

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



FLORA OF AUSTRALIA SUPPLEMENTARY SERIES NUMBER 10

Extract: Lythraceae

LYTHRACEAE

Herbs, shrubs or trees. *Leaves* opposite or whorled, simple, usually entire; stipules vestigial or absent. *Inflorescences* various. *Flowers* 3–8-merous, bisexual, actinomorphic or zygomorphic. *Bracteoles* present or absent. *Hypanthium* present. *Sepals* valvate, with or without appendages between the lobes. *Petals* alternate with sepals, rarely absent. *Stamens* usually in 2 whorls and twice the number of sepals or petals, sometimes in 1 whorl and equal to, or less than, the number of sepals or petals; anthers tetrasporangiate and dithecal, opening by longitudinal slits. *Gynoecium* of 2–6 carpels united to form a superior, compound ovary; locules equal to number of carpels or rarely 1; placentation axile or free-central; style filiform; stigma mostly capitate. *Fruit* a capsule, dehiscent variously.

A family of 28 genera and *c.* 660 species, widespread in tropical regions. In Australia there are eight genera and 24 species; four genera in NT, three on the floodplains.

Taxonomic reference: Hewson & Beesley (1990).

- 1 Flowers axillary, solitary and sessile or subsessile **Rotala**
- 1: Flowers in axillary cymes or if solitary then on long pedicels..... 2
- 2 Flowers 4-merous, in dense compound axillary cymes..... **Ammannia**
- 2: Flowers 5- or 6-merous, in simple axillary cymes or 4-merous and solitary..... **Nesaea**

AMMANNIA L.

Annual *herbs*, erect, often reddish, glabrous or almost so. *Stems* quadrangular. *Stipules* absent. *Leaves* opposite. *Flowers* in most axils, cymose, usually actinomorphic, 4-merous. *Hypanthium* campanulate. *Calyx* appendages absent or obscure. *Petals* present or sometimes absent. *Stamens* 4–8. *Capsule* reddish, hyaline; dehiscence irregular.

Worldwide genus of *c.* 30 species; four in Australia and NT.

- Leaves attenuate at base **A. baccifera**
- Leaves cordate-auriculate at base **A. multiflora**

A. baccifera L.

Herbs to 1 m tall. *Leaves* discolorous; blades narrowly elliptic to elliptic, 0.8–11 cm long, 0.3–3.8 cm wide, L:W 2.9–7.5, attenuate at base. *Hypanthium* 1–2 mm long. *Sepals* shortly triangular, c. 1 mm long. *Petals* absent. *Capsule* globose, 1–2 mm diam., exceeding hypanthium; locule 1; placentation free-central; placenta stipitate, globular. *Flowering & fruiting*: throughout year, depending on available moisture. Fig. 20 (*Russell-Smith 5878*).

Widespread through Africa, Europe and Asia to Australia (WA, NT, SA, Qld). In NT widespread in the Top End, extending to the Gulf and Victoria River regions. Favours clay soils on margins of waterholes and creekbanks; often in weed proportions in areas disturbed by stock. Also in shaded areas in rainforest and drier parts of floodplains.

A. multiflora Roxb.

Herbs to 60 cm tall. *Leaves* slightly discolorous; blades sessile, oblong-linear to narrowly lanceolate or oblanceolate, 1.8–4.4 cm long, 1.5–9 mm wide, L:W 3.7–14, with base cordate-auriculate, sometimes obscurely so. *Hypanthium* c. 1 mm long. *Sepals* broadly triangular, c. 0.2–0.5 mm long. *Petals* purple, obovate, 0.5–1 mm long. *Capsule* 1.5–2.5 mm diam.; locules 2; placentation axile; placenta elliptic. *Flowering & fruiting*: throughout year, depending on available moisture. Fig. 20 (*Dunlop 2238*).

Widespread from Africa to Australia (all mainland States). Widespread and common in most of NT but uncommon in the Top End; collected from East Point, the Adelaide River floodplain and other floodplains as far east as the Walker River. Grows on margins of drying waterholes and along watercourses, sometimes on drier parts of floodplains such as where dominated by *Cyperus scariosus*.

Top End specimens show features intermediate with the introduced species *A. auriculata* Willd.

NESAEA Kunth

Annual or perennial *herbs* or subshrubs. *Stems* terete. *Stipules* absent. *Leaves* opposite or whorled, sessile or subsessile. *Flowers* axillary, solitary or cymose, actinomorphic, 4-, 5- or 6-merous. *Hypanthium* campanulate to globose and commonly ribbed, with or without appendages. *Petals* conspicuous, equal, not clawed. *Stamens* as many or twice as many as sepals, usually exerted. *Ovary* 2–5-locular. *Capsule* membranous, dehiscent septicidally by valves or irregular. *Seeds* numerous.

A genus of 50 species native to Africa, Madagascar, India, Australia and America; five species in Australia, all recorded in NT.

