



## Two new endemic species of *Craspedia* (Asteraceae: Gnaphalieae) from Victoria

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### Introduction

Two informally named species were included in the account of *Craspedia* G.Forst. in volume 4 of the *Flora of Victoria* (Everett 1999) and its online derivative *VicFlora* (<https://vicflora.rbg.vic.gov.au/>) including brief descriptions and keys to identification. At the time of publication of the *Flora*, the distribution and ecology of the species were poorly known and some morphological features only partially understood. Some specimens of the two species at MEL, returned after being on extended loan to NSW, had been annotated by Joy Everett as *Craspedia sylvestris* and *C. basaltica*, neither having been formally published. The opportunity is taken here to more fully circumscribe these distinctive species and their habitats and formalise these names.

### *Craspedia sylvestris* J.Everett ex N.G.Walsh *sp. nov.*

*Craspedia* sp. 1 *sensu* J. Everett in N.G. Walsh & T.J. Entwisle (eds), *Flora of Victoria* 4: 763 (1999), Walsh, N.G. & Stajsic, V. (2007), *A Census of the Vascular Plants of Victoria* edn. 8: 55, 176; *Craspedia* sp. Subalpine (N.G.Walsh 5149) Vic. Herbarium, Australian Plant Name Index (<https://biodiversity.org.au/nsi/services/APNI>).

**Type:** VICTORIA. Mount Buller. Summit Nature Trail between Burnt Hut Reservoir and Boggy Creek ski run, *N. Karunajeewa* 1258, 10.i.2016 (holotype: MEL 2393129; isotypes BRI, CANB, CHR, NSW, PAL, S).

Rosetted perennial herb, shortly rhizomatous; flowering scapes often red-tinged, sometimes sparsely cottony below inflorescence, 50–70 cm high, 1 or 2 per rosette, but rosettes sometimes crowded

### Abstract

Two species of *Craspedia*, *C. basaltica* and *C. sylvestris*, confined to grasslands of western Victoria and subalpine woodlands and forests of eastern Victoria respectively are described as new. The names replace informal names *Craspedia* sp. 1 and *C. sp. 2 sensu* Everett 1999 as described in volume 4 of the *Flora of Victoria* (hard copy) and the online *VicFlora*. A key is provided to the Victorian species of *Craspedia*. With the description of the two new species, 13 species of *Craspedia* are now formally recognised from Victoria.

**Keywords:** Victoria, endemic flora, montane forest, volcanic plain grassland



NATIONAL HERBARIUM OF VICTORIA (MEL), AUSTRALIA

Pocket Empty

HOLOTYPE  
National Herbarium of Victoria (MEL)  
*Craspedia sylvestris* J.Everett  
ex N.G. Walsh  
Determinavit: N.G. Walsh 18.1.2020

NATIONAL HERBARIUM OF VICTORIA (MEL)  
MELBOURNE, AUSTRALIA



MEL 2393129

**Craspedia sp. 1 sensu Fl. Victoria 4:762 (1999)**

Det.: Karunajeewa, N.G., 10 Jan. 2016

Coll.: Karunajeewa, N.G. 1258 Date: 10 Jan. 2016

**Australia: Victoria**

Loc.: Mount Buller. Summit Nature Trail between Burnt Hut Reservoir and Boggy Creek ski run. 37° 8' 41.2" S 146° 26' 8.2" E. Alt.: 1702 m.

**Habitat:** Patch of low (c. 4 m) Snow Gum woodland surrounding a small creek. Adjacent vegetation predominantly treeless subalpine grassland/heathland. Eucalyptus pauciflora with fairly dense shrub layer, grasses and forbs. Beside track.

**Associated taxa:** Eucalyptus pauciflora, Leionema phyllicifolium, Stellaria pungens, \*Dactylis \*glomerata, Acaena novae-zelandiae, Geranium sp.

**Descriptive notes:** Tufted herb forming clumps to c. 30 cm diameter. Basal leaves spreading, darkish dull green above, paler mid green below. Leaf base long, tapering, purplish-red. Flowering stems erect to 40 cm tall, green or purplish-red. Bracts surrounding compound heads green with a purplish claw. Florets intense orange.

**Collecting notes:** About 12 plants in 3 x 3 m. Occasional, mostly in woodland but a few plants seen in adjacent grassland.

