

**PROTEACEAE**

Evergreen shrubs or trees. Stipules absent. Leaves mostly alternate, simple, entire or variously lobed. Inflorescences basically racemose with flowers commonly in pairs. Flowers usually bisexual, strongly zygomorphic or actinomorphic, 4-merous. Perianth of 4 petaloid tepals, free, cohering into a tube or fused, sometimes arising from rim of hypanthium. Stamens 4; filaments partly or wholly fused to tepals. Hypogynous glands often present, usually 4, alternating with tepals. Ovary superior, 1-carpellate, sometimes stipitate, 1-locular, ovules 1-2(many); style simple, commonly expanded below or around the small terminal to lateral stigma into a pollen presenter. Fruit a dehiscent woody to leathery follicle or a fleshy drupe. Seeds 1-many, often winged. Fig. 34

A world-wide family of c. 80 genera and 1500 species; predominantly in the warmer regions of the southern hemisphere. In Australia about 50 genera and 900 species; 6 genera in the NT, all recorded in the DR. [Johnson & Briggs, 1975]

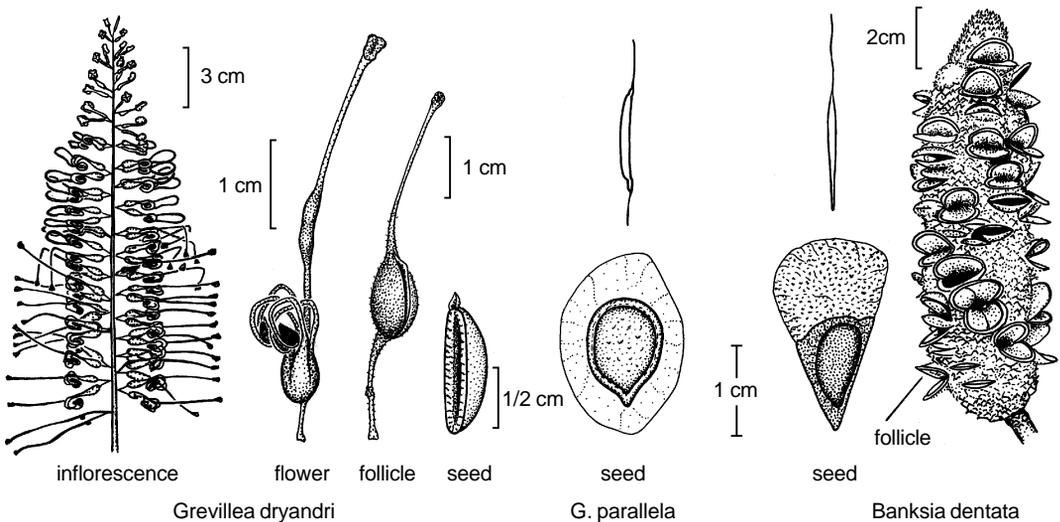


Fig. 34

- |   |             |
|---|-------------|
| 1. Flowers sessile, in dense cone-like inflorescences .....                       | Banksia     |
| 1. Flowers pedicellate, not embedded in inflorescence axis .....                  | 2           |
| 2. Fruit fleshy .....   | 3           |
| 2. Fruit dry, leathery or woody .....   | 4           |
| 3. Fruit purplish, drying black; rainforest .....                                 | Helicia     |
| 3. Fruit greenish yellow; open forest .....                                       | Persoonia   |
| 4. Fruit linear, >30 mm long .....  | Stenocarpus |
| 4. Fruit ± ellipsoid or orbicular, mostly <30 mm long, rarely to 35 mm long ..... | 5           |
| 5. Fruit with solid woody valves .....  | 6           |
| 5. Fruit with thin concave valves .....   | Grevillea   |
| 6. Leaves entire; seed winged at one end; inflorescence <50 mm long .....         | Hakea       |
| 6. Leaves deeply lobed; seed encircled by wing; inflorescence >50 mm long .....   | Grevillea   |

### BANKSIA L.f.

A predominantly Australian genus of c. 72 species with 1 species extending to New Guinea and eastern Indonesia. One species in the NT. [Taylor & Hopper, 1988; George, undated]

#### B. dentata L.f.

Shrub or small tree to 6 m. Branchlets densely pubescent with closely tangled crisped hairs, interspersed with longer patent hairs. Petiole 10-12 mm long. Leaf blades strongly discolorous, oblanceolate to spatulate, 140-270 mm long, 47-70 mm wide, L/W 3.3-5.7, glabrous above, densely white arachnoid below, lateral veins ± at right angles, deeply dentate with lobes spinose. Inflorescence terminal, spike-like, densely flowered, rachis thick and woody, to 170 mm long and 100 mm wide. Flowers zygomorphic. Perianth free, grey silky pubescent. Hypogynous glands present. Style yellow, glabrous,

pollen presenter not differentiated, erect, linear. Infructescence fusiform, woody, with many transversely orientated follicles, golden pubescent, 80-110 mm long, c. 40 mm wide; follicles c. 15 mm wide, opening by 2 hard woody valves. Seeds 2, with a thickened separator between them, wedge-shaped, black, c. 11 mm long, wing on one end, c. 9 mm long. Flowering: Mar - Aug; fruiting: June - Aug. Fig. 34, 35

Occurs from eastern Indonesia, New Guinea to northern Australia; common in the DR on sandy, seasonally wet areas. The rachis of the infructescence is used for carrying fire (Wightman & Brown, 1994).

### GREVILLEA R.Br.

Shrubs or trees. Flowers zygomorphic; receptacle (torus) concave, transverse to oblique on the pedicel. Hypogynous glands free or variously fused or lobed. Ovary stipitate or sessile; ovules 2; pollen presenter discoid to ± conical, oblique to erect or lateral on the style. Fruit a follicle; seeds (1)2, with a membranous wing or with a terminal elaiosome.

