



70 OXALIDACEAE¹

Alan M Gray²

Perennial herbs, rarely shrubs (not in Tas.); oxalic acid often present in the tissues; bulbs, rhizomes or tubers present in some species. Leaves alternate, cauline or radical, stipules absent or present and then connate to base of petiole, petiolate, rarely sessile, compound, 3-foliate or palmate, rarely simple (not in Tas.); leaflets entire or incised. Inflorescence usually an umbellate cyme or flowers solitary; bracts and bracteoles usually present. Flowers actinomorphic, bisexual; receptacle hypogynous. Sepals 5, free or united, valvate. Petals 5, free and shortly clawed, or united at or slightly above the base, aestivation imbricate-contorted. Stamens 10(–15), in 2 or 3 whorls, obdiplostemonous, filaments of outer whorl sometimes fused basally with the petals; anthers dorsifixed, versatile, dehiscing by 2 longitudinal slits. Ovary superior, 3–5 locular; ovules 1-many per cell; styles 3–5; stigmas capitate, shortly 2-lobed. Fruit usually a loculicidal capsule, rarely a berry. Seeds compressed, often with a fleshy aril which separates elastically from the testa causing the seeds to be ejected explosively from the capsule.

A family of 5 genera and about 950 species, widespread in tropical and temperate regions. In Australia 1 genus and about 22 species; 11 or 12 species (5 native) in Tasmania. Oxalidaceae are placed in the Oxalidales and are sister to the Connaraceae (Pantropical).

Key reference: Cocucci (2004).

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

1 OXALIS

Oxalis L., *Sp. Pl.* 1: 433 (1753).

Perennial herbs, stems absent or creeping, decumbent or erect, with or without bulbs, rhizomes or tubers, bulbs (when present) covered by a protective tunic. Leaves cauline or radical, palmate, 3-foliate; stipules connate, usually ciliate; leaflets entire or variously 2-lobed, sessile or shortly petiolulate, photosensitive, lobes often in-folding or reflexing in response to darkness or bright light. Inflorescences 1-many flowered. Sepals 5, free. Petals 5, white, pink, mauve, purple, red or yellow, spirally contorted in bud, free at the base, united for a short distance above and then free and spreading. Stamens 10, 5 short, 5 long; filaments fused basally into a short tube. Ovary 5-locular. Fruit a loculicidal capsule, valves persistent on central axis, hairy inside. Seeds 2–15 per cell, testa smooth or variously ornamented with transverse ridges.

A genus of c. 800–850 species, widespread in tropical and temperate regions with a major centre of diversity in southern Africa (200 spp.), especially the Greater Cape Floristic Region (180 spp; South Africa). In Australia 22 species (5 or 6 native); 11 or 12 (5 native) species in Tasmania.

Some species of *Oxalis* are grown as horticultural specimens. Many introduced species do not set seed under Australian conditions, however a number of species reproduce efficiently by the production of large numbers of bulbs or bulbils, thus, despite the absence of seed, the plants spread easily and rapidly from cultivation. Species

1 This work can be cited as: Gray AM (2011) 70 Oxalidaceae, **version 2011:1**. In MF Duretto (Ed.) *Flora of Tasmania Online*. 8 pp. (Tasmanian Herbarium, Tasmanian Museum & Art Gallery: Hobart). www.tmag.tas.gov.au/floratasmania

2 Tasmanian Herbarium, Tasmanian Museum & Art Gallery, Private Bag 4, Hobart, Tasmania 7001.

spreading and becoming established in gardens and disturbed land rapidly become invasive weeds that are extremely difficult to eradicate.

Due to the presence of oxalic acid in the plant tissues, some species have been known to cause stock poisoning, if over-grazed. Few species have commercial value. However, a South American species, *O. tuberosa* Mol. (Oca), produces large, starchy tubers that are sometimes used as a substitute for potatoes, particularly among Andean peoples; it is also popularly grown and used in New Zealand where it is known as New Zealand Yam.

