Apatophyllum macgillivrayi (Celastraceae), a new species from south-west Western Australia

R.J. Cranfield and N.S. Lander

Western Australian Herbarium, Department of Conservation and Land Management,
PO Box 104, Como, Western Australia 6152

Abstract

Cranfield, R.J. & Lander, N.S. *Apatophyllum macgillivrayi* (Celastraceae), a new species from south-west Western Australia. Nuytsia 8(2): 191-194 (1992). A new species of *Apatophyllum* (Celastraceae) endemic to the Austin Botanical District of the Eremaean Botanical Province of Western Australia, namely *A. macgillivrayi* Cranfield & Lander, is described. A key to species of *Apatophyllum* and a map of their distribution is provided. The differences between *Apatophyllum* and the putatively related genus *Psammomoya* are briefly noted.

Introduction

A specimen collected in late 1989 during the North East Goldfield Survey carried out by members of the Western Australian Department of Agriculture's Division of Resource Management was recently submitted to the Western Australian Herbarium for identification. On superficial examination it appeared to be a species of *Hibbertia* Andr. (Dilleniaceae). More detailed examination showed it to be a new species of *Apatophyllum* McGillivray (Celastraceae), a genus previously unrecorded for Western Australia. *Apatophyllum* is thought to be related to the Western Australian endemic genus *Psammomoya* Diels & Loes (McGillivray 1971).

Taxonomy

Apatophyllum macgillivrayi Cranfield & Lander, sp. nov. (Figure 1)

Apatophyllum constablei affinis a qua sepalis longioribus, petalis longioribus, et fructibus longioribus differt.

Typus: near Scholl Range (27° 16' S, 121° 40' E), Western Australia (precise locality withheld), 6 December 1989, *H. Pringle* 2751 (holo: PERTH; iso: NSW).

Sub-shrub to 30 cm high, compact, glabrous, much branched. *Leaves* alternate, crowded, sessile, stipulate; stipules persistent, erect, twisting with age, subulate, 0.7-1.7 mm long, with 1-3 short lateral lobes, brown; lamina acicular, 3-12 x 0.4-0.5 mm, indurate, yellowish green, monosulcate abaxially, longitudinally ribbed with sclerenchymatous bundles, obscurely veined, pungent. *Inflorescence* axillary, pedunculate,

