



TRILEPIDEA

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Deadline for next issue:
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The Network will publish almost any article about plants and plant conservation with a particular focus on the plant life of New Zealand and Oceania.

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NEW ZEALAND

PLANT OF THE MONTH, p. 3



Dracophyllum fiordense.
Photo: Rowan Hindmarsh-Walls.

New threat assessment of New Zealand hornworts and liverworts published

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New Zealand has a surprising diversity of hornworts and liverworts, the latest estimate published by de Lange et al. (2020) recognises 770 species, subspecies, varieties and forms of these tiny plants inhabiting our archipelago (including the Kermadec Islands group). These figures are still changing of course as new discoveries are being made; indeed, only a few days after de Lange et al. (2020) was published a new species of *Stolonivector*, *S. echioides* Frogley et Glenny was described (Frogley & Glenny 2020) and there are other as yet undescribed taxa, particularly in the Lejeuneaceae, that still need resolution.

The assessment by de Lange et al. (2020) is part of a five yearly cycle of threat listing sponsored by the New Zealand Department of Conservation. For that assessment New Zealand-based experts met at the Lincoln Campus of Landcare Research during November 2018 after which international specialists, based in the Field Museum, Chicago and Natural History Museum, Paris, added their contributions in 2019.

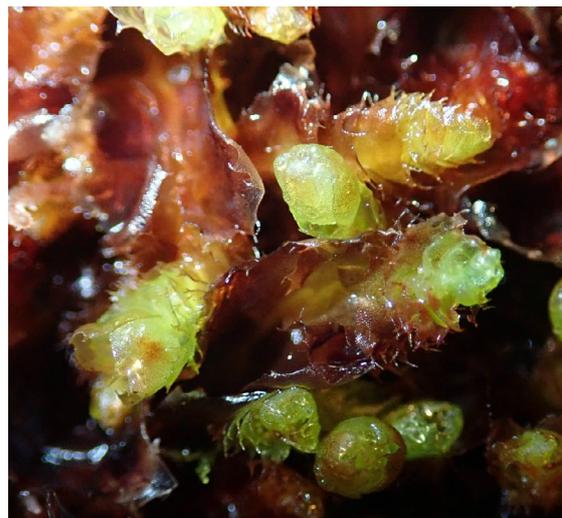
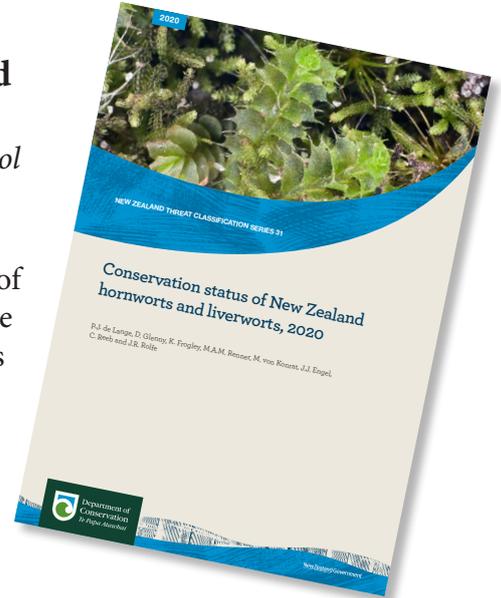


Fig. 1. *Goebelobryum vermiculare* J.J.Engel et Glenny (Acrobolbaceae), Kopouatai Peat Bog, Hauraki. This is a species that inhabits mostly restiad bogs. Although this species can be locally common in these habitats, the loss of restiad bog has resulted in its listing as a 'Relict' species by de Lange et al. (2020). Photo: P.J. de Lange.

The new threat assessment recognises 174 taxa as 'Data Deficient', ten as 'Threatened - Nationally Critical', five 'Threatened - Nationally Endangered', three 'Threatened - Nationally Vulnerable' and 128 as 'At Risk' (Fig. 1). Two taxa have observed declines. The first of these, *Neogrollea notabilis* E.A.S.Hodgs., may have gone extinct from the Chatham Islands due to road works while the only known West Coast site for it at Tiropahi has vanished through vegetation succession. The other documented decline concerns a species of *Radula*, *R. marginata* Taylor ex Gottsche, Lindenb. et Nees (Fig. 2), known to iwi as 'wairua kahu'. This species synthesises a cannabinoid type bibenzyl compound named

perrottetinenic acid, and two other bibenzyls, together with a known cannabinoid, perrottetinene (Toyota et al. 2002). Publication of that discovery resulted in significant interest from the 'alternative drug use community' with the result that some accessible populations of this species have been eliminated through indiscriminate harvesting.