For the accurate determination of most species of *Oxalis* fresh material is essential, particularly mature seed capsules. As well, it is necessary to lift or dig portions of the plants to determine the presence or absence of bulbs or bulbils, rhizomes and well-defined tap roots. Notes for collections should include the presence or absence of these structures as well as colour of the petals. *Oxalis corniculata* and related species are particularly difficult to distinguish, relying chiefly on the characters of the hairs on the stem and the fruit. Critical research and a revision of this group is necessary.

Key reference: Thompson (1982).

1.	Plants with bulbs and/or bulbils, or thick, fleshy or woody rhizomes	2
1:	Plants without bulbs, bulbils or woody rhizomes, but sometimes with slender, fleshy rhizomes	7
2.	Petals yellow or white	3
2:	Petals pink, mauve or purple	4
3.	Petals white, rarely with very faint pink/bluish tinge; leaves usually with distinctive maroon markings (rare)	O. vallicola +
3:	Petals yellow; leaves sometimes with purple flecks (widespread)	1 O. pes-capre
4.	Plants without bulbs; woody rhizomes present	2 O. articulata
4:	Plants with bulbs and/or bulbils and rhizomes	5
5.	Stems well developed and leafy	3 O. incarnata
5:	Stems absent or very short, never leafy	6
6.	Flowers in umbels of 6–14; stems very short; tunic scales of bulbils pale fawn-brown	4 O. latifolia
6:	Flowers solitary; stems absent or very short; tunic scales of bulbils black-brown	5 O. purpurea
7.	Petals white	6 O. magellanica
7:	Petals yellow	8
8.	Plants with stems creeping, usually compact, strongly rooting at the nodes; tap root poorly developed or absent	9
8:	Plants with stems loose, erect or ascending, scarcely compact, weakly rooting at the nodes; tap root slender or well developed	10
9.	Stems green or greenish-yellow, not reddish; fruit conical to shortly cylindrical, 3–6(–8) mm long (sub-montane and inland wetter sites)	10 O. exilis
9:	Stems at least partially distinctly reddish; fruit cylindrical or ± slightly expanded in the middle, 12–24 mm long (coastal sandy areas)	11 O. rubens

10. Leaves dull green to brownish-purple with pale green midrib; stipules inconspicuous; tap root stout, deeply penetrating **9 *O. radicata***
- 10: Leaves distinctly green throughout; stipules obvious; tap root absent or slender, shallow 11
11. Stem hairs spreading or retrorse **7 *O. corniculata***
- 11: Stem hairs mostly antrorse **8 *O. perennans***

+ Only three collections of *O. vallicola* (Rose) Knuth are known from Tasmania, one from the south at Sandy Bay and two from the north of the state, at Latrobe and Devonport. All three collections are of garden origin. The species is not considered naturalized in Tasmania and is not treated further in this account. Of the introduced species in Tasmania it is perhaps closest, in appearance, to *O. articulata*.

1 * *Oxalis pes-caprae* L., *Sp. Pl.* 1: 434 (1753)

Soursob

Oxalis cernua Thunb., *Oxalis (Dissertation)* 14, t. 2 (1781).

Illustrations: Jaspars, *Fl. S. Austral.*, ed. 4, 2: 712, fig. 386c (1986); Conn, *Fl. New South Wales* 3: 20 (1992); Conn *et al.*, *Fl. Victoria* 4: 217, fig. 40a (1999); Richardson *et al.*, *Weeds of the south-east, an identification guide for Australia* 329 (2006).

Perennial herbs; stems only developed in crowded or shaded plants; bulbs ovoid, 8–30 mm long, pointed, tunic fawn-pale brown; bulbils proliferating on white, fleshy rhizomes and in lower leaf axils. Leaves alternate, crowded in a basal rosette, trifoliolate; stipules to c. 10 mm long, membranous, narrow, tapering into the petiole; petioles 5–10(–15) cm long, sparsely hairy; leaflets green, often purple-flecked adaxially, subsessile, 5–30 mm long and wide, cuneate-obcordate, adaxial surface glabrous, abaxial surface sparsely pubescent, margins ciliolate, apex bilobed, lobes divergent, apices rounded, sinus to c. 1/3 the length of the leaflet. Inflorescences radical, umbellate, 3–25-flowered; peduncles longer than the leaves, sparsely hairy; pedicels 5–20 mm long, with antrorse simple hairs and spreading glandular hairs. Sepals green at the base, 5–8 mm long, lanceolate, apex with 2 reddish-orange calli, indumentum similar to the pedicels. Petals yellow, 15–25 mm long, broadly obovate. Fruit and seed not maturing in Australia. Flowering Jun.-Nov.

