NEW ZEALAND PLANT CONSERVATION NETWORK

TRILEPIDEA

Newsletter of the New Zealand Plant Conservation Network

No. 175

June 2018

Deadline for next issue: Monday 16 July 2018

SUBMIT AN ARTICLE TO THE NEWSLETTER

Contributions are welcome to the newsletter at any time. The closing date for articles for each issue is approximately the 15th of each month.

Articles may be edited and used in the newsletter and/or on the website news page.

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. 2

Pachycladon crenatum. Photo: Rowan Hindmarsh-Walls

The latest review of the threat status New Zealand's indigenous flora

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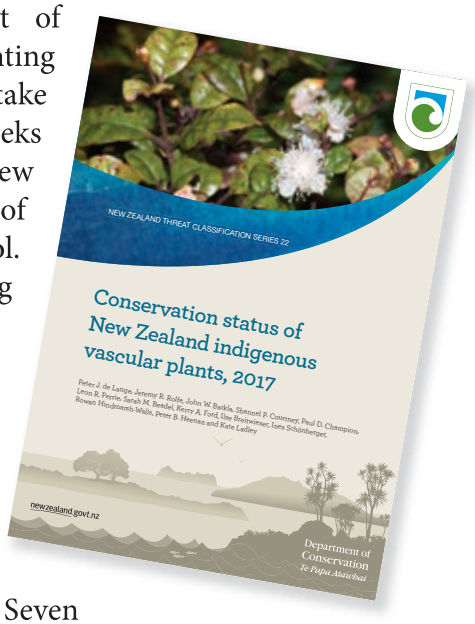
Over a five yearly cycle, the Department of Conservation hosts a panel of experts representing a range of skills and interest groups to undertake threat listings of New Zealand's biota. Two weeks ago the eighth conservation assessment of the New Zealand Vascular Flora was published as part of the New Zealand Threat Classification Series (Vol. 22). The new listing replaces the previous listing prepared in 2012 and published in 2013.



The situation for the New Zealand indigenous flora is not good; 2502 taxa at the rank of species, and 283 taxonomically indeterminate and/or informally recognized 'tag-named' taxa were assessed. These figures represent the most accurate statement of the New Zealand Indigenous Vascular Flora currently available. Seven taxa are listed as 'Extinct' (one less than the 2012 listing), and 403 taxa are listed as 'Threatened' (114 more than in the previous listing). Sixty-one taxa have experienced severe documented declines since the last listing, 59 taxa now have worse conservation assessments, and another 77 have a worsening conservation status. These declines can be directly mapped to deteriorating water quality, the impact of dairy farming in the inter-montane basins of the eastern South Island, ongoing loss of habitat, and direct pressure from browsing animals and from diseases.

In some cases, the cause of decline remains unclear. For example, the poroporo (*Solanum aviculare* var. *aviculare*) once abundant 30–40 years ago in the North Island is now in serious decline, such that it is either absent from or in sharp decline over large parts of its former range. Oddly, whilst it is in decline, its close relative *Solanum laciniatum* is not; in some places it is actively spreading into habitat *S. aviculare* var. *aviculare* once occupied. Even stranger, is that the offshore island race of *S. aviculare* var. *latifolium* is also spreading in places where it has been planted on the mainland. Research as to why this happening is urgently needed.

In the case of kauri (*Agathis australis*), the cause of the decline is now well known and, for the first time, this iconic conifer has been listed as 'Nationally Vulnerable', reflecting the impact of the killer disease, *Phytophthora agathidicida*, a listing made possible because a predicted decline rate and a national population estimate for kauri now exists. Less certain has been the call to list all New Zealand's indigenous myrtles (Myrtaceae) as 'Declining' or 'Threatened'—a precautionary decision taken by the panel on the basis of the arrival of myrtle rust (*Austropuccinia psidii*), and concern

PLANT OF THE MONTH – *PACHYCLADON CRENATUM*

Pachycladon crenatum. Photo: Rowan Hindmarsh-Walls.

The plant of the month for June is the Fiordland Pachycladon, *Pachycladon crenatum*, one of 10 *Pachycladon* species endemic to the New Zealand region. Like most of the other mainland New Zealand species, *P. crenatum* is found in alpine habitats. This species can be seen in the mid to high alpine areas of Fiordland National Park, possibly spreading eastwards into the Takitimu mountains. Plants are found in cracks in rock slabs and open stony areas where there is little competition from other species. It is a small stature perennial plant, forming squat single rosettes, with a ring of short flowering stems emerging from beneath the rosette leaves. The flowers are comparatively large and white, with the fruits often turning orange.

