Botanical name

Acacia mackeyana Ewart & Jean White, Proc. Roy. Soc. Victoria n. ser. 22: 6, pls 3 & 4 (1909)

This species was named by two Victorian botanists, Alfred James Ewart and Jean White, and commemorates Sir John Emanuel Mackey for his involvement in the creation of a large national park in Gippsland (see Hall 1984 for further details).

Common name

Mackey's Wattle.

Characteristic features

Dense *shrubs*. *Branchlets* densely white-hairy at least when young. *Phyllodes* terete, short, sub-stout and rigid, normally shallowly recurved, finely multi-nerved (with stomata between the nerves: observe at x10 magnification), abruptly contracted into a very sharp needle-like point; pulvinus hairy on its upper surface. *Heads* globular, small, few-flowered. *Pods* terete to sub-terete, short, hard-textured.

Description

Habit. Dense, rigid, commonly obconic *shrubs* (0.3)0.5-1.5(-2.5) m tall and about 1-2 m wide, dividing at or just above ground level into 2-4 slender main stems, crowns much-branched (the branches often sub-crooked), compact and occupying 10-30% of the total plant height, plants sometimes with a slight "bonsai" appearance, however, in open exposed sites the plants are often domed or sub-domed with crowns occupying 60% or more of the total plant height.
Bark. Grey.
Branchlets. Densely white-hairy (at least when when young).
Phyllodes. Terete, mostly 1-2.5 cm long, 1-2 mm in diameter, sub-stout and rigid, ascending to erect, normally shallowly recurved, sometimes a few or all straight, glabrous except pulvinus hairy on its upper surface, dark green; *longitudinal nerves* numerous, fine, close together, stomata evident (at x10 magnification) along the narrow inter- nerve spaces; *apices* abruptly contracted into a sharply pungent, rigid, brown tip.
Heads. Paired within axil of phyllodes, globular, small, golden, 7-12-flowered; *peduncles* 2-5 mm long, glabrous.
Flowers. 5-merous; *sepals* free.
Pods. Terete to sub-terete, short (1.5-4 cm long), 2-3(-4) mm wide, erect to sub-erect, coriaceous-crustaceous, straight to shallowly curved (valves clearly recurved upon dehiscence), glabrous, light brown to light reddish brown.
Seeds. Longitudinal in the pods, 3-4 mm long, 1.5-2 mm wide, slightly shiny, rich dark brown to blackish; *aril* large and white to creamy white.

Taxonomy

Related species. *Acacia mackeyana* together with *A. dissona, A. eremophila, A. hadrophylla, A. densiflora, A. kalgoorliensis, A. papulosa* and *A. undosa* constitute the taxonomically very complex "*A. densiflora* group", see Cowan and Maslin (1995) for discussion. Apart from *A. mackeyana* itself, the other members of this group that occur in the Kalannie region are *A. dissona* var*. indoloria, A. eremophila* var*. variabilis, A. densiflora* and *A. kalgoorliensis.*

Acacia mackeyana is distinguished from other members of the "*A. densiflora* group" occurring in the Kalannie region by a combination of its short, mostly shallowly recurved, very pungent phyllodes.

Distribution

Occurs in southwest Western Australia where it extends from near Coorow southeast to near Corrigin and Moorine Rock; outlying populations occur at Mullewa and in the Ongerup, Ravensthorpe and Frank Hann National Park areas.

Acacia mackeyana has a scattered distribution in the Kalannie region but not uncommon in the places where it occurs. It is frequently found on highly degraded road verges.

Habitat

Grows in hard, yellowish brown or light brown sandy loam, or kaolin, on flats or the sides of low slopes.

Recorded from the following Kalannie region Land Management Units. Red Brown Earth; Shallow Soil over Granite; Sandy Loam over Clay.

Conservation status.

Not considered rare or endangered.

Flowering

Over its geographic range *A. mackeyana* flowers from late June to August.

Plants in the Kalannie region were in flower in mid-July 1996.

Fruiting

Over the geographic range of this species pods with mature seeds have been collected in December and January.

In December 1996 most of the Kalannie region plants examined were sterile and of those that were in fruit the pods contained much aborted seed. This may have been caused by adverse conditions (perhaps the timing and/or intensity of rainfall) unsuited to seed set. The same reduction in seed set occurred in many other acacias in the region that year.

The pods are scattered over the plant, small and difficult to collect. The seeds tend to remain attached to the pods by the slender funicle for a short while following dehiscence.

There are about 104 000 seeds per kilogram. *Note*: This figure is derived from a single sample counted by Angela Waters (Kalannie Tree Supplies) and would most probably have included both viable and non-viable seeds.

Biological features

No information available.

Propagation

Informal germination tests, using various hot water treatments, were conducted by Angela Waters (Kalannie Tree Supplies). Best results were obtained by boiling the seed for 1 minute and letting it soak overnight before sowing. Simply soaking the seed over night in just-boiled water, or by using non -treating seed, reduced the germination response.

Revegetation

This species has rather limited potential for revegetation purposes in the Kalannie region. The collection of seed in quantity could prove troublesome.

Utilisation

Soil stabilisation. On account of its dense spreading crowns this low-growing species has some potential for growing on heavier soils where erosion control is required.

Wildlife refuge. The dense, intricately branched crown and spiny phyllodes provide good wildlife protection (especially for small nesting birds).

References

Cowan, R.S. and Maslin, B.R. (1995). *Acacia* Miscellany 15. Five groups of microneurous species of *Acacia*, mostly from Western Australia (Leguminosae: Mimosoideae: section Plurinerves). Nuytsia 10(2): 205-254.

Hall, N. (1984). *Botanists of Australian Acacias.* (CSIRO: Melbourne.)