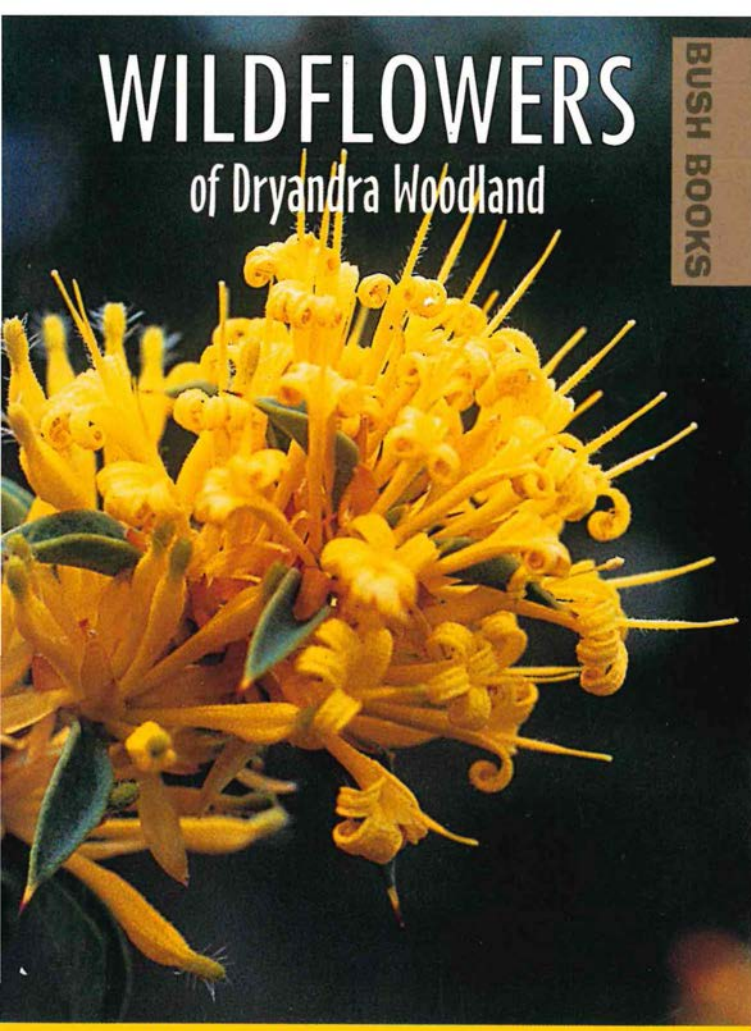
# WILDFLOWERS
## of Dryandra Woodland

BUSH BOOKS



*What flower is that?*

*Bush Books are a series of practical field guides to help you learn about and discover WA's unique plants, animals and special features, region by region.*

**ABOUT THE AUTHORS**

Jonica Foss is a primary school teacher with an interest in natural history, and is a volunteer at the WA Herbarium. She is part of the team that identifies plants sent in from the regional herbaria.

Peter Foss is a lawyer with a scientific interest and a keen photographer. He is a former Minister for the Environment.

Patricia Gurry is a member of the Nature Photography Group. She is a volunteer at the WA Herbarium, where she helps to curate the *Eremophila*.

Jonica and Patricia grew up at Dryandra State Forest and are daughters of the late John Currie, Senior Forester there for 35 years and for whom this book was written.

**Acknowledgements:** Neville Marchant, Mike Hislop, Ryonen Butcher, Elizabeth George, Greg Keighery, Allen Lowrie, Bruce Maslin, Margaret Pieroni, Barbara Rye, Juliette Wege, Judy Wheeler, Paul Wilson.

**Publisher:** Department of Conservation and Land Management, 17 Dick Perry Avenue, Kensington, Western Australia, 6151.

**Editor:** Carolyn Thomson-Dans.

**Design and production:** Natalie Jolakoski.

**Front cover:** Holly-leaved honeysuckle (*Lambertia ilicifolia*). Photo – Peter Foss

ISBN 0 7307 5554 1 

# WILDFLOWERS
## of Dryandra Woodland

by Jonica Foss, Peter Foss and Patricia Gurry

GOVERNMENT OF WESTERN AUSTRALIA
DEPARTMENT OF Conservation AND LAND MANAGEMENT
Conserving the nature of WA

# INTRODUCTION

Dryandra Woodland, near Narrogin, is one of the largest remaining areas of original bushland in the central western Wheatbelt. Its 27,000 hectares are an important conservation area for wildflowers and wildlife, providing breeding grounds for the State's animal emblem, the numbat, and many other threatened animals and plants. Here, you can find tammar wallabies, honey possums, woylies, echidnas, malleefowl and carpet pythons. Dryandra's open woodlands, with their beautiful white gums, are a peaceful haven in the surrounding farmland and attract thousands of visitors each year. A new visitor centre provides night tours to view dalgytes, bettongs and other small mammals.

Dryandra displays a spectacular variety of flowers in spring. With an annual rainfall of only 500 millimetres, it lies in the transition zone between the semi-arid Wheatbelt and the moister jarrah forests. It is this change from one vegetation system to another which gives rise to an unusually high number of plant species (816 recorded so far) in a small area.

Dryandra Woodland was reserved in 1926 by the newly-formed Forests Department for the production of tannins from the local brown mallet (*Eucalyptus astringens*) – a slim, smooth brown-trunked eucalypt. Clearing and planting took place in the 1920s and 1930s and resulted in 8000 hectares of mallet plantations being established. However, after 30 years, the world market for natural tannins collapsed. Dryandra remained State forest and is now an important conservation and recreation area. More than two thirds of Dryandra is natural wandoo/powderbark woodland. The area's management plan requires the mallet plantations to be gradually returned to their original vegetation, with a small amount of timber still available for making tool handles and fence posts.

Dryandra is an excellent area in which to appreciate the dependency of plant communities upon the underlying soil, rocks

Photo – Peter Foss

*Grey-leaved bottlebrush.*

and landforms. Changes in the terrain are clearly associated with changes in plants growing there. This book describes eight vegetation associations, plus the artificially created associations in the mallet plantations. Each plant described also has the soil type with which it is most commonly associated.

The woodland takes its name from the many dryandras found there. Some 12 different dryandra species grow there in all terrains. The two dominant woodland trees are wandoo (*E. wandoo*) and powderbark (*E. accedens*), which both grow to about 10 metres tall. Wandoo has a white to grey trunk, and grows mainly on flat ground, whereas powderbark has creamy white to pink powdery bark and grows on laterite slopes and breakaways. Granite sheoak (*Allocasuarina huegeliana*) dominates the granite outcrops.

Dryandra Woodland is only 160 kilometres south-east of Perth on the Narrogin-Wandering Road. Visitors can stay at the nearby town of Narrogin or at on-site cottage and dormitory-style accommodation in the old forestry settlement at Dryandra. The Department of Conservation and Land Management (CALM) has developed a series of walktrails through the woodland, each of which passes through a number of different vegetation types.

Through this book you can gain an appreciation of the variety and beauty of the Wheatbelt flora represented at Dryandra and of the amazing adaptations they need to cope with the harsh environment.

# HABITATS AND SOIL TYPES

Laterite Plateau Woodland Flat gravelly area at the top of a laterite breakaway with a scattering of trees including marri, jarrah and powderbark and a wide variety of bushes including many dryandras.

Laterite Firebreak These were cleared when Dryandra Woodland was actively cultivated. The removal of tree cover allowed a great diversity of flowers and bushes to flourish. Trees are starting to return.

Sandy Firebreak Yellow sandy cleared areas with a slightly different, but diverse, mix of shrubs and flowers.

Mixed Woodland Occasionally on lower slopes, marri and jarrah, and some wandoo or powderbark, are found with a varied understorey.

Powderbark Laterite Slopes Laterite breakaways, and the slopes leading up to them, are covered in powderbark, often with an understorey of king dryandra (*Dryandra proteoides*).

Wandoo Flats Wandoo dominates the sandy flats. Spring annuals grow profusely in the sparse understorey.

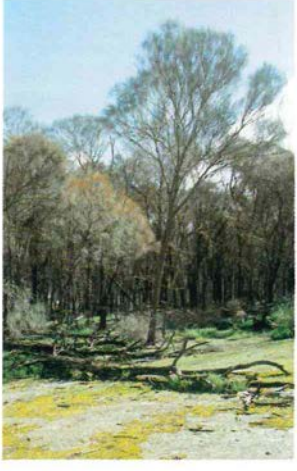
Sheoak Flats These rough grey-barked trees (*Allocasuarina huegeliana*) have fine needle-like leaves, which seem to sigh with even the lightest wind. In spring, the ground is covered with annuals.

Sheoak Granite Granite rocks show through the thick carpet of needles. There are rock ferns and annuals in spring.

Mallet Plantation Though planted on a variety of soils, the acidic tannin bark and thick canopy effectively suppress most undergrowth, except where thinning has allowed a few species to return.

Above: *Wandoo flats*

Below left: *Granite sheoak*



Below right: *Mallet plantation*

Photos – Peter Foss

# EVERLASTINGS

## (*Lawrencella rosea* and *Rhodanthe citrina*)

Family Asteraceae, the daisies

Yellow everlastings, pink Lindley's everlastings and tiny book triggerplants form massed spring displays on the damp wandoo flats and sheoak glades at Dryandra. Everlastings are so-called because they have colourful, papery bracts that dry well and last indefinitely in flower arrangements. They are popular garden plants, and were grown in England from as early as 1791. In common with many daisies, the floral bracts look like petals but surround the central disc florets, which are the true flowers.

