A new species and new combination in *Craspedia* (Asteraceae) from Tasmania

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Abstract

Rozefelds, A. C. (Tasmanian Herbarium, GPO Box 252–04, Hobart, Tasmania 7001, Australia) 2001. A new species and new combination in Craspedia *(Asteraceae) from Tasmania.* Telopea *9(4): 813–820.* **Craspedia glabrata** (Hook.f.) Rozefelds from subalpine communities in Tasmania is recognised as a distinct species. It is distinguishable from all mainland Australian and Tasmanian taxa by its small size, white florets and narrowly oblanceolate, pale green leaves. **Craspedia preminghana** Rozefelds is characterised by its white florets and broad oblanceolate-obovate, green leaves with multiseptate hairs and is known only from the type locality at Preminghana (Mount Cameron West) in north-western Tasmania. The distribution and conservation status of both species are examined.

Introduction

Craspedia has proved to be a difficult genus taxonomically, and with the exception of the flora treatment in Curtis (1963), it has not been critically studied in Tasmania. Currently four *Craspedia* species (Buchanan 1999), one of which consists of four varieties, are recorded from Tasmania. However, there is no recent key to these taxa and the species limits and the diagnostic characters that define each species remain unclear. In the absence of a modern treatment of the Tasmanian species it is also unclear whether any of these species should be listed as rare or threatened. This lack of study has led to the delisting of taxa, e.g., *Craspedia glauca* var. *glabrata*, from the revised list of threatened species for the State (W. Potts pers. comm. 2001). A taxonomic revision of the genus in Tasmania is therefore the first step in assessing whether any of the taxa are threatened and should be listed under the Tasmanian Threatened Species Act. It also allows the species of *Craspedia* in Tasmania to be critically compared with those from mainland Australia, and New Zealand.

It has become evident, in undertaking this study, that resolution of the taxonomic problems in *Craspedia* in Tasmania is reliant upon the availability of good herbarium specimens, supported by field observations of living plants. Existing herbarium collections are often information-poor and lack notes on floret and anther colour, root characters, leaf appearance (i.e., whether the leaves are flat, or u- or v-shaped in cross section) and habitat information (e.g., landform, soil type and associated vegetation). Recent research by Bridle & Kirkpatrick (2001) has also shown that flowering time is important in delimiting species.

This is the first in a planned series of papers on *Craspedia*, in Tasmania, and two distinctive species with white florets are described. The morphology, distribution, ecology and conservation status of each species is discussed. The two species are compared with other Australian species of *Craspedia* that have white florets. The Tasmanian biogeographical regions used are those of Orchard (1988).

Taxonomy

Craspedia glabrata *(Hook.f.) Rozefelds*, **comb. nov.**

Basionym: *Craspedia richea* Cass. (sp. nom. illeg.) var. *glabrata* Hook.f. *Lond. J. Bot.* 6: 118 (1847).

Craspedia glauca (Labill.) Sprengel var. *glabrata* (Hook.f) Curtis (comb. inval.), *Student's Flora of Tasmania* 2: 347 (1963).

Remarks: This species was described as a variety of *C. richea* Cass. by Hooker (1847). The species name, *Craspedia richea* Cass. is illegitimate, as the basionym for this species is *Richea glauca* Labill. (Chapman 1991). Curtis (1963) attempted to rectify this mistake by transferring the variety *glabrata* to *C. glauca*. The new combination *C. glauca* var. *glabrata* Hook.f., however, is invalid, as the original reference and date of publication were not cited (Chapman 1991).

Type: Marlborough, Tasmania, *Gunn 1159* 8 Jan 1841, lectotype K [**here designated**] n.v., Cibachrome HO ! (Fig. 1).

Vernacular name: Little Alpine Billy Button.