N. striatiflora Hewson

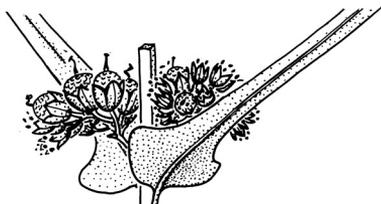
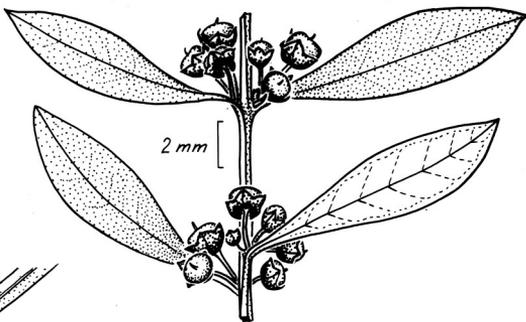
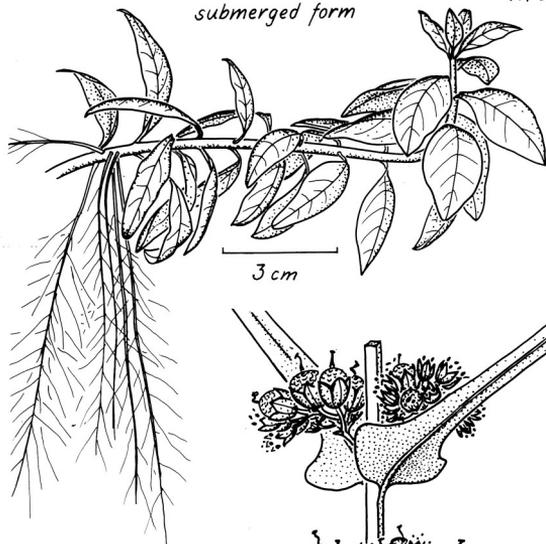
Annual *herbs*, glabrous, erect, to 25 cm. *Stipules* absent. *Leaves* opposite, more or less sessile; blades linear-terete, 1.5–3 cm long. *Flowers* usually solitary, sometimes in dichasia, (4) 5 (6)-merous; peduncle 1–1.5 cm long, ribbed in upper part. *Bracteoles* to 2 mm long. *Hypanthium* campanulate, c. 3 mm long, ribbed; ribs maroon, white-membranous between, plicate in bud. *Calyx* appendages blunt. *Sepals* shallowly triangular, to 0.75 mm long. *Petals* mauve, ovate, to 4 mm long. *Stamens* 4, rarely 8; anthers exerted. *Capsule* globose, to 4 mm diam.; dehiscence irregular. *Flowering & fruiting*: Mar.–Apr. Fig. 20 (*Rankin 2278*).

Found in the Kimberley and northern NT in swampy or black soil habitats. In the Top End known from black soil floodplains of the Adelaide and South Alligator rivers and *Melaleuca* forest at Cape Shield.

Ammannia

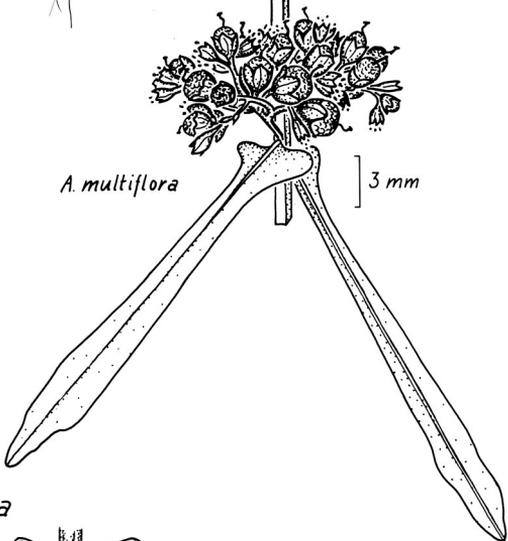
submerged form

A. baccifera

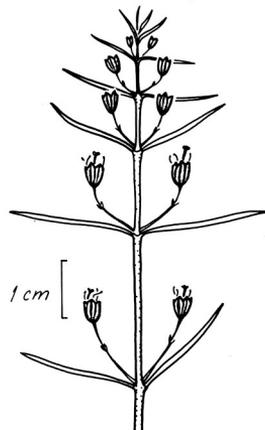


A. multiflora

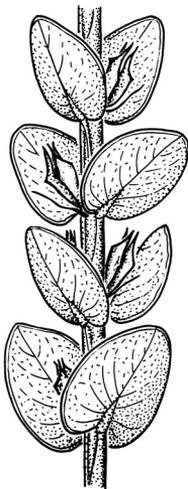
3 mm



Nesaea striatiflora



Rotala



R. diandra

2 mm



R. mexicana



R. occultiflora

2 mm



R. rosea

FIGURE 20

LYTHRACEAE

ROTALA L.