The species is most similar in appearance to *P. novae-zelandiae*. Both species form squat single rosettes, but *P. crenatum* can be distinguished by its distribution and more robust form, with larger, glossier bright green leaves. The two species may overlap on the eastern edge of *P. crenatum*'s range. The species is endemic to New Zealand and is currently listed as At Risk—Naturally Uncommon, because of its scattered distribution across much of central Fiordland.

Being a brassica, it is likely to be very palatable so could potentially be threatened by herbivore browse, especially by hares, if they were to ever invade the central part of Fiordland; currently, they haven't reached this area. *Pachycladon crenatum* could also be affected by diseases and pests such as turnip mosaic virus, aphids, white butterfly, diamondback moth, and powdery mildew, but, luckily, *Pachycladon*'s habitat is very far from civilisation and these pests. The species is not generally cultivated and should not be removed from the wild, since its entire range is within Fiordland National Park.

The genus *Pachycladon* is mostly endemic to the New Zealand region, with only one species, *P. radicata*, being from Tasmania. It is in the cabbage family, Brassicaceae, along with other distinctive alpine genera such as *Notothlaspi* and *Cardamine*.

The genus name *Pachycladon* means 'thick shoot' referring to the large stem/taproot characteristic of the genus; the species epithet *crenatum* refers to the crenate, or rounded teeth on the edge of a leaves.

You can view the NZPCN website factsheet for *Pachycladon crenatum* at: http://www.nzpcn.org.nz/flora_details.aspx?ID=614

over the impact this rust may have/is already having on our Myrtaceae. Advice from Australian myrtle rust experts was used to arrive at this conclusion. Though myrtle rust is still in the early stages of establishment in New Zealand, already—as predicted—we are seeing an impact on the endemic myrtle genus *Lophomyrtus* and maire tawake (*Syzygium maire*), though, so far, mostly on cultivated plants or those growing in forest remnants in urban areas.

The panel acknowledges that the high listing for the Myrtaceae may be inaccurate; the panel is only too happy to be proved wrong. The decision to take this step, however, accords with the precautionary principle advocated by the New Zealand Threat Classification System, and the stance already being taken by the Ministry of Primary Industries and Department of Conservation. Both agencies have been trying to obtain seed and germ-plasm of New Zealand myrtles in the full expectation that some of these iconic trees and shrubs are going to go extinct while the rest are probably going to get very sick. With no cure in sight, this is a potential disaster for New Zealand's coast to montane vegetated ecosystems.

A copy of the report is available free from: https://www.doc.govt.nz/Documents/science-and-technical/nztcs22entire.pdf
The NZTCS data used to compile the report may be viewed and downloaded from: https://www.nztcs.org.nz/#/reports/38

Seed banking Myrtaceae on Aotea/Great Barrier Island

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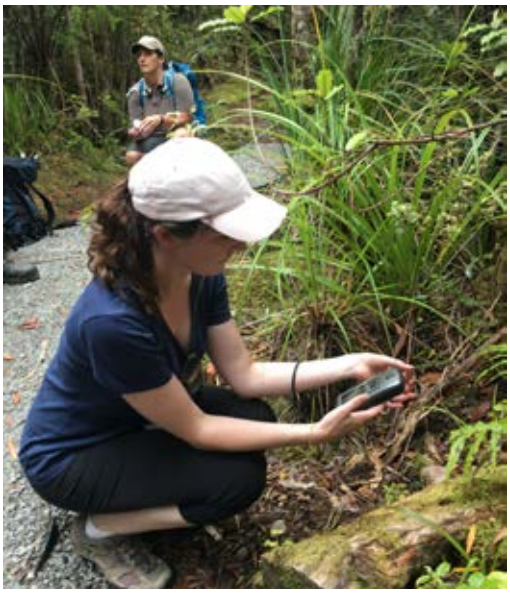
Myrtle rust is a fungal disease thought to have blown here from Australia where it is widespread. It was first detected in New Zealand in April 2017 on Raoul Island and has since spread throughout the country. It threatens the survival of our native Myrtaceae species and, with little understanding of its long term impacts on Myrtaceae species, seed banking is one way we can buy time to mitigate the potential impacts of this disease.



