric rule.

Key to Groups

1a.	Plants parasitic on branches of shrubs and trees	Group A
1b.	Plants terrestrial	2
2a.	Leaves reduced to minute scales or teeth rarely up to 1.5 mm long on green branchlets, sometimes early-deciduous or absent	Group B
2b.	Leaves well-developed, at least 2 mm long, usually more	3
3a.	Prostrate or scandent shrubs or vines	Group C
3b.	Trees or erect shrubs; stems sometimes lax but not scandent	4
4a.	Stems spiny or leaves rigidly pungent (easily piercing skin)	Group D
4b.	Stems/leaves unarmed, or leaves weakly aristate-pungent	5
5a.	Leaves compound	Group E
5b.	Leaves simple	6
6a.	Leaves toothed or lobed	Group F
6b.	Leaves entire	7
7a.	Foliage strongly eucalyptus- or pine-scented; trees	Group G
7b.	Foliage not especially aromatic, or if so then shrubs only	8
8a.	Stipules clearly evident and persistent	Group H
8b.	Stipules absent, obscure or mostly early-deciduous	9
9a.	Leaves opposite or whorled, or with parallel veins	Group I
9b.	Leaves alternate or some sub-opposite, not parallel-veined	Group J

Group A

Vines, thin, twining, usually ± tangled ..... **Cassytha pubescens**

Woody plants, not twining

- Attachment to host ± bulbous ..... **Amyema:-**
  - [Central and lateral flowers pedicellate; fruit greenish white] (2) ..... **A. miquelii**
  - [Central flower sessile, laterals pedicellate; fruit greenish brown] (11) ..... **A. pendulum**
- Attachment to host by adventitious roots (1) ..... **Muellerina eucalyptoides**

Group B

Scale leaves alternate or absent

- Branchlets rather soft and flaccid; [flowers yellow-green] ..... **Exocarpos:-**
  - Shrubs or small trees; mature branchlets usually pendulous; [flowers in short spikes] (12) ..... **E. cupressiformis**
  - Shrubs up to 1.5 m high; mature branchlets erect [flowers in small clusters] (10) ..... **E. strictus**
- Branchlets rigid and twiggy; [flowers white]
  - Shrub rarely >50 cm high; at least some scales usually present, narrow-triangular to acicular (11) ..... **Choretrum pauciflorum**
  - Shrub to 100 cm high; scales obscure or absent (10) ..... **Omphacomeria acerba**

Scale leaves whorled

- Foliage aromatic; scale leaves 3-whorled (?11) ..... **Callitris endlicheri**
- Foliage not aromatic; scale leaves 9–16-whorled (8) ..... **Allocasuarina verticillata** (Casuarina stricta)

Group C

Leaves compound

- Leaves opposite; plants not prickly (9) ..... **Clematis microphylla**
- Leaves alternate; plants prickly ..... **Rubus:-**
  - Leaves pinnate; [flowers mostly pink; mature fruit red] (12) ..... **R. parvifolius** (R. triphyllus)
  - Leaves digitate; [flowers mostly white; mature fruit black] (12) ..... ***R. anglocandicans** (R. procerus R. fruticosus; R. vulgaris)

Leaves simple

- Leaves opposite (11) ..... ***Lonicera japonica**
- Leaves alternate
  - Leaves prominently parallel-veined (8) ..... **Acacia lanigera**
  - Leaves not parallel-veined
    - Plants twining or scrambling
      - Plants hairy, at least on young stems (11) ..... **Billardiera scandens**
      - Plants glabrous
        - Leaves leathery, strongly reticulate-veined (9) ... **Hardenbergia violacea**
        - Leaves not leathery or strongly reticulate-veined (10) ..... **Comesperma volubile**
    - Plants not twining or scrambling
      - Leaves mostly linear-oblong to oblanceolate, often toothed at the apex (10) ..... **Rhytidosporum procumbens** (Marianthus procumbens)
      - Leaves mostly lanceolate to broad-elliptic, never toothed ..... **Bossiaea:-**
        - Leaves 3–8 mm long; stipules longer than petioles (10) ..... **B. buxifolia**
        - Leaves 5–15 mm long; stipules shorter than petioles (10) ..... **B. prostrata**