Annual or perennial *herbs*, glabrous, terrestrial or aquatic. *Leaves* decussate or whorled, sessile or shortly petiolate; stipules absent. *Flowers* solitary or rarely in reduced cymes, usually regular, 3–5-merous. *Hypanthium* usually campanulate, hyaline. *Sepals* 3–5; appendages 3–5 or absent. *Petals* 3–5 or absent. *Stamens* 2–5, never more than sepals. *Ovary* 2–4-locular. *Capsule* thin-walled, ellipsoidal, *c.* equal to length of flower, dehiscently septically by valves. *Seeds* numerous.

A genus of *c.* 45 species; six recorded in Australia, five in NT.

- 1 Bracteoles leaf-like, usually 2–3 times length of flower **R. occultiflora**
1: Bracteoles filiform to linear, rarely exceeding hypanthium..... 2
2 Leaves with conspicuous hyaline margins; capsule valves 2 (1:):..... **R. diandra**
2: Leaves lacking hyaline margins; capsule valves more than 2 3
3 Leaves decussate or in whorls; petals and hypanthium appendages absent (2:):..... **R. mexicana**
3: Leaves decussate; petals and hypanthium appendages present **R. rosea**

R. diandra (F.Muell.) Koehne

Annual erect *herbs*. *Leaves* decussate, sessile; blades ovate to elliptic-oblong, 4–12 mm long, 2.5–9.5 mm wide, L:W 1.6–3; base obtuse to cordate; margins hyaline. *Bracteoles* filamentous, 1–2.5 mm long. *Hypanthium* *c.* 1.5 mm long. *Sepals* 4, *c.* 1.5 mm long; appendages absent. *Petals* absent or rarely vestigial. *Stamens* 2. *Capsule* valves 2. *Flowering & fruiting*: Apr.–Aug. Fig. 20 (*Dunlop 8415*).

Endemic to Australia (WA, NT, Qld). In NT uncommon north of Katherine but relatively common in the Victoria River and Gulf regions and extending to 21°S. Usually occurs on the drying margins of swamps and in drying creek and river beds, rarely on floodplains; on clay or sand.

R. mexicana Cham. & Schldl.

Annual, terrestrial or aquatic *herbs*. *Leaves* decussate or in whorls of 3–8, sessile; blades of aerial leaves narrowly elliptic to narrowly lanceolate, 3.5–9 mm long, 0.9–1.5 mm wide; aquatic leaves linear to filiform, to 15 mm long, *c.* 1 mm wide. *Bracteoles* filiform, about as long as flower. *Hypanthium* *c.* 0.5 mm long. *Sepals* 3–5, *c.* 0.25 mm long; appendages absent. *Petals* absent. *Stamens* 2–4. *Capsule* valves 3 (4). *Flowering & fruiting*: Feb.–Aug. Fig. 20 (*Must 1006*).

Widespread throughout the warmer parts of the world including N Australia (WA, NT, Qld). In NT relatively common and widespread north of 18°S. Usually on the drying margins of swamps, in seepage areas and in drying creek and river beds but occasionally on floodplains (Daly River, Moyle River); usually on sand.

R. occultiflora Koehne

Annual erect *herbs*. *Leaves* whorled or decussate, sessile; blades ovate to linear, elliptic, 3.5–12 mm long, 0.8–3.5 mm wide, L:W 2–4.3. *Bracteoles* leaf-like, narrowly elliptic, longer than flower. *Hypanthium* *c.* 0.5 mm long. *Sepals* 5, *c.* 0.5 mm long; appendages absent. *Petals* absent. *Stamens* 3 (4). *Capsule* valves 3. *Flowering & fruiting*: Apr.–Sept. Fig. 20 (*McKean B614*).

India and N Australia (WA, NT, Qld). Widespread in NT. Usually on seepage areas, around drying swamps or in drying creeks, rarely on floodplain margins (Adelaide River, South Alligator River); usually on sand.

R. rosea (Poir.) Cook

Annual erect *herbs*. *Leaves* decussate, sessile; blades linear-lanceolate to elliptic, to 2 cm long. *Flowers* solitary or in reduced cymes. *Bracteoles* linear-lanceolate or filamentous, usually as long as hypanthium. *Hypanthium* c. 1.5 mm long. *Sepals* (4) 5, c. 0.25 mm long; appendages (4) 5 or rarely absent, subulate. *Petals* (4) 5, elliptic to oblong, usually as long as sepals. *Stamens* 5, rarely less. *Capsule* valves 3 or 4. *Flowering & fruiting*: May–June. Fig. 20 (*Wightman 45*).

Occurs throughout India, SE Asia, New Guinea, China, Korea and Japan. In Australia only known from northern NT, being recorded for the South Alligator River floodplain and Howard Springs, the latter collection cited by Hewson & Beesley (1990).