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47 RANUNCULACEAE [1]

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Terrestrial or aquatic, perennial or rarely annual, herbs, woody climbers, or rarely small shrubs. Leaves in a basal rosette, or spiral, opposite or rarely whorled; without stipules; petioles usually with sheathing base; lamina simple or compound. Inflorescence usually terminal, a cyme, raceme or panicle, or flowers solitary. Flowers actinomorphic or zygomorphic, bisexual, rarely unisexual and dioecious (see *Clematis*). Perianth hypogynous, petaloid or sepaloid, whorled or spiral, undifferentiated or consisting of calyx and corolla. Corolla formed usually of petaloid nectaries (here treated as petals), rarely with true petals (*Adonis*), usually 5 or more, rarely reduced to 2, 1 or absent. Stamens mostly numerous, rarely 2 or 1, spiral; filaments free; anthers extrorse, opening in longitudinal slits; rarely with connective appendages. Carpels 1–many, free and spiral or in 1 whorl and ± fused; style usually well developed; ovules 1–many, ventral or basal, anatropous; integuments 1 or 2. Fruit of 1–many follicles or a head of achenes, or rarely a berry or capsule. Seeds 1–many, usually with a small embryo and oily endosperm; germination usually epigeal.

A cosmopolitan, though predominantly Northern Hemisphere, family of about 70 genera and more than 3,000 species. 10 genera (0 endemic, 5 introduced), and about 75 species (52 endemic, 16 introduced) in Australia; 8 genera (2–4 introduced) and 39 species (11 endemic, 10–12 introduced) in Tasmania. Most species are poisonous and some are used in horticulture and medicine. The Ranunculaceae are placed in Ranunculales and are related to the Berberidaceae (Eurasia, Africa, Americas) and Menispermaceae (mostly pantropical) (see Stevens 2007 & references cited therein).

Some species and cultivars of the genera *Aconitum* L. (Monkswood, Wolfsbane), *Anemone* L., *Aquilegia* L. (Coumbine, Granny's Bonnets), *Clematis* L., *Consolida* Gray (Larkspur), *Delphinium* L. (Larkspur), *Ficaria* Guett., *Helleborus* L. (Hellebore), *Nigella* L. (Love-in-a-Mist), *Ranunculus* L. (Buttercup, Celandine, Spearwort), *Thalictrum* L. (Meadow Rue) and *Trollus* L. (Globe Flower) are grown in gardens and some escape occasionally in Australia. Spencer (1997) gives a more detailed account of the taxa used in horticulture.

Synonymy: Aquilegiaceae, Anemonaceae, Calthaceae, Clematidaceae.

Key reference: Eichler *et al.* (2007).

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

1.	Leaves opposite; climbers or shrubs; achenes with elongated, plumose styles	**4 Clematis**
1:	Leaves basal or alternate or spirally arranged; annual or perennial herbs; styles never plumose	2
2.	Perianth segments with basal spur	3
2:	Perianth segments without spurs	5
3.	Flowers zygomorphic; leaves basal and cauline, palmately divided or lobed	**Consolida** +
3:	Flowers actinomorphic; leaves in a basal rosette and sometimes also cauline, ternately compound or simple	4

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

4.	Large perennial; leaves ternately compound; flowers conspicuous, petals 20–38 mm long; fruit a whorl of several follicles	**2 Aquilegia**
4:	Small annual; leaves simple; flowers very small, petals 1.5–3.5 mm long; fruit of numerous achenes on an elongated subulate spike	**7 Myosurus**
5.	Peduncle with a whorl of involucral bracts inserted below perianth	**3 Anemone**
5:	Peduncle without a whorl of involucral bracts	6
6.	Perianth of ± equal segments, not clearly separated into sepals and petals; leaves simple and entire, usually with 2 wing-like appendages or lobes lying almost against the adaxial surface	**1 Psychrophila**
6:	Perianth divided into sepals and petals (sepals rarely deciduous); leaves simple or variously divided but without 2 wing-like appendages or lobes on the adaxial surface	7
7.	Aquatic plants; leaves cauline, submerged leaves repeatedly trichotomously divided into filiform segments in many planes; petals white	**5 Batrachium**
7:	Terrestrial or aquatic plants; leaves in a basal rosette and/or cauline, simple, or once, twice or rarely thrice divided and then in one plane; leaf-segments broad, rarely filiform; petals cream, yellow, greenish yellow or red	8
8.	Petals with 1 or more nectary secreting pits; perennial with or without stolons or rhizomes; leaves simple or variously divided; ultimate segments various	**6 Ranunculus**
8:	Petals without a nectary secreting pit; annual without stolons or rhizomes; leaves bi- or tri-pinnate; ultimate segments linear	**8 Adonis**

[+] *Consolida ajacis* (L.) Schur. (Annual Larkspur) has been collected north-west of Granton on the Lyell Highway (south-east Tasmania) but the species has not persisted. It is not treated further here. The species is a native of the Mediterranean region and has previously been erroneously called *C. ambigua* (L.) P.W.Ball & Heywood in Australia.

1 PSYCHROPHILA

Psychrophila (DC.) Bercht. & J.Presl, *Prir. Rostin*. 1: 79 (1823).

Synonymy: *Caltha* L. sect. *Psychrophila* DC., *Syst. Nat. (Candolle)* 1: 307 (1817).

Perennial, terrestrial herbs with stout, rhizomes or rootstocks. Leaves spirally arranged, forming basal rosettes, simple, lamina usually with 2 wing-like appendages or lobes on adaxial surface of blade. Flowers terminal, usually solitary on ebracteate peduncles, actinomorphic, bisexual. Perianth not differentiated into sepals and petals; tepals 5 or more, petaloid, white, magenta-pink or pale yellow, free, not spurred. Nectaries absent. Stamens usually numerous. Carpels usually 2–18, free; ovules numerous, in two rows. Fruit a radiating head of free follicles; follicles shortly beaked, glabrous, opening dorsally, seeds several.

A genus of about 12 species found in the Andes of Ecuador, Peru, Bolivia, Argentina and Chile, to the Magellanic Region and the Falkland Islands, New Zealand and Australia. Species are mostly restricted to high elevations but some extend to lower altitudes in subantarctic regions. Australia has two endemic species, *P. introloba* (F.Muell.) W.A.Weber, which is confined to alpine areas of New South Wales and Victoria, and *P. phylloptera*, which is restricted to Tasmania.

The two Australian species were traditionally placed in *Caltha* sect. *Psychrophila*, and the section was recognised at the genus level in the *Flora of Australia* by Eichler *et al.* (2007). *Psychrophila* is characterised by the

peculiar leaf appendages, solitary, often white or pale yellow flowers on leafless peduncles, mostly narrow, ± acute tepals, and its almost exclusive restriction to the Southern Hemisphere. *Caltha* is restricted to the Northern Hemisphere. Schuettpelz and Hoot (2004) completed a phylogeny of *Caltha sensu lato* and showed that while *C.* section *Psychrophila* was monophyletic the remaining species (in section *Caltha* or *Caltha sensu stricto*) do not group into one monophyletic clade. This suggests that while *Psychrophila* may be a good genus what remains, presently in *Caltha*, is not. Schuettpelz and Hoot (2004) identified a number of informal species groups but further formal taxonomic work is required to resolve the generic limit of *Caltha*, that is, should it be divided into further genera, and at what taxonomic level *Psychrophila* should be recognised.

Key reference: Eichler & Jeanes (2007).

1 Psychrophila phylloptera (A.W.Hill) H.Eichler, *Fl. Australia* 2: 459 (2007)

Caltha phylloptera A.W.Hill, *Ann. Bot. (London)* 32: 433, fig. 7 (1918). *Caltha introloba sensu* G.Bentham, *Fl. Austral.* 1: 15 (1853); J.D.Hooker, *Bot. Antarct. Voy. III. (Fl. Tasman.)* 2: 355 (1860), *non* F.Muell. (1855). *Caltha novae-zelandiae sensu* L.Rodway, *Tasman. Fl.* 3 (1903), *non* Hook.f. (1853).

Illustrations (mostly as *C. phylloptera*): Stones & Curtis, *The Endemic Flora of Tasmania* 4: t. 80, No. 134 (1973); Curtis & Morris, *The Student's Flora of Tasmania* 1: 20 fig. 6 (1975)*;* Kirkpatrick, *Alpine Tasmania* 92, fig. 40b (1997); Wilson (Ed.), *Fl. Australia* 2, fig. 55h (2007), lamina.

Small, tufted, glabrous herb, 2–8 cm high; rhizomes fleshy with long spreading fibrous roots; often forming dense mats. Leaves in rosettes; petiole 7–30(–60) mm long, lower half with a broad membranous sheathing base; lamina cordate-ovate to ovate-lanceolate, 10–25 mm long, 5–10 mm wide, ± entire, ± emarginate; basal appendages on adaxial surface, these elliptical, 5–12 mm long, c. half the length of leaf lamina, erect, attached for part of their length along either side of the midrib, often unequally 2-lobed near base. Peduncles often scarcely longer than leaf sheaths in flower, thickening and elongating to 17 mm long in fruit. Flowers subsessile at anthesis. Tepals 5–7, creamy yellow to pale straw-coloured, spreading, linear-lanceolate, 8–10 mm long, short-acuminate. Stamens c. 10; filaments c. 5 mm long, flattened; anthers ovoid, c. 0.5 mm long. Carpels 5–8(–10); styles persistent. Fruiting follicles in a head 5–15 mm diam., sessile. Seeds 1–6, brown, ovoid, smooth. Flowering Dec.-Mar.; fruiting Jan.-Apr.

Tas. (TCH, TSR); endemic. Localised on the Central Plateau and Mt Field. Usually found in sheltered, wetter areas such as shallow pools, soaks on scree slopes, though sometimes found amongst cushion plants. The closest ally of *P. phylloptera* is probably *P. introloba* from which it can be distinguished by the erect leaf lobes that are often incised in the lower part into two unequal lobes (cf. lobes entire and folded inwards) and the yellow to pale straw-coloured tepals (cf. white, sometimes magenta-tinted).

2 * AQUILEGIA

Aquilegia L., *Sp. Pl.* 1: 533 (1753).

Perennial, terrestrial herbs with erect, short, woody stock, sometimes subtuberous. Leaves spirally arranged, forming a basal rosette; lamina 1- to 3-ternately compound, without appendages on the adaxial surface. Inflorescence terminal, bracteate, cymose or flowers solitary. Flowers actinomorphic, bisexual. Perianth variously coloured. Sepals 5, petaloid, free. Petals 5, free, conspicuous, more or less tubular with a flat, erect limb and a backwardly directed nectar-secreting spur. Stamens numerous. Carpels usually 5, free, many-ovulate. Fruit a whorl of many-seeded follicles; follicles each with persistent style, opening along the dorsal surface.

A genus of about 70 species found largely in temperate regions of the Northern Hemisphere. In Australia only 1 species has been recorded as an occasional garden escape.

Key reference: Jeanes (2007).

1 * Aquilegia vulgaris L., *Sp. Pl.* 1: 533 (1753) *Columbine*

Illustrations: Walsh, *Fl. Victoria* 3: 63, fig. 13e–h (1996); Spencer, *Horticultural Flora of South-eastern Australia* 2: 51 (1997); Richardson *et al.*, *Weeds of the South-East, an Identification Guide for Australia* 352 (2006).

Plants 40–100 cm high, glabrous or softly hairy. Basal leaves long-petiolate, petiole to 20 cm long; lamina 2–3-ternate; leaflets cuneate to broad-ovate, 1–5 cm long, margins lobed or crenate, adaxial surface glabrous, abaxial surface pilose and glaucous. Cauline leaves smaller, less divided. Flowers nodding, usually blue to violet, sometimes white or reddish, 3–5 cm diam. Sepals ovate, 15–30 mm long, acute. Petals 20–38 mm long including the 15–22 mm long spur; spur sharply curved with an apical knob. Stamens sub-equal to or exceeding limb of petals; staminodes c. 10, white, membranous, slightly shorter than stamens. Follicles 15–30 mm long, beaked, glandular-pubescent, dehiscing while green. Seeds black, 2–2.5 mm long, shiny. Flowers collected Oct.-Nov.

Tas. (TSE); also sparingly naturalized in NSW, Vic.; native in Europe. An occasional garden escape that has been rarely recorded as isolated plants or in small populations from the base of Mt Wellington, Little Swanport, North West Bay River and the Tasman Peninsula. Usually found in cool, moist, shaded sites.

3 ANEMONE

Anemone L., *Sp. Pl.* 1: 538 (1753).

Perennial, terrestrial herbs, rarely small shrubs (not in Tas.), with a creeping or tuberous rhizome or woody descending rootstock. Leaves spirally arranged, forming a basal rosette except for involucre; lamina usually palmately lobed or divided, without appendages on the adaxial surface. Inflorescence terminal, uniflowered or a few–many-flowered cymose umbels, scape erect with a whorl of (2)3(4) small involucral bracts that is usually remote from the flower. Flowers actinomorphic, bisexual. Perianth not differentiated into sepals and petals; tepals 4–20, petaloid, variously coloured, free, not spurred. Nectaries absent. Stamens many. Carpels many, each with 1 pendulous functional ovule. Fruit a globular or oblong cluster of achenes; achenes glabrous or hairy, each with a persistent style beak.

A genus of about 110–120 species in the temperate and cold regions of both Hemispheres. There are two species in Australasia, one confined to New Zealand and another to Tasmania.

Key references: Zimen *et al.* (2006); Eichler & Jeanes (2007).

1 Anemone crassifolia Hook., *Icon. Pl.* 3(6): t. 257 (1840) *Anemone*

Illustrations: Rodway, *Tasman. Fl.* t. opp. p. 4 (1903); Stones & Curtis, *The Endemic Flora of Tasmania* 3: t. 52, No. 86 (1971); Kirkpatrick, *Alpine Tasmania* 92, fig. 40a (1997); Wilson (Ed.), *Fl. Australia* 2: proceeding p. 278, plate 50; p. 294, fig. 55i-k (2007); Simmons *et al.*, *A Guide to Flowers and Plants of Tasmania,* 4th edn, 33 (2008).

Perennial herb, 8–35 cm high, with a short rootstock and slender, underground stems. Basal leaves petiolate; petioles 2–26 cm long, much longer than lamina; lamina ± orbicular, usually 1.5–7 cm wide, palmately lobed or divided into 3–5 segments; segments cuneate, blunt, coarsely toothed, thick and almost succulent, with appressed hairs mainly on veins and margins, often purplish beneath. Scape 8–20(–50) cm long, with dense covering of appressed hairs on upper part, sparser lower down; cauline leaves usually (2)3, placed between middle and half way between middle and flower, sessile, irregularly lobed or entire. Flowers solitary. Tepals 6–8, white, oblong to ovate-obovate, 10–22 mm long. Achenes glabrous; style-beak 3–4 mm long, hooked or coiled at apex. Flowering Oct.-Jan.; fruiting Dec.-Mar.