Another issue impacting on the conservation of these tiny plants is the fact that so few people know how to identify them. Most of the key experts in this group are now elderly or based in overseas research institutions and herbaria.

The publication is freely available at: <https://www.doc.govt.nz/globalassets/documents/science-and-technical/nztcs31entire.pdf>. Assessment data may be viewed and downloaded at <https://nztcs.org.nz/reports/1078>.

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DOC Wharekauri/Rekohu/Chatham Islands Vacancy

The Wharekauri/Rēkohu/Chatham Islands DOC office has an exciting opportunity for someone to join their team who would love to contribute to plant conservation in this unique and rugged environment. The Chatham Island archipelago has the highest level of endemism of any New Zealand biogeographic region with approximately 47 endemic plant taxa, a significant number of which are threatened. In the absence of many of the tree species that dominate mainland New Zealand forests, the Chathams boast the largest members of several former shrub genera including *Coprosma*, *Hebe* (*Veronica*), *Olearia*, *Corokia* and *Dracophyllum*. It is also a centre for megaherb diversity, with two outstanding specimens being the only members of their genera in New Zealand: the famous Chatham Island forget-me-not (Figure 1) and the Chatham Island sow thistle (Figure 2).



Figure 1 (left). *Myosotidium hortensia*. Photo: John Sawyer.

Figure 2 (right). *Sonchus grandifolius*. Photo: Peter.J. de Lange.

As part of the role you will lead vegetation survey and monitoring along with managing and implementing planting programmes for threatened plants and ecosystem restoration. As such, you will work closely with our onsite nursery staff. Ecosystem restoration is essential to our larger threatened fauna work programme with notable species including the Chatham Island oystercatcher (dune restoration) and black robin (coastal broadleaf forest restoration). The role encompasses work on the main Chatham and Pitt Island, not to mention our crowning glories, predator-free Nature Reserves Hokorereora/Rangatira/South East and Maung're/Mangere Islands.

Please apply online at <https://careers.doc.govt.nz/jobs/DOC-400-4712CI>

PLANT OF THE MONTH – *DRACOPHYLLUM FIORDENSE*

Rowan Hindmarsh-Walls (rowan.hindwalls@gmail.com)

The plant of the month for June is *Dracophyllum fiordense*, one of thirty-four *Dracophyllum* species native to the New Zealand region, and is the closest relative of the now extinct 'Truffula Tree' from the famous Dr Seuss story 'The Lorax' (no, not really!). The species is fairly widespread, ranging from Southern Fiordland north up the western side of the main divide to inland of Hokitika. *Dracophyllum fiordense* is a shrubby tree species of up to 5 metres tall, generally with few branches and thick striated trunks. Each stem has a crowning rosette of broadly linear, slightly glaucous to bright green leaves, with long curling tips. The pink flowers are borne on large racemes arising from the trunk below the leafy rosette.



Dracophyllum fiordense: (left) growth habit, (centre) leaf bases, (right) long curling leaf-tip. Photos: Rowan Hindmarsh-Walls, 2 March 2014.

Dracophyllum fiordense is found in a number of habitats from lowland and montane forest, to sub-alpine tussock grassland, but generally prefers steep bluffy areas or bouldery habitats, as it doesn't appear to be able to tolerate poorly drained soils.

The species is moderately easy to distinguish from other large-leaved *Dracophyllum* species by its infrequently branching habit and generally short stature. It is most similar to *D. traversii*, with which it is sympatric in the northern part of its range, but that species is more highly branched than *D. fiordense* and generally has more glaucous blue-green to brown-red leaves, compared to the often bright to dark green leaves of *D. fiordense*. Also, the flowering racemes of *D. traversii* arise from the top of the leafy rosettes rather than from underneath them, as in *D. fiordense*. It is also found with *Dracophyllum menziesii* but this species has a more sprawling shrubby growth habit, and smaller, shorter leaves without the curling tips.

The species is endemic to New Zealand and is currently listed as 'At Risk – Declining', a recent downgrade from 'Not Threatened' due to the fact that, in much of Fiordland, the species is browsed by deer, presumably when other more palatable feed is in short supply in the colder months (personal observations). The northern populations of the species are not nearly as badly affected. As ungulate numbers, including deer, are known to be increasing across much of the country (DOC, 2019), species such as *D. fiordense* are likely to be more heavily targeted in the future.