A genus of c. 260 species, mainly Australian but a few species extend to New Guinea, Indonesia and New Caledonia. Thirty four species recorded for the NT with 15 in the DR [McGillivray, 1993]. A number of species are used for a variety of purposes by Aboriginal people. The seeds of *G. decurrens* and *G. heliosperma* are eaten raw. Nectar from many species is eaten. Some species such as *G. dryandri* have medicinal uses. Species with caustic fruits such as *G. dimidiata* are used to produce tribal skin markings (Levitt, 1981; Wightman et al., 1992a,b)

1.	Leaves dentate with spinose lobes .....	2
1.	Leaves deeply pinnately or bipinnately lobed usually to midrib or entire .....	3
2.	Flowers red, <8 mm long; perianth inconspicuously hairy inside .....	<i>G. longicuspis</i>
2.	Flowers white or creamy yellow to greenish yellow, >10 mm long; perianth with conspicuous stiff white hairs inside .....	<i>G. angulata</i>
3.	Leaves entire .....	4
3.	Leaves deeply lobed usually to midrib or with odd entire leaves .....	11
4.	Leaf venation strongly pinnate and reticulate with marked intramarginal vein .....	5
4.	Venation obscure or ± parallel without intramarginal vein .....	6
5.	Prostrate shrub .....	<i>G. goodii</i> subsp. <i>goodii</i>
5.	Erect shrub .....	<i>G. goodii</i> subsp. <i>pluricaulis</i>
6.	Inflorescence <60 mm long, lateral branches recurved; flowers yellow-orange to reddish .....	<i>G. refracta</i>

- |     |  |                                 |
|-----|--|---------------------------------|
| 6.  | Inflorescence >60 mm long, lateral branches spreading;<br>flowers white to cream .....                     | 7                               |
| 7.  | Leaves linear or filiform, <6 mm wide .....  | 8                               |
| 7.  | Leaves not linear, >6 mm wide .....  | 9                               |
| 8.  | Leaf venation obscure; inflorescence to 500 mm long .....  | G. pyramidalis                  |
| 8.  | Leaf venation conspicuous; inflorescence to 140 mm long .....  | G. parallela                    |
| 9.  | Plants glabrous .....  | G. dimidiata                    |
| 9.  | Plants hairy at least on branchlets .....  | 10                              |
| 10. | Young leaves and branchlets usually glandular hairy; leaves straight .....                                 | G. myosodes                     |
| 10. | Young leaves and branchlets eglandular; leaves falcate .....   | G. mimosoides                   |
| 11. | Leaves <55 mm long, rigid, spinose .....   | G. benthamiana                  |
| 11. | Leaves >55 mm long, flaccid, not spinose .....   | 12                              |
| 12. | Inflorescence <60 mm long with branches recurved .....   | G. refracta                     |
| 12. | Inflorescence >60 mm long, if branched then branches spreading .....                                       | 13                              |
| 13. | Inflorescence unbranched .....   | 14                              |
| 13. | Inflorescence branched .....   | 15                              |
| 14. | Low prostrate shrub; flowers green maturing yellow .....   | G. formosa                      |
| 14. | Small tree; flowers bright orange .....  | G. pteridifolia                 |
| 15. | Flowers white to creamy yellow .....   | 16                              |
| 15. | Flowers pink to red .....  | 17                              |
| 16. | Leaf venation obscure; inflorescence to 500 mm long .....  | G. pyramidalis                  |
| 16. | Leaf venation conspicuous; inflorescence to 140 mm long .....  | G. parallela                    |
| 17. | Sparse shrub; leaf lobes linear, <4 mm wide .....  | 18                              |
| 17. | Small tree; leaf lobes not linear, >6 mm wide .....  | 19                              |
| 18. | Flowers and fruit glandular hairy; leaves with 14-26 pairs of lobes;<br>lobes filiform, c. 1 mm wide ..... | G. dryandri<br>subsp. dasycarpa |
| 18. | Flowers and fruit glabrous; leaves with 3-16 pairs of lobes;<br>lobes linear, 1.3-4 mm wide .....          | G. dryandri<br>subsp. dryandri  |
| 19. | Leaves pinnately lobed, discolorous; lobes 10-45 mm wide .....   | G. decurrens                    |
| 19. | Leaves mostly bipinnately lobed, concolorous; lobes 6-14 mm wide .....                                     | G. heliosperma                  |

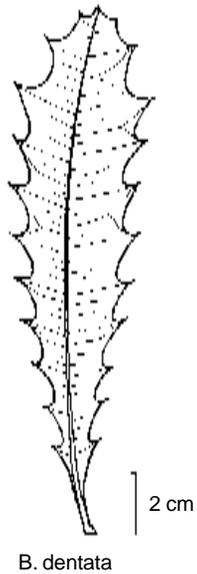
### *G. angulata* R.Br.

Shrub to 2 m. Indumentum on branchlets, leaves and peduncle of very fine appressed, ferruginous becoming silvery, simple hairs. Petiole 8-10 mm long. Leaf blades grey-green, oblong to elliptic, (35)50-110 mm long, 24-40 mm wide, L/W 1.9-3.2, coarsely dentate; lobes spinose. Inflorescence axillary, mostly unbranched, 30-55 mm long. Perianth white or creamy yellow to greenish yellow, glabrous outside, dense, stiff, white patent hairs on inside, separating into 4 free segments. Ovary stipitate, glabrous; style pale green, glabrous, pollen presenter oblique,  $\pm$  elliptic. Follicle asymmetric-ellipsoid, 10-13 mm

