

AUSTRALIAN BIOLOGICAL RESOURCES STUDY



FLOODPLAIN FLORA

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

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Extract: Euphorbiaceae

EUPHORBIACEAE

Trees, shrubs or herbs, often with milky latex, often succulent. *Leaves* usually alternate, sometimes opposite, rarely whorled, simple or rarely compound; stipules usually present. *Flowers* unisexual (plants monoecious or dioecious), commonly actinomorphic; inflorescences diverse. *Perianth* mostly inconspicuous, seldom showy. *Tepals* distinct or connate near base. *Stamens* (1) 5–many, variously arranged; anthers commonly tetrasporangiate and dithecal, opening by longitudinal slits or sometimes with apical pores;

EUPHORBIACEAE

pollen grains free. *Nectary* disc sometimes present. *Gynoeceium* of (2) 3 (many) carpels united into a compound, plurilocular ovary; ovules 1 or 2 in each locule; style usually 1, divided into 2 or more stigmas. *Fruit* often a dry capsule or schizocarp, or drupaceous or baccate. *Seeds* with a straight or curved embryo; endosperm usually copious and oily but sometimes absent.

About 300 genera and 7,500 species worldwide; 65 genera in Australia with 33 genera in NT.

Important crop plants include: *Ricinus communis* L., the Castor Oil Plant; *Hevea brasiliensis* (A.Juss.) Müll.Arg., Para Rubber, a source of natural rubber; *Manihot esculenta* Crantz, Cassava or Tapioca. Species in the genera *Acalypha*, *Codiaeum*, *Euphorbia* and *Jatropha* are used as ornamentals.

Taxonomic references: Airy Shaw (1980a, b), Webster (1994).

- 1 Leaves opposite **Euphorbia**
1: Leaves alternate or clustered 2
2 Trees; leaves clustered on short lateral shoots; fruit dry **Excoecaria**
2: Herbs, scandent shrubs or lianes; leaves not clustered, often distichous on lateral branchlets and giving the appearance of pinnate leaves; fruit dry or fleshy **Phyllanthus**

EUPHORBIA L.

Trees, shrubs or herbs with milky latex, monoecious. *Cauline leaves* opposite, alternate or whorled, usually simple. *Floral leaves* opposite. *Stipules* minute or absent. *Flowers* much reduced, aggregated into a specialised inflorescence (cyathium) which consists of 1 female flower surrounded by several smaller male flowers, all enclosed in an involucre of connate bracts; nectary glands alternate with bracts and often with petaloid appendages. *Male flowers*: reduced to a single stamen. *Female flowers*: naked, pedicellate; ovary 3-locular; ovules 1 per locule; styles 3, shortly connate at base, each 2-lobed. *Fruit* a schizocarp, splitting into 3 mericarps. *Seeds* with or without a caruncle.

A genus of c. 2,000 species worldwide; c. 57 species in Australia with c. 31 in NT. The genus is treated here in the broad sense: the species described may otherwise be included in *Chamaesyce* Gray.

E. vachellii Hook. & Arn.

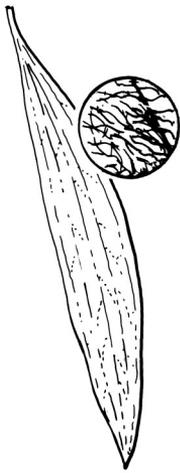
Chamaesyce vachellii (Hook. & Arn.) Hara

Euphorbia serrulata Reinw.

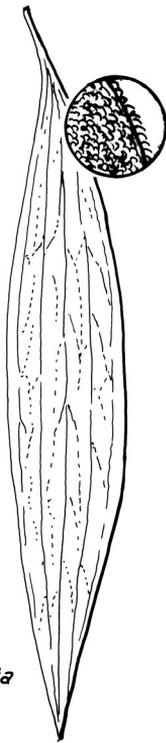
Annual or perennial *herbs*, decumbent to erect, to 60 cm tall. *Stems* glabrous or hispid to puberulous. *Stipules* narrowly subulate, often divided into filiform segments, 0.4–1.3 mm long; margins lacerate and often with short hairs. *Petioles* 0.5–2.5 mm long. *Leaf blades* linear, linear-oblong to elliptic, 10–65 mm long, 1.5–16 mm wide, glabrous or hispid; margins entire or serrate; apex obtuse or acute. *Cyathia* in leafy or leafless clusters, lateral or terminal, 0.8–1.5 mm long, 0.7–1.5 mm wide, glabrous. Glands 4, orbicular or oblong, flat or slightly concave, 0.1–0.5 mm long, 0.1–0.6 mm wide. *Gland appendages* white, entire, 0.1–1.7 mm long, 0.1–2.5 mm wide. *Gynophore* 1–3 mm long, glabrous. *Styles* 0.2–0.7 mm long, glabrous. *Schizocarp* 1.6–2.5 mm long, 1.8–2.5 mm wide, glabrous or puberulous. *Seeds* dark brown or creamy brown, tetragonous, ovoid, 1.1–1.5 mm long, 0.7–1.3 mm wide, rugose. *Flowering & fruiting*: most months. Fig. 22 (*Martensz AE761*).

