

Botanical name

Acacia hemiteles Benth., Linnaea 26: 619 (1855)

The botanical name is derived from the Greek *hemi-* (half) and *teleos* (finished, perfect), and presumably refers to the slightly asymmetric phyllodes (the original author of this species, George Benthham, did not state why he used this particular name).

Common name

Tan Wattle (preferred Common Name), Broombush.

Characteristic features

Branchlets angled to flattened at extremities. *Phyllodes* commonly shallowly recurved, smooth, grey-green (+/- glaucous when young), midrib evident. *Heads* globular, showy, arranged in short racemes, the buds reddish brown and enclosed by bracts when young. *Pods* papery and curved to openly coiled. *Funicle* not expanded into an aril.

Description

Habit. Spreading, multi-stemmed, dense, glabrous *shrubs* (0.5-)1-2 m tall (occasionally 3 m in open disturbed sites such as roadverges), often broader than high (1.5-4 m across), either domed with the foliage extending to the ground or obconic with flat-topped or sub-rounded crowns occupying 30-50% of the total plant height.

Branchlets. Angled to flattened at extremities, the cuticle often white.

Phyllodes. Narrowly elliptic to +/- narrowly oblong or linear, narrowed at both ends, 4-10 cm long, 4-9 mm wide, sub-rigid, smooth, rather spreading widely to erect, straight or more commonly shallowly recurved, dull, greyish green except rather glaucous when young; with 1 *longitudinal nerve* (midrib) on each face, the midrib evident, yellowish green and scarcely resinous, lateral nerves absent or obscure; *marginal nerves* not resinous except on young phyllodes where they are sticky-resinous; *apices* sub-acute to short-acuminate, innocuous to +/- pungent; *gland* not prominent, situated on upper margin of phyllode at the distal end of pulvinus or up to 3 mm above it.

Heads. Arranged in normally 4-7-branched racemes which are 6-16 mm long and enclosed when young by imbricate brown bracts, globular, 8-9 mm in diameter when fresh, bright light golden, showy and occurring in great profusion, delicately fragrant, 20-30-flowered; *flower buds* reddish brown; *peduncles* mostly 5-11 mm long, slender.

Flowers 5-merous; *sepals* free.

Pods. Shallowly curved to openly 1 1/2-coiled, 3-8 cm long, 5-8 mm wide, chartaceous, straw-yellow to light brown.

Seeds. Longitudinal in the pods, 3-5 mm long, 2-4 mm wide, dull to slightly shiny, dark brown to black; *funicle* not expanded into an aril.

Taxonomy

Acacia hemiteles was formerly known as *A. graffiana*.

Related species. This species together with four close relatives, *A. anthochaera*, *A. camptoclada*, *A. dorsenna* and *A. prainii*, comprise the informal "*Acacia prainii* group" (see Maslin 1995 for discussion). Three of these species, *A. anthochaera*, *A. hemiteles* and *A. prainii*, occur in the Kalannie region.

Acacia hemiteles is perhaps most closely related to *A. prainii* (which has narrower, often more pungent phyllodes); *A. anthochaera* is recognized by its generally longer, narrower phyllodes (see *A. anthochaera* for more details).

Distribution

Widely distributed in southern Western Australia where it occurs from the Nullabor Plain west to near Ongerup and Canna in the wheatbelt.

Acacia hemiteles is not especially common in the Kalannie region; it has a scattered distribution but in a few places it forms dense colonies, especially along highly degraded road verges.

Habitat

Over its range *A. hemiteles* occupies a wide edaphic range, growing on (gravelly) sand, loam or clay, or sometimes on granite rocks or laterite.

In the Kalannie region it occurs on hard, light brown loam-clay (with a little surface gravel). *Acacia hemiteles* is lime tolerant according to Simmons (1987).

Recorded from the following Kalannie region Land Management Units. Red Brown Earth; Colluvial Flat-Solodic; Sandy Loam over Clay.

Conservation status

Not considered rare or endangered.

Flowering

Over its wide geographic range *A. hemiteles* flowers between June and November, with peak flowering occurring in August and September.

Plants in the Kalannie region were in full flower in early September 1997.

Plants flower profusely from a young age.

Fruiting

Across the wide geographic range of this species pods with mature seeds occur from late November to early February.

Plants from the Kalannie region were with mature seed in early December 1996.

The pods are usually produced in large quantities and are held terminally, thus accessible for collection. They are easily harvested in large numbers either by hand or (more efficiently) by manually shaking or gently beating the plants and collecting them on a ground sheet. The medium-sized to large seeds (30 000-40 000 viable seeds per kg) are easily removed from the pods.