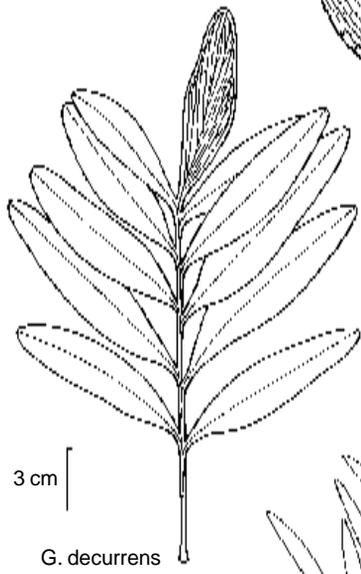
long, glabrous. Seed 7.5-10 mm long. Flowering and fruiting: most months. Fig. 35

Restricted to the NT and eastern Kimberley. Occurs from Cobourg Peninsula and western Arnhem Land, disjunctly to the VRD. Not recorded in the DR but commonly cultivated. There is a closely related yellow flowered species, *G. aurea* P. Olde & N. Marriott, with longer inflorescences from the sandstone in Kakadu. This is also in cultivation. Another closely related species, *G. brevis* P. Olde & N. Marriott, which differs in having  $\pm$  entire leaves, occurs in the southern part of Kakadu National Park.