The genus *Dracophyllum* is endemic to Oceania, and is found in New Zealand, Australia, and New Caledonia, with more than half of the species being found in New Zealand. It is in the heath family, Ericaceae, and is similar to the Tasmanian genus *Richea*. The genus name *Dracophyllum* means 'dragon leaf', from the greek: *drakon*, dragon and *phyllon*, leaf. The species epithet *fiordense* means 'of fiordland', the main stronghold of the species.

View the NZPCN factsheet at: <https://www.nzpcn.org.nz/flora/species/dracophyllum-fiordense/>

Reference

Department of Conservation. 2019: Abundance and distribution of ungulates. <https://www.doc.govt.nz/our-work/monitoring-reporting/national-status-and-trend-reports-2018-2019/?report=NationalUngulatesFactsheetWeb> – accessed 16 June 2020

Frontier Lichenology—the (relatively) undiscovered world of New Zealand lichen crusts

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It's 2011 and I'm stood at a welding bench in the salubrious suburb of Kelston, West Auckland, having emigrated to New Zealand about a year previously. I know I've had enough of what I'm doing at the moment, but what next? A call to the local Department of Conservation volunteer organiser sees me quitting my job and heading for a volunteer stint on the island of Tiritiri Matangi, an experience which considerably changed the path my life has taken. A few years down the line and I'm studying a Bachelor of Applied Science at Unitec, and have been persuaded to enter the arcane world of lichenology by Dr Dan Blanchon.

Between Dan, Peter de Lange and myself we established a project to study the lichen diversity in 50 council run vegetation plots around the Auckland region, partly funded by Unitec and partly by the Australia and Pacific Science Foundation. I was unaware when I started that we'd potentially discover not only species new to New Zealand, but trumping that the holy grail of discoveries for those of us botanically inclined – a species new to science.

Vascular plants are well studied in New Zealand—admittedly there are many taxa that still have not been formally described, but most will have tag names and are just waiting for the taxonomists to get them written up. Many would say the same for our lichen flora—New Zealand is lucky enough to have a phenomenal pair of books written by the late David Galloway detailing the extent of his vast knowledge of our lichens (Galloway 2007), but as we've waded through the thousands of specimens gathered by our project it has become apparent that these treatments are sadly out of date. During our project the vast majority of specimens collected have fallen into the 'crustose' group of lichens—these being corticolous (growing on the bark of trees) species that are often unassuming to the naked eye, but come to life when viewed with the hand lens. Providing the tree isn't ludicrously hard barked or the lichen in question doesn't fly off into the leaf litter while sampling, never to be found again, it usually takes about 30 seconds to get a specimen. The problem with crusts however is the time that must be spent back in the lab with the microscope, dissecting sexual structures to reveal the wonders (spores) that lie within. Once you've done this, you're then able to dive into lengthy dichotomous keys and hopefully come out the other end with a positive identification. It's this time-consuming identification process and the equipment required that act as barrier to entry to this botanical field and as a result there are great discoveries to be made if you have the time, patience and equipment.

Some genera are particularly heinous to identify, and it is within these that we've been finding our most interesting records, starting with *Pertusaria endoxantha* (Fig. 1.), an unassuming crustose species that was identified with some assistance from one of the experts across the Tasman. This was actually in the first plot we did, near Cornwallis, West Auckland. Looking at its morphology it's easy to see why it has been overlooked until now, but it still amazes me that new species records can be found so close to New Zealand's most populous city. Following on from that, several new records have been discovered within Auckland's city limits, including four species of *Pyrenula* (Fig. 2.), a minute perithecioid species called *Anisomeridium anisolobum* and a graphid species with distinctive orange pruina called *Alyxoria ochrocheila*. The latter two species records are yet to be formally published.



Fig. 1. *Pertusaria endoxantha* corticolous on tanekaha (*Phyllocladus trichomanoides*), Waitakere Ranges, Auckland. Photo: A.J. Marshall.