**LINDLEY'S EVERLASTING (*Lawrencella rosea*):** This annual grows to 25 centimetres high. The small flower heads, up to 30 millimetres across, have pink or white radiating bracts. The centre of the flower is bright yellow. The plants can have single stems with a terminal head of flowers or can be finely branched, with up to four flowers on each stem. The thin leaves can be opposite or arranged alternately on the stem. They are often thread-like and grow up to 30 millimetres long. The flowers have a fresh, pleasant perfume.

**YELLOW EVERLASTING (*Rhodanthe citrina*):** This annual grows to 30 centimetres high. The glossy yellow flower heads are up to 20 millimetres across. The narrow leaves, up to 40 millimetres long, are green and slightly stem-clasping. The thin leaves and stems often have a woolly appearance.

**HABITAT AND DISTRIBUTION:** Lindley's everlasting is common, growing from north of Geraldton to Kojonup in the south and east to Kalgoorlie. Yellow everlasting is widespread throughout the State, from as far north as Exmouth and south to Albany and Esperance. It thrives in sands, gravels and granitic soils. Both grow in damp areas of the woodland in wandoo flats, sheoak thickets and around granite outcrops. Wandoo Flats, Sheoak Granite, Sheoak Flats.

**FLOWERING TIME:** Lindley's everlasting flowers from July to October. Yellow everlasting is in bloom from August to December.

Photo – Patricia Gurry

Above: *Lindley's everlasting*

Below: *Yellow everlasting*

Photo – Peter Foss

# VARIABLE BUTTERCUP

*(Hibbertia commutata)*

Family Dilleniaceae, the native buttercups

This common *Hibbertia* of the wandoo woodland makes a showy display of bright yellow buttercup flowers in late spring. The genus was named after George Hibbert (1757-1837), a London merchant who had a private botanic garden at Chelsea. The name *commutata* is Latin for 'change' and refers to the changeable nature of the shrub. It is a very variable species in both leaf size and hairiness.

**DESCRIPTION:** The variable buttercup is a small shrub with an open sprawling habit, which can grow to 30 centimetres high. Its flowers, up to 20 millimetres across, are on the ends of branchlets or in the leaf axils. There are three smooth hairless carpels (the female reproductive organs) in the centre of each flower, surrounded by 15-30 stamens and five bright yellow petals. Silky white hairs cover the sepals and the new growth. These in turn are surrounded by dark brown, papery bracts. The greyish-green leaves are commonly a narrow oblong shape and grow to 40 millimetres long by 10 millimetres wide. The undersides of the leaves are covered in long white hairs.

**DISTINCTIVE FEATURES:** Bright yellow buttercup flowers cover the bushes. The new growth is covered in long silky white hairs. This shrub has similar-sized flowers and a similar leaf colour to *H. ovata* but can readily be distinguished by its smooth carpels. *H. ovata* has carpels covered in long white hairs.

**HABITAT AND DISTRIBUTION:** Variable buttercup is a very common shrub from north of Geraldton down to the south coast at Albany. It grows in sandy and lateritic soils in open woodland. Mixed Woodland, Sandy Firebreak, Wandoo Flats.

**FLOWERING TIME:** July to November.

Photo – Peter Foss

Photo – Peter Foss

## CUSHION BUTTERCUP

**(*Hibbertia hibbertioides* var. *pedunculata* ms)**

Family Dilleniaceae, the native buttercups

In WA, the genus *Hibbertia* is found from the tropical north to the south-west, where there are more than 64 species. These provide a colourful spring display in the bush, with their intense yellow petals. Native buttercups have five free persistent sepals and five petals. The petals fall quite early, but the flowers are continuously replaced. Each flower has numerous yellow stamens, either on one side of or clustered around the carpels. They are sometimes joined in bundles but often remain separate. These features, plus the distinctive number of carpels, enable each species to be identified in the bush using just a hand lens.

**DESCRIPTION:** This small prostrate shrub forms a mat up to 300 millimetres in diameter. It has bright yellow flowers, up to 15 millimetres across, each usually with a slender stalk. Each flower has three carpels. Five sepals surround the flowers and have a long point or awn. Soft, fine, pale greyish-green leaves, 10 millimetres long, are crowded along short stems. The species has recently undergone a name change. It was previously *H. teretifolia.*

**DISTINCTIVE FEATURES:** The ground-hugging habit and circular shape of these buttercups is very distinctive. They dot the landscape in large numbers, appearing like scattered flat gold cushions. The leaves and flowers are very similar to those of *H. hemignosta*, which often grows in the same area. However, the latter is an erect plant up to 300 millimetres tall with thin upright branches.

**HABITAT AND DISTRIBUTION:** This species grows in full sun in sand, gravelly clay or laterite, and in partial shade in open woodland. It is restricted to an area from York to Dryandra. Sandy Firebreak, Laterite Firebreak, Laterite Plateau Woodland, Mixed Woodland.

**FLOWERING TIME:** Cushion buttercup flowers mostly from September to October. At Dryandra, flowering can occur from May to October, depending on rainfall.

Photo – Peter Foss

Photo – Patricia Gurry

## PYGMY SUNDEW

*(Drosera hyperostigma)*

Family Droseraceae, the sundews

In October, brilliant spots of orange dot the gravelly bushland soil, as pygmy sundews begin to flower. Sundews are a fascinating group of insectivorous plants of the south-west of WA. Instead of leaves they have concave lamina (modified leaf blades) covered in sticky glands, used to catch and digest small insects. Proteins from these insects supplement their diet, as the soils in which they grow are generally very low in nutrients. The pygmy sundew is a perennial plant. To cope with the hot, dry summers it enters a dormant stage, forming a shining silver white bud to reflect the sun's rays. The dormant bud is held a few millimetres off the hot ground by thin, dead-looking roots. With the first rains in autumn, new roots penetrate deep into the soil and start their regrowth.

**DESCRIPTION:** This small, perennial plant forms a basal rosette of modified leaves up to 25 millimetres in diameter. The stalk of each leaf is green and widens into a concave structure (lamina). The margins of the lamina are surrounded by long hairs with reddish, sticky glands on the ends. The six to eight flowered inflorescence can be up to 50 millimetres high. There are three black styles spreading horizontally with stigmatic top-shaped knobs at the ends. The five stamens are white with yellow pollen.

**DISTINCTIVE FEATURES:** Each species of pygmy sundew can be identified by the shape, number and colour of its style and stigma, as well as by the individual shape of the stipules and the sticky lamina. This pygmy sundew has rounded bright orange petals with black glossy centres. The pollen is yellow and there are three top-shaped black stigmas. The lamina is circular with a green stalk.

**HABITAT AND DISTRIBUTION:** This sundew inhabits lateritic and sandy soils in open forest, from Gidgegannup to Beverley and Dryandra. Laterite Plateau Woodland, Laterite Firebreak.

**FLOWERING TIME:** October to November.

Photo – Patricia Gurry

## WHEATBELT ASTROLOMA

*(Astroloma epacridis)*

Family Epacridaceae, the Australian heaths

The impoverished soils of the south-west contain the greatest diversity of plant species in WA. A remarkable selection process, over thousands of years, has seen the development of specialised features to increase uptake of scarce nutrients. In the heath family, a symbiosis with fungi in the hair roots enables them to utilise nitrogen from plant litter. Many species from this family flower in autumn and winter, providing an important food source for birds and animals when other flowers are scarce. The fleshy fruits of astrolomas are rich in nutrients and form a regular part of the diet of emus and bobtail skinks. The flowers are tightly formed hairy tubes, which resist entry by insects. They need the strong beaks of birds like honeyeaters to pollinate them.

**DESCRIPTION:** This shrub can grow to 1.2 metres, with an open spreading habit, but at Dryandra it is more often a small, compact, rounded bush. The flowers are red to orange glossy tubes, to 12 millimetres long, that open into a five-pointed star. They grow singly in the leaf axils. Narrow, pale bluish-green leaves, 10 millimetres long by two to three millimetres wide, have downward-curved margins and are held almost at right angles to the stem.

**DISTINCTIVE FEATURES:** The red tubular flowers have a white beard inside the ends of the lobes, and the stiff, narrow bluish-green leaves have sharply-pointed tips.

**HABITAT AND DISTRIBUTION:** Wheatbelt astroloma grows in a wide variety of soils, from sand to lateritic gravel. It is widespread throughout the south-west, from New Norcia to the Fitzgerald River National Park. At Dryandra it grows in full sun on old firebreaks and also in partial shade in mallet plantations and in powderbark and wandoo woodland. Soil Associations: All.