Small *herb* with usually a single flowering scape 8–18(–30) cm high, roots thick, tomentose covered with fine brown hairs. *Leaves* mostly basal, narrowly oblanceolate to almost linear, 3.5–7.0 cm long, 2.5–4.0 mm wide, margins entire, glabrescent, concolorous, pale green with slight bluish tinge, usually v-shaped in cross section *in vivo*, usually one prominent mid vein, upper leaf surface with a few stalked glandular hairs, c. 0.1 mm long, and arachnoid hairs on the leaf margins and sometimes over the entire leaf surface, lower leaf surface with occasional stalked glandular hairs c. 0.1 mm long, and scattered arachnoid hairs, occasionally widespread giving a weakly tomentose appearance, leaf base purplish, old leaf bases retained. *Bracts* 4–8, becoming progressively shorter and narrower distally, leaf-like near base, up to 25 mm long, and up to 2.5 mm wide, margins entire, wrapping halfway around but not obscuring the scape, distal bracts linear, 6–10 mm long, 0.8–1.2 mm wide, margins entire. *Inflorescence* a single globose, terminal compound head. *Scape* purplish, 0.8–2.0 mm thick, usually with scattered, long, fine arachnoid hairs, particularly near the base of the compound head. *Compound head* hemispherical-spherical, 8–12 mm in diameter, with 25–40 partial heads. *Partial heads* near base of compound head, with 3–6 florets, main bract of the partial involucre broadly triangular, with a green ovate-triangular, glandular and herbaceous stereome, arachnoid hairs near the base, and light brown membranous margins. *Corolla* white. *Anthers* tailed, cream. *Achenes* 1.5–1.7 mm long with small scattered glandular hairs, covered by a dense indumentum of fine silky hairs; pappus of 11–16 colourless plumose bristles c. 3 mm long.

Selected specimens examined: Tasmania: Ben Lomond: SE of Ski Village, Ben Lomond National Park, 41°31′08″S 147°40′07″, wet seepage areas in alpine shrubland, on dolerite, altitude 1460 m, *Rozefelds 1597*, 29 Jan 2000 (HO504310); Slopes behind Ben Lomond Ski Village, 41°32′S 147°40′E, on dolerite, altitude 1480 m, *Rozefelds 116*, 2 Mar 1996 (HO316207). Central Highlands: Camerons Lagoon, near Great Lake, 41°57′27″S 146°40′43″E, altitude 1040 m, *Rozefelds 1589,* 23 Jan 2000 (HO504428); Camerons Lagoon, 41°57′S 146°40′E, altitude 1040 m, on basalt, *K. Bridle s.n.,* 16 Jan 2000 (HO504228); Table Mountain, NW Slope, 42°14′S 147°08′E, *M.T. Davis 1128*, Mar 1954 (HO10844); near Interlaken, 42°09′S 147°10′E, altitude 1000 m, marshland, *M.T. Davis 1139*, Mar 1954 (HO10847); 10 mls [16 km] N.E. of Bothwell, 42°17′S 147°05′E, marsh, *J. Somerville s.n.*, 22 Dec 1958 (HO10846); and *W.M. Curtis s.n.,* 22 Dec 1958 (HO52705); Flagstaff Creek, St Patricks Plains, 42°02′S 146°46′E, *A.M. Buchanan 6302*, 22 Mar 1985 (HO410606); Millers Bluff, 41°56′S 147°10′E, *Astelia alpina* wetland, *A. Moscal 18935*, 25 Feb 1990 (HO144238); Alma Tier (Interlaken Road) 42°08′S 147°04′E, montane grassland, altitude 1000 m, *L. Gilfedder 17,* 10 Feb 1991 (HO443077). East Coast: 1.5 km E of Apsley Marshes, 41°57′S 148°13′E, in heath sedgeland, altitude 15 m, *A. Moscal 8537*, 7 Oct 1984 (HO400801).