While working through specimens in the lab at Unitec one day we came across a thelotremoid species that did not happily sit in any key we had available to us. Lichen dissection can be a surprisingly satisfying task—you never really know what you’re going to find inside the apothecia, which is why it’s important to check every specimen and not rest on your laurels and simply assume that your specimen is *Thelotrema lepadinum* (by far the most common thelotremoid lichen in the Auckland region). This particular specimen was never going to be *T. lepadinum*, however. Its spores were enormous—practically visible to the naked eye and this is unheard of in the New Zealand lichen world, at least in the context of the specimens I’ve studied over the last seven or so years. Peter sent some details to his friend and lichenological maestro Robert Lücking and his curiosity was spiked. This was an *Ocellularia*



Fig. 2. *Pyrenula ravenelii* corticolous on aruhe (*Coprosma areolata*), Pillar Light Bush, Puponga, North West Nelson—this is an unusual form of this species in that the thallus is finely pseudocyphellate, hitherto New Zealand examples of this species lacked pseudocyphellae. Photo: P.J. de Lange.

and not a *Thelotrema*—these genera are morphologically very similar but are an example of convergent evolution and are actually not extremely closely related. Not only did it fall into a different genus to my first impression, but Robert believed this species to be new to science, distinct from other species of *Ocellularia* by thallus morphology, spore size, and the presence of lengthy appendages on either end of the large spores (if you’ve looked at a lot of spores then these appendages are actually pretty cool). Some time passed, and *Ocellularia jacinda-arderniae* was formally described (Fig. 3). All that remained to do was to check through previous specimens from our project to make sure we hadn’t picked it up before and thrown on an erroneous identification. Amazingly there was *O. jacinda-arderniae* lurking among our specimens from the first plot we did back in 2014, misidentified by myself as *Thelotrema monosporum*, a species that on face value looks very similar and also has large spores.



Figure 3. (left) *Ocellularia jacinda-arderniae* herbarium specimen from Tawharanui Regional Park, Omaha Bay (UNITEC 10674). Photo: P.J. de Lange. (right) *Ocellularia jacinda-arderniae* ascospore from an herbarium specimen collected from Tawharanui Regional Park, Omaha Bay (UNITEC 10674). Photo: A.J. Marshall.

The knowledge vacuum left by the passing of David Galloway in December 2014 (de Lange 2014); who unfortunately I was never able to meet, is noticeable. I’ve been lucky enough to pick the brains of Dan and Peter over the past years, but with crustose species it is international experts who we need to turn to when the resources we have for identification are insufficient. So, if you want to discover something new, get a microscope and delve into the hidden and exciting world of crustose lichens!

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Ngutu kākā (*Clianthus*)—some taxonomic history and resolving what species was present on Aotea (Great Barrier Island)

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The genus *Clianthus* was established by Lindley (1835) initially to accommodate one New Zealand species ngutu kākā (*Clianthus puniceus* (G.Don) Sol. ex Lindl.) (Fig. 1). Over time other species were added to the genus. The first of these, known by the vernacular ‘Phillip Island Glory Pea’, was endemic to Phillip Island, the smaller of the two main islands of the Norfolk group (Green 1994). That plant had already been named by Stephan Endlicher as *Streblorrhiza speciosa* Endl. (Fig. 2) in his flora of Norfolk Island (Endlicher 1833). However, Lindley (1845) felt that it was better accommodated in *Clianthus*, as *C. carneus* Lindl. commenting that ‘when it was first raised in Europe it continued to bear that name [*Streblorrhiza speciosa*], until it flowered, when it was found to be identical with the now well-known genus *Clianthus*, as Dr Endlicher himself suspected. It has therefore become necessary to alter the name first given to it’. In this case Lindley was wrong; *Streblorrhiza*, though now extinct, has been confirmed as distinct from *Clianthus* by both morphological and molecular means, with the inference from cpDNA that this genus may have had a closer relationship to *Carmichaelia* R.Br. than it had to *Clianthus* (Heenan 1998; Heenan et al. 2018).

Another species of *Clianthus*, *C. binnendyckianus* Kurz, was described by Wilhelm Sulpiz Kurz in 1871 (Kurz 1871), who noted that ‘this plant resembles in habit *C. Dampieri* [sic] [now *Swainsona formosa*], but it is smaller in all parts and easily distinguished by the subulate bracts etc. I have entertained some doubts whether the species can belong to *Clianthus* on account of the style not being bearded, but there are no other characters which could justify a separation from the genus’. That species was subsequently treated as a synonym of *Sarcodum scandens* Lour. (Fig. 3). *Sarcodum scandens* is a widespread legume of South East China, Indochina and Central and South Malesia (see <http://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:517916-1> (accessed 25 May 2020)).