Group D

Most leaves >3 cm long

- Leaf/leaflet margins toothed or lobed
  - Stems prickly; leaves pinnately compound, aromatic with an apple-like scent (11) ..... ***Rosa rubiginosa**
  - Stems thorny; leaves not compound or aromatic
    - Leaves bluntly serrate-dentate (10) ..... ***Pyracantha crenulata**
    - Leaves 3–5-lobed..... **Crataegus:-**
      - Leaf base included angle usually <90 degrees; [ripe fruit dark red, 8–10 mm long] (11) ..... ***C. monogyna**
      - Leaf base included angle usually >90 degrees; [ripe fruit orange-red or yellow, 20–25 mm long] (11) ..... ***C. azarolus**
- Leaf/leaflet margins entire
  - Leaves pinnately compound (11) ..... ***Robinia pseudoacacia**
  - Leaves simple ..... **Hakea:-**
    - Young branches glabrescent; [fruit <2 cm long] (12) .... **H. microcarpa**
    - Young branches sericeous; [fruit 2–3 cm long] (6) ..... **H. sericea**

Most leaves <3 cm long

- Branches thorny or stipules spiny
  - Leaves rigidly pungent (8)..... **Daviesia ulicifolia**
  - Leaves acute, obtuse or rounded, never pungent
    - Stipules present, spiny; leaves not clustered (9) ..... **Acacia paradoxa** (A. armata)
    - Stipules absent; leaves somewhat clustered
      - Stems glabrous (12)..... **Bursaria lasiophylla** (B. spinosa)
      - Stems hairy (12)..... ***Lycium ferocissimum**
- Branches not thorny; stipules absent or early deciduous, never spiny
  - Dorsal leaf surface with several veins parallel/radiate from the base
    - Leaf margins finely ciliate (8) ..... **Melichrus urceolatus**
    - Leaf margins glabrous
      - Leaves mostly 7–8 mm long; dorsal surface concave (5) ..... **Monotoca scoparia**
      - Leaves mostly 15–20 mm long; dorsal surface convex (9) ..... **Styphelia triflora**
  - Dorsal and/or ventral leaf surface with 1 vein, or veins obscure
    - Leaf mid-vein obscure or visible at the dorsal base only (10) ..... **Daviesia acicularis**
    - Leaf mid-vein prominent on both surfaces..... **Acacia (p.p.):-**
      - Leaves subulate, 15–35 mm long (6) ..... **A. genistifolia** (A. diffusa)
      - Leaves flat, triangular, 6–12 mm long (8) ..... **A. gunnii** (A. vomeriformis)

Group E

Leaves bipinnate throughout ..... **Acacia (p.p.):-**

- Foliage greyish, hoary-pubescent
  - Pinnae in 3–4 pairs; pinnules 5–7 mm long (7) ..... ***A. baileyana**
  - Pinnae in 10–20 pairs; pinnules 2–5 mm long (8) ..... **A. dealbata**
- Foliage not greyish or hoary-pubescent
  - Branchlets prominently ridged, bright green; pinnules 8–10 mm long (8) ..... ***A. decurrens**
  - Branchlets obscurely ridged, dull green; pinnules 1.5–6 mm long
    - Branchlets velvety-pubescent; pinnae in 8–16 pairs; pinnules mostly 1.5–2.5 mm long (11) ..... **A. mearnsii**
    - Branchlets glabrous or sparsely pubescent; pinnae in 6–8 pairs; pinnules 4–6 mm long (1) ..... **A. parramattensis**