Tas. (FLI, TNS, TSE); also naturalized in WA, NT, SA, Qld, NSW, Vic., New Zealand; native to South Africa. Locally common in the north and south of the state, chiefly near centres of population. A widespread weed of gardens, orchards and other cultivated and disturbed areas, from sea-level to c. 100 m alt. A persistent and intractable weed of gardens, roadsides and arable land, spreading by means of soil contaminated with bulbs and bulbils, e.g. in nursery stock. Poisonous to stock.

2 * *Oxalis articulata* Savigny, *Encycl. (Lamarck)* 4: 686 (1798)

Bent Woodsorrel

Illustrations: Jaspars, *Fl. S. Austral.*, ed. 4, 2: 710, fig. 385a (1986); Conn, *Fl. New South Wales* 3: 21 (1992); Conn *et al.*, *Fl. Victoria* 4: 217, fig. 40g (1999); Richardson *et al.*, *Weeds of the south-east, an identification guide for Australia* 326 (2006).

Tufted, perennial herbs; stems absent or not evident; rhizomes c. 15 cm long, 2.5 mm diam., fleshy, becoming woody and clad with old leaf bases; bulbs or bulbils absent. Leaves in rosettes, crowded at the apex of rhizomes, trifoliolate; stipules membranous, tapering into petiole; petioles 5–30 cm long, sparingly hairy; leaflets green, sessile, 10–25 mm long and wide, obcordate, adaxial surface sparsely pubescent, abaxial surface with orange secretory pits near the margin, margins ciliate, apex deeply notched, lobes oblong to obovate, apices rounded, sinus to c. 1/3 the length of the leaflet. Inflorescences radical, umbellate, 3–30-flowered, sometimes with secondary branching; peduncles slightly longer than the leaves, sparsely hairy; pedicels 10–25 mm long, sparsely to moderately pubescent. Sepals green, 3–5 mm long, lanceolate, apex with 2 terminal orange calli, pubescent. Petals bright pink-purple, often with darker longitudinal striations, 10–15 mm long, obcordate to obovate. Fruit and seed not maturing in Australia. Flowering Mar.-Dec.

Tas. (FLI, KIN, TNM, TNS, TSE, TWE); also naturalized in SA, NSW, Vic.; native to South Africa. An occasional weed near centres of population in the north and south-east, along roadsides, in waste places and some cultivated areas.

3 * *Oxalis incarnata* L., *Sp. Pl.* 1: 433 (1753)

Pale Woodsorrel

Illustrations: Jaspars, *Fl. S. Austral.*, ed. 4, 2: 710, fig. 385c (1986); Conn, *Fl. New South Wales* 3: 22 (1992); Conn *et al.*, *Fl. Victoria* 4: 217, fig. 40h (1999); Richardson *et al.*, *Weeds of the south-east, an identification guide for Australia* 328 (2006).

Slender, perennial herbs; stems branched, erect to spreading, 5–30 cm long, glabrous or the younger stems sparsely pubescent; rhizomes slender, 5–10 cm long; bulbs and bulbils proliferating on rhizomes and in leaf axils, ovoid, to c. 2 cm long, beaked, tunic pale brown, papery. Leaves in a basal rosette and in several pseudo-whorls of c. 5–10 towards the ends of the branches, trifoliolate; stipules membranous, tapering into petiole; petioles 1–8 cm long, glabrous; leaflets green, often greyish abaxially, subsessile, 5–15 mm long, 8–20 mm wide, obcordate, glabrous, calli near margins, apex bilobed, lobes oblong, rounded, sinus to c. $\frac{1}{4}$ the length of the leaflet. Inflorescences axillary, 1-flowered; peduncles longer than the leaves, glabrous. Sepals green, 4–6 mm long, oblong, \pm glabrous, apex with several light-brown converging calli. Petals pale lilac to pinkish-purple, greenish on the inside base, 12–20 mm long, broadly obovate. Fruit and seed not maturing in Australia. Flowering Aug.-Jan.