Australia also contributed a *Clianthus*. That species, widely known as the ‘Sturt’s desert pea’ is the floral emblem of South Australia (Fig. 4). It was originally placed in *Donia* G.Don et D.Don, as *D. formosa* G.Don in 1832, however, in 1835 it was transferred to *Clianthus* by John Lindley, as *C. dampieri* Lindl. and, as it is a variable plant another species *C. oxleyi* Lindl. was also segregated from it (Lindley 1835). Later in 1950, George Don’s species epithet “*formosus*” which as *Donia formosa* has priority over Lindley’s later epithet “*dampieri*” was revived by Ford & Vickery (1950). Thus Sturt’s desert pea became *Clianthus formosus* (G.Don) Ford et Vickery with Lindley’s alternative names (*C. dampieri* and *C. oxleyi*) ruled as both illegitimate and superfluous. The name changes for



Figure 1. *Clianthus puniceus* flowering in cultivation, Hamilton. Provenance unknown. Photo: G.M. Crowcroft.



Figure 2. *Streblorrhiza speciosa*, the Phillip Island Glory Pea, as illustrated in John Lindley’s paper transferring that genus and species to *Clianthus* as *C. carneus*.

Sturt's desert pea were not over yet though. In 1990, Australian botanist Joy Thompson shifted it to *Swainsona* Salisb., as *S. formosa* (G. Don) Joy Thomps. (Thompson 1990), a position it currently occupies—though see comments about the paraphyly of *Swainsona* by Garnock-Jones (2014).

As a result, *Clianthus* became an endemic New Zealand genus, a status it has retained, for the last 30 years. Phylogenetically, Heenan (1998) and Wagstaff et al. (1999) reported that *Clianthus* is the sister clade to *Carmichaelia*. Garnock-Jones (2014) also accepted *Clianthus*, noting that it is distinguished from *Carmichaelia* by its 'leafiness, large red flowers and large, many-seeded follicular fruits. Both genera appear to have apomorphic characters and there are substantial morphological differences between them. Maintaining *Clianthus* separate from *Carmichaelia* seems acceptable,

and taxonomic recognition of their sister relationship at a higher rank than genus **may be justified** [bold—my emphasis]. His wording suggesting that there is some lingering doubt; whether this is justified or not *Clianthus* is still accepted by the Kew based 'Plants of the World Online (POWO)' as a New Zealand endemic (<http://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:22037-1> accessed 26 May 2020) as it was also by Lewis et al. (2005).

Within New Zealand, aside from *Clianthus puniceus*, a second, somewhat controversial species of *Clianthus*, *C. maximus* (Fig. 5) was proposed by Colenso (1885) for Tairāwhiti / East Cape and Hawkes Bay plants. Colenso's species was distinguished from *C. puniceus* on the basis of differences in the leaves and flowers. These distinctions did not find favour with other New Zealand based botanists and so 14 years later Kirk (1899) transferred Colenso's species to the rank of variety as *C. puniceus* var. *maximus* (Colenso). Kirk's decision was followed by both Cheeseman (1906, 1925) and Allan (1961) and then it would seem that var. *maximus* was forgotten about altogether. There the matter lay until renewed interest in the threat status and ecology of *Clianthus* in the 1970s and 1980s (Given 1981) resulted in the suggestion that at least some of the *Clianthus* plants in the Tairāwhiti / East Cape Region might be *Clianthus puniceus* var. *maximus* (Daniel 1985, 1986). Even then, antipathy toward the variety was such that an ecological paper resulting from research into these new discoveries preferred to treat all *Clianthus* as *C. puniceus* stating that 'all plants examined in this study are referred to *C. puniceus* without varietal distinction, although we noted some morphological variation between populations' (Shaw & Burns 1997; p. 234).



Figure 3. *Sarcodum scandens* Lour. In flower at Con Cuông, Nghệ An, Vietnam. This species was described as species of *Clianthus* by Kurz (1871) who was unaware that his new *Clianthus* had already been placed in *Sarcodum* by João de Loureiro (1717–1791). Photo: Eugene Popov.



Figure 4. *Swainsona formosa* the Sturt's desert pea in full flower. Photo: Klaus Bohn.



Figure 5. *Clianthus maximus* in full flower showing the diagnostic uniformly dark red flowers, with the proximal portion of the keel, standard and wings white, otherwise without any white-striping on the standard.