Leaves palmate or pinnate

- Leaves 3-foliolate
  - Branches drooping; [flowers white] (10) ..... ***Chamaecytisus palmensis**
  - Branches erect or spreading; [flowers yellow]
    - Leaflets obovate (10) ..... ***Genista monspessulana** (Teline monspessulana)
    - Leaflets linear (10) ..... **Gompholobium huegelii**
- Leaves 5–17-foliolate
  - Leaflet margins serrate (10) ..... ***Sorbus domestica**
  - Leaflet margins entire
    - Leaflets elliptic-oblong, 1.5–3 cm long (9) ..... **Indigofera australis**
    - Leaflets ovate, 7–13 cm long (12) ..... ***Ailanthus altissima**

Group F

Leaves hairy

- Stipules present but often early-deciduous
  - Leaf margins biserrate; hairs simple (9) ..... ***Kerria japonica**
  - Leaf margins crenate; hairs stellate (9) ..... **Gynatrix pulchella**
- Stipules absent
  - Most leaf blades basally symmetrical; margins serrulate (9) ..... ***Malus domestica**
  - Most leaf blades basally asymmetrical; margins biserrate
    - Base of leaf blade distinctly 3-veined, acute (10) ..... ***Celtis australis**
    - Base of leaf blade not 3-veined, rounded on one side (8) ..... ***Ulmus minor**

Leaves glabrous (or at most glandular-tuberculate)

- Trees
  - Leaf margins uniformly serrulate (10) ..... ***Salix babylonica**
  - Leaf margins usually with 2 large lateral lobes, or sometimes entire (12) ..... **Brachychiton populneus**
- Shrubs rarely >2 m high
  - Leaves mostly 100–180 mm long, often narrowly-lobed (11) ..... **Solanum linearifolium**
  - Leaves up to 80 mm long, never narrowly-lobed
    - Leaves 25–80 mm long (10) ..... **Dodonaea viscosa ssp. angustissima**
    - Leaves rarely >20 mm long
      - Plant glandular-viscid; leaves 8–20 mm long (12) ... **Olearia tenuifolia**
      - Plant not glandular; leaves 4–8 mm long (10) ..... **Rhytidosporum procumbens** (Marianthus procumbens)

Group G

Leaves very narrow-linear, fasciculate in 2s or 3s (10) ..... ***Pinus radiata**

Leaves flat, broader and not fasciculate ..... **Eucalyptus:-**

- Bark rough and persistent to small branches
  - Leaves peppermint-scented; juvenile leaves consistently opposite; leaf sap thin and watery, not sticky (11) ..... **E. dives**
  - Leaves not peppermint-scented; juvenile leaves alternate or rarely sub-opposite; leaf sap sticky-viscous
    - Bark stringy-fibrous, red-brown inside (2) ..... **E. macrorhyncha**
    - Bark tesselate-fissured, yellow-brown inside (2) ..... **E. bridgesiana**
- Bark smooth and decorticating, at least on main branches
  - Smooth bark with white, chalky powder, never "scribbly"
    - Bark of trunk hardly maculate, often with superficial "axe-marks" (insect damage); juvenile leaves sessile, orbicular, glaucous; [umbels 3-flowered] (12) .. **E. rubida**
    - Bark of trunk maculate, usually lacking "axe-marks"; juvenile leaves short-petiolate, linear to lanceolate, not glaucous; [umbels more than 3-flowered] (11) ..... **E. mannifera**
  - Smooth bark hardly powdery, or if so then "scribbles" present
    - "Scribbles" usually present on smooth bark, and branches often with stress-wrinkles at junction with trunk
      - Leaves thick, parallel-veined (12) ..... **E. pauciflora**
      - Leaves not particularly thick, penniveined (1) ..... **E. rossii**
    - "Scribbles" and stress-wrinkles absent
      - Bark rarely sub-persistent, mostly smooth, variegated light and dark grey and grey-brown or purplish (temporarily yellowish only after decortication); adult leaves rather thick and "leathery", mostly about 15 cm or more long; intra-marginal vein usually about 1 mm from margin; [umbels always axillary; apex of buds long-conical] (9) ..... **E. blakelyi**
      - Bark often sub-persistent on trunk and up to main branches; smooth bark usually pale or yellowish grey; leaves not especially thick, up to about 10 cm long; intra-marginal vein usually about 2–3 mm from margin; [umbels often in leafless panicles; buds lacking long-conical apex]
        - Adult leaves lanceolate, apex abruptly contracted, acute; juvenile leaves broadly elliptic-ovate (10) ..... **E. melliodora**
        - Adult leaves broadly ovate-oblong, apex rounded; juvenile leaves sub-orbicular (10) ..... **E. polyanthemos**

