AUSTRALIAN BIOLOGICAL RESOURCES STUDY

FLOODPLAIN FLORA

A flora of the coastal floodplains
of the Northern Territory, Australia

I. D. Cowie, P. S. Short & M. Osterkamp Madsen

Parks & Wildlife Commission of the Northern Territory

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Extract: **Myrtaceae**

MYRTACEAE

Trees or shrubs; oil dots present in most organs. *Stipules* present or absent. *Leaves* opposite or alternate, rarely whorled, simple, often sclerophyllous, entire; intramarginal vein often present. *Inflorescences* cymose to racemose or flowers solitary and axillary; flowers bisexual or rarely unisexual, actinomorphic, rarely zygomorphic, epigynous to perigynous; hypanthium often well-developed. *Perianth* (3) 4- or 5 (6)-merous, parts free or variously united to form a calyptra (operculum); petals sometimes absent. *Stamens* few to numerous, borne at the rim or on the upper surface of the hypanthium, free in a continuous or interrupted ring or united at the base into 4 or 5 bundles or united for part of their length into a tube; staminodes sometimes present; anthers tetrasporangiate and dithecal, with an apical gland on the connective, opening by longitudinal slits or apical pores; nectary borne on the summit of the ovary or lining the hypanthium. *Gynoecium* of 2–5 (16) carpels united to form a compound ovary with as many locules as carpels, rarely a single locule; ovules 2–many per locule; style usually terminal with a capitate stigma. *Fruit* a 1–many-seeded berry or a loculicidally dehiscent capsule, a drupe or a nut.

About 140 genera and 3,000 or more species in tropical, subtropical and, to a lesser extent, temperate regions; 75 genera in Australia. Represented in NT by 24 genera.

The family has traditionally been recognised as consisting of two subfamilies, the Myrtoideae and the Leptospermoideae. The former are generally fleshy fruited and best developed in the New World; the latter are mostly capsular and are centred in the Australasian region.

Reference: Johnson & Briggs (1983).

MELALEUCA L.

Evergreen *trees* or shrubs. *Leaves* opposite or alternate; blades often parallel-nerved. *Inflorescence* a spike or a head, usually on a vegetative shoot which continues to grow; flowers 1–3 in the axils of bracts. *Flowers* perigynous; perianth 5-merous. *Sepals* imbricate, free, persistent. *Petals* free, deciduous. *Stamens* in 5 bundles opposite the petals; anthers versatile. *Ovary* 3-locular; ovules many per locule. *Fruit* a capsule, enclosed in the enlarged, woody hypanthium. *Seeds* minute. ***Paperbarks.***

About 150 species, the majority Australian endemics with a few outside Australia as far north as India; *c.* 20 species in NT.

Melaleuca leucadendra and *M. cajuputi* are amongst the tallest and best formed species of trees in the Top End. The latter, and perhaps both of these species, has been utilised by indigenous people for dugout canoes (Specht, 1958; Levitt, 1981). These and other melaleucas have been cut for sawn timber and round poles. The traditional uses of the papery bark of many species are manifold. It is used for shelters, containers, for the wrapping of food in cooking, for starting fires and for any activity which requires clean waterproof sheeting. All species have oils in their leaves with *M. cajuputi* the best known source of traditional and commercial medicinal oils (Specht, 1958; Wightman & Smith, 1989; Smith & Wightman, 1990).

Taxonomic references: Blake (1968), Byrnes (1984).

Key mainly based on vegetative characters

1 New leaves covered with crisped hairs ..... **M. dealbata**

1: New leaves covered with predominantly straight hairs 2

2 Hairs on new leaves mostly spreading *(1:)* ..... **M. cajuputi**

2: Hairs on new leaves appressed 3

3 Leaf blades falcate or lanceolate to narrowly lanceolate, 5–15 times as long as wide; inflorescence an interrupted spike, glabrous throughout; stamens 7–14 mm long *(2:)* ..... **M. leucadendra**

3: Leaf blades elliptic to narrowly elliptic, 2.4–9 times as long as wide; inflorescence a dense spike, glabrous or the rachis, hypanthium and sepal bases sericeous; stamens 15–20 mm long .... **M. viridiflora**

Key mainly based on floral characters

1 Stamens 15 mm or more long ..... **M. viridiflora**

1: Stamens less than 15 mm long 2

2 Hypanthium and sepals glabrous *(1:)* ..... **M. leucadendra**

2: Hypanthium and sepals pubescent 3

3 Stamens 4–6 per bundle; young leaves with crisped hairs *(2:)* ..... **M. dealbata**

3: Stamens 7–11 per bundle; young leaves with straight hairs ..... **M. cajuputi**