Tas. (FLI, TNS, TSE, TSR, TWE); also naturalized in WA, SA, NSW, Vic.; native to South Africa. A troublesome and persistent weed, common in gardens and other cultivated areas and in some bushland localities in the north and south of the state; prefers moist conditions and tolerates deep shade.

4 * *Oxalis latifolia* Kunth, *Nov. Gen. Sp. [H.B.K.]* 5: 237, t. 467 (1823)

Largeleaf Woodsorrel

Illustrations: Jaspars, *Fl. S. Austral.*, ed. 4, 2: 712, fig. 386f (1986); Conn, *Fl. New South Wales* 3: 21 (1992); Conn *et al.*, *Fl. Victoria* 4: 217, fig. 40d (1999); Richardson *et al.*, *Weeds of the south-east, an identification guide for Australia* 329 (2006).

Perennial herbs with spreading rhizomes; bulbs numerous, ovoid to globose, vertically ribbed, often ciliate, tunic pale fawn-brown; bulbils proliferating from old bulbs on stolons, to c. 5 cm long. Leaves alternate, crowded, radical, trifoliolate; stipules conspicuous, to 10 mm long; petioles 5–25 cm long, sparsely pubescent; leaflets green, sometimes maroon-flecked across the apical lobes, subsessile, \pm reflexed, 9–45 mm long, 15–45(–75) mm wide, cuneate-deltoid, adaxial surface maroon-flecked, glabrous, abaxial surface sparsely pubescent, margins sparsely ciliate, apex bilobed, lobes triangular, divergent, apices rounded, sinus wide, to c. $\frac{1}{3}$ the length of the leaflet. Inflorescences radical, umbellate, 6–14-flowered; peduncles longer than the leaves, sparsely pubescent; pedicels 1–2 cm long, glabrous. Sepals green, 4–5 mm long, lanceolate, glabrous, apex with 2 conspicuous orange-brown calli. Petals white to pale pink-purple, whitish on the inside base, 10–16 mm long, obovate. Fruit and seed not maturing in Australia. Flowering Dec.-Jun.

Tas. (TNM, TSE, TSR); also naturalized in WA, SA, NSW, Vic.; native to Mexico. A widespread and frequent weed of gardens, chiefly in the south-east of the state; locally abundant in waste ground and disturbed areas; difficult to eradicate.

5 * *Oxalis purpurea* L., *Sp. Pl.* 1: 433 (1753)

Largeflower Woodsorrel

Oxalis variabilis Jacq., *Oxalis* 89, t. 52 (1794).

Illustrations: Jaspars, *Fl. S. Austral.*, ed. 4, 2: 710, fig. 385e (1986); Conn, *Fl. New South Wales* 3: 21 (1992); Conn *et al.*, *Fl. Victoria* 4: 217, fig. 40b (1999); Richardson *et al.*, *Weeds of the south-east, an identification guide for Australia* 329 (2006).

Perennial herbs; stems much reduced, apparently absent; tap root slender; bulbs and bulbils forming on rhizomes,

ovoid, 1–3 cm long, pointed, tunic dark brown-black, hard, somewhat resinous. Leaves radical, crowded at the apex of rhizome, trifoliolate; stipules c. 4 mm long, membranous, tapering into petiole; petioles 1–4.5 cm long, usually densely villous; leaflets green adaxially, purplish abaxially with numerous dots and streaks which turn black on drying, 5–45 mm long, 5–50 mm wide, sessile, broad obovate to rhomboid, adaxial surface glabrous, abaxial surface pubescent mainly along the midribs, margin ciliate, apex rounded or ± emarginate. Inflorescence radical, 1-flowered; peduncles shorter than or scarcely longer than the leaves, ± pilose. Sepals green, striate with translucent lines, 5–8 mm long, lanceolate, apex without calli, ciliate. Petals pink to reddish-purple, white to yellow on the inside base, 10–40 mm long, broadly obovate. Fruit and seed not maturing in Australia. Flowering Apr.-Nov.