**Dupl.:** BRI, CANB, CHR, NSW, PAL, S

Figure 1. *Craspedia sylvestris* Holotype (MEL 2393129).

and inflorescences then appearing more numerous; roots, thick, spreading, woolly. Basal leaves ascending or widely spreading, rather flaccid, elliptic to obovate, the lamina 60–100 mm long, 20–40 mm wide, green, tapered to a rather distinct, usually deep reddish or purplish 'petiole' 30–70 mm long; surfaces slightly rough with sparse multiseptate hairs and often with sparse to moderately dense cottony hairs on the margins; secondary veins (1 or 2 either side of the midvein) usually apparent, but much finer than midvein, curving from lamina base to apex. Stem bracts c. 10–15, ovate, those from about halfway up scape to the inflorescence with broad amplexicaul bases, margins often undulate. Inflorescence orange, hemispherical to globular 2–3 cm diam., with 40–70 capitula. Capitula each with 8–11 florets; bract subtending individual capitula ovate to broadly ovate, 3.5–4.5 mm long, 2–4 mm wide; margin membranous, hyaline to brown-translucent, to c. 1 mm wide, entirely surrounding the stereome, occasionally virtually absent and then almost the entire bract opaque, green or flushed purplish; stereome ovate to broadly ovate, minutely glandular, base woolly; bracts subtending individual florets ovate to obovate, 5–6 mm long, hyaline. Cypselas 1–2 mm long, 0.2–1.5 mm wide; pappus 3–5.5 mm long. Flowers summer (Figures 1, 2).

**Selected specimens examined:** VICTORIA. Mt Hotham, Alpine Rd c. 2 km E of Dargo Rd, P.G. Neish 581, 7.iii.1998 (MEL, NSW); Howqua River area, road to The Bluff, A.C. Cochrane 857, 28.i.2000 (MEL); Mt Buffalo NP, track to Mollison Galleries, N.G. Walsh 5149, 28.i.2000 (MEL); Mt Buller, Boggy Creek area, C.W. Huggins, 31.i.1989 (MEL); The Bluff, N.G. Walsh 949, 22.i.1981 (MEL); Mt Buller, ca 1 km from Alpine Village, J. Russell 76-91, 23.i.1974 (MEL); Omeo Plain, M.G. Corrick 10434, 22.i.1989

(MEL); Crosscut Saw between Mt Howitt and Mt Speculation, N.G. Walsh 2528, 7.i.1981 (MEL); Bogong National Park, 36 km generally S of Harrietville, R.M. King 9768 (MEL, US); Southern slopes of Mt Stirling, near Howqua Gap, M.G. Corrick 7985, 31.i.1982 (MEL); King Spur Tk, ca 38 km N of Dargo, R.A. Kilgour 199, 1.ii.1982 (MEL)

**Distribution and habitat:** Endemic in Victoria. Principally in montane to subalpine (between ca 1300 and 1700 m a.s.l.) woodland and forest of the Mt Matlock, Snowy Range, The Bluff, Mt Buller, Mt Buffalo, Mt Stirling and Mt St Bernard areas where *Eucalyptus delegatensis* R.T.Baker and *E. pauciflora* Sieber ex Spreng. are the common canopy dominants. Also in rather dense shrublands dominated by e.g. *Podocarpus lawrencei* Hook.f., *Prostanthera cuneata* Benth. It rarely, if ever occurs in treeless alpine grassland/open heaths where e.g. *Craspedia aurantia* J.Everett & Joy Thomps., *C. crocata* J.Everett & Joy Thomps., *C. gracilis* Hook.f., *C. adenophora* K.L.McDougall & N.G.Walsh are frequent (Figure 3).

**Notes:** The ovate to broadly ovate, narrowly-margined bracts of the individual capitula are distinctive and contrast to those of other species of subalpine to alpine *Craspedia* of similar habit (in particular *C. aurantia*, *C. crocata* which have broad hyaline margins, often widely dilated in the proximal half to the extent that the bract is somewhat 3-lobed. From *C. aurantia* it is further distinguished by the long 'petiolate' leaves and from *C. crocata* (which is generally a species of higher mountains in Victoria) by the overall more robust habit, broader leaves and bracts and proportionately larger inflorescences. Some 'shade' forms of *C. variabilis* J.Everett & Doust approach *C. sylvestris* in habit, but



**Figure 2.** *Craspedia sylvestris* Capitular bract (from MEL 2045414).

the leaves are rarely wider than 20 mm, the florets yellow rather than orange, and the capitular bract with membranous margins wider than the stereome. *Craspedia variabilis* is not known to occur at elevations above ca. 1000 m, considerably below the lowest altitudinal limit of *C. sylvestris*.