**FLOWERING TIME:** Flowering takes place from March to November, but is most prolific in autumn and early winter.

Photo – Patricia Gurry

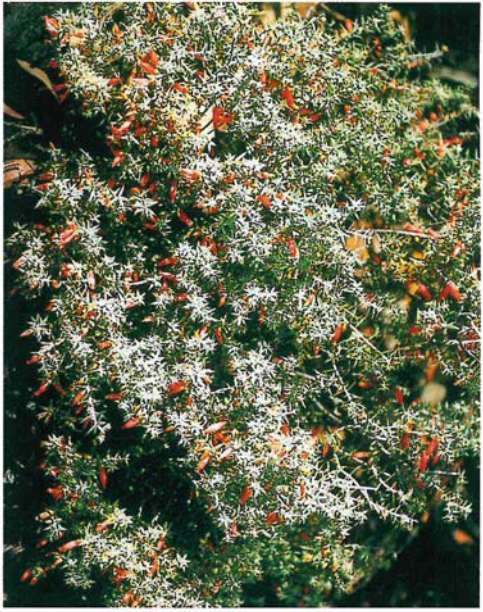


Photo – Patricia Gurry

## GLOWING DAMPIERA

*(Dampiera obliqua)*

Family Goodeniaceae, the fanflowers

Glowing dampiera forms clumps of brilliant blue along the sides of gravel roads at Dryandra. The genus *Dampiera* was named after English navigator and privateer William Dampier (1652-1715), a keen naturalist who made one of the earliest collections of Western Australian plants. There are 38 species of *Dampiera* endemic to the south-west of WA. They are small sub-shrubs with mostly rich blue flowers and winged lobes on the petals. Most species have a yellow or white mark on the throat of the corolla and often ridges leading down into the throat. These guides help to place pollinating insects in the right position to pick up pollen whilst feeding on the nectar. The type of hairs on the outside of the petals is a useful guide to identifying the species.

**DESCRIPTION:** Glowing dampiera forms an erect sub-shrub, up to 700 millimetres tall, with many angular stems. The plant is hairless except for the petals, which have silvery grey hairs pressed closely to the undersides. The brilliant blue flowers, up to 10 millimetres wide, have a white patch in the throat. In some specimens the flowers are almost purple. They are held in loose clusters along the stems. The stalkless leaves are up to 60 millimetres long and 20 millimetres wide.

**DISTINCTIVE FEATURES:** These small shrubs have brilliant blue flowers with a line of silvery grey hairs on the underside of the petals. They grow in clumps, making a vivid display along gravelly road verges.

**HABITAT AND DISTRIBUTION:** Glowing dampiera grows in full sun in gravelly soils and on lateritic ridges in a restricted area between Pingelly, Narrogin and Kukerin. Laterite Firebreak, Laterite Plateau Woodland.

**FLOWERING TIME:** August to November.

Photo – Peter Foss

Photo – Patricia Gurry

## ROUND-HEADED MICROCORYS

*(Microcorys capitata)*

Family Lamiaceae, the mintbushes

*Microcorys* belong to the mint family, whose members are aromatic herbs or low shrubs, usually with opposite or whorled leaves. The family includes common garden plants such as rosemary, mint, lavender and thyme. They often have square stems, and the flowers have distinctive upper and lower lips. Round-headed microcorys is an attractive low shrub found in only a few areas on sandy gravel firebreaks at Dryandra. Like many other members of the mint family, the flowers have spots in the throat that help guide pollinating insects into the nectary at the base of the flower. The name *capitata* means 'having a distinct head' and refers to the clusters of flowers on the ends of the branches.

**DESCRIPTION:** This small shrub has an open, erect habit with many stems and rigid branches. It grows to 80 centimetres tall and up to a metre wide. Numerous flowers are held in round white heads at the ends of short, lateral branches. The centre of the head has a cluster of reddish-brown bracts which surround flowers yet to open. The upper lip of the corolla has two lobes, and is helmet shaped or hooded, while the lower lip has three lobes. The throat of each flower is dusted with pinkish-red spots. Small, egg-shaped leaves are in whorls of three around the stem.

**DISTINCTIVE FEATURES:** Round-headed microcorys is distinguished by its clusters of white, bell-shaped flowers, which have lobed lips and red spots in the throat. There are brown bracts in the centre of the group of flowers.

**HABITAT AND DISTRIBUTION:** This shrub grows only in a restricted area centred around Narrogin. It is found on lateritic breakaways and sandplains. It enjoys disturbed areas and is found at Dryandra growing in sandy gravel along the edges of old firebreaks. Laterite Firebreak.

**FLOWERING TIME:** August to November.

Photo – Patricia Gurry

Photos – Peter Foss

## TINY-LEAVED WATTLE

(*Acacia lasiocarpa* var. *sedifolia*)

Family Mimosaceae, the wattles

Tiny-leaved wattle grows throughout the wandoo woodland at Dryandra, with a bright display of golden blossoms in spring. There are more than 950 species of *Acacia* in Australia, from tall forest trees to groundcovers. The common name 'wattle' is derived from the wattle and daub buildings made by early settlers, who used the flexible stems of some acacia species. Aboriginal people ate the nutritious seeds of this versatile group of plants, and used the tough timber to make tools and weapons. In the woodland the long-lived seeds also provide food for many insects and animals. They produce prolific seedlings after fire, and the nodules on their roots enrich the soil by their ability to fix nitrogen.

**DESCRIPTION:** Tiny-leaved wattle is a variable variety. Some plants are very spiny, whereas others have no spines. At Dryandra tiny-leaved wattle grows as a small tangled spiny shrub to a metre high and almost the same across. There are numerous spreading, divided branches, each ending in a sharp reddish-brown tip. Reddish spines project from many of the leaf axils. Leaves are in clusters of tiny, dark green pairs of leaflets. Each leaf has two to three pairs, each about two millimetres long. The flowers are aggregated into golden, globular heads on short stalks in the leaf axils.

**DISTINCTIVE FEATURES:** This low-growing shrub is sometimes mistaken for prickly moses (*A. pulchella*), but has leaflets with inward-rolled margins, short flower stalks and only one spine at the base of the leaves, whereas prickly moses has flat leaflets, a longer flower stalk and usually has two spines at the leaf base.

**HABITAT AND DISTRIBUTION:** Tiny-leaved wattle grows in sand, laterite and sandy clay, in open woodland or full sun, from Moora in the north, across to Tammin and south to the Stirling Range. At Dryandra, it is mostly found in wandoo woodland. Wandoo Flats.

**FLOWERING TIME:** July to October.

Photo – Bruce Maslin

## GREY-LEAVED BOTTLEBRUSH

*(Beaufortia incana)*

Family Myrtaceae, the myrtles

In spring, there is no missing the bright red flowers of the grey-leaved bottlebrush. This shrub makes a stunning display, especially with the sun shining from behind the blossoms. The name *incana* means 'grey' and the greyish-blue foliage forms an attractive contrast to the flowers. The brush-like flowers are designed to give maximum spread of pollen onto the feathers of visiting birds.

**DESCRIPTION:** This large, rigidly branched, spreading shrub grows one to two metres tall. Dark red bottlebrush flowers are clustered along the branches. The groups of flowers are approximately 25 millimetres across and 20 millimetres high. They are made up of red stamens, which are united in bundles of three with the filaments being divided at the ends. The stamens are yellowish-green at the base and red nearer to the tips. Greyish-blue, narrow leaves, five to 12 millimetres long, have silky hairs on both sides. They are densely clustered along the branches.

**DISTINCTIVE FEATURES:** Grey-leaved bottlebrush can be recognised by its bright red clusters of flowers along the branches and its greyish-blue leaves.

**HABITAT AND DISTRIBUTION:** This species grows in sandy gravel in full sun. Laterite Plateau Woodland.

**FLOWERING TIME:** August to December.

Photo – Patricia Gurry

## WHITE MYRTLE

*(Hypocalymma angustifolium)*

Family Myrtaceae, the myrtles

The 12 species in this genus are all endemic to south-western Australia. The white myrtle is a very common shrub of the Wheatbelt and of coastal areas. For most of the year it is not noticeable, then it bursts into flower in late winter. The white flowers have five spreading petals and many long, loose stamens which give them a fluffy appearance. The generic name comes from *hypo* meaning 'under' and *calymma* meaning 'covering' and refers to the cap-like covering on the bud. *Angustus* is Latin for 'narrow' and *folium* means 'leaf', as the plant has long, thin leaves.

**DESCRIPTION:** This erect, many-stemmed shrub can grow up to a metre tall. Young stems are a whitish colour. The white, stalkless flowers often have a pink throat that deepens in colour with age. They grow in pairs in the axils of the leaves, making a bunch of four flowers around the stem. There are five radiating petals and usually 25-30 stamens. The style is three to four millimetres long. Linear leaves, 10-30 millimetres long, are held opposite one another, are triangular in cross-section and often curved. They grow almost at right angles to the stem and have a soft point.

**DISTINCTIVE FEATURES:** White myrtle is distinguished by its long, graceful stems and small, fluffy bunches of white flowers clustered in the leaf axils. The narrow leaves, in opposite pairs on the stems, are three to four times as long as the flowers.

**HABITAT AND DISTRIBUTION:** This very common and variable shrub grows in many different habitats throughout the south-west. One of the most common species in Dryandra Woodland, it is found on sandy soils, in clay and on lateritic ridges. It grows in full sun on old firebreaks in association with sandplain poison (see pages 32-33), but is also one of the few shrubs that grow in the partial shade of the mallet plantations. Soil associations: All.

**FLOWERING TIME:** June to November.

Photo – Peter Foss

## PINK POWDERPUFFS

**(*Verticordia insignis* subsp. *compta*)**

Family Myrtaceae, the myrtles

Featherflowers (*Verticordia*) are varied and extremely beautiful. Their colourful sepals, which in most other plants are green with undivided margins, are divided into many feathery or fringed lobes. The petals too are frequently fringed or toothed. Featherflowers have a specialised gland at the base of each leaf that exudes a sweet liquid and can provide food for honeyeaters even when plants are not flowering. *Insignis*, meaning 'remarkable for' or 'outstanding', is derived from the abundant flowers. The subspecific name from the Latin *comptus* means 'head-dress' and probably refers to the ring of hairs around the base of the flower.