Emma Bodley from Auckland Botanic Gardens notes the locations of *Metrosideros parkinsonii*. Photo: Bec Stanley.

The Department of Conservation (DOC) had a list of target species and number of collections they wanted to make but required assistance to carry of seed collection. In May 2017, a partnership between DOC and Botanic Gardens Australia New Zealand (BGANZ) was formalised with the signing of a memorandum of understanding at the Threatened Species Summit. The MOU reflects both organisations' commitment to work together on "… mutually important plant conservation work, improving co-ordination, achieving more research, increasing conservation capability and reducing costs by increasing the efficiency and effectiveness of the relationships." Auckland Botanic Gardens (ABG) is a member of BGANZ so the opportunity arose to utilise both organisations' expertise to work on seed banking some Myrtaceae on Aotea/Great Barrier Island. This work was supported by the The Global Tree Seed Bank Project of Millennium Seed Bank Partnership (MSB), Kew, which provided funding from the Garfield Weston Foundation.

Metrosideros parkinsonii seedling. Photo: Bec Stanley.

Seed collection on Aotea was supported by the MSB because of the high concentration of Myrtaceae species in

one place and recognising that we could contribute to the Global Tree Seed Bank Project. The canopy of the Aotea comprises Myrtaceae species with kānuka (*Kunzea robusta*) and pohutukawa (*Metrosideros excelsa*) being the dominant elements of the landscape. It also has an endemic kānuka (*Kunzea sinclairii*) and populations of Parkinson's rātā (*Metrosideros parkinsonii*), which has a weird distribution including Aotea, Hauturu-o-Toi (Little Barrier Island) and northwest Nelson, and nowhere else in between.

DOC and ABG staff on Great Barrier Island/Aotea. Photo: Bec Stanley.

The project involved two trips to the island. ABG staff, Emma Bodley and Bec Stanley, worked alongside DOC island staff, Louise Mack and Jordan Scarlett, covering 35 km of tracks in three days (31 January – 2 February). The primary focus of this first trip was to identify plants from which collections could be made, i.e., being accessible, observe the stage of fruit/seed production to estimate when seed would be mature, and to find large enough populations to ensure that the target of 10,000 seeds could be met. Finding the plants first, and taking a GPS location, meant collecting would be more efficient. We had 11 target species on our list as a goal to seed bank and we located nine. One species on the list has subsequently been removed with advice from kānuka expert Dr Peter de Lange.

Jeff Jones and Jordan Scarlett collecting seed from *Kunzea sinclairii* and GPS marking every plant from which seed was collected. Photo: Emma Bodley.

Three weeks later, Emma, Jeff Jones (ABG) and Jordan spent three days (26–28 February) walking the previously highlighted areas collecting seed from *K. sinclairii, K. robusta* and *Leptospermum scoparium.* Collections of the three species were submitted to the New Zealand Indigenous Flora Seed Bank (NZIFSB). All protocols surrounding myrtle rust and seed banking were followed and surveys of the populations before collection started were conducted to ensure no myrtle rust was present.

We saw plenty of other plants of interest including a very healthy population of the dwarf mistletoe (*Korthalsella salicornioides*) that grows on *L. scoparium*; this is likely to be the largest population in the Auckland region.

Responding to the myrtle rust threat remains a high priority for DOC and the Botanic Gardens. This collaboration is a great example of our partnerships bringing additional resources to each other and contributing to key conservation goals.

A name change for *Oxybasis* in New Zealand

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The indigenous chenopods ('goosefoots') of New Zealand comprise a small group. Though their New Zealand diversity may be low (Schönberger et al., 2017), arguments rage about the family to which they belong—Amaranthaceae or Chenopodiaceae (in New Zealand we tend to use Amaranthaceae)—what names we should use for the genera present here and even the correct names for the species we have here.