Following critical taxonomic study of cultivated and wild plants, and type material of *Clianthus* Heenan (2000) offered a new opinion of *Clianthus* recognising two species, a recircumscribed *C. puniceus*, and a reinstated and recircumscribed *C. maximus* and this view is accepted here. Taxonomy aside, *Clianthus* whether two species or one remains on the brink of extinction (Given 1981; Wilson & Given 1989; de Lange et al. 2010), and because of this status there is now a wealth of ecological, genetic and taxonomic knowledge available for the genus. Unfortunately, little of this data has done much to reverse the ongoing decline in this genus, indeed it would already be extinct if not for a few enlightened souls working mainly in the Te Urewera, the Tairāwhiti / East Cape Region and the northern Hawkes Bay. The status of the sole wild population of *Clianthus* on Moturemu Island remains unknown as there seem to have been no documented visits to that site for the last decade. Fortunately plants from that provenance are in cultivation and these have been used to translocate the species to island habitats in the Hauraki Gulf with variable success (author pers. obs.).

Now that we have two species of *Clianthus* a niggling issue that has remained unresolved is whether one species or both occurred historically in the northern part of the range of the genus. Aside from the ‘wanting to know for the sake of knowing’ understanding this will potentially help guide conservation and restoration plans for the genus in those parts of its range from which it has been extirpated. The problem is the lack of verifiable evidence. Heenan (2000) noted, that there are very few historical records of *Clianthus* supported by herbarium specimens, particularly in the northern part of its range. Indeed, we are not even clear where the type locality for *C. puniceus* is (see Lindley 1835 and Heenan 1995 for discussion on where the type material may have come from)). So we really have no idea what grew on the Coromandel Peninsula, around eastern Auckland or in Northland (Kirk 1868, Cheeseman 1906, 1925), all we know for certain is that plants found on Moturemu Island, in the Kaipara Harbour are *C. puniceus* (Heenan 2000; de Lange et al. 2010). *Clianthus maximus* on the other hand was described by Colenso (1885) as an eastern North Island species occurring from the top of Tairāwhiti / East Cape to the Hawkes Bay and inland in pockets around Te Urewera and the adjacent ranges.

Clianthus was also recorded from Aotea / Great Barrier Island (Kirk 1868), and for that record there is one validating specimen held in a New Zealand Herbarium. That specimen, collected by Kirk in 1867 is held by the Museum of New Zealand Te Papa Tongarewa Herbarium (WELT SP027015!) it is unfortunately sterile. Nevertheless, the leaves of WELT SP027015 are rather large and to my eye they still appear glossy; features that are diagnostic of *C. maximus*, but which are much easier to see in fresh rather than dried specimens (see de Lange et al. 2010). At the time Peter Heenan was working on the problem we looked at this collection together, I was convinced it was *C. maximus* but Peter remained unsure, what we needed was a flowering collection—none appeared to exist. Consequently, Heenan (2000; p. 367) was reluctant to place it in either species. Instead for his revised distribution for *Clianthus maximus* he noted that ‘its former distribution may have extended to Great Barrier Island (see Goulding 1983)’. That comment stems from a painting reproduced in Goulding (1983), a book which celebrates the then virtually unrecognised botanical paintings of Aotea / Great Barrier Island Resident Fanny Osbourne née Malcolm (1852–1933) (Fig. 6). Fanny lived on Aotea / Great Barrier Island, mostly in the vicinity of Tryphena from 1859 to 1929 when through illness she departed to spend the last four years of her life in the care of her daughters (Goulding 1983). A self-taught artist. in between raising her 13 children, she painted



Figure 6. Fanny Osbourne (1852–1933) who sold water colours she did of Aotea / Great Barrier Island plants to supplement the family income. Photo: Auckland War Memorial Museum.

stunningly beautiful and botanically accurate pictures of wildflowers on the island, which she sold to islanders and island visitors alike. Her paintings were undertaken from fresh wild-collected specimens that she or her husband Alfred had found. One species she painted was *Clianthus* (Fig. 7.), and I remain firmly of the opinion her painting depicts *C. maximus*. Critical features diagnostic of *C. maximus* shown in her painting, include almost uniformly dark red flowers, with the proximal portion of the keel, standard and wings white, and without any white-stripping on the standard. The match is close but the lack of dark maroon, maroon black blotch at the base of the standard is admittedly uncharacteristic of *C. maximus* or *C. puniceus*. There the matter rested until November 2012 when I visited the Field Museum, Chicago, Illinois, USA.