Tas. (FLI, KIN, TNM, TSE, TSR, TWE); also naturalized in WA, NT, SA, Qld, NSW, Vic.; native to South Africa. Locally scattered in population areas near the north and south-east coasts; originally cultivated for its ornamental attributes, but now well established and spreading as a weed of gardens, parks, roadsides and disturbed areas.

6 *Oxalis magellanica* G.Forst., *Commentat. Soc. Regiae Sci. Gott.* 9: 33 (1789) *Snowdrop Woodsorrel*

Oxalis lactea Hook., *Companion Bot. Mag.* 1(9): 276 (1836).

Illustrations: Curtis & Morris, *The Student's Flora of Tasmania* 1, 2nd edn: 101, fig 28 (1975) [as *O. lactea*]; Kirkpatrick, *Alpine Tasmania* 87: fig. 38d (1997); Conn *et al.*, *Fl. Victoria* 4: 213, fig. 39i (1999); Whiting *et al.*, *Tasmania's Natural Flora* 249 (2004).

Small perennial herbs, rhizomatous or stoloniferous; stems sparsely pilose to glabrescent; taproot absent; bulbs and bulbils absent; stems usually spreading. Leaves radical due to reduction of internodes, trifoliolate; stipules conspicuous, to 5 mm long, glabrous, membranous-scarious; petioles 1–5(–8) mm long, with long, sparse, spreading hairs; leaflets green, sessile, 3–12 mm long, 3–13 mm wide, broadly obcordate, adaxial surface dark green, glabrous, shining, abaxial surface sparsely appressed-pubescent, margin ciliate, bilobed, lobes oblong to obovate, apices rounded, sinus to 2/5 the length of the leaflet. Inflorescence axillary, 1-flowered; peduncles up to twice the length of the leaves, glabrous or pubescent. Sepals green, 3–5 mm long, elliptic, apex without calli, ciliate. Petals clear-white, membranous, 5–10 mm long, obovate to obcordate, sometimes ± oblique. Capsule 4–5 mm long, obovate to globose, glabrous. Seed with testa smooth, not transversely ridged. Flowering & fruiting Oct.-Feb.

Tas. (BEL, FLI, TCH, TNS, TSE, TSR, TWE); also in Vic. (where rare); also New Zealand, South America. Common and widespread in damp forests and shrubberies, in the central west, south and north-east of the state, from c. 450–1000 m alt., often forming small colonies in rocky clefts and along steam banks. Has potential as an ornamental rockery specimen.

7 * *Oxalis corniculata* L., *Sp. Pl.* 1: 435 (1753), subsp. **corniculata** *Yellow Woodsorrel*

Oxalis corniculata var. *stricta* Hook.f., *Bot. Antarct. Voy. II (Fl. Nov.-Zel.)* 1(1): 42 (1852). *Oxalis corniculata* var. *microphylla* Hook.f., *op. cit.*

Illustrations: Jaspars, *Fl. S. Austral.*, ed. 4, 2: 712, fig. 387a (1986); Conn, *Fl. New South Wales* 3: 20 (1992); Conn *et al.*, *Fl. Victoria* 4: 217, fig. 40a (1999); Conn *et al.*, *Fl. Victoria* 4: 213, fig. 39g (1999); Richardson *et al.*, *Weeds of the south-east, an identification guide for Australia* 327 (2006).

Slender annual or perennial herbs; stems greenish-yellow, erect or ascending, sometimes decumbent and rooting at the nodes; sparsely retrorse-hairy; roots fibrous, but a slender taproot sometimes developed; bulbs and bulbils absent. Leaves alternate, cauline, trifoliolate; stipules c. 3–5 mm long, membranous, ciliate; petioles 1–7 cm long; leaflets green, 4–20 mm long, 4–25 mm wide, broadly obcordate, adaxial surface glabrous, abaxial surface pubescent, subsessile, margins ciliate, apex bilobed, rounded, sinus to c. 1/5 the length of the leaflet. Inflorescences axillary, umbellate, 1–6-flowered; peduncles about as long as the leaves, antrorse-hairy; pedicels 5–30 mm long, deflexed in fruit, sparsely pilose to glabrescent. Sepals 2–5 mm long, lanceolate, apex without calli, ± pubescent. Petals yellow, 5–8 mm long, obcordate to obovate, apex sometimes shallowly notched.