Group H

Leaves mostly >5 mm wide (11) ..... ***Cotoneaster microphyllus**

Leaves mostly, or at least the upper, up to 5 mm wide

- Leaf apex mostly acute or aristate
  - Leaves hairy, at least on young branches ..... **Pultenaea:-**
    - Leaves weakly pungent-aristate, margins incurved; stipules 2–5 mm long (10) ..... **P. procumbens**
    - Leaves not aristate, margins involute; stipules about 1 mm long (11) ..... **P. laxiflora**
  - Leaves glabrous or sub-glabrous
    - Habit erect or spreading, to 3 m high; leaves about 15 mm long (9) ..... **Acacia buxifolia**
    - Habit low and bushy, rarely >20 cm high; leaves about 5 mm long (8) ..... **Cryptandra amara var. floribunda**
- Leaf apex mostly obtuse, rounded or emarginate
  - Shrubs erect, with bright green, obovate to oblanceolate leaves
    - Leaves and stems finely hispid-hairy; mid-vein of leaf prominent; margins strongly revolute (9) ..... **Phyllanthus hirtellus** (P. thymoides)
    - Leaves sub-glabrous; stems stellate-hairy; mid-vein becoming obscure distally; margins flat or slightly recurved (9) ..... **Cryptandra amara var. longiflora**
  - Shrubs often lax or semiprostrate, with dull green leaves, not obovate or oblanceolate
    - Leaves dorsally hairy, the upper linear to narrow-lanceolate, the lower oblong-elliptic (8) ..... **Hovea heterophylla**
    - Leaves glabrous, all very broad-ovate, broad-elliptic or broad-oblong ..... **Bossiaea:-**
      - Leaves obtuse, 3–8 mm long; stipules longer than petiole (10) ..... **B. buxifolia**
      - Leaves acute, 5–15 mm long; stipules shorter than petiole (10) ..... **B. prostrata**

Group I

Leaves opposite or whorled; primary veins, if visible, not parallel

- Leaves mostly 2–6 cm long
  - Leaves rugose, stellate-hairy, mostly 2–3 cm long (11)..... ***Cistus salvifolius**
  - Leaves smooth, sub-glabrous, 3–6 cm long (12)..... ***Ligustrum sinense**
- Leaves <1.5 cm long
  - Leaves often 3-whorled, hairy, dorsally concave (11)..... **Mirbelia oxylobioides**
  - Leaves opposite, glabrous, dorsally convex or flat ..... **Pimelea:-**
    - Shrub usually <25 cm high, bushy or spreading; leaves sub-sessile, the margins minutely papillose-serrulate near apex; bracts ovate to narrow-ovate (11)..... **P. aff. glauca**
    - Shrub usually >50 cm high, slender-diffuse; leaves distinctly short-petiolate, margins smooth throughout; bracts broad-ovate (10)..... **P. linifolia**

