
MANGROVES OF THE NORTHERN TERRITORY, AUSTRALIA:

IDENTIFICATION and TRADITIONAL USE

Glenn Wightman

Ethnobiology Project, Parks and Wildlife Service
Department of Natural Resources, Environment and the Arts
PO Box 496, Palmerston NT 0831, Australia



Northern Territory Government



Principal Illustrator

Milton Andrews

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EXTRACT: *Lumnitzera* (pp. 107–111)

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DARWIN 2006

Lumnitzera

COMBRETACEAE

DERIVATION: In honour of Stefan Lumnitzer (1750–1806), a German botanist.

A genus of three species, two of which occur in the NT; the third species, *L. rosea*, considered to be of hybrid origin, is not known from the NT.

DESCRIPTION: Evergreen shrubs or small trees, bark very dark to black, longitudinally fissured. Leaves spirally arranged, clumped toward end of twigs, slightly fleshy, coriaceous, marginal and terminal glands inconspicuous. Flowers actinomorphic, bisexual, 5-merous. Calyx tube elongated, bearing two persistent bracteoles. Stamens 5–10, anthers versatile, 0.5 mm long. Ovary inferior, unilocular, ovules 2–5, pendulous, anatropous; style slender; stigma small, simple. Pseudocarp flattened, ellipsoidal, striated, 10–15 x 3–5 mm, bracteoles persistent.

KEY TO SPECIES:

1. Flowers red, inflorescences terminal, fruit slightly compressed *L. littorea*
1. Flowers white, inflorescences axillary, fruit very compressed ... *L. racemosa*

Lumnitzera littorea (Jack.) Voigt

Red-flowered Black Mangrove

DERIVATION: The Latin 'littoreus' means seashore and refers to the coastal habitat of this species.

DESCRIPTION: Tree, spreading, to 9 m; pneumatophores slender, knee-like, occurring occasionally. Leaves narrowly obovate-elliptic, 3.9–7.8 x 1.2–2.4 cm, apex rounded or retuse with inconspicuous terminal gland, base cuneate, petiole 1–5 mm long. Flowers strongly scented and nectariferous, pedicel 3 mm long. Calyx tube slightly compressed, 8–12 mm long, bearing 2 ovate bracteoles, 1 mm long, calyx lobes ovate, 1 mm long, apex blunt. Corolla bright red, lobes 4–6 x 1.5–2 mm, elliptic, apex broadly acute. Stamens 5–10, filaments 9–10 mm long. Style 10 mm long. Pseudocarp slightly compressed, 9–10 mm x 4–5 mm, ellipsoidal, somewhat corky.

HABITAT: *Lumnitzera littorea* prefers a soft fine-grained substrate at the landward edge of the mangrove zone, where tidal inundation is uncommon and freshwater input is improved for much of the year. *Scyphiphora hydrophyllacea* is a common associate in this environment. *Lumnitzera littorea* also occurs fringing waterways with a strong perennial freshwater flow. Associates in this environment include *Rhizophora apiculata*, *Bruguiera gymnorhiza* and *Xylocarpus granatum*.

DISTRIBUTION: *Lumnitzera littorea* occurs sporadically around the northern and eastern NT coastline, but has not been recorded from west of Cox Peninsula. Also found in Queensland, extra-Australian distribution includes tropical Asia, Malaysia and Polynesia.

DISTINCTIVE FEATURES: Tree with blackish bark, leaf with small gland at tip, flowers bright red.

ETHNOBOTANY: Emi and Batjamal people use the hard, heavy wood to make digging sticks and throwing sticks (Smith & Wightman 1990). Rirratjingu people use the heavy timber to make clap sticks, while children suck the sweet, nectar-rich, red flowers (Yunupingu et al. 1995).

Tiwi people use the straight stems of smaller plants to make spears and observe birds visiting the bright red flowers to obtain nectar and pollen (Puruntatameri et al. 2001). Iwaidja speakers consider the timber to be good firewood, and when it is dry it is used to cook turtles and other marine foods (Blake et al. 1998).

Recorded Aboriginal language names

Milinyarr (Rirratjingu)	Thirwi (Batjamal)
Ra (Emi)	Tjerrwi (Batjamal)
Mijinga (Tiwi)	Tjerwi (Batjamal)
Wulhamarr (Iwaidja)	

In Malaysia, the timber is valued for its extreme durability, the wood is reportedly sound after 50 years submersion in salt water. A rose-like fragrance and attractive appearance enhance its suitability as a cabinet timber (Watson 1928, Exell 1954). Maiden (1889) reports various uses of the 'blackish, hard and durable' timber in Fiji. Also in Fiji, Pillai (1987) records the timber being used for firewood, beams, poles, fence posts, fish traps and canoes. In the Philippines it is used to treat thrush in infants (Jara 1987). In Vietnam the wood is valued for its fragrance, appearance and durability; it is also resistant to attack from mangrove worms, and it is used for poles, fish net frames, house posts and piles (Hong & San 1993).