Currently, of the species traditionally treated as Chenopodiaceae in New Zealand, we more or less accept the following genera: *Atriplex* (c. 10 species, 5 indigenous, 2 endemic), *Bassia* (1 naturalized species, formerly often placed in *Kochia*), *Beta* (1 naturalised species), *Blitum* (2 naturalised species), *Chenopodiastrum* (2 species, 1 indigenous[1], 1 naturalised), *Chenopodium* (now including *Rhagodia* and *Einadia*; c. 12 species, 4 indigenous, 2 endemic, 8 naturalised), *Dysphania* (3 species, 1 endemic, 2 naturalized), *Oxybasis* (1 indigenous species), *Salicornia* (including *Sarcocornia*: 1 indigenous species), *Salsola* (at least 2 species, both considered for now as naturalised, but more work on those treated as *S. kali* is needed), and *Suaeda* (1 endemic species) (Schönberger et al., 2017).

Recently, there has been further debate about what genus and rank one of our indigenous goosefoots should belong to (Mosyakin & de Lange, 2018). The 'goosefoot' concerned was initially described in 1810 as *Chenopodium ambiguum* (Fig. 1.) by Robert Brown (1773–1858), who, besides being an exceptional botanist, was also the scientist who discovered and documented 'Brownian Motion'. Brown named his new species from Australian material (Brown 1810). The same plant was then noted in New Zealand and eventually on Easter Island.

Fig. 1. *Oxybasis ambigua*—here seen growing on sand at Little Hellfire, Rakiura (Stewart Island). Photo: John Barkla.

Almost from the onset, the taxonomic status of this little plant has been up for debate. The first salvo was fired when, in 1857, Kew based botanist Joseph Dalton Hooker (1817–1911) decided that Brown's plant was the same as the Northern Hemisphere *Chenopodium glaucum* (Fig. 2.) (Hooker 1857). For the most part, Hooker's view was followed in New Zealand, though on occasion Brown's species (*C. ambiguum*) was resurrected by Australasian botanists (notably Allan 1961). In the early 1980s, Wilson (1982) decided that the plant should be treated as a subspecies of *C. glaucum*, following the decision that Albert Thellung (1912) proposed in his pioneering early study of the alien flora of Montpellier, France. Following this usage in New Zealand at least, acceptance of *Chenopodium glaucum* subsp. *ambiguum* was widely adopted (Webb et al. 1988). The only issue clouding this was the

1 *Chenopodiastrum* is represented in New Zealand by the naturalised *C. murale* and indigenous *C. erosum*. The latter species, treated as *Chenopodium erosum* by Webb et al. (1988) and as *Oxybasis erosa* by Mosyakin (2013), is now correctly assigned to *Chenopodiastrum* (Uotila 2018; see also Mosyakin & de Lange 2018). Though treated as naturalised by Webb et al. (1988), it is treated as indigenous to Australia and New Zealand by Wilson (1984). In New Zealand it appears to be confined to inland areas of the South Island (McKenzie Basin, Central Otago), herbarium specimens that we have seen of other reported New Zealand occurrences are referable to *C. murale*.

Fig. 2. *Oxybasis glauca*—a Northern Hemisphere species not currently confirmed in New Zealand. This plant was photographed as a weed in a garden in the Ukraine, Kiev Region, at Hrebinky. Photo: Sergei Mosyakin.

discovery that three New Zealand plants (from different locations) were tetraploids, unlike northern hemisphere *Chenopodium glaucum*, which is diploid. On the basis of that discovery, de Lange & Murray (2002) argued that the little herb should again be treated as a full species—*Chenopodium ambiguum*. The tetraploid nature of *C. ambiguum* may indicate that it emerged through some ancient hybridisation between two yet unidentified ancestral diploid taxa, accompanied by duplication of the chromosome number (allopolyploidy event). Plants of different ploidy levels in *Chenopodium* and related genera normally do not hybridise easily, thus our tetraploid should be reproductively isolated from *C. glaucum*.

There matters would have rested except that, on the basis of DNA-based phylogenetic studies, a major revision of the world chenopod genera published in 2012 (Fuentes et al., 2012) resulted in the resurrection of *Oxybasis*. *Oxybasis* is one of several segregate genera split at various times from *Chenopodium*, only to be subsumed into it later. With the resurrection of *Oxybasis*, *Chenopodium ambiguum* was placed within it, initially as a synonym of *Oxybasis glauca* and then, in 2013, as a subspecies—*O. glauca* subsp. *ambigua* (Mosyakin 2013). When that combination was made, Mosyakin (2013) was unaware of the differences in ploidy between *Oxybasis glauca* and his new combination within it, the Australasian / Easter Island subsp. *ambigua*.