Leaves alternate; primary veins parallel/radiate from base

- Leaves mostly >20 mm long, usually falcate ..... **Acacia (p.p.):-**
  - Erect shrub or small tree; leaves 7–12 cm long, glabrous (1) ..... **A. implexa**
  - Low or prostrate shrub to 50 cm high; leaves 3–6 cm long, woolly-hairy (at least on younger growth) (8)..... **A. lanigera**
- Leaves up to 10 mm long, never falcate
  - Leaves mostly 5–10 mm long
    - Leaves distinctly petiolate, elliptic-obovate, not pungent or aristate (9)..... **Brachyloma daphnoides**
    - Leaves sub-sessile, weakly pungent or aristate
      - Leaves linear-lanceolate, spreading (5)..... **Astroloma humifusum**
      - Leaves broad-lanceolate, appressed (9) ..... **Leucopogon virgatus**
  - Leaves mostly 2–5 mm long, rarely more
    - Leaves broad-ovate with cordate base (10)..... **Epacris microphylla**
    - Leaves much narrower, never with cordate base
      - Leaves linear-lanceolate, sub-glabrous; [flowers borne on older wood] (11)..... **Acrotriche serrulata**
      - Leaves ovate, elliptic or oblanceolate, clearly hairy or ciliate [flowers borne on younger wood] ..... **Leucopogon (p.p.):-**
        - Leaves 4–6 mm long, sparsely puberulent on surface, margins ciliate; [flowers pendulous-secund along short lateral branches; style exserted] (10)..... **L. fletcheri**
        - Leaves 1.5–3 mm long, profusely hispid-hairy all over, [flowers otherwise; style included]
          - Leaf-apex weakly pungent-aristate, straight; [flowers in small terminal clusters] (7) ..... **L. pilibundus** (L. microphyllus var. pilibundus)
          - Leaf-apex not aristate, acute-recurved; [flowers in short leafy spikes 1–2 cm long] (10)..... **L. attenuatus**

Group J

Leaf width mostly >5 mm

- Leaves hairy
  - Leaves obovate to oblanceolate, (12) ..... **Persoonia rigida**
  - Leaves elliptic to oblong
    - Leaves linear-oblong, stellate-hairy, 3-8 mm wide (11) ..... **Astrotricha ledifolia**
    - Leaves elliptic, not stellate-hairy but densely felted below,10–30 mm wide (12) ..... **Pomaderris intermedia**
- Leaves glabrous
  - Leaves clearly asymmetric or falcate; marginal gland present ..... **Acacia (p.p.)**:-
    - Leaves mostly 1–2 cm long ..... **A. pravissima**
    - Leaves 6–20 cm long
      - Bipinnate foliage often persistent; leaves acute to acuminate; gland not close to mid-vein (9) ..... **A. rubida**
      - Bipinnate foliage not persistent; leaves rounded to sub-acute; gland fairly close to mid-vein
        - Branchlets ± angular; pulvinus mostly <3 mm long (12) ..... **A. penninervis**
        - Branchlets ± terete; pulvinus mostly 4–7 mm long (9) ..... **A. pycnantha**
  - Leaves symmetric; marginal gland absent
    - Leaves linear to linear-oblanceolate, mostly 20–50 mm long, somewhat resinous; margins often obscurely denticulate (10) ..... **Dodonaea viscosa ssp. angustissima**
    - Leaves linear to lanceolate, 40–80 mm long, not resinous; margins entire (10) ..... **Daviesia mimosoides**

Leaf width mostly <5 mm

- Leaves mostly 2–5 mm long
  - Leaf-margins strongly rolled toward mid-vein and obscuring it on the upper or lower surface
    - Leaves axially twisted, margins involute (10) ..... **Dillwynia phylicoides**
    - Leaves straight, margins revolute (8) ..... **Cryptandra amara var. floribunda**
  - Leaf-margins not obscuring mid-vein
    - Leaves 2–3.5 mm long, narrow-oblong to oblanceolate (11) ..... **Kunzea parvifolia**
    - Leaves 3–5 mm long, broad-spathulate (12) ..... **Olearia microphylla**
- Leaves mostly 5–50 mm long
  - Leaf-margins flat
    - Leaves mostly slightly asymmetric in outline; marginal gland usually present (9) ..... **Acacia buxifolia**
    - Leaves symmetric about mid-vein; marginal gland absent
      - Plant lax, mostly <0.5 m high; [flowers and fruit sub-sessile]
        - Leaves aromatic (10) ..... **Leptospermum multicaule**
        - Leaves not aromatic (9) ..... **Cryptandra amara var. longiflora**
      - Plant erect, 0.5 m to more than 4 m high; [flowers and fruit distinctly pedunculate or pedicellate]

