

A key to *Dysoxylum* (Meliaceae) in Australia, with a description of a new species from Far North Queensland

D.J. Mabberley

Abstract

Mabberley, D.J. (*Nationaal Herbarium Nederland, University of Leiden, The Netherlands, and National Herbarium of New South Wales, Royal Botanic Gardens Sydney, Mrs Macquaries Road, Sydney 2000, Australia*) 2004. A key to *Dysoxylum* (Meliaceae) in Australia, with a description of a new species from Far North Queensland. *Telopea* 10(3): 725–729. A key to the known 15 species of *Dysoxylum* in mainland Australia is presented. *Dysoxylum pumilum* from Far North Queensland is illustrated and described as new.

Introduction

The continuing delay in publishing my submitted account of Meliaceae for *Flora of Australia* (see Mabberley 1998) has given the opportunity to revise the account of the family in the light of new discoveries. One of these is a new species of *Dysoxylum* Blume from Far North Queensland, here described. Publication of this has been prompted by the imminent appearance of a new edition of William and Wendy Cooper's *Fruits of the Rain Forest* (Cooper & Cooper 1994) in which the species will be figured.

With 15 indigenous species, the genus *Dysoxylum* is the biggest in the family in Australia and, as no modern account of it is accessible, the opportunity is taken to provide a key to the identification of its species here. Descriptions of the 12 species not restricted to Australia were published by the author in Mabberley et al. (1995: 61–133). Descriptions of the remaining two species in mainland Australia, *D. fraserianum* and *D. rufum*, are to be found, in Stanley and Ross (1983: 481) and Taylor and Harden (2002). The indigenous species of Lord Howe Is. (*D. pachyphyllum* Hemsl., endemic) and Norfolk Is. (*D. bijugum* (Lab.) Seem.), not considered here, are described in Green (1994).

Key to the species

Note: The fruits are often characteristic but are rarely well represented in herbaria. Illustrations of most are provided by Cooper and Cooper (1994: tt. 192–203) and are indicated in the key below.

- 1 Leaves decussate
 - 2 Leaflets with scarcely discernible lateral veins; capsule 5–8 cm diam., glabrous
..... *Dysoxylum acutangulum* Miq. subsp. *foveolatum* (Radlk.) Mabb.
northern Australia, Solomon Is. to Sumatra
 - 2* Leaflets with conspicuous lateral veins; capsule c. 2 cm diam., finely hairy
..... *Dysoxylum oppositifolium* F. Muell.
north-east Queensland, New Guinea to Philippines
Cooper and Cooper [1994: t. 198]
- 1* Leaves in spirals

- 3 Leaves in bud stiletto-like
- 4 Leaves 3- or 4-jugate; capsule c. 5 cm long, pyriform, usually strongly veined *in sicco*, lacking rostrum *Dysoxylum latifolium* Benth.
northern Australia, Solomon Is., New Guinea [and Ternate?]
Cooper and Cooper [1994: t. 196]
- 4* Leaves usually 2-jugate; capsule c. 3.5-4 cm long, subspherical, ± veined *in sicco*, distinctly rostrate *Dysoxylum pumilum* Mabb.
north-east Queensland
- 3* Leaves in bud fist-shaped
- 5 Leaves paripinnate, sometimes with a terminal spike
- 6 Domatia present *Dysoxylum fraserianum* (A. Juss.) Benth.
Queensland, New South Wales
- 6* Domatia absent
- 7 Petals less than 2 mm long
..... *Dysoxylum papuanum* (Merr. & L.M. Perry) Mabb.
north Queensland, New Guinea, Solomon Is.
Cooper and Cooper [1994: t. 199]
- 7* Petals more than 5 mm long
- 8 Bracts and bracteoles 1–1.5 mm long; petals 6–15 mm long; capsule to 2.5 cm diam., foliage not garlic-scented *Dysoxylum klanderi* F. Muell.
north-east Queensland
Cooper and Cooper [1994: t. 195]
- 8* Bracts and bracteoles minute; petals 5–8 mm long; capsule to 7.7 cm diam., foliage garlic-scented *Dysoxylum alliaceum* (Blume) Blume
Queensland, Solomon Is. through Malesia
to peninsular Thailand and Andaman Is.
Cooper and Cooper [1994: t. 192]
- 5* Leaves imparipinnate
- 9 Calyx of free sepals
- 10 Calyx glabrous or subglabrous
..... *Dysoxylum gaudichaudianum* (A. Juss.) Miq.
Queensland to Java, Christmas Is. and Samoa
Cooper and Cooper [1994: t. 194]
- 10* Calyx densely hairy *Dysoxylum rufum* (A. Rich.) Benth.
Queensland, New South Wales
Cooper and Cooper [1994: t. 202]
- 9* Calyx a tube
- 11 Fruit densely hairy *Dysoxylum setosum* (Span.) Miq.
north Queensland, New Guinea, Timor
Cooper and Cooper [1994: t. 203]
- 11* Fruit glabrous
- 12 Flowers on bole and branches, rarely in axils too
- 13 Petals 15–20 mm long *Dysoxylum parasiticum* (Osb.) Kosterm.
Queensland, Solomon Is. through Malesia to Taiwan
Cooper and Cooper [1994: t. 200]
- 13* Petals 8–9 mm long *Dysoxylum pettigrewianum* F.M. Bailey
Queensland, Solomon Is. to Moluccas
Cooper and Cooper [1994: t. 201]
- 12* Flowers in axils

- 14 Flowers 4-merous
 *Dysoxylum mollissimum* Blume subsp. *molle* (Miq.) Mabb.
 Queensland, New South Wales, New Guinea west to Celebes,
 north to Carolines and east to Niue
 Cooper and Cooper [1994: t. 197, as *D. muelleri*]
- 14* Flowers 5-merous *Dysoxylum arborescens* (Blume) Miq.
 Queensland, Vanuatu and Malesia north to Taiwan
 Cooper and Cooper [1994: t. 193]

***Dysoxylum pumilum*, a new species from Far North Queensland**

***Dysoxylum pumilum* Mabb., species nova**

Arbor pumila, gracilis, foliis saepissime bijugatis; *Dysoxylum*, *D. latifolium* Benth. affine, foliolis majoribus forte acuminatis, inflorescentiis longioribus, fructibus subsphericis, rostratis, seminibus majoribus, distincta est.

Typus: Australia, Queensland, Cook, SFR 755, Gosschalk L.A., 17°25'S, 145°47' E, 360 m, *B. Hyland* 8792, 18 May 1976, fls (holo QRS; iso NSW).

Small understorey tree to 8 m; bole to 8 cm diam. Bark smooth; inner bark white to yellow or brown with no latex. Leafy twigs 3 mm diam., glabrous; apical buds stiletto-like. Leaves 14–25 cm long, 2 (3)-jugate, with terminal spike or its scar, dark glossy green adaxially, alternate (or subopposite); petiole 7.5–10 cm, ± angled, subglabrous, drying blackish; leaflets 12–34 × 5–12 cm, ovate to oblong, chartaceous, glabrous, opposite to alternate, bases weakly asymmetric, acute to obtuse, apices acute to acuminate, the acumen to 8 mm long, costae 8–14 on each side, pale and prominent abaxially in sicco, arcuate, obscure near margin, intercostals subprominent; petiolules 5–8 mm, weakly swollen. Thyrses axillary, sometimes in axils of undeveloped leaves, 8–35 cm long, subspiciform; axis subglabrous to finely sericeous, bearing cymes of 1–3 flowers, rectangular in bud; bracts c. 0.5 mm, triangular, pubescent, caducous; pedicels 3–4 mm long, pubescent, articulated with short pseudopedicels. Calyx c. 2 mm long, 3–4 mm diam., shallowly cupular, margin weakly 4-toothed. Petals 4, 5–6 mm × c. 2.5–3 mm, oblong, cream. Staminal tube narrowed towards apex, subglabrous, cream, margin very shallowly crenulate to ± dentate; anthers 8, c. 1 mm long, included. Disk c. 1 mm tall, glabrous, margin undulate. Ovary finely pubescent, 4-locular; style pubescent in proximal 2/3; stylehead subcapitate. Capsule c. 3.5–4 cm long, 3.5–4 cm diam., subspherical, abruptly rostrate, ± veined in sicco, yellow-green, orange-yellow within. Seeds 2 or 3, c. 2.5–3 cm long, 2–2.5 cm wide, 1–1.5 cm thick, flattened ellipsoid to hemispherical; sarcotesta glossy, orange-brown; cotyledons collateral, dark green.