**DESCRIPTION:** Pink powderpuffs is an erect, bushy shrub up to a metre tall and 600 millimetres wide, though shrubs at Dryandra are generally smaller and more straggly. Stems and branches are grey. The bright pink, fringed petals have a thick skirt of paler pink, fluffy sepals below them. The white style protrudes above the flowers and is tipped with yellow, as are the anthers. The flowers are sweetly scented. Small, bright green, boat-shaped leaves are up to four millimetres long.

**DISTINCTIVE FEATURES:** The upper leaves of pink powderpuffs are smaller and the flowers are a brighter pink, with shorter stamens and a shorter style, than those of the other *insignis* subspecies. This subspecies is sometimes confused with *V. inclusa*, which also has short stamens and a short style but lacks hairs on the inner face of the staminodes (sterile stamens).

**HABITAT AND DISTRIBUTION:** This shrub grows in full sun on sandy or gravelly soils, or in partial shade in open woodland, from Manmanning in the north to Kojonup and Lake Grace in the south, and has been recorded as far east as Widgiemooltha. Laterite Firebreak, Sandy Firebreak, Laterite Plateau Woodland.

**FLOWERING TIME:** September to November.

Photo – Patricia Gurry

Photo – Patricia Gurry

## GOLDEN FEATHERFLOWER

(*Verticordia serrata* var. *serrata*)

Family Myrtaceae, the myrtles

The first *Verticordia* specimens were collected from WA in 1791, by Archibald Menzies on the *Vancouver* expedition, but the first two species were not named until 1826. They were initially thought to resemble the waxflowers and placed in *Chamelaucium*. Two years later they were recognised as a distinct genus by Augustin de Candolle and called *Verticordia*, which means 'turner of hearts'. The name is thought to refer to Venus, the goddess of love and beauty, who could bewitch her suitors and turn their hearts. Golden featherflower, with its bright, buttercup yellow heads of flowers, is similar to orange morrison (*V. nitens*), from the sandplains near Perth, but has much smaller leaves and is a more slender plant.

**DESCRIPTION:** Golden featherflower is an open erect shrub, from 300 millimetres to a metre tall and 500 millimetres wide. It often has a spindly appearance and has few branches. The flowers form a dense brilliant yellow mass at the ends of the branches. They are held erect in groups, and the flower-stalks are of differing lengths so that the overall effect is of a flattened head of flowers. The sepals are feathery and widely spreading and the petals are toothed. The petals have a glossy, golden inner surface.

**DISTINCTIVE FEATURES:** This plant is recognised by its bright golden heads of small, feathery flowers on slender stems and its tiny, rounded green leaves, up to three millimetres long, with fine hairs on the margins.

**HABITAT AND DISTRIBUTION:** It enjoys full sun and grows in a variety of soils, from white sand to lateritic gravel. Golden featherflower grows in open mallee heathlands or open jarrah forest. It is common throughout the Wheatbelt, from the Boyagin Nature Reserve south to Lake Grace. Laterite Plateau Woodland, Laterite Firebreak, Sandy Firebreak.

**FLOWERING TIME:** October to January.

Photo – Patricia Gurry

Photo – Patricia Gurry

## DIAMOND-LEAVED BITTER PEA

*(Daviesia rhombifolia)*

Family Papilionaceae, the peas

*Daviesia* is a diverse genus of pea-flowered legumes with more than 90 species in WA. The genus was named after a Welsh botanist Hugh Davies (1739-1821). Like the acacias and other pea flowers, the daviesias are able to fix nitrogen in the soil. This is produced in specialised nodules on their roots. Most daviesias have small yellow and red flowers specialised for bee pollination, but a few varieties, like staghorn bush (*D. epiphyllum*), have large red flowers and attract bird pollinators. They are all characterised by having triangular pods containing two hard-coated seeds. The shrubs are well adapted for hot, dry conditions with hard, prickly phyllodes (modified leaf stalks). These perform the function of leaves and have the advantage of reducing transpiration because they have fewer pores (stomata).

**DESCRIPTION:** This many-stemmed shrub to 800 millimetres high has angular, ribbed branchlets. The phyllodes are diamond-shaped with rounded edges and extremely sharp tips. They are a bluish-green colour and up to 30 millimetres long by 10 millimetres wide. The small pea flowers are orange and red. They are stalkless and clustered in the phyllode axils. The triangular pods are flattened.

**DISTINCTIVE FEATURES:** The shrubs are easily recognised by their distinctive rounded diamond-shaped phyllodes with sharply pointed ends, and their clusters of small red and orange pea flowers.

**HABITAT AND DISTRIBUTION:** The diamond-leaved bitter pea can grow on lateritic soils, sand or sandy clay. It is found in a fairly wide area from the Darling Range to Narrogin, and east as far as Bodallin. At Dryandra it inhabits the laterite ridges and plateaus. Laterite Plateau Woodland, Powderbark Laterite Slopes.

**FLOWERING TIME:** July to September.

Photo – Peter Foss

## SANDPLAIN POISON

*(Gastrolobium microcarpum)*

Family Papilionaceae, the peas

Sandplain poison is one of the dominant shrubs of the understorey at Dryandra, providing good cover for small mammals. Masses of orange and yellow pea flowers create a wonderful spring display. Gastrolobiums contain fluoroacetate, which is highly toxic to introduced mammals but has little effect on native mammals that co-evolved with the plants. Agricultural clearing eradicated poison plants, endangering many *Gastrolobium* species and destroying the habitat of mammals such as numbats and woylies. Baiting with a synthetic fluoroacetate, called 1080, to reduce introduced foxes, has increased numbers of small native mammals. Ongoing 1080 baiting at Dryandra, combined with an extensive protective understorey, means numbats and woylies are once again very common there. In fact, regular baiting in many south-west conservation areas has resulted in the woylie being removed from the threatened species list.

**DESCRIPTION:** Sandplain poison is a bushy shrub to 1.5 metres high with open branches. Olive green leaves, 20 to 40 millimetres long, have a paler underside, sharply-pointed tips and are in whorls of three. The ends curve backwards. Orange and yellow pea flowers are arranged in long racemes. The small, flattened seed pod is about 10 millimetres long.

**DISTINCTIVE FEATURES:** This species thrives in summer, when other shrubs show signs of stress. Gastrolobiums can be distinguished from non-toxic members of the pea family by their paired or whorled leaves with prominent stipules, and terminal racemes of orange and yellow, or red and yellow, flowers.

**HABITAT AND DISTRIBUTION:** Sandplain poison grows in gravelly and sandy soils. It colonises disturbed areas such as firebreaks. It has been found as far north as Yandanooka and also around Toodyay and south to Highbury. Soil Association: All.

**FLOWERING TIME:** August to October.

Photo – Peter Foss

## PAINTED LADY

*(Gompholobium scabrum)*

Family Papilionaceae, the peas

*Gompholobium* is an entirely Australian genus of more than 30 species and now includes the former genus *Burtonia*. Painted lady used to be known as *Burtonia scabra*. The family name is derived from *papilio*, meaning 'butterfly' in Latin, and refers to the shape of the flowers, which are like butterfly's wings. The specific name means 'rough' and refers to the leaves, which are often scaly. This shrub is one of the most striking spring-flowering shrubs at Dryandra.

**DESCRIPTION:** Painted lady is a slender erect shrub of up to 1.5 metres tall, with a few ascending branches and numerous short lateral ones. The leaves are divided into three narrow leaflets, up to 20 millimetres long, with the margins tightly curled under. The pea flowers range in colour from pink to mauve, and the large standard petals are 12 to 20 millimetres long. The smooth tubular calyx has five narrow lobes. Painted lady is quite variable across its range. Leaflets on the shrubs at Dryandra are a pale greenish-grey, but in the same species growing further south near Denmark they can be dark green.

**DISTINCTIVE FEATURES:** The species is recognised by its masses of showy rose pink to mauve pea flowers in spring, its tall open growth habit and its leaflets which are in threes.

**HABITAT AND DISTRIBUTION:** Painted lady grows in gravelly and sandy soils and on laterite hillsides in full sun or partial shade. Laterite Plateau Woodland.

**FLOWERING TIME:** July to October.

Photo – Patricia Gurry

# BLUE SMOKEBUSH

*(Conospermum amoenum)*

Family Proteaceae

The Proteaceae family is found primarily in the southern hemisphere. It is an ancient family with a long fossil record here and in Antarctica. It is well adapted for living in harsh conditions, with the greatest abundance of its species found in heaths and dry woodlands on low-nutrient soils. The *Conospermum* genus has 53 species. Their flowers are highly adapted to insect pollination, and have intriguing modifications of the style-ends and stamens to deposit pollen onto their visitors. The generic name literally means 'cone seed' and refers to the distinctive top-shaped fruits. The specific name of blue smokebush is derived from the Latin *amoenus*, which means 'charming' or 'showy'.