Tas. (TCH, TSR, TWE); endemic. Occurs locally on mountains (> 1300 m alt.) in western and south-western Tasmania. Usually found on sandstones, conglomerates and quartzites in alpine and subalpine communities amongst boulders and/or in wet peaty soil. The closest ally of *A. crassifolia* appears to be *A. tenuicaulis*

(Cheeseman) Parkin & Sledge of New Zealand. These two species are placed in *Anemone* section *Rivularidium* Jancz and are more closely related to South American members of this section than to the Asian members (Eichler & Jeanes 2007).

4 CLEMATIS

Clematis L., *Sp. Pl.* 1: 543 (1753).

Synonymy: *Valvaria* Ser., *Fl. Jard*. 3: 93 (1849).

Terrestrial, woody climbers, perennial herbs, or rarely shrubs. Leaves opposite; petioles and petiolules often twining and acting as tendrils; lamina variously compound or rarely simple, in some species ending in tendrils, adaxial surface without appendages. Inflorescence a dichasial panicle or flowers solitary. Flowers actinomorphic, bisexual or unisexual and then plants dioecious. Perianth not differentiated into sepals or petals, spurs absent; tepals mostly 4(–8), petaloid, variously coloured, free, valvate. Nectaries absent. Stamens many. Male flowers sometimes with ± petaloid staminodes. Female flowers usually with 1 whorl of staminodes. Carpels numerous, free; ovule solitary. Fruit a globular head of achenes, each with a persistent, long, often plumose style (awn).

A cosmopolitan genus of over 300 species found mainly in temperate and arctic regions of the Northern Hemisphere. In Australia there are 15 species (11 endemic, 2 introduced). Several extra-Australian species and hybrids are grown as ornamentals in gardens. A detailed revision of the genus in Australia is required. Many of the dioecious species overlap in the extremes of variation of most of their characters. Collections require both fertile and vegetative shoots and should be accompanied by detailed notes of tepal and stamen colour as well as morphological variation in the population. Ideally a number of plants should be collected from a population. Diligent collectors would tag plants so that cross-referenced collections can be made of both flowering and fruiting material.

The term ‘flammuliform’ (see Eichler & Jeanes 2007) is used in the key and descriptions for *Clematis* to describe the complex division of leaves of some species. First the leaf is cleft into 5 primary divisions, which are then each ternately divided. This leads to a typical condition of 15 leaflets, but by further or incomplete division, there may be 12–36 leaflets. The term is derived from *C. flammula* L. whose leaves demonstrate this type of division.

Key reference: Eichler & Jeanes (2007).

1.	Stems erect, not climbing; leaves simple, rarely deeply 3-lobed or ternate, petioles and petiolules straight	**2 C. gentianoides**
1:	Stems climbing; leaves compound, petioles and petiolules often acting as tendrils	2
2.	Plants deciduous, with bisexual flowers; stamens and carpels numerous	**1 C. vitalba**
2:	Plants evergreen, dioecious; female flowers with one row of staminodes, male flowers lacking rudiments of a gynoecium	3
3.	Leaves ternate, or 5-foliolate	4
3:	Leaves 2–3-ternate, or flammuliform	5
4.	Abaxial surface of tepals glabrous in centre and lanuginose on the margins; at least some leaves 5-foliolate	**3 C. clitorioides**
4:	Abaxial surface of tepals evenly pubescent; leaves mostly ternate	**4 C. aristata**
5.	Leaves usually biternate with up to 12 leaflets (leaflets sometimes lobed)	**5 C. microphylla**
5:	Leaves flammuliform or triternate, with > 12 leaflets (immature leaves can have fewer leaflets)	**6 C. decipiens**

1 * Clematis vitalba L., *Sp. Pl.* 1: 544 (1753) var. **vitalba** *Travellers Joy, Old Man's Beard*

Illustrations: Fretwell, *Clematis* 145 (1989); Spencer, *Horticultural Flora of South-eastern Australia* 2: 57 (1997); Richardson *et al.*, *Weeds of the South-East, an Identification Guide for Australia* 353 (2006).

Monoecious, strong, deciduous, woody climber to several m in length. Leaves imparipinnate, mostly with 5(7) leaflets; petiole and petiolules often acting as tendrils; leaflets ovate, 3–10 cm long, 1–5.6 cm wide, entire, lobed or serrate, acute to acuminate, glabrous or slightly pubescent, more densely so on veins. Flowers in axillary and terminal dichasial panicles, bisexual, fragrant. Tepals greenish white, oblong, 7–12 mm long, with silky hairs on both surfaces, tomentose at margin. Stamens 5–9 mm long; anthers oblong, 1–2 mm long, obtuse, without appendage; staminodes absent. Achenes dark-brown, ovoid, strongly compressed, 3–5 mm long, 1.5–2.5 mm wide, pubescent, awn to 4 cm long. Flowering Jan.-Apr.; fruiting Jan.-Aug. (Nov.).

Tas. (TNM, TSE); also naturalized in SA, Vic; native to Europe. Grown as an ornamental and has escaped and naturalized locally. Usually found in moist places such as gullies and along water courses.

2 Clematis gentianoides DC., *Syst. Nat.* 1: 159 (1817)

Valvaria gentianoides (DC.) Ser., *Fl. Jard.* 3: 95 (1849); *Clematis aristata* var. *gentianoides* (DC.) F.Muell., *Fragm.* 10(81): 2 (1876); *C. aristata* subsp. *gentianoides* (DC.) Kuntze, *Verh. Bot. Vereins Prov. Brandenburg* 26: 157 (1885); *C. gentianoides* var. *normalis* Domin, *Biblioth. Bot.* 89(2): 109 (1926), *nom. inval*. *Clematis aristata* subsp. *procumbens* Kuntze, *Verh. Bot. Vereins Prov. Brandenburg* 26: 157 (1885); *C. gentianoides* var. *procumbens* (Kuntze) Domin, *Biblioth. Bot.* 89(2): 109 (1926). *Clematis aristata* subsp. *tasmanica* Kuntze, *Verh. Bot. Vereins Prov. Brandenburg* 26: 157 (1885); *C. gentianoides* var. *tasmanica* (Kuntze) Domin, *Biblioth. Bot.* 89(2): 109 (1926).

Illustrations: Stones & Curtis, *The Endemic Flora of Tasmania* 1: t. 6, No. 8 (1967); Curtis & Morris, *The Student's Flora of Tasmania* 1, 2nd edn: 10, fig. 5 (1975); Gilfedder *et al.*, *The Nature of the Midlands* 127 (2003); Simmons *et al.*, *A Guide to Flowers and Plants of Tasmania,* 4th edn, 125 (2008).

Low dioecious shrub with creeping underground stem, with thick tuberous roots; aerial branches in semi-erect tufts, regrowing from stem each year, 10–65 cm long. Leaves usually simple, rarely deeply 3-lobed or ternate; petiole and petiolules not acting as tendrils; lamina broadly ovate to narrowly lanceolate, 2–10 cm long, 0.7–3.3 cm wide, entire or coarsely toothed, acute to obtuse, rather thick, glabrous. Flowers usually solitary, terminal, sometimes in 3-flowered dichasia, long pedunculate, unisexual. Tepals white, narrow-ovate to oblong, 15–50 mm long, ± glabrous or abaxial surface sparsely lanuginose along margins. Stamens 3–18 mm long; anthers narrowly ovate, 2–2.5 mm long, appendage subulate, 0.3–0.8 mm long; staminodes present. Achenes brown, obovoid, compressed, 3.5–5.5 mm long, 1.8–2.5 mm wide, villous, awns to 4 cm long. Flowering Oct.-Mar.; fruiting Nov.-May.

Tas. (BEL, FLI?°, TNM, TSE); endemic. Found in eastern Tasmania mainly between the Bicheno and Hobart areas, and disjunctly in the Launceston area. It is often locally abundant in poor soil and on well-drained slopes. One historical collection has been made on Flinders Island which requires confirmation (Eichler & Jeanes 2007).

3 Clematis clitorioides DC., *Syst. Nat.* 1: 158 (1817)

Clematis blanda Hook., *J. Bot. (Hooker)* 1(3): 241 (1834); *C. aristata* var. *blanda* (Hook.) Benth., *Fl. Austral.* 1: 6 (1863). *Clematis aristata* var. *minor* Hook., *J. Bot. (Hooker)* 2(16): 400 (1840). *Clematis hexapetala* subsp. *brachystemon* Kuntze, *Verh. Bot. Vereins Prov. Brandenburg* 26: 108 (1885). *Clematis aristata* subsp. *gunniana* Kuntze, *op. cit.* 156, *p.p.*; *C. aristata* var. *gunniana* (Kuntze) Domin, *Biblioth. Bot.* 89(2): 108 (1926). *Clematis clitorioides* var. *decipiens* Domin., *op. cit*. *Clematis linearifolia sensu* J.D.Hooker, *Bot. Antarct. Voy. III. (Fl. Tasman.)* 1: 4, t. 1 (1855), *p.p.*, *non* Steud. (1845).

Illustration: Wilson (Ed.), *Fl. Australia* 2: 302, fig. 56d-f (2007).

Dioecious, evergreen, woody climber to 4 m in length. Leaves ternate or often imparipinnate with 5 leaflets; petioles and petiolules often acting as tendrils; leaflets usually ovate, 1.2–6 cm long, 0.5–2.8 cm wide, entire or rarely dentate, acute, usually glabrous. Flowers in axillary and terminal dichasial panicles, unisexual. Tepals white, narrow-elliptic to narrow-ovate, 1.2–3.7 cm long, abaxial surface ± glabrous except for the lanuginose margin, adaxial surface glabrous. Stamens 4–12 mm long; anthers narrowly ovate to broadly elliptic, 1.5–3 mm long, appendage linear, 0.5–1 mm long; staminodes present. Achenes brown, ovate, compressed, 4–5 mm long, 1.5–2 mm wide, usually glabrous, smooth, margin slightly pronounced, awn to 5 cm long. Flowering Aug.-Jan.; fruiting Dec.-Mar.

Tas. (all regions except MIS); endemic. Widespread across Tasmania and found in dry or wet, lowland and highland forests and woodlands.

4 Clematis aristata R.Br. ex Ker Gawl., *Edward's Bot. Reg.* 3: t. 238 (1817)

Clematis aristata R.Br. ex DC., *Syst. Nat.* 1: 147 (1817), *nom. illeg., nom. superfl. Clematis coriacea* DC., *Syst. Nat.* 1: 146 (1817); *C. aristata* var. *coriacea* (DC.) Benth., *Fl. Austral.* 1: 6 (1863). *Clematis aristata* subsp. *confertissima* Kuntze, *Verh. Bot. Vereins Prov. Brandenburg* 26: 156 (1885).

Illustrations: Cochrane *et al.*, *Flowers & Plants of Victoria* 137, fig. 424 (1968); Morley & Toelken (Eds), *Flowering Plants in Australia* 55, fig. 24a (1983); Fairley & Moore, *Native Plants of the Sydney District* 58, t. 107 (1989); Walsh, *Fl. Victoria* 3: 40, fig. 4h-k (1996); Corrick & Fuhrer, *Wildflowers of Victoria* fig. 677 (2000); Briggs & Makinson, *Fl. New South Wales* 1, rev. edn: 158 (2000); Corrick & Fuhrer, *Wildflowers of Victoria* 192, fig. 677 (2000); Gilfedder *et al.*, *The Nature of the Midlands* 127 (2003); Wilson (Ed.), *Fl. Australia* 2: proceeding p. 278, plate 51, p. 306, fig. 57h-i (2007); Simmons *et al.*, *A Guide to Flowers and Plants of Tasmania,* 4th edn, 129 (2008).

Strong, dioecious, evergreen, woody climber to 15+ m in length. Leaves ternate; petioles and petiolules often acting as tendrils; leaflets ovate to deltate, 2.5–9.5 cm long, 1–5 cm wide, serrate or occasionally entire, ± acute, usually glabrous. Flowers in numerous axillary panicles, unisexual. Tepals creamy white, oblong to narrow-ovate, 11–28 mm long, abaxial surface pubescent, often densely white-tomentose at margin, adaxial surface glabrous. Stamens 4–15 mm long; anther linear-oblong, 1.5–4 mm long, appendage subulate, 1–3 mm long; staminodes present. Achenes brown, ovate, compressed, 4–7 mm long, 2–3.5 mm wide, shortly pubescent or rarely glabrous, smooth, margin slightly thickened, awn to 5 cm long. Flowering Sept.-Jan.; fruiting Dec.-Apr.

Tas. (all regions except MIS); also SA, Qld, NSW, Vic. Widespread throughout Tasmania. Found mainly in wetter montane forests, but also in drier open forests.

5 Clematis microphylla DC., *Syst. Nat.* 1: 147 (1817) *Small-leaved Clematis, Small Leaf Clematis, Old Man's Beard*

Clematis hexapetala subsp. *microphylla* (DC.) Kuntze, *Verh. Bot. Vereins Prov. Brandenburg* 26: 108 (1885).

Illustrations (often as *C. microphylla* var. *microphylla*): Cochrane *et al.*, *Flowers & Plants of Victoria* 77, fig. 210 (1968); Cunningham *et al.*, *Plants of Western New South Wales* 308 (1982); Walsh, *Fl. Victoria* 3: 40, fig. 4l-n (1996); Corrick & Fuhrer, *Wildflowers of Victoria* fig. 678 (2000); Briggs & Makinson, *Fl. New South Wales* 1, rev. edn: 158 (2000); Wilson (Ed.), *Fl. Australia* 2: proceeding p. 278, plate 53, p. 306, fig. 57e-g (2007).

Dioecious, evergreen, woody climber to 5 m in length. Leaves mostly biternate with 9 leaflets; petiole and petiolules often acting as tendrils; leaflets lanceolate-oblong to broad-ovate, 8–47 mm long, 5–18 mm wide, entire or appearing toothed or lobed by incomplete division, usually obtuse, glabrous. Flowers in axillary and terminal dichasial panicles, unisexual. Tepals creamy white, linear-lanceolate, 1.9–2.0 cm long, abaxial surface pubescent, abaxial surface glabrescent. Stamens 2–5.5 mm long; anthers ellipsoidal oblong, 0.4–1 mm long, without appendage; staminodes present. Achenes light brown, compressed-ovoid, 4–5.5 mm long, 2–3.5 mm wide, glabrous or with short sparse hairs, margin corky, awn to 6.5 cm long. Flowering (Aug.) Sept.-Nov.; fruiting Nov.-Feb.

Tas. (BEL, FLI, KIN?°, TNS, TSE); also SA, Qld, NSW, Vic. In Tasmania, the species is mostly confined to the north-east quarter of the island of Tasmania and the Furneaux Group. Reports of the species from King Island require confirmation. The species has been collected from cliffs near Kingston Beach (SW of Hobart) but this requires confirmation. Found in a wide variety of habitats including open forests, heathy woodlands and mallee scrublands. The species can be difficult to distinguish from *C. decipiens* with which it is broadly sympatric across Australia. Research including detailed population studies is required to determine if these taxa are distinct.

6 Clematis decipiens H.Eichler ex Jeanes, *Fl. Australia* 2: 461 (2007)

Illustration: Wilson (Ed.), *Fl. Australia* 2: 306, fig. 57b (2007).

Dioecious, evergreen, woody climber to 5 m in length. Leaves flammuliform, usually with 12–15 leaflets; petioles and petiolules often acting as tendrils; leaflets narrow-ovate to lanceolate, entire or deeply 3-sect, apex minutely mucronate to emarginate, glabrescent, terminal leaflet 12–40 mm long, 1.5–5(–11) mm wide. Flowers in axillary and terminal dichasial panicles, unisexual. Tepals pale green to creamy white, linear-lanceolate, 1.5–2 cm long, abaxial surface pubescent with tomentose margins, adaxial surface glabrous. Stamens 1.5–5 mm long; anthers elliptic to ovate, 0.5–1 mm long, without appendage; staminodes present. Achenes light brown, compressed-ovoid, 4–6 mm long, 2.5–3 mm wide, glabrous or with short, sparse hairs, margin corky, awn to 5.5 cm long. Flowering Aug.-Nov. (Jan.); fruiting Nov.-Jan.

Tas. (FLI, KIN); also NT, SA, Qld, NSW, Vic. Found on King Island, on Three Hummock Island (North West Region), the Furneaux Group and sporadically along the north-eastern coastline of the island of Tasmania, and. Usually found in coastal forests, woodlands and scrub. Few plants have been collected from the Island of Tasmania and these tend to have much wider leaflets than plants from the islands of Bass Strait and approach *C. microphylla* in appearance (see also discussion under that species).

5 * ? BATRACHIUM

Batrachium (DC.) Gray, *Nat. Arr. Brit. Pl.* 2: 270 (1821).

Synonymy: *Ranunculus* section *Batrachium* DC., *Syst. Nat. (Candolle)* 1: 233 (1817); *Ranunculus* subgenus *Batrachium* (DC.) Gray, *Proc. Amer. Acad. Arts* 21: 363 (1886).

Aquatic, annual or perennial herbs; stems weak, branching. Leaves alternate, mostly cauline; lamina submerged and then finely dissected into capillary segments in various planes and/or floating and then lobed, adaxial surface without appendages. Flowers terminal, solitary on ebracteate peduncles, seemingly opposite leaves along stems, bisexual, actinomorphic. Perianth segments not spurred. Sepals 5. Petals usually 5, white (except in 1 non-Tas. species) with a yellow claw (except in 1 non-Tas. species), adaxial surface matt; nectary pit near base of petal. Fruit a globular to pyriform head of achenes; achenes 4–90, glabrous or hairy; beak usually deciduous.

A virtually cosmopolitan, though predominantly Eurasian and African, genus of about 20 species. 1 species in south-eastern Australia (possibly introduced). The genus is often delegated to subgeneric status under *Ranunculus* (see discussion and references under that genus).

Key reference: Eichler & Jeanes (2007).

1 * ? Batrachium trichophyllum (Chaix) Bosch, *Prodr. Fl. Bat.* 1: 5 (1850) *Water Buttercup*

Ranunculus trichophyllus Chaix in D.Villars, *Hist. Pl. Dauphiné* 1: 335 (1786). *Ranunculus aquatilis sensu* J.D.Hooker, *Bot. Antarct. Voy. III. (Fl. Tasman.)* 1: 5 (1855); G.Bentham, *Fl. Austral.* 1: 10 (1863); L.Rodway, *Tasman. Fl.* 2 (1903), *non* L. (1753).

Illustrations: Aston, *Aquatic Plants of Australia* fig. 62 (1973), as *R. trichophyllus*; Hughes & Davis, *Aquatic Plants of Tasmania*, 108, fig. 43 (1989), as *R. trichophyllus*; Walsh, *Fl. Victoria* 3: 60, fig. 12 (1996); Briggs & Makinson,

Fl. New South Wales 1, rev. edn: 159 (2000); Wilson (Ed.), *Fl. Australia* 2: 311, fig. 59l-o (2007).

Aquatic, ± glabrous herb; stems hollow, rooting at the lower nodes. Leaves: petiole 8–40 mm long, basal sheath oblong to ovate, adnate for about two-thirds of length; lamina globose to obconical, 10–45 mm long, all repeatedly tri- or di-chotomously divided into rigid or flaccid capillary segments, which spread in 3 dimensions. Peduncles 1–5 cm long, longer than leaves, placing the flowers above the water surface, recurved at base in fruit. Flowers c. 8 mm diam. Sepals greenish, blue-tipped, narrow-ovate, 2.5–3.5 mm long, spreading, deciduous. Petals white with a yellow claw, ovate to obovate, 3.5–5.5 mm long; nectary scale lunate. Receptacle globular, hairy. Stamens 9–15. Carpels 16–33, hairy when immature, sometimes glabrous when mature. Achenes ovoid to obovoid, 1.5–2 mm long, usually sparsely hairy, pericarp on lateral walls with regular transverse ridges 0.05–0.1 mm apart; beak subterminal, very short. Flowering & fruiting Oct.-Feb. (Jun.).

Tas. (BEL, TNM, TNS, TSE, TSR); also SA, NSW, Vic.; also New Zealand, Eurasia, North America. Apparently uncommon north from the Hobart area through central Tasmania to the Tamar River. Found in still or slow moving fresh water in streams, rivers, lakes, lagoons, ponds and farm dams. It is unknown whether this species is an Australian native or an introduced species. Eichler and Jeanes (2007) noted that Australian material of this species more closely matches European material than it does material from New Zealand, suggesting that the species in Australia is possibly naturalized. They also noted that there is an abundance of 19th century Australian collections and that the species is highly variable in Australia and found in remote and relatively pristine areas, which conversely may mean that the species is native.

6 RANUNCULUS

Ranunculus L., *Sp. Pl.* 1: 548 (1753).

Annual or perennial, terrestrial or aquatic herbs; stems erect, rhizomatous or stoloniferous. Leaves spiral, cauline and/or in a basal rosette; lamina simple or compound, adaxial surface without appendages. Inflorescence terminal, cymose or flowers solitary. Flowers actinomorphic, bisexual. Perianth segments lacking spurs. Sepals usually 5, rarely fewer. Petals 5–15, rarely fewer, yellow or white, often glossy, usually conspicuous, each with 1 or more nectar-secreting pits on the adaxial surface. Stamens numerous, rarely 5 or fewer. Carpels free, usually numerous, with 1 basal ovule. Fruit a head of achenes; achenes glabrous or with hairs; style-beak usually persistent, glabrous.

A cosmopolitan genus of more than 500 species, the majority of which are found in extratropical areas of the Northern Hemisphere. 52 species (38 endemic, 10 introduced) occur in Australia; 27 (8 endemic, 7 introduced) occur in Tasmania. Fresh plants of many species are poisonous to cattle.

Menadue and Crowden (1989) discuss variation and relationships of all known species of *Ranunculus* on the island of Tasmania and illustrate leaves, petals, nectaries of petals, and achenes for all species except *R. diminutus*. The occurrence of hybrids between related species of *Ranunculus* is not uncommon. Putative hybrid swarms occur naturally where the parental species co-occur, especially when the ground has been disturbed or local ecological processes disrupted (see Eichler & Walsh 2007). Chromosome numbers have been recorded for many species of *Ranunculus* (see Eichler & Walsh (2007) & references cited therein) with some species, eg. *R. amphitrichus*, showing significant chromosome variation.

The key presented here is based, in part, on the keys to the species of *Ranunculus* for Tasmania by Menadue and Crowden (1989) and for Australia by Eichler and Walsh (2007). Menadue and Crowden did not include *R. crassipes* (Macquarie Is.) and *R. diminutus* (Furneaux Group) in the their key. When collecting *Ranunculus* the critical items that need to be collected are a number of entire plants per population (including stolons or rhizomes) and if possible both flowering and fruiting material. Key observations that should be included in field notes are: habitat (aquatic or terrestrial), presence or absence of stolons or rhizomes, leaf colour and texture, and petal colour (white, bright yellow, pale yellow, yellow-green etc).

A review of the various infrageneric classifications of *Ranunculus* is provided by Hörandl *et al.* (2005). Hörandl *et al.* (2005) and Paun *et al.* (2005) present results that show *Batrachium* is nested well within *Ranunculus* though they disagree on the placement of genera such as *Myosurus*. For now *Batrachium* and *Myosurus* are retained as distinct from *Ranunculus*.

Key references: Melville (1955, 1956); Briggs (1960, 1962); Menadue & Crowden (1988, 1989, 1990); Eichler & Walsh (2007).

1.	Leaves cauline, trichotomously dividing into capillary segments in several planes; aquatic	**Batrachium trichophyllum** +
1:	Leaves in a basal rosette and/or cauline, entire, ternate, palmatifid, palmatisect, or pinnate, segments in one plane; aquatic or terrestrial	2
2.	Plants connected by ramifying, long rhizomes or stolons	3
2:	Plants tufted with fibrous roots or with a short creeping rootstock, rarely with a short, non-ramifying, robust, arching stolon	11
3.	Leaf rosettes connected by stout (above-ground) stolons; petals 6–17 mm long	**19 R. repens**
3:	Leaf rosettes connected by slender (underground) rhizomes; petals 4–11 mm long	4
4.	Sepals sparsely to densely hairy on the abaxial surface; petals 4–11 mm long with nectary near base	5
4:	Sepals glabrous, rarely sparsely hairy (*R. collicola*) and then petals < 4 mm long and nectary near or just below middle	6
5.	Leaves matt, leathery, teeth apices acute; segments or leaflets or, especially lateral ones, usually dissected to midway or below; fruiting pedicels erect; nectary of petal ± 0.5–1 mm long	**7 R. glabrifolius**
5:	Leaves glossy, ± fleshy, teeth apices blunt; segments or leaflets usually shallowly toothed; fruiting pedicels often recurved; nectary of petal 0.2–0.5 mm long	**8 R. collinus**
6.	Receptacle hispid in staminal zone	7
6:	Receptacle glabrous in staminal zone	8
7.	Leaves to 12 mm across, trifoliolate; leaflets ± fleshy; nectary near petal base	**4 R. diminutus**
7:	Leaves to 90 mm across, often so deeply lobed as to appear palmatifid or palmatisect; nectary usually at about 1/3 petal length from base	**5 R. amphitrichus**
8.	Sepals and petals c. equal (Macquarie Is.)	**6 R. crassipes**
8:	Sepals shorter than petals (areas other than Macquarie Is.)	9
9.	Leaves obviously hairy	**3 R. prasinus**
9:	Leaves glabrous, glabrescent or with fine scattered hairs	10
10.	Petals pale greenish-yellow, 2.5–7 mm long; flowers 1–2; lateral leaflets/lobes elliptic to lanceolate, 1–8 mm long, 1–4 mm wide, usually 2-lobed, at least some of the more proximal lobes > 1 mm long (coastal areas of the south-west)	**1 R. acaulis**
10:	Petals golden-yellow, 3–4 mm long; flowers 1–5; lateral leaflets/lobes narrowly elliptic, to 3 mm long, to 1 mm wide, usually entire, rarely lobed and then the more proximal lobes < 1 mm long (central plateau)	**2 R. collicola**

11.	Basal leaves entire, not divided or lobed	12
11:	Basal leaves divided or lobed	14
12.	Leaves cuneate, 3-dentate, lamina truncate at the base	**9 R. triplodontus**
12:	Leaves linear, linear-elliptic, elliptic or lanceolate, tapering into a petiole	13
13.	Lamina narrow linear, ± terete, rarely trifurcate, 0.5–1.25 mm wide	**17 R. setaceus**
13:	Lamina linear-elliptic or lanceolate, 2–15 mm wide	**27 R. flammula**
14.	Some leaves trilobed; lateral lobes to 0.5 mm wide	**17 R. setaceus**
14:	Leaves trilobed, trifoliolate or pinnate; most lateral lobes > 1 mm wide	15
15.	Leaves in a basal rosette, rarely with small cauline leaves or bracts on flowering stems	16
15:	Leaves in a basal rosette as well as with numerous smaller cauline leaves	24
16.	Leaves with narrow, linear segments, segments 1–2 mm wide; 3 or more nectaries at base of petals	**18 R. gunnianus**
16:	Leaves with broad segments, segments 1.5–25 mm wide; 1 nectary between base and midway of petals	17
17.	Flowers pale yellow, inconspicuous on scapes shorter than the leaves	18
17.	Flowers golden-yellow, conspicuous on scapes as long as or longer than the leaves	20
18.	Leaves pinnate, 3–5(7)-foliolate, hirsute; nectary a crescentic bracket, lacking a lobe	**12 R. decurvus**
18:	Leaves 3(5)-foliolate or -lobed, or simple, glabrous or hirsute; nectary covered by a small fleshy lobe	19
19.	Leaves trilobed or trifoliolate, lateral leaflets usually not distant from terminal, abaxial surface glabrous or hairy; petiole sparsely to densely pilose, rarely glabrescent; petals 0–6	**9 R. triplodontus**
19:	Leaves 3–5-foliolate, lateral leaflets distant from terminal leaflet, glabrous or with long, sparse ± appressed hairs near margins; petiole glabrous or with sparsely pilose; petals 5-6	**10 R. jugosus**
20.	Sepals reflexed	**14 R. scapiger**
20:	Sepals spreading or appressed to petals	21
21.	Hairs on stems and leaves closely appressed; leaflets attached asymmetrically	**16 R. pascuinus**
21:	Hairs on leaves spreading, on stems spreading or appressed; leaflets attached symmetrically	22
22.	Nectary one-third from base of petal, naked, forming a crescentic pit; often with a short, stout rhizome	**11 R. nanus**
22:	Nectary near petal-base, covered by a petaloid or small fleshy lobe or nectary a bracket; without a rhizome	23

23.	Leaves pinnate; nectary lobe rounded, or sub-acute triangular	**13 R. pimpinellifolius**
23:	Leaves ternate or ternately lobed; nectary lobe truncate, free to half-attached	**15 R. lappaceus**
24.	Achenes glabrous and smooth	25
24:	Achenes with hairs, spines or tubercles	28
25.	Achenes in a oblong head; nectary of petal without lobe	**R. sceleratus ++**
25:	Achenes in a globular head; nectary of petal with lobe 0.7–2.8 mm long	26
26.	Receptacle glabrous; basal leaves with lamina ± orbicular to reniform in outline, 1–23 cm diam., ± palmately 5–7-partite, each lobe again variously divided	**20 R. acris**
26.	Receptacle glabrous in stamen zone, hispid above; basal leaves with lamina ovate to deltate in outline, 0.6–5.5 cm diam., trifoliolate, or palmately trilobed	27
27.	Sepals reflexed; achenes with marginal rib narrow, sometimes with a line of subappressed hairs	**14 R. scapiger**
27:	Sepals spreading or appressed to petals; achenes with margin narrowly ridged	**15 R. lappaceus**
28:	Flowers > 8 mm diam.; petals golden-yellow; sepals reflexed	29
28.	Flowers very small, < 7 mm diam.; petals pale-yellow or lemon; sepals erect	31
29.	Leaves palmatifid; sepals ± glabrous, achenes with smooth margins and long spiny tubercles	**23 R. muricatus**
29:	Leaves trifoliolate or ternate; sepals pubescent, achenes with short, blunt tubercles	30
30.	Flower 12–25 mm diam.; stamens 10–18; achenes with small obtuse tubercles round margin	**21 R. sardous**
30:	Flower 8–12 mm diam.; stamens 35–50; achenes with flattened brown face and short, blunt conical tubercles	**22 R. trilobus**
31.	Nectary a prominent petaloid lobe wider than petal; achenes with very long prominent spines	**R. arvensis ++**
31:	Nectary a small pocket or bracket, significantly narrower than petal; achenes with tubercles or bristles	32
32.	Flowers 4–7 mm diam.; achenes covered with conical tubercles only	**24 R. parviflorus**
32:	Flowers 2–3 mm diam.; achenes covered with tubercles ending in a stiff bristle, or bristles only	33
33.	Achenes with a few conical tubercles ending in recurved bristles over lateral faces but not margins	**25 R. sessiliflorus**
33:	Achenes with numerous bristles over lateral faces and margins	**26 R. pumilio**

+ *Batrachium trichophyllum* is included here in this key as it has often misidentified as a species of *Ranunculus*. An account of the genus is given above.