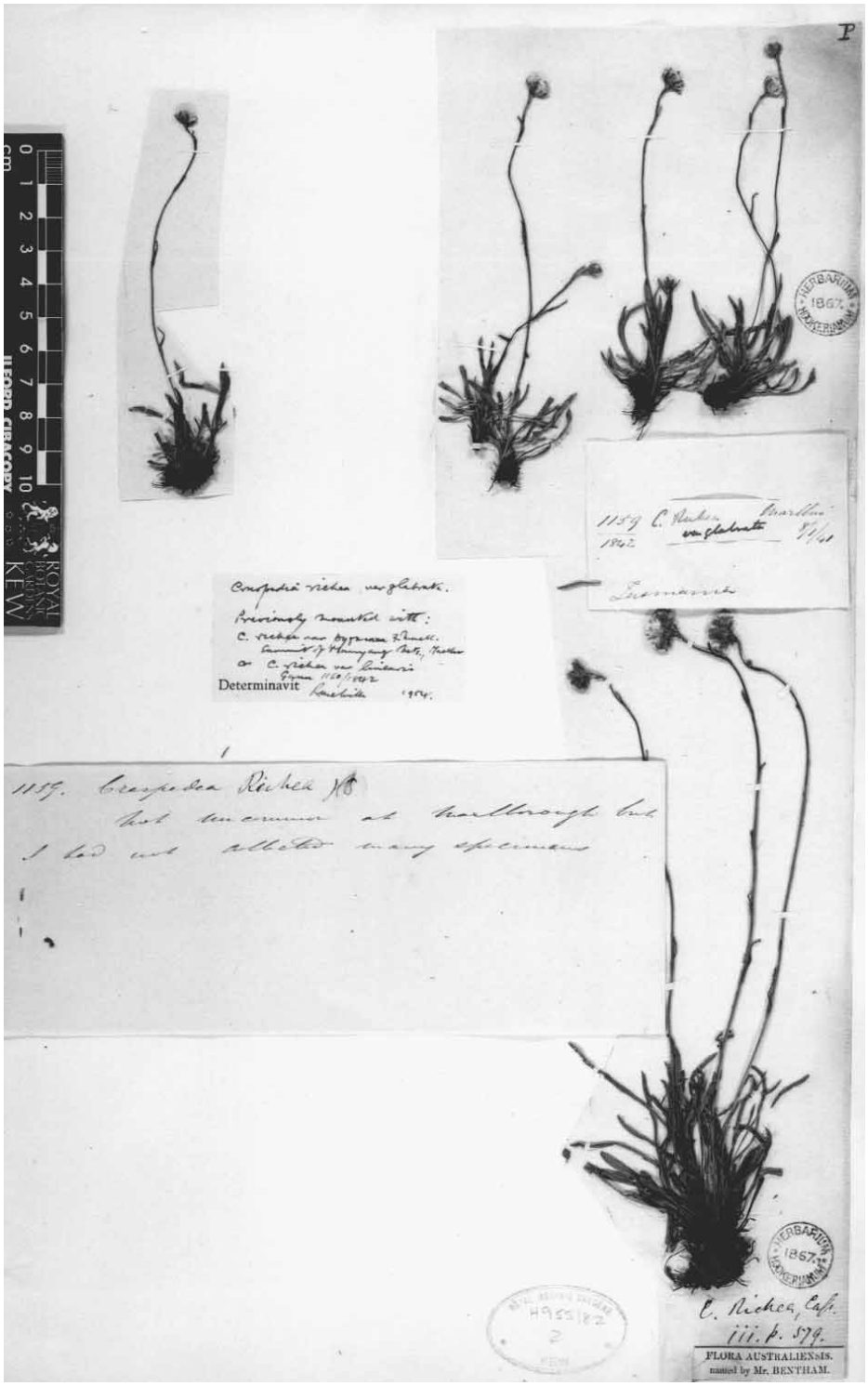

Fig. 1. Lectotype of *Craspedia glabrata* (Hook.f.) Rozefelds (*Gunn 1159*, K). The lectotype is the right hand specimen of the three specimens in the top right hand corner.

Remarks: Hooker (1847) in describing *C. richea* var *glabrata* questioned whether it required specific rank. Curtis (1963) proposed a new combination *C. glauca* (Labill.) Sprengel var *glabrata*, that although illegitimate, suggested affinities with *C. glauca*. *Craspedia glabrata* can be easily distinguished from *C. glauca* by its narrowly oblanceolate leaves and white florets. Four *Craspedia* species in mainland Australia and Tasmania have white florets, and they differ from *Craspedia glabrata* in a number of vegetative and reproductive characters (Table 1). *Craspedia alba* Everett & J.Thompson (mainland Australia) can be distinguished from *C. glabrata* by its more robust, oblong to oblanceolate leaves, and the silvery appressed hairs on the leaves and scape (Table 1). *Craspedia alpina* Backh. ex Hook.f. (Tasmania) has much larger spathulate leaves with white woolly hairs, and it also has much larger compound heads (Table 1). *Craspedia leucantha* F.Muell. (mainland Australia) differs from *C. glabrata* in having larger spathulate leaves that are 7–14 cm in length and 5–25 mm in width (Everett & Doust 1992).

Distribution: *Craspedia glabrata* is known from the Central Highlands and Ben Lomond Plateaus (Fig. 2). The type (*Gunn 1159*) is from Marlborough, a locality that no longer exists, but it equates to an area on the Nive River, near Bronte in Central Tasmania. All the current collections referred to *C. glabrata* are from subalpine and alpine areas above 800 m in Tasmania, with the exception of a lowland collection (*Moscal 8537*) from the Apsley Marshes in eastern Tasmania which has been tentatively referred to this species (Fig. 2).

Habitat: The species has been collected from moist, poorly drained soils and swampy areas, or occasionally from grassland.

Flowering period: December–March.