Leaves 6–13 cm long (10) ..... **Dodonaea viscosa ssp. angustissima**

Leaves 0.1–2.5 cm long

Leaves mostly 8–25 mm long (12) ..... **Kunzea ericoides** (*Leptospermum phylicoides*)

Leaves mostly 1–7 mm long (10) ..... **Calytrix tetragona**

Leaf-margins involute, or revolute or recurved

Leaves glabrous or minutely ciliate

Leaves mostly 20–50 mm long (10)..... **Dodonaea viscosa ssp. angustissima**

Leaves mostly 5–10 mm long

Leaf-margins involute (10)..... **Dillwynia serice**a

Leaf-margins slightly recurved (9) ..... **Cryptandra amara var. longiflora**

Leaves hairy on one or both surfaces

Leaves obtuse

Leaves villous, often appearing "rusty" (8) ..... **Grevillea aff. alpina**

Leaves finely puberulent, never "rusty" (10)..... **Hibbertia obtusifolia**

Leaves acute to acuminate

Mid-vein obscured on many leaf surfaces..... **Cassinia (p.p.):-**

Stems and leaves hispid-hairy and scabrid; leaves 10–50 mm long (12)..... **C. aculeata**

Stems and leaves not hispid-hairy or scabrid; leaves 5–10 mm long (12)..... **C. arcuata**

Mid-vein clearly evident on most leaf surfaces

Leaves 5–10 mm long, only the mid-vein evident on the lower surface (10) ..... **Hibbertia calycina** (H. stricta s.l.)

Leaves mostly 10–100 mm long; at least some lower surface visible beside the mid-vein

Young stems densely glandular-hairy only [flowers pale violet] (12)..... **Olearia tenuifolia**

Young stems glabrous, or yellowish woolly- or cottony- hairy [flowers creamy or greenish white]

Leaves ventrally hairy, distinctly petiolate (12)..... **Ozothamnus conditus** (Helichrysum conditum)

Leaves ventrally glabrous, sub-sessile..... **Cassinia (p.p.):-**

Leaves on flowering shoots 60–100 mm long, 2–5 mm wide; [inflorescence corymbose] (12)..... **C. longifolia**

Leaves on flowering shoots up to 60 mm long, 1 mm wide; [inflorescence pyramidal] (1)..... **C. quinquefaria**

Glossary

*	known, or believed, not to be native to the Canberra area.
±	more-or-less (qualitative); approximately (quantitative).
<	less than.
>	greater than, more than.
acicular	needle-shaped.
acuminate	tapering to a slender point, the included angle <40°
acute	tapering to a point, the included angle 40–90°
adventitious roots	roots with abnormal origin; e.g. from nodes of stem.
aff.	*affinis*: having affinity with, but distinct from, the named taxon; usually applied to a taxon believed to be undescribed; (see cf.).
alternate	developed singly around an axis, and at different levels; e.g. leaves on a stem.
angular	possessing angles; e.g. the cross-section of stems of some species.
apex	(plural apices) the top; hence: apical.
appressed	bent from the base so as to more or less lie along the surface.
aristate	bearing a stiff but hardly spiny bristle; e.g. some leaf apices.
aromatic foliage	foliage that is scented, usually as a result of being glandular, resinous or oil-dotted.
axil	the angle formed by a leaf or bract and the stem; hence: axillary.
bipinnate	twice pinnate.
biserrate	serrate (q.v.) but with each tooth itself serrulate.
broad-	prefix to leaf-shape: reduces length:breadth ratio, up to 40% from median value.
cf.	*confer*: compare with; used in cases of uncertainty of identity of a taxon; (see aff.).
ciliate	with fringe of hairs; e.g. leaf margins of some species.
clustered	general term applied to parts that are contiguous but not integral.
compound leaf	leaf that is divided to the rachis into discrete segments; (see simple leaf; pinna).
cordate	heart-shaped, usually in reference to the base of a leaf blade.
corymb	a raceme (q.v.) in which all flowers ascend to a common level; hence: corymbose.
crenate	margin divided regularly into small rounded lobes or teeth.
deciduous	falling off, usually seasonally; e.g. leaves, bark, etc.
decorticate	deciduous outer bark shed in strips or large flakes, usually seasonally.
dentate	margin divided regularly into obtuse teeth.
digitate	branching in 5 parts from a central axis, like the fingers of the hand.
discolorous	of different colours; e.g. the upper and lower surfaces of leaves in many species.
distal	remote or away from the point of attachment; (see proximal).
dorsal	pertaining to the back; e.g., the underside of a leaf; (see ventral).
elliptic	ellipse-shaped, the widest point equidistant from both ends, the length:breadth ratio 2:1–3:2.
emarginated	notched at the apex.
entire	margin unbroken by lobes or teeth.
erect	at right-angles to surface or axis.
exserted	projected beyond adjacent parts.
falcate	sickle-shaped, i.e. curved; e.g. leaves in some *Eucalyptus* and *Acacia* species.
fasciculate	arranged in bundles.
flaccid	limp.
foliar	of, or pertaining to, leaves.
foliolate	bearing pinnae or leaflets.

