

J E Beever collection numbers for voucher specimens placed in the herbarium of Auckland Museum (AK) are given.

<i>Amblystegium riparium</i> 72-89	<i>Fissidens exilis</i> Hedw.* 81-25a
<i>Amblystegium serpens</i> * 81-04a	<i>Fissidens pungens</i> * 81-14, 81-25b
<i>Barbula convoluta</i> 81-12b	<i>Fissidens taxifolius</i> 81-01
<i>Barbula unguiculata</i> 81-21	<i>Hypnum cupressiforme</i> 81-15
<i>Bryum argenteum</i> 81-10a	<i>Isopterygium minutirameum</i> * 81-05
<i>Bryum billardierei</i> var. <i>platyloma</i> 81-08	<i>Racopilum convolutaceum</i> 81-13a
<i>Bryum dichotomum</i> * 81-10b	<i>Rhynchostegium tenuifolium</i> * 81-16, 81-02, 81-13b
<i>Bryum pseudotriquetrum</i> 80-99	<i>Sematophyllum amoenum</i> * 81-09
<i>Bryum sauteri</i> 81-24	<i>Stokesiella praelonga</i> * 80-96, 80-97
<i>Ceratodon purpureus</i> 81-23a	<i>Tortula muralis</i> * 81-12a
<i>Dicranella</i> sp. 81-11	<i>Tortula papillosa</i> 81-06
<i>Eurhynchium muriculatum</i> * 81-100	<i>Tortula princeps</i> * 81-17
<i>Fissidens berteroi</i> 72-87a	<i>Trematodon suberectus</i> * 80-99a

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***Celmisia* on Mt Pirongia, Western Waikato: some notes on its identity and taxonomy**

P. J. de Lange

Cheeseman (1879) provided the first account of the indigenous vascular flora of Mt Pirongia (see de Lange, 1994 - this issue). In his paper he mentioned the peculiar fact that although *Celmisia gracilentata* was present on the hills near Whatawhata, and widespread to the south of the Mountain, it

was not present on Pirongia. Cheeseman apparently did not collect a voucher of *C. gracilentata* from Whatawhata as there is no specimen in AK, and today the species is locally extinct there. However, the species still persists south of Mt Pirongia at Ngawhakatara in the Awaroa Valley (author *pers. obs.*), the Tawarau (Druce and Ogle 1987), and on the next major peak east of Pirongia, Mt Maungatautari near Cambridge (Clarkson and Boase 1986¹). As Cheeseman spent limited time on the mountain, it seemed that the absence of *Celmisia gracilentata* from the mountain merely indicated that further field work was required. Later botanical investigations of the mountain by Gudex (1955) and Druce (Unpub. Checklist 179, 1978) also failed to record *Celmisia* from the mountain.

In 1978 I was told by the late Reg Bell of Pirongia township that a *Celmisia* did grow on Mt Pirongia, but that it was extremely rare, growing on only a few cliffs at the western end of the mountain range. With this in mind I searched the western cliffs of the mountain without success, until in 1987 below the small peak Hihikiwi (altitude 880 m, NZMS S15 939539) I discovered a small patch of *Celmisia* growing within a shaded rock overhang. Associated plants included seedling kamahi (*Weinmannia racemosa*), tawheowheo (*Quintinia serrata*), *Blechnum* "Black Spot" (*B. capense sensu* Allan 1961), *Poa cita* (CHR 472490 - itself a new record for the mountain and range extension, see Druce 1978, Edgar 1986), and a small amount of *Jovellana repens*. The *Celmisia* resembled *C. gracilentata s.s.* - which was what I first thought they were, but the upper side of the leaves were bright green in colour, while the undersides were covered in fine white tomentum, with a dark purple midrib. These are features of *Celmisia adamsii* var. *adamsii*, a taxon normally considered endemic to the Coromandel Peninsula (Allan 1961). Obviously its occurrence outside the Coromandel area was a matter of some curiosity, so in November 1990 I returned to Hihikiwi with the local Department of Conservation Botanist, Liz Stanaway, to collect a voucher (CHR 472907) to substantiate the record. This collection was examined by Dr D. R. Given (*pers. comm.*, 1991) who confirmed that although the specimen had narrower leaves than the range normally seen in *C. adamsii* var. *adamsii*, it was indeed this species. The narrower leaves I attribute to the etiolated condition of the plants (see notes on CHR 472907), rather than any regional deviation from the range normally seen in the Coromandel area. This is because the site has become overgrown since 1987, as a consequence of regeneration following an intensive Department of Conservation goat control campaign (L. Stanaway *pers. comm.*, 1991).

