



55 LYTHRACEAE ¹

Alan M Gray ²

Annual or perennial herbs, sometimes shrubs and trees. Leaves opposite or whorled, rarely alternate, stipules minute or absent, simple, usually entire. Inflorescence terminal or axillary, a racemose spike or cymose panicle, or flowers axillary and solitary. Flowers actinomorphic or rarely zygomorphic, bisexual, perigynous, sometimes heterostylous. Hypanthium prominent, sometimes spurred; tooth-like appendages sometimes present between sepals. Sepals usually 4, 6 or 8, valvate, inserted on a floral tube, persistent. Petals equal to number of sepals, rarely absent, free, imbricate, crumpled in bud, often fugacious. Stamens usually in 2 whorls, twice number of petals, sometimes in 1 whorl and equal to or less than the number of petals; anthers versatile or basifixed, longitudinally dehiscent. Nectariferous disc sometimes present. Carpels 2–6, fused; ovary superior, (1)2–6-locular, placentation axile but the septum often not reaching the top of the ovary; stigma often capitate. Fruit usually a capsule, dehiscent by various means. Seeds usually numerous, with little or no endosperm.

A family of 31 genera and about 620 species mainly in tropical regions of the world; 8 genera and about 24 species in Australia. The family is placed in the Myrtales sister to Onagraceae (Conti *et al.* 1998; Huang & Shi 2002; Sytsma *et al.* 2004; Graham *et al.* 2005). It is not well represented in Australia, and there are some problems pertaining to generic delimitations. A few species may be considered weedy, particularly in wetlands and on disturbed or recently cleared land. Some are desirable ornamental and horticultural plants including species of *Cuphia* P.Browne (Cigar Plant), *Lagerstroemia* L. (Crepe Myrtle; some species of which also provide useful timber), *Lythrum* (Loosestrife) and *Punica* L. (Pomegranate).

Synonymy: Punicaceae, Sonneratiaceae, Trapaceae.

Key reference: Hewson (1990).

External resources: accepted names with synonymy & distribution in Australia (APC); author & publication abbreviations (IPNI); mapping (AVH, NVA); nomenclature (APNI, IPNI).

1 LYTHRUM

Lythrum L., *Sp. Pl.* 1: 446 (1753).

Herbs or rarely small shrubs (not in Tas.), annual or perennial. Leaves exstipulate, entire. Inflorescence of axillary clusters or contracted cymes and appearing whorl-like in an often showy, elongated spike, or rarely, flowers solitary. Flowers actinomorphic, bisexual. Hypanthium elongate-cylindrical, ribbed. Sepals 4–8, narrowly triangular, persistent on the rim of the hypanthium and often alternating with narrow, tooth-like appendages. Petals 4–8, free, not clawed, usually showy, rarely obscure, sometimes fugaceous. Stamens usually twice as many as the petals, dimorphic, in two whorls, one whorl more or less equalling the petals, the other shorter and usually enclosed or barely exerted beyond the orifice of the hypanthium. Ovary superior, 2-locular; style filiform; stigma capitate. Fruit a capsule, enclosed within the persistent hypanthium, dehiscent septically at the summit, seeds numerous.

1 This work can be cited as: Gray AM (2009). Lythraceae, **version 2019:1**. In MF de Salas (Ed.) *Flora of Tasmania Online*. 3 pp. (Tasmanian Herbarium, Tasmanian Museum and Art Gallery: Hobart). <https://flora.tmag.tas.gov.au/treatments/lythraceae/>

2 Tasmanian Herbarium, Tasmanian Museum & Art Gallery, PO Box 5058, UTAS LPO, Sandy Bay, TAS 7005, Australia.

A cosmopolitan genus of about 35 species; 5 (4 native, 2 endemic) species in Australia. The two species occurring in Tasmania are almost cosmopolitan and favour wet or damp habitats, sometimes growing in waterlogged areas or areas prone to flooding.

