

## Botanical name

*Acacia victoriae* Benth. in T.L.Mitchell, J. Exped. Trop. Australia 333 (1848)

Strictly defined this species was named after a river in central Queensland, but the river (now called the Barcoo), in turn, was named after Queen Victoria.

## Common names

Bramble Wattle, Prickly Wattle, Bardi Bush, Gundabluey, Elegant Wattle, Narran, and more (see Cunningham *et al.* 1981); for central Australian aboriginal names see Latz (1995).

## Characteristic features

Spreading often straggly *shrubs* or *small trees*, readily root suckering and sometimes forming thickets. *Branchlets* often pruinose. *Stipules* spiny (at least on young plants). *Phyllodes* variable, thin and not rigid, obtuse, prominently 1-nerved. *Heads* globular, mostly arranged in racemes with the long peduncles twinned along the raceme axes, creamy white to pale lemon-yellow, prolific and showy. *Pods* broad, flat but moderately raised over the seeds, chartaceous. *Seeds* mottled; funicle scarcely expanded into an aril.

## Description

**Habit.** Spreading, often straggly *shrubs* or *small trees* 1.5-5 m tall with the crowns 1-6 m wide, sometimes reaching 9 m tall (but not in Kalannie region), readily root suckering and sometimes forming thickets.

**Bark.** Grey and commonly rough at base of mature stems, smooth and greenish, yellow-green, bronze-green, brown or orange on upper branches.

**Branchlets.** Usually glabrous, often pruinose.

**Stipules.** Spiny, 2-12 mm long, evident on young plants but commonly absent or only the hard bases persisting at nodes on mature plants.

**Phyllodes.** Very variable, linear to narrowly oblong, lanceolate or narrowly elliptic, 2-5(-10) cm long, 2-8(-11) mm wide, thin and not rigid, usually glabrous, green to grey-green or glaucous; with 1 prominent *longitudinal nerve* (midrib) on each face, the lateral nerves usually obscure; *apices* obtuse, not pungent; *gland* situated on upper margin of phyllode at, or very near, the distal end of the pulvinus, obscure or prominent.

**Heads.** Mostly arranged in racemes which are 1-10 cm long (a few heads paired within axils of phyllodes), globular, creamy white to pale lemon-yellow, prolific and showy, 15-30-flowered; *peduncles* mostly occurring in pairs along the raceme axis, 6-18 mm long, slender, usually glabrous.

**Flowers.** 5-merous; *sepals* free.

**Pods.** Narrowly oblong, flat but moderately raised over the seeds, (1-)3-8 cm long, 9-16 mm wide, chartaceous, glabrous.

**Seeds.** Transverse in the pods, more or less globose, 4-6 mm long, 3-5 mm wide, brown mottled blackish; *funicle* short, thick and scarcely expanded into an aril.

## Taxonomy

**Related species.** As discussed by Maslin (1992) *A. victoriae* and nine close relatives comprise the informal "A. victoriae group"; only *A. victoriae* itself occurs in the Kalannie region.

*Acacia victoriae* is not far removed taxonomically from *A. murrayana* which is recognized by its longer phyllodes, non-spiny stipules, golden flower-heads, peduncles not twinned along the raceme axis and non-mottled seeds.

**Variants.** Across its wide geographic range *A. victoriae* is very variable, especially in its phyllode shape and size. The taxonomic status of a hairy variant of the species, described as subsp. *arida*, requires further investigation: this occurs southern Northern Territory, northern South Australia, western New South Wales and southwest Queensland. Plants of this species from the Kalannie region show little morphological variation.

### **Distribution**

Widespread in arid and sub-tropical areas of all mainland States of Australia except Victoria (where it is confined to the extreme northwest of that State).

*Acacia victoriae* is rare in the Kalannie region (this area being on the south western edge of its range).

### **Habitat**

Over its extensive range *A. victoriae* occurs in a variety of habitats but is commonly found in clay or loam on alluvial flats (subsp. *arida* occurs on sand) where it often forms dense communities. Tolerant of lime, saline and clay soils (Simmons 1987). According to Elliot and Jones (1982) the presence of this species has been found to indicate underground water in some districts. Details of its ecology are given in Turnbull (1986) and Fowler and Fox (1995).

In the Kalannie region *A. victoriae* occurs in red brown loam on the edge of a Samphire-dominated salt lake.

**Recorded from the following Kalannie region Land Management Unit.** Alluvial Sand over Clay.

### **Conservation status**

Although *A. victoriae* is rare within the Kalannie region in the broader context is not considered rare or endangered.

### **Flowering**

Over its extensive geographic *A. victoriae* mainly flowers from August to October. Although flowering is sometimes irregular, it is primarily seasonal (flowering in spring) and, according to Askew and Mitchell (1978), not dependent upon the incidence of rainfall.

In the Kalannie region plants were in young bud in early September 1997.

*Acacia victoriae* flowers at an early age (less than 2 years).

### **Fruiting**

Over the extensive geographic range of this species pods with mature seeds have most often been collected from November to January (however, Bonney 1994 records the fruiting period for South Australian populations as October to March). Because fruit set can be variable (perhaps related to the timing and/or intensity of rainfall events) plants should be monitored seasonally.

Plants from the Kalannie region had few immature pods in mid-December 1996.

*Acacia victoriae* is an easily harvested species. The pods are held on the extremities of the branches and once fully mature, a gust of wind is sufficient to remove them.

