

Gaultheria viridicarpa, a new name in Ericaceae: Vaccinioideae

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Abstract

Gaultheria viridicarpa J.B. Williams (Ericaceae: Vaccinioideae), is formally published as the new name, raised to the rank of species, for *G. appressa* var. *glabra* A.W. Hill in Burt & A.W. Hill from southern Queensland and northern New South Wales, Australia. Typification, distribution, habitat and conservation status of this species are discussed.

Introduction

Specimens of a *Gaultheria* collected by Charles Moore in the early 1860s on the eastern escarpment of the New England Tableland, Northern Tablelands, New South Wales, were referred to the Tasmanian species *G. hispida* R.Br. (Bentham 1869). Hill (in Burt & Hill 1935) concluded that these collections represented a distinct variety of *G. appressa* A.W. Hill, namely, *G. appressa* var. *glabra* A.W. Hill. This taxonomic concept was maintained until the 1980s (Beadle 1980). Unpublished morphological studies by JBW indicated that the taxon should be recognised as a distinct species, and he annotated the herbarium collection *Moore 139* (K) “*Gaultheria* sp. nov. (*Gaultheria appressa* A.W. Hill var. *glabra* A.W. Hill)”.

In 1989, plants of *Gaultheria* were discovered on the cliff top at Mount Merino, McPherson Range, on the Queensland–New South Wales border. Originally thought to be morphologically different enough to represent a new species, *Gaultheria* sp. (Mt Merino G. Leiper AQ502686), *sensu* Henderson (2002), or a subspecies of the New England species (Williams & Chapman 1992, Briggs & Leigh 1995), it was concluded by JBW, after examination of additional collections from Mount Merino and New England, that plants from both of these regions represent one morphological taxon. The manuscript name, *G. viridicarpa*, was proposed as the name *G. glabra* was preoccupied by an Andean species, and the species was described informally in the Flora of New South Wales (Williams & Chapman 1992). This paper takes the work of JBW and provides the formal framework for valid publication of the name (IRT) whilst recognising JBW’s intellectual contribution.

Taxonomy

Gaultheria viridicarpa J.B. Williams *nom. et stat. nov.*

Basionym: *Gaultheria appressa* A.W. Hill var. *glabra* A.W. Hill in B.L. Burt & A.W. Hill, *J. Linn. Soc. Bot.* 49: 623 (1935).

Type: Top of mountains heads of Macleay and Bellinger Rivers. A very pretty shrub growing among rocks frequently covered with snow. *C. Moore 319*; lecto (here designated) MEL1058751 (Fig. 1); probable isolecto: BM, K, NSW.

[†] Deceased 31 July 2005

Gaultheria sp. A, *sensu* Williams & Chapman in Harden (Ed), *Fl. New South Wales* 3: 400 (1992).

Gaultheria viridicarpa subsp. *merinoensis* J.B.Williams ms, *sensu* Briggs & Leigh, *Rare or Threatened Australian Pl.* 56 (1995) *nom. nud.*

Gaultheria viridicarpa J.B.Williams subsp. *viridicarpa* ms, *sensu* Briggs & Leigh *loc. cit.* (1995) *nom. nud.*

Gaultheria sp. (Mt Merino G.Leiper AQ502686), *sensu* Henderson, *Names & Distributions Queensland Pl.* 67 (2002); Bostock & Holland, *Census Queensland Fl.* 62 (2010).

Gaultheria sp. Point Lookout (J.B.Williams NE37757), *sensu* CHAH (2005).

Distribution and habitat: *Gaultheria viridicarpa* is a narrowly endemic species known from two disjunct populations: McPherson Range, Mount Merino, on the Queensland–New South Wales border, c. 20 km NW of Murwillumbah and along the Great Escarpment from near Ebor south to Point Lookout, c. 70 km E of Armidale, New South Wales. Populations occur in skeletal loam on basalt along cliff-lines of erosional calderas of Pleistocene shield volcanoes, the former on the Tweed Volcano, the latter on the Ebor Volcano. The Mount Merino population is only known along several hundred metres of cliff top at c. 1160 m altitude in a narrow strip between *Nothofagus moorei* closed forest and the escarpment edge, with associated species including *Pittosporum oreillyanum*, *Tasmannia insipida*, *Lomatia arborescens*, *Podolepis monticola*, *Olearia elliptica*, *Coronidium telfordii*, *Xerochrysum* sp. Mt Merino (S.T.Blake 22869), *Leucopogon* sp. Lamington (G.Leiper AQ633386) and *Thelychiton kingianum*. At New England sites plants have been observed on rocky sites adjacent to cliff tops, in cracks in rock faces and in rock overhangs beneath cliffs at 1400–1560 m altitude. The plants grow in *Eucalyptus pauciflora* shrubby open forest with *Banksia integrifolia* subsp. *monticola*, *Ozothamnus whitei*, *Gingidia montana* s. lat. and on the margin of *Nothofagus moorei* layered closed forest with *Trochocarpa montana*, *Coronidium elatum* subsp. *minus*, *Xerochrysum* sp. Point Lookout (I.R.Telford 12830) and *Wahlenbergia telfordii*. Fig. 2.