The discovery of *C. adamsii* var. *adamsii* in the Western Waikato conforms to a pattern previously noted within woody taxa and commented on by Clarkson (1980), who noted a number of apparently Eastern Waikato taxa and/or supposed Coromandel "endemics" present in the western Waikato (c.f. Clayton-Greene 1978). However, when one considers the immense variation within the closely related *C. gracilentata* complex it is not that surprising. *Celmisia adamsii* is rather similar to *C. gracilentata*², with the type variety differing only by the wider bright green upper surfaces of the leaves cf. dull green, mottled, villous and normally narrower in-rolled leaves typical of *C. gracilentata s.s.* When one considers then the range of forms exhibited by *C. gracilentata s.l.*, *C. adamsii* var. *adamsii* falls within this earlier named species, and should be treated at subspecific level. If this view is considered the discovery of *C. adamsii* on the west coast of the Waikato fits within a pattern of infraspecific variation, extending from the Central Volcanic Plateau components of the *gracilentata* complex, northwards to the eastern and western ranges of the King Country and the Waikato, and ultimately leading to those northern taxa of lower altitudinal sites presently known as *C. major* var. *major*, *C. adamsii* var. *adamsii*, and *C. adamsii* var. *rugulosa*. Morphological differences within all these taxa are subtle, forming a continuum from one taxon to another. For this reason, Druce (1992) considers these northern *Celmisia* as part of the *C. gracilentata* complex, recommending their relegation to subspecific or varietal level. From what I have seen of these northern taxa, both in the wild and from examination of herbarium material, I would support that concept.

¹ Clarkson and Boase (1986) discuss the discovery of *Celmisia gracilentata* on Mt Maungatautari, and attribute the first record of this species from the mountain to Muriel Fisher, and their collection as the first voucher. However, AK 35417 collected by J. E. Attwood in 1932 is clearly the first voucher of the species from the mountain.

² D. R. Given (*pers. comm.*, 1991) points out that the northern *Celmisia* may in fact be referable to *C. graminifolia*, however clarification of the type locality of this taxon is still needed (see Allan 1961). *C. graminifolia* is considered a doubtful taxon by Druce (1992) who includes it under *C. gracilentata*.

Acknowledgments

I would like to thank Liz Stanaway for her comments and company in what turned out to be rather miserable field conditions. I am extremely grateful to the late Reg Bell for sharing with me privileged knowledge of the flora of "his" mountain. I thank David Given, for confirming the identity of the *Celmisia* and sharing with me his knowledge of the complexities of northern *Celmisia*. Ewen Cameron, Gillian Crowcroft, and Bruce Clarkson kindly commented on the text. I am grateful to Catherine Beard (Curator of the Waikato University Herbarium) who tolerated several hours of my "animated" discussion involving the entire herbariums holdings of *C. gracilentia* and its allies.

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The imbricate-leaved dacyrdiums – identifying the adult foliage

R. O. Gardner

"Dear Mr Phillips Turner

I have given this morning to the study of your specimens, and to comparing them with the types in my herbarium. First of all, I may say that the adult foliage of several of our Coniferae is very difficult to distinguish. *Dacrydium bidwillii*, *D. intermedium* and *D. colensoi* have adult leaves so similar to one another that dried specimens can barely be separated..."

So wrote T. F. Cheeseman in 1922 (letter filed with unnumbered specimens in AK). These plants, and our two other native species, are now placed as *Halocarpus bidwillii*, *H. biformis* and *H. kirkii*, *Lagarostrobos colensoi*, and *Lepidothamnus intermedium* and *L. laxifolius*, the three genera here being distinguished principally on features of the female cone. The species themselves have very characteristic juvenile foliage and rather different adult growth forms – see, for example, the descriptions and key of Wilson and Galloway (1993). But, as Cheeseman states, there is quite a problem identifying collections of sterile (or male) adult foliage, such as may be represented by ecological survey vouchers or old herbarium material. Nor do the distributions help much in deciding what an unknown collection "should" be, since the species have a common preference for open, cool or cold, moist habitats.