From south China through eastern Malesia to tropical Australia (WA, NT, Qld). In NT it grows as far south as Elliott. Occurs in savanna, coastal dunes and drier parts of coastal floodplains. Specimens from inland areas are mostly annual, those of coastal dunes perennial and rhizomatous. The taxon described here includes *E. mitchelliana* Boiss. The application of these names needs to be resolved.

Melaleuca



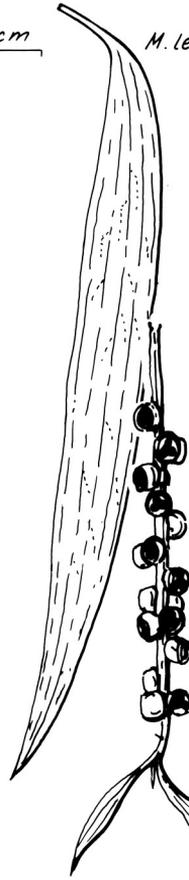
M. cajuputi



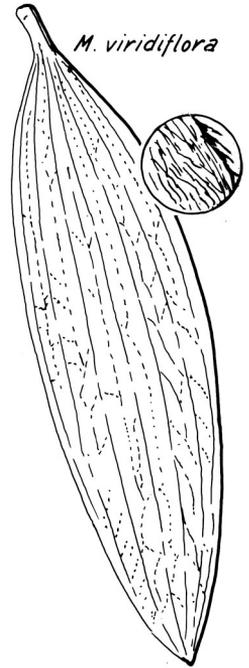
M. dealbata

1 cm

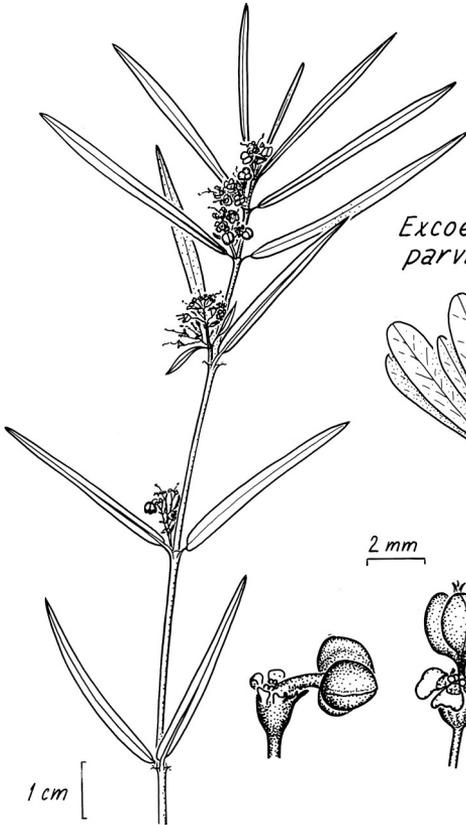
M. leucadendra



M. viridiflora

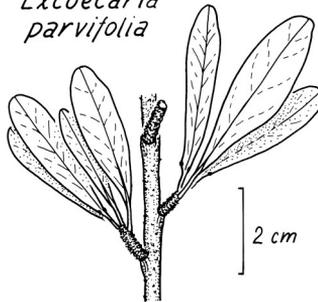


Euphorbia vachellii



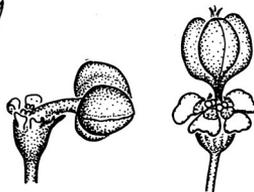
1 cm

Excoecaria parvifolia

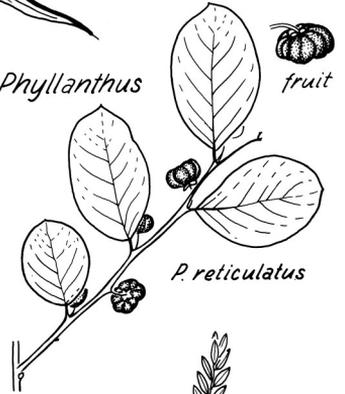


2 cm

2 mm



Phyllanthus



1 cm



fruit

P. reticulatus

1 mm



fruit



seed

2 mm

P. urinaria

EUPHORBIACEAE

EXCOECARIA L.

Trees or shrubs with milky sap, glabrous, usually dioecious. *Leaves* alternate, opposite or clustered, simple. *Stipules* minute. *Inflorescence* of terminal or axillary spikes or racemes. *Flowers* 2- or 3-merous. *Male flowers* with minute perianth; stamens 2 or 3; anthers 2-celled, opening longitudinally; rudimentary female parts and disc lacking. *Female flowers* with the ovary 2- or 3-locular, with 1 ovule per locule; styles 3, linear. *Schizocarp* dehiscent into 3 mericarps. *Seeds* lacking caruncle.

A genus of c. 40 species occurring in tropical Africa and Asia. Four species in Australia, three in NT. The caustic latex of all species is harmful, especially to the eyes. Some species have been referred to as 'Blind Your Eyes' (Everist, 1979).

