

***Colobanthus* on Banks Peninsula: a case of less than perfect flowers or less than perfect botanists?**

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The botanical family Caryophyllaceae has some pretty showy siblings, cultivated widely in New Zealand gardens and brightening roadsides with pink, red and white flowers. Carnations, pinks, sweet Williams, catchflies,ampions, soapwort, and gypsophila are among the good-looking ones, some of them fully naturalised on Banks Peninsula such as catchfly (*Silene gallica*) and rose campion (*Silene coronaria*). The family is quite large and cosmopolitan (around 2,630 species in about 85 genera), spread across both hemispheres, although markedly more numerous and diverse in temperate and warm climates of the northern hemisphere. By no means all of this multitude are gaudy posers, however. Some are modest little weedy herbs and inconspicuous patches, such as chickweeds (*Stellaria* and *Cerastium*), allseed (*Polycarpon*) and pearlwards (*Sagina*), with all four of these genera exemplified by naturalised exotics on the Peninsula, and one of them (*Stellaria*) by one native species and three exotics. Altogether across Banks Peninsula and Kaitorete Spit, 35 species represent the family – 10 natives and 25 naturalised exotics. We specifically mention Kaitorete because one species is quite common there, but (so far as we know) is unknown on the Peninsula proper; clammy gypsophila (*Gypsophila australis*) is dubiously native, and more likely an early introduction from Australia (Landcare Research 2015).

Colobanthus might well be the least conspicuous of the lot. The name itself means “mutilated, or less than perfect, flower”; the flowers are not only tiny and green, they completely lack petals. The genus has at least one claim to fame though. One species (*C. quitensis*) is one of only two angiosperms (flowering plants) to grow on Antarctica. The other is a tiny grass, *Deschampsia antarctica* (Antarctic hairgrass). Both reportedly extend south of the Antarctic Circle to about 68°S, on the Antarctic Peninsula, which juts out towards the southern tip of South America.

Of some 20 species of *Colobanthus* known globally, all in the southern hemisphere, Aotearoa/New Zealand has 13 or 14, all but two of them endemic (Table 1, p 66). Lucy Moore named a new species from northwest Nelson *C. masonae* in 1961, but that is now regarded by most as a form of *C. wallii*. *Colobanthus squarrosus* subsp. *drucei* and subsp. *squarrosus* were named by Barry Sneddon in 1999 from northwest Nelson. During Hugh’s botanical survey of Rakiura/ Stewart Island between 1978 and 1983 he documented a peculiar soft-leaved, 4-sepalled *Colobanthus* on the Tin Range and on rocks along the Kopeka River – this appeared to be distinct and un-named, although he wondered if it was just a local form of *C. affinis*³. That species, looking more typical and with mostly 5-sepalled flowers, he observed for sure only on Mount Anglem to the north. *Colobanthus* aff. *affinis*

³ Referred to as *Colobanthus* aff. *affinis* (CHR 404117; Kopeka), <https://nztns.org.nz/nztns-species/1001056>

'Kopeka' is one of seven 'taxonomically unresolved' entities that occur in Aotearoa (Table 1, p. 61).

In Hugh's "Plant Life of Banks Peninsula" (Wilson 2013) four species of *Colobanthus* are listed for Banks Peninsula. *Colobanthus strictus* is common on rock outcrops and rocky ground, mostly above 400 m, while the other three – *C. apetalus*, *C. brevisepalus* and *C. muelleri* – all seem to be rare and local (Figure 1).

Colobanthus apetalus is known from only two sites on either side of Akaroa Harbour, *C. muelleri* is found on the south coast near the entrance to Akaroa Harbour, and *C. brevisepalus* has been recorded near the summit of Mount Evans (initially identified as *C. buchananii*) (Wilson 1985), on the south side of Wairewa/Lake Forsyth, and on Kaitorete Spit (Hutchison 2014). Three of the species are widespread in the South Island and classified as 'Not Threatened', but *C. brevisepalus* has a conservation status of 'At Risk-Declining' (de Lange et al. 2018).

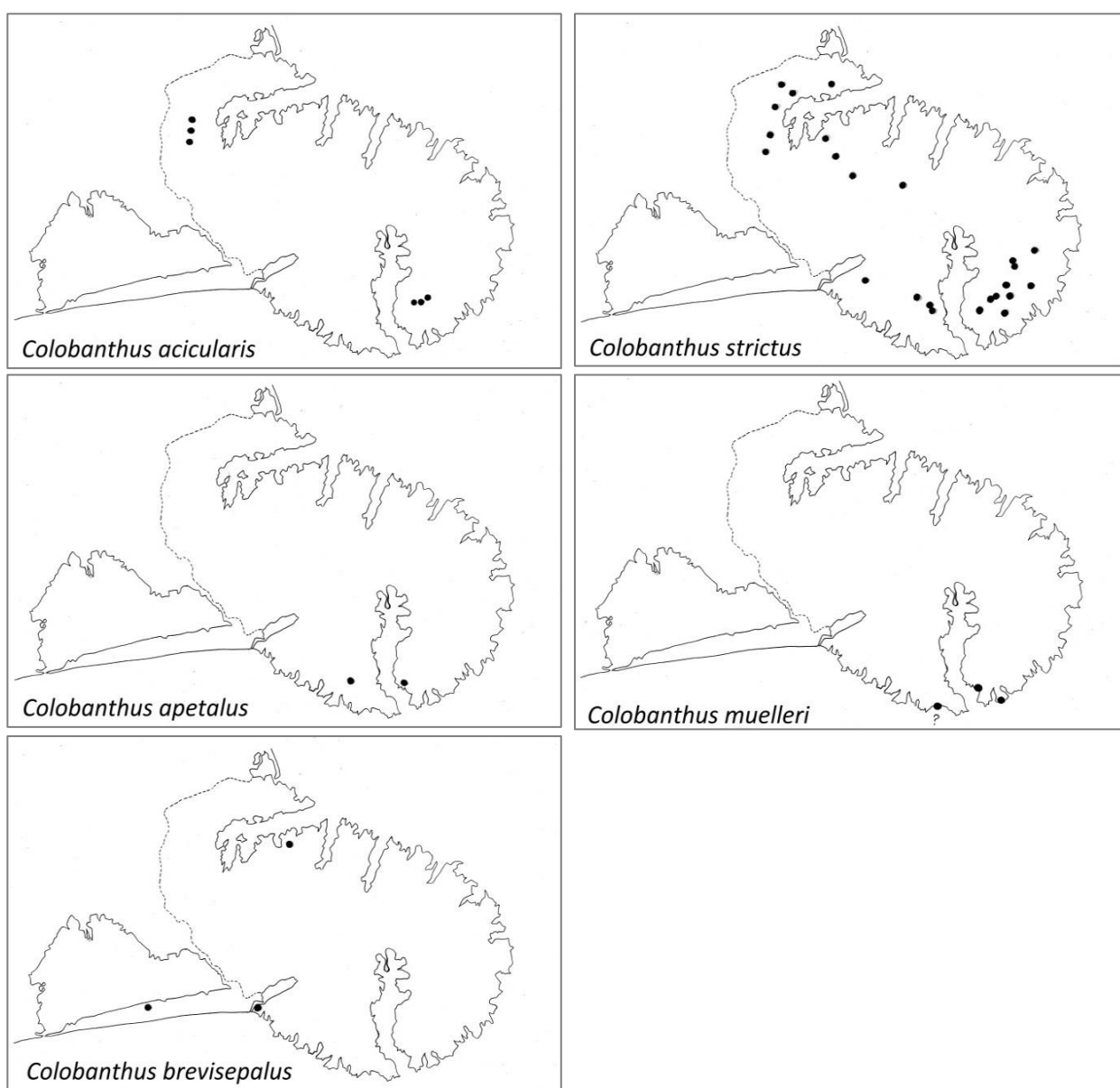


Figure 1. Localities of the five *Colobanthus* species that occur on Banks Peninsula.

Hugh was aware a fifth species, *C. acicularis*, had been recorded on the Peninsula – indeed the Canterbury Botanical Society listed it for Banks Peninsula in “A provisional list of indigenous flowering plants of Canterbury” (Aitken et al. 1983), along with *C. muelleri* and *C. strictus*. He had also seen specimen CHR 226562 in the Allan Herbarium, collected by M.J.A. Simpson (a.k.a. Margaret Bulfin) from Flag Peak, Banks Peninsula, on “rocks near summit” (Simpson, year unknown). Now, writing this article, Hugh found an entry about it in his notebook 12, page 124, 17 May 2007: “looks like *acicularis* but with less acicular [sepal] tips, so check *brevisepalus*, but the *brevisepalus* specimens are away on loan to Barry Sneddon. Check in the field on top of Flag Peak for any *acicularis*- or *brevisepalus*-like plants.”

Hugh is a wee bit embarrassed to admit that he failed to follow his own instructions and made no mention of *C. acicularis* in his book. So, it was enlightening when Melissa phoned him to say she was fairly sure she had found *C. acicularis* at Misty Peaks Reserve near Akaroa. She had seen two plants on a rock face near the top of Ōtoki/Berard, some 700 m to the northeast of Flag Peak on 8 November 2022, whilst undertaking a threatened plants survey for Christ church City Council (Hutchison 2023) (Figure 2).



Figure 2. *Colobanthus acicularis*, Ōtoki/Berard, Misty Peaks Reserve, Akaroa. 8 November 2022. Photo: Melissa Hutchison.

Deciding that taking specimens from two tiny clumps was morally suspect, she took close-up photos instead, which clearly show the distinctive drooping habit and long-sepal flower buds (Figure 3, p. 58). Ōtoki is only a couple of hours away on foot from Hugh’s home in the upper Ōtānerito Valley, and barely 250 m from Hinewai Reserve’s southwest boundary. A foray was planned in time for the Editor’s deadline, but wild, wet weather had other ideas. We will make further searches though. As with several other species that needed finding or confirming, we are indebted to Melissa’s sharp eyes and acute observation. Hugh looks forward to the next interesting phone call!

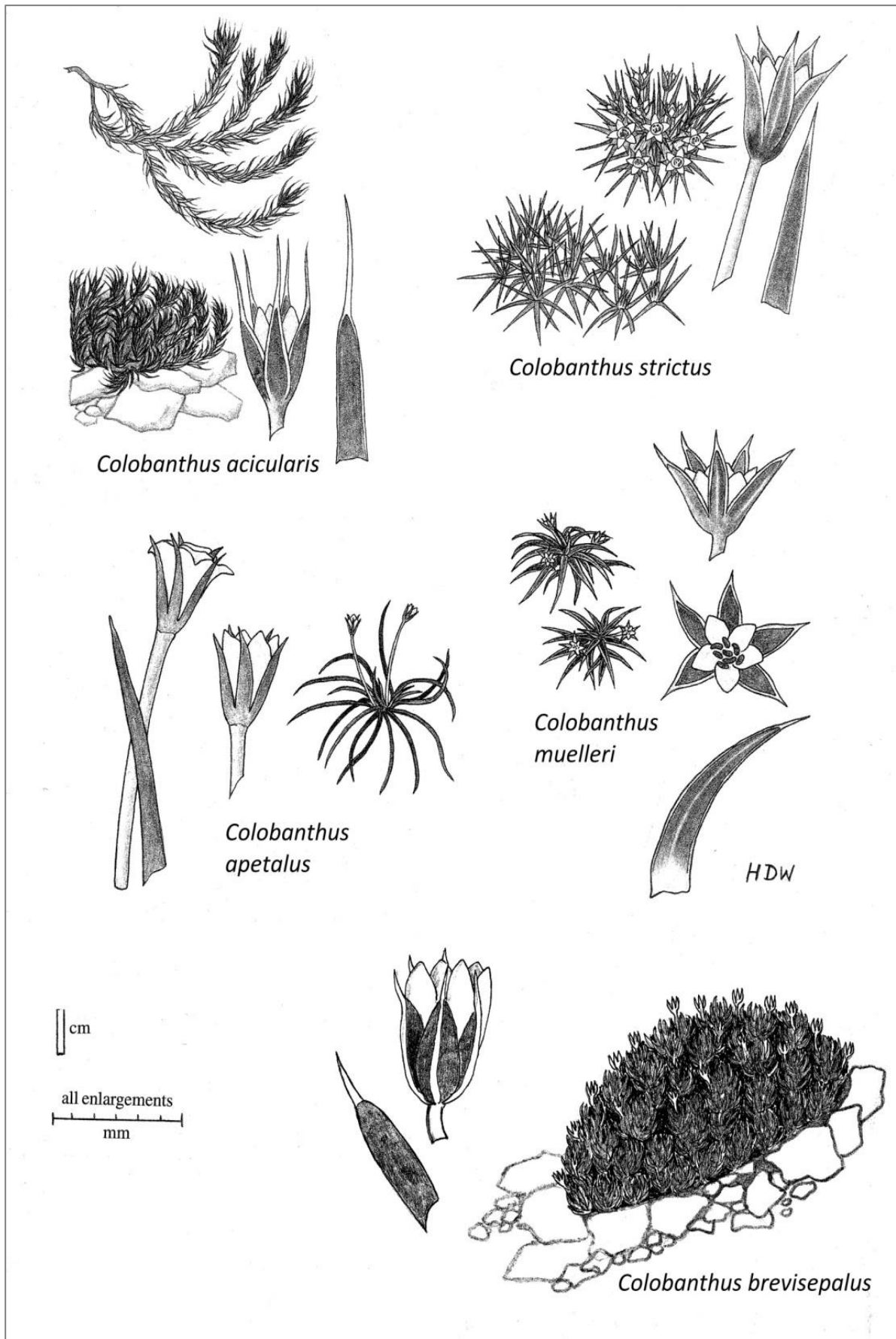


Figure 3. Drawings of the five *Colobanthus* species that occur on Banks Peninsula. Note: 1 cm scale applies to whole plants, the mm scale to enlargements of floral parts.

Now Melissa also has a confession to make. She was at Misty Peaks to look for Threatened and At Risk plants, and at the time didn't give the *Colobanthus* much thought as it wasn't on her radar as anything rare or noteworthy. She quickly snapped some photos of the plants but didn't think any more about it until she added an observation to iNaturalist in June this year with a suggested ID of *Huperzia australiana* (Hutchison 2022). Marley Ford saw the photos and suggested they might be *Colobanthus acicularis*, but Melissa said she had ruled out that species as it wasn't listed in "Plant Life of Banks Peninsula", and commented "surely, I haven't found another 'new' species that Hugh Wilson hasn't seen on the Peninsula, especially with it being so close to Hinewai!" Other botanists then chimed in with various opinions about what it might be, ranging from *C. brevisepalus* to *C. buchananii*. *Colobanthus*, it seems, is tricky to identify, even for well-seasoned botanists!

It turns out that Alice Shanks and Carol Jensen had recorded *C. acicularis* from two rock outcrops at Misty Peaks (Ōteauheke/Brasenose and Ōtoki/Berard) in 2009 (Shanks 2023) and three sites on the Port Hills between Ōrongomai Scenic Reserve and Ōmawete/Coopers Knob in 2008 during a previous botanical survey for the City Council. As the species is widespread and common in the Southern Alps, they had not realised the significance of this at the time (or in fact until Melissa contacted Alice about it several weeks ago!). So it seems *C. acicularis* is most definitely a legitimate member of the Banks Peninsula flora; it has simply been overlooked in the mists of time, perhaps akin to the way mist can obscure the high, rocky peaks it inhabits on the Peninsula – The Māori name for Misty Peaks, Ōteauheke, translates as "the place where the mist comes down" (Christchurch City Council 2023).

Colobanthus acicularis seems to be another example of a few upper cool-temperate-subalpine species, common in the Alps, that occur locally only on one or two high Peninsula tops, perhaps as relicts from a much more extensive subalpine and alpine flora of the glacial past, but probably more likely as waifs and strays that make a chance arrival from the distant mountains across the wide plains. Some other examples are *Bulbinella angustifolia* and *B. hookeri* (Asphodelaceae), *Gentianella serotina* (Gentianaceae), *Geum cockaynei* (Rosaceae), *Myrsine nummularia* (Primulaceae), *Pentachondra pumila* (Ericaceae), *Raoulia hookeri* and *R. tenuicaulis* (Asteraceae), and the tiny *Ranunculus cheesemanii* recently discovered on Te Ahu Pātiki/Mount Herbert by Mark Parker. Doubtless there will be more botanical surprises in future. We need sharp eyes and open minds (free of brain fog!) to detect not only species overlooked or misidentified, but also transformations due to chance or climate change.

References

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Table 1. *Colobanthus* species present in New Zealand and their conservation status (de Lange et al. 2018). Information sourced from the New Zealand Threat Classification System website (<https://nztns.org.nz/>). Notes: Species in **bold** occur on Banks Peninsula; NA = Not assessed.

Taxon name	Conservation status
Taxonomically determinate	
<i>Colobanthus acicularis</i> Hook.f.	Not Threatened
<i>Colobanthus affinis</i> (Hook.) Hook.f.	Not Threatened
<i>Colobanthus apetalus</i> (Labill.) Druce	Not Threatened
<i>Colobanthus brevisepalus</i> Kirk	At Risk-Declining
<i>Colobanthus buchananii</i> Kirk	Not Threatened
<i>Colobanthus canaliculatus</i> Kirk	Not Threatened
<i>Colobanthus hookeri</i> Cheeseman	At Risk-Naturally Uncommon
<i>Colobanthus monticola</i> Petrie	Not Threatened
<i>Colobanthus muelleri</i> Kirk	Not Threatened
<i>Colobanthus muscoides</i> Hook.f.	Not Threatened
<i>Colobanthus squarrosus</i> Cheeseman subsp. <i>squarrosus</i>	Not Threatened
<i>Colobanthus squarrosus</i> subsp. <i>drucei</i> Sneddon	At Risk-Naturally Uncommon
<i>Colobanthus strictus</i> Cheeseman	Not Threatened
<i>Colobanthus wallii</i> Petrie ¹	Not Threatened
Taxonomically unresolved	
<i>Colobanthus</i> (a) (CHR 515133; Pareora River)	NA
<i>Colobanthus</i> (b) (AK 232645; Red Hills)	At Risk-Naturally Uncommon
<i>Colobanthus</i> (c) (CHR 365413; "marble")	At Risk-Naturally Uncommon
<i>Colobanthus</i> aff. <i>affinis</i> (CHR 404117; Kopeka)	NA
<i>Colobanthus</i> aff. <i>brevisepalus</i> (a) (CHR 688765; "limestone")	NA
<i>Colobanthus</i> aff. <i>buchananii</i> (CHR 471657)	NA
<i>Colobanthus</i> aff. <i>wallii</i> (AK 232551; "serpentine")	At Risk-Naturally Uncommon

¹ Includes *Colobanthus masonae* L.B. Moore.