

NEW ZEALAND BOTANICAL SOCIETY

NEWSLETTER

NUMBER 139

March 2020



New Zealand Botanical Society

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Subscriptions

The 2020 ordinary and institutional subscriptions are \$25 (reduced to \$18 if paid by the due date on the subscription invoice). The 2020 student subscription, available to full-time students, is \$12 (reduced to \$9 if paid by the due date on the subscription invoice).

Back issues of the *Newsletter* are available at \$7.00 each. Since 1986 the Newsletter has appeared quarterly in March, June, September and December.

New subscriptions are always welcome and these, together with back issue orders, should be sent to the Secretary/Treasurer (address above).

Subscriptions are due by 30 April each year for that calendar year. Existing subscribers are sent an invoice with the March *Newsletter* for the next years subscription which offers a reduction if this is paid by the due date. If you are in arrears with your subscription a reminder notice comes attached to each issue of the *Newsletter*.

Deadline for next issue

The deadline for the June 2020 issue is 25 May 2020.

Please post contributions to:
Lara Shepherd
Museum of New Zealand Te Papa Tongarewa
169 Tory St Wellington 6021

Send email contributions to lara.shepherd@tepapa.govt.nz Files are preferably in MS Word, as an open text document (Open Office document with suffix ".odt") or saved as RTF or ASCII. Macintosh files can also be accepted. Graphics can be sent as TIF JPG, or BMP files; please do not embed images into documents. Alternatively photos or line drawings can be posted and will be returned if required. Drawings and photos make an article more readable so please include them if possible.

Cover Illustration

Carex pterocarpa by Eleanor Burton.

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NEWS

New Zealand Botanical Society News

■ Call for Nominations for Allan Mere Award 2020.

Nominations meeting the following conditions are invited for the award of the Allan Mere for the year 2020.

Conditions of the Allan Mere Award

1. The Award shall be made annually to a person or persons who have made outstanding contributions to botany in New Zealand, either in a professional or amateur capacity.
2. The Award shall be administered by the New Zealand Botanical Society.
3. Nominations for the Award may be made by regional Botanical Societies, or by individuals, to the Secretary of the New Zealand Botanical Society. Nominations shall close on 30th June each year. Nominations shall be signed by nominator and seconder, and accompanied by supporting information.
4. Selection of the successful nominee/nominees shall be made by the Committee of the New Zealand Botanical Society, normally within three months of the closing date for nominations.
5. If, in the opinion of the Committee, no suitable nomination is received in any particular year, the Committee may refrain from making an award.
6. The Mere shall be formally presented to the recipient on an appropriate occasion by the President of the New Zealand Botanical Society or his/her nominee, but otherwise shall remain in the custody of, and be displayed by, the Herbarium Keeper of the Allan Herbarium (CHR) at Landcare Research, Lincoln, together with the book recording awards.
7. The recipient shall receive an appropriately inscribed certificate.

Nominations should be forwarded by 30 June 2020 to:

Ewen Cameron, Secretary, New Zealand Botanical Society, c/- Canterbury Museum, Rolleston Avenue, Christchurch 8013.

■ From the President: Annual General Meeting –Approval of Financial Statement for the year ended 31 December 2019

Anthony Wright, President, New Zealand Botanical Society

Financial Statement for the year ended 31 December 2019

Below is the Society's Financial Statement for 2019, which has been reviewed by the committee, who recommend it for adoption by the members through ballot.

Society Name: New Zealand Botanical Society

Society Number: 426877

Financial Statement for year ended: 31 December 2019

	2019	2018
INCOME		
Donations	\$99.00	\$79.00
Interest	\$6.97	\$6.88
Sale of Back issues	\$112.00	\$0.00
2017 Subscriptions	-	\$0.00
2018 Subscriptions	-	\$323.00
2019 Subscriptions	\$3,156.00	-
Total Income	\$3,373.97	\$408.88
EXPENSES		
Postage costs	\$1,926.20	\$1,776.20
Printing costs	\$1,518.00	\$1,565.38
Stationery	\$33.94	\$36.83
Calligraphy costs (Allan Mere)	\$97.75	\$86.25
Bank fees	\$18.00	-
Total Expenses	\$3,593.89	\$3,464.66
Total income	\$3,373.97	\$408.88
Less total expenses	(\$3,593.89)	(\$3,464.66)
Net surplus/(deficit)	(\$219.92)	(\$3,055.78)
ASSETS		
Cash in bank - current account	\$8,125.96	\$8,342.47
Cash in bank - Achiever Savings	\$2,074.78	\$2,073.62
Accounts Receivable	-	-
Total Assets	\$10,200.74	\$10,416.09
LIABILITIES		
Printing costs	\$397.90	\$364.09
Stationery costs	-	\$29.24
Postage costs	-	-
Total Liabilities	\$397.90	\$393.33
Total Assets	\$10,200.74	\$10,416.09
Less Total Liabilities	(\$397.90)	(\$393.33)
NET ASSETS	\$9,802.84	\$10,022.76
Represented by		
Retained earnings c/fwd from previous year	\$10,022.76	\$13,078.54

While a small loss on the year's operations is posted, the Society has a healthy accumulated surplus which can easily cover it. Therefore, no increase in subscription levels is proposed.

As President I move, and Ewen Cameron, Secretary/Treasurer, seconds a resolution "That the 2019 Annual Financial Statement published in Newsletter 139 (March 2020), be adopted".

Voting in the Annual General Meeting by means of Ballot by either email or post. There is a Ballot Paper included with this issue of the Newsletter. The ballot will close at 5 pm on Friday 17 April 2020. Emailed ballot papers can be sent to hbenson@canterburymuseum.com. Voting papers being posted should reach the Secretary/Treasurer, New Zealand Botanical Society, C/- Canterbury Museum, Rolleston Avenue, Christchurch, 8013 no later than this closing time. An addressed envelope has been included to assist you.

The results of the AGM postal ballot papers will be notified in Newsletter 140, June 2020.

From the Treasurer: Subscriptions 2020

Enclosed are the subscription invoices for 2020. Please pay via direct credit following the instructions on the invoice, or alternatively post your remittance back to us using the self-addressed envelope enclosed along with your Ballot Paper

Regional Botanical Society News

■ **Whanganui Museum Botanical Group**

For monthly meetings the Whanganui Botanical Group has merged with Birding Whanganui (local branch of OSNZ) and the Whanganui branch of Forest and Bird, under an umbrella name of 'Nature Talks'. Each group will arrange a speaker for about 4 meetings per year. Meetings will normally be on the 3rd Tuesday of each month. It is intended to continue with monthly botanical field trips to which members of the other two groups are invited.

President: Clive Higgie (06) 342 7857 clive.nicki@xtra.co.nz

Secretary: Robyn Ogle (06) 347 8547 robcol.ogle@xtra.co.nz

■ **Nelson Botanical Society**

Labour Weekend Camp: Mangarakau

Day 1: Mangarakