

National Library of Australia
Cataloguing-in-publication entry (PDF):
Flora of the Darwin Region Volume 1
ISBN: 9781921519949 (PDF)
Series: Northern Territory Botanical Bulletin No. 37
Notes: Includes bibliographical references and
index.
Subjects: Botany – Northern Territory – Darwin
region – Plants – Identification
Other Authors/Contributors: Short, P.S.,
Cowie, I.D., Northern Territory Department
of Natural Resources, Environment, the Arts
and Sport.
Dewey Number: 581.994295
ISSN: 0314-1810
Date of Publication: March 2011

Cover: *Helicteres procumbens* (Benth.) Cowie, *ined.*
Cover Artist: R. Walter
Editors: P.S. Short and I.D. Cowie
Illustrations: M. Osterkamp
Typesetting: D. Bisa and M. Voukalis
Photographic Editor: B.M. Stuckey
Authors contributing to this publication:
D.E. Albrecht
Northern Territory Herbarium, Department of
Natural Resources, Environment, the Arts and
Sport, P.O. Box 1120, Alice Springs, N.T. 0871,
Australia
R.M. Barker
State Herbarium of South Australia, Plant
Biodiversity Centre, P.O. Box 2732, Kent Town,
S.A. 5071, Australia
I.D. Cowie; B. Crase*; D.J. Dixon*; C.R. Dunlop*;
R.K. Harwood*; R.A. Kerrigan*; G.J. Leach*;
C. Mangion*; P.S. Short; G.M. Wightman*
Northern Territory Herbarium, Department of
Natural Resources, Environment the Arts and

Sport, P.O. Box 496, Palmerston, N.T. 0831,
Australia
L.A. Craven
Australian National Herbarium, Centre for
Plant, Biodiversity Research, G.P.O. Box 1600,
Canberra, A.C.T. 2601, Australia
L.L. Forman† (deceased)
Royal Botanic Gardens, Kew, Richmond,
Surrey, TW9 3AB, UK
B. Jackes
James Cook University Herbarium, School of
Marine and Tropical Biology, James Cook
University, Townsville, Qld 4811, Australia
L. Jessup
Queensland Herbarium Mt Coot-tha Road,
Toowong, Qld 4066, Australia
J. Palmer
Australian National Herbarium, G.P.O. Box
1600, Canberra, A.C.T. 2601, Australia

*Former employee NT Herbarium

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Publisher:

Northern Territory Herbarium
Department of Natural Resources,
Environment, the Arts and Sport
P.O. Box 496
Palmerston, N.T. 0831, Australia

Suggested citation for this article:

Short, P.S. (2011). Lecythydaceae. *In* Short, P.S.
& Cowie, I.D. (eds), *Flora of the Darwin Region*.
(Northern Territory Herbarium, Department of
Natural Resources, Environment, the Arts and
Sport). Vol. 1, pp. 1–6.
[http://www.nt.gov.au/nreta/wildlife/plants_
herbarium/index.html](http://www.nt.gov.au/nreta/wildlife/plants_herbarium/index.html)

LECYTHIDACEAE

P.S. Short

Trees or shrubs. *Leaves* alternate but commonly crowded at the tips of branches, simple, lamina entire or toothed; stipules absent or small and caducous. *Flowers* bisexual, actinomorphic or zygomorphic, commonly large and showy, solitary or in axillary or terminal racemes or in terminal panicles. *Calyx* of (2) 4–6 (12) usually imbricate or valvate sepals. *Petals* 4–6, imbricate or rarely absent. *Stamens* 10–numerous, mostly either symmetrically arranged in several centrifugally developing series and with the filaments connate below and forming a staminal ring or the stamens arranged in an asymmetrical ring which forms on one side a ligule which may form a hood over the gynoecium; anthers tetrasporangiate and dithecal, opening by longitudinal slits or apical pores. *Gynoecium* of 2–6 carpels united to form an inferior or half-inferior ovary with as many locules as carpels, each locule with 2–many anatropous ovules; placentation axile, apical-axile, basal-axile or strictly basal; style simple, terminal and with a capitate or lobed stigma. *Fruit* an operculate capsule, a drupe or berry. *Seeds* often nut-like, winged or with a funicular aril, usually lacking endosperm.

