

## Typification of *Gnaphalium collinum* var. *monocephalum* (Gnaphalieae: Asteraceae) and clarification of related material

Christina Flann<sup>1</sup>, Paul G. Wilson<sup>2</sup> and Jan J. Wieringa<sup>1</sup>

<sup>1</sup>Netherlands Centre for Biodiversity Naturalis (section NHN), Wageningen University Branch, Biosystematics Group, Generaal Foulkesweg 37, 6703BL Wageningen, The Netherlands

<sup>2</sup>Western Australian Herbarium, Department of Environment and Conservation, Locked Bag 104, Bentley Delivery Centre, Bentley, Western Australia 6983  
Email: christinaflann@gmail.com

### Abstract

Flann, C., Wilson, P.G. & Wieringa, J.J. Typification of *Gnaphalium collinum* var. *monocephalum* (Gnaphalieae: Asteraceae) and clarification of related material. *Nuytsia* 20: 1–5 (2010). The protologue of *Gnaphalium collinum* var. *monocephalum* Hook.f. cites three gatherings which are now considered to be referable to three different taxa known by the names *Euchiton lateralis* (C.J.Webb) Breitw. & J.M.Ward, *Euchiton traversii* (Hook.f.) Holub and *Argyrotegium mackayi* (Buchanan) J.M.Ward & Breitw. This has caused confusion regarding the typification and application of J.D.Hooker's varietal name. This article resolves the uncertainty and provides a corrected synonymy for all the taxa involved.

### Introduction

Recent taxonomic work in the genus *Euchiton* Cass. (Flann *et al.* 2008) has raised questions about the name *Gnaphalium collinum* var. *monocephalum* Hook.f. (1859) as there has been confusion regarding its application resulting from issues of typification (Drury 1972, Ward *et al.* 2003). The protologue included three gatherings which are now referred to three different taxa known as *Euchiton lateralis* (C.J.Webb) Breitw. & J.M.Ward, *Euchiton traversii* (Hook.f.) Holub and *Argyrotegium mackayi* (Buchanan) J.M.Ward & Breitw. Two of the gatherings of *G. collinum* var. *monocephalum* were cited by Bentham in the protologue of *Gnaphalium collinum* var. *radicans* Benth. (1867) which complicated the situation. Lectotypes have been designated for both of the latter names (Wakefield 1957, Drury 1972) but these have not been widely adopted (Ward *et al.* 2003). This issue is now resolved and in line with the recent revision of the taxonomy of this group (Flann *et al.* 2008) a revised set of synonymies is listed

### Discussion

Hooker (1859) in the protologue of *Gnaphalium collinum* var. *monocephalum* referred explicitly to one gathering as 'HAB: Western Mountains, Archer', and in the discussion to two Mueller gatherings from the 'Australian Alps at elevations of 5-6000 ft' each of which bore one of two designations

of Mueller's (*G. involucreatum* var. *radicans* or *G. involucreatum* var. *monocephalum*). The original material therefore consists of the specimens of these three cited gatherings actually used by Hooker together with any unseen duplicate specimens, each specimen being a syntype.

The sheet K324334/5 contains two syntype specimens of *G. collinum* var. *monocephalum*. One of these is enclosed in an envelope labelled 'Western Mountains, Archer' (Figure 1A, C inset). This material is now known as *Euchiton lateralis*. The other syntype (Figure 1A), labelled in Mueller's hand as *Gnaphalium involucreatum* var. *radicans* and as coming from 'Summits of the Munyang Mountains 5-6000', on springs' is assumed to consist of at least the element immediately above the label and probably one or more of the other four elements attached to the sheet. Previous labelling and pencilled lines suggest all may not belong to the one gathering. However, all five elements are of the species now known as *Argyrotegium mackayi*.

There is a further syntype of *G. collinum* var. *monocephalum* at K under the other Mueller herbarium name, '*G. involucreatum* var. *monocephalum*', with a similar label in Mueller's handwriting but with the collection locality 'Subalpine pastures on the Snowy River' (K324224, Figure 1B). This material is now known as *Euchiton traversii* and is also a syntype of that name for when Hooker (1864: 154) described