The species is locally common, but currently not recorded from a number of high-montane forest areas that have similar habitats to those at known sites. It could be anticipated to occur in such areas (e.g. forests surrounding the Bogong High Plains, the Nunniong Plateau and the Cobberas Range). It is reasonably represented in national parks (Alpine NP, Mt Buffalo NP). However, like many alpine/subalpine herbs, it is very susceptible to a projected drier and hotter climate as modelled by the CSIRO (2020) <https://www.climatechangeinaustralia.gov.au/en/>. An IUCN (2020) assessment produces a risk code of Vulnerable (VU (A3c)).

The manuscript name *Craspedia* sp. 'Loveridge' appears on some labels of specimens of this species collected in Victoria at NSW (e.g. *J.A. Jeanes* 2319). The reason for this is unknown and the author of the labels

is not recorded. The same informal name has been used for a New Zealand plant (Druce 1992) collected from the 'Loveridge Basin' which is no longer recognised as distinct (de Lange et al. 1999). It is considered most unlikely that this manuscript name for a New Zealand species is the same taxon as *C. sylvestris*.

**Etymology:** The name from the Latin meaning 'of forests' was suggested by Everett. While not always appropriate (some plants occur in *Eucalyptus pauciflora* subalpine woodlands), the name is retained to avoid confusion on specimens so annotated by her.

***Craspedia basaltica* J.Everett ex N.G.Walsh *sp. nov.***

*Craspedia* sp. 2 *sensu* J. Everett in N.G. Walsh & T.J. Entwisle (eds), *Flora of Victoria* 4: 763 (1999); Walsh, N.G. & Stajsic, V. (2007), *A Census of the Vascular Plants of Victoria* Edn. 8:55, 176; *Craspedia* sp. Derrinallum (N.G.Walsh 5591) Vic. Herbarium, Australian Plant Name Index <https://biodiversity.org.au/nsl/services/APNI>.

**Type: VICTORIA.** Nerrin Nerrin-Woorndoo Rd, 4 km WSW of Mt Hamilton, *S.J. Forbes* 1433, 3.ix.1983 (holotype: MEL 666789; isotypes: AD, NSW).

Rosetted perennial herb, shortly rhizomatous; flowering scapes 1–4 per rosette, to 20(–30) cm high;



**Figure 3.** Distribution of *Craspedia sylvestris* (triangles) and *C. basaltica* (closed circles), based on herbarium collections at MEL.



roots thick, spreading, woolly, commonly emerging at successive levels from rootstock. Rosette leaves usually rather crowded, ascending-spreading, lamina narrow-elliptic or narrowly obovate, 20–30(–60) mm long, 2–6(–10) mm wide, green, with scattered multiseptate eglandular hairs to c. 0.5 mm long, usually some sessile or subsessile glands present at least abaxially when young, base attenuated and petiole-like, usually reddish, about as long as or longer than lamina; leaf remnants usually retained as a fibrous tunic surrounding the current season's rosette for several seasons. Stem bracts c. 8–12, narrowly ovate to lanceolate, sessile (sometimes amplexicaul) from about the third bract from the base to the inflorescence, margins plane. Inflorescence pale yellow, c. spherical, 15–25(–40) mm diam., with 20–40 capitula on peduncles c. 2 mm long; scape straw-coloured to reddish, with some spreading multiseptate hairs in the lower part, but with mainly loose to moderately dense cobwebbed heads beneath the inflorescence. Individual capitula mostly with 5 or 6 (rarely to 8) florets; bract subtending individual capitula broadly ovate, 4.5–6 mm long, 2.5–3.5 mm wide, margins membranous, colourless to brown, stereome very small, much narrower than membranous margins and usually only c. half as long as the entire bract, finely woolly at base. Cypselas 1.5–2 mm long, 0.6–1 mm wide, white-sericeous; pappus 3–5 mm long. Flowers Aug.–Oct. (Figures 4, 5).