The pods may be shed unopened or may open on the plant with the seeds still attached by the funicle (Davidson and Morton 1984). Pods can be collected by manually shaking or gently beating the branches and collecting them on a ground sheet. The seeds separate from the pods with minimal mechanical processing. Horner (1992) noted that it bears uniformly heavy seed crops and that it is one of the few acacias whose seed can be collected from the ground.

There are 18 000 - 28 000 viable seeds per kg. (Turnbull 1986), including 10-20% soft seed.

### **Biological features**

**Longevity.** A relatively short-lived species (10-15 years).

**Growth characteristics.** An adaptable, fast-growing species which readily coppices and is known to sucker (Thomson 1992). It is fire-tolerant (when young) but is killed by severe drought (Askew and Mitchell 1978): the phyllodes drop at the onset of severe moisture stress and once devoid of foliage the older branches rarely shoot again (Mitchell and Wilcox 1994). It is moderately frost tolerant and has survived temperatures of -2 deg. C to -5 deg. C in Iran (Webb 1973).

**Disease.** Arboretum plants may be susceptible to root rot (Fowler and Fox 1995). In central Australia plants of *A. victoriae* are sometimes parasitised by mistletoe and there appears to be a relationship between mistletoe volume and tree mortality (Reid *et al.* 1992).

**Weed potential.** In some areas plant numbers may increase markedly during a succession of wet seasons and the species can become a nuisance, especially around watering points (Everist 1969).

**Wood.** Air dry density: 804 kg/m<sup>3</sup>, based on 7 samples tested (G. Pronk, pers. comm.).

### **Propagation**

Propagate from seed. The seeds can retain a relatively high percentage of viability after a number of years storage (see Doran *et al.* 1983 for details).

Rusbridge *et al.* (1996) obtained good germination from this species by using untreated seed but suggested that seed pre-treatments would improve germination rates. Indeed, Fox and Davies (1983) showed boiling water pre-treatment did enhance germination but less so than by scarifying the seed. For revegetation purposes Fox and Davies suggest that it is best not to pre-treat all seed prior to sowing; they also suggested that seed stored for two to three years produced better germination results than fresh seed. Further details of germination are given in Fowler and Fox (1995).

### **Revegetation**

*Acacia victoriae* is a fast growing, salt tolerant species that is often used in land reclamation and minesite rehabilitation work in arid areas of Western Australia, particularly the goldfields region. Although this species is rare in the Kalbarri region there is scope here for its use in soil conservation on saline sites (it is also capable of growing in alkaline situations). Its suckering ability enhances its utility for soil stabilisation purposes. Under natural conditions *A. victoriae* has the ability to colonise bare, eroded alluvial plains.

Bonney (1994) recommends sowing seed in Springtime in sandy soils for general propagation mixes; for direct seeding sow seed through a tyne during early to mid Winter. Seeding rates of 500 g/ha are suggested by Mitchell and Wilcox (1994).

Rusbridge *et al.* (1996) report that *A. victoriae* is often used in rehabilitation work in the northern goldfields area of Western Australia. Success rates are good with the species producing a medium level shrub layer when established. Fowler and Fox (1995) summarize the results of pot trials using *A. victoriae* to assess its suitability in mine site rehabilitation.

### Utilisation

**Salinity control and soil stabilisation.** See Rehabilitation above.

**Windbreak.** Useful as a low windbreak in dry country, especially as it can readily regenerate from suckers and sometimes forms thickets.

**Shade and shelter.** Suitable for inclusion in shelter plantings for stock and wildlife.

**Wildlife refuge.** This species provides a good habitat for birds to nest in and, according to Bonney (1994), the seeds are sought after by many birds. Davies (1976, 1978) indicated that the seeds of this species are of some importance in the diet of emus in Western Australia.

**Fodder.** *Acacia victoriae* is a useful fodder plant for arid and semi-arid areas but, according to Petherham and Kok (1983), it can be killed by severe browsing (recovers well after light grazing though). Everist (1969) reported that in Queensland it is readily eaten by stock and provides a valuable supplement during drought. Chippendale and Jephcott (1963) regard it as being moderately palatable to stock in central Australia, and note that although the foliage is of poor nutritive content the abundant seed pods provide a source of protein for grazing cattle. According to Mitchell and Wilcox (1994) animals readily eat the flowers and browse the foliage of this species during dry periods; the crude protein content is about 12% and digestibility 48%.

**Ornamental.** An ornamental species suited to growing in arid and semi-arid areas, yet adaptable to cooler moist climates (Elliot and Jones 1982).

**Seed for human food.** *Acacia victoriae* is the main species of *Acacia* seed used in the "bush tucker" industry at present. The seeds of this species have good nutritional characteristics and they were commonly used as a food by aboriginals (see Maslin *et al.* 1998 for more details). The flour produced from processing seeds of *A. victoriae* has been incorporated into bread, damper, biscuits and pasta, dessert cones, mousses, hot drinks, pancakes and ice creams. *Acacia victoriae* is one of the most promising species suggested by Maslin *et al.* (1998) for trialling in southern Australia as a source of seed for human food. However, it is emphasised that much more research is needed before this species can be recommended for food production; in particular, there is a need for comprehensive biochemical analyses to ascertain if any anti-nutritional or toxic components are present in the seeds.

**Aboriginal useage.** According to Latz (1995) *A. victoriae* is an important traditional food for central Australian aboriginals. The fully formed, but still green, pods are lightly roasted and the seed eaten; mature seeds are ground before being eaten. Also, the white gum that is sometimes found on the trunk is also eaten; edible grubs may be found in the roots and trunk of mature plants. The wood is sometimes used for the blades of hunting spears.

**Miscellaneous.** A good source of pollen for bees (Boomsma 1972).

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