**DESCRIPTION:** This erect shrub, up to 80 centimetres tall and a metre across, often has many stems arising from ground level. The inflorescence is a simple spike, with two or three flowers in each leaf axil. Rich blue tubular flowers, four to five millimetres long, are covered in a varying density of short white hairs. Dull green leaves, 10-15 millimetres long, are spreading, circular in cross-section and often covered with short hairs. The top-shaped fruits contain only one seed and are fringed and winged.

**DISTINCTIVE FEATURES:** Blue smokebush is easy to distinguish from other smokebushes at Dryandra because of its spreading habit and distinctive blue flowers. Unlike fine-leaved smokebush (see pages 38-39), which holds its flowers above the bush, this shrub has flowers growing along each branch in the leaf axils.

**HABITAT AND DISTRIBUTION:** This plant grows in yellow sand, sandy clay over laterite or in lateritic gravel. The blue smokebush has two subspecies. The Dryandra subspecies, *C. amoenum* subsp. *cuneatum* is found in a restricted area between Dryandra and York. Sandy Firebreak, Laterite Firebreak.

**FLOWERING TIME:** July to October.

Photo – Patricia Gurry

## FINE-LEAVED SMOKEBUSH

**(*Conospermum filifolium* subsp. *filifolium*)**

Family Proteaceae

Conospermums are known as smokebushes, because many species have waving, soft white heads of flowers that give the impression of drifting clouds of smoke. Unlike other members of the Proteaceae, they do not produce nectar to attract insects, only pollen. They have an unusual articulated style, which is triggered when an insect touches the lower stamens. This causes an explosion, releasing all the pollen onto the visitor to be transferred to the next flower. Unlike the triggerplants, the style does not reset, and unwary insects have been imprisoned permanently in the flower. Specialised bees pollinate these flowers, and are sturdy enough not to be trapped by the swift moving style.

**DESCRIPTION:** Fine-leaved smokebush is an erect, slender shrub up to 1.5 metres tall. It has a single stem at the base and branches above that, like a candelabrum. The lower branches often lack foliage. There are masses of small, soft flowers. Each flower is a woolly white floral tube, ten millimetres long, with a mouth of blue-tipped lobes. The dull green leaves are fine and needle-like. They curve upwards and grow to 40 millimetres long.

**DISTINCTIVE FEATURES:** Fine-leaved smokebush has finer, shorter leaves than common smokebush (*C. stoechadis*), also found at Dryandra, which has similar flowers and is a similar height. The leaves of common smokebush are thicker and longer (up to 150 millimetres).

**HABITAT AND DISTRIBUTION:** This shrub is widespread in the Wheatbelt, from Mogumber down to the Stirling Range National Park and as far east as Lake Grace. It grows on sandy clay, sand over laterite and sandy gravel. At Dryandra it is infrequent and can be found on open gravelly or sandy firebreaks on the Wandoo Walk. Laterite Firebreak, Sandy Firebreak.

**FLOWERING TIME:** August to December.

Photo – Peter Foss

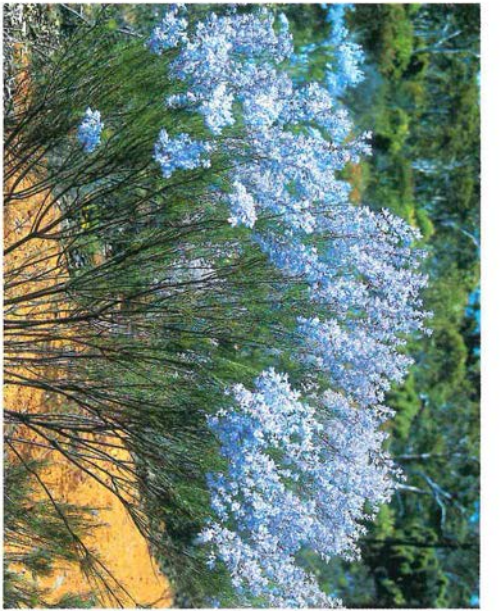


Photo – Patricia Gurry

## GOLDEN AND KING DRYANDRAS

*(Dryandra nobilis* and *Dryandra proteoides)*

Family Proteaceae

Most dryandra species have very prickly divided leaves, with distinctive triangular lobes. The flowers usually range in colour from pale lemon to golden yellow, and are often well hidden in the leaves. Dryandras are a very important source of food and shelter for many insects, birds and small mammals in the woodland. Old shrubs, especially of golden and king dryandras, form dense impenetrable stands and provide safe havens for woylies to nest in.

**GOLDEN DRYANDRA (*Dryandra nobilis*):** This tall shrub to four metres high has densely-leaved branches, and a showy display of rich golden yellow flowers, up to 50 millimetres in diameter. The leaves, up to 250 millimetres long by 25 millimetres wide have triangular lobes indented to the midrib. Old leaves persist on the branches, giving the shrub a brown, shaggy appearance.

**KING DRYANDRA (*Dryandra proteoides*):** This bushy shrub is up to two metres tall by 1.5 metres wide. The leaves are rigid and prickly, 200 to 260 millimetres long by 20 millimetres wide. Inflorescences reach up to 120 millimetres long. The large, protea-shaped flower heads, hidden inside the bushes, are surrounded by striking reddish-orange bracts. The bracts remain on the branches for many years after flowering.

**HABITAT AND DISTRIBUTION:** Both species prefer rocky, lateritic soils, especially on the breakaways. Golden dryandra occurs from Walebing to Katanning. Powderbark Laterite Slopes, Laterite Plateau Woodland, Mixed Woodland, Laterite Firebreak. King dryandra grows mainly on the upper slopes of breakaways in restricted pockets of vegetation between Northam and Pingelly, often in association with powderbark. Powderbark Laterite Slopes.

**FLOWERING TIME:** Golden dryandra flowers from July to October, whereas king dryandra blooms in June and July.

Photo – Patricia Gurry

Above: *Golden dryandra*

Below: *King dryandra*

Photo – Babs and Bert Wells/CALM

# PINGLE

*(Dryandra squarrosa)*

Family Proteaceae

A common shrub in the Wheatbelt and the Perth area, pingle is a striking plant with lemon yellow flowers tightly clustered along its stems. Fire kills the plant, but it regenerates prolifically from seed and forms large stands with masses of flowers. The name *squarrosa* refers to the recurved tips of the bracts surrounding the flowers. Pingle is a major food source for honeyeaters, cockatoos and honey possums. Birds and animals have evolved in conjunction with plants in the Australian bush. Honeyeaters and honey possums have brush-tipped tongues used to gather nectar and pollen. Dryandras have many adaptations to encourage a variety of pollinators: their flowers produce copious amounts of nectar and pollen, and many have a mousy odour to attract small mammals.

**DESCRIPTION:** This shrub grows up to four metres tall and has an open habit, slender branches and dark green, prickly leaves. Juvenile leaves can grow up to 120 millimetres long and about six millimetres wide. Adult leaves are shorter and broader – approximately 20 to 50 millimetres long. Strongly-scented lemon yellow flower heads, 20 to 30 millimetres across, grow along the stems in the axils of the leaves and branches.

**DISTINCTIVE FEATURES:** Pingle produces masses of lemon yellow flowers on tall, slender plants. Its dark green, glossy, prickly leaves are also distinctive.

**HABITAT AND DISTRIBUTION:** This species prefers full sun and open woodland. It grows in gravelly clay, loam or lateritic soils. It occurs widely in south-western WA, from Bindoon almost to Albany. Laterite Plateau Woodland.

**FLOWERING TIME:** Pingle flowers from mid-winter to late spring, from June to November.

Photo – Peter Foss

## SPINY HONEYPOT

(*Dryandra subpinnatifida* var. *subpinnatifida*)

Family Proteaceae

This uncommon species is found in only a few locations in the Dryandra Woodland. It grows in dense scrub, often in association with Drummond's mallee (*Eucalyptus drummondii*). The flowers when young are a similar honeypot shape to mounded honeypot (*Dryandra nivea* subsp. *nivea*), but they are smaller and pale yellow, and the shrub itself is taller. Fire will kill most *Dryandra* species, but they regenerate rapidly from seed. The Proteaceae family was named after Proteus, the mythical son of Poseidon who could change his shape at will. It draws attention to the varied genera in this family.

**DESCRIPTION:** Spiny honeypot grows as a dense, prickly shrub up to a metre tall. The dark green leaves, up to 350 millimetres long by 16 millimetres wide, have inward-rolled margins. The upper margins are smooth, but the lower portion of each leaf has extremely sharp, yellow spines. The flower buds have pinkish bracts and form dense clusters along the upper part of the stems. The bracts surrounding the flowers are up to 20 millimetres long. The yellow flower heads are about 25 millimetres wide, with 40 to 50 flowers per head.

**DISTINCTIVE FEATURES:** This species is easily recognised by its long, dark green leaves, which have smooth edges along the upper parts and long, very sharp spines at their bases. Pale yellow heads of flowers are almost hidden in the foliage. Spiny honeypot frequently hybridises with pingle (see pages 42-43). The hybrid shrubs form triangular lobes on the upper sections of the leaves.

**HABITAT AND DISTRIBUTION:** Spiny honeypot grows in gravelly loams and sandy gravel. It is found in restricted locations between Pingelly and Narrogin. Laterite Plateau Woodland.