Other material examined: Queensland, Cook: SFR 755, Gosschalk L.A., EP/34, 17°26'S, 145°46'E, 380 m, *D. Fitzsimon* 222, 30 Nov 1976 (QRS), sterile, and *D. Fitzsimon* 2757, Dec 1976, (QRS), fr.; SFR 755, Gosschalk L.A., 17°24'S, 145°46'E, 380 m, *B. Gray* 786, 9 Nov 1977 (NSW, QRS), fr.; Chuklunga [Chuck Lunga] Creek, 17°25'S, 145°46'E, 360 m, *A.K. Irvine* 1939, 11 July 1979 (QRS), fr.; SFR 755, Bartle Frere, Russell River, 17°23'S, 145°47'E, 380 m, *B. Gray* (*Hyland* no. 25903RFFK), 7 Dec 1995 (QRS), buds; idem, *B. Gray* (*Hyland* no. 25904RFFK) (QRS), sterile; idem, *B. Gray* 6468 (QRS), fr., seedlings; SFR 755, Bartle Frere, Gosschalk L.A., 17°24'S, 145°46' E, 400 m *B. Gray* 6765, 30 May 1996 (QRS), fls; ibid, *B. Gray* 6808, 21 June 1996 (NSW – spirit only, QRS), fls, and 6809 (QRS), fr.; Russell River at junction with Chuck Lunga Creek, 17°26'S, 145°46'E, 160 m, *W. Cooper* 1624, 4 Dec 2001 (QRS), sterile.

Distribution and ecology: an understorey tree known only from the above collections from the Bartle Frere area of north-east Queensland. By comparison, the very closely allied *D. latifolium* is a widespread tree of rain forest and semi-deciduous thicket (Port Moresby region of Papua New Guinea) to 1200 m. It is frequently reported as a common canopy tree in New Guinea and the Solomon Is.