E. parvifolia Müll.Arg.

Semideciduous *trees* to 7 m tall. *Bark* dark grey, fissured. *Leaves* clustered on short lateral shoots; petioles 1–8 mm long; blades oblanceolate, obovate or narrowly elliptical, 1.5–4.7 cm long, 0.4–2.2 cm wide, L:W (1.5) 3–6.4, sometimes purplish above; base cuneate or attenuate; margins entire; apex obtuse, occasionally slightly emarginate. *Male inflorescence* c. 1 cm long. *Capsules* 6–7 mm long. *Seeds* pale brown, smooth, obovoid, c. 5 mm long. *Flowering*: early wet season. *Fruiting*: Jan.–Apr. **Guttapercha**. Plate 27, Fig. 22.

Endemic to northern Australia (WA, NT, Qld). In NT extending from the Daly River floodplain south to the Barkly Tableland. Usually growing on seasonally waterlogged flats with clay soil, occasionally on semi-saline areas.

Smith *et al.* (1993) recorded that the Ngarinyman people of the Bulla Community make an antiseptic wash from this plant. The latex and chopped inner bark are boiled in water and the resulting red liquid applied to cuts and sores. They also recorded that the wood is good for making boomerangs.

PHYLLANTHUS L.

Trees, shrubs, subshrubs, annual or perennial herbs, monoecious or dioecious. *Stems* foliose throughout or foliage phyllanthoid (distichous on lateral branchlets, giving the appearance of pinnate leaves). *Leaves* alternate, simple, entire. *Stipules* persistent, often peltate. *Flowers* small; tepals usually in 2 whorls, usually with a defined midrib and coloured hyaline margin. *Male flowers* with disc glands often present; stamens 2–6; filaments free or connate. *Female flowers* with tepals usually larger than males; disc glands often present, variously shaped; ovary usually 3-locular with 2 ovules per locule; styles 3, bifid. *Fruit* a depressed-globular schizocarp separating into 3 mericarps or sometimes succulent and with 4 or more mericarps. *Seeds* trigonous, lacking caruncle.

A genus of c. 600 species occurring in tropical and subtropical regions of both hemispheres. About 50 species in Australia with c. 20 in NT.

Taxonomic reference: Hunter & Bruhl (1997).

Fruit fleshy; leaves 13–64 mm long, 11–36 mm wide **P. reticulatus**
Fruit dry; leaves 5–15 mm long, 3–5 mm wide **P. urinaria**

P. reticulatus Poir.

Deciduous, scandent perennial *shrubs*, glabrous or densely hispidulous; foliage not obviously phyllanthoid. *Leaves* on petioles 1–5 mm long; blades discolorous, ovate or oblong orbicular, 1.3–6.4 cm long, 1.1–3.6 cm wide, L:W 1.1–2.3 (2.6); base attenuate to truncate; apex acute or obtuse. *Stipules* 1–2 mm long, triangular. *Male & female flowers* usually together in dense fascicles of up to 15 flowers, often racemose on slender, leafless branchlets. *Male flowers*

almost sessile or shortly pedicellate. *Female flowers* on pedicels to 0.6 mm long; tepals green with a broad hyaline margin, orbicular, 1–1.5 mm long. *Fruit* fleshy, maturing blue-black, 4–5 mm long, 4–8 (10) mm diam., 6- or more locular. *Seeds* pale brown, c. 2.5 mm long, finely reticulate. *Flowering & fruiting*: most months. Fig. 22 (*Dunlop 3405*).

Throughout the Old World tropics and widespread in N Australia (WA, NT, Qld). Common in the Top End and south to Keep River. Occurs in monsoon forest in a variety of situations, in riparian habitats and in *Melaleuca* forest fringing floodplains.

P. urinaria L.

Annual *herbs*, erect, to 1 m tall with one main stem, glabrous. *Branchlets* angular or narrowly winged; foliage phyllanthoid. *Leaves* almost sessile; blades narrowly lanceolate, linear-oblong, often obovate, 5–15 mm long, 3–5 mm wide, L:W 1.6–3.5; base obtuse, asymmetric; apex obtuse or acute often with a minute mucro. *Stipules* c. 1 mm long, setaceous. *Flowers* monoecious with 1 or 2 male and 1 female flower in axillary fascicles; male flowers falling early, on pedicels to 1 mm long; female flowers on pedicels to 1 mm long; tepals with a narrow green midrib and broad hyaline margins, narrowly lanceolate, c. 1 mm long. *Fruit* a greenish, tuberculate schizocarp, 2–2.5 mm long, 3–4 mm diam. *Seeds* brown, c. 2 mm long, with c. 20 rows of transverse ridges on the back; ridges and sides of the seed muricate. *Flowering & fruiting*: usually Feb.–June. Fig. 22 (*Cowie 3073*).

Widespread in the Old World tropics (Australia: WA, NT, Qld). Common on floodplains of the Top End, extending from Fitzmaurice River to Arafura Swamp. Also in other seasonally wet habitats. Usually on levees and drier parts of floodplains with species such as *Eriochloa procera* and *Cyperus scariosus*.