Meanwhile, back in New Zealand during the early 2000s, botanists and ecologists noted that what was now *Oxybasis glauca* subsp. *ambigua* was in decline. Formerly widespread and common in coastal saltmarsh, shell banks and, on occasions, inland on salt pans, *Oxybasis glauca* subsp. *ambigua* was now much less common than it had been. In fact, it appeared to be going extinct over large parts of its northern North Island New Zealand range. As such, people were being encouraged to record its presence. Also, with the advent of iNaturalist (initially in the local 'Nature Watch New Zealand' format—see inaturalist.nz) people were posting observations of it, using the name *Oxybasis glauca* subsp. *ambigua*, the name advocated for it by Ngā Tipu o Aotearoa (New Zealand Plant Names Database) (Schönberger et al. 2017).

Then, in February 2018, on iNaturalist, *Oxybasis glauca* subsp. *ambigua* had yet another name shift. This time the genus and subspecies vanished completely into *Chenopodium glaucum*. The first we knew about this in New Zealand was when one of us (PdL) received outraged emails from New Zealand botanists wanting to know why this happened!?! Inquiries by de Lange to iNaturalist revealed that the Kew based 'The Plant List' (see http://www.theplantlist.org/) was responsible. For plant names and taxonomic decisions, the iNaturalist website uses that website as the 'preferred' resource for the names it uses—considering the volatility of plant names and myriad databases offering opinions this is understandable. However, the experience of many botanists has been that 'The Plant List' is not always up-to-date with plant taxonomy, particularly where Southern Hemisphere plants are concerned. Something more formal on the fate of *Oxybasis* needed to be done.

And it now has. In our paper we detail the taxonomic history of *Oxybasis*, examining the evidence for merging that genus into *Chenopodium* and conclude that this 'lumping' is not warranted. Having established this, we also investigated the status of the various subspecies and species that have been merged into *Oxybasis* (*Chenopodium*) *glauca*. We concluded that three species, two that had been merged into *Oxybasis glauca* as subspecies by Mosyakin (2013), and the South American *Chenopodium*

parodii, are actually distinct species in their own right that belong in *Oxybasis*. Accordingly, three new combinations have been made at species rank*: Oxybasis ambigua* (R.Br.) de Lange et Mosyakin, *O. amuernsis* (Ignatov) Mosyakin et de Lange (Fig. 3), and *O. parodii* (Aellen) Mosyakin et de Lange.

Fig. 3. *Oxybasis amurense* – a Northern Hemisphere species allied to *Oxybasis glauca*. This plant was photographed in the Russian Far East, Khabarovsk Province, left bank of Amur opposite Nizhnetambovskoe Village. [In Russian: Хабаровский край, левый берег Амура напротив села Нижнетамбовское] Photo: Marina Skotnikova.

Evidently, more work has to be done to solve the problem of the geographic and evolutionary origins of our native *Oxybasis*. No doubt there will still be disagreement over our taxonomic decisions at the global level but, for now at least, the species rank allotted to the Australian – New Zealand – Easter Island *Oxybasis ambigua* makes the best use of available cytological, morphological and phylogenetic information. We hope that this decision accords some nomenclatural stability for those interested in its conservation status in the New Zealand part of its range.

Acknowledgments

We would like to thank Jeremy Rolfe for his thoughtful review of a draft of this article. We thank John Barkla and Marina Skotnikova for permission to use their images of *Oxybasis ambigua* and *O. amurense*.

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New Zealand's iconic kauri trees remain at risk from the spread of kauri dieback disease

Roger Smith, Chair of the Kauri Dieback Programme Governance Group and Head of Biosecurity New Zealand (kauridieback@mpi.govt.nz)

At the end of last year, the Government clearly signalled the need to deliver stronger protection for kauri, including the development of a National Pest Management Plan. The Kauri Dieback Programme Governance Group is progressing this work and has set up the Accelerating Protection for Kauri project to do this. Now there's an opportunity for everyone with an interest in kauri to contribute.

To gather ideas and get your thoughts on ways to protect kauri there will be three rounds of consultation. Right now the details are still being worked on. But we can tell you the first round will be about refreshing the direction for managing kauri dieback disease. In later rounds we'll ask you what the National Pest Management Plan could look like and ways to action it. We're doing this over time so everyone who wants to has a chance to have their say.