++ *Ranunculus sceleratus* L. subsp. *sceleratus* (Celery Buttercup), a native of Europe, northern Africa, western and central Asia, was collected in Hobart in the late 1800's or early 1900's, and has not been collected since.

Ranunculus arvensis L. (Corn Buttercup, Corn Crowfoot), a native of southern Europe, south-western Asia and northern Africa, was collected at Cressy in 1974 and appears not to have persisted. It has been recorded as a weed in South Australia and New South Wales where it also apparently has not persisted.

1 Ranunculus acaulis Banks & Sol. ex DC., *Syst. Nat.* 1: 270 (1817)

Illustrations: Hooker, *Bot. Antarct. Voy. I. (Fl. Antarct.)* 1: t. 2 (1844); Menadue & Crowden, *Pap. Proc. Roy. Soc. Tasmania* 123: 88, fig 1o, 92, fig. 3o, 94, fig. 5b (1989).

Rhizomatous, terrestrial perennial, often mat forming, glabrous or sparsely pilose. Leaves in a basal rosette; petioles (3–)12–50(–70) mm long; lamina trifoliolate or deeply 3-lobed, 3–9.5 mm long, (3–)5–15 mm wide, somewhat fleshy; lobes and leaflets elliptic to lanceolate, apex blunt; terminal lobe or leaflet 3–9.5 mm long, 1.5–5 mm wide, entire or rarely lobed; lateral lobes 2–7 mm long, 1–4 mm wide, entire or unequally divided. Flowering stems 1–2-flowered, erect, 5–45 mm long, subequal to leaves; cauline leaves usually absent. Sepals 3–5, spreading, broad-obovate, membranous, 1.5–2.5 mm long, glabrous, persistent at anthesis. Petals 5–8, pale greenish-yellow, narrowly oblong or spatulate, 2.5–7 mm long; single nectary almost in the middle of petal, c. 0.5 mm long, lobe shallowly emarginate to rounded, free for $^1/_4$–$^1/_2$ its length. Receptacle glabrous. Stamens c. 10–15. Carpels c. 6–12. Achenes in a globular head, ± semiorbicular to somewhat reniform, 1.5–2 mm long, virtually smooth; beak to 1 mm long, straight or ± recurved. Flowering (Aug.) Nov.-Jan.; fruiting Dec.-Jan.

Tas. (TSR, TWE); also New Zealand (including Auckland & Chatham Islands), Chile, Falkland Islands. Occurs along coasts from the north-western to the southern extremities of Tasmania. Usually found in seepage areas on the seaward side of dunes. The unvouchered record from Lake Pedder before its flooding (Curtis & Morris 1975) refers probably to *R. collicola* (Eichler & Walsh 2007).

2 Ranunculus collicola Menadue, *Brunonia* 8: 373 (1986) [as *R. collicolus*]

Illustrations (all as *R. collicolus*): Menadue & Crowden, *Brunonia* 8: 374, fig. 1, 379, fig. 5 (1986); Kirkpatrick *et al.*, *City Parks & Cemeteries: Tasmania's Remnant Grasslands & Grassy Woodlands* 101, pl. 11-3 (1988); Menadue & Crowden, *Pap. Proc. Roy. Soc. Tasmania* 123: 88, fig 1d, 92, fig. 3q, 94, fig. 5o (1989); Kirkpatrick, *Alpine Tasmania* 92, fig. 40c (1997).

Rhizomatous, basically terrestrial though often submerged perennial, glabrous, or young leaves sparsely pilose. Leaves mostly in a basal rosette, somewhat fleshy. Basal leaves with petioles 8–45 mm long; lamina 3-foliolate, leaflets ± elliptic, apex blunt; terminal leaflets 3–6 mm long, 0.5–1.5 mm wide; lateral leaflets 1–3 mm long, 0.4–1 mm wide. Flowering stems 1–5-flowered, 5–35 mm long, smaller to slightly longer than leaves, erect; cauline leaves occasionally present, sessile and linear. Sepals 5, spreading, margins hyaline, broad-elliptic or broad-ovate, 1.2–2.7 mm long, glabrous or rarely sparsely hispid, persistent at anthesis. Petals 6–9, golden-yellow, ± narrow-elliptic, 3–4 mm long; single nectary at or just below middle of petal, a shallow pocket c. 0.5 mm long, apex ± truncate or broadly emarginate. Receptacle glabrous. Stamens c. 10–14. Carpels 5–10. Achenes in a globular head, flattened ellipsoid, c. 2 mm long, smooth; beak to c. 0.3 mm long, erect, with recurved tip. Flowering & fruiting Nov.-Mar.

Tas. (TCH; TSR?°); endemic. Restricted to the Central Highlands to the shores of First Lagoon, Second Lagoon and Lake Sorrell: c. 1130 m alt. It possibly also occurred on the shores of Lake Pedder before it was flooded as there is an unvouchered record of *R. acaulis* from there (Curtis & Morris 1975; see above). Found growing in fine silt along the shores of lakes.

3 Ranunculus prasinus Menadue, *Brunonia* 8: 375 (1986)

Illustrations: Menadue & Crowden, *Brunonia* 8: 376, fig. 2, 379, fig. 6 (1986); Kirkpatrick *et al.*, *City Parks & Cemeteries: Tasmania's Remnant Grasslands & Grassy Woodlands* 101, pl. 11-2 (1988); Menadue & Crowden, *Pap. Proc. Roy. Soc. Tasmania* 123: 88, fig 1n, 92, fig. 3p, 94, fig. 5n (1989); Gilfedder *et al.*, *The Nature of the Midlands* 87 (2003); Wilson (Ed.), *Fl. Australia* 2: 323, fig. 60c (2007).

Rhizomatous, basically terrestrial though often submerged perennial, pilose to sparsely villous. Leaves in a basal rosette; petioles 15–35(–170) mm long; lamina deeply trifoliolate, 6–10(–22) mm long, 7–12(–26) mm wide; leaflets simple and entire to tridentate or 3-lobed, ± elliptic to oblanceolate in outline, apex acute, hairy mainly about the margin; terminal leaflets 3–22 mm long, 1–3 mm wide; lateral leaflets 2–15 mm long, 1–3 mm wide. Flowering stems 1(2)-flowered, 2.5–5(–9) cm long, taller than leaves, erect; cauline leaves absent. Sepals 5, erect, pale yellow, elliptic to ovate, 3.5–4 mm long, glabrous, persistent at anthesis. Petals 5–8, golden-yellow, elliptic to obovate, 7–8 mm long; single nectary ± 1/4 petal-length above base, pocket-like, 0.1–0.3 mm long, lobe fleshy, rounded, free for up to 1/2 its length. Receptacle glabrous in stamen-zone, a few hairs present in achene-zone. Stamens 20–32. Carpels 10–14. Achenes in a globular head, semiorbicular, 1.8–2 mm long, smooth with 2–3 lateral ridges; beak 0.6–0.8 mm long, recurved. Flowering Sept.-Jan.; fruit collected Nov.-Dec.

Tas. (TNM); endemic. Confined to sedgy edges of small lagoons near Tunbridge. Plants, when submerged, become etiolated as represented by the measurements in brackets in the description.

4 Ranunculus diminutus B.G.Briggs, *Telopea* 5(4): 583–587 (1994)

Illustrations: Briggs, *op. cit.*, 584, fig. 1; Walsh, *Fl. Victoria* 3: 59, fig. 11c (1996); Briggs & Makinson, *Fl. New South Wales* 1, rev. edn: 161 (2000), as *Ranunculus* sp. B.

Rhizomatous, basically terrestrial perennial. Leaves in basal rosettes, glabrous or abaxial surface sparsely pilose; petioles 2–5(–12 outside Tas.) cm long; lamina trifoliolate, ovate in outline, 6–12 mm long, (1.75–)4–15 mm wide; leaflets or segments oblong to narrowly elliptic, entire or with 2 or 3 lobes or teeth; terminal leaflets 6–12 mm long, 1–1.5 mm wide; lateral leaflets 5–7 mm long, 1.5–3.5 mm wide. Flowering stems 1(–3)-flowered, 1–4(–10 outside Tas.) cm long, subequal to leaves, erect; cauline leaves absent. Sepals 5–8, spreading, ovate to broadly elliptic, 2–5 mm long, glabrous or sparsely pilose (not in Tas.), persistent at anthesis. Petals 6, bright yellow, oblong to obovate, 3–6.5 mm long; single nectary near petal base, pocket-like, lobe c. 0.5 mm long, apex shallowly emarginate, truncate, or shortly rounded. Receptacle sparsely hispid. Stamens 15–30. Carpels 6–30. Achenes in a globular head, flattened-obovoid, 1–1.8 mm long, the lateral faces smooth or finely wrinkled or obscurely ridged; beak slender, erect, c. 1 mm long. Flowering & fruiting material collected in October; Flowering & fruiting Sept.–Feb. (outside Tas.).

Tas. (FLI°); also SA, NSW, Vic. In Tasmania the species is known from a single collection made in 1975 which came from North Lagoon, Badger Island, Furneaux Group. In other Australian states the species is found on seasonally inundated, often subsaline, clay soils or muds.

5 Ranunculus amphitrichus Colenso, *Trans. & Proc. New Zealand Inst.* 17: 237 (1885) [as *R. amphitricha*]
Small River Buttercup

Ranunculus rivularis Banks & Sol. ex DC., *Syst. Nat.* 1: 270 (1817), *nom. illeg.*, *non* Sprengel (1807), see Garnock-Jones, *Taxon* 35: 126 (1986), Garnock-Jones, *New Zealand J. Bot.* 28: 115-116 (1990). *Ranunculus rivularis* var. *subfluitans* Benth., *Fl. Austral.* 1: 14 (1863), *nom. inval*. *Ranunculus rivularis* var. *inundatus* (R.Br. ex DC.) Rodway, *Tasman. Fl.* 3 (1903). *Ranunculus inundatus sensu* J.D.Hooker, *Bot. Antarct. Voy. III. (Fl. Tasman.)* 1: 8 (1855); W.M.Curtis & D.I.Morris, *The Student's Flora of Tasmania* 1, 2nd edn: 17 (1975), *non* R.Br. ex DC. (1817).

Illustrations (often as *R. rivularis*): Melville, *Kew Bull*. 10: 214, fig. 17 (1955); Aston, *Aquatic Plants of Australia* figs 60a & g, 61d & f (1973); Hughes & Davis, *Aquatic Plants of Tasmania*, 110, fig. 44 (1989); Walsh, *Fl. Victoria* 3: 59, fig. 11d (1996); Briggs & Makinson, *Fl. New South Wales* 1, rev. edn: 164 (2000); Gilfedder *et al.*, *The Nature of the Midlands* 87 (2003); Wilson (Ed.), *Fl. Australia* 2: 311, fig. 59d-g (2007).

Rhizomatous or stoloniferous, usually partially or entirely submerged, highly variable perennial. Leaves in a basal rosette and sometimes cauline, glabrous. Basal leaves with petioles 1–16(–24) cm long; lamina ± circular in outline, trifoliolate to palmatisect, 5–50(–90) mm diam.; segments linear-oblong when deeply submerged, cuneate to obovate when aerial and then 3-toothed or 3–many-lobed, apex acute. Flowering stems 1–4-flowered, 1–16 cm long, longer than basal leaves, erect to spreading; cauline leaves similar to basal leaves, sometimes smaller

or absent. Sepals 4 or 5, pale creamish-yellow, spreading though sometimes later ± reflexed, broadly ovate, 2–3 mm long, glabrous, persistent at anthesis. Petals 4–9, pale yellow-green or dull yellow, oblong to narrowly obovate, 2–6 mm long; single nectary a tumid semilunar pocket or bracket at about 1/3 petal length from base, rarely lower. Receptacle hispid in stamen-zone, glabrous or with few hairs in achene-zone. Stamens c. 10–18. Carpels c. 6–15. Achenes in a globular head, sublenticular, 1.5–2 mm long, somewhat swollen, smooth or slightly wrinkled or warted; beak slender, straight or slightly curved, almost as long as achene-body. Flowering Oct.-Feb. (Apr.); fruiting Nov.-Mar.

Tas. (all regions except MIS); also WA, SA, NSW, Vic., New Zealand. Found in swamps, ponds, dams, along rivulets etc., sometimes permanently submerged, mostly in shallow water though occasionally found in deep clear water (from depths of 8 m outside Tas.; Eichler & Walsh 2007). Throughout its range the species displays a high level of morphological variation and ploidy levels (see Eichler & Walsh 2007). In Tasmania there are diminutive plants on sand dunes in the West Coast and South West Regions. There is also a robust form from Deal Island (Furneaux Group) with stout stolons.

6 Ranunculus crassipes Hook.f., *Bot. Antarct. Voy. I. (Fl. Antarct.)* 1: 224, pl 81 (1845)

Ranunculus biternatus sensu T.F.Cheeseman, *Vasc. Fl. Macquarie Is.* 16 (1919), *non.* Sm. (1814).

Illustrations: George *et al.* (Eds), *Fl. Australia* 50: xxi, fig. 10; 161, fig. 39f-i (1993).

Rhizomatous, terrestrial, perennial, glabrous herb; stolons sometimes quite stout. Leaves in basal rosette; petiole 0.3–19 cm long; lamina ternate or ternatifid, ± orbicular in outline, 1.5–23 mm long, 3–20(–35) mm wide (larger leaves usually found in shade); lobes cuneate, acutely 2–5(–10)-toothed; terminal lobes 3–23 mm long, 2–18 mm wide; lateral lobes 2.5–18 mm long, 1.5–15 mm wide. Flowers solitary; scape stout, 4–10(–70) mm long, shorter or c. as long as leaves, erect; cauline leaves absent. Sepals 5, reflexed, elliptic, 3.5–6 mm long, abaxial surface glabrous, persistent at anthesis. Petals 5–7, pale yellow-green, oblanceolate to obovate-spatulate, 3–6 mm long; single nectary c. 1/3 petal-length above base, a lobeless semilunar pit or superficial. Receptacle glabrous between achenes. Stamens many. Carpels 12–20, glabrous. Achenes in a globular head, smooth, turgid, 1.5–1.7 mm long excluding beak; beak c. straight, 0.5–1.25 mm long. Flowering & fruiting Sep.-Mar.