1. Robust plant to 1.6(–1.8) m high, pilose to subglabrous; leaves mostly opposite; flowers 3–5, clustered in the upper leaf axils

1 *L. salicaria*

1: Slender plant to 0.6 m high, glabrous; leaves mostly all alternate; flowers solitary in the upper leaf axils

2 *L. hyssopifolia*

1 *Lythrum salicaria* L., Sp. Pl. 1: 447 (1753)

Purple Loosestrife

Illustrations: Curtis, *The Student's Flora of Tasmania* 2: 225 (1963); Sainty & Jacobs, *Waterplants of New South Wales* 282–283 (1981); Highet & Wilson, *Fl. New South Wales* 2: 200 (1991); Elliot & Jones, *Encyclopaedia of Australian Plants* 6: 257 (1993); Jeanes, *Fl. Victoria* 3: 911, fig.185d-f (1996); Wrigley & Fagg, *Australian Native Plants*, 4th edn: 212 (1996); Corrick & Fuhrer, *Wildflowers of Victoria* 138, fig. 487 (2000); Sainty & Jacobs, *Waterplants in Australia, a Field Guide* 238, 239 (2003); Richardson *et al.*, *Weeds of the South-East, an Identification Guide for Australia* 305 (2006).

A stout annual herb, erect or ascending; stems often numerous, 1.6(–1.8) m high, arising from a thickened rootstock; smaller branches often angular, ridged, pilose to subglabrous. Leaves usually opposite, or the lower ones occasionally whorled, upper leaves sometimes alternate, exstipulate, sessile, 2–7 cm long; lamina narrowly ovate to lanceolate or oblong-lanceolate, the base slightly stem-clasping, rarely cordate to auriculate, apex acute, margins entire, subglabrous or the veins on the abaxial surface shortly and sparsely pubescent. Flowers 3–5 together, almost sessile and appearing whorled in the axils of the bract-like upper leaves which exceed the flowers proximally and become progressively shorter distally, the arrangement forming a long, terminal, spike-like inflorescence. Hypanthium elongate-cylindrical, 3–5(–7) mm long, 2–3 mm wide at the summit, strongly ribbed; ribs purplish, pubescent. Sepals usually 6, narrowly triangular, erect, 1–2 mm long and usually alternating with an equal number of subulate appendages which are little longer than the sepals. Petals (4)6, dark pink to purple, ovate or obovate, blunt, spreading, (6–)8–12 mm long, base tapered and inserted below each appendage. Stamens inserted at the base of the hypanthium. Capsule ovoid-cylindrical, shorter than the hypanthium, dehiscent septicidally at the summit by two valves. Seeds minute, numerous. Flowering & fruiting Jan.–Mar.

Tas. (FUR, TNM, TNS, TSE); also SA, Qld, NSW, Vic.; Asia, Europe, N Africa, Americas. Widespread though localised, occasionally common in swamps and wetlands, also on the banks of streams and rivers and other areas prone to waterlogging or flooding. This species is listed as Vulnerable under the *Tasmanian Threatened Species Protection Act* (1995). A considerable number of subspecific taxa have been described for this species though most are not currently accepted (see Hewson 1990; APNI). Heterostyly is a fairly common phenomenon in Lythraceae and for a synopsis of this condition, as observed in *L. salicaria*, see Curtis (1967).

The species is ornamental and horticulturally easy to grow and maintain. It is often cultivated in Australian gardens in temperate areas, usually as a water-feature plant or in bog gardens. However, in some parts of the world, particularly North America, it is regarded as a serious, invasive weed.

2 *Lythrum hyssopifolia* L., Sp. Pl. 1: 447 (1753) [as *L. Hyssopifoli*]

Small Loosestrife, Lesser Loosestrife

Lythrum hyssopifolium Benth., *Fl. Austral.* 3: 299 (1867), orth. var.

Illustrations Sainty & Jacobs, *Waterplants of New South Wales* 280–281 (1981); Hewson, *Fl. Australia* 18: 103, fig. 33g-l (1990); Highet & Wilson, *Fl. New South Wales* 2: 200 (1991); Jeanes, *Fl. Victoria* 3: 911, fig. 185i-j (1996); Harris *et al.*, *One Hundred Islands: the Flora of the Outer Furneaux* 185 (2001); Sainty & Jacobs, *Waterplants in Australia, a Field Guide* 236, 237 (2003); Richardson *et al.*, *Weeds of the South-East, an Identification Guide for Australia* 305 (2006).