Pantropical family of *c.* 25 genera and over 300 species, with the greatest diversity in the Neotropics. In Australia the family is represented by two genera (*Barringtonia* and *Planchonia*) and five species, these being members of the subfamily Planchonioideae which is found in the Old World tropics.

The Australian representatives of this family have “brush-flowers”, that is the outer whorls of stamens dominate the other floral organs, giving the appearance of a shaving brush.

Perhaps the most widely known species in this family is the Brazil Nut (*Bertholletia excelsa*).

Taxonomic references: Cronquist (1981); Henderson (1982); Morton *et al.* (1998); Mori (2004); Prance & Mori (2004).

- | | | |
|----|---|---------------------|
| 1 | Fruit partly or manifestly 4-angled or 4-winged | Barringtonia |
| 1: | Fruit not angled or winged | Planchonia |

BARRINGTONIA J.R. Forst. & G. Forst.

Trees or shrubs. *Bark* fissured. *Leaves* spirally arranged, margins entire or serrate-crenulate; stipules very small, caducous. *Inflorescence* a raceme or spike, usually pendulous, may be terminal, axillary or cauliflorous, individual flowers sessile or pedicelled. *Bracts* and bracteoles caducous. *Floral tube* sometimes 4-angled or 4-winged. *Calyx* of 4 or 5 persistent and imbricate lobes on the receptacle rim or connate and breaking at anthesis into 2–5 persistent segments or sometimes circumscissile and leaving a cup-shaped rim. *Petals* (3) 4 (5), free, convex. *Stamens* many, in 3–8 whorls, the inner 1–3 whorls reduced to sterile filaments. *Disc* an undulating ring at the base of style. *Style* filiform, equal or exceeding the stamens, folded in bud, persistent. *Ovary* inferior, 2–4 locular; ovules 2–6 per locule. *Fruit* a 4-angled or 4-winged drupe. *Seeds* 1 per fruit, large.

About 40 species; found in east Africa, Madagascar, south and south-east Asia, Australia and islands of the western Pacific. Four species in northern Australia, with two in the N.T. and both in the D.R.

Taxonomic references: Payens (1967); Henderson (1982); Prance & Mori (2004).

- | | | |
|----|---|---|
| 1 | Leaf margins serrate-crenulate; sepals 1–3 mm long; petals red, pink or white, less than 1.5 cm long; fruit 4-angled or winged and to <i>c.</i> 4 cm long | B. acutangula subsp. acutangula |
| 1: | Leaf margins entire; sepals 3–4 cm long; petals white, more than 5 cm long; fruit somewhat pyramidal, basally 4-lobed, more than <i>c.</i> 8 cm long | B. asiatica |

B. acutangula (L.) Gaertner subsp. **acutangula**

Shrub or tree, mostly 3–5 m tall, but sometimes much taller. *Bark* fissured. *Leaves* deciduous; petiole 0.3–1 cm long; lamina obovate to oblanceolate or elliptic to narrowly elliptic, 3.5–21 cm long, 1–9.5 cm wide, serrate-crenulate, glabrous or the undersurface hairy, green or glaucous. *Racemes* terminal, pendulous, *c.* 10–44 cm long, with *c.* 15–70 scented pedicellate flowers, pedicels 4–10 mm long. *Bracts* 1–5 mm long. *Bracteoles* to *c.* 1 mm long. *Sepals* green, free, semicircular, 1–3 mm long, 2–3 mm wide. *Petals* 4 (5), obovate, 4–8 mm long, 4–5 mm wide, red or crimson. *Stamens* in 3 whorls, the inner one staminodial; outer filaments 8–20 mm long, red; anthers *c.* 0.5 mm long, yellow; staminodes 3–5 mm long. *Ovary* 2- (4)-celled; style red. *Fruit* ellipsoid to narrowly ellipsoid, 1.5–4 cm long, 1.3–1.6 cm wide, longitudinally 4-angled or winged, green with brown or reddish tinting, pericarp fibrous. *Flowering & fruiting* throughout the year. **Freshwater Mangrove, Itchy Bush, Itchy-grub Bush.**