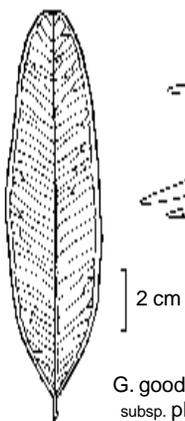
**Banksia**



*B. dentata*

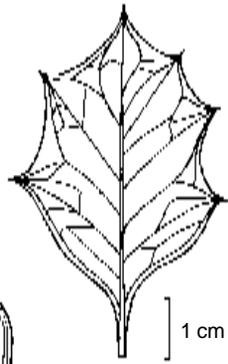


*G. decurrens*

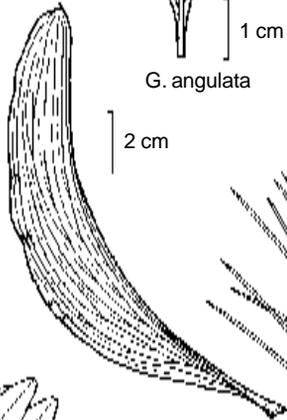


*G. goodii*  
subsp. *pluricaulis*

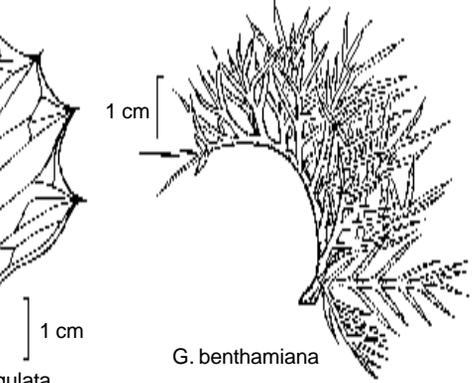
**Grevillea**



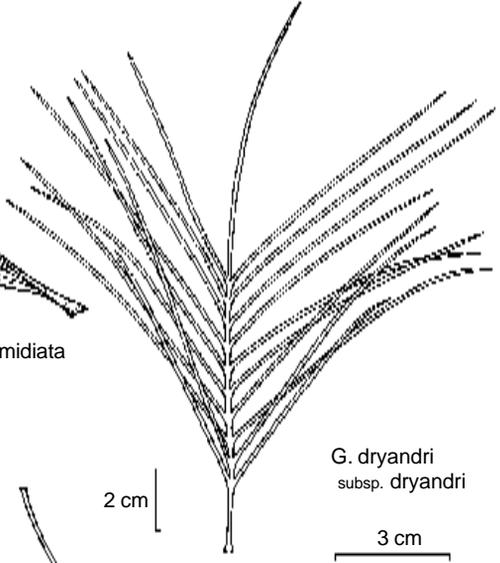
*G. angulata*



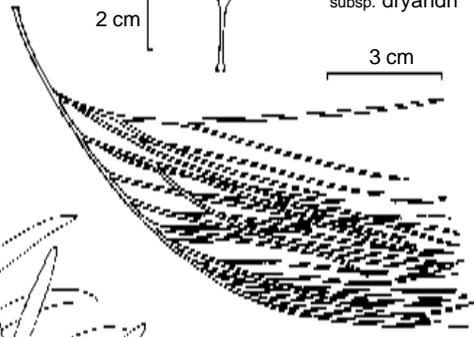
*G. dimidiata*



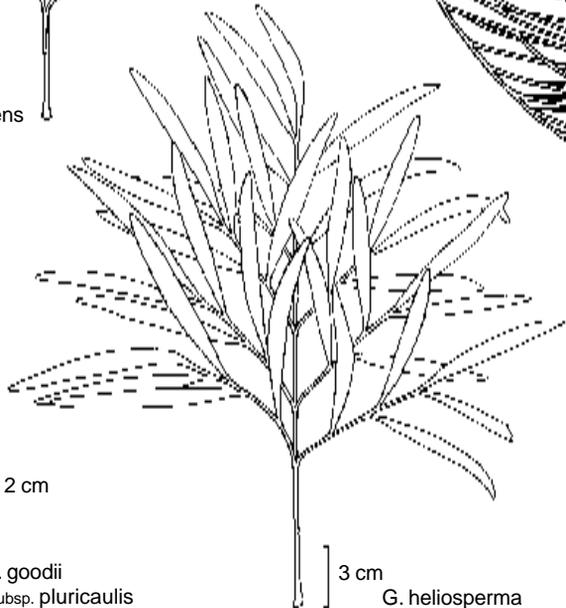
*G. benthamiana*



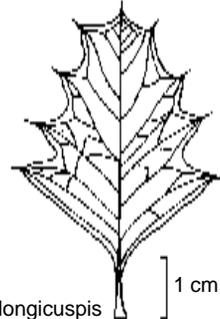
*G. dryandri*  
subsp. *dryandri*



*G. formosa*



*G. heliosperma*



*G. longicuspis*

Fig. 35

*G. benthamiana* McGillivray

Shrub or small tree to 4 m. Indumentum on branchlets and leaves of dense, medifixed, glandular, silvery hairs, occasionally also with septate glandular hairs. Petiole 5-7 mm long. Leaf blades grey-green, imbricate, recurved, ovate to deltoid or oblong in outline, 30-55 mm long, 20-65 mm wide, L/W 0.86-1.5, deeply bipinnately lobed; lobes linear, spinose. Inflorescence axillary or terminal, simple or branched, to 250 mm long. Pedicel, perianth, and style glandular hairy. Perianth pink becoming deep red to almost black, inner surface papillose and hirsute with simple hairs; separating into 2 free segments. Ovary stipitate, glabrous; style red to pink, pollen presenter oblique, only slightly wider than style. Follicle asymmetric-ellipsoid, 14-20 mm long, glabrous. Seed c. 13 mm long. Flowering and fruiting: Apr - Dec. Fig. 35

A rare NT endemic restricted to old plateaus and escarpments of the Daly River basin. On rocky slopes in open woodland.

*G. decurrens* Ewart

Small tree to 4 m. Indumentum on branchlets, leaves and inflorescence of dense, medifixed, ferruginous becoming hyaline hairs, leaves glabrescent. Petiole 70-110 mm long. Leaf blades grey-green, discolorous, 170-330 mm long, 1-pinnate with 4-6 pairs of lobes, dissected to midrib; lobes narrowly lanceolate to narrowly elliptic, 75-160 mm long, 10-45 mm wide, L/W 3.5-7.5, venation conspicuous. Inflorescence axillary, branched, to 230 mm long. Perianth pink, glaucous, glabrous outside, inside hirsute at base, deciduous in 2 parts. Ovary stipitate, glaucous, glabrous; style pink, pollen presenter oblique, elliptic. Follicle orbicular, 28-35 mm long, glabrous, glaucous, valves thickly woody. Seed orbicular, 23- 25 mm diam. with wing to 10 mm broad. Flowering: Nov - Mar; fruiting: June - Sept. Fig. 35

Widespread from the Gulf to the Kimberley; common in the DR on skeletal soils in woodland. This species has been treated as a synonym of *G. heliosperma* by McGillivray (1993).

*G. dimidiata* F.Muell.

Small tree to 5 m, glabrous, sometimes glaucous. Petiole 15-40 mm long. Leaf blades grey-green, curved, dimidiate, broadest at or below middle, 175-340 mm long, 18-75 mm wide, L/W 3.3-10, coriaceous, entire, with obscure fine parallel veins. Inflorescence terminal, openly branched, to 420 mm long. Perianth creamy yellow; separating into 4 free

segments. Ovary stipitate; style cream, pollen presenter conical. Follicle asymmetric-ellipsoid, 14-20 mm long, covered with caustic sticky resin. Seed not seen. Flowering: June - Sept; fruiting: Sept - Oct. Fig. 35

From Gove to the Kimberley; rare in the DR where known from the Douglas River area. Occurs in open woodland and shrublands.

*G. dryandri* R.Br. subsp. *dryandri*

Sparse shrub or subshrub to 1 m. Indumentum of fine medifixed hairs on branchlets and leaves, otherwise glabrous. Petiole 15-55 mm long. Leaf blades 160-200 mm long, 1-pinnate with 3-16 pairs of lobes, dissected to midrib; lobes linear, 68-180 mm long, 1.3-4 mm wide, margin recurved. Inflorescence terminal, branched, secund, to 550 mm long. Perianth red, rarely paler cream to white, with short fine hairs inside; separating into 4 free segments. Ovary stipitate; style red or paler, pollen presenter large, oblique. Follicle asymmetric-ellipsoid, c. 10 mm long, thinly woody, glabrous, sticky resinous. Seed not seen. Flowering and fruiting: Mar - Oct. Fig. 35

From Qld across the Top End and into the Kimberley; common in the DR where found in open woodland on laterite.

*G. dryandri* R.Br. subsp. *dasycarpa* McGillivray

Sparse shrub to 2 m. Inflorescence axis, pedicels, perianth, ovary and base of style with septate glandular hairs. Petiole 20-35 mm long. Leaf blades 130-185 mm long, 1-pinnate with 14-26 pairs of lobes; lobes filiform, to 105 mm long, c. 1 mm wide. Follicle elongate ellipsoid, 12-15 mm long, highly viscid. Seed narrowly oblong, c. 9 mm long, folded and furrowed, wing vestigial, protruding at one end and modified into an elaiosome. Flowering and fruiting: Mar - July. Fig. 34

Associated with sandstone from Arnhem Land to Katherine Gorge. Uncommon in the DR where known from sandstone formations south of Adelaide River township. Differing from subsp. *dryandri* only by the above characters.

*G. formosa* McGillivray

Sprawling shrub, branches trailing to several metres long. Indumentum on branchlets, leaves, inflorescence, pedicels and outside of perianth of closely sericeous medifixed hairs. Petiole 7-15 mm long. Leaf blades grey-green, 45-150 mm long, 1-pinnate with 8-11 pairs of lobes, dissected to midrib,

sometimes lower lobes further divided 1-3 times; lobes filiform, 45-80 mm long, c. 1 mm wide. Inflorescence terminal, unbranched, secund, to 300 mm long. Perianth green maturing yellow, glabrous inside, separating into 4 free segments. Ovary sessile, hirsute; style green turning yellow, pollen presenter lateral. Follicle asymmetric narrow-ovoid, 14-15 mm long, ferruginous with septate glandular hairs and unequal 2-armed hairs. Seed ellipsoid to oblong, 9-11 mm long, flattened, wing vestigial and modified into an elaiosome, protruding at one end. Flowering: Jan - Apr; fruiting: Feb - May. Fig. 35

Endemic to the western Arnhem Land plateau but now widely cultivated in Darwin.