A slender annual herb, ascending or decumbent; stems 10–60 cm long, finely ridged, glabrous. Leaves alternate, sometimes opposite at the base of the plant, exstipulate, sessile or sub-sessile, (5–)10–25 mm long; lamina linear to oblong or oblong-lanceolate, the base rounded or narrowed, apex obtuse to sub-

acute, margins entire, glabrous. Flowers solitary in the upper leaf axils, sub-sessile, pedicels c. 1 mm long. Hypanthium obconical, 3–6 mm long, c. 1 mm wide at the summit. Sepals 4–6, triangular, erect, 1.0–1.5 mm long with a short apical hair tuft. Appendages 4–6, narrowly triangular, a little longer than the sepals. Petals pink to bluish-purple, ovate, spreading, 1–4 mm long, base tapered and arising from a shallow, glandular pocket just below each appendage. Stamens 4–6, rarely 8–12, dimorphic, enclosed or slightly exerted. Capsule cylindrical, about as long as the hypanthium, dehiscent at the summit by 2–4 valves. Seeds minute, numerous. Flowering & fruiting Oct.-Mar.

Tas. (BEL, FUR, KIN, TNM, TNS, TSE, TSR, TWE); probably naturalized in WA, SA, Vic, Qld, NSW; possibly naturalized in S Europe. A widespread species that is locally scattered to common; found in damp, low lying areas prone to flooding or waterlogging.

REFERENCES

- ALA (Atlas of Living Australia) <http://www.ala.org.au/>
- APC (Australian Plant Census) <https://biodiversity.org.au/nsl/services/apc>
- APNI (Australian Plant Name Index) <https://biodiversity.org.au/nsl/services/apni>
- AVH (Australia's Virtual Herbarium) (Council of Heads of Australasian Herbaria) <http://avh.chah.org.au/>
- Conti E, Wilson PG, Graham SA, Briggs BG, Johnson LAS, Sytsma KJ (1998) Interfamilial relationships in Myrtales: Molecular phylogeny and patterns of morphological evolution. *Systematic Botany* **22** 629–647.
- Curtis WM (1967) Lythraceae. *The Student's Flora of Tasmania* **2** 225–227.
- Graham SA, Hall J, Sytsma K, Shi S (2005). Phylogenetic analysis of the Lythraceae based on four gene regions and morphology. *International Journal of Plant Sciences* **166** 995–1017.
- Hewson HJ (1990) Lythraceae. *Flora of Australia* **18** 100–104.
- Huang Y, Shi S (2002) Phylogenetics of Lythraceae *sensu lato*: A preliminary analysis based on chloroplast *rbcl* gene, *psaA-ycf3* spacer, and nuclear rDNA internal transcribed spacer (ITS) sequences. *International Journal of Plant Sciences* **163** 215–225.
- IPNI (International Plant Name Index) <http://www.ipni.org> or <http://www.us.ipni.org>
- Jeanes JA (1996) Lythraceae. *Flora of Victoria* **3** 909–911.
- NVA (Natural Values Atlas) (Department of Primary Industries and Water: Hobart) <https://www.naturalvaluesatlas.tas.gov.au/>
- Sytsma KJ, Litt A, Zjhra ML, Pires C, Nepokroeff M, Conti E, Walker J, Wilson PG (2004) Clades, clocks, and continents: Historical and biogeographical analysis of Myrtaceae, Vochysiaceae, and relatives in the southern hemisphere. *International Journal of Plant Sciences* **165** 85–105.

NOTE: Web addresses can and do change: a list of current web addresses is maintained in the web version of this treatment on the *Flora of Tasmania Online* website at <https://flora.tmag.tas.gov.au>

INDEX

C	M
Cigar Plant.....1	Myrtales.....1
Crepe Myrtle.....1	O
<i>Cuphia</i>1	Onagraceae.....1
L	P
<i>Lagerstroemia</i>1	Pomegranate.....1
Lesser Loosestrife.....2	<i>Punica</i>1
Loosestrife.....1	Punicaceae.....1
Lythraceae.....1	Purple Loosestrife.....2
<i>Lythrum</i>1	S
<i>Lythrum hyssopifolia</i>2	Small Loosestrife.....2
<i>Lythrum hyssopifolium</i>2	Sonneratiaceae.....1
<i>Lythrum salicaria</i>2	T
	Trapaceae.....1