**FLOWERING TIME:** July to October.

Photo – Margaret Pieroni

## BLACK TOOTHBRUSH GREVILLEA

*(Grevillea hookeriana)*

Family Proteaceae

This grevillea is remarkable for its unusual black flowers. The flowers are crowded along one side of the stem to develop into a 'toothbrush' when the black styles straighten up. This one-sided development is thought to be an adaptation to support birds or mammals during pollination. A further attraction to pollinators is a nectary at the bottom of the flower, which secretes a sweet, watery liquid. James Drummond collected the type specimen. It was named after Sir William Hooker, a director of Kew Botanic Gardens in England from 1841-65. For many years, confusion existed in the horticultural trade, as a garden hybrid with red flowers was being sold as *G. hookeriana.* This hybrid is now called 'Grevillea Redhook'.

**DESCRIPTION:** This spreading dense shrub can reach 2.5 metres tall and a similar width. Stiff branches are layered with narrow, leathery green leaves. The leaves, up to seven centimetres long, are divided many times at the end. The margins are curled over. The inflorescence, up to 80 millimetres long, has a distinctive toothbrush shape. The floral tube is yellowish-green with a black style and a maroon tip. Some yellow-flowered forms have been found at Dryandra.

**DISTINCTIVE FEATURES:** Look out for striking black toothbrush-shaped flowers with maroon tips and widely-spreading layered branches.

**HABITAT AND DISTRIBUTION:** Black toothbrush grevillea grows in gravelly sand in full sun. It is found in a roughly triangular area between Winchester, Dryandra and Newdegate. Laterite Firebreak, Sandy Firebreak.

**FLOWERING TIME:** This species flowers from early winter to early summer (July to November).

Photo – Patricia Gurry

Above: *The fruit*

Below: *The toothbrush-like inflorescence*

Photo – Patricia Gurry

## TASSEL GREVILLEA

*(Grevillea tenuiflora)*

Family Proteaceae

This attractive small shrub begins to flower in late winter. It produces pendulous tassels of beautiful creamy white flowers with a pleasant perfume. Tassel grevillea was one of the first *Grevillea* species to be introduced into cultivation in England, in 1836. It is named from the Latin *tenuis*, meaning 'thin' or 'narrow', and *flos* ('flower') because of its small, slender flowers. The flowers of grevilleas and hakeas are very similar, and the shrubs are often confused, but grevilleas have inflorescences at the ends of the branchlets whilst those of hakeas are held in the leaf axils. Also, hakeas have hard, woody nuts whilst those of grevilleas are leathery and thin-walled.

**DESCRIPTION:** The tassel grevillea is an open, erect shrub up to a metre high. The arching branches are angular and ridged, and covered in silky hairs. The crinkly, greyish-green leaves are up to 50 millimetres long and 60 millimetres wide. They are divided two or three times into broad, sharply-pointed lobes. New growth is purple. The flowers are in dense, pendulous spikes and are creamy white with pale violet or pink tinges on the style ends.

**DISTINCTIVE FEATURES:** The species is recognised by its raggedy, tassel-like, creamy blossoms and divided leaves with sharp, broad lobes. The flowers have a sweet perfume.

**HABITAT AND DISTRIBUTION:** Tassel grevillea can grow in many different soil types. It has been found in gravelly laterite, sand, sandy clay and loam in open, well-drained positions. It is common in the Wheatbelt, from York to Narrogin and Wagin, and has also been recorded closer to the coast at Mt Cooke and Armadale. Powderbark Laterite Slopes, Laterite Firebreak, Mixed Woodland, Sandy Firebreak.

**FLOWERING TIME:** August to November.

Photo – Peter Foss

## WAVY-LEAVED HAKEA

*(Hakea undulata)*

Family Proteaceae

Hakeas are also in the Proteaceae family, which is well represented at Dryandra, as family members are particularly well adapted to harsh, dry conditions in summer. Hakeas have tough, prickly leaves and woody, persistent nuts. Like other members of this family, such as dryandras, grevilleas, isopogons and petrophiles, hakeas provide a rich supply of nectar and pollen for insects, birds and small mammals of the woodland. There are 100 recorded species of hakeas in the south-west of WA, 11 of which are found at Dryandra. The specific name, from the Latin *undulatus*, refers to the wavy margins of the leaves.

**DESCRIPTION:** Wavy-leaved hakea is a tall, upright shrub that can grow to 2.5 metres. It has an open habit and ascending branches with reddish stems. The stiff, rounded leaves, 60 millimetres long by 30 millimetres wide, have wavy, prickly margins and many teeth. There are three to five longitudinal veins with prominent cross-veining. The leaf stalks are long and tapering. Sweetly-scented white flowers, around 10 millimetres long, grow in clusters in the leaf axils. The mature nut is grey with brown spots and is egg-shaped. It has a small upturned beak and is retained on the stem.

**DISTINCTIVE FEATURES:** The wavy-leaved hakea is noticeable for the beautiful cross-veining of its leaves. This is particularly striking in the afternoon sunlight. It has prickly wavy leaves and small bunches of sweet-scented white flowers in the leaf axils.

**HABITAT AND DISTRIBUTION:** This shrub has a very wide tolerance of soils but needs good drainage. It is found in sand, loam and gravel, in full sun and in partial shade. It is very common in the Wheatbelt and on the Swan Coastal Plain, and is found from the Moore River, north of Perth, to east of Albany on the south coast. Laterite Firebreak, Wandoo Flats.

**FLOWERING TIME:** August to October.

Photo – Peter Foss

## PINK CONEFLOWER

### (*Isopogon crithmifolius*)

Family Proteaceae

Isopogons are known as coneflowers because of the grey cones, which remain on the shrub after the flowers have fallen. The flowers of isopogons and petrophiles are very similar. They have round heads made up of dozens of individual flowers. Each flower is a soft narrow tube that splits into four lobes as it opens. This exposes the anthers – one on each lobe – and the pollen presenter, which is a spindle-shaped style with a brush tip. As the flowers fade and fall, the scales at the base of each flower enlarge. In the case of isopogons the scales fall off when the fruit is ripe. *Isopogon* comes from two Greek words *isos* ('equal') and *pogon* ('beard'), which refers to the beard of silky hairs on the fruit.

**DESCRIPTION:** The pink coneflower is a tall, erect, dense shrub to 1.8 metres with grey bark. It has bright pink (sometimes pinkish-mauve) flower heads, three to four centimetres in diameter, on the ends of the branchlets. The pollen presenters are bright yellow and constricted in the middle. Rigid and prickly green leaves, up to four centimetres long, are divided once or twice into sections, with three lobes in each section. They are finely ridged. New stems and leaves are covered in sparse long hairs.

**DISTINCTIVE FEATURES:** These tall shrubs with grey bark and bright pink, round flower heads are spectacular in spring. They are very similar to rose coneflower (*I. dubius*), also found at Dryandra, but rose coneflower has deeply folded and channelled leaves.

**HABITAT AND DISTRIBUTION:** This is a common shrub in the Wheatbelt, centred around Narrogin. It is found from Brookton south to Bridgetown. It grows on lateritic soils and in sand over laterite. At Dryandra it is common in the shrublands on laterite ridges and along laterite firebreaks. Laterite Plateau Woodland, Powderbark Laterite Slopes, Laterite Firebreak, Mixed Woodland.

**FLOWERING TIME:** August to November.

Photo – Peter Foss

## HOLLY-LEAVED HONEYSUCKLE

*(Lambertia ilicifolia)*

Family Proteaceae

This genus is named after Lambert, an English horticulturist. The lambertias or 'wild honeysuckles' are very attractive shrubs. Many people are familiar with the common orange *Lambertia*, known as chittick (*L. inermis*), found on the south coast. There are nine species of *Lambertia*, and eight of these are found in the south-west of WA. At Dryandra, the holly-leaved honeysuckle produces a blaze of spring colour on the laterite slopes. The bright yellow colour and tubular shape of its flowers are typical of those pollinated by birds.

**DESCRIPTION:** This dense shrub up to two metres tall has curved, prickly leaves approximately 15 millimetres long. Bright yellow flowers have a prominent protruding style and are in clusters of seven. The floral tube is about 20 millimetres long. It broadens towards the top and the lobes roll back tightly to form a curled edge to the flower. This is the smallest flowered *Lambertia* species. The very spiny fruit, about 14 millimetres wide, remains green for several years and eventually turns grey.

**DISTINCTIVE FEATURES:** This shrub is easy to identify if you look for the spiny seed pods, which are held on the stems for many years. Bright yellow clusters of honeysuckle-type flowers grow all along the branches. The flowers are in heads of seven. Each flower has a protruding style.

**HABITAT AND DISTRIBUTION:** Holly-leaved honeysuckle grows in sandy soils and gravelly lateritic soils. It is found in the Wheatbelt, from Corrigin to Lake Grace and almost as far south as Kojonup. At Dryandra, it grows in gravelly soils in full sun. Powderbark laterite slopes.

**FLOWERING TIME:** August to November.

Photo – Peter Foss

Above: *The spiny seed pods*

Below: *Flower clusters*

Photo – Peter Foss

## SILKY PETROPHILE

*(Petrophile brevifolia)*

Family Proteaceae

Uncommon in the Dryandra Woodland, this attractive shrub has beautiful silky yellow flower heads, enclosed in unusual brown and white bracts. *Petrophile* means 'rock-lover' and at Dryandra these shrubs are found on rocky lateritic ridges or gravelly firebreaks. Petrophiles are easy to confuse with isopogons, which also have round heads of tubular flowers and grey cones, but in petrophiles the cone-scales are retained on the bush whereas those of isopogons drop off as the seeds ripen. The major difference between the two is in their fruit. The seeds of petrophiles are flattened and fringed, with hairs on the margins, while those of isopogon are smaller and extremely hairy.