Tas. (MIS); also Heard Is. (Australian Territory), Kerguelen Is. (French Territory). Apparently widespread and abundant on Macquarie Island (Orchard 1993) though majority of collections originate from the northern third of the island and then in coastal and near coastal areas. Found in boggy areas, amongst grasses and bryophytes, as well as in featherbed herb fields, along creeks and on scree. This species is sometimes included under *R. biternatus* Sm., a very variable and southern circumpolar species, but recent treatments (eg. Orchard 1993; Eichler & Walsh 2007) indicate it is distinct.

7 Ranunculus glabrifolius Hook., *J. Bot. (Hooker)* 1: 243 (1834)

Ranunculus glabrifolius var. *gracilior* Hook., *Comp. Bot. Mag.* 1: 273 (1836). *Ranunculus incisus* Hook.f., *Bot. Antarct. Voy. II. (Fl. Nov.-Zel.)* 1: 10, t. 4 (1852). *Ranunculus rivularis* var. *major* Benth., *Fl. Austral.* 1: 14 (1863).

Illustrations: Melville, *Kew Bull.* 10: 213, fig. 16.4–5, 217, fig. 18 (1955); Aston, *Aquatic Plants of Australia* figs 60b, f (1973); Walsh, *Fl. Victoria* 3: 59, fig. 11f (1996); Kirkpatrick, *Alpine Tasmania* 94, fig. 41d (1997); Gilfedder *et al.*, *The Nature of the Midlands* 86 (2003).

Rhizomatous, terrestrial perennials. Leaves mostly in a basal rosette, glabrous or with few scattered hairs. Basal leaves with petiole 1–3(–6) cm long; lamina trifoliolate or deeply palmatisect, ± orbicular in outline, 1–7 cm diam.; leaflets obovate-cuneate to narrowly elliptic or rarely linear, usually deeply lobed, apex acute; terminal leaflets 6–40 mm long, 5–15 mm wide; lateral leaflets 5–40 mm long, 3–30 mm wide; ultimate segments mostly 1–3 mm wide. Flowering stems 1–3-flowered, to c. 25 cm long, longer than leaves, erect, usually appressed hirsute; cauline leaves linear, linear-lanceolate or 3-lobed. Sepals 5, pale yellow, spreading, ovate, 4–10 mm long,

abaxial surface appressed-hairy, persistent at anthesis. Petals 5–15, oblanceolate to obovate, 5–11 mm long, golden-yellow; single nectary near petal-base, pocket like, ± 0.5–1 mm long, apex of lobe shallowly emarginate or sinuate, often asymmetric, margins excurrent. Receptacle glabrous. Stamens 12–50. Carpels 9–15. Achenes in a globose head, inflated, subglobular or broadly obovate, 2.7–4 mm long, the lateral faces with 3–4 broad, oblique ridges; beak erect or reflexed, c. 1.5 mm long. Flowering Oct.-Feb.; fruiting Nov.-Feb.

Tas. (BEL, FLI, TCH, TNM, TSE, TSR); also SA, NSW, Vic., New Zealand. Found mainly in the Central Highlands though scattered collections have been made elsewhere in the eastern half of the island of Tasmania. It is usually found in shallow water, wet grassland, or moist clearings in forest and woodland from near sea level to montane areas. Smaller leaved plants of this species can be difficult to distinguish from *R. collinus* and work is required to satisfactorily delimit these taxa.

8 Ranunculus collinus R.Br. ex DC., *Syst. Nat.* 1: 271 (1817)

Ranunculus inconspicuus Hook.f., *Bot. Antarct. Voy. III. (Fl. Tasman.)* 1: 9, t. 2B (1855); *R. rivularis* var. *inconspicuus* (Hook.f.) Benth., *Fl. Austral.* 1: 14 (1863). *Ranunculus parviflorus* var. *australis* Benth., *Fl. Austral.* 1: 14 (1863), *p.p.*

Illustrations: Aston, *Aquatic Plants of Australia* fig. 60e (1973); Walsh, *Fl. Victoria* 3: 59, fig. 11g (1996); Kirkpatrick, *Alpine Tasmania* 92, fig. 40e (1997); Briggs & Makinson, *Fl. New South Wales* 1, rev. edn: 165 (2000); Wilson (Ed.), *Fl. Australia* 2: 311, fig. 59a-c (2007).

Rhizomatous, basically terrestrial perennial, sometimes mat-forming. Leaves in a basal rosettes; petioles 1–3.5 cm long, with appressed or spreading hairs; lamina trifoliolate, 5–15(–65 outside Tas.) mm long and wide; segments cuneate to broadly oblanceolate, usually 3-toothed with slightly thickened or blunt apices, sometimes more deeply cleft and more abundantly toothed, dark-green, adaxial surface ± shining, abaxial surface paler, both surfaces glabrous to moderately appressed-hairy; terminal segments 3–10(–20) mm long, 2–8 mm wide; lateral segments 2.5–11(–16) mm long, 1.5–8 mm wide. Flowering stems 1–2-flowered, 1–4.5(–17) cm long, usually shortly exceeding leaves, erect at anthesis, recurving in fruit, spreading- to appressed-hirsute; cauline leaves absent. Sepals number 3–5, pale yellow, spreading, broadly elliptic to obovate, ± 3 mm long, abaxial surface sparsely to densely pilose, persistent at anthesis. Petals 5–11, golden-yellow, oblong to obovate, 4–10 mm long; single nectary near petal-base, shallowly pocket-like, 0.2–0.5 mm long, apex of lobe shallowly emarginate or slightly rounded. Receptacle glabrescent in stamen zone, hispid above or glabrous throughout. Stamens 25–40. Carpels 8–20. Achenes in a globose head, broadly ellipsoid, 2–2.5 mm long, lateral faces with 2–4 coarse oblique ridges or boldly reticulate; beak recurved, 0.5–1 mm long. Flowering Oct.-Mar.; fruiting Nov.-Mar.

Tas. (BEL, TCH, TSE, TSR); also NSW, Vic. Found mainly at altitudes above 500 m alt. in bogs, wet grasslands, soaks and seepage areas. This species can be difficult to distinguish from *R. glabrifolius* as the distinction between the teeth apices (see key) is not clear cut.

9 Ranunculus triplodontus Melville, *Kew Bull.* 10: 204 (1955)

Ranunculus cuneatus Hook., *J. Bot. (Hooker)* 1: 242 (1834), *nom. illeg., non* Sommerf. (1833). *Ranunculus lappaceus* var. *subsericeus sensu* L.Rodway, *Tasman. Fl.* 3 (1903), *auct. non* Benth. (1863), *p.p.*

Illustrations: Melville, *op. cit.*, 200, fig. 5.8–5.10, 205, fig. 10; Stones & Curtis, *The Endemic Flora of Tasmania* 6: t. 135, No. 222 (1978); Menadue & Crowden, *Pap. Proc. Roy. Soc. Tasmania* 123: 88, fig 1m; 92, fig. 3h; 94, fig. 5q (1989).

Tufted, terrestrial perennial, rarely developing ± erect stolons. Leaves basal and cauline; abaxial surface glabrous to hirsute, adaxial surface glabrous or nearly so; petioles 1–12 cm long, hirsute near base; the lower leaves usually simple, oblong-cuneate or broadly elliptic with 3–7 teeth, (2–)6–30 mm long and wide; the upper leaves broadly ovate and deeply 3-lobed, or 3-foliolate with coarsely toothed leaflets; terminal leaflets 5–21 mm long, 4–12 mm wide, sometimes with a petiolule to 10 mm long; lateral leaflets 6–23 mm long, 4–7 mm wide. Flowering

stems 1–3-flowered, stout, (0.5–)1–9 cm long, usually shorter than basal leaves, spreading or recurved, ± hirsute; pedicels elongating and recurving in fruit. Sepals 5, pale cream with green and/or red tinge, spreading, broadly elliptic, 1–5 mm long, ± glabrous, persistent at anthesis. Petals 0–6, pale-yellow, often golden at apex, oblanceolate to obovate, 2.5–5.5(–8) mm long; single nectary c. 1/3 petal-length above base, crescentic or a short (c. 0.3 mm), fleshy, obtuse lobe developed. Receptacle ± hirsute. Stamens 8–20. Carpels 7–16. Achenes in a globular head, sublenticular, shortly stipitate, ± compressed, 1.5–2.5 mm long, minutely dimpled, margins not prominent; beak recurved or recoiled at apex, 0.4–0.8 mm long. Flowering & fruiting Nov.-Feb.

Tas. (TCH, TSE, TSR, TWE); endemic. Widespread in the Central Highlands with outlying populations on Mount Field and Mt Anne to the south, and the Parramores Tier area to the east. Found in montane and subalpine herb fields, grasslands, creeks, swamps, lake edges and bogs; c. 550–1200 m alt. A very variable species that, for specimens with ternate leaves, can be difficult to distinguish from *R. jugosus* with which it is sometimes found. Both of these species often develop a robust above ground arching rhizome.

10 Ranunculus jugosus Menadue, *Brunonia* 8: 377 (1986)

Illustrations: Menadue & Crowden, *Brunonia* 8: 378, fig. 3; 379, fig. 7 (1986); Menadue & Crowden, *Pap. Proc. Roy. Soc. Tasmania* 123: 88, fig 1p; 92, fig. 3g; 94, fig. 5p (1989); Kirkpatrick, *Alpine Tasmania* 92, fig. 40d (1997).

Tufted, basically terrestrial though sometimes submerged perennial, some larger plants developing above ground, arching to erect stolons. Leaves in a basal rosette; petioles 0.7–16 cm long, ± glabrous; lamina 3(5)-foliolate, 9–50 mm long, 12–45 mm wide, glabrous or with long, sparse ± appressed hairs; terminal leaflet obovate, 3–20 mm long, 3–11 mm wide, trifid, rarely entire and then narrowly ovate or elliptic, petiolule 2–17 mm long; lateral leaflets remote, narrowly elliptic, 4–17 mm long, 1.5–7 mm wide, entire to tridentate, sessile or almost so. Flowers solitary; flowering stems almost absent to 5.5 cm long, usually shorter than leaves though sometimes exceeding leaves in fruit, erect, sparsely hirsute; sometimes appearing to have 2 cauline leaves; sometimes flowering under water. Sepals 5, red tinged near apex, spreading, ± ovate, 2.5–4 mm long, glabrous or abaxial surface with a few long scattered hairs, persistent at anthesis. Petals usually 6, pale yellow, oblong to obovate, 3–5 mm long; single nectary near petal base, bracket-like with a minute, fleshy, triangular lobe. Receptacle sparsely hirsute throughout. Stamens 11–16. Carpels 8–14. Achenes in a globular head, ± ovate, sublenticular, 2.3–2.6 mm long, minutely punctate; beak c. 0.4 mm long, recurved. Flowering Oct.-Mar.; fruiting Nov.-Mar.

Tas. (TCH); endemic. Restricted to the Lake Augusta–Walls of Jerusalem area, Central Plateau, at c. 960–1250 m alt. Found in flood prone areas in river silt, soak areas, amongst boulders and in shallow pools. The species can be difficult to distinguish from *R. triplodontus* (see above).

11 Ranunculus nanus Hook., *J. Bot. (Hooker)* 1(3): 242 (1834)

Ranunculus lappaceus var. *nanus* (Hook.) Benth., *Fl. Austral.* 1: 13 (1863); *R. rivularis* var. *nanus* (Hook.) Rodway, *Tasman. Fl.* 2 (1903).

Illustrations: Melville, *Kew Bull*. 10: 204, fig. 9 (1955); Stones & Curtis, *The Endemic Flora of Tasmania* 4: t. 80, No. 133 (1973); Menadue & Crowden, *Pap. Proc. Roy. Soc. Tasmania* 123: 88, fig 1l; 92, fig. 3d; 94, fig. 5d (1989); Kirkpatrick, *Alpine Tasmania* 94, fig. 41c (1997).

Tufted or shortly rhizomatous, terrestrial perennial. Leaves in basal rosettes; petioles 3–120 mm long; lamina ovate to deltate, (3–)6–35 mm long, 3–25 mm wide, pinnately 3–5-pinnatisect, or with 5–7 leaflets; basal lobes or leaflets elliptic to lanceolate, entire, or ± obovate and 3-dentate, ± glabrous to hirsute; terminal leaflets 4–20 mm long, 2–16 mm wide; lateral leaflets 3–13 mm long, 7–25 mm wide. Flowering stems 1-flowered, 6–60 mm long, usually about as long as leaves or slightly longer, erect, ± glabrous to hirsute; cauline leaves absent. Sepals 5, green or brownish, spreading, oblong-elliptic, c. 3–5 mm long, glabrous or abaxial surface sparsely hirsute, persistent at anthesis. Petals 5(–7), golden-yellow, elliptic to broadly obovate, 3–9 mm long; single nectary c. 1/5 petal-length above base, a shallow semilunar pit, rarely with a triangular fleshy lobe. Receptacle glabrous in stamen-zone,

hispid above. Stamens 24–30. Carpels 10–20. Achenes in a globular head, ± flattened, elliptic-ovate, 2.7–3.5 mm long; beak tapered, 0.7–1.2 mm long, tip recurved. Flowering late Oct.-Mar.; fruiting Nov.-Mar.

Tas. (BEL, TCH, TSR); endemic. Widespread on the Central and Ben Lomond Plateaus and occasionally seen in other higher altitude areas at 750–1400 m alt. Found in bogs and swamps, often in periodically flooded places, but also in alpine heaths. Menadue and Crowden (1990) analyse leaf polymorphism in this species and conclude that the variation is largely influenced by the environment.

12 Ranunculus decurvus (Hook.f.) Melville, *Kew Bull.* 10: 202 (1955)

Ranunculus scapigerus var. *decurvus* Hook.f., *Bot. Antarct. Voy. III. (Fl. Tasman.)* 1: 7, t. 2A (1855). *Ranunculus scapigerus* var. *concinnus* Hook.f., *Bot. Antarct. Voy. III. (Fl. Tasman.)* 1: 7 (1855); *R. concinnus* (Hook.f.) Melville, *Kew Bull*. 10: 201 (1955).

Illustrations: Melville, *op. cit.*, 202, fig. 7 (as *R. concinnus)*, 203, fig. 8; Stones & Curtis, *The Endemic Flora of Tasmania* 4: 80, No. 135 (1973); Menadue & Crowden, *Bot. J. Linn. Soc.* 98: 81, fig. 5b-g (1988); Menadue & Crowden, *Pap. Proc. Roy. Soc. Tasmania* 123: 88, fig. 1g; 92, fig. 3f; 94, fig. 5j (1989); Kirkpatrick, *Alpine Tasmania* 92, fig. 40f (1997).

