Flora of Tasmania online

117 PHRYMACEAE [1]

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Annual or perennial herbs. Leaves opposite, simple. Flowers bisexual. Calyx tubular, lobed or toothed, persistent. Corolla tubular, zygomorphic, 2-lipped, with an upper lip of 2 lobes and a lower lip of 3 lobes. Stamens epipetalous, 4 or rarely 2. Anthers 1–2-locular, opening by longitudinal slits. Ovary superior, of 2 carpels, each with 2 (rarely 1) loculi; style terminal; stigma 2-lobed. Fruit an achene or loculicidal capsule included in the calyx, rarely a berry (not in Tasmania). Seeds ∞, small, surface reticulate.

A family of 13 genera and over 200 species, with an almost worldwide distribution and two centres of diversity in western North America and Australia. Seven genera and approximately 37 species in Australia, 4 genera and 4 species (3 native, 1 naturalised) in Tasmania (Barker *et al*., 2012). Several species of *Diplacus* and *Erythranthe* are grown as ornamentals (Spencer, 2002). Phrymaceae have long been treated within a broad concept of the Scrophulariaceae (Curtis 1967), and forms part of a clade that includes Pawloniaceae, Orobanchaceae and Lamiaceae (Barker *et al*., 2012). More recent versions of the APG system split *Mazus* into its own family (Mazaceae—Stephens 2019).

Key references: Barker *et al*. (2012).

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

1.	Leaves radical or in basal rosettes, connected thorugh underground rhizomes. Bracteoles present	2 Mazus
1:	Leaves opposite along creeping or decumbent stems. Bracteoles absent	2
2.	Leaves distinctly toothed. Calyx glandular-hairy. Corolla yellow	4 Erythranthe
2:	Leaves entire or teeth indistinct. Corolla glabrous, or if hairy, hairs eglandular. Corolla mauve to purple or ± white	3
3.	Corolla < 4 mm long, white	1 Glossostigma
3:	Corolla > 10 mm long, mauve to purple	3 Thyridia

1 GLOSSOSTIGMA

Glossostigma Wight & Arn., *Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur.* 18(1): 355 (1836).

Synonymy: *Tricholoma* Benth., *Prodr.* [A. P. de Candolle] 10: 426 (1846)

Annual or perennial slender herbs. Stems creeping and rooting at the nodes, mat-forming. Leaves opposite, sometimes clustered through reduction of the internodes, lamina entire. Flowers small, solitary, axillary, pedicellate, bracteoles absent. Calyx tubular, campanulate 3–4-lobed. Corolla tube short; lobes 5, subequal. Stamens 4 or 2, normally included within the corolla tube; filments very slender; anthers single-celled with lobes diverging at the base and confluent at the apex. Ovary 2-locular; style short; stigma a broad spathulate lamina longer than the style. Fruit a capsule, globular or ovoid, opening by 2 valves.

A genus of 6 species, all native in Australia, of which 3 are endemic to the continent. Also New Zealand, India and east Africa. One single species, *G. elatinoides*, in Tasmania.

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

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1 Glossostigma elatinoides (Benth.) Benth. ex Hook.f., *Bot. Antarct. Voy. II (Fl. Nov.-Zel.)* 1: 189 (1853)

Small mudmat

Tricholoma elatinoides Benth., *Prodr.* [A. P. de Candolle] 10: 426 (1846); *Glossogyne elatinoides* F.Muell., *Pap. Proc. Roy. Soc. Tasmania* 1874: 87 (1875) *orth. var*.

Illustrations: Barker, *Fl. S. Austral.* [J.M. Black] 3, ed. 2: 1279, fig. 581c (1952); Barker, *Fl. New South Wales* 3: 562, pl. 28 (1992); Barker, *Fl. Victoria* 4: 495, fig. 96f (1999); Wapstra et al, *Tasmanian plant names unravelled* 274 (2010).

Aquatic or terrestrial, mat-forming glabrous (rarely sparsely hairy) perennial herb, forming dense patches. Stems slender, much branched, prostrate, rooting at the nodes, ascending at the tips. Leaves opposite, 6–20(–30) mm long; petiole often much longer than the lamina; lamina linear-spathulate or oblong, 1-nerved, rarely obscurely 3-nerved, 2–8 mm long, 1.5–2.5(–4.0) mm wide, base narrowed gradually or abruptly into the petiole, margin entire, apex rounded, slightly truncated by an apical gland. Flowers solitary, axillary; pedicel erect, (1–)2–6(–12) mm long, shorter than to as long as the leaves. Calyx 2–3 mm long, 4-lobed; lobes unequal, 2 long and 2 shorter ones, apex rounded. Corolla white, sometimes stained pink or blue; tube almost as long as the calyx; lobes 1.0–1.5 mm long, with margins ciliolate, arranged into upper and lower lips, upper lip 2-lobed, lower lip 3-lobed. Stamens 4, shorter than corolla. Stigma large, bearded. Fruit ovoid-globular, shorter than calyx. Flowering Dec.–Apr.