*G. goodii* R.Br. subsp. *goodii*

Prostrate shrub, annual stems from perennial rootstock. Indumentum on branches, leaves, inflorescence, outside of perianth of fine medifixed, ferruginous or hyaline hairs, minute colleters on underside of leaf. Petiole 4-7 mm long. Leaf blades entire, lanceolate, elliptic, obcordate, 48-175 mm long, 22-50 mm wide, L/W 1.4-7, venation conspicuous with a prominent intramarginal vein. Inflorescence axillary, rarely terminal, unbranched, secund, to 270 mm long. Perianth greenish to red, hairy inside; deciduous in 2 parts. Ovary shortly stipitate, white hirsute; style pink, sparsely hairy for lower 2/3, pollen presenter lateral. Follicle ellipsoid, 15-17 mm long, thinly woody. Seed ellipsoid, c. 10 mm long, wing narrow,  $\pm$  fleshy and protruding at one end. Flowering: Jan - Apr; fruiting: May - June.

An NT endemic; widespread in the DR on sandy soils in *Eucalyptus miniata* open forest.

*G. goodii* R.Br. subsp. *pluricaulis* McGillivray

Erect multistemmed shrub to 3 m. Petiole 5-15 mm long. Leaf blades entire, lanceolate, narrowly elliptic to oblong, 130-300 mm long, 27-85 mm wide, L/W 2.5-7, apex acute to emarginate. Inflorescence to 150 mm long. Perianth pale greenish yellow to orange. Ovary white sericeous; style orange, pink to bright red, hairy. Flowering: all year; fruiting: Apr - June. Fig. 35

An NT endemic from Melville Is. to Port Keats, Darwin R. area and Litchfield NP. Differing from subsp. *goodii* by the above characters.

*G. heliosperma* R.Br.

Small tree to 7 m. Indumentum on branchlets and leaves of ferruginous, medifixed hairs, leaf blades glabrescent or glabrous. Petiole 50-115 mm long. Leaf

blades concolorous, mostly bipinnate, 4-6 pairs of lobes, dissected to midrib, terminal lobes simple, rachis to 290 mm long; lobes narrowly lanceolate to narrowly elliptic, 55-130 mm long, 6-14 mm wide, L/W (6)9-16. Inflorescences axillary or rarely terminal, branched, to 150 mm long. Perianth red, glaucous, hairy inside at base; deciduous in 4 parts. Ovary stipitate, glabrous; style red, pollen presenter lateral to oblique. Follicle orbicular, 20-35 mm diam., glabrous, glaucous, valves thickly woody. Seed orbicular, c. 15 mm diam. with wing to 4 mm broad. Flowering: May - July; fruiting: July - Oct. Fig. 35

From western Qld to the Kimberley. Common in the DR on sandy soils or sandstone in *Eucalypt* forest. Close to *G. decurrens* with which it hybridises. See notes for *G. decurrens*.

*G. longicuspis* McGillivray

Shrub to 1 m. Indumentum on branchlets, leaves and peduncle of medifixed and septate glandular hairs. Petiole 5-14 mm long. Leaf blades ovate, 35-65 mm long, 25-60 mm wide, L/W 1-1.7, coarsely dentate; lobes spinose. Inflorescence axillary or terminal on short lateral branchlets, unbranched, to 40 mm long. Perianth red, hairy inside; separating into 4 free segments. Ovary stipitate, glabrous; style glabrous, yellowish, pollen presenter lateral. Follicle oblong, 12-14 mm long, glabrous. Seed not seen. Flowering: Aug - Dec; fruiting: Sept - Apr. Fig. 35

A DR endemic, restricted to the Manton Dam area, Berry Springs and Wagait. On gravelly soils in open woodland.

*G. mimosoides* R.Br.