M. cajuputi Powell

Trees to 20 m tall, rarely to 35 m tall; bark white, papery. *Branchlets* and young leaves softly pilose, with spreading hairs; leaves soon glabrous but hairs persistent on petioles and branchlets. *Petioles c.* 5 mm long. *Leaf blades* narrowly elliptic, tapering equally to each end from the middle, often slightly falcate, 2.4–8 (11) cm long, 0.7–1.8 (2.8) cm wide, L:W 3–7. *Inflorescence* a spike, 4–14 cm long. *Hypanthium c.* 2 mm long, pubescent. *Sepals* triangular, *c.* 1 mm long, pubescent, without membranous margins. *Petals* broadly elliptic, concave, membranous, ciliate, *c.* 2 mm long. *Stamens* with bundles separate, 7–11 per bundle, 7–12 mm long. *Ovary* pubescent at apex. *Fruit* 2–3 mm long, 3–5 mm wide. *Flowering*: Mar.–Oct. *Fruiting*: Sept.–Dec. Fig. 22.

India to N Australia (WA, NT, Qld). Common in the Top End and occurring south to Mataranka. Forms pure stands on the heavy clay soils of the coastal plains, sometimes in areas with a slight saline influence. Habitat preference is for sites which remain moist, at least at depth, throughout the year.

M. dealbata S.T.Blake

Trees to 12 m, rarely taller; bark white, papery, becoming shaggy. *New foliage* greyish, densely pubescent with crisped and simple patent hairs; older *leaves* glabrous. *Petioles* 4–9 mm long. *Leaf blades* elliptic or narrowly elliptic, 4.2–12.5 cm long, 1.2–2.8 cm wide, L:W 3–7. *Inflorescence* of interrupted spikes 6–11 cm long, densely grey-pubescent in all parts except the petals and stamens. *Hypanthium c.* 2 mm long. *Sepals* obtuse, 1–1.2 mm long. *Petals* orbicular, 1.5–2.5 mm long. *Stamens* white, 4–6 per bundle; bundles 6.5–10 mm long, falling separately. *Fruit* 3.5–4 mm long, 3.5–4 mm wide. *Flowering*: Aug.–Oct. *Fruiting*: July. Plate 26, Fig. 22.

Australia (WA, NT, Qld) and New Guinea. Widespread in NT, occurring as far south as Wave Hill and Wollogorang. Frequently on heavy clay soils which are waterlogged during the wet season; also on sandy soils overlying clay and sometimes in swales of coastal dunes. Distinguished in the field by its blue grey foliage on growing tips. Used in Darwin for street plantings.

M. leucadendra (L.) L.

Trees to 30 m tall; bark white, papery; branchlets pendulous. *Young leaves* silky-hairy, glabrous when fully expanded. *Petioles* 5–15 mm long. *Leaf blades* often falcate, narrowly lanceolate or lanceolate, 5.5–19 cm long, 0.7–3.7 cm wide, L:W 5–15, acute to acuminate. *Inflorescence* of interrupted spikes, 7–13 cm long, glabrous throughout. *Hypanthium* 2–3 mm long. *Sepals* semicircular, overlapping, 1–1.5 mm long. *Petals* orbicular, concave, 2–4 mm long. *Stamens* 5–9 per bundle; bundles 7–14 mm long, falling separately. *Fruit* 2.5–5 mm long, 3–6 mm wide. *Flowering*: Aug.–May. *Fruiting*: all year. Plate 1, Fig. 22.

Moluccas, New Guinea and N Australia (WA, NT, Qld). In NT widely distributed, occurring as far south as Wave Hill and Wollogorang. In a variety of permanently wet habitats including freshwater seepages on the landward fringe of mangroves, the margins of freshwater streams and the coastal floodplains in permanent and semipermanent swamps; on sand or clay. Cultivated as an amenity tree in Darwin, especially fine-leaved forms.

M. viridiflora Sol. ex Gaertn.

Trees 2–16 m tall; bark white, papery. *Young leaves* sericeous soon becoming glabrescent and green except in arid habitats where the foliage remains silvery throughout. *Petioles* 8–15 mm long. *Leaf blades* thick, strongly veined, elliptic or narrowly elliptic, (5.5) 9.5–17 cm long, (0.7) 2.2–5 cm wide, L:W 2.4–5.7 (9), acute. *Inflorescence* a dense spike, 6–7 (10) cm long; glabrous throughout or more usually the rachis, hypanthium and sepal bases sericeous. *Hypanthium* 1.5–3 mm long. *Sepals* semicircular, 1–2 mm long with a broad hyaline margin. *Petals* obovate to orbicular, concave, 4–5 mm long with several linear glands between the nerves. *Stamens* green or greenish white, 6–10 per bundle; bundles 15–20 mm long, falling separately. *Fruit* 4–5 mm wide. *Flowering*: Feb.–May. *Fruiting*: all year. Fig. 22.