Tufted, terrestrial perennial; stems and leaves with fine hairs, usually spreading near base, appressed on adaxial surface. Leaves in a basal rosette; petioles (0.6–)1–13 cm long; lamina ovate in outline, (2–)4–27(–56) mm long, (2–)4–22(–35) mm wide, 3–5(–7)-foliolate, leaves of younger plants sometimes 3–5-lobed; leaflets suborbicular to ovate, coarsely toothed; terminal leaflets 3–12 mm long, 3–18 mm wide, petiolule 1–7 mm long; lateral leaflets 2–20 mm long, 3–12 mm wide, sometimes entire, rarely divided again. Flowering stems 1(2)-flowered, at anthesis shorter than leaves, 0.3–3 cm long, in fruit exceeding leaves, 1.5–12(–23) cm long, erect; cauline leaves absent. Sepals 5, pale greenish-yellow, spreading, oblong or ovate, c. 2–4 mm long, abaxial surface sparsely hirsute, persistent at anthesis. Petals 0–5, pale yellow to cream-yellow, narrowly elliptic, 1.7–5 mm long; single nectary 0.5–1.5 mm above petal-base, a shallow crescentic bracket. Receptacle hispid in stamen zone, glabrous or sparsely hispid above. Stamens 8–22. Carpels 8–28. Achenes in a globular head, flattened, ovate, 1.3–3.8 mm long, smooth, without marginal ridges; beak 0.4–1 mm long, recurved. Flowering & fruiting Nov.-Mar.

Tas. (BEL, TCH, TNS, TSE, TSR, TWE); endemic. Widespread in alpine and subalpine communities though rarely collected outside of the Central Highlands and the Ben Lomond Region. Found in grassland and heath above 400 m alt., though also found in bogs on the mountains of the Central Plateau. Menadue and Crowden (1988) conduct a multivariate analysis of the morphological variation found in the *R. decurvus-R. concinnus* complex and concluded that the two species cannot be separated.

13 Ranunculus pimpinellifolius Hook., *J. Bot. (Hooker)* 1: 243 (1834)

Ranunculus pimpinellifolius var. *glabrior* Hook., *J. Bot. (Hooker)* 2: 401 (1840), *nom. inval.*; *R. lappaceus* var. *pimpinellifolius* (Hook.) Benth., *Fl. Austral.* 1: 12 (1863). *Ranunculus pimpinellifolius* var. *vestitus* Hook., *Icon. Pl.* 3(6): t. 260 (1840). *Ranunculus hirtus* Banks & Sol. ex DC., *Syst. Nat.* 1: 289 (1817), *nom. illeg., non* Sprengel (1807), see P.J.Garnock-Jones, *Taxon* 35: 126 (1986). *Ranunculus hirtus* var. *vestitus* Hook.f., *Bot. Antarct. Voy. III. (Fl. Tasman.)* 1: 6 (1855). *Ranunculus lappaceus* var. *scapigerus sensu* L.Rodway, *Tasman. Fl.* 3 (1903), *p.p., non* (Hook.) Benth. (1817).

Illustrations: Melville, *Kew Bull*. 10: 197, fig. 3, 200, fig. 5.3–4 (1955); Kirkpatrick *et al.*, *City Parks & Cemeteries: Tasmania's Remnant Grasslands & Grassy Woodlands* 101, pl. 11-5 (1988); Briggs & Makinson, *Fl. New South Wales* 1, rev. edn: 162 (2000); Walsh, *Fl. Victoria* 3: 53, fig. 9b (1996); Corrick & Fuhrer, *Wildflowers of Victoria*, p. 194, fig. 682 (2000); Gilfedder *et al.*, *The Nature of the Midlands* 86 (2003); Wilson (Ed.), *Fl. Australia* 2: 329, fig. 61a-c (2007).

Tufted, terrestrial perennial; stems and leaves with long spreading hairs, rarely almost glabrous. Leaves in basal rosettes; petioles 1–13 cm long; lamina narrowly ovate in outline, 5–40 mm long, 7–35 mm wide, pinnate, with

3–5(7) cuneate; leaflets ovate or obovate, usually coarsely toothed, sessile or subsessile; terminal leaflets 5–19 mm long, 8–22 mm wide; lateral leaflets 4–16 mm long, (1.5–)4–16 mm wide, petiolules to 5 mm long. Flowering stem 1(2)-flowered, 1.7–25 cm long, c. as long as basal leaves at anthesis, usually longer in fruit, erect. Sepals 5, green with hyaline margins, spreading, elliptic to ovate, 2.5–6 mm long, abaxial surface pubescent, persistent at anthesis. Petals 5–8, golden-yellow, elliptic to obovate-cuneate, 4–12 mm long; single nectary near petal-base, shallowly pocket like, to c. 0.5 mm long, lobe triangular, usually asymmetric. Receptacle hirsute or glabrous. Stamens 20–60. Carpels 12–40. Achenes in a globular head, flattened, ovate to broadly elliptic, 2.5–3.5 mm long, smooth, upper margin forming a ± prominent shoulder; beak 0.5–1 mm long, recurved. Flowering Oct.-Jan.; fruiting Oct.-Feb.

Tas. (TCH, TNM, TSE, TSR); also NSW, Vic. Found mainly on the eastern portion of the Central Highlands and surrounding areas at 200–1200 m alt. Found in wet areas such as bogs, marshes, stream banks and lake shores in montane and subalpine regions. Closely related to *R. productus* B.G.Briggs of the Mt Kosciuszko area, New South Wales (Eichler & Walsh 2007).

14 Ranunculus scapiger Hook., *J. Bot. (Hooker)* 1: 244 (1834) [as *R. scapigerus*]

Ranunculus lappaceus var. *scapigerus* (Hook.) Benth., *Fl. Austral.* 1: 12 (1863). *Ranunculus scapigerus* var. *foliosus* Melville, *Kew Bull.* 10: 197 (1955).

Illustrations (some as *R. scapigerus*): Melville, *Kew Bull*. 10: 196, fig. 2, 200, fig. 5.1–2 (1955); Briggs, *Proc. Linn. Soc. New South Wales* 84: 309, figs 32–37 (1960); Walsh, *Fl. Victoria* 3: 55, fig. 10c (1996); Kirkpatrick, *Alpine Tasmania* 97, fig. 42a (1997); Briggs & Makinson, *Fl. New South Wales* 1, rev. edn: 162 (2000); Gilfedder *et al*., *The Nature of the Midlands* 86 (2003); Wilson (Ed.), *Fl. Australia* 2: 336, fig. 63j (2007).

Tufted, terrestrial perennial. Leaves mostly in basal rosettes. Basal leaves with petioles 1–15 cm long, hairs spreading; lamina broadly ovate in outline, 7–26(–60 outside Tas.) mm long, 11–42 mm wide, often broader than long, palmately lobed with 7 subequal teeth or trifoliolate; leaflets cuneate to suborbicular, coarsely toothed, pilose on both surfaces, hairs spreading or appressed; terminal leaflets 11–26 mm long, 7–23 mm wide; lateral leaflets 8–20 mm long, 7–21 mm wide. Flowering stems 1–4-flowered, 5–30 cm long, longer than leaves, erect, hairs spreading in lower part, appressed above; cauline leaves when present simple, 3-lobed to linear-lanceolate. Sepals 5, green, reflexed, elliptic, 4–7 mm long, abaxial surface pilose, persistent at anthesis. Petals 5, golden-yellow, often tinged purple on the abaxial surface, narrowly to broadly elliptic, 6–9(–15) mm long; single nectary near petal-base, lobe rounded or truncate, 0.7–1.2 mm long, free for most of its length. Receptacle glabrous in stamen zone, hispid above. Stamens 15–35. Carpels 20–50. Achenes in a globular head, 1.7–3 mm long, smooth, marginal rib narrow, sometimes with a line of subappressed hairs; beak slender, 1.2–2 mm long, straight with a recoiled tip. Flowering & fruiting Nov.-Apr.

Tas. (BEL, TCH, TNS, TSE, TSR); also NSW, Vic. Found in upland areas of the state (200–1100 m alt.) in forest, woodland and moist grassland.

15 Ranunculus lappaceus Sm., in A.Rees, *Cycl.* 29(2): (*Ranunculus* no. 61) (1815) *Australian Buttercup, Common Buttercup*

Ranunculus lappaceus var. *latilobus* Hook.f., *Bot. Antarct. Voy. III. (Fl. Tasman.)* 1: 6 (1855).

Illustrations: Briggs, *Proc. Linn. Soc. New South Wales* 84: 302, figs 5–10 (1960); Cunningham *et al., Plants of Western New South Wales* 309 (1982), as Common Buttercup; Walsh, *Fl. Victoria* 3: 53, fig. 9c (1996); Kirkpatrick, *Alpine Tasmania* 94, fig. 41b (1997); Corrick & Fuhrer, *Wildflowers of Victoria* 194, fig. 681 (2000); Briggs & Makinson, *Fl. New South Wales* 1, rev. edn: 161 (2000); Gilfedder *et al*., *The Nature of the Midlands* 86 (2003); Wilson (Ed.), *Fl. Australia* 2: 336, fig. 63d-e (2007).

Tufted, terrestrial perennial. Leaves mostly in basal rosette. Basal leaves with petioles 1.6–16(–30 outside Tas.) cm long with spreading and/or appressed hairs; lamina ovate to deltate in outline, (6–)12–55(–110 outside Tas.)

mm long and wide, usually trifoliolate, sometimes trifid; leaflets deeply dissected or lobed, sometimes ± biternate, appressed-hirsute, sometimes with well developed petiolules; terminal leaflets (6–)19–50 mm long, (4–)11–30 mm wide; lateral leaflets (5–)12–32 mm long, (1.5–)7–26 mm wide. Flowering stems 1–many per plant, 1–3(–10 outside Tas.)-flowered, 4–60(–170 outside Tas.) cm high, taller than basal leaves, erect, with spreading and/or appressed hairs; cauline leaves 1–5 per stem, often similar to basal leaves, usually trilobed to simple, becoming smaller along flowering stems, lobes 7–25 mm long, 2–5 mm wide. Sepals 5, green or dark yellow, spreading, elliptic, 4–10 mm long, 2.5–4 mm wide, abaxial surface hairy, persistent at anthesis. Petals 5, bright yellow, obovate-cuneate, 6–22 mm long, obtuse; single nectary near petal base, lobe cuneate, c. 1–2.8 mm long, free for most its length. Stamens 40–110. Carpels 20–50. Receptacle glabrous in stamen-zone, hirsute above. Achenes in globular head, lenticular, obovate-cuneate, 1.7–3.5 mm long, margin narrowly ridged, lateral faces smooth or dimpled; beak slender, 0.8–2 mm long, arched, tip recoiled. Flowering (May) Sept.-Jan.; fruiting Oct.-Mar.

Tas. (BEL, FLI, KIN, TCH, TNM, TNS, TSE, TSR); also SA, Qld, NSW, Vic. Common in the eastern half of the state from near sea level to alpine areas; rarely collected in the north-west. Found in moist grassland, woodland and forest, occasionally in drier places amongst rocks; often found in disturbed areas. A highly variable species in the dimensions of most organs, especially the leaves and flowering scapes. Plants from higher elevations frequently have single-flowered inflorescences. Briggs (1960, 1962) discusses variation and hybridisation in the *R. lappaceus* group of species.

16 Ranunculus pascuinus (Hook.f.) Melville, *Kew Bull.* 10: 198 (1955)

Ranunculus lappaceus var. *pascuinus* Hook.f., *Bot. Antarct. Voy. III. (Fl. Tasman.)* 1: 6 (1855). *Ranunculus lappaceus* var. *uniflorus* Hook.f., *Bot. Antarct. Voy. III. (Fl. Tasman.)* 1: 6 (1855). *Ranunculus lappaceus* var. *subsericeus* Benth., *Fl. Austral.* 1: 13 (1863).

Illustrations: Melville, *op. cit.*, 199, fig. 4, 200, fig. 5.5–7; Stones & Curtis, *The Endemic Flora of Tasmania* 3: t. 51, No. 84 (1971); Kirkpatrick *et al.*, *City Parks & Cemeteries: Tasmania's Remnant Grasslands & Grassy Woodlands* 101, pl. 11-4 (1988); Menadue & Crowden, *Pap. Proc. Roy. Soc. Tasmania* 123: 88, fig 1b, 92; fig. 3b; 94, fig. 5h (1989); Kirkpatrick, *Alpine Tasmania* 94, fig. 41e (1997).

Tufted, terrestrial perennial; stems, petioles, leaf-blades and flowering stems with appressed hairs. Leaves in a basal rosette; petioles 1–10 cm long; lamina obliquely ovate to deltoid in outline, 7–30 mm long, 5–30 mm wide, simple, 3-partite, or trifoliolate with lanceolate lateral leaflets, these often not opposed on rachis; leaflets entire or further toothed to ternately dissected, apex acute; terminal leaflets 8–20 mm long, 7–13 mm wide; lateral leaflets 5–12 mm long, 2–4 mm wide. Flowering stems 1-flowered, 2–20 cm long, longer than leaves, erect; cauline leaves absent. Sepals 5, green or red tinged, spreading, ovate, 3.5–7 mm long, abaxial surface densely appressed-hairy, persistent at anthesis. Petals 5, golden-yellow, often tinged crimson or purple on the abaxial surface, broadly obovate-cuneate, 8–15 mm long; single nectary near petal-base, lobe ovate to oblong, 0.5–1 mm long, free for more than half this length. Receptacle glabrous in stamen-zone, hirsute above. Stamens 30–50. Carpels 20–40. Achenes in a globular head, obovate-cuneate, 3–4 mm long, flattened, marginal ridge slightly raised; beak slender, 0.7–1.2 mm long, ± erect, tip recurved. Flowering Oct.-Feb.; fruiting Nov.-Mar.

Tas. (TCH); endemic. Confined to the northern parts of the Central Plateau at 760–1200 m alt. Found in subalpine grasslands, herb fields, shrubland, and occasionally in forest and along creek banks. A single herbarium collection made in 1931 from 'Prosser River, Orford' (East Coast) requires confirmation.

17 Ranunculus setaceus Rodway, *Proc. Roy. Soc. Tasmania* 1900–1901: 107 (1902)

Ranunculus millani sensu L.Rodway, *Tasman. Fl.* 2 (1903), *non* F.Muell. (1855).

Illustrations: Stones & Curtis, *The Endemic Flora of Tasmania* 3: t. 52, No. 85 (1971); Melville, *Kew Bull.* 1955: 209, fig. 12 (14–19); Menadue & Crowden, *Pap. Proc. Roy. Soc. Tasmania* 123: 88, fig. 1e; 92, fig. 3j; 94, fig. 5i (1989); Wilson (Ed.), *Fl. Australia* 2: 323, fig. 60d-e (2007).

Shortly rhizomatous, terrestrial perennial; leaf rosettes usually crowded. Leaves in basal rosettes; lamina narrowly linear, 1.2–8 cm long, 0.5–1(–1.25) mm wide, distally terete or flattened, simple or trifurcate with narrowly linear segments each with an apical or subapical hydathode, glabrous or with a few scattered hairs; lateral lobes 3–11 mm long, to 0.5 mm wide. Flowering stems 1-flowered, 9–40 mm long, shorter than leaves, erect at anthesis, recurved when fruiting; cauline leaves absent. Sepals 5, c. hyaline, oblong to broadly ovate, 1.5–3.5 mm long, ± glabrous, deciduous at anthesis. Petals 5, cream to pale greenish yellow, narrowly lanceolate to narrowly elliptic, 3–5 mm long; single nectary c. 0.7–2.0 mm above petal-base, a lobeless semilunar pit. Receptacle sparsely hairy throughout. Stamens 10–15. Carpels 10–15. Achenes in a globular head, lenticular, obovate to semiorbicular, 3–4.5 mm long, smooth; beak short, recurved. Flowering Oct.-Jan.; fruiting Jan.-Mar.