We will visit the following areas for hui on the first round of consultation. There is a mix of marae and community venues during the day and in the evening, open to everyone:

LOCATION	DATE	TIME
Northland Mangamuka Marae 9 Iwitaua Road, Mangamuka	Monday 2 July	10.00 a.m. to 3.00 p.m.
Whangarei Barge Park Showgrounds Event Centre 474 Maunu Road	Monday 2 July	7.00 p.m. to 9.00 p.m.
Whangarei Te Puna o Te Matauranga Marae Northtec, 51 Raumanga Valley Road	Tuesday 3 July	10.00 a.m. to 3.00 p.m.
Auckland Te Mahurehure Marae 65-73 Premier Avenue, Point Chevalier	Wednesday 4 July	10.00 a.m. to 3.00 p.m.
Auckland Kelston Community Centre 126 Awaroa Road, Sunnyvale	Wednesday 4 July	7.00 p.m. to 9.00 p.m.
Thames Thames War Memorial Hall Corner of Mary and Queen Streets	Thursday 5 July	7.00 p.m. to 9.00 p.m.
Thames Matai Whetu Marae 12 Ngati Maru Highway, Kopu	Friday 6 July	10.00 a.m. to 3.00 p.m.

If you can't make the hui, there are other ways to have your say. Submissions are now open and will close on Monday 16 July 2018, at 5.00 p.m. Take a look at our website to see the best way for you to have your say: www.kauridieback.co.nz. This is an opportunity for everyone with an interest in kauri to contribute. There are three rounds of consultation this year. We're doing this to get the best result for kauri by working on the future and coming up with actions together.

This first round is to refresh the future direction for managing kauri dieback disease. In rounds two and three later this year, you'll see (and get to comment) on the big picture view created from your feedback in round one. This will inform how the National Pest Management Plan can best be used to support the work to protect kauri—and you'll get a say on that too. We'll keep you updated with these consultation dates.

Please pass this information to your members or communities who may be interested in contributing to the future of kauri. Remember to go to www.kauridieback.co.nz to have your say before 16 July 2018.

For any questions, please contact me at kauridieback@mpi.govt.nz and we will get back to you.

A New Species of *Pittosporum* from the Poor Knights Islands, Northland, Aotearoa/New Zealand

In a recent paper (Carter et al., 2018) a new species of *Pittosporum*, *Pittosporum roimata*, is described. It is the only vascular plant endemic to the Poor Knights Islands. This new species has previously been referred to as a distinct yellow-flowered variant of *Pittosporum cornifolium* (tawhiri karo, wharewhareatua), a morphologically similar epiphytic shrub known from both main islands of New Zealand as well as other offshore islands. The new species is separated from *P. cornifolium* based on morphology, DNA sequence variation, as well as distribution. *Pittosporum roimata* is distinguished from *P. cornifolium* by flowers with yellow petals, larger inflorescences and in producing several terminal fruits per stem. Herbarium specimens of *P. roimata* statistically have larger leaves and shorter petioles than specimens of *P. cornifolium*. *Pittosporum roimata* is locally common on the Poor Knights, growing on rocky substrates associated with *Xeronema callistemon* (raupo taranga) and *Metrosideros excelsa* (pohutukawa). Using the current New Zealand Threat Classification System, the authors suggest a preliminary classification of this new species as 'at risk/naturally uncommon' qualified data poor [DP], one location [OL].

Male *Pittosporum roimata* on Tatua Peak, Aorangi Island, Poor Knights Islands. Photo: Dylan van Winkel.

Reference

Carter, S.N.; S. Miller; S.J. Meyer; C.E.C. Gemmill, 2018: A new species of *Pittosporum* described from the Poor Knights Islands, Northland, Aotearoa/New Zealand. *Systematic Botany 43(2)*: 633–643.

