ACACIA UNDOOLYANA:
A NEW SPECIES FROM CENTRAL AUSTRALIA

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Abstract

A. undoolyana G. Leach is described as a new species. It is closely related to A. macdonnellensis Maconochie and also shows some affinities to A. ammobia Maconochie. The species is restricted to the East Macdonnell Ranges of Central Australia. It is considered vulnerable with frequent wildfires identified as the major threat.

Acacia undoolyana G. Leach, sp. nov.

Frutex elatus vel arbor 2-15m alta. Cortex scaber griseus ad brunneus. Ramuli pubescentes glabrescentes costis inconspicuis flavidis. Phyllodia sparsim pubescentia argentei-furfuracea valde falcata cuneata ad apices acuta 15-22 cm longa 6-12 mm lata, nervis 1 vel 3 longitudinalibus ceteris prominentioribus et nervis secundariis tenuibus congestis non anastomantibus praeedita, venis marginalibus conspicuis luteis; glans basalis obscura 1-1.5 mm longa; pulvinus 2-3 mm longus, phyllodia juvenalia argentea dense appresse pubescentia obovata, glande apicali prominenti. Inflorescencia brevis axillaris racemosa, spicis 1-4, axe pubescenti 1-15 mm longo saepe axe in surculum foliaceum elongato. Spicae densae vivide aureae 15-25 mm longae in pedunculis dense pubescentibus 4-6 mm longis; rhachis glaber; bracteolae spathulatae c. 1 mm longae. Flores 5-meri; calyx 0.75-1 mm longus pubescens, lobis c. 0.25 mm longis obtusis; corolla 1.5-2 mm longa, calyce c. duplo longior, glabra, lobis tubum aequantibus, apicibus incrassatis; stamina 3-4 mm longa; ovarium dense pubescentia. Legumen planum 60-110 mm longum 2-3 mm latum inter semina contractum sparsim pubescentia. Semina longitudinalia nitida brunnea oblonga c. 4 mm longa 1.5-2 mm lata; funiculus sub semino 2-3plo plicatus.


Tall shrub to tree 2-15 m high. Bark rough, grey-brown. Branchlets pubescent, glabrescent, with indistinct yellowish ribs. Phyllodes sparsely pubescent with dense white scurfy bloom, strongly falcate, narrowed to each end, acute, 15-22 cm long, 6-12 mm wide; 1 or 3 longitudinal nerves more prominent than the rest with many fine crowded secondary nerves, not visibly anastomosing, with conspicuous yellow margins; gland basal, inconspicuous, 1-1.5 mm long; pulvinus 2-3 mm long, immature phyllodes silvery, densely appressed-pubescent, obovate, apical gland prominent. Inflorescence a short axillary raceme with 1-4 spikes, axis pubescent, 1-15 mm long, often growing into leafy shoot. Spikes dense, bright yellow, 15-25 mm long on densely pubescent peduncles 4-6 mm long; rachis glabrous; bracteoles spathulatae, c. 1 mm long, pubescent. Flowers 5-merous; calyx 0.75-1 mm long, pubescent, lobes c. 0.25 mm long, obtuse; corolla 1.5-2 mm long, c. twice as long as calyx, glabrous, lobed to about middle, apices thickened; stamens 3-4 mm long; ovary densely pubescent. Pod flat, 60-110 mm long, 2-3 mm wide, constricted between seeds, sparsely pubescent. Seeds longitudinal, shiny, brown, oblong, c. 4 mm long, 1.5-2 mm wide; funicle folded 2-3 times below the seed. (Fig. 1).

Specimens examined

NORTHERN TERRITORY: N'Dhala Gorge, c. 65 km E of Alice Springs, A.C. Beauglehole 20792, 15.x.1966 (NT); P.K. Latz 10259, 13.xi.1985 (NT, PERTH); A. Soos 7, 8, 9, 71.ix.1987 (DNA, NT); Kadaicha Ranges, A. Soos 23, 24, 25, 26, 27, 10.ix.1987 (DNA, NT); 25 km SW of Trephina Gorge, P.K. Latz 10427, 10428, 9.iv.1987 (DNA, NT).
Fig. 1. *A. undoolyana*. A, flowering branch; B, inflorescence; C, flower; D, pod; E, seed in pod. (A-C, Leach 1367; D, E, Beauglehole 20892). Illustrated by P. Fox.
Affinities

Early collections of this species have previously been identified as *A. cowleana* or *A. ammobia*, however, *A. undoolyana* is most similar to *A. macdonnelliensis*. The latter two species are separated by *A. undoolyana* having longer, broader and strongly falcate phyllodes which in the field have a distinctive silvery sheen. These four species can be distinguished as follows:

1. Phyllodes with obvious anastomosing veins .................................................. *A. cowleana*
2. Phyllodes 6-15 cm long, 1-3 mm broad; peduncle 2-4 mm long ......................... *A. macdonnelliensis*
3. Phyllodes mostly straight, rarely curved at tip; peduncle glabrous; mostly on sand dunes .......... *A. ammobia*
4. Phyllodes strongly falcate; peduncle densely pubescent; rocky hills ................ *A. undoolyana*

Distribution and ecology (Map 1)

*A. undoolyana* is only known from 3 populations in the East Macdonnell Ranges covering c. 35, 200 and 600 ha respectively (Soos et al., 1987). It is considered a threatened species and is here designated as 2VCi based on the coding scheme of Leigh, Briggs and Hartley (1981). Frequent wildfires are identified as the major threat. Although the species is marginally represented in the N'Dhala Gorge Nature Reserve the small size of this reserve makes an adequate fire management plan almost impossible and so the species must be considered inadequately conserved. All remaining populations are on a pastoral lease but as the species inhabits rocky ranges the threat from grazing by stock is minimal. The species is restricted to steep rocky slopes with skeletal soils. On ridgetops, it is replaced by *A. macdonnelliensis* and on slopes with increasing amounts of soil it is replaced by *A. aneura*.

Map 1. Distribution map of *A. undoolyana*. 

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Acacia undoolyana

**Flowering and fruiting**

Flowering specimens have been collected in August and September; fruiting material in September and October. The extensive flowering observed during August/September of 1987 did not result in any successful fruit set.

**Etymology**

The main population is on the Undoolya pastoral lease, managed over the last 80 years by the Hayes family.

**Acknowledgement**

Les Pedley (BRI) is gratefully acknowledged for comparing material of *A. undoolyana* with several Queensland taxa.

**References**