Tas. (TCH, TSE, TNM); also Vic., NSW, SA; New Zealand. Restricted to riparian or lakeside habitats on permanently wet ground, often growing in mud or submerged from sea level to approximately 1000 m elevation. Rare and only known from a few localities on the East Coast, Midlands and Central Highlands. Often grown as an aquarium plant.

2 MAZUS

Mazus Lour., *Fl. Cochinch.* 2: 385 (1790).

Perennial (in Tasmania) rhizomatous herbs. Stems short. Lower leaves opposite, often forming a basal rosette, upper ones alternate. Flowers solitary or in terminal, one-sided racemes; bracts and bracteoles small, sometimes absent. Calyx campanulate, 5-lobed. Corolla with a short tube; lobes in 2 lips, upper lip emarginate, erect, lower lip larger with 3 spreading lobes, throat with two ± prominent protruberances. Stamens 4, in pairs of unequal length, anthers 2-celled, those of each pair joined, lobes diverging widely. Style slender; stigmas 2, flattened. Fruit a capsule.

A genus of approximately 30 species in Australia (1 species), New Guinea, New Zealand and south-east Asia, with a centre of diversity in China (Stevens, 2001). After APG IV (APG, 2016), *Mazus* is considered part of the family Mazaceae, rather than Phrymaceae.

1 Mazus pumilio R.Br., *Prodr. Fl. Nov. Holland.* 439 (1810) *Swamp mazus*

Illustrations: Barker, *Fl. S. Austral.* [J.M. Black] 3, ed. 2: 1285, fig. 584 (1952); Barker, *Fl. New South Wales* 3: 559, (1992); Barker, *Fl. Victoria* 4: 489, fig. 95h (1999); Wapstra et al, *Tasmanian plant names unravelled* 276 (2010); Howells (Ed.), *Tasmania's Natural Flora* 350 (2012).

Perennial rhizomatous herb, glabrous or sparely hairy, hairs eglandular. Branches very short. Leaves radical, in a spreading rosette or erect tuft, (1.5–)2.0–5.0(–7.5) cm long, (3–)5–10(–14) mm wide; petiole short and wide; lamina glabrous or sparsely hairy, discolorous, oblanceolate or obovate to spathulate, surface flat or sinuate, margin entire or shallowly toothed or sinuate, apex blunt. Peduncle slender, erect, (0.5–)1.5–4.0(–8.5) cm long with 1–4(–6) flowers. Bracts absent or caducous, bracteoles to 4 mm long. Calyx 4–5 mm long, tubular, lobes persistent, narrowly triangular, almost as long as the tube, enlarged in the fruiting stage. Corolla pale purple; tube 5–8 mm long; lobes in 2 lips, upper lip with 2 erect lobes, lower lip with 3

spreading lobes, throat hairy. Fruit 5–7 mm long, shorter than or occasionally slightly exserted from persistent calyx. Flowering (Oct.–)Nov.–Feb.(–Apr).

Tas. (BEL, KIN, FLI, TNS, TNM, TSE, TCH, TSR, TWE); also Vic, NSW, SA, Qld; New Zealand. Widespread and moderately common in swampy and poorly drained wet ground, often in grassland, heathland or marsupial lawn. More common at low elevation, but records exist up to 1000 m elevation. Sometimes confused with *Thyridia repens*, but *Mazus pumilio* has basal leaf rosettes connected through underground rhizomes, and relatively long leaves, whereas *Thyridia repens* has opposite pairs of small, rounded leaves along creeping stems, as well as substantially larger flowers.

3 THYRIDIA

Thyridia W.R.Barker & Beardsley, *Phytoneuron* 39: 20 (2012)

Annual or perennial, often semi-aquatic glabrous herbs. Stems prostrate, mat-forming, rooting at the nodes, or if submerged, then erect and up to 20 cm tall, or with erect branches arising from prostrate stems. Leaves semi-succulent, 1-nerved, sessile or subsessile; lamina glandular-punctate, margins entire. Flowers single, axillary, subsessile to pedicellate, bracteoles absent. Calyx tubular, lobed. Corolla tube funnel-shaped; lobes in 2 lips, throat opening closed by palate. Stamens 4, in pairs, those of each pair joined; anthers 2-locular, loculi divergent. Ovary 2-locular; stigmas 2, flattened, irritable. Fruit a loculicidal, thick-walled capsule.