Capsule cylindrical, 8–16 mm long, erect, ± densely retrorse-hairy. Seeds brown, transversely wrinkled. Flowering & fruiting Sep.-Apr.

Tas. (BEL, FLI, KIN, TCH, TNM, TNS, TSE, TSR, TWE); also naturalized in WA, NT, SA, Qld, NSW, Vic., New Zealand; probably native to Europe but now a cosmopolitan weed. Widespread in suburban gardens, pastures, and in open, grassy woodland in the east, north-east and far west coast, from sea-level to c. 1200 m alt. Potentially weedy. Green (1994) included *O. exilis*, *O. perennans*, *O. radicata* and *O. rubens* under *O. corniculata* and noted the group required considerable work.

8 *Oxalis perennans* Haw., *Misc. Nat.* 181 (1803)

Grassland Woodsorrel

Oxalis cognata Steud., *Pl. Preiss.* 1(1): 160 (1844).

Illustrations: Jaspars, *Fl. S. Austral.*, ed. 4, 2: 712, fig. 387b (1986); Conn, *Fl. New South Wales* 3: 18 (1992); Conn *et al.*, *Fl. Victoria* 4: 213, fig. 39a (1999); Whiting *et al.*, *Tasmania's Natural Flora* 249 (2004).

Perennial herbs; stems green to greenish-yellow, erect or ascending, sometimes creeping to c. 30 cm and ± loosely mat-forming; sparsely antrorse-hairy, rarely glabrescent; roots fibrous, taproot rarely stout; bulbs and bulbils absent. Leaves alternate, cauline, trifoliolate; stipules conspicuous, to 3 mm long, apex obtuse to rounded, ciliate; petioles 1–5 mm long, with antrorse and sometimes spreading hairs; leaflets green, sessile, (2–)6–15 mm long and wide, cuneate-obcordate, adaxial surface glabrous to pubescent, abaxial surface pubescent, the hairs usually confined to the midrib, margins ciliate, apex bilobed, lobes oblong to obovate, straight, apices rounded. Inflorescences axillary, umbellate, 1–6 flowered; peduncles as long as the leaves, antrorse-hairy; pedicels 5–15 mm long, erect, sometimes deflexed in fruit, pilose. Sepals green, oblong, 3–5 mm long, often ciliate. Petals yellow, 6–12 mm long, obovate. Capsule 8–30 mm long, cylindrical, erect, usually densely antrorse-hairy. Seeds brown, transversely ridged. Flowering & fruiting all year.

Tas. (FLI, TSE, TSR); also in WA, NT, SA, Qld, NSW, Vic., New Zealand. Localized in the south and east of the state; widespread in dry, open woodlands, stony-grassy areas, especially on dolerite soils, spreading readily into disturbed areas, roadsides etc. Potentially weedy. Green (1994) included *O. exilis*, *O. perennans*, *O. radicata* and *O. rubens* under *O. corniculata* and noted the group required considerable work.

9 *Oxalis radicata* A.Rich., *Tent. Fl. Abyss.* 2: 123 (1847)

Stoutroot Woodsorrel

Illustrations: Jaspars, *Fl. S. Austral.*, ed. 4, 2: 712, fig. 387c (1986); Conn, *Fl. New South Wales* 3: 20 (1992); Conn *et al.*, *Fl. Victoria* 4: 213, fig. 39f (1999).

Annual or perennial herbs; stems green to greenish-brown, erect, ascending or decumbent, sometimes spreading and rooting at the nodes, sometimes shallowly rhizomatous, moderately to densely patent or retrorse-hairy; tap root usually stout, becoming woody and deeply penetrating; bulbs and bulbils absent. Leaves alternate, cauline, trifoliolate; stipules inconspicuous, to 1 mm long, keeled, tapering abruptly into petiole, ciliate; petiole 10–40(–65) cm long, sparsely antrorse-hairy to glabrescent; leaflets dull green-suffused brownish-purple on both surfaces, midribs usually bright green, sessile, 4–15 mm long, 5–15 mm wide, obcordate, adaxial surface sparsely antrorse-hairy, abaxial surface moderately antrorse-hairy, margins ciliate, apex bilobed, lobes obovate, apex rounded, sinus to 1/5 the length of the leaflet. Inflorescences axillary, umbellate, 2–4-flowered; peduncles equal to or a little shorter than the leaves, hairs spreading to retrorse; pedicels erect, usually deflexed in fruit, 10–35 mm long. Sepals green, 5–8 mm long, oblong, often ciliate. Petals yellow, 7–12 mm long. Capsule 6–20 mm long, cylindrical, erect, usually densely retrorse-hairy. Seeds rust-orange, transversely ribbed. Flowering & fruiting Sep.-Apr.