glabrescent	becoming glabrous.
glabrous	hairless; e.g. some leaf or stem surfaces.
glandular	bearing glands. Various types may secrete oil, nectar, gum, etc.
glaucous	surfaces bearing a fine, powdery, bluish grey bloom.
herb	plant not producing a woody stem or dry bark; hence: herbaceous.
hispid	covered with short, stiff hairs.
hoary	with a grey, frosty appearance.
included	not projected beyond adjacent parts; e.g. the valves in a capsule of Eucalyptus
incurved	moderately curved upward, i.e. through 180 deg; e.g. leaf margins of some species; (see recurved).
inflorescence	group of flowers borne on a single, branched or unbranched stem.
involute	abruptly rolled upward, i.e. through 180–360 deg; e.g. leaf margins of some species (see revolute).
juvenile	leaves first-formed leaves, often different in size, shape and arrangement to the adult leaves.
lamina	the blade of a leaf. lanate woolly.
lanceolate	lance-shaped, i.e. with the widest point in the proximal half, the length:breadth ratio 6:1 or more.
lateral	pertaining to the side, relative to an axis; e.g. branches from main stem.
leaflet	general term applied to any (usually the smallest) foliar unit of a compound leaf; (see pinna, pinnule).
linear	long and narrow, with more or less straight sides, the length:breadth ratio 12:1 or more.
maculate	spotted or blotched; e.g. the variegated smooth bark of some eucalypts.
margin	edge or border; e.g. of any foliar structure.
mucronate	with a mucro, i.e. with a short, stiff point, often an extension of the mid-vein.
narrow-	prefix to leaf-shape: increases length:breadth ratio, up to 30% from median value.
oblanceolate	same shape as lanceolate, but with the widest point in the distal half.
oblong	longer than wide, with more or less straight sides, the length:breadth ratio 2:1–3:2.
obovate	same shape as ovate, but with the widest point in the distal half.
obtuse	blunt, i.e. tapering to a point, the included angle >90°
opposite	developed in pairs, one of each pair on either side of an axis; e.g. leaves or leaflets.
orbicular	approximately circular in outline.
ovary	structure that develops into the fruit after fertilization.
ovate	egg-shaped, i.e. with widest point in the proximal half, the length:breadth ratio 2:1–3:2.
palmate	radiating from a central point; e.g. leaflets or leaf veins.
panicle	a compound (multi-branched) inflorescence in which all flowers are stalked; hence: paniculate.
parallel	linear (not necessarily straight) structures equidistant from one another; e.g. leaf veins in some species.
parasitic	the situation of one organism living on, and deriving nutrition from, another live organism.
pedicel	the stalk of a single flower; hence: pedicellate.
peduncle	the stalk of an inflorescence (which may be reduced to a single flower).
penniveined	with veins diverging from the midrib of a leaf, analogous to the plume of a feather.
persistent bark	bark that is retained indefinitely, not seasonally shed.
petiole	stalk of a leaf; hence: petiolate.