NOTES: Strong nectar production, bright red flower colour, inflorescence morphology and terminal location all suggest bird pollination. The corky, buoyant fruit of *L. littorea* is well adapted to water dispersal.

Flowers have been recorded from June to February, and fruit from June to March. However, flowering appears to peak from July to November.

***Lumnitzera racemosa* Willd. White-flowered Black Mangrove**

DERIVATION: The Latin 'racemosus' means raceme and is probably an inaccurate reference to the inflorescence structure.

DESCRIPTION: Shrub or small tree to 4–5 m, pneumatophores rare, forming dense mats or banks of twining, narrow roots. Leaves obovate, 2.2–9.7 x 1–2.5 cm, apex retuse, base cuneate; petiole 1–10 mm long. Flowers weakly scented and nectariferous, sessile. Calyx tube strongly compressed, 6–8 mm long, bearing 2 broadly ovate bracteoles, 1.5 mm long, calyx lobes broadly ovate, 1 mm long, apex acuminate, gland-tipped. Corolla white, lobes 4 x 2 mm, elliptic, apex acute. Stamens 10, filaments 4 mm long. Style 5 mm long. Fruit distinctly compressed, 10–12 x 3–4 mm, ellipsoidal, fibrous, woody.

HABITAT: *Lumnitzera racemosa* forms the landward fringe of many NT mangal formations. A substrate of consolidated mud is preferred. This species also occurs along the margins of waterways with a fresh water influence. Associates include *Ceriops australis*, *Excoecaria ovalis*, *Avicennia marina* and *Aegialitis annulata*.

DISTRIBUTION: *Lumnitzera racemosa* is widespread and common around the entire NT coastline, extending its range to Western Australia and Queensland. Extra-Australian distribution includes eastern tropical Africa, Madagascar, India, Malaysia, Papua New Guinea and Indonesia.

DISTINCTIVE FEATURES: Small tree or shrub, bark blackish, leaf with small gland at tip, flowers white.

ETHNOBOTANY: Anindilyakwa people consider the timber to be good firewood because it stays alight even when wet. The wood is also used to make fire sticks and fighting spears, while the flowers are a good source of nectar for wild bees (Levitt 1981).

Yanyuwa people use the timber to make spear heads (Baker 1998).

Tiwi people use the stems of small straight plants to make spear shafts and spears for hunting wallabies and stingrays. The spear-head may be added separately, or the end sharpened and then hardened over a fire (Puruntatameri et al. 2001).

Iwaidja speakers consider the timber to be good firewood, when it is dry it is used for cooking turtles and other foods (Blake et al. 1995). Jaminjung and Ngaliwurru people also consider the timber to be good firewood (Wightman unpublished notes).

Recorded Aboriginal language names

Arndiny (Yanyuwa)

Dakul (Yolngu matha)

Mirin (Yolngu matha)

Mijinga (Tiwi)

Munggurnu, Marlmun (Jaminjung)

Dakul (Djambarrpuynu)

Gundaabarr (Kunwinjku)

Yilerrkirra (Anindilyakwa)

Wulhamarr (Iwaidja)

Munggurnu (Ngaliwurru)

The crushed inner bark is used as fish poison, the timber is considered to be good firewood, and the leaves are used to treat lower back pain in Sumba, Indonesia (Astuti et al. 2001).

NOTES: The white, slightly scented and nectariferous flowers are suited to insect pollination. The fibrous, buoyant fruit are suited to water dispersal. Flowers have been recorded year round but peak from October to February. Fruit are produced from November to March, with a peak during January and February.

Two varieties of *Lumnitzera racemosa* are recognised: The widespread, white-flowered typical variety *racemosa*, and the yellow-flowered, *L. racemosa* var. *lutea* (Gaudich.) Exell., which occurs on the Timor and Alor Islands in eastern Indonesia.

Lumnitzera x rosea is believed to be a hybrid of *L. racemosa* and *L. littorea*, and has only been recorded from Missionary Bay on Hinchinbrook Island in Queensland (Tomlinson et al. 1978). It exhibits floral characters intermediate between the putative parents, and has high pollen sterility. Different pollination vectors and separation of parents due to preference of spatially disjunct mangrove habitats almost always prevent hybridisation and may explain why this hybrid taxon has not been recorded in the NT.