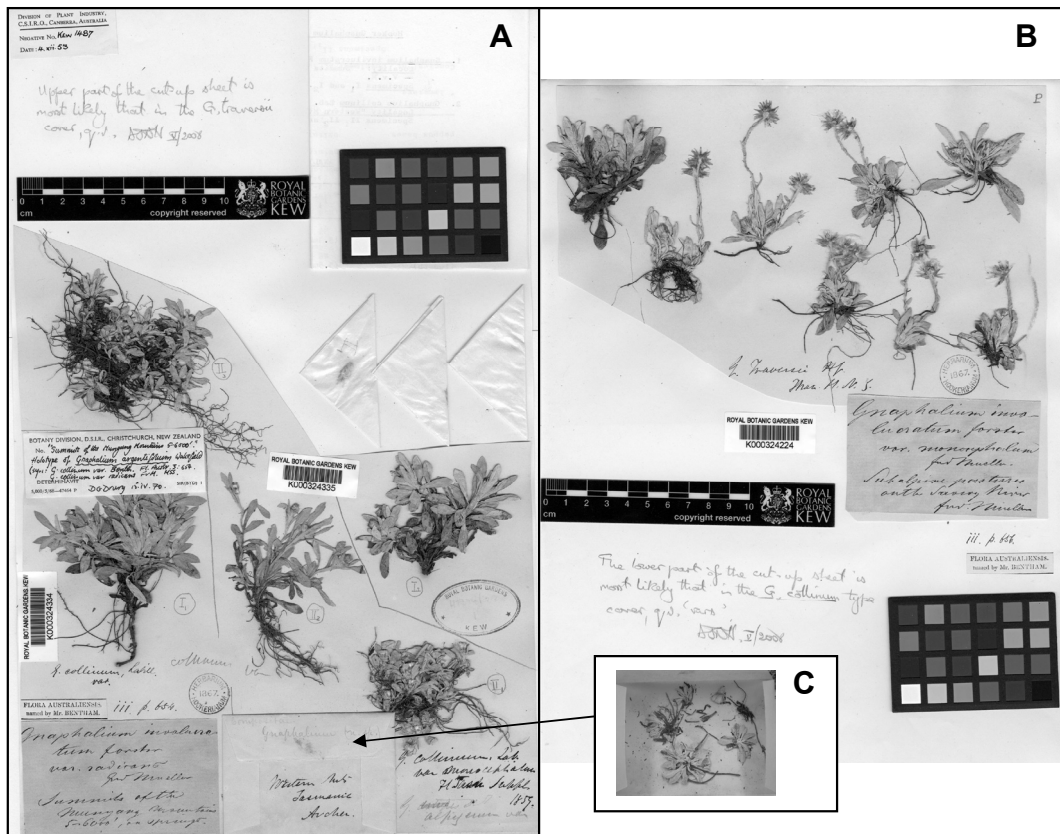


Figure 1. Type material of *Gnaphalium collinum* var. *monocephalum* A – herbarium sheet with both the Mueller and Archer syntype material (K324335/ K324334), the envelope contains the lectotype of *G. collinum* var. *monocephalum* and the visible specimens are an isolectotype of *G. collinum* var. *radicans*. B – Syntype of *G. collinum* var. *monocephalum* and *G. traversii* (K324224). C – Inset showing the Western Mountains, Tasmania, Archer material (contents of envelope on K324335), lectotype of *G. collinum* var. *monocephalum*.

*G. traversii* he noted 'Mueller has sent this same plant from the Victorian alps as *G. involucreatum* var. *monocephalum*, but besides the totally different habit it differs from that plant in the heads not being bracteate and twice as large, and in the looser cottony tomentum'.

Bentham (1867: 654) described *Gnaphalium collinum* var. *radicans* and recognised it as being distinct from both *G. collinum* var. *monocephalum* and *G. traversii* citing 'Victoria. Summits of the Australian Alps, *F. Mueller.*' and 'Tasmania. Western mountains, *Archer.*' Bentham had received Mueller's material on loan for work on *Flora Australiensis* and so he had available both the material on K324334/5 referred to above and the two sheets at MEL that bear a label annotated '*G. involucreatum* var. *radicans*' in Mueller's handwriting namely MEL49311 and MEL49312. Wakefield (1957: 187, 188) published *Gnaphalium argentifolium* N.A. Wakef. as a *nom. et. stat. nov.* based on *G. collinum* var. *radicans*, stating:

'LECTOTYPE: "Summits of the Australian Alps", *leg.* F. Mueller. This material – seen by Bentham and now in MEL – appears to be part of a suite of specimens, now in various herbarium folders, collected under the original label: In pratis altioribus montium Munyang Mountains, utplurimum altitudim 5-6000 ft. Jan. '55. Dr. ferd. Mueller.'

Clearly Wakefield has designated the specimen on MEL49311 as the lectotype as the locality information given on the label attached to that sheet is as cited by Wakefield and as given by Bentham in the protologue. *Gnaphalium argentifolium* was transferred by Anderberg (1991: 167) to the genus *Euchiton* Cass. as *Euchiton argentifolius* (N.A. Wakef.) Anderb., and is now referred to *Argyrotegium* as *A. mackayi* (Flann *et al.* 2008), making *G. collinum* var. *radicans*, *G. argentifolium* and *E. argentifolius* all nomenclatural synonyms.