Specimens examined (selection): **Queensland:** Moreton–New South Wales: North Coast border: [Lamington National Park], Mt Merino (Merino Lookout), 7 Nov 1989, *McDonald 4381 & Macnicol* (BRI, NSW); Mt Merino Lookout, 23 Nov 1990, *Leiper s.n.* (BRI-AQ502686); [Limpinwood Nature Reserve], McPherson Range, Mount Merino, summit lookout, 9 Jan 1989, *Telford 10793* (BRI, CANB, NE, NSW). **New South Wales:** Northern Tablelands: Escarpment edge, Allans Waters, between Ebor and Dorrigo, 11 Dec 1992, *Bale 1295* (NE); New England National Park, Majors Point, c. 12 km E of Ebor, 7 Jun 1987, *Williams s.n.* (NE48724); New England National Park, Point Lookout, 14 Dec 1983, *Williams s.n.* (BRI, CANB, NE48730); New England National Park, Great Escarpment, Point Lookout, 26 Dec 1988, *Telford 10757* (BISH, BRI, CANB, HO, NE, NSW).

Typification: in the protologue of *G. appressa* var. *glabra*, Hill (1935: 632) cited the locality of this variety and where herbarium collections are held as: “Mountains head of Bellingen [Bellinger] River (borders of New England), 1200 m., *Moore* (in Herb. Kew & in Herb. Mus. Brit.). Heads of Macleay and Bellingen River, *Moore* 139 (in Nat. Herb. Vict.). New England, *Moore* (in Herb. Nat. N.S.W.)”

There are two sheets held at NSW. One sheet (NSW396163) bears the label: “*Gaultheria hispida* R.Br. Summits of snowy mountains at the head of Bellinger River at an altitude of 4000'. C. Moore”. The words “Bellinger River” are in Betche’s hand-writing, the additional wording transcribed in another unknown hand verbatim from *Flora Australiensis*. The second sheet (NSW396280) is labelled “*Gaultheria hispida* R.Br. New England” in Betche’s hand. Neither sheet has a collector’s name or a date of collection. Both sheets were redetermined by Joyce Vickery as *Gaultheria appressa* var. *glabra* A.W.Hill.

The sheet held at MEL (MEL1058751) bears the label: “Summits of mountains at the head of Macleay and Bellinger Rivers at an altitude of 4000'. C. Moore 139. A very pretty shrub growing among rocks frequently covered with snow” and a determinavit slip in Hill’s handwriting: “*Gaultheria appressa* A.W.Hill var. *glabra* A.W.Hill”.

Examination of a specimen held at K indicated that it had been received from NSW on 5 November 1867. The MEL specimen was borrowed by Hill in 1932, who transcribed Moore’s collection notes on to the K sheet: “A very pretty shrub growing among rocks frequently covered with snow.” The sheet is annotated by Hill as “*Gaultheria appressa* A.W.Hill var. *glabra* A.W.Hill. Top of mountains heads of Macleay and Bellinger Rivers”. A specimen held at the BM is labelled “Snowy Mountains, New England (C.Moore)” and shares a sheet with a Tasmanian collection of *G. hispida* but that is not annotated by Hill.

Although all probably part of the same gathering, the specimens are best regarded as syntypes with lectotypification required. An unfortunate practice in the past was the transcription of field collection data differently on to herbarium labels for replicate specimens, sometimes giving the appearance of several