Tas. (FLI, TNM, TSE, TSR); also NT, SA, Qld, NSW, Vic. Local in the east and south-east of the state, in coastal areas and dry, grassy woodlands, preferring poor, peaty/sandy soils or gravels, from sea level to c. 250 m alt. Green (1994) included *O. exilis*, *O. perennans*, *O. radicata* and *O. rubens* under *O. corniculata* and noted the group required considerable work.

10 *Oxalis exilis* A.Cunn., *Ann. Nat. Hist.* 3: 316 (1839)

Feeble Woodsorrel

Illustrations: Jaspars, *Fl. S. Austral.*, ed. 4, 2: 712, fig. 386c (1986); Conn, *Fl. New South Wales* 3: 19 (1992); Conn *et al.*, *Fl. Victoria* 4: 213, fig. 39c (1999).

Small, herbaceous perennials; stems green or greenish-yellow, creeping or ascending to c. 35 cm, very sparsely antrorse-hairy, often rooting at the nodes, sometimes forming \pm compact 'cushions', especially in exposed highland habitats; taproot, bulbs and bulbils absent. Leaves alternate, cauline, often densely tufted, trifoliolate; stipules conspicuous, 1–2 mm long, apex merging abruptly into petiole, ciliate; petioles 1–6(–8) cm long, sparsely antrorse-hairy; leaflets green to yellowish-green, sessile, 2.5–4 mm long, 3–6 mm wide, cuneate-obcordate, adaxial surface glabrous or sparsely pubescent, abaxial surface pubescent, apex bilobed, lobes obovate, obtuse, divergent, often deflexed and infolded along the midrib, margins ciliate. Inflorescences axillary, 1–2-flowered; peduncle as long as the leaves, antrorse-hairy; pedicels 5–15 mm long, erect, usually deflexed in fruit, sparsely pilose. Sepals green, 1.5–3 mm long, oblong, apex without calli, glabrous or often ciliate. Petals yellow, 4–8 mm long, broadly oblanceolate. Capsule 3–6(–8) mm long, conical to shortly cylindrical, erect, usually retrorse-hairy, sometimes scattered septate hairs present. Seeds rust-orange, prominently transversely ribbed. Flowering & fruiting Oct.–May.

Tas. (BEL, TCH, TNS, TSE, TSR, TWE); also in NSW, Vic., Norfolk Island; also New Zealand, New Caledonia. Widespread but localised throughout the west and central areas of the state, from sea-level to c. 1200 m alt. Prefers heavy soils and clays, on river banks, 'marsupial lawns' and in ditches where water accumulates, stony pastures, etc. Green (1994) included *O. exilis*, *O. perennans*, *O. radicata* and *O. rubens* under *O. corniculata* and noted the group required considerable work.

11 *Oxalis rubens* Haw., *Misc. Nat.* 182 (1803)

Coast Woodsorrel

Illustrations: Conn, *Fl. New South Wales* 3: 19 (1992); Conn *et al.*, *Fl. Victoria* 4: 213, fig. 39b (1999).