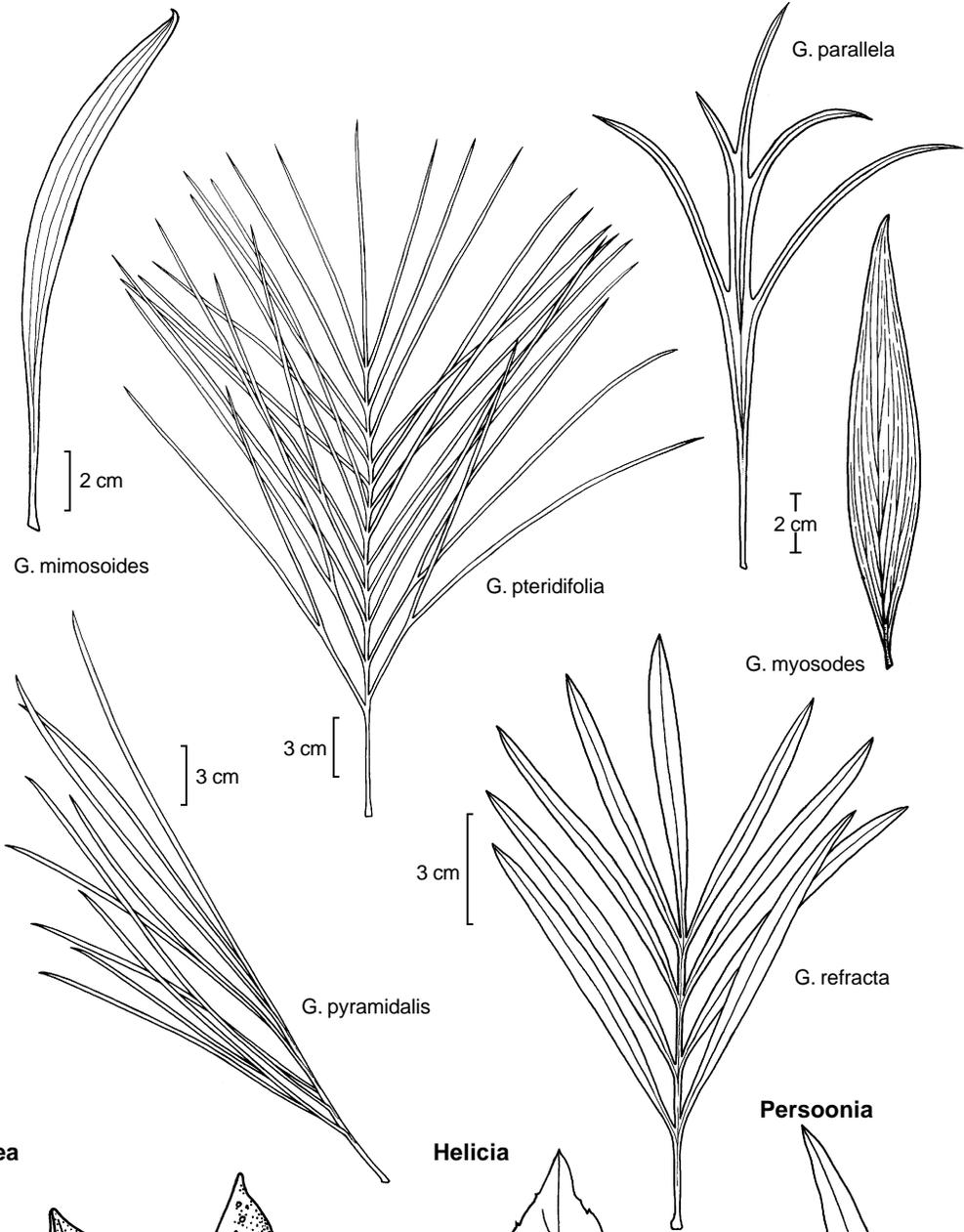
Small tree to 8 m. Bark thick, furrowed, grey. Indumentum of dense, silvery, medifixed hairs on young branchlets and petioles. Leaves sessile; blades grey-green, falcate, 120-290 mm long, 6-20(30) mm wide, L/W 8-25, coriaceous, entire, with obscure fine parallel veins. Inflorescence terminal, branched, to 300 mm long. Perianth cream, papillose inside; separating into 4 free segments. Ovary stipitate, glabrous; style cream, glabrous, pollen presenter conical. Follicle  $\pm$  orbicular, 14-22 mm diam., woody, covered with caustic sticky resin. Seed not seen. Flowering: June - Sept; fruiting: mostly Sept - Nov, old fruits persisting. Fig. 36

From western Qld to the Kimberley. Scattered in the DR in open forest or woodland.

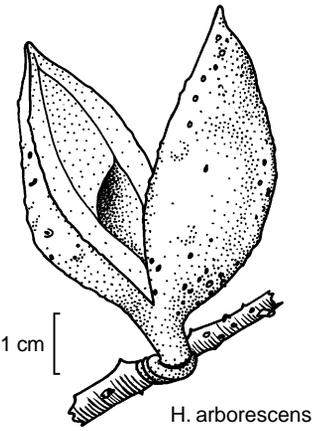
*G. myosodes* McGillivray

Shrub to 1.6 m. Indumentum of branchlets and

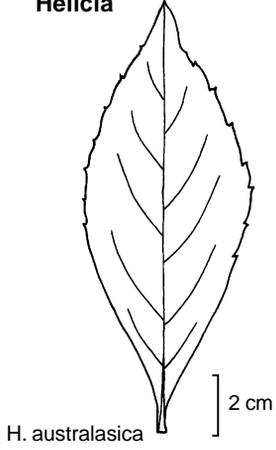
**Grevillea**



**Hakea**



**Helicia**



**Persoonia**



Fig. 36

leaves of ferruginous medifixed hairs and septate glandular hairs, leaves sometimes lacking glandular hairs. Leaves sessile or shortly petiolate; blades narrowly elliptic to elliptic, 90-170 mm long, 11-35 mm wide, L/W (2.5)6.5-9.5, coriaceous, entire, obscurely veined. Inflorescence terminal, branched, to 140 mm long. Perianth creamy yellow; separating into 4 free segments. Ovary shortly stipitate, glabrous; style cream to yellow, pollen presenter conical. Follicle oblong to  $\pm$  orbicular, 19-24 mm long. Seed oblong to orbicular, c. 18 mm long, 14 mm wide, wing c. 4 mm broad. Flowering: Apr; fruiting: Apr - May. Fig. 36

Disjunct from western Arnhem Land to Litchfield NP and the Kimberley. Rare in the DR; in open Eucalypt forest on lateritic and sandstone plateaus.

#### *G. parallela* Knight

Small tree to 6 m. Bark black, rough, furrowed. Indumentum on branchlets and leaves of medifixed hairs, rarely in dry country the inflorescence and flowers sericeous. Leaves entire or deeply 2-7-lobed, to 350 mm long, discolorous, longitudinally veined, margins recurved; lobes linear, to 115 mm long, 1.5-9 mm wide. Inflorescence terminal, branched, to 140 mm long. Perianth white to pale yellow, usually glabrous; separating into 4 free segments. Ovary stipitate; style cream, pollen presenter oblique. Follicle ellipsoid, 20-22 mm long, woody. Seed orbicular, c. 17 mm diam., wing c. 4 mm broad. Flowering: Apr - Oct; fruiting: July - Dec. Fig. 34, 36

From Qld to the Kimberley; rare in the DR where known only from Melville Is. and the Marrakai area. Typically in seasonally wet areas on a variety of soil types.