Whanganui Regional Museum Botanical Group Golden Anniversary

You are invited to a special celebration of the 50th anniversary of the Whanganui Regional Museum Botanical Group on Saturday 27 and Sunday 28 October 2018. A varied programme has been planned. There are now flights by Chathams Air between Auckland and Whanganui: https://www.airchathams.co.nz/Airline-Info/whanganui-schedule/. The hosts can arrange pick-up from and delivery to Whanganui airport. Please book your own accommodation; some is available at the Quaker Settlement (twin share $45 each, per night, or your own room $60 (including linen and towel), sleeping house $30 each (take your own bedding and towel). Contact: www.quakersettlement.co.nz/facilities-bookings/charges-and-fees/

By arriving a day or more before, or staying on after Sunday, you can check out some of the other local botanical options. Members of the Botanical Group may be available to show you around if you would like a guide. Places to explore include Gordon Park Scenic Reserve (10 ha of swamp forest with an all-weather track); the James McGregor Arboretum at Kowhai Park on the true left of the awa; coastal dunes at Castlecliff (see a local dune restoration project or unmanaged dunes to the west, with interesting garden escapes among lots of splendid spinifex; Bason Botanical Gardens. For the more adventurous, consider a day trip to the Waitahinga Trails (mainly tracked black beech forest). The Botanical Group has plant lists available for most of these places.

Potential attendees are invited to contact Margi Keys, the anniversary committee's convenor (see below), for details. Earlybird registration ($50 per person) is open till 31 July after which date is becomes $60 pp. Registrations should be made with Margi Keys (email: margikeys93@gmail.com or ph: 06 344 1250).

EVENTS

If you have important events or news that you would like publicised via this newsletter please e-mail the Network (events@nzpcn.org.nz):

The Global Partnership for Plant Conservation Conference

Theme: *Supporting the Worldwide Implementation of the Global Strategy for Plant Conservation.* **Location:** Cape Town, South Africa. Date: 28–30 August, 2018.	**Register at:** http://www.sanbi.org/events/global-partnership-plant-conservation-conference

International Federation of Landscape Architects 55th World Congress

Location: Singapore at the Sands Expo and Convention Centre. **Date:** 15–21 July 2018 in conjunction with the Singapore Garden Festival. **Themes:** 'Biophilic City; Smart Nation; Future Resilience.	**To register:** http://www.ifla2018.com/conference-registration

12th Australian Plant Conservation Conference

Hosted by: Centre for Australian National Biodiversity Research (CANBR) at CSIRO. **Venue:** CSIRO Discovery at the Black Mountain Science and Innovation Park, Canberra. **Date:** 12–16 Nov 2018. • presentations on the latest findings relevant to plant conservation and native vegetation rehabilitation • practical workshops on ecologically sound techniques • field trips demonstrating plant conservation in action • social activities to enhance networking.	**More details:** to be provided in the near future, so stay tuned at www.anpc.asn.au/conferences/2018.

John Child Annual Bryophyte and Lichen Workshop

Date: 8–13 November. **Location:** Pureora Forest Lodge and is open anyone and everyone with an interest in the mosses, liverworts, and lichens of New Zealand, from beginner to expert. **Accommodation:** Pureora Forest Lodge (http://www.pureoraforestlodge.org.nz/facilities.html), other possibilities at Pureora and in the surrounding area. **Bring:** all necessary field gear. **Cost:** approximately $300. **Tom Moss Award:** open to any student studying any aspect of Australasian bryophytes and/or lichens; see www.wellingtonbotsoc.org.nz/awards/moss.html for details. **Estimate of numbers:** If you are interested in attending the workshop this year, please email Dhahara Ranatunga (dranatunga@aucklandmuseum.com) as soon as possible.	**Organisers:** Thomas Emmitt, email: temmitt@doc.govt.nz, and Dhahara Ranatunga, email: dranatunga@aucklandmuseum.com.

Auckland Botanical Society

Meeting: Wednesday 4 July for a talk by Yumiko Baba titled 'Botanising here, there and everywhere'. **Venue:** Unitec Room 115-2017.	**Contact:** Maureen Young, email: youngmaureen@xtra.co.nz.
Lichen Workshop: Saturday 14 July to be led by Dan Blanchon.	**Contact:** Maureen Young, email: youngmaureen@xtra.co.nz.

Kaipatiki Project

Bushcare Day: Saturday 14 July, 10.00am – 12 noon at Domain Road, Glenfield; **h**elp weed and learn about pest trapping at Eskdale Reserve. Kids welcome, refreshments provided and some spades at all Bushcare Days. **Wear**: gumboots, gloves, bring spades if you have them. Groups welcome, please advise in advance.	**Information:** www.kaipatiki.org.nz/volunteer, or email: office@kaipatiki.org.nz or www.facebook.com/kaipatikiproject, or ph: 09 482 1172.