Tas. (BEL, TCH); endemic. Occurs on the Western Tiers and the Ben Lomond Plateau at 1100–1400 m alt. Found in bogs, bolster communities, depressions subject to intermittent flooding and in small streams and on the edges of lakes. The species is often found flowering and fruiting under water.

18 Ranunculus gunnianus Hook., *J. Bot. (Hooker)* 1: 244, t. 133 (1834)

Illustrations: Walsh, *Fl. Victoria* 3: 55, fig. 10d (1996); Kirkpatrick, *Alpine Tasmania* 95, fig. 41a (1997); Costin *et al.*, *Kosciusko Alpine Flora* 129 (2000); Briggs & Makinson, *Fl. New South Wales* 1, rev. edn: 161 (2000); Corrick & Fuhrer, *Wildflowers of Victoria* 193, fig. 680 (2000); Wilson (Ed.), *Fl. Australia* 2: proceeding p. 278, plate 55, p. 339, fig. 64d-f (2007).

Tufted, terrestrial perennial; rootstock thick, erect or creeping. Leaves in basal rosettes; petioles 1–18 cm long; lamina ± ovate in outline, 0.8–4.5 cm long, 1.2–4 cm wide, 2–3-times pinnately divided into few–many segments; segments subterete sulcate or linear to linear-lanceolate, often subfasciculate, 1–2 mm diam., with scattered long hairs or glabrescent, each with a small terminal hydathode. Flowering stems 1-flowered, 5–29 cm long, longer than leaves, erect, sparsely pilose to villous; cauline leaves usually absent. Sepals 5–7, usually tinged purple, spreading, obovate to oblong, 6–17 mm long, glabrous or abaxial surface pilose, persistent at anthesis. Petals 5–13, shining golden-yellow, pale purple on abaxial surface, narrow-elliptic or obovate, 10–25 mm long; nectaries 3(–7) per petal, near petal base, lobeless, in shallow pits or superficial. Receptacle glabrous. Stamens c. 40–75. Carpels c. 20–60. Achenes obovoid-oblong, 2–2.5 mm long, plump, smooth; beak ± straight, 1–1.5 mm long. Flowering Oct.-Jan.; fruiting Nov.-Mar.

Tas. (BEL, TCH, TSR, TWE); also NSW, Vic. Confined to high altitude areas (> 1000 m alt.). Found in bogs, herb fields, damp grassland, open rocky areas and, occasionally subalpine woodland. Plants from the Cradle Mountain and Mt Rufus areas (Central Highlands) and the mountains of the South-West (eg. Mt LaPerouse, Mt Anne) have broader (to c. 2 mm wide), ± flattened ultimate leaf segments than do those seen from other Tasmanian and interstate localities. Plants may not flower for several years and may require a heavy snowfall or late snow-melt to trigger flowering (Eichler & Walsh 2007).

Ranunculus gunnianus appears to be most closely related to *R. sericophyllus* Hook.f. of New Zealand (Eichler & Walsh, 2007). These two species both possess several, usually 3, nectary pits near the base of the petal, a feature not seen in other Australian species, along with ± repeatedly pinnatifid leaves (Eichler & Walsh, 2007). Mueller (1862) based his *Ranunculus* section *Pseudadonis* F.Muell. solely on *R. gunnianus*.

19 * Ranunculus repens L., *Sp. Pl.* 1: 554 (1753) *Creeping Buttercup*

Illustrations: Ross-Craig, *Drawings of British Plants* 1: pl. 30 (1948); Eichler, *Fl. S. Australia* 1: 351, fig. 198d (1986); Walsh, *Fl. Victoria* 3: 45, fig. 5a (1996); Briggs & Makinson, *Fl. New South Wales* 1, rev. edn: 164 (2000); Sainty & Jacobs, *Waterplants in Australia, a Field Guide* 252, 253 (2003); Richardson *et al.*, *Weeds of the South-East, an Identification Guide for Australia* 355 (2006).

Stoloniferous, sometimes stout, terrestrial perennial; stolons rooting at nodes. Leaves in a basal rosette and cauline. Basal leaves: petioles 1–25 cm long; lamina very variable, triangular-ovate in outline, 1–6(–15 outside Tas.) cm long, 1–10 cm wide, 3(5)-foliolate; leaflets with petiolules to 4 cm long, lamina broadly ovate, entire and

irregularly toothed, or further ± ternately or sometimes ± biternately dissected, subsericeous, pilose or ± glabrous; terminal leaflets 8–55 mm long, 10–52 mm wide; lateral leaflets 7–50 mm long, 4–48 mm wide. Flowering stems 1–5-flowered, 1.5–35(–75 outside Tas.) cm high, taller than leaves, erect, pilose to subsericeous; cauline leaves becoming smaller and less divided up flowering stems, uppermost cauline-leaves sessile, linear-lanceolate, entire. Sepals 5, pale green to yellow with purple margins, appressed to petals or spreading, ovate to broad-elliptic, 5–9 mm long, abaxial surface pubescent, persistent at anthesis. Petals usually 5, yellow, glossy, broadly obovate, 6–17 mm long; single nectary near petal-base, lobe obovate to cuneate, 1–2 mm long, free for most of this length. Receptacle hispid. Stamens 35–75. Carpels c. 20–50. Achenes in a globular head, ± orbicular, 2.5–3.5 mm long, strongly laterally compressed, glabrous, finely punctulate, distinctly margined; beak c. 1 mm long, straight or curved. Flowering (May) Sept.-Feb.; fruiting Nov.-Feb.

Tas. (KIN, TNM, TNS, TSE, TSR, TWE); also naturalized SA, Qld, NSW, Vic.; native in Eurasia. A weed of wet, disturbed areas such as roadsides, ditches, swamps, farmland, and disturbed forest though sometimes found in apparently undisturbed forest.

20 * Ranunculus acris L., *Sp. Pl.* 1: 554 (1753) subsp. **acris** *Meadow Buttercup*

Illustrations: Ross-Craig, *Drawings of British Plants* 1: t. 29 (1948); Spencer, *Horticultural Flora of South-eastern Australia* 2: 67 (1997); Richardson *et al.*, *Weeds of the South-East, an Identification Guide for Australia* 354 (2006).

Erect, terrestrial perennial herb; rootstock erect or oblique. Leaves basal and cauline; petioles 3–28 cm long; basal leaves with lamina ± orbicular to reniform in outline, 1–23 cm diam., ± palmately 5–7-partite; segments ovate-cuneate, usually ± 3-fid, irregularly serrate to deeply lobed, variously pilose or hirsute. Flowering stem usually much branched with many flowers, 30–70 cm high; cauline leaves simpler than basal leaves, with shorter petioles, uppermost sometimes sessile. Sepals 5, green or red-tinged, appressed to petals, ovate, 3–5 mm long, abaxial surface pubescent, persistent at anthesis. Petals 5–10, golden-yellow, glossy, broadly obovate, 9–15 mm long; single nectary virtually at petal-base, lobe obovate to cuneate, c. 1 mm long, free for almost entire length. Receptacle glabrous. Stamens c. 40–75. Carpels c. 25–60. Achenes ± orbicular 2–3.5 mm long, marginate, weakly biconvex, smooth; beak 0.2–0.5 mm long, straight or slightly curved. Flowering & fruiting Oct.-Mar.

Tas. (TSE, TWE); also naturalized in Vic.; indigenous to Eurasia, also naturalized in New Zealand, South Africa, NE North America. Known from the Kettering-Snug (East Coast) and Balfour (West Coast) areas where it is found in wasteland, hedges, drainage channels and other disturbed habitats in cool, moist areas. Australian specimens are referable to the typical subspecies which is distinguished from the other subspecies (subsp. *borealis* (Regel) Nyman, subsp. *friesianus* (Jord.) Rouy & Foucaud of Europe) chiefly by having a shortly creeping rhizome and deeply divided leaves (Coles 1971).

21 * Ranunculus sardous Crantz, *Stirp. Austr.* Fasc. 2: 84 (1763)

Ranunculus philonotis Ehrh., *Hannover. Mag.* 17 1es St. 270 (1783); *R. sardous* subsp. *philonotis* (Ehrh.) Elenevsky & T.G.Derviz-Sokolova, *Byull. Moskovsk. Obshch. Isp. Prir., Otd. Biol.* 94(1): 117 (1989). *Ranunculus philonotis sensu* G.Bentham, *Fl. Austral.* 1: 15 (1863), *non* Retz. (1791) [written as *R. pholinotis* by Eichler & Walsh (2007, p. 344)].

Illustrations: Ross-Craig, *Drawings of British Plants* 1: t. 32 (1948); Walsh, *Fl. Victoria* 3: 45, fig. 5b (1996); Richardson *et al.*, *Weeds of the South-East, an Identification Guide for Australia* 355 (2006); Wilson (Ed.), *Fl. Australia* 2: 346, fig. 65g-j (2007).

Tufted, erect, terrestrial, annual, rarely developing short stolons in very wet sites, pilose to glabrescent. Leaves basal and cauline. Basal leaves: petiole 5–16(–32 outside Tas.) cm long; lamina triangular-ovate in outline, 2–5 cm long, 2–7 cm wide, deeply 3-lobed or trifoliolate, sometimes distinctly petiolulate; petiolule to 25 mm long; leaflets or lobes irregularly cut or toothed or crenate, to 35 mm long and wide. Flowering stem 5–18-flowered, 10–50 cm high, taller than basal leaves, erect; cauline leaves shortly stalked or sessile and becoming smaller,

less divided, and with narrower lobes along stem. Sepals 5, creamy-brown, reflexed, ovate, 4–7 mm long, abaxial surface sparsely pilose, persistent at anthesis. Petals 5, pale yellow, obovate, 8–14 mm long; single nectary near petal-base, lobe obovate to cuneate, c. 1 mm long, attached only at base. Receptacle hairy. Stamens c. 40–60. Carpels 30–40. Achenes in slightly elongated head, flattened, suborbicular, 2–2.5 mm long, greenish brown, faces with small obtuse tubercles near green margin, rarely smooth or evenly tuberculate; beak c. 0.5 mm long, curved upwards. Flowering & fruiting (Jun.) Oct.-Feb.

Tas. (KIN, TCH, TNM, TNS, TSE); also naturalized in SA, NSW, Vic.; native of Europe, N Africa. Recorded mainly from north-eastern Tasmania and King Island where usually found in disturbed wet areas in pasture, ditches and other water-retentive places.

22 * Ranunculus trilobus Desf., *Fl. Atlant.* 1: 437, t. 113 (1798) *Large Annual Buttercup*

Illustrations: Briggs & Makinson, *Fl. New South Wales* 1: 165 (1990); Walsh, *Fl. Victoria* 3: 45, fig. 5c (1996); Wilson (Ed.), *Fl. Australia* 2: 346, fig. 65a-c (2007).

Erect or slightly spreading, terrestrial annual, glabrous or sparsely pilose. Leaves basal and cauline; petioles 2–10 cm long, sparsely hairy; lamina of first basal leaves with lamina suborbicular, 1–4 cm long, 1–5 cm wide, entire or shallowly ternately divided; lamina of later leaves deeply ternately dissected to trifoliolate; petiolule to 3 mm long; segments cuneate-obovate, dentate or more deeply lobed, 1–4 cm long and wide. Flowering stems to 40 cm high, (1–)several-many-flowered; upper cauline leaves and bracts usually with linear-oblong segments. Sepals 5, green-yellow, reflexed, ovate, 3–5 mm long, glabrous or abaxial surface sparsely pilose, persistent at anthesis. Petals (3)4–5, golden-yellow, elliptic to obovate, 4–8 mm long; single nectary virtually at petal-base, lobe cuneate to obovate, 0.5–1 mm long, free for more than half this length. Receptacle hispid. Stamens 10–20. Carpels 18–50. Achenes in a slightly elongated head, ovate-orbicular, 2.5–3.5 mm long, compressed, faces brown, with many small conical-hemispherical tubercles, margins narrowly keeled, green; beak narrowly triangular, scarcely c. 0.5 mm long, recurved. Flowering Oct.-Mar.; fruiting Oct.-Mar. (June).

Tas. (TSE); also naturalized in WA, SA, NSW, Vic.; native in near Atlantic SW Europe, NW Africa. Naturalized in the upper Derwent Valley, eg. around Glenora and Bushy Park, in moist depressions, roadsides, alluvial flats and irrigated land.

23 * Ranunculus muricatus L., *Sp. Pl.* 1: 555 (1753) *Sharp Buttercup, Burr Buttercup, Prickle-fruit Buttercup*

Illustrations: Cunningham *et al.*, *Plants of Western New South Wales* 310 (1982), as Sharp Buttercup; Walsh, *Fl. Victoria* 3: 45, fig. 5d (1996); Briggs & Makinson, *Fl. New South Wales* 1, rev. edn: 165 (2000); Richardson *et al.*, *Weeds of the South-East, an Identification Guide for Australia* 354 (2006).

Suberect or spreading, terrestrial annual, glabrous to pilose. Leaves basal and cauline. Basal leaves with petioles 5–18 cm long; lamina ± orbicular in outline, ± cordate, (0.6–)1.5–4 cm long, (0.6–)1–5.5 cm wide, with 3–5 shallow rounded coarsely crenate-dentate lobes. Flowering stems 1–10-flowered, 3–50 cm high, taller than basal leaves; upper cauline leaves ± cuneate, with 3 narrow, entire or toothed segments. Sepals 5, red tinged near apex, strongly reflexed, ovate, 3–5 mm long, abaxial surface sparsely pilose, persistent at anthesis. Petals 5, yellow, obovate, 6–9 mm long; single nectary near petal base, lobe obovate to cuneate, 1–2 mm long, free for up to half this length. Receptacle pubescent. Stamens 15–20. Carpels 8–20. Achenes in a globular head, broadly obovate, 5–8 mm long, flattened, brown with a green, strongly keeled and grooved, smooth margin, faces with numerous, short spines (rarely almost smooth); beak stout, 2–3 mm long, nearly straight. Flowering & fruiting Oct.-Feb.

Tas. (FLI, KIN, TNM, TSE); also naturalized in WA, SA, Qld, NSW, Vic.; native in the Mediterranean region. Collected mainly from the Derwent catchment area to Bothwell (Central Highlands), as well as in the Midlands to Launceston. Also found at Three Hummock Is. (North West), Deal Is. (Furneaux Group), and Sorrell and Bream Creek (East Coast). Usually found in damp disturbed places, including roadsides, gullies and stream margins,

and cultivated areas. *Ranunculus muricatus* is closely related to *R. arvensis* from which it can be differentiated by its reflexed sepals (cf. spreading), yellow petals (pale yellow) and shortly spiny achenes (cf. prominently spiny).

24 * Ranunculus parviflorus L., *Syst. Nat.* 10th edn, 2: 1087 (1759) *Small-flowered Buttercup*

Illustrations: Ross-Craig, *Drawings of British Plants* 1: t. 3-3 (1948); Eichler, *Fl. S. Australia* 1: 349, fig. 197g (1986); Walsh, *Fl. Victoria* 3: 47, fig. 6a (1996); Wilson (Ed.), *Fl. Australia* 2: 346, fig. 65d-f (2007).