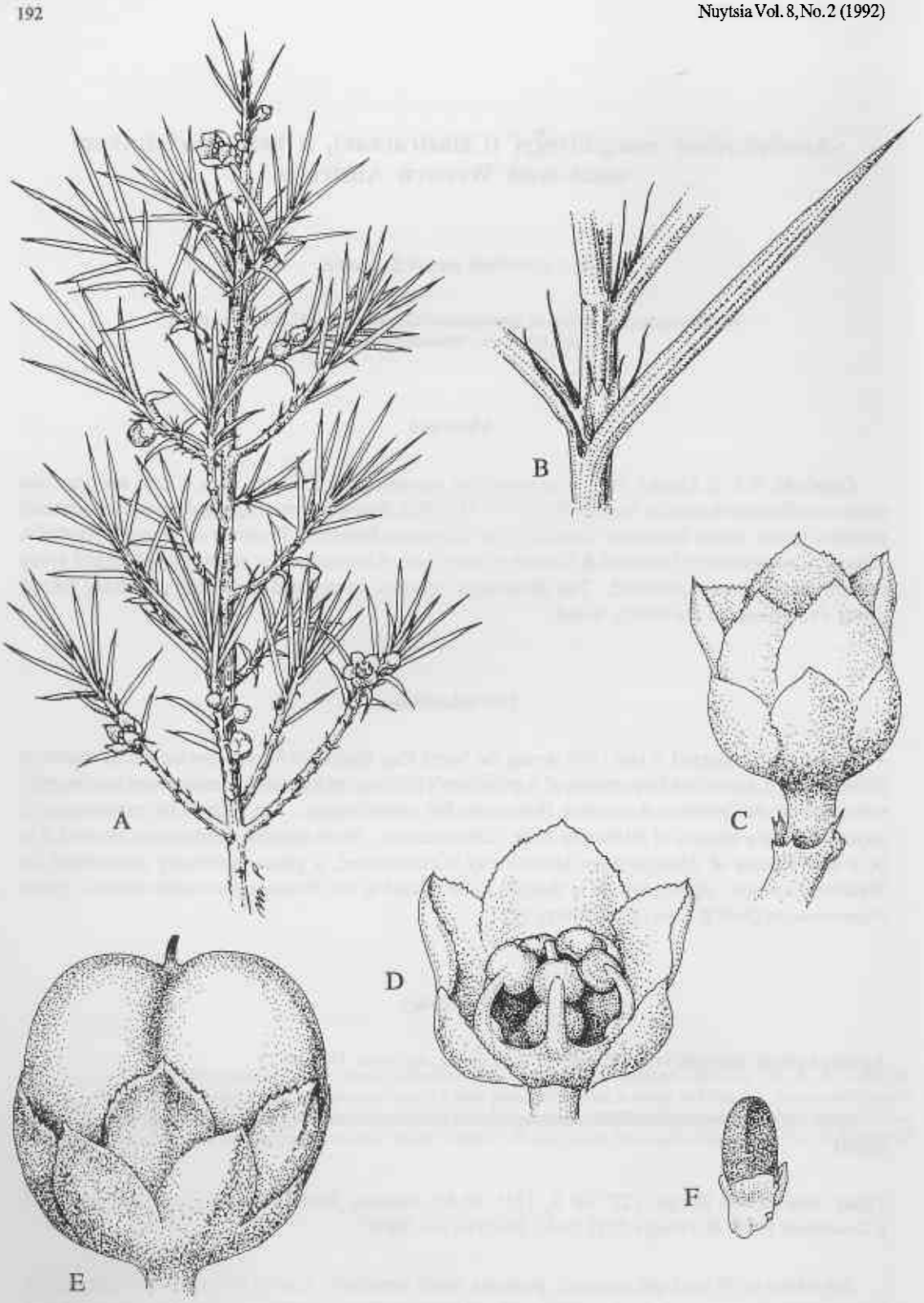

Figure 1. *Apatophyllum macgillivrayi*. A - Habit (x1.5). B - Leaf showing stipules (x6). C - Floral bud (x10). D - Flower after anthesis (x10). E - Capsule (x10). F - Seed with basal aril (x10). Drawn from the holotype.

1-flowered. *Peduncles* 0.5-1.5 mm long, elongating after anthesis; bracteoles 2, distal, opposite and basally connate, triangular, 0.5-1.6 mm long, greenish yellow, with membranous fimbriate margins and acuminate apices. *Flowers* axillary, solitary, pedicellate; pedicel 0.5-1 mm long. *Sepals* 5, imbricate, broadly ovate, 1.5 x 1-2 mm, greenish yellow; margin membranous, fimbriate; apex obtuse. *Petals* 5, imbricate, broadly ovate, 2-3.5 x 1.5-2 mm, greenish yellow; margin membranous, fimbriate; apex obtuse. *Stamens* 5, antisepalous, inserted on the rim of an erect, thin, fleshy, partially free, 0.2 mm high staminal disc; filaments linear, 0.5 mm long; anthers spherical, 0.5 x 0.4-0.6 mm, longitudinally dehiscent, basifixed, with oblong connective. *Ovary* surrounded and partially enclosed by the staminal disc, ovoid, 0.4-0.6 x 0.7-1 mm, 2-locular or 3-locular with 1 locule abortive; ovules 2 per locule, anatropous, c. 0.2 x 0.4 mm; style columnar, c. 1 mm long. *Fruit* a somewhat compressed, cordiform, bilocular, 1-seeded capsule, c. 5 x 4.5 mm, straw-coloured. *Seed* compressed obloid, c. 2 x 1 mm, brown, smooth; aril basal, cupular, white, chartaceous.

Distribution. Endemic to the Austin Botanical District of the Eremaean Botanical Province of Western Australia where it occurs on vacant Crown Land near the Scholl Range, Western Australia (Figure 2).

Habitat. Amongst low open *Callitris columellaris* shrubland on kaolinitic rubble beneath a low granite tor.

Conservation status. This species is known only from the type locality where it is abundant. It thus warrants the category 1R of Briggs & Leigh (1988).

Etymology. The specific epithet honours Mr Donald J. McGillivray, for many years Senior Botanist at the National Herbarium of New South Wales, who first described the genus *Apatophyllum* (McGillivray 1971).

Notes. This species is apparently most closely related to *A. constablei* McGillivray. The latter can be readily distinguished by its sepals, which are 0.9-1.2 x 0.7-0.9 mm; its petals, which are 1-2 x 0.5-0.7 mm; its fruit, which is 4-5 x 2-3 mm; and its seed, the surface of which is rugulose.