A monotypic genus present in Australia and New Zealand.

1 Thyridia repens (R.Br.) W.R.Barker & Beardsley, *Phytoneuron* 39: 20 (2012) *Creeping monkeyflower*

Mimulus repens R.Br., *Prodr. Fl. Nov. Holland.* 439 (1810).

Illustrations: Barker, *Fl. S. Austral.* [J.M. Black] 3, ed. 2: 1287, fig. 585d (1952); Barker, *Fl. New South Wales* 3: 561, (1992); Barker, *Fl. Victoria* 4: 495, fig. 96e (1999); Wapstra et al, *Tasmanian plant names unravelled* 276 (2010); Howells (Ed.), *Tasmania's Natural Flora* 350 (2012).

Annual or perennial, terrestrial or semi-aquatic, glabrous succulent herb. Stems prostrate, rooting at the nodes, mat-forming with ascending branches 6–20 cm long. Leaves opposite, often closely clustered on short axillary shoots, subsessile or sessile, sometimes ± stem-clasping; lamina ± succulent, 2–10 mm long, 1.5–4.5 mm wide, broadly elliptical or oblong or ovate, base rounded, margin entire, apex blunt. Flowers solitary, axillary; pedicel 1–10 mm long, elongating after anthesis. Calyx 4–6 mm long, folded, minutely 5-toothed, teeth almost equal, approximately 0.5 mm long. Corolla 2-lipped, blueish, mauve or pale purple to pink, 12–15 mm long; tube 5–10 mm long; upper lip 2-lobed, lower 3-lobed with a prominent yellow, hairy raised palate. Fruit globose to ellipsoid, 6–7 mm long. Flowering (Oct.–)Nov.–Jan.(–Apr).

Tas. (FLI, TNM, TSE, TSR); also Vic, NSW, Qld, SA, WA. Widespread on wet ground on the margin of lakes, and watercourses, often brackish or saline lagoons of the Midlands the coast on the eastern half of Tasmania, from sea level to approximately 250 m elevation.

4 * ERYTHRANTHE

Erythranthe Spach, *Hist. Nat. Veg. Phan.* 9: 312 (1838)

Annual or perennial, terrestrial or semi-aquatic glabrous to hirsute herbs. Stems prostrate to decumbent or erect, terete or angled. Leaves opposite or whorled, petiolate or sessile, glandular-punctate. Flowers solitary or in racemes, with flowers flowers single in the axil of leaf-like bracts; bracteoles absent. Calyx tubular, 5-angled, shortly 5-toothed. Corolla tubular, tube symmetrical, lobes 5, often in 2 lips. Stamens 4, in pairs of unequal length; anthers of each pair joined, 2-locular, loculi divergent. Ovary 2-locular; stigma with 2 broad, equal flaps, irritable. Fruit a loculicidal capsule, enclosed within persistent calyx.

A genus of approximately 110 species, mostly in North America. Six species in Australia, of which 4 are native and 2 are naturalised.

1 * Erythranthe moschata (Douglas ex Lindl.) G.L.Nesom, *Phytoneuron* 39: 38 (2012) *Musk monkeyflower*

Mimulus moschatus Douglas ex Lindl., *Bot. Reg.* 13, t.1118 (1828).

Illustrations: Barker, *Fl. S. Austral.* [J.M. Black] 3, ed. 2: 1287, fig. 585b (1952); Barker, *Fl. New South Wales* 3: 560, (1992); Barker, *Fl. Victoria* 4: 495, fig. 96a (1999).

Perennial, glandular-villous, viscous herb. Stems creeping or decumbent, rooting at the lower nodes, often much-branched, 10–50 cm long. Leaves shortly petiolate; petiole 2–10 mm long; lamina 1.5–7.5 cm long, mostly flat, ovate to broad-ovate, base rounded to cordate, margin toothed, apex acute to obtuse, mucronate. Flowers 1(–2), axillary, pedicel 1–2 cm long, bracteoles absent. Calyx 8–12 mm long, 5-angled, ± folded, teeth somewhat unequal, 3–4 mm long, lanceolate. Corolla yellow; tube cylindrical, 15–25 mm long; lobes spreading, rounded, lower lip with a palate containing two hirsute ridges. Fruit ovoid, with apex pointed, 5–6 mm long, held within persistent calyx. Flowering Nov.–Feb.

Tas. (FLI, TNS, TNM, BEL, TCH, TSR, TSE), naturalised; also naturalised in Vic, NSW, SA, ACT. Native to western North America. Tasmanian exotic populations may have originated from ornamental cultivars (Curtis 1967). Found in stream banks, swampy ground and wet places, mostly in the eastern half of the state, from near sea-level to over 900 m elevation.

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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/

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