Decumbent to ascending, terrestrial annual, sparsely to densely pilose. Leaves basal and cauline. Basal leaves with petiole 0.7–15 cm long; lamina orbicular-reniform, (4–)10–25 mm long, (5–)15–40 mm wide, palmately 3–5-lobed, lobes coarsely toothed, hairy on both surfaces. Flowering stems (1)2–10-flowered, 2.5–58 cm long, taller than basal leaves; cauline leaves similar to basal leaves, lobes often narrower, uppermost leaves often entire, ± sessile. Sepals 5, reflexed, ovate, c. 2 mm long, abaxial surface densely pilose, persistent at anthesis. Petals 2–5, pale yellow, obovate, 2–3 mm long; single nectary near petal-base, lobe ± ovate, c. 0.4 mm long, free above midway. Receptacle glabrous. Stamens 5–8. Carpels 6–24. Achenes in a globular head, orbicular-ovate, 2.5–3 mm diam., brown with paler, keeled narrow margin, faces ± evenly covered with short tubercles, each terminated by a short hooked bristle; beak triangular or hooked at apex, c. 0.5 mm long. Flowering & fruiting Aug.-Jan.

Tas. (BEL, TNS, TSE); also naturalized SA, NSW, Vic.; native in Atlantic Europe and the Mediterranean region. A weed in moist disturbed sites such as wasteland, pasture, gardens, roadsides and quarries.

25 Ranunculus sessiliflorus R.Br. ex DC., *Syst. Nat.* 1: 302 (1817) var. **sessiliflorus** *Smallflower Buttercup*

Ranunculus parviflorus var. *australis* Benth., *Fl. Austral.* 1: 14 (1863) [see Hj Eichler, *Fl. Australia* 2: 461 (2007)].

Illustrations: Melville, *Kew Bull*. 1956: 278, fig. 1a-c, 283, fig. 5.1–15 (1957); Eichler, *Trans. Roy. Soc. S. Australia* 81, t. 1, fig. 2 (1958); Stanley & Ross, *Fl. South-eastern Qld* 1: 173, fig. 23e (1983); Walsh, *Fl. Victoria* 3: 47, fig. 6d (1996); Briggs & Makinson, *Fl. New South Wales* 1, rev. edn: 166 (2000); Wilson (Ed.), *Fl. Australia* 2: 350, fig. 66d-f (2007).

Erect, slender, terrestrial annual to 35 cm high, sparingly to ± densely pilose on lower part; stems usually branched near base. Leaves basal and cauline; adult leaves with petioles 8–55 mm long; lamina palmately lobed or dissected, or 3- or 5-fid, but not usually distinctly compound, 2–17 mm long, 4–22 mm wide; segments cuneate, elliptic or ± flabelliform; terminal segment 3-dentate; lateral segments ± 2-fid with 3 or 4 teeth to each lobe. Flowers leaf-opposed, subsessile, the lower ones occasionally shortly pedicellate with fruiting pedicels to 1.5 cm long. Sepals 3 or 4, whitish-green, oblong to elliptic, c. 2 mm long, abaxial surface pilose, persistent at anthesis. Petals 0–2, creamy-yellow, elliptic- to linear-spatulate, 1–2 mm long; single nectary above middle of petal, lobe minute, ± triangular, obtuse. Receptacle glabrous. Stamens 3–6. Carpels 6–20. Achenes in a globular head, suborbicular to obovate, 1.3–2.5 mm long, virtually flat, the lateral faces each bearing 7–25 conical tubercles terminated by a recurved bristle; beak short-triangular, 0.3–0.5(–1) mm long, ± acute. Flowering & fruiting Aug.-Nov.

Tas. (BEL, FLI, KIN, TCH, TNM, TNS, TSE); also WA, SA, Qld, NSW, Vic. A rare species scattered throughout the eastern half of the state with isolated collections from Three Hummock Island, in the north west, and Flinders Island. Found in moist sheltered sites in herb field, grassland and woodland, often in rocky country. Melville (1956) and Eichler (1958) discuss variation in the *R. sessiliflorus* complex. *Ranunculus sessiliflorus* var. *pilulifer* (Hook.) Melville (as *R. pumilio* var. *pilulifer* (Hook.) Hook.f.) was recorded for Tasmania by Hooker (1855).

26 Ranunculus pumilio R.Br. ex DC., *Syst. Nat.* 1: 271 (1817) var. **pumilio** *Smallflower Buttercup, Small-flowered Buttercup, Ferny Buttercup, Ferny Small-flowered Buttercup*

Ranunculus leptocaulis Hook., *J. Bot. (Hooker)* 1: 244 (1834).

Illustrations: Melville, *Kew Bull.* 1967: 278, fig. 1e; 284, fig. 6.1–6 (1957); Eichler, *Trans. Roy. Soc. S. Australia* 81, t. 1, fig. 2 (1958); Cunningham *et al.*, *Plants of Western New South Wales* 310 (1982), as Ferny Buttercup; Walsh, *Fl. Victoria* 3: 47, fig. 6b (1996); Briggs & Makinson, *Fl. New South Wales* 1, rev. edn: 166 (2000); Wilson (Ed.), *Fl. Australia* 2: 350, fig. 66a-c (2007).

Erect, slender, terrestrial, annual herb to 40 cm high, ± densely pilose, at least in lower part; stems branched from base. Leaves basal and cauline. Adult leaves with petioles 7–95 mm long; lamina trifoliolate or palmatisect, (3–)6–30 mm long, (4–)10–30(–40) mm wide, with the lobes cut into lanceolate to linear, apex acute segments mostly 0.5–1.5 mm wide; terminal lobes 2–30 mm long, 2.5–25 mm wide; lateral lobes 2–15 mm long, 2.5–11 mm wide; petiolules to 16 mm long. Flowers generally pedicellate though upper flowers sometimes sessile; pedicels 3–15 mm long (to 5 cm in fruit). Sepals 5, whitish-green, reflexed in older flowers, elliptic to obovate, c. 2 mm long, with appressed hairs, persistent at anthesis. Petals 2–4, yellow, ovate-spatulate, 1.5–2 mm long; single nectary above middle of petal, lobe minute, semi-elliptic or triangular. Receptacle glabrous. Stamens 4–6. Carpels 10–25. Achenes in a globular head, suborbicular, biconvex, 1.5–2 mm long; lateral faces and margins covered with (usually c. 50) minute tubercles, each bearing a short, stiff, curved or appressed hair, hairs distinctly longer than subtending tubercles; beak ± triangular, obtuse or minutely hooked, c. 0.2 mm long. Flowering Aug.-Dec.; fruiting Sep.-Dec.

Tas. (TCH, TNM, TNS, TSE); also WA, SA, Qld, NSW, Vic. Found in central Tasmania between Hobart and Launceston, and on Flinders Island. Usually occurs in moist and/or shaded locations such as paddocks. *Ranunculus pumilio* var. *politus* Melville is largely co-extensive with the typical variety though it is not found in Queensland or Tasmania. It differs from the typical variety in having glabrous achenes and 3 (rarely 4) sepals.

27 * Ranunculus flammula L., *Sp. Pl.* 1: 548 (1753) subsp. **flammula** *Lesser Spearwort*

Illustrations: Ross-Craig, *Drawings of British Plants* 1: t. 25 (1948); Walsh, *Fl. Victoria* 3: 49, fig. 7c (1996); Briggs & Makinson, *Fl. New South Wales* 1, rev. edn: 167 (2000); Richardson *et al.*, *Weeds of the South-East, an Identification Guide for Australia* 354 (2006).

Erect or ascending, terrestrial, perennial, to c. 80 cm high, glabrous or with scattered appressed hairs; mostly rooting at lower nodes. Leaves mostly cauline; lower leaves with petioles to c. 10 cm long, lamina narrow-elliptic to lanceolate, 1–6 cm long, 2–15 mm wide, acute, entire or with a few small teeth, grading with upper cauline leaves; upper cauline leaves narrow-elliptic, attenuate, to 14 mm long, 6 mm wide, sessile or subsessile, becoming smaller towards ends of flowering stems. Flowers few–many, in cymes, leaf-opposed. Sepals (4)5, pale greenish-yellow, spreading, ovate to obovate, 2–4 mm long, abaxial surface appressed-hairy, persistent at anthesis. Petals 5, pale yellow, obovate-cuneate, 4–8 mm long; single nectary near petal base, lobe cuneate, truncate, c. 0.2 mm long, fused for entire length. Receptacle glabrous. Stamens 25–40. Carpels c. 10–50. Achenes obovate, 1–2 mm long, smooth, minutely reticulate, obscurely bordered, glabrous; beak minute, blunt. Flowering & fruiting mainly Nov.-Mar.

Tas. (BEL); also naturalized in SA, NSW, Vic.; a native of Eurasia, NW Africa. Known from very few collections made in the Scottsdale and Nabowla areas. Elsewhere in Australia found in wet places in pastures and along drainage channels. There are two other subspecies (subsp. *minimus* (A.Benn.) Padmore and subsp. *scoticus* (E.S.Marshall) A.R.Clapham) distinguished on leaf characteristics; both of these are confined to the British Isles.

7 * ? MYOSURUS

Myosurus L., *Sp. Pl.* 1: 284 (1753).

Small, annual, terrestrial herbs. Leaves all in a basal rosette, simple, entire. Peduncle without bracts. Flowers solitary, terminal, on ebracteate spathe, actinomorphic, bisexual. Sepals 5, spurred; spurs descending and appressed to peduncle. Petals 5–7 or fewer, sometimes absent, inconspicuous, usually smaller than sepals, nectary a narrow groove. Stamens 5–20. Carpels very numerous, to 200 or more. Fruit a slender, subulate spike of spirally arranged achenes on a greatly elongated fruiting receptacle; achenes glabrous, with a stylar beak.

A genus of about 15 species found in the temperate regions of both Hemispheres. In Australia only 1 species recorded and assumed here to be native to Tasmania.

Paun *et al.* (2005) published a phylogeny of *Ranunculus* and showed that *Myosurus*, along with *Ceratocephala* Moench (a genus of Eurasia), is sister to a clade containing *Ranunculus* and *Batrachium*.

Key reference: Eichler & Jeanes (2007).

1 * ? Myosurus australis F.Muell., *Trans. Philos. Soc. Victoria* 1: 6 (1854) *Mousetail*

Myosurus minimus var. *australis* (F.Muell.) Huth, *Bot. Jahrb. Syst.* 16: 284 (1892). *Myosurus minimus sensu* W.M.Curtis & D.I.Morris, *The Student's Flora of Tasmania* 1: 11 (1975), *non* L. (1753).

Illustrations (often as *M. minimus*): Cunningham *et al.*, *Plants of Western New South Wales* 309 (1982); Morley & Toelken (Eds), *Flowering Plants in Australia* 56, fig. 25a-b (1983); Kirkpatrick *et al.*, *City Parks & Cemeteries: Tasmania's Remnant Grasslands & Grassy Woodlands* 101, pl. 11-1 (1988); Walsh, *Fl. Victoria* 3: 63, fig. 13i-k (1996); Briggs & Makinson, *Fl. New South Wales* 1, rev. edn: 167 (2000); Wilson (Ed.), *Fl. Australia* 2: 294, fig. 55a-e (2007).

Plants 3–6(–20 outside Tas.) cm high, glabrous. Leaves simple, narrow-linear, entire, somewhat dilated towards the base, 1–4.5(–12 outside Tas.) cm long, 0.5–1.0(–2.5 outside Tas.) mm wide, sometimes slightly expanded above, usually withered in fruit. Peduncles usually 2–10(–30 outside Tas.), 1–3 cm long at anthesis, apparently elongating to c. 10 cm or more in fruit. Sepals yellow or yellowish-green, 3–4.5 mm long, deciduous; spur 0.5–2 mm long. Petals (0)3–5, yellowish-green, sometimes, filiform-tubular, widest near the apex, 1.5–3.5 mm long; nectary minute, at junction of blade and claw. Stamens 5–10. Fruiting spikes cylindric, 0.5–3(–5) cm long, 1.5–2.5 mm thick, gradually narrowed to the apex; achenes typically 100–300 per spike, reddish brown, dorsally diamond-shaped to trullate, 1–1.5 mm long, including the appressed, ascending beak. Flowering & fruiting material collected in Nov. & Jan. [Jul.-Nov. interstate].

Tas. (CH, EC†); also WA, SA, Qld, NSW, Vic. It is assumed here that the species [and genus] is native to Tasmania though it could just as likely be a recent introduction. Collected only twice in Tasmania: once from a pool near Jericho in 1970 where it is presumed extinct; and a second time from near Penstock Lagoon in 2005. At Penstock Lagoon the species was growing in *Eucalyptus pauciflora - E. dalrympleana* open forest amongst exposed rockplates on a dolerite pavement. Elsewhere in Australia the species is found in moist places near inland watercourses.

8 * ADONIS

Adonis L., *Sp. Pl.* 1: 547 (1753).

Annual or perennial, terrestrial herbs with branching leafy stems. Leaves alternate; lamina 2–4-pinnate with narrowly linear segments, adaxial surface lacking appendages. Peduncle without bracts. Flowers usually solitary, terminal on ebracteate spathes, actinomorphic, bisexual. Perianth segments not spurred. Sepals 5(--8), sometimes petaloid and/or deciduous. Petals 3–20, intensely coloured, yellow or red, glossy, without claw or

nectaries. Stamens numerous. Carpels numerous. Fruit an elongated head of achenes; achenes glabrous or hairy, beak persistent.

A genus of about 35 species native to temperate Eurasia and the Mediterranean area; 1 species introduced to Australia as a garden ornamental, occasionally escaping and becoming naturalized. Some species contain pharmaceutically useful glycosides.

Key reference: Eichler & Jeanes (2007).

1 * Adonis microcarpa DC., *Syst. Nat.* 1: 223 (1817) *Pheasant's Eye*

Illustrations: Walsh, *Fl. Victoria* 3: 40, fig. 4 c & d (1996); Briggs & Makinson, *Fl. New South Wales* 1, rev. edn: 167 (2000); Richardson *et al.*, *Weeds of the South-East, an Identification Guide for Australia* 352 (2006); Wilson (Ed.), *Fl. Australia* 2: 356, fig. 67a-f (2007).

Erect annual, 10–50 cm high. Stem usually branched, sparsely villose towards base, glabrous above. Leaves 2- or 3-pinnate, to 6 cm long, with linear, acute segments, glabrous. Flowers solitary, 15–25 mm diam., terminal; peduncle 1–5 cm long, lengthening as flower matures. Sepals dark purplish brown appressed to spreading, ovate-oblong, 5–12 mm long, glabrous. Petals 5–10, usually yellow, rarely bright-red, with a black basal spot, suberect, obovate, 7–15 mm long, longer than the sepals. Stamens numerous. Carpels 10–50. Achenes 2.5–4 mm long, arranged in a ± cylindrical head c. 15–25 mm long, each with a short straight green beak. Flowering & fruiting material collected in May [Aug.-Dec. interstate].

Tas. (FLI); also naturalized in WA, SA, Qld, NSW, Vic.; native to S Europe. An uncommon weed found mainly in barley and wheat fields. The single record from Tasmania (Wybalenna area, Flinders Island) was made from a dry sheep grazing paddock in 1999.

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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].

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