Drury (1972) in his paper on the genus *Gnaphalium* discussed *G. collinum* var. *monocephalum* under the heading 'monocephalous chamaephytes of group IV'. He did not discuss lectotypification in the text but in a small note in a table comparing several species (Drury 1972: 172) he clearly lectotypified *G. collinum* var. *monocephalum* on the 'Archer, Western Mountains' material at K. The data given for *G. collinum* var. *monocephalum* can be traced back to the page authored by Drury and attached to K324334/5. The plants in the envelope are the only ones on the sheet with one capitulum. They are small, white-hairy, stoloniferous, and have rosettes with a single capitulum that contains fewer than 80 female florets. However, it is clear that Drury's measurements relate to the visible specimens on the sheet which are Mueller's collection of *G. involucreatum* var. *radicans* from the Munyang Mountains that is now known as *A. mackayi*, rather than the Archer material enclosed in the envelope, that is now known as *E. lateralis*. The latter species was thought to be endemic to New Zealand but has now been shown to be present in Tasmania (Flann *et al.* 2008).

Drury's lectotype fits the description and as a cited specimen it cannot be considered to be in major conflict with the protologue, therefore his choice cannot be superseded (Art. 9.17b, McNeill *et al.* 2006), moreover, it is in conformity with current nomenclature. If he had correctly written down what he evidently tried to do, i.e. lectotypify the name on the mounted specimens on that sheet, we would now have been forced to supersede his choice because it would have been in conflict with the protologue.

The practical outcome is that the correct placement for two names can now be clearly stated: *G. collinum* var. *monocephalum* is a heterotypic synonym of *E. lateralis* while *G. collinum* var. *radicans* (and therefore also *G. argentifolium*) is a heterotypic synonym of *A. mackayi*.

### Revised synonymy of associated species

***Euchiton*** Cass. in *Dict. Sci. Nat.*, ed. 2. 56: 214 (1828). = *Gnaphalium* sect. *Euchiton* (Cass.) DC., *Prodr.* 6: 235 (1838). – Type: *Euchiton pulchellus* Cass. = *Euchiton involucratus* (G.Forst.) Holub.

***Euchiton lateralis*** (C.J.Webb) Breitw. & J.M.Ward in Ward & Breitweiser, *New Zealand J. Bot.* 36(2): 303 (1998). = *Gnaphalium laterale* C.J. Webb, *New Zealand J. Bot.* 26(3): 485-487. 1988 – *Holo*: [New Zealand] Ahukawakawa Swamp, Egmont National Park, 3000 ft, Jan. 1963, *A.P. Druce* (CHR158660!) = *Gnaphalium collinum* var. *monocephalum* Hook.f. in J.D. Hooker, *Bot. Antarct. Voy. III. (Fl. Tasman.)*. 2: 364 (1859). = *Gnaphalium japonicum* var. *monocephalum* (Hook.f.) F.Muell., *Pap. & Proc. Roy. Soc. Tasmania* for 1870: 15 (1871). – *Lecto*: (designated by Drury 1972: 172): [Australia] Western Mountains, Tasmania, *Archer* (K!).

***Euchiton traversii*** (Hook.f.) Holub, *Folia Geobot. Phytotax.* 9: 271 (1974). = *Gnaphalium traversii* Hook.f., *Handb. N. Zeal. Fl.* 154 (1864). – *Syntypes*: [Middle Island:] [New Zealand] Wairau mountains, alt. 3-4000 ft., *Travers* (K!); [New Zealand] alps of Canterbury, *Haast*; [Australia] Subalpine pastures on the Snowy River, *F. Mueller* (K324224!).

***Argyrotegium*** J.M.Ward & Breitw. in J.M.Ward, I. Breitwiser & C. Flann, *New Zealand J. Bot.* 41: 608–609 (2003). – Type: *Argyrotegium mackayi* (Buchanan) J.M.Ward & Breitw.