**Selected specimens examined: VICTORIA.** Chatsworth Rd, 8 km W of Derrinallum, *K.L. McDougall s.n.*, 11.x.1990 (MEL *p.p.*, with *C. variabilis*); Bannockburn Rail Reserve, c. 2.5 km NW of rail station, *N.G. Walsh 5591 & N. Williams*, 18.ix.2002 (MEL); Shelford-Mt Mercer Rd, c. 3 km NNW from Rokewood-Shelford Rd, *N.G. Walsh 5594 & N. Williams*, 18.ix.2002 (MEL); Shelford-Mt Mercer Rd, c. 5 km N of Shelford-Rokewood Rd, *J.A. Jeanes 1224, M.J. Hirst & N. Polidarpowski*, 14.x.2005 (MEL); Laverton, near Fitzgerald Rd, *collector unknown*, ix.2001 (MEL); Rockbank, Clarke Rd grassland, *V. Stajsic 7311 & J.A. Jeanes*, 7.xi.2012 (MEL); ca 8 km SW of Werribee, on railway reserve, *R.J. Adair 1760*, 29.ix.1982 (MEL); Woorndoo-Streatham Rd, 1.5 km NE of Pagels Lane, *N.G. Walsh 8853 & A. Messina*, 15.xi.2018 (MEL); Little River, *J.P. Fullagar s.n.*, s.d. (MEL); 1 km W of Poonneet Rly Siding, 0.5 km SE of Cressy PO, *A.C. Beauglehole 58416* (MEL); Geelong-Ballarat rail line, c. 6 km S of Meredith, *S.J. Platt 122*, 30.x.1984 (MEL); Rail crossing of the Camperdown-Lismore Rd, 3 km SW of Lismore PO, *G.J. Hirth*, 18.ix.1977 (MEL). 3 miles [5 km] W of Kaniva, *R. Melville 877*, 15.ix.1952 (K, MEL); Ararat, *C. Green 66*, s.d. (MEL).

**Distribution and habitat:** Apparently endemic in Victoria. Rare, now apparently restricted to drier grasslands of the Volcanic Plain west of Melbourne (e.g. Deer Park, Bannockburn, Shelford, Little River, Derrinallum areas), but apparently formerly with outlying occurrences in the Wimmera near Ararat, Kaniva and Rupanyup, where likely associated with heavier (cracking clay) soils of the Wimmera, but not recorded from these latter sites for many decades and now possibly extinct from these localities. The Kaniva locality is close to the South Australian border, and similar soils occur in that state contiguous with those of the Victorian Wimmera (Govt of South Australia, 2016), so *C. basaltica* could be anticipated to occur (or have occurred) there as well, but there are no specimens at MEL (Figure 3).

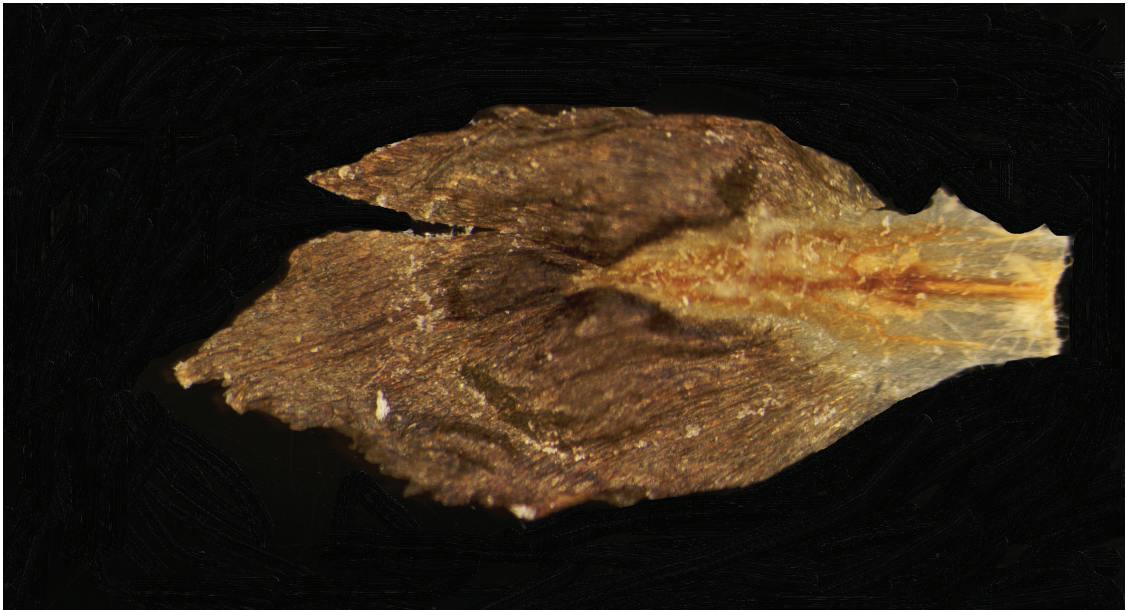
Most likely confused with small forms of *C. variabilis* but differing in the relatively narrower leaves, the generally fewer-flowered capitula (those of *C. variabilis* 7–12-flowered), the smaller inflorescences, and the capitulum-subtending bracts with a very narrow stereome, significantly narrower than the membranous margins (stereome as wide or wider than the margins in *C. variabilis*). While *C. variabilis* is, true to its epithet, variable both in morphology and habitat, *C. basaltica* is constant in both habit and its (usually clay-based) grassland habitat.