**DESCRIPTION:** This is a sturdy, erect, spreading shrub up to a metre high. It has grey bark and bluish-green leaves, up to 50 millimetres long. They are circular in cross-section, with sharp rigid tips. The leaves curve upwards along the stems. Flowers are in heads 30 to 40 millimetres across. The unopened floral tubes, up to 15 millimetres long, are a soft, silky yellow. They open to expose bright yellow, drooping pollen presenters. The bases of the flower heads are enclosed in slim, brown bracts with white, papery edges.

**DISTINCTIVE FEATURES:** Silky petrophile is characterised by curving leaves with sharp tips, and silky yellow flower heads, surrounded by brown and white bracts.

**HABITAT AND DISTRIBUTION:** This shrub can grow in a variety of soils, from grey, yellow or brown sand over laterite or limestone to gravelly lateritic ridges. It grows well on sandplains, and has also been found in swampy areas. It is widespread throughout the southern Wheatbelt as far south as Kojonup, and north along the coast as far as Eneabba and Mt Lesueur. Laterite Plateau.

**FLOWERING TIME:** At Dryandra, silky petrophile flowers from September to November, but elsewhere from May to December.

Photo – Patricia Gurry

## TANGLED PETROPHILE

*(Petrophile divaricata)*

Family Proteaceae

This tall shrub is common on the open heathlands and former firebreaks at Dryandra, with massed displays of hairy lemon yellow flowers in spring. The soft new growth is a startling deep brownish-red colour. The specific name refers to the many spreading forked branches. There are about 60 WA species of *Petrophile*, all in the south-west of WA, and they form an important food source for birds and insects because they are rich in nectar.

**DESCRIPTION:** Tangled petrophile is a very dense, prickly shrub up to two metres tall. It has unusual leaves, up to 80 millimetres long, that are circular in cross-section and frequently divided several times. Its attractive lemon yellow flowers are in heads up to 30 millimetres across. The projecting yellow styles are spindle-shaped and covered with short hairs that are bent or turned downward.

**DISTINCTIVE FEATURES:** Soft, brownish-red new growth, tangled narrow leaves divided many times and heads of lemon yellow flowers in spring are the main features to look for.

**HABITAT AND DISTRIBUTION:** At Dryandra, tangled petrophile is a very versatile plant, as it is found in full sun on the gravelly firebreaks but also grows well under stands of mallet or powderbark trees. Elsewhere in the State it can also be found growing on granite outcrops and sandplains. It has a large distribution from Regans Ford in the north to the Stirling Range National Park in the south. Laterite Plateau Woodland, Mixed Woodland, Mallet Plantation, Sandy Firebreak, Laterite Firebreak, Powderbark Laterite Slopes.

**FLOWERING TIME:** August to December.

Photo – Peter Foss

## FAN-LEAVED SYNAPHEA

*(Synaphea flabelliformis)*

Family Proteaceae

All 50 species of this uniquely south-western genus have yellow flowers held in spikes. Like those of smokebushes, synaphea flowers have an explosive pollen-release mechanism. Before the flower opens, the anthers and stigma are held closely together under tension, to be released when touched by an insect. The Latin name *flabelliformis* describes the fan-shaped leaves.

**DESCRIPTION:** This tufted, many-stemmed shrub can grow up to 40 centimetres high. Flowers are in bright yellow spikes, 60-120 millimetres long, with the upper flowers fairly crowded. The flower spikes are on long, slender stalks, covered in short hairs, above the leaves. Individual flowers, four to seven millimetres long, are also covered in short hairs. The stigma is wider than it is long and has broad lateral lobes. Bluish-green, leathery leaves, up to 200 millimetres, are on a long stalk, all of which are usually covered with dense, short hairs. The leaves have several prominent veins.

**DISTINCTIVE FEATURES:** Fan-leaved synaphea can be distinguished from *Synaphea interioris*, which has also been found in the area, by its long spikes of small, bright yellow flowers and fan-shaped leaves with sharp teeth on the wavy upper margins. The latter has flatter, more deeply divided leaves and larger flowers, and its leaf stalks, leaves, flower stalks and flowers are usually hairless. The stigma of *S. interioris* is roughly as long as it is wide, and has a shallow notch along the upper edge.

**HABITAT AND DISTRIBUTION:** This species inhabits gravelly soils and sandy clay in wandoo and marri woodland between Toodyay, Narrogin and Wickepin. Like many synapheas, fan-leaved synaphea seems to respond to mild disturbance, and plants are common along the edges of tracks and roads. Laterite Firebreak, Mixed Woodland, Sandy Firebreak, Powderbark Laterite Slopes.

**FLOWERING TIME:** July to October.

Photo – Patricia Gurry

Photo – Patricia Gurry

## CLUSTER BORONIA

(*Boronia capitata* subsp. *clavata*)

Family Rutaceae

Unlike many species of boronia, which need shade and thick soil mulch to maintain a steady soil temperature, the pink boronia at Dryandra is a hardy type that can thrive in exposed sandy conditions on old firebreaks. It is a member of the Rutaceae family, whose members have highly aromatic leaves with prominent oil glands. Other members include citrus trees such as oranges and lemons. The boronia is a uniquely Australian genus of more than 90 species, many of which have perfumed flowers. The seeds form in an explosive capsule, which splits open in summer to eject its contents up to two metres from the parent plant. The name of the species, *capitata*, means 'head' and refers to the flowers clustered at the tops of the branches. The subspecific name *clavata* refers to the club-shaped leaves.

**DESCRIPTION:** This open spindly shrub, up to 90 centimetres tall, has terminal clusters of pink flowers. Star-shaped flowers, up to 10 millimetres across, have a faint, sweet perfume. The four petals open widely to reveal a prominent cluster of stamens surrounding the central stigma. The small leaves are narrow, fleshy and club-shaped. They are held in opposite pairs on the stems and grow up to seven millimetres long.

**DISTINCTIVE FEATURES:** Pink, star-shaped flowers with four petals and small, club-shaped opposite leaves are the main distinguishing features.

**HABITAT AND DISTRIBUTION:** Cluster boronia can grow in sand or lateritic gravel on open sandplains or on laterite ridges. At Dryandra it is found in leaf litter in open eucalypt woodland or on old firebreaks. It is found in the central Wheatbelt in an area bounded by York in the north, Kojonup in the south and Hyden in the east. Sandy Firebreak, Laterite Plateau Woodland.

**FLOWERING TIME:** May to October.

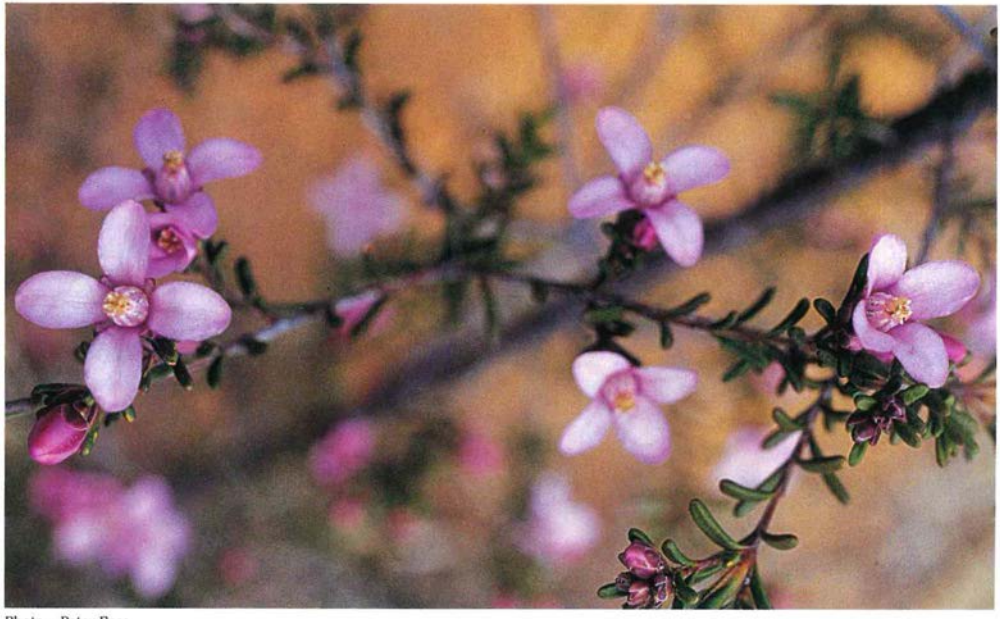


Photo – Peter Foss

## WHITE CANDLES

*(Stackhousia monogyna)*

Family Stackhousiaceae

This low-growing multi-stemmed herb grows profusely at Dryandra in spring. The plants form dense clumps of white flower spikes, an attractive contrast to the orange gravel and leaf litter in which they grow. The flowers display the characteristics often associated with attracting night-flying moths – creamy white flowers with a horizontal landing platform and a sweet odour that is stronger at night. The genus was named after an English botanist John Stackhouse (1742-1819).