Although I was over there to participate in a *Frullania* (Frullaniaceae) workshop run by Dr Matt von Konrat I managed to spend a day looking through their vascular plant collection for New Zealand plants. My initial queries of Christine Niezgoda, their Collections Manager for Flowering Plants as to whether the Field Herbarium held much New Zealand material suggested they held very little, so I resorted to random searches of genera that interested me. So I was very surprised; Christine



Figure 7. *Clianthus* painted by Fanny Osbourne from a specimen collected from the wild on Aotea / Great Barrier Island and reproduced in Goulding (1983). Osbourne's painting is a very good representation of *Clianthus maximus*.



Figure 8. The Thomas Kirk Great Barrier Island *Clianthus maximus* specimen held in the Field Herbarium (F 355273). Photo: C. Niezgoda.

even more so, because I was soon finding hitherto unrecognised Thomas Kirk New Zealand specimens. Lots of Kirk specimens intact. Furthermore, unlike many of those left in New Zealand herbaria these were beautifully labelled with specially printed labels reading 'Ex Herb. T Kirk F.L.S., Wellington, N.Z.' and sporting Kirk's distinctive handwriting. These collections came to the Field Herbarium it transpired as part of the J.M. Coulter collection that had been gifted from the University of Chicago to the Field Museum many years before but once there they had been forgotten about. Kirk as seems to have been his norm with a variety of international contacts (de Lange 2016) evidently traded New Zealand plant specimens with Coulter. Christine knew of the Coulter herbarium gifting of course but had not realised that it held so many Kirk specimens, after I left she went on to discover over 800 of them (C. Niezgoda *pers. comm.*).

During my random 'ducks' and 'dives' for that day the herbarium deities were clearly shining on me because there in a folder marked "*Clianthus puniceus*" I found a Kirk specimen (F 355273! Fig. 8), and even better it was a wild collection from Great Barrier Island and best of all flowering! The specimen is beautifully preserved. In all respects, foliage and flower dimensions it matches the characters provided for *Clianthus maximus* by Heenan (2000); even the flowers, which are so well pressed that the original colour whilst long gone has been replaced with an orange brown pigmentation that still shows the diagnostic paler (probably once white) bases of the keel, wings and standard, and remarkably, a much darker brown blotch at the base of the standard.

This specimen along with Fanny Osbourne's painting provide I feel conclusive proof that the range of *Clianthus maximus* can be extended from the Tairāwhiti / East Cape Region to Aotea / Great Barrier Island. However, unless other fortuitous specimens from other Coromandel, eastern Auckland and Northland sites where *Clianthus* was recorded by Cheeseman appear in the world's herbaria we will forever remain unclear whether one or both species of *Clianthus* once grew in these places.

Acknowledgements

I'd like to thank Dr Matt von Konrat, Head of Botanical Collections, Field Museum, for funding my travel to Chicago to attend the *Frullania* workshop and for providing me with free accommodation—always a bonus when travelling in the USA. I also thank Christine Niezgod, Collections Manager, Flowering Plants for taking the image of the Kirk *Clianthus* specimen and her ongoing interest in the Kirk holdings in their herbarium. Leon Perrie, Curator of the WELT, provided me with the much-needed WELT accession number for the Kirk *Clianthus* specimen in his care—my notes on that collection being out of range during the COVID-19 Level 4 Lockdown when I wrote this article. Lastly I thank Peter Heenan for all that great discussion in 1998 about *Clianthus* whilst out and about in the field looking at *Sophora* in the southern North Island

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Gordon Park Scenic Reserve volunteers wanted

The Department of Conservation supports a volunteer group in Whanganui to look after Gordon Park Scenic Reserve, which is a small kahikatea remnant forest just outside the city. This forest remnant is of an extremely rare type and contains many species which are uncommon in the Whanganui district today. The native flora is almost as extensive as that at Bushy Park in Whanganui, though the forest is only 10 per cent of the area of Bushy Park. A list can be provided on request for anyone wanting further information about species within the Reserve.

We're trying to build the number of volunteers we have supporting the preservation and growth of the Reserve (with the aim of eventually creating an employment opportunity), and it would be neat to have tertiary students engaging with the biodiversity here. Also of interest could be some kind of research or thesis project connected to the site. If you could please pass this information on, hopefully we will find some enthusiastic new connections and/or volunteers.

Also, I've been given a bag of native hibiscus seeds and am trying to find a home for them. They are apparently *Hibiscus trionum*, not *Hibiscus richardsonii* which has a threatened status.

If you have a use for them I am happy to post them on. Just contact me by phone or email as per the details below if you are interested in either a volunteer role or the hibiscus seeds.