Small, herbaceous perennial; stems reddish, erect or ascending, to 30 cm long, glabrous or sparsely antrorse-hairy, usually distinctly reddish, spreading and rooting at the nodes; taproot slender or absent; bulbs and bulbils absent. Leaves sometimes sub-opposite or whorled, cauline, sometimes tufted, trifoliolate; stipules \pm conspicuous, to c. 3 mm long, membranous and truncate or apex merging abruptly into pedicel, ciliolate; petioles usually 7–30 mm long, hairs mostly antrorse; leaflets green to purplish-green, sometimes sub-glaucous, sessile, 2–8 mm long, 2–10 mm wide, cuneate-obcordate, adaxial surface \pm glabrous, abaxial surface sparsely pubescent, apex bilobed, lobes oblong to obovate, straight, divergent, margins ciliolate. Inflorescences axillary, 1–2 flowered; peduncles longer than the leaves, antrorse-hairy; pedicels 5–10 mm long, erect. Sepals green, 3–4 mm long, often ciliolate. Petals yellow, 7–10 mm long. Capsule cylindrical, often slightly expanded in the middle portion, 12–24 mm long, usually densely retrorse-hairy. Seed orange-brown, with prominent, sub-truncate ridges. Flowering & fruiting Oct.–May.

Tas. (FLI, TSE, TWE); also SA, Qld, NSW, Vic., New Zealand. Apparently confined to coastal areas, on beaches, stabilized sand dunes and sandy heaths, from sea-level to c. 250 m alt.

The two species *O. rubens* and *O. exilis* are comparable in many characters. It seems that the red stems and relatively long fruit capsules of the former, as well as the very different habitats are the main means of separating the two. Further extensive collecting and critical research will be necessary to clarify the position of these two entities. Green (1994) included these two species and *O. perennans* and *O. radicata* under *O. corniculata* and noted the group required considerable work.

REFERENCES

ALA (Atlas of Living Australia) www.ala.org.au

APC (Australian Plant Census) <http://www.chah.gov.au/apc/about-APC.html>

APNI (Australian Plant Name Index) <http://www.anbg.gov.au/cgi-bin/apni>

AVH (Australia's Virtual Herbarium) (Council of Heads of Australasian Herbaria) <http://avh.rbg.vic.gov.au/avh/>
 Cocucci AA (2004) Oxalidaceae. In K Kubitzki (Ed.), *The families and genera of vascular plants, Vol. 6, Flowering plants, dicotyledons, Celastrales, Oxalidales, Roosales, Cornales, Ericales*. pp. 285–290 (Springer-Verlag, Berlin)
 Green PS (1994) Oxalidaceae. *Flora of Australia* **49** 254–256.
 IPNI (International Plant Name Index) <http://www.ipni.org/index.html> or <http://www.us.ipni.org/index.html>
 NVA (Natural Values Atlas) (Department of Primary Industries and Water: Hobart) <http://www.dpiw.tas.gov.au/inter.nsf/WebPages/LJEM-6TV6TV?open>
 Thompson J (1982) *Oxalis* in Australia. *Australian Systematic Botany Society Newsletter* **32** 4–6.

NOTE: Web addresses can and do change: a list of current web addresses will be maintained on the *Flora of Tasmania Online* website [www.tmag.tas.gov.au/floratasmania].

INDEX

B

Bent Woodsorrel 3

C

Coast Woodsorrel 7

Connaraceae 1

F

Feeble Woodsorrel 7

G

Grassland Woodsorrel 6

L

Largeflower Woodsorrel 4

Largeleaf Woodsorrel 4

N

New Zealand Yam 2

O

Oca 2

Oxalidaceae 1

Oxalidales 1

Oxalis 1

Oxalis articulata 3

Oxalis cernua 3

Oxalis cognata 6

Oxalis corniculata 2, 5, 6, 7

Oxalis corniculata subsp. *corniculata* 5

Oxalis corniculata var. *microphylla* 5

Oxalis corniculata var. *stricta* 5

Oxalis exilis 6, 7

Oxalis incarnata 4

Oxalis lactea 5

Oxalis latifolia 4

Oxalis magellanica 5

Oxalis perennans 6, 7

Oxalis pes-caprae 3

Oxalis purpurea 4

Oxalis radicata 6, 7

Oxalis rubens 6, 7

Oxalis tuberosa 2

Oxalis vallicola 3

Oxalis variabilis 4

P

Pale Woodsorrel 4

S

Snowdrop Woodsorrel 5

Soursob 3

Stoutroot Woodsorrel 6

W

Woodsorrel 3, 4, 5, 6, 7

Y

Yellow Woodsorrel 5