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**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 praedita, venis marginalibus conspicuae luteae; glans basalis obscura 1-1.5 mm longa; pulvinus 2-3 mm longus, phyllodia juvenalia argentea dense appresse pubescentia obovata, glande apicali prominenti. *Inflorescentia* 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 spatulatae 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 pubescens. *Legumen* planum 60-110 mm longum 2-3 mm latum inter semina contractum sparsim pubescens. *Semina* longitudinalia nitida brunnea oblonga c. 4 mm longa 1.5-2 mm lata; funiculus sub semino 2-3plo plicatus.

Type: G.J. Leach 1367, 17.viii.1987, N'Dhala Gorge Nature Park, 23° 38' S, 134° 28' E (DNA, holo.; AD, BRI, CANB, CBG, K, MEL, NSW, NT, PERTH, iso.).

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 spatulate, 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.ix.1985 (NT, PERTH); *A. Soos* 7, 8, 9, 7.ix.1987 (DNA, NT); Kadaicha Ranges, *A. Soos* 23, 24, 25, 26, 27, 10.ix.1987 (DNA, NT); 25 km SW of Trepkina Gorge, *P.K. Latz* 10427, 10428, 9.iv.1987 (DNA, NT).

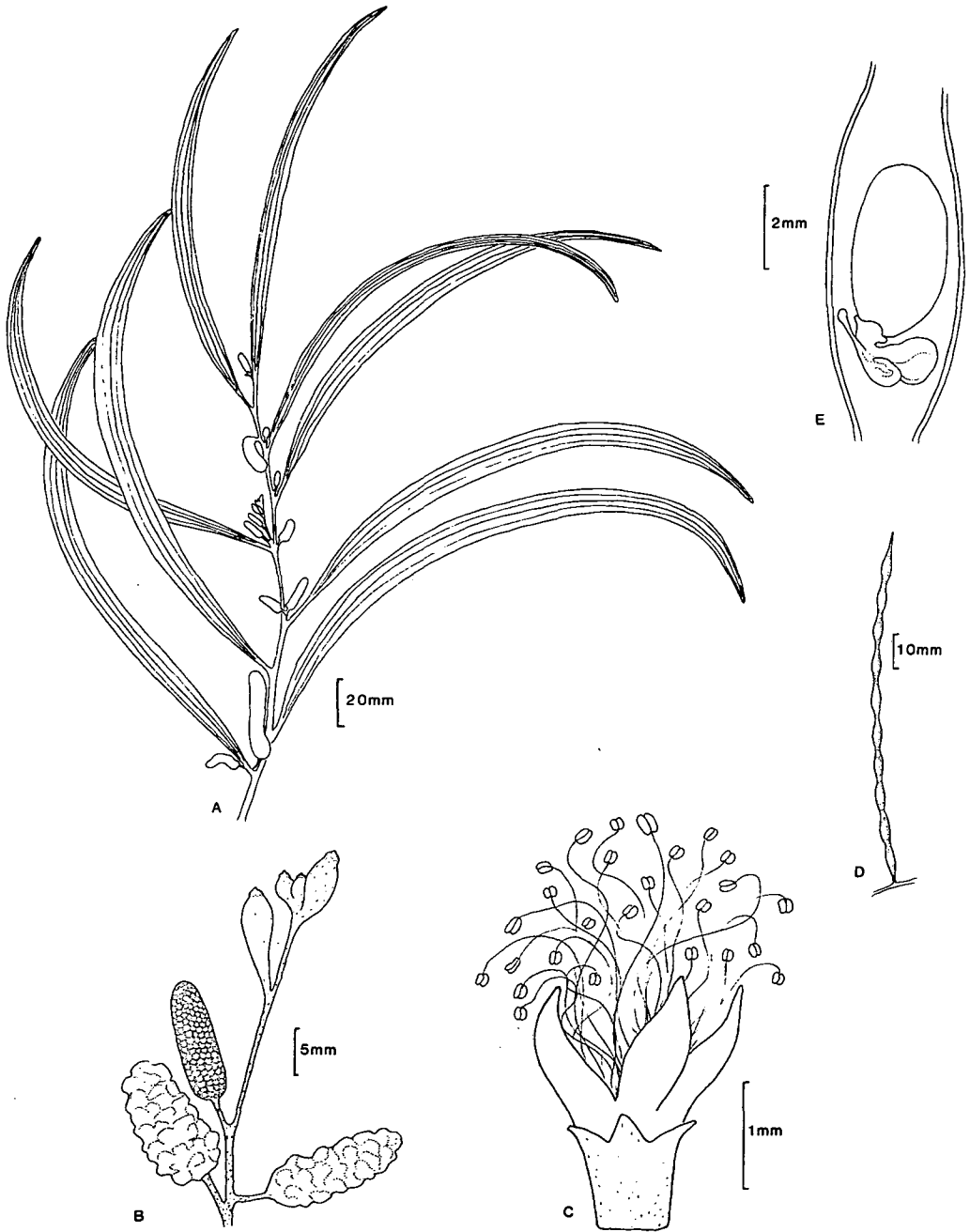


Fig. 1. *A. undoolyana*. A, flowering branch; B, inflorescence; C, flower; D, pod; E, seed in pod. (A-C, *Leach 1367*; D, E, *Beaglehole 20892*). Illustrated by P. Fox.

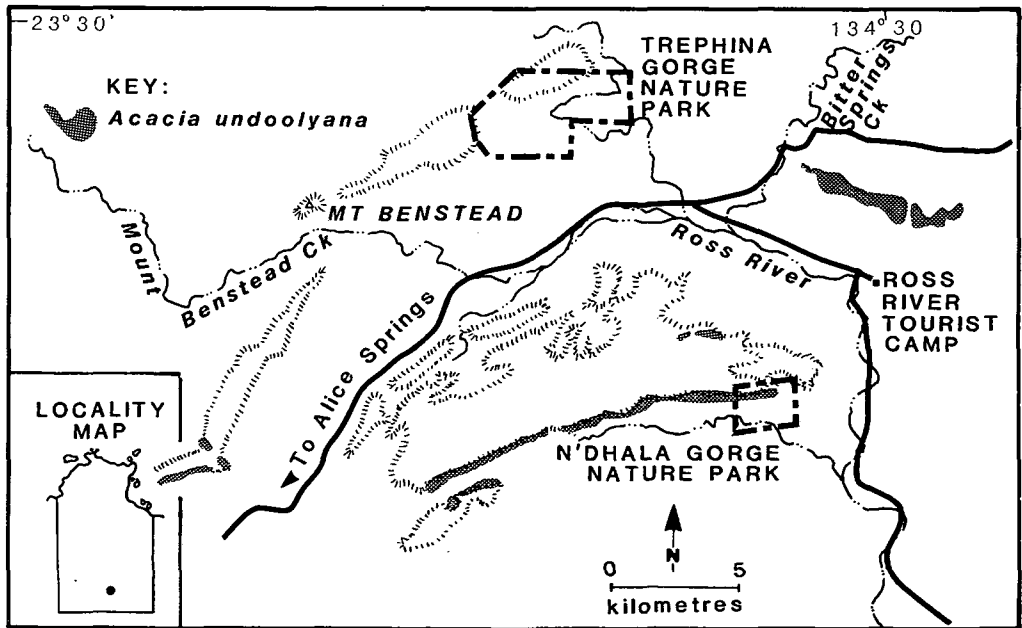
Affinities

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*
- 1. Phyllodes with numerous close parallel veins; anastomoses not visible 2
- 2. Phyllodes 6-15 cm long, 1-3 mm broad; peduncle 2-4 mm long *A. macdonnelliensis*
- 2. Phyllodes 12-22 cm long, 4-12 mm broad; peduncle 4-7 mm long 3
- 3. Phyllodes mostly straight, rarely curved at tip; peduncle glabrous; mostly on sand dunes *A. ammobia*
- 3. 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*.

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

- Leigh, J., Briggs, J. & Hartley, W. (1981). Rare or threatened Australia plants. *ANPWS Special Publication 7*.
Soos, A., Latz, P.K. & Kube, P. (1987). Occurrence of two rare plant populations in the Eastern Macdonnell Ranges. *Conservation Commission of the Northern Territory, Technical Memorandum 87/11*.