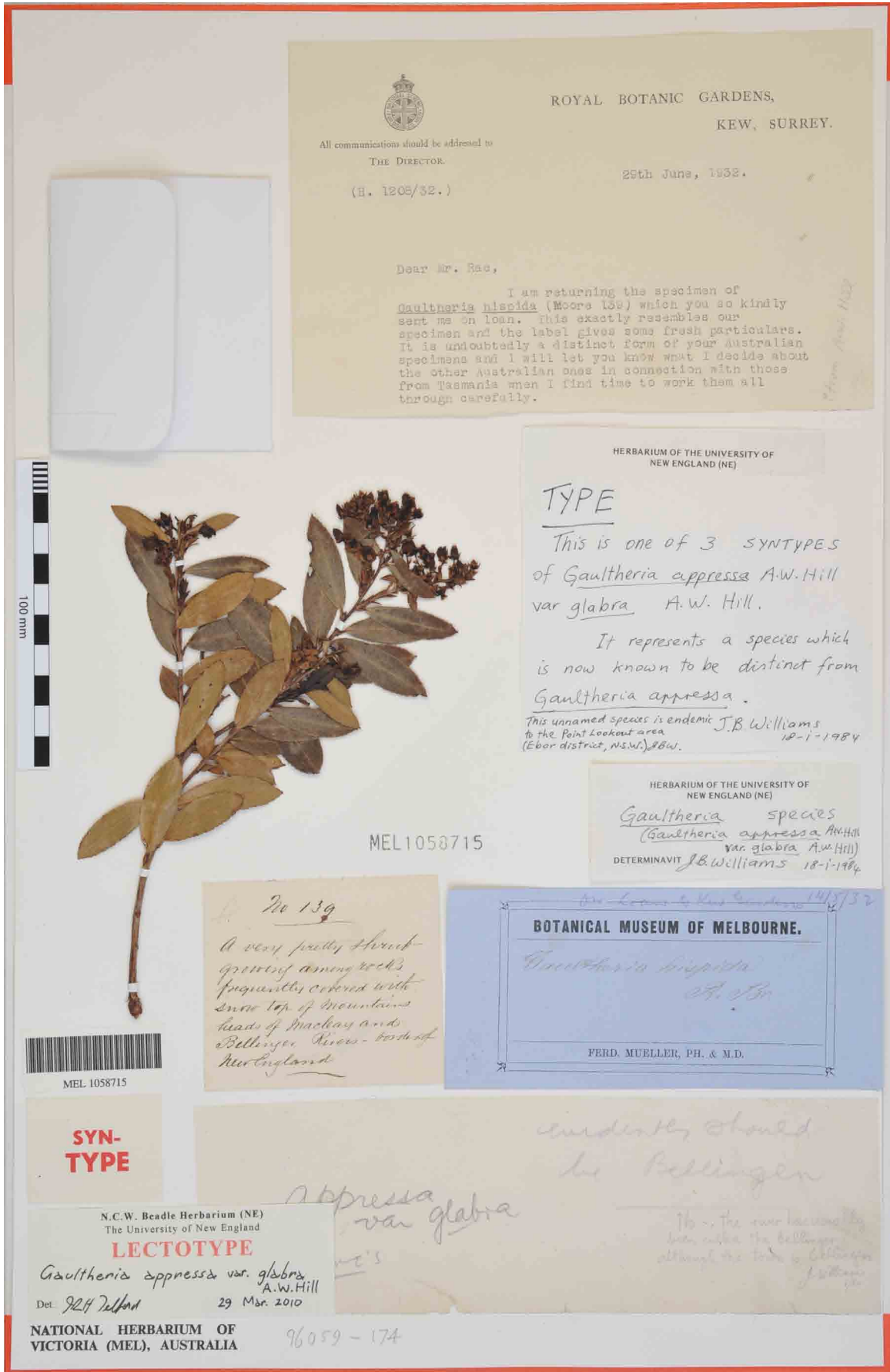


Fig. 1. Image of the lectotype of *Gaultheria viridicarpa* J.B.Williams.

collections; this appears to have been the case here. None of the sheets bear a date of collection. With collector's name, number and field notes, as well as being annotated by Hill, the MEL specimen is here chosen as lectotype. The BM, K and NSW specimens are regarded as probable isolectotypes.

Conservation Status: *Gaultheria viridicarpa* is known from only four populations. At the Mount Merino site (Queensland–New South Wales), few plants have been observed on the cliff-top, but the potential habitat of rock ledges below requires investigation. Along the New England escarpment (New South Wales), three populations have been collected, but other suitable sites need exploring. The Point Lookout population contains several hundred plants but plant numbers at Majors Point and Allans Water need assessment. Following IUCN guidelines (2010), the status is regarded as “Data Deficient”. The species is coded as “Vulnerable” in Queensland under the Nature Conservation Act 1992. In New South Wales, the species does not appear to be at risk. All known plants are conserved in Lamington National Park, Limpinwood Nature Reserve and New England National Park.

Notes: recent phylogenetic reconstruction based on molecular data (Bush et al. 2009) has shown *G. viridicarpa* (as *G. appressa* “viridicarpa”) to diverge at the base of an Australian clade sister to a New Zealand clade, involving one of at least three dispersal events in *Gaultheria* from New Zealand to Australia.