Fig. 1 (*Waterhouse*, DNA 39059; *Wightman* 606); Pl. 1 (unvouchered).

Afghanistan east to south-east Asia, Australia (W.A., N.T., Qld) and New Guinea. In the N.T. it is confined to seasonally inundated areas and perennial watercourses or catchments in the Top End. Localities include Katherine Gorge, Kathleen Falls (Flora River), Fogg Dam and floodplains of the Daly, Mary and South Alligator rivers.

Payens (1967) recognised two subspecies, *i.e.* subsp. *acutangula* described here and subsp. *spicata* (Blume) Payens. The latter has sessile flowers and the fruit is almost globular and 4- or 8-ribbed or slightly winged. It has not been recorded for Australia but ranges from India to New Guinea.

The vernacular name of Freshwater Mangrove is unfortunate as the species is not a true mangrove (inhabitants of intertidal zones). The names Itchy Bush and Itchy-grub Bush are a reflection of the fact that trees are commonly infested by caterpillars of the moth family Lymantriidae, which shed irritant hairs.

Wightman *et al.* (1991) recorded use, by the Alawa people of Minyerri, of crushed leaves and bark as a fish poison. Wightman *et al.* (1992) recorded the same use by the Mangarrayi people of the Elsey River area and further recorded that sap from

this tree can cause blindness. Marrfurra *et al.* (1995) noted that the Ngan'gikurunggurr and Ngan'giwumerri people of the Daly River area use timber from the tree for making woomeeras and spears. In the Kimberley region of W.A. Aboriginal people are known to use the bark as an analgesic (Skatssoon 2004).

Long-neck turtles (*Chelodina rugosa*) are known to hibernate and lay eggs under this tree.

B. asiatica (L.) Kurz

Trees from *c.* 7–15 m or more tall, large trees may have thick buttresses. *Leaves* deciduous; petiole *c.* 0.5 cm long; lamina obovate or somewhat oblong, slightly fleshy and waxy, 7–40 cm long, 4–20 cm wide, entire, apically emarginate to mucronate, discolorous. *Racemes* usually terminal, erect, with 3–20 scented pedicellate flowers up to 10 cm in diam., pedicels 4–8 cm long. *Bracts* 8–20 mm long. *Bracteoles* triangular, *c.* 1.5–5 mm long. *Sepals* green, undivided, at anthesis rupturing into 2 rounded or acuminate lobes 3–4 cm long, 2–3 cm wide. *Petals* 4, elliptic, 5.5–8.5 cm long, convex, white. *Stamens* in 6 whorls, the inner ones staminodial; outer filaments 8–15 cm long, mostly white but apically pink, red or purplish; anthers yellow; staminodes 2–3.5 cm long. *Ovary* 4- or 5-celled; style basally white, apically red; stigma white. *Fruit* somewhat pyramidal, with 4 rounded basal lobes, 8.5–11 cm long, 8.5–11 cm wide, green but drying brown, pericarp spongy and fibrous, calyx segments remaining attached. *Flowering* only recorded June, Sept.

Fig. 1 (*Risler* 257); Pl. 2 (unvouchered).

A characteristic strand plant in the Indo-Malaya region and Polynesia. In Australia established plants are recorded from coastal beaches on Cape York (Qld), islands in Torres Strait, and in the N.T. on Marchinbar and Bathurst islands.