Lisa Lambertson, Kaitiaki ao Hapori – Community Ranger, Department of Conservation, M: 027 242 9373, E: llamberton@doc.govt.nz

UPCOMING EVENTS

If you have events or news that you would like publicised via this newsletter please email the Network (events@nzpcn.org.nz).

Auckland Botanical Society

Meeting: Wednesday 1 July at 7.30pm – Speaker Ewen Cameron.

Topic: The vascular plants recorded and collected in New Zealand by Banks and Solander, 1769–1770.

Field Trip: Saturday 18 July to Smith's Bush, Otatau. **Meet:** 10.00am at Smith's farm, old cowshed 300 metres up Maioro Road from Otatau village.

Leader: Tricia Aspin,
email aspin@ps.gen.nz,
ph. 09 235 8981 or 027 414 9253.

Rotorua Botanical Society

Field Trip: Sunday 5 July to Jim Barnett Reserve, Waotu (combined with Waikato Botanical Society). **Meet:** 9.00am at the Convention Centre carpark, Fenton Street, Rotorua or 10.00am at the Puketuru Hall. **Grade:** Easy–Medium.

Leader: Kerry Jones,
email: km8j1s@gmail.com,
ph. 07 855 9700 or 027 747 0733.

Meeting: Monday 6 July at 6.00pm – AGM to be followed by guest speaker.

Venue: DOC Rotorua office,
99 Sala Street, Rotorua.

Field Trip: Sunday 2 August to Glovers Farm, Waiohotu Road, Fitzgerald Glade, Western Mamakus (combined with Waikato Botanical Society). **Meet:** 8.15am at the Convention Centre carpark, Fenton Street, Rotorua or 9.00am at the corner of Waiohotu Road and SH 5. **Grade:** Medium.

Leader: Jacqui Bond,
email: supajac@yahoo.com,
ph. 021 125 9273.

Wellington Botanical Society

Field Trip: Saturday 4 July to Brookfield Wildlife Refuge and Outdoor Education Centre (Scouts NZ), Wainuiomata. **Meet:** 9.30am at 562 Moores Valley Road, Wainuiomata.

Co-Leaders: Kate Jordan, email katel_jordan@gmail.com, and Sunita Singh, ph. 027 405 2987.

Meeting: Monday 20 July with speakers Cliff Keilty (Downer), John van den Hoeven (Downer) and Jonathan Frericks (Hutt City Council) **Topic:** Nurturing Percy Scenic Reserve's botanical potential.

Field Trip: Saturday 1 August to Waikanae River. **Meet:** 9.45am at Waikanae Station north end carpark.

Co-Leaders: Kate Jordan, ph. 027 899 0018 and Chris Horne, ph. 04 475 7025 or 021 474 9300.

Nelson Botanical Society

Field Trip: Sunday 20 July to Rowe covenant, Stanley Brook.

Leader: Helen Lindsay, email helenlindsay3@gmail.com, ph. 03 538 4020. Please contact Helen for further information.

Meeting: Monday 21 July at 6.00pm (pot luck dinner), followed by AGM and guest speaker Uta Purcell at 7.15pm. **Topic:** Botanising along the Silk Road through Eastern Anatolia.

Venue: Jaycees room, Founders Park.

Canterbury Botanical Society

Meeting: Monday 6 July at 7.30pm with speaker Melanie Lapointe. **Topic:** Wetlands of Quebec and Canada.

Venue: Upper Riccarton Library community meeting room, 71 Main South Road, Riccarton.

Field Trip: Saturday 11 July to Mears Bush beech forest, Matawai Park and Silverstream revegetation projects. **Meet:** 9.30am at the Peg Hotel, 899 Main North Road, Belfast or 10.10am at the West Oxford Hotel. **Grade:** Easy.

Contact: Alice Shanks, email alice@caverock.net.nz, ph. 027 366 1246. Please let Alice know if you intend to participate.

Botanical Society of Otago

Meeting: Wednesday 8 July at 5.20pm with Speaker James Crofts-Bennett. **Topic:** Silken harp chords and the green choir.

Venue: Benham Seminar Room, Room 215, Second Floor, Zoology Benham Building, 346 Great King Street, Dunedin.

Field Trip: Saturday 11 July to Tavora Reserve, North Otago. **Meet:** 9.00am at the Botany Department carpark.

Contact: John Barkla, email: mjbarkla@xtra.co.nz, ph. 03 476 3686.