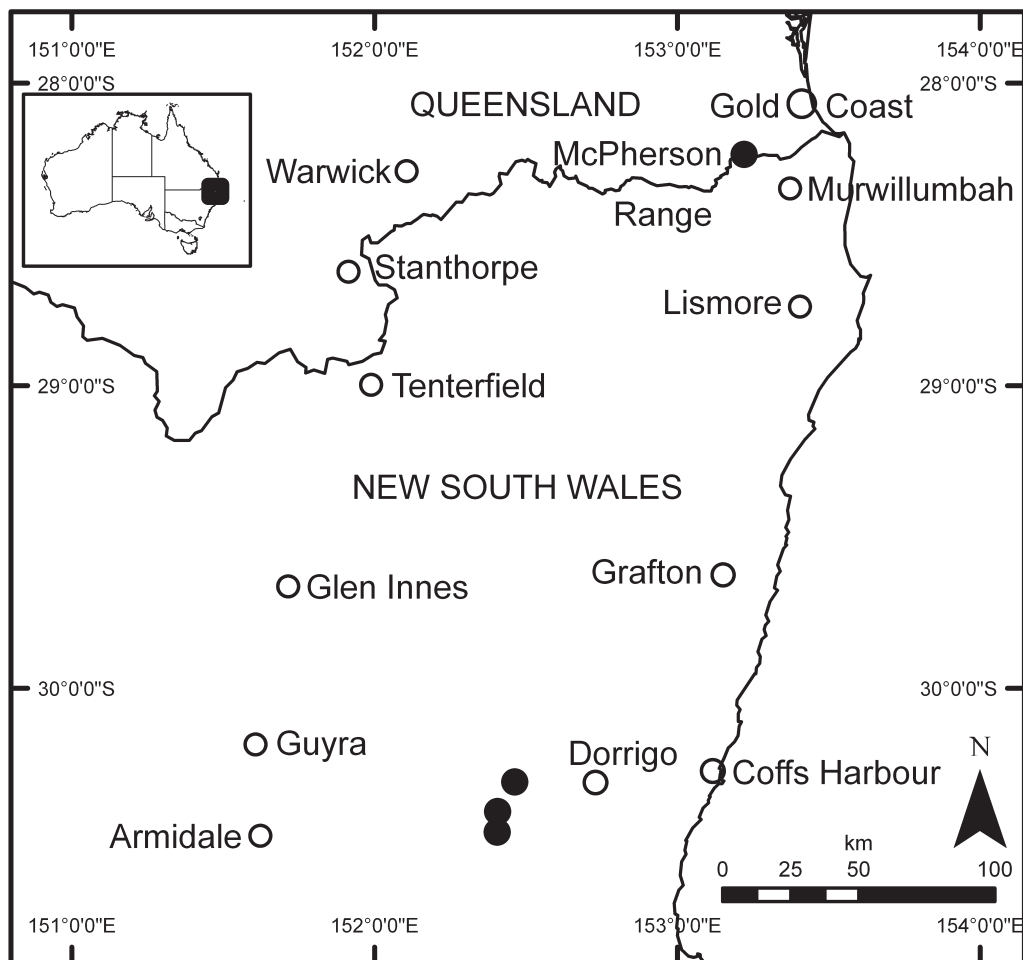


Fig. 2. Distribution of *Gaultheria viridicarpa*.

Acknowledgments

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References

- Beadle NCW (1980) *Students Flora of North-eastern New South Wales*, vol. 4. University of New England, Armidale.
- Benthham G (1869) *Flora Australiensis*, vol. 4. L.Reeve & Co., Great Britain.
- Bostock PD & Holland AE eds (2010) *Census of the Queensland Flora*. Queensland Herbarium, Department of Environment and Resource Management, Brisbane.
- Briggs JD & Leigh JH (1996) *Rare or Threatened Australian Plants*. CSIRO, Australia.
- Burtt BL & Hill AW (1935) The genera *Gaultheria* and *Pernettya* in New Zealand, Tasmania and Australia. *Journal of the Linnean Society of London, Botany* 49: 611–644.
- Bush CM, Wagstaff SJ, Fritsch PW & Kron KA (2009) The phylogeny, biogeography and morphological evolution of *Gaultheria* (Ericaceae) from Australia and New Zealand. *Australian Systematic Botany* 22: 229–242.
- CHAH (2005) Australian Plant Census, <http://www.anbg.gov.au/chah/apc/> (accessed 28 May 2012).
- Henderson RJF ed (2002) *Names and Distributions of Queensland Plants*. Queensland Government.
- IUCN Standards and Petitions Subcommittee (2010) Guidelines for using the IUCN Red List Categories and Criteria. Version 8. Prepared by the Standards and Petitions Subcommittee in March, 2010. <http://intranet.iucn.org/webfiles/doc/SSC/RedList/RedListGuidelines.pdf> (accessed 23 Apr. 2012).
- Nature Conservation Act (1992) <http://www.legislation.qld.gov.au/legisltn/acts/1991/92ac020.pdf> (accessed 23 Apr. 2012)
- Williams JB & Chapman AR (1992) Ericaceae. Pp. 399–400 in Harden GJ (ed) *Flora of New South Wales*, vol. 3. New South Wales University Press, Kensington.

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