**DESCRIPTION:** This perennial herb can grow up to 500 millimetres high. Many stems arise from ground level and have spikes of star-shaped cream or white flowers at the ends of the branchlets. Tubular flowers, six to ten millimetres long, open into five spreading lobes three to five millimetres long. Linear leaves, 10 to 40 millimetres long by two millimetres wide, are arranged alternately along the stem.

**DISTINCTIVE FEATURES:** White candles can be recognised by its clumps of slender stems, each one topped by a candle-like spike of small creamy white, tubular flowers. The flowers have a stronger scent at night.

**HABITAT AND DISTRIBUTION:** This species grows on most soil types, from sand to heavy loam and loamy gravel. It grows in open woodland and on old firebreaks at Dryandra. White candles is widespread and common throughout southern Australia. Laterite Firebreak, Wandoo Flats, Mixed Woodland.

**FLOWERING TIME:** August to November.

Photo – Patricia Gurry

Photo – Patricia Gurry

## BOOK TRIGGERPLANT

*(Stylidium calcaratum)*

Family Stylidiaceae, the triggerplants

Masses of these delicate annuals carpet the ground under sheoaks and on wandoo flats at Dryandra in spring. Book triggerplants can quickly be identified by looking for the sensitive trigger, which is poised below the flower. The anthers (male) and style (female) have combined into a sensitive hinged column. When the insect lands to drink nectar at the flower it trips the trigger and is showered with pollen. At the same time, the stigma brushes against the insect's abdomen to collect any pollen left there from another flower. The trigger takes about 20 minutes to reset. The book triggerplant is so-called because it folds its petals up at night like a book. The specific name comes from the Latin *calcar*, which means 'spurred', and refers to the shape of the nectary at the base of the flower.

**DESCRIPTION:** This tiny, slender plant, up to 100 millimetres tall, has white or pink flowers and red spots at the bases of the petals. The petals are paired vertically, with the upper ones notched at the apex. These fold over at night or in dull weather. The trigger is held poised at the front of the flower. The flowers are on the ends of very thin scapes (similar to stems), which arise from a basal rosette of leaves. The scapes may have a single flower or may be branching, with up to eight flowers.

**DISTINCTIVE FEATURES:** Book triggerplants form carpets of delicate pale pink or white flowers in spring. The petals are in vertical pairs and the tops have distinctive notched lobes.

**HABITAT AND DISTRIBUTION:** This species is widespread throughout the south-west. It grows in damp, sandy soils on wandoo flats and in sheoak thickets. It also grows around granite outcrops. Wandoo Flats, Sheoak Flats, Sheoak Granite.

**FLOWERING TIME:** August to January.

Photo – Patricia Gurry

Photo – Patricia Gurry

## BUNJONG

### (*Pimelea spectabilis*)

Family Thymelaeaceae, the banjines

This shrub lives up to its specific name *spectabilis*. The spectacular large flower heads of the bunjong are immediately obvious when looking through the open understorey of the Dryandra Woodland. This is the largest flowered *Pimelea*, with heads up to 50 millimetres across. The sweetly-scented white flowers attract moths and butterflies. These insects have a long proboscis that enables them to reach the nectary at the base of the slender floral tubes.

**DESCRIPTION:** Bunjong is a tall shrub up to two metres high with an open, branching habit from a single stem at ground level. It has grey bark and the young stems are a reddish colour. The leaves are very narrowly elliptic, 20-50 millimetres long and two to five millimetres wide, and are held in opposite pairs. The flower heads, up to 50 millimetres in diameter, are composed of numerous small tubular flowers with each tube covered in long, spreading white hairs. Four to six reddish bracts surround the large heads. Each small flower has four lobes, two stamens and a prominently protruding style. The flowers have a pleasant, sweet scent. One shiny, brown seed is produced per flower.

**DISTINCTIVE FEATURES:** Bunjong is recognised by its tall open growth, from one main stem, and its large spectacular flower heads. It gives the impression of a bouquet of white flowers.

**HABITAT AND DISTRIBUTION:** This species grows in sand with gravel, or in gravelly, lateritic soils and on rocky breakaway slopes. It grows in three distinct areas in the south-west of the State: one from Mundaring to Dryandra, the second from Cape Naturaliste to Albany, and the third in the Fitzgerald River National Park. Laterite Plateau Woodland, Powderbark Laterite Slopes, Mallet Plantation.

**FLOWERING TIME:** September to November.

Photo – Patricia Gurry

Photo – Patricia Gurry

| SIGHTING RECORD | | | |
|---|---|---|---|
| SPECIES | DATE | LOCALITY | REMARKS |
| yellow everlasting | | | |
| Lindley's everlasting | | | |
| variable buttercup | | | |
| cushion buttercup | | | |
| pygmy sundew | | | |
| Wheatbelt astroloma | | | |
| glowing dampiera | | | |
| round-headed microcorys | | | |
| tiny-leaved wattle | | | |
| grey-leaved bottlebrush | | | |
| white myrtle | | | |
| pink powderpuffs | | | |
| golden featherflower | | | |
| diamond-leaved bitter pea | | | |
| sandplain poison | | | |
| painted lady | | | |
| blue smokebush | | | |
| fine-leaved smokebush | | | |
| golden dryandra | | | |
| king dryandra | | | |
| pingle | | | |
| spiny honeypot | | | |
| black toothbrush grevillea | | | |
| wavy-leaved hakea | | | |
| pink coneflower | | | |

## SIGHTING RECORD

| SPECIES | DATE | LOCALITY | REMARKS |
|---|---|---|---|
| holly-leaved honeysuckle | | | |
| silky petrophile | | | |
| tangled petrophile | | | |
| fan-leaved synaphea | | | |
| cluster boronia | | | |
| white candles | | | |
| book triggerplant | | | |
| bunjong | | | |

Spiny honeypot

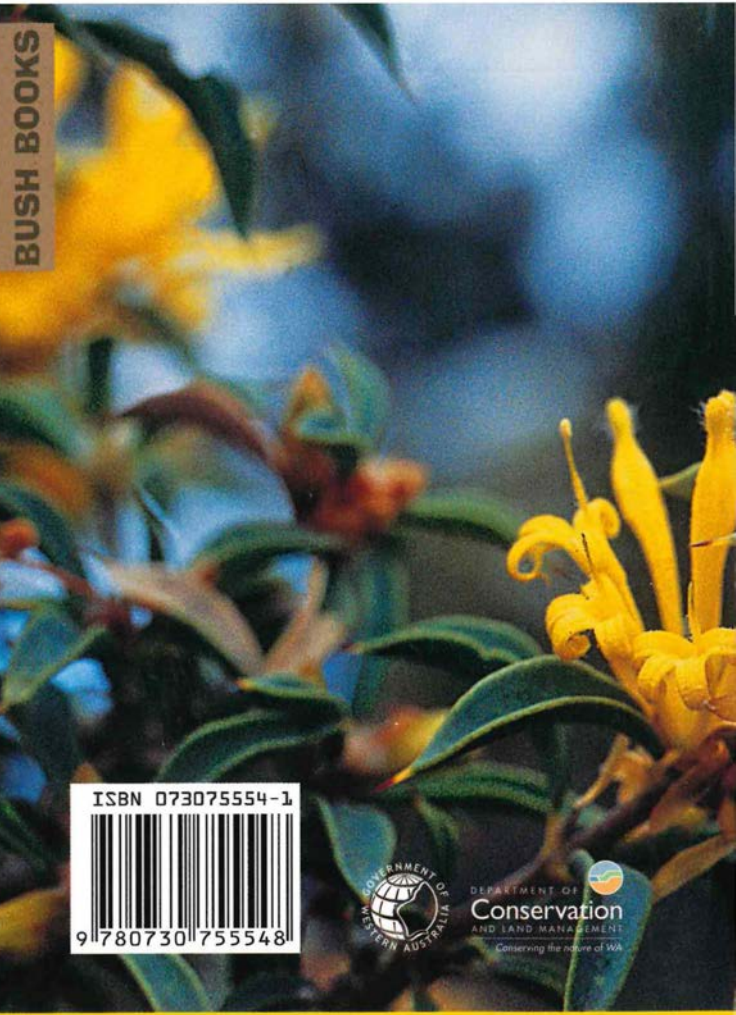
# INDEX

**OTHER BOOKS IN THIS SERIES**

Geology and Landforms of the South-West
Waterbirds of the South-West Wetlands
Bush Tucker Plants of the South-West
Beachcombers Guide to South-West Beaches
Orchids of the South-West
Trees of the South-West Forests
Wildflowers of the South-West Forests
Wildflowers of the South Coast
Mammals of the South-West
Birds of the South-West Forests
Mammals of North-Western Australia
Hazardous Animals of North-Western Australia
Birds of the Kimberley
Geology and Landforms of the Kimberley
Plants of the Kimberley
Plants of the Pilbara
Animals of Shark Bay
Wildflowers of Shark Bay
Trees of the Goldfields
Wildflowers of the Mid-West
Threatened Wildflowers of the Mid-West
Whales and Dolphins of Western Australia
Threatened and Rare Birds of Western Australia
Australian Birds of Prey
Birds in the Backyard
Bugs in the Backyard
Frogs of Western Australia
Fungi of the South-West Forests

2003451-04-5M

BUSH BOOKS



ISBN 073075554-1

GOVERNMENT OF WESTERN AUSTRALIA

DEPARTMENT OF Conservation AND LAND MANAGEMENT

Conserving the nature of WA