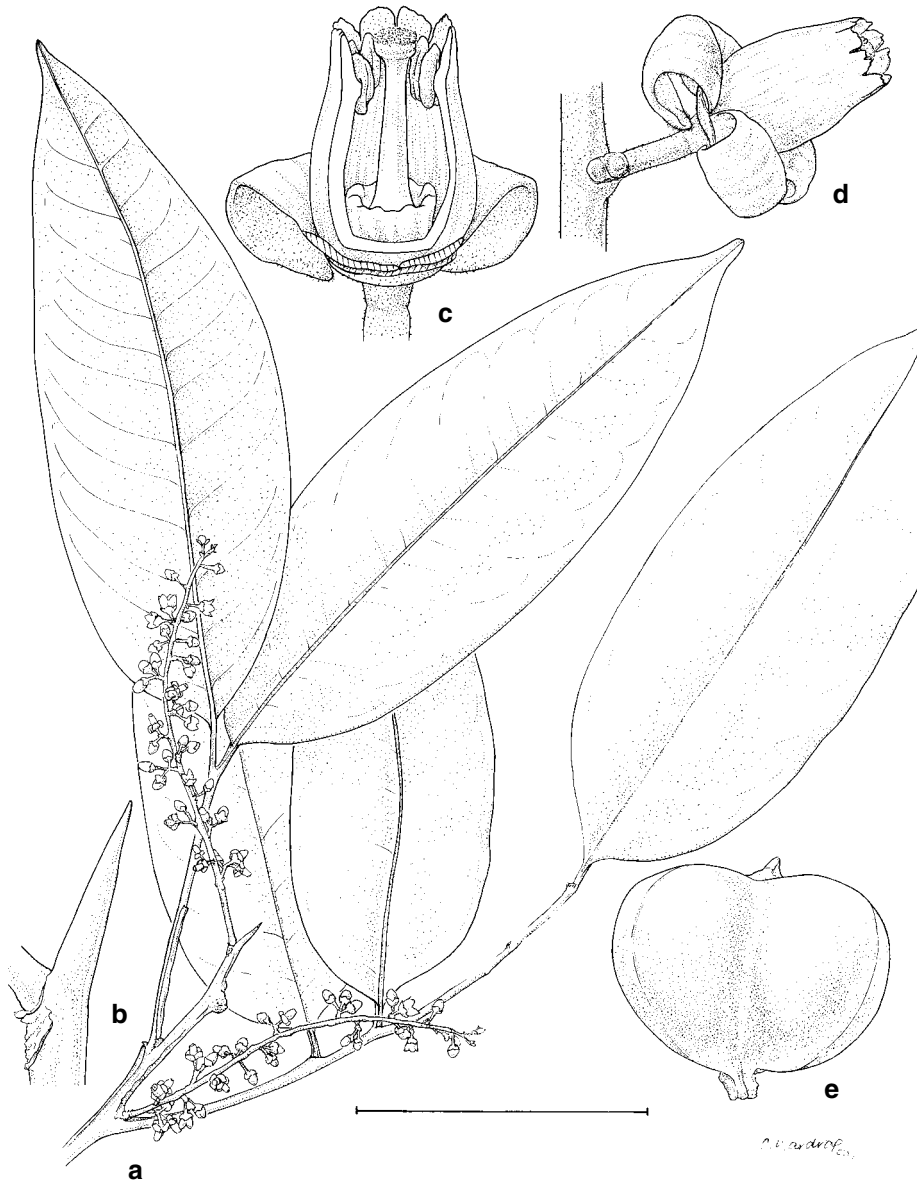


Fig. 1. *Dysoxylum pumilum*. **a**, habit; **b**, apical bud; **c**, flower (dissected); **d**, flower; **e**, fruit: **a**, **b**, Hyland 8792; **c**, **d**, Gray 6808 (spirit material); **e**, Gray 786. Scale bar: **a** = 8.5 cm; **b** = 1.5 cm; **c** = 0.75 cm; **d** = 1.2 cm; **e** = 4 cm.

Etymology: The specific epithet refers to the small size of the treelet.

References

- Cooper, W. and Cooper, W.T. (1994) *Fruits of the rain forest. A guide to fruits in Australian tropical rain forests*. (RD Press: Surry Hills, NSW).
- Green, P.S. (1994) *Dysoxylum*. *Fl. Australia* 49 (Oceanic Is. 1): 247–48.
- Mabberley, D.J., Pannell, C.M. & Sing, A.M. (1995) Meliaceae. *Flora Malesiana* I, 12.
- Mabberley D.J. (1998) Notes on Australian Meliaceae. *Telopea* 8: 45–46.
- Stanley, T.D. & Ross, E.M. (1983) *Flora of south-east Queensland*. Vol. 1 (Department of Primary Industry: Brisbane).
- Taylor, M.J. & Harden, G.J. (2002) Meliaceae. Pp. 327–332 in G.J. Harden (ed.), *Flora of New South Wales*. Revised edition. Vol. 2. (University of New South Wales Press: Sydney).

Manuscript received 4 November 2003
Manuscript accepted 24 November 2003