New Guinea and Australia (WA, NT, Qld). The species has a wide tolerance with respect to habitat and occurs from the coastal floodplains to creek lines as far inland as the Tanami Desert.

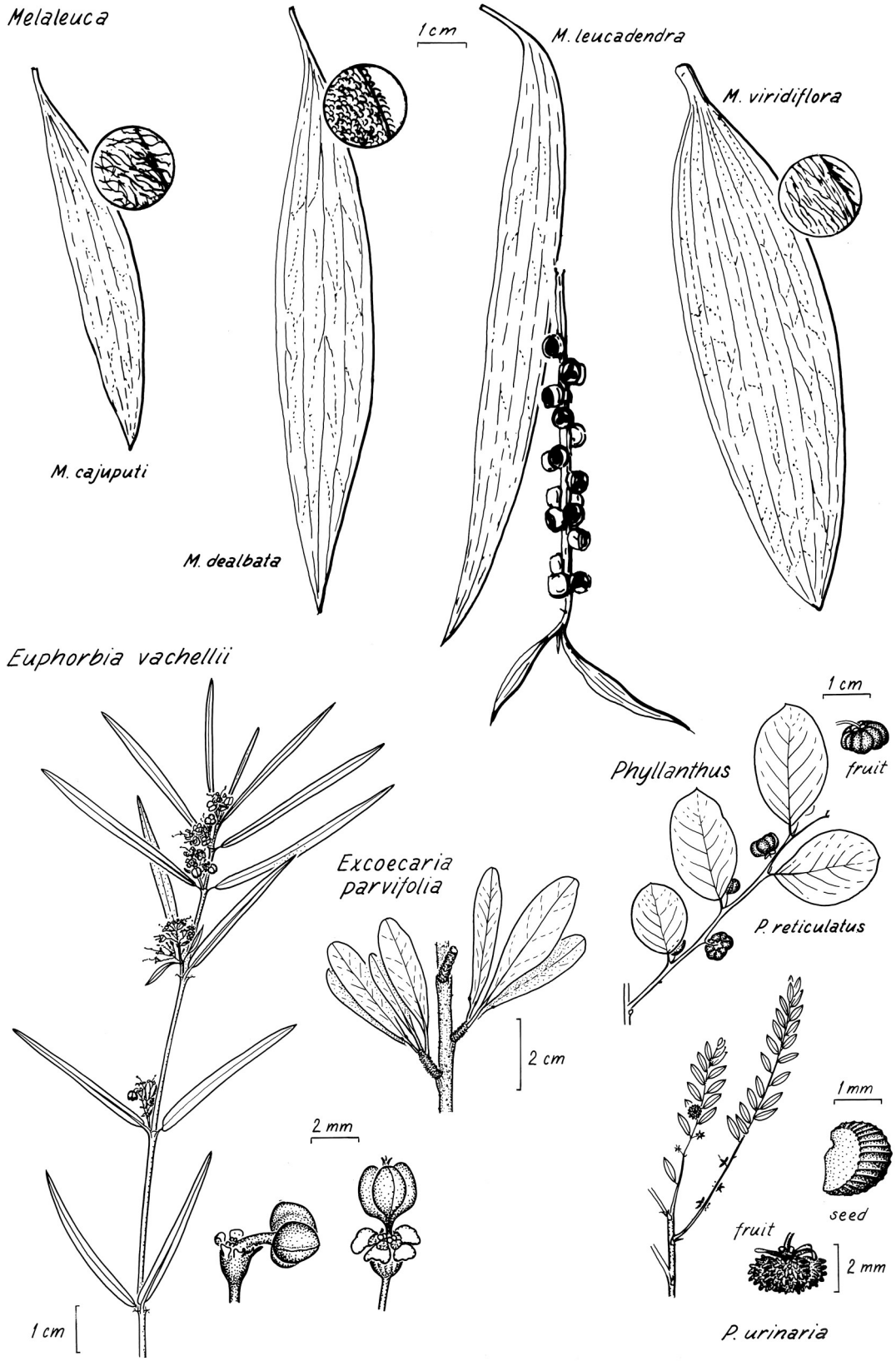
Melaleuca
1 cm
M. leucadendra
M. viridiflora
M. cajuputi
M. dealbata
Euphorbia vachellii
1 cm
Phyllanthus
fruit
Excoecaria parvifolia
P. reticulatus
2 cm
2 mm
1 mm
seed
fruit
2 mm
1 cm
P. urinaria

FIGURE 22