Fruit are extremely buoyant and can be widely dispersed in the sea. In Australia, drift-fruit have been recorded from beaches in southern N.S.W., Qld, N.T. and Ashmore Reef (Smith, J. 1999). In the Top End drift-fruit have been found in the Darwin area, Howard Island, Cape Barrow and Yirrkala.

Due to a paucity of specimens the above description is largely adopted from Payens (1967).

Barringtonia

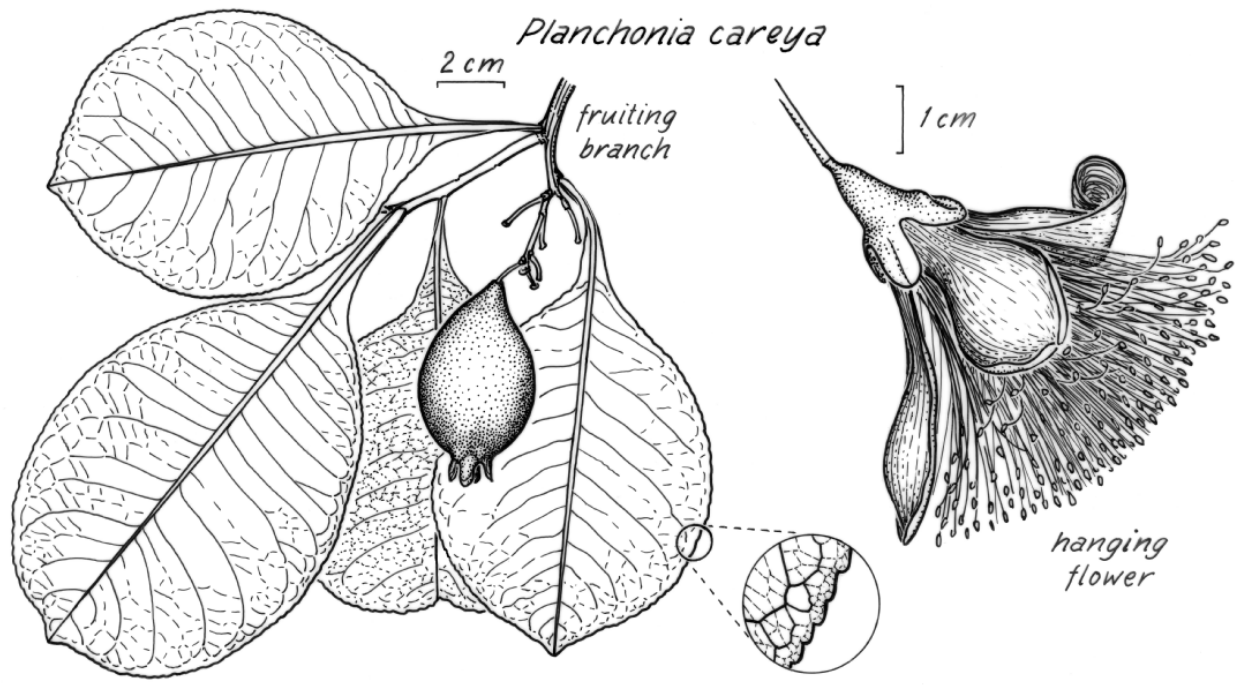
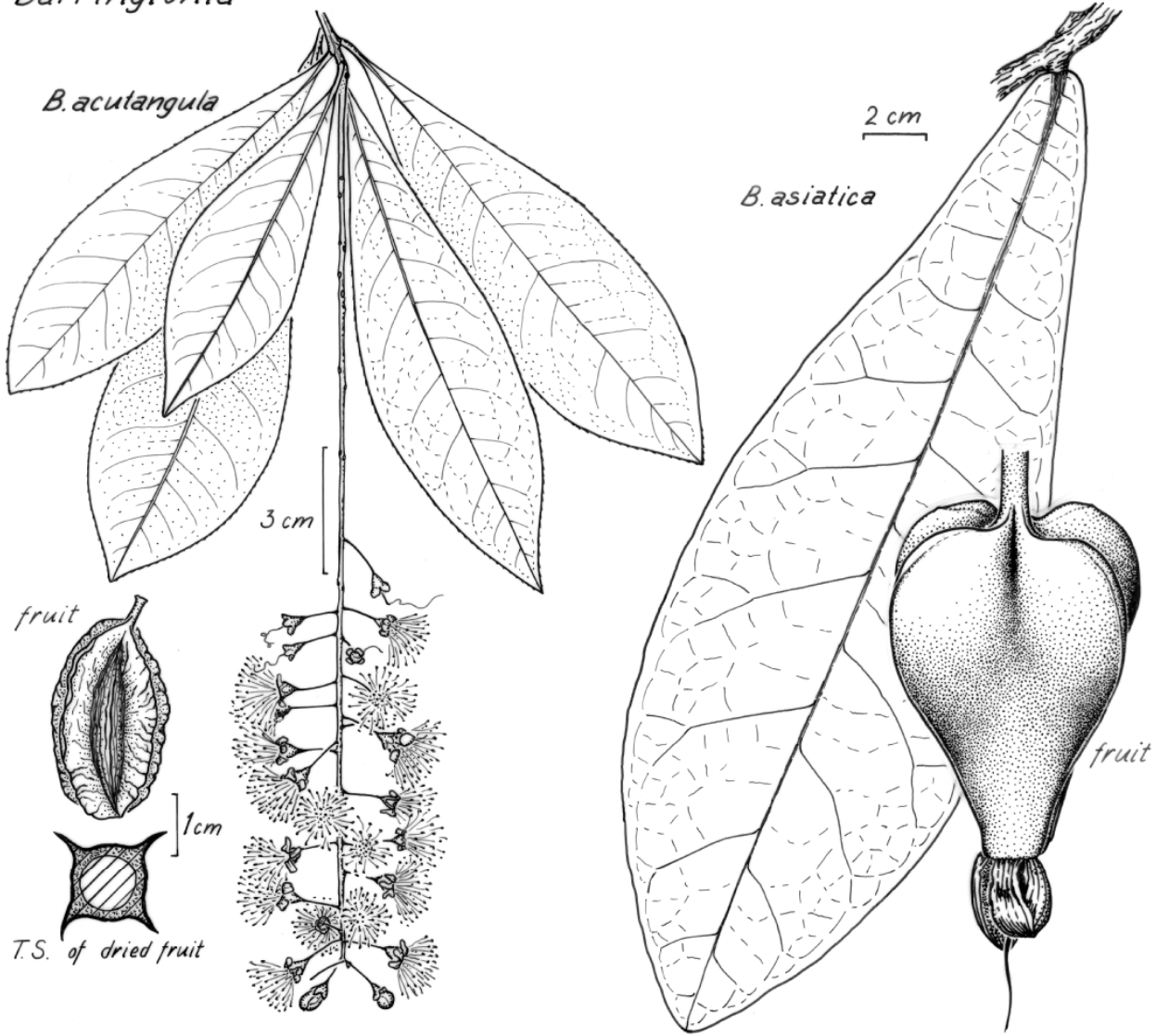