Conservation status: This taxon, as *Craspedia glauca* var. *glabrata*, was listed as 'Rare' in the Tasmanian Threatened Species Protection Act (Anon 1995). As its taxonomic status was unclear, along with all the other varieties of *C. glauca* recognised by Curtis (1963), it was delisted from the draft list of threatened species for the State (W. Potts pers. comm. 2001). While there are only relatively few herbarium collections in the Tasmanian Herbarium, the widespread nature of the existing collections, and supporting field observations, suggest that it is not threatened (Fig. 2).

Craspedia preminghana Rozefelds **sp. nov.**

A *Craspedia alba* Everett & J.Thompson, *C. leucantha* F.Muell., *C. glabrata* (Hook.f) Rozefelds et *C. alpina* Backh. ex Hook.f. combinatione characterum sequentium distinguitur: foliis oblanceolatis-obovatis prasinis, 13–20 cm longis, 2.0–3.4 cm latis cum pilis multiseptatis longis.

Type: Tasmania, Preminghana (Mt Cameron West), North West Coast, 40°52'S 144°42'E, *A. Moscal 27954B*, 9 Jan 1996, altitude 65 m, on cliff base, scree boulder slope (holo HO319514).

Vernacular name: Preminghana Billy Button

Robust *herb* with one to three scapes up to 36 cm high, roots thick, tomentose covered with fine brown hairs. *Leaves* mostly basal, broadly oblanceolate to spathulate, 13–20 cm long, 2.0–3.4 cm wide, margins entire, hispidulous, discolorous, dull green above, light green below, and flat to slighty concave in cross section *in vivo*, prominent mid vein and two conspicuous lateral veins that extend to the apex, upper leaf surface with scattered hairs consisting of longer multiseptate hairs up to 0.4 mm long, and smaller stalked glandular hairs, c. 0.1 mm long, with a conspicuous rim of multiseptate, stalked glandular and scattered arachnoid hairs along the margins, lower leaf surface

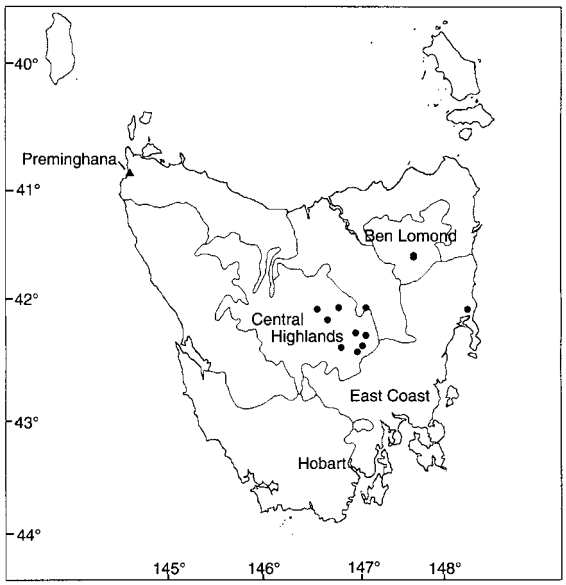

Fig. 2. Map showing the distribution of *Craspedia glabrata* (circles) and *C. preminghana* (triangle) based upon Tasmanian Herbarium (HO) records.

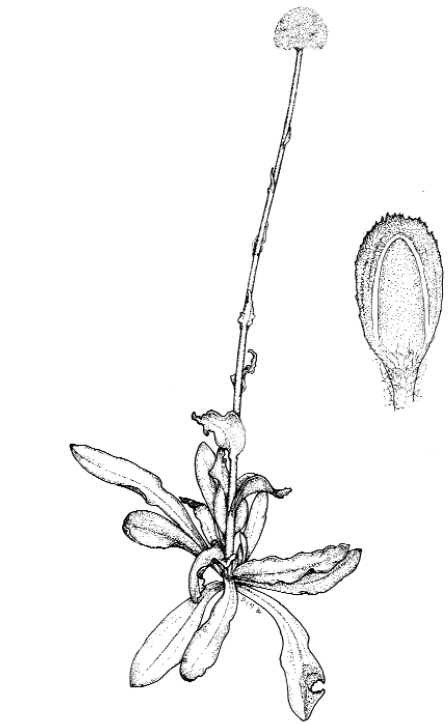

Fig. 3. *Craspedia preminghana*. Habit, and detail of involucral bract of compound head. *del*. D. I. Morris.