Like many forbs of grasslands of the volcanic plain, *C. basaltica* has become exceedingly rare largely as a result of land clearance. In the western part of its range, land clearing occurred for agriculture, but more recently in sites nearer Melbourne, clearing has occurred for housing and industrial development. It is not known from any gazetted reserve and persists on relatively few road and rail reserves, many of which are threatened through weed invasion or inadvertent destruction through ploughing or roadworks. An IUCN (2020) assessment produces a risk code of Endangered (EN (B2ab)).

**Etymology:** The epithet, undoubtedly relating to the species' restriction to basaltic clay soils (at least apparently nowadays) was suggested by Everett. The name is appropriate and retained to avoid confusion on specimens so annotated by her.



Figure 4. *Craspedia basaltica* Holotype (MEL 666789).



**Figure 5.** *Craspedia basaltica* Capitular bract (from MEL 665686).

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## Key to Victorian species of *Craspedia*

- 1 Short-lived plant with a single tap-root; north-west Victoria only ..... ***C. haplorrhiza***
- 1: Perennial plant with many secondary roots; absent from, or very rare in north-west.....2
- 2 Flowers white ..... ***C. alba***
- 2: Flowers yellow or orange ..... 3
- 3 At least the abaxial leaf surfaces with more or less covered by appressed copious cottony or woolly hairs .....4
- 3: Leaf surfaces glabrous or with septate or glandular hairs but not covered by appressed hairs, but hairs sometimes forming a marginal fringe ..... 7
- 4 Leaves distinctly discoloured with abaxial surface more densely hairy than the adaxial, sticky-glandular, often aromatic when crushed with a scent reminiscent of orange peel ..... ***C. adenophora***
- 4: Leaves more or less concolorous, not sticky ..... 5
- 5 Robust plants with very densely white-woolly leaves (at least on the abaxial surfaces); inflorescences (25–)30–40 mm in diameter; alpine ..... ***C. maxgrayi***
- 5: Small to robust plants with sparsely to densely silvery grey-woolly leaf surfaces; inflorescences 12–30 mm in diameter ..... 6
- 6 Rosette leaves sparsely to densely hairy, with two somewhat indistinct arching secondary veins; lowlands ..... ***C. canens***
- 6: Rosette leaves moderately to densely hairy, with two or four very distinct secondary veins running more or less parallel to the central vein; subalpine to alpine ..... ***C. gracilis***
- 7 Plants mostly above 50 cm high and up to 1 m; rosette leaves narrowly oblanceolate to oblong, often greater than 15 cm long, usually glabrous or glabrescent; mostly lowland swamps and drainage lines ..... ***C. paludicola***
- 7: Plants mostly 50 cm high or lower; rosette leaves obovate to oblanceolate (or narrower in rare *C. basaltica*), mostly conspicuously hairy, or if glabrous an alpine species ..... 8
- 8 Rosette leaves with leaf bases broadly attenuate, not distinctly petiolate; subalpine to alpine ..... 9
- 8: Rosette leaves with leaf bases long-attenuate, usually distinctly petiolate; lowland to alpine ..... 10
- 9 Rosette leaves subglabrous except for a fringe of hairs around the margins; moist to wet habitats ..... ***C. lamicola***
- 9: Surfaces of rosette leaves with robust septate hairs; drier habitats ..... ***C. aurantia***
- 10 Flowers always yellow; lowland ..... 11
- 10: Flowers usually orange, more rarely yellow; montane or subalpine ..... 12
- 11 Leaves 10 mm wide or less, blade less than half the total leaf length, base conspicuously red-tinged; virtually confined to grasslands of the volcanic plain west of Melbourne ..... ***C. basaltica***
- 11: Widest leaves usually more than 12 (rarely c. 8) mm wide, blade more than half the total length, base green or white; widespread, rare on the volcanic plain ..... ***C. variabilis***
- 12 Basal leaves linear-spathulate to spatulate, the widest to 12 mm wide, mostly long-attenuate at base; capitula 1–2 cm diameter; typically a species of moist grassland in alpine areas ..... ***C. crocata***
- 12: Basal leaves broadly spatulate, the widest 20–40 mm wide, very long-attenuate at base; capitula 2–3 cm diameter; mostly in grassy understorey of montane woodlands and forests ..... ***C. sylvestris***