Key to species of *Apatophyllum*

1. Stipules lobed, 0.7-3 mm long
   2. Sepals narrowly ovate, 0.9-1.2 x 0.7-0.9 mm ..... *A. constablei* McGillivary
   2. Sepals broadly ovate, c. 1.5 x 1-2 mm ..... *A. macgillivrayi* Cranfield & Lander
1. Stipules entire, 0.2-0.3 mm long ..... *A. olsenii* McGillivray

Discussion

Of particular interest are the extraordinary disjunctions between the three species of *Apatophyllum*. Each species has a restricted distribution at locations widely separated from the others: near Glen Davis in New South Wales, at Many Peaks Range in Queensland, and at the Scholl Range in Western Australia respectively (Figure 1). The conclusion seems inevitable that these species are relictual.

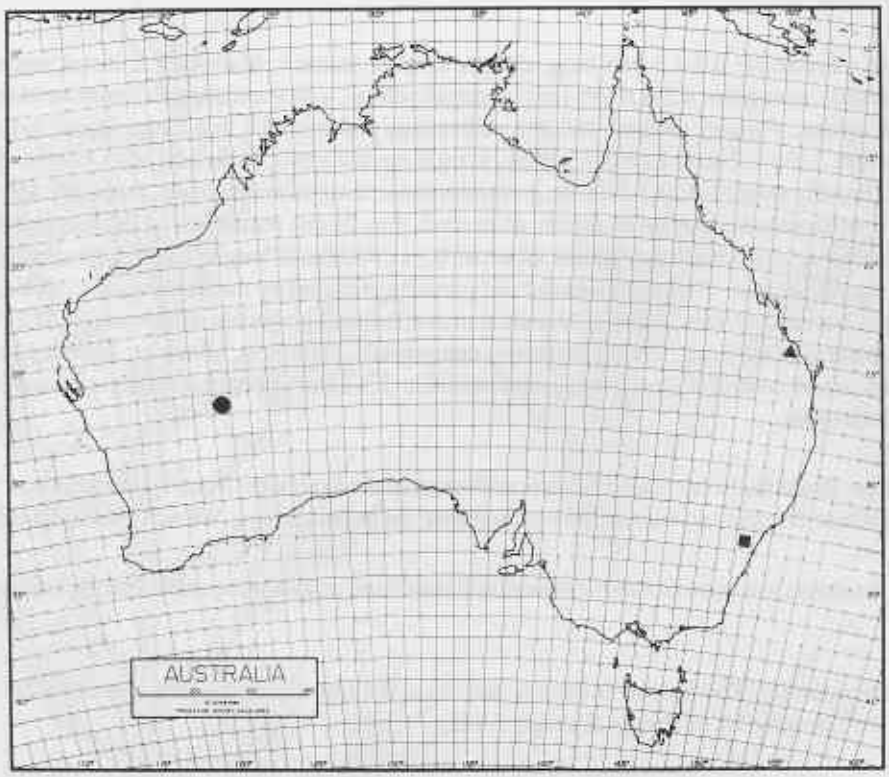

Figure 2. Distribution of *Apatophyllum constablei* (■), *A. macgillivrayi* (●), *A. olsenii* (▲) indicating occurrence in 1°x1° squares.

The discovery of *Apatophyllum macgillivrayi* brings to two the number of Celastraceous genera occurring in south-western Western Australia, the other being the putatively related *Psammomoya*. Curiously, both *Apatophyllum* and *Psammomoya* are sub-shrubs.

Keighery (in press) has recently extended *Psammomoya* from two to four species. In our view, *Apatophyllum* and *Psammomoya* have not been succinctly distinguished in the literature (McGillivray 1971, Lander 1983, Jessup 1984, Keighery in press). Their known differences are brought together in the following synoptic key.

1 Leaves opposite, decussate and exstipulate, reduced to minute, deltoid or orbicular cataphylls ..... **Psammomoya**

1 Leaves alternate, spirally arranged, and stipulate, not reduced ..... **Apatophyllum**

References

Briggs, J. & J. Leigh (1988). "Rare or Threatened Australian Plants." Revised edn. (Australian National Parks and Wildlife Service, Canberra.)

Diels, L. & T. Loesener (1904). Celastraceae. *In* L. Diels & E. Pritzel, Bot. Jahrb. Syst. 35: 339.

Jessup, L.W. (1984). Celastraceae. *In* A.S. George (ed.) "Flora of Australia", vol. 22, pp. 150-180.

Keighery, G.J. (in press). *Psammomoya* (Celastraceae), a taxonomic review. Nuytsia.

Lander, N.S. (1983). Celastraceae. *In* B.D. Morley & H.R. Toelken (eds) "Flowering Plants in Australia", pp. 222-224.

Loesener, T. (1942). Celastraceae. *In* Pflanzenfam. 20b: 89-197.

McGillivray, D.J. (1971). *Apatophyllum*: an interesting new Australian genus in the family Celastraceae. Kew Bull. 25: 401-406.