***Argyrotegium mackayi*** (Buchanan) J.M.Ward & Breitw. in *New Zealand J. Bot.* 41: 609 (2003). = *Raoulia mackayi* Buchanan, *Trans. & Proc. New Zealand Inst.* 14: 354-355, t. 34, f.2. (1882). = *Gnaphalium traversii* var. *mackayi* (Buchanan) Kirk, *Stud. Fl. New Zealand*: 299 (1899). = *Gnaphalium mackayi* (Buchanan) Cockayne, *Veg. New Zealand*, ed. 2: 324, 439 (1928). = *Euchiton mackayi* (Buchanan) Anderb., *Opera Bot.* 104: 167 (1991). – *Syntype*: [New Zealand] Black Peak Range, South Island, *McKay* (K!) = *Gnaphalium collinum* var. *radicans* Benth. in *Fl. Austral.* 3: 654 (1867). = *Gnaphalium japonicum* var. *radicans* (Benth.) Maiden, *Agric. Gaz. New South Wales* 10: 1024 (1899). = *Gnaphalium argentifolium* N.A. Wakef., *Vict. Naturalist* 73(11): 187 (1957). = *Euchiton argentifolius* (N.A. Wakef.) Anderb., *Opera Bot.* 104: 167 (1991). – *Lecto*: (designated by Wakefield, 187: (1957): [Australia] Summits of the Australian Alps, *F. Mueller* (MEL49312!).

### Acknowledgements

We thank Sue Frisby (K), Debby Redmond and Ines Schönberger (CHR) for type images; Dr Nicholas Hind for discussion of type material; Dick Brummitt for helpful comments on the manuscript; and Gillian Perry for making radical improvements to the text.

### References

- Anderberg, A.A. (1991). Taxonomy and phylogeny of the tribe Gnaphalieae (Asteraceae). *Opera Botanica* 104: 1–195.  
 Bentham, G. (1867). *Flora Australiensis*. Vol. 4. (Reeve, London.)  
 Buchanan, J. (1882). On the alpine flora of New Zealand. *Transactions and Proceedings of the New Zealand Institute* 14: 342–356.  
 Candolle, A.P. de (1838). *Prodromus systematis naturalis regni vegetabilis*. Vol. 6. (Treuttel and Würtz: Paris.)

- Cassini, H. (1828). Uchite, Euchiton. In: Cuvier, F. (ed.) *Dictionnaire des science naturelles*. 2nd ed. Vol. 56, pp. 214-218. (F.G. Levrault: Paris.)
- Cockayne, L. (1928). *The vegetation of New Zealand*. 2nd ed. (Wilhelm Engelmann: Leipzig.)
- Drury, D.G. (1972). The cluster and solitary-headed cudweeds native to New Zealand (*Gnaphalium* section *Euchiton* – Compositae). *New Zealand Journal of Botany* 10: 112–179.
- Flann, C., Breitwieser, I., Ladiges, P.Y., Walsh, N.G. & Ward, J.M. (2008). Morphometric analysis of *Euchiton traversii* complex (Gnaphalieae: Asteraceae). *Australian Systematic Botany* 21: 178–191.
- Holub, J. (1974). New names in phanerogamae 3. *Folia Geobotanica and Phytotaxonomica* 9: 261–275.
- Hooker, J.D. (1859). *The botany, the Antarctic voyage of H.M. Discovery ships Erebus and Terror, in the years 1839-1843 ... Part III. Flora Tasmaniae*. Vol. 2. (Reeve, London.)
- Hooker, J.D. (1864). *Handbook of the New Zealand flora*. Part 1. (Reeve: London.)
- Kirk, T. (1899). *The students' flora of New Zealand and the outlying islands*. (Govt. Printer: Wellington.)
- McNeill, J., Barrie, R.R., Burdet, H.M., Demoulin, V., Hawksworth, D.L., Marhold, K., Nicolson, D.H., Prado, J., Silva, P.C., Skog, J.E., Wiersema, J.H. & Turland, N.J. (eds) (2006). *International Code of Botanical Nomenclature (Vienna Code) adopted by the Seventeenth International Botanical Congress Vienna, Austria, July 2005*. *Regnum Vegetabile* vol. 146. (A.R.G. Gantner: Ruggell, Liechtenstein.)
- Maiden, J.H. (1899). A second contribution towards a flora of Mount Kosciuszko. *Agricultural Gazette of New South Wales* 10: 1001–1042.
- Mueller, F.J.H. (1871). Contributions to the phytography of Tasmania. II. *Papers and Proceedings of the Royal Society of Tasmania for 1870*: 11–20.
- Wakefield, N.A. (1957). Flora of Victoria: new species and other additions. 12. *Victorian Naturalist* 73(11): 186–188.
- Ward, J.M. & Breitwieser, I. (1998). New combinations in *Euchiton* (Compositae-Gnaphalieae) from New Zealand. *New Zealand Journal of Botany* 36(2): 303–304.
- Ward, J.M., Breitwieser, I. & Flann, C. (2003). *Argyrotegium*, a new genus of Gnaphalieae (Compositae). *New Zealand Journal of Botany* 41: 603–611.
- Webb, C.J. (1988). *Gnaphalium laterale*, a new species for New Zealand. *New Zealand Journal of Botany* 26(3): 485–488.