#### *G. pteridifolia* Knight

Small tree to 6 m. Bark dark grey, finely fissured. Indumentum on branchlets, leaves, inflorescence and perianth of dense medifixed hairs. Petiole 45-90 mm long. Leaf blades silvery, discolorous, to 40 mm long, 1-pinnate with 7-11 pairs of lobes, dissected to midrib, sometimes lower lobes further divided 1-2 times; lobes linear, to 180 mm long, 1.5-4 mm wide, margin recurved. Inflorescence axillary or terminal on short lateral branches, unbranched, appearing 1-sided at anthesis, to 230 mm long. Perianth orange, glabrous inside; separating into 4 free segments. Ovary sessile, hirsute; style orange, glabrous, pollen presenter oblique. Follicle asymmetrically oblong, 14-20 mm long, densely tomentose with septate

glandular hairs. Seed narrowly oblong, 12-17 mm long, wing c. 2.5 mm broad. Flowering: May - Aug, later in eastern Arnhem Land; fruiting: June - Oct. Fig. 36

Widespread from Qld to the Kimberley and common in the DR, especially on seasonally wet sandy areas.

#### *G. pyramidalis* A.Cunn. ex R.Br.

Small tree to 7 m. Indumentum of fine, ferruginous or silvery, medifixed hairs on branchlets and leaves, otherwise glabrous. Petiole 50-140 mm long. Leaf blades 270-500 mm long, entire or 1-pinnate with 4-7 pairs of lobes, dissected to midrib, sometimes lower lobes further divided 1-3 times; lobes linear, to 390 mm long, 1-4(8) mm wide. Inflorescence terminal, branched, to 500 mm long. Perianth white to cream, papillose inside; separating into 4 free segments. Ovary stipitate; style cream, pollen presenter conical. Follicle ellipsoid to orbicular, 17-24 mm long, thinly woody, viscid, drying black. Seed not seen. Flowering: May - Oct; fruiting: Sept - Jan. Fig. 36

From the NT and the Kimberley; rare in the DR with records from the Daly River and Mt Bunday; more common in drier country of the Gulf and the VRD. Occurs in open woodland. Closely related to *G. erythroclada* W. Fitzg. which occurs from the Gulf to the Kimberley.

#### *G. refracta* R.Br.

Shrub to 5 m. Indumentum on branchlets, leaves, inflorescence and perianth of dense silvery or ferruginous, medifixed hairs. Petiole 20-40 mm long. Leaf blades discolorous, to 170 mm long, entire or 1-pinnate with 1-10 pairs of lobes, deeply dissected to midrib; lobes narrowly elliptic to oblanceolate, 50-170 mm long, 4-21 mm wide. Inflorescence terminal, branched, to 60 mm long, branches recurved. Perianth yellow-orange to red, hairy inside; separating into 4 free segments. Ovary stipitate, glabrous; style yellow, glabrous, pollen presenter oblique to lateral. Follicle  $\pm$  orbicular to elliptic, 20-30 mm long, woody. Seeds elliptic, c. 19 mm long, wing c. 4 mm broad. Flowering and fruiting: throughout the year. Fig. 36

Widespread across the NT to the Kimberley. Rare in the DR in southern parts around Litchfield; on sandstone or sandy soils.

## HAKEA Schrader

An endemic Australian genus of c. 140 species; 14 species in the NT but only 1 in the DR.

### *H. arborescens* R.Br.

Small tree to 8 m. Bark rough, grey, fissured. Indumentum of branchlets, young leaves, inflorescence and perianth densely sericeous with ferruginous to hyaline medifixed hairs. Leaves sessile; blades entire, linear to narrowly oblanceolate or narrowly elliptic, 50-185 mm long, 3-11 mm wide, L/W 9.5-43, coriaceous, venation parallel but obscure. Inflorescence axillary, unbranched, to 30(50) mm long, clustered in heads. Perianth free, silvery or ferruginous. Hypogynous glands fused, horseshoe-shaped. Ovary shortly stipitate, glabrous; style hairy

in lower half or glabrous, pollen presenter conical, terminal. Fruit a follicle, ellipsoid, 28-58 mm long, 14-26 mm wide, thickly woody, smooth to slightly verrucose, beaked. Seeds 2, obovoid, 10-15 mm long, black, wing 15-18 mm long, membranous. Flowering: Jan - July; fruiting: persisting throughout the year. Fig. 36

Widespread from Qld to the Kimberley and extending into the arid zone. Uncommon in the DR where known from the Elizabeth R. area and Howard Springs. Associated with coastal dunes or inland on alkaline soils.

## HELICIA Lour.

A genus of c. 90 species from Asia to Malesia and Australia. About 8 species in Australia with 1 in the NT. [Foreman, 1983]

### *H. australisica* F.Muell.

Small tree to 10(15) m. Bark smooth and pale. Indumentum of branchlets, inflorescence and pedicels of small ferruginous medifixed hairs. Petiole 6-17 mm long. Leaf blades; juvenile leaves large and coarsely dentate; adult leaves discolorous, narrowly elliptic, elliptic to oblanceolate, 100-210 mm long, 26-80 mm wide, L/W 2.1-4.7, strongly reticulately veined, entire or dentate. Inflorescence axillary, unbranched,

to 190 mm long. Pedicels fused at base. Flowers in pairs, actinomorphic. Perianth free, white to cream, ciliate. Hypogynous glands free. Ovary sessile, hirsute with ferruginous hairs; style glabrous, pollen presenter erect. Fruit fleshy, dark purple to black, ellipsoid, 10-15 mm long. Seeds 2. Flowering: July - Nov; fruiting: Jan - Mar. Fig. 36

Qld and the NT. Common in the DR in perennially wet rainforest. Ripe fruit are edible.