Biological features

Growth characteristics. A moderately fast-growing, hardy species which is able to withstand extended dry periods. Its coppicing ability is unknown and it has not been recorded to root sucker under natural conditions.

Weed potential. *Acacia hemiteles* is a disturbance opportunist and is an early coloniser after fire. However, it is not likely to become weedy.

Propagation

Propagate from seed.

According to Rusbridge *et al.* (1996) the germination rates for this species depends upon seed quality and pretreatment technique (nicking, scarifying, acid treatment and hot water treatment have all been used to improve germination results).

Revegetation

A hardy species suited to revegetation of clay soils in the Kalannie region. Sometimes *A. hemiteles* is the only species surviving along highly degraded road verges and it has occasionally been observed to regenerate naturally in gravel pits. It has some potential for providing shade and shelter and as a wildlife refuge, however, maximum benefit for these purposes would be derived if individuals were planted close together.

Acacia hemiteles is recommended by Wilcox *et al.* (1996) as being suitable for revegetation on a variety of soil types in the Midlands and northern wheatbelt regions of Western Australia; it is regarded by Clarke (1997) as being suited to revegetating drainage lines in these areas. It is also recommended by Lefroy *et al.* (1991) for regeneration of "White gum" country (i.e. shallow grey neutral to acidic sand over sandy clay with kaolinitic clay at depth), "Salmon gum" country (i.e. alkaline loam over clay with distinctive white nodules of calcium carbonate at depth) and "Mallee" country (i.e. neutral to alkaline brown sand over red-brown clay) in the central wheatbelt region.

According to Mitchell and Wilcox (1994) *A. hemiteles* is a useful species to include in seeding mixes applied to arid zone mine dumps which are not highly saline; about 1 kg/ha was recommended for inclusion in such mixes. Although this species has been widely used in rehabilitation in the goldfields area of Western Australia it has demonstrated variable performance; however, once established it plays an important role in soil stabilization. (Rusbridge *et al.* 1996).

Utilisation

Soil stabilisation. See Rehabilitation above.

Shade and shelter. See Rehabilitation above.

Wildlife refuge. On account of its dense, spreading crown *A. hemiteles* has potential in providing protection for small wildlife; it would be particularly effective in this regard when individuals grow close.

Fodder. *Acacia hemiteles* does not appear to be eaten by stock (Mitchell and Wilcox 1994).

Seed for human food. *Acacia hemiteles* is one of the lesser-known species suggested by Maslin *et al.* (1998) for trialling 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. There are no records of the seeds of this species having been eaten by Aborigines.

Horticulture and amenity plantings. Plants of this species flower prolifically from an early age; the heads are bright golden and lightly perfumed. For these reasons it could have horticultural potential or be useful as amenity planting in semi-arid areas.

References

Clarke, M. (1997, in press). West Morawa catchment revegetation report. (To be published in 1998 by Agriculture W.A.)

- Lefroy, E.C., Hobbs, R.J. and Atkins, L.J. (1991). *Revegetation guide to the central Wheatbelt*. (Agriculture W.A.: Western Australia.)
- Maslin, B.R. (1995). *Acacia* miscellany 14. Taxonomy of some Western Australian "Uninerves-Racemosae" species (Leguminosae: Mimosoideae: section Phyllodineae). *Nuytsia* 10(2): 181-203.
- Maslin, B.R., Thomson, L.A.J., McDonald, M.W. and Hamilton-Brown, S. (1998). *Edible Wattle Seeds of Southern Australia. A review of species for semi-arid regions of southern Australia*. (CSIRO, Forestry and Forest Products, Australian Tree Seed Centre: Canberra.)
- Mitchell, A.A. and Wilcox, D.G. (1994). *Arid shrubland plants of Western Australia*. ed. 2. (University of Western Australia Press in association with the Department of Agriculture, Western Australia: Perth.)
- Wilcox, D.G., Lefroy, E.C., Stoneman, T.C., Schoknecht, N.R. and Griffin, E.A. (1996). *Trees and shrubs for the Midlands and Northern Wheatbelt*. (Agriculture W.A.: Western Australia.)
- Rusbridge, S., Bradley, G. and G. (1996). *Plant Identification Handbook for Land Rehabilitation in the Goldfields of Western Australia*. (Published by the Goldfields Land Rehabilitation Group.)
- Simmons, M.H. (1987). *Growing Acacias* (Kangaroo Press.)