with a greater density of scattered hairs, consisting of multiseptate hairs up to 0.5 mm long, and smaller stalked glandular hairs c. 0.1 mm long, particularly along margins and veins, leaf bases purplish *in vivo*, old leaf bases retained. *Bracts* 5–9, becoming progressively shorter and changing shape distally, leaf-like in size and shape near base, margins entire, narrowly attached and not obscuring the scape, middle bracts broadly ovate to lanceolate, up to 60 mm long and 25 mm wide, margins undulose to entire, stem clasping with basal margins sometimes obscuring the scape, distal bracts, lanceolate-linear, 8–15 mm long and 4–6 mm wide, margins entire, wrapping halfway around stem but not obscuring scape. *Inflorescence* a single globose, terminal compound head. *Scape* green to purplish, 4–5 mm thick, surface slightly ridged, with long multiseptate hairs to c. 1 mm long, and stalked glandular hairs. *Compound head* spherical, c. 25–35 mm in diameter with up to c. 60–100 partial heads. *Partial heads* near base of compound head with 5–7 florets, main bract of the partial involucre ovate-triangular, with a green ovate to triangular, glandular and herbaceous stereome, and dark brown membranous margins. *Corolla* creamy white. *Anthers* tailed, yellow. *Achenes* 2–3 mm long (not mature) with small scattered glandular hairs, covered by a dense indumentum of fine silky hairs; pappus of 12–16 colourless plumose bristles, 4–5.5 mm long. (Fig. 3).

Specimens examined: Tasmania: West Coast: All from Preminghana (Mount Cameron West), 40°52′S 144°42′E, altitude 80 m, *Rozefelds 1340* & *A.M. Buchanan*, 21 Jan 1999 (HO441379); altitude 80 m, *Rozefelds 1341*, 21 Jan 1999 (HO441463); 40°51′55″S 144°42′15″E, *Rozefelds 1857* & *W.A. Gebert*, 27 Sep 2000 (HO509227); 40°52′S 144°42′E, *F. Coates s.n.*, 10 Jan 1989 (HO114134).

Derivation: Preminghana is the Tasmanian Aboriginal name for the locality.

Remarks: *Craspedia preminghana* can be distinguished from *C. alpina* Backh. ex Hook.f. (Tasmania) and *C. alba* Everett & J.Thompson (mainland Australia) by its green foliage and the conspicuous multiseptate hairs on the leaves and scape (Table 1). *Craspedia leucantha* F.Muell. (mainland Australia) differs from *C. preminghana* in having almost glabrous leaves and a smaller compound head (Table 1) (Everett & Doust 1992). *Craspedia preminghana* can be distinguished from *C. glabrata* by its broadly oblanceolate to spathulate leaves, multiseptate hairs on leaves and scape, and also by its much larger compound head (Table 1). The flowers of *C. preminghana* are honey-scented, and the leaves when crushed have a conspicuous lemon-mint smell.

Distribution: Presently known only from the type locality, Preminghana in north western Tasmania (Fig. 2). Fieldwork at nearby Woolnorth Station in north western Tasmania, which has a similar geology and aspect to Preminghana, did not locate additional populations of this species.

Habitat: Known to occur only on steep basalt cliffs with coastal vegetation including *Correa backhousiana*, *Alyxia buxifolia* and *Urtica incisa* (narrow-leafed coastal form). The vegetation of Preminghana (Mount Cameron) and adjoining coastal areas was described by Brown (1980).

Flowering period: October – January.

Conservation status: The plants have been collected from steep slopes of Mount Cameron, which are difficult to access and the number of plants in the population is therefore difficult to ascertain. It is thought that the entire population consists of fewer than 200 plants. The species therefore requires listing under the Australian Environmental Protection and Biodiversity Conservation Act (1999) as 'Critically Endangered' as it is known from only one locality and has an estimated population size of less than 250 mature plants. Field studies by Bridle and Kirkpatrick (2001) have shown that grazing pressure from both marsupials, and/or introduced mammals, impacts negatively on *Craspedia* species in the Central Highlands of Tasmania.

Craspedia preminghana grows on steep, almost vertical, cliff edges on Preminghana, and its survival may be due to the likely absence, or reduced impact of grazing in these areas. Under the guidelines for the listing of species under the Tasmanian Threatened Species Protection Act (Anon 1995) the species would be listed as 'Endangered' — total population less than 250 individuals.

Acknowledgments

I wish to thank Alex Chapman (ABLO) for his help in obtaining Cibachromes from K of Tasmanian type material. The Tasmanian Aboriginal Land Council allowed access to Preminghana. Alan Gray kindly grew on some plants collected from Preminghana for the author, and Dennis Morris prepared Fig. 3. NSW loaned comparative material of mainland species for study and Joy Everett (NSW) has provided advice on taxonomic problems within the genus and her editorial advice has considerably improved the manuscript.

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