Waikato Botanical Society

Meeting: Monday 16 July at 5.30 p.m. for a talk by Monique Hall on her research findings on her summer project based on *Dactylanthus taylorii* on Mt Pirongia.	**Venue:** the Link Centre at Corner of Te Aroha Street and Memorial Drive.

Rotorua Botanical Society

Field trip: Sunday 1 July to Waimangu Scenic Reserve. **Meet:** car park, Rotorua, at 8.30 a.m. or at Waimangu Visitor Centre 9.00 a.m. **Grade:** easy. **Cost: l**ocals rate, $19.00 pp.	**Leader:** Martin Pearce, ph: 07 349 1929; email: mpearce21@xtra.co.nz

Whanganui Regional Museum Botanical Group

Golden Anniversary: Saturday 27 and Sunday 28 October, see article above. Earlybird registration : $50 per person, open till 31 July after which date it becomes $60 pp.	**To register:** Margi Keys, email: margikeys93@gmail.com or ph: 06 344 1250.

Wellington Botanical Society

Field trip: Saturday 7 July to Manawa Karioi, Island Bay. **Meet:** at 9.30 a.m. at the Manawa Kariori information board next to Tapu te Ranga Marae's 4 carpark.	**Co-Leaders:** Paul Blaschke, ph: 04 389 8545 / 027 2462848; email: paul@blaschkerutherford.co.nz; and Sunita Singh, ph: 04 387 9955 / 027 4052987.
Meeting: Monday 16 July at 7.30 p.m. for a talk by Jeremy Rolfe, Department of Conservation, titled 'An update on the latest conservation status of indigenous vascular plants'.	**Venue:** Victoria University Lecture Theatre M101, ground floor Murphy Building, west side of Kelburn Parade; enter building off Kelburn Parade about 20 m below pedestrian overbridge.

Nelson Botanical Society

Field Trip: Sunday 15 July to The Glen covenant. **Meet:** 9.00 a.m. at the Cathedral steps.	**Contact:** Helen if intending to come, ph: 03 528 4020; email: lindsay.helen@xtra.co.nz. **Leader:** Helen Lindsay.
Meeting: Monday July 16 at 7.30 p.m. for a talk by Uta Purcell titled 'Plant hunting in Yunnan and Sichuan (Tibetan Plateau)'.	**Venue:** Jaycees Room Founders Park.

Friends of Te Ara Kakariki – Greenway Canterbury Trust

Annual General Meeting: Thursday 26 July at 7.00 p.m. **Guest speaker:** Libby Harrison, Deputy Chair of WWF New Zealand will talk about the importance of preserving biodiversity.	**Venue:** Lecture Theatre Stewart S1.

Canterbury Botanical Society

Field Trip: Friday 6 July 1.00 p.m. to 3.00 p.m. to the Allan Herbarium at Lincoln to get to know the extinct and rare plants of Canterbury. Please let Alice know if you would like to have lunch beforehand so she can book at table at Hillyer's Cottage Cafe, 12 Gerald Street for 11.45 a.m.	**Contact:** Alice Shanks, ph: 03 337 1256, or text 027 366 1246.
Meeting: Monday 6 August at 7.30 for a talk by Jeremy Rolfe on the key changes in the threatened status of NZ vascular plants.	**Venue:** Upper Riccarton Library, 71 Main South Road.

Botanical Society of Otago

Meeting: Wednesday 18 July at 5.20 p.m. for a talk by David Lyttle titled 'Mountains of the Rain Shadow'. **Venue:** the Zoology Benham Building, 346 Great King Street, behind the Zoology car park by the Captain Cook Hotel; use the main entrance of the Benham Building to get in and go to the Benham Seminar Room, Rm. 215, 2nd floor and please be prompt as we have to hold the door open.	**Contact:** Allison Knight, email: allison.knight.nz@gmail.com.
Workshop: Saturday 28 July, 2.00 - 4.30 p.m. for a joint BSO/ Botany Dept. close-up photography workshop. **Meet:** in the Upstairs Lab, Department of Botany, 464 Great King St. **Register:** by Thursday 26 July.	**Contact:** Allison Knight, ph: 027 487 8265.