## PERSOONIA Smith

A genus of c. 90 species; endemic to Australia; 1 species in the NT. The genus *Pycnonia* was described by Johnson & Briggs (1975) to accommodate 6 species from SW Australia and the widespread northern species *Persoonia falcata*; however this new genus has not been taken up.

### *P. falcata* R.Br.

Small tree to 8 m. Bark rough, grey. Young branchlets with dense silvery simple hairs. Leaves sessile; blades subglaucous, straight or falcate, linear to oblanceolate to broadly oblanceolate, 95-280 mm long, 8-55 mm wide, L/W 3.5-34, coriaceous, venation obscure except for midrib, base attenuate, entire. Inflorescence axillary or terminal, often growing out into a leafy shoot, unbranched, to 220

mm long, flowers subtended by bracts or leaves. Flowers zygomorphic. Perianth free, yellow. Hypogynous glands 4, free. Ovary sessile, glabrous; style short, curved, glabrous, truncate. Fruit a fleshy drupe, yellow-green, ellipsoid, 15-20 mm long. Flowering: June - Oct; fruiting: Oct - Jan. Fig. 36

Milky Plum

Widespread across northern Australia in open woodland; common in the DR. Fruits are edible.

### STENOCARPUS R.Br.

Trees. Young growth rusty pubescent. Inflorescences terminal or in upper axils, umbellate. Flowers zygomorphic. Hypogynous glands united in a horseshoe-shaped nectary. Ovary stipitate; ovules numerous; style long and dilated apically into an oblique pollen presenter. Fruit a follicle; seeds with an outer membranous wing folded around the inner wing.

A genus of 25 species from Malaysia, New Caledonia to Australia; 8 species in Australia; 3 in the NT, 2 in the DR. All NT species are described here.

- 1. Leaves discoloured, glossy above ..... S. 'Top End'
- 1. Leaves concolorous, dull above ..... 2
- 2. Perianth yellow, 4-5 mm long ..... S. cunninghamii
- 2. Perianth white, 8-15 mm long ..... S. acacioides

**S. acacioides** FMuell.

*S. cunninghamii* R.Br, misapplied name

Tree to 12 m; bark black, fissured. New buds rusty tomentose; plants otherwise glabrous. Petioles 5-20 mm long. Leaf blades concolorous, dull, coriaceous; juveniles entire, deltoid or ovate, 73-120 mm long, 57-111 mm wide, L/W 1-1.5, grading into adult leaves; adults elliptic or narrowly elliptic, 45-115 mm long, 7-30 mm wide, L/W 3-8, main longitudinal veins 4-8, secondary venation obscure, bases long-attenuate, apices acute or obtuse. Umbels of 19-22 flowers; peduncles 7-35 mm long; pedicels 6-10 mm long. Perianth white, 8-15 mm long. Fruit woody, linear, 55-150 mm long. Seeds not seen. Flowering: Apr - Oct; fruiting: Nov - May. Fig. 37

Distributed from the Kimberley eastward across the Top End north of 16° S. Of scattered occurrence

in the DR, usually on skeletal soils in Eucalypt woodland; rarely in monsoon thickets. Typically reproducing by suckers and not often seen as adults.

**S. cunninghamii** R.Br.

Tree to 10 m; bark dark grey, flaky and rough. New growth rusty tomentose, soon becoming glabrous. Petioles 4-7 mm long. Leaf blades concolorous, dull, coriaceous; juveniles elliptic or ovate in outline, simply lobed to deeply bipinnately lobed, lobes linear; adults oblanceolate, narrowly oblanceolate or narrowly elliptic, straight or falcate, 25-110 mm long, 4-18 mm wide, L/W 3-12, venation faint with 3-5 longitudinal veins, base attenuate, apex acute or obtuse, mucronate. Umbels of 14-21 flowers; peduncles 3-19 mm long, pedicels 4-5 mm

**Stenocarpus**

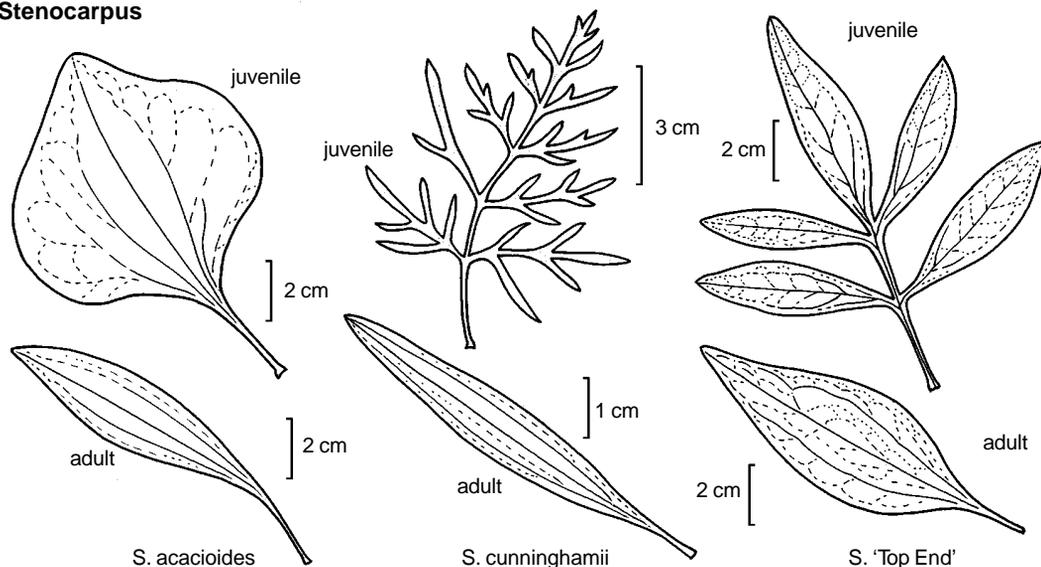


Fig. 37