phyllode	a flattened leaf petiole, lacking a true lamina but looking like, and functioning as, a leaf.
pinna (pl. pinnae)	the primary subdivision of a pinnately- compound leaf; (may be again divided; see pinnule, leaflet).
pinnate leaf	compound leaf with pinnae arranged in opposite pairs, with or without a single terminal leaflet.
pinnule	the smallest (lowest-rank) foliar unit of a divided pinna (q.v.).
prickle	spine produced by sub-epidermal tissue of a stem, but lacking vascular tissue.
p.p.	*pro parte*: in part, partly
proximal	towards the point of attachment; (see distal).
puberulent	very finely pubescent.
pubescent	downy: possessing short, soft hairs.
pungent	with a sharp, hard point; (does not refer to odour).
pyramidal	more or less pyramid-shaped, i.e. triangular in outline.
raceme	elongate inflorescence of stalked flowers on a common rachis and opening progressively upwards; hence: racemose.
rachis	the main axis of any organ; e.g. inflorescence or leaf.
radiate	spreading from a more or less common centre.
recurved	moderately curved downward, i.e. through 180°; e.g. leaf margins in some species.
reticulate	forming a network; e.g. leaf veinlets.
revolute	abruptly rolled downward, i.e. through 180–360°, e.g. leaf margins in some species; (see involute).
rostrate	beaked, i.e. with a substantial, stiff point.
scabrid	rough to the touch, usually as a result of presence of stiff or tuberculate hairs.
scandent	climbing or trailing.
secund	with parts all directed to one side only; e.g. flowers along the stems in some species.
sericeous	silky-hairy, the hairs appressed.
serrate	saw-toothed: margin divided regularly into small, acute, usually distally-pointing teeth.
serrulate	finely serrate.
sessile	stalkless, i.e. without a petiole or pedicel.
shrub	woody plant <8 m high, with permanent branching from, or close to, the base.
simple leaf	leaf undivided, or variously toothed or lobed but not divided into discrete leaflets; (see compound leaf)
s.l.	*sensu lato*: in the broad sense; often used in cases of persistent difficulty in defining constituent taxa.
spathulate	spoon-shaped; usually with a more or less rounded apex.
spike	elongate inflorescence of sessile flowers on a common rachis and opening progressively upwards.
spine	any hard, pointed structure; e.g. thorn, prickle, etc.
stellate	star-shaped; e.g., referring to branched hairs.
stigma	receptive surface at the apex of the style for germination of pollen grains.
stipule	small appendage, usually herbaceous or rarely spiny, present in pairs at the base of leaves of some dicotyledonous plants
style	stalk of a stigma, usually borne at apex of ovary.
sub-	(prefix): almost.
subulate	awl-shaped: narrow and tapering to a fine point.
taxon (pl. taxa)	any unit of classification; e.g. genus, species etc.
terete	more or less cylindrical in cross-section; e.g. the stems of many species.

ternate	arranged in threes; e.g. lobes or leaflets in some species.
terrestrial	on, or growing in, the earth.
tesselate bark	bark closely fissured into discrete, more or less rectangular or square segments.
thorn	a reduced, spiny branch.
tomentose	possessing short, matted hairs.
tree	woody plant >8 m high with at least a short trunk lacking permanent branches.
tripinnate	thrice pinnate.
tuberculate	warty; with small, surface nodules or swellings, often associated with glands or the bases of hairs.
umbel	several pedicellate flowers emanating simultaneously from the apex of a peduncle; hence: umbellate.
vascular	bundle primary conducting tissue.
vein	vascular bundle of leaf.
ventral	pertaining to the front; e.g. the upper surface of a leaf; (see dorsal).
villous	possessing long, soft hairs.
viscid	with a coating of any sticky substance.
whorled	several similar structures in opposition around an axis; e.g. the stem leaves of some species.