References: Byrnes 1977, Exell 1954, Tomlinson et al. 1978.

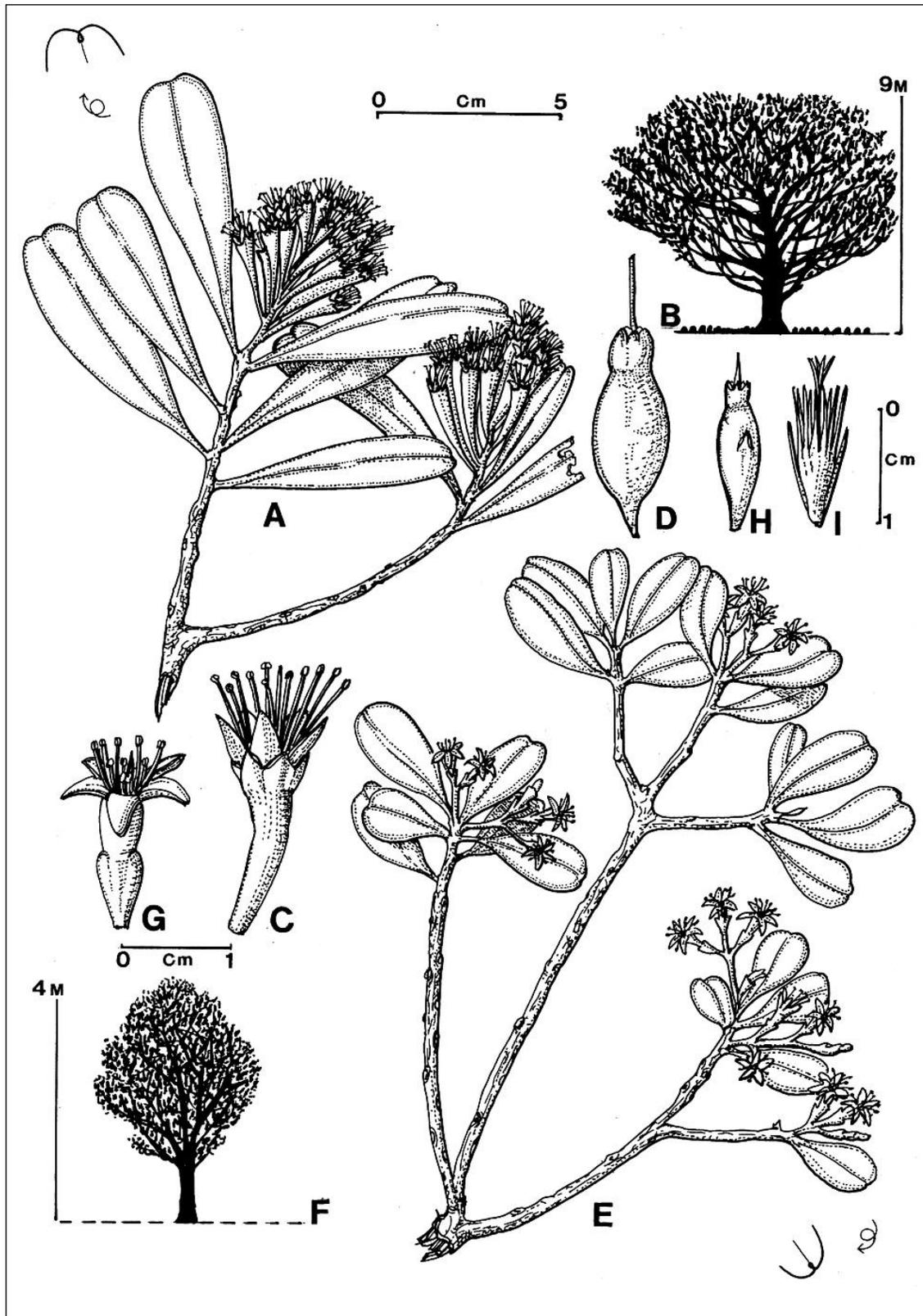


Figure 30. *Lumnitzera*. A–D, *L. littorea*. A, flowering branch with underside leaf apex gland; B, habit; C, flower; D, fruit (A–D, G. Wightman 211, DNA). E–I, *L. racemosa*. E, flowering branch with underside leaf apex gland; F, habit; G, flower; H, fruit; I, partially decomposed fruit (E–I, G. Wightman 826, DNA).