Fig. 1

PLANCHONIA Blume

Trees. *Leaves* typically clustered at the end of branches, their margins entire or crenulate. *Inflorescence* a short raceme or flowers solitary. *Bracts* subpersistent. *Floral tube* obovoid or campanulate. *Calyx* segments 4. *Petals* 4, recurving. *Stamens* many, multiwhorled, shortly united at the base, some sterile; falling with the petals. *Style* filiform, exceeding the stamens, stigma simple. *Ovary* inferior, 3- or 4-locular; ovules several per locule. *Fruit* a berry with persistent calyx lobes. *Seeds* several per fruit, may be embedded in fleshy pulp.

Perhaps nine species, with the genus ranging from Andaman Islands to the Philippines, New Guinea and Australia. Two species in northern Australia but only *P. careya* in the N.T.

Taxonomic references: Henderson (1982); Prance & Mori (2004); Barrett (2006).

P. careya (F. Muell.) Knuth

Tree 4–6 m or more tall but also occurring as a suffrutescent shrub resprouting after fire, deciduous. *Bark* fissured and corky. *Leaves* essentially elliptic to broadly elliptic or almost circular but basally more or less abruptly tapering to form a “winged-petiole” and the whole leaf sometimes more or less spatulate, 3.5–20 cm long, 2–11.5 cm wide, margins crenulate, commonly apically acuminate, glabrous. *Flowers* in few-flowered racemes. *Pedicels* 5–30 mm long. *Floral tube* scurfy, 11–15 mm long. *Sepals* 5–9 mm long, 4–7 mm wide, obtuse, margins more or less shortly ciliate. *Petals* narrowly obovate or somewhat oblong, recurving, to 45 mm long and 15 mm wide, white, pale green-white or pinkish. *Staminal tube* 5–10 mm long, pink; filaments to 60 mm long, white or with some pink. *Style* to *c.* 70 mm long. *Fruit* ellipsoidal, smooth, 5–7 cm long, 2–3.5 cm diam.; pericarp thick, fibrous. *Seeds* compressed-oval, *c.* 5 mm long, embedded in pulp. *Flowering* Feb.–Nov. *Fruiting* June–Feb. **Cocky Apple.**

Fig. 1 (*McKean B113; Rogers 14*); Pl. 3 (*Smith 108*); Pl. 4 (unvouchered).

New Guinea and northern Australia (W.A., N.T., Qld). A common species in eucalypt woodland and forest and on both laterite and sandy soils. In the N.T. occurring as far south as *c.* 16° S.

As with *Barringtonia acutangula* trees may harbour bags of a processionary caterpillar of the moth family Lymantriidae. Contact of the skin with

hairs from the caterpillars causes swelling and intense itchiness.

Flowers open at night and last for just a few hours before falling in the early morning. Pollination is reputedly by the Northern Blossom Bat (*Macroglossus minimus*) and some species of Flying Fox (*Pteropus* spp.).

Used for many purposes by Aboriginal people. The soft yellow flesh of the fruit is eaten by many groups (Wightman & Smith 1989; Marrfurra *et al.* 1995; Yunupingu *et al.* 1995; Blake *et al.* 1998). When cooking echidnas, rock snakes, kangaroos and other game in a ground oven leaves may be used to flavour the meat (Marrfurra *et al.* 1995). The bark may be used as a fish poison (Smith & Kalotas 1985; Yunupingu *et al.* 1995; Raymond *et al.* 1999), boiled in water to wash skin sores (Blake *et al.* 1998), used to make string bags (Wightman *et al.* 1991) or the inner bark used to produce a reddish dye (Blake *et al.* 1998). Specht (1958) recorded that the wood may be used as a fire-making tool and Wightman & Smith (1989) noted that Aboriginal people of Milingimbi heat leaves and place them on mosquito bites to relieve pain. The species is also a calendar plant, flowering indicating to the Anindilyakwa people of Groote Eylandt that it is time to hunt fat sea-turtles and, for people of the Daly River area, indicating that eggs of the Freshwater Crocodile are available for collection (Groote Eylandt Linguistics-langwa 1993; Marrfurra *et al.* 1995).

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Pl. 1 *Barringtonia acutangula* subsp. *acutangula*
(Photos: J. Brock)



Pl. 2 *Barringtonia asiatica* (Photo: P.S. Short)



Pl. 3 *Planchonia careya* (Photo: N.M. Smith)



Pl. 4 *Planchonia careya*
(Photos: fruit C.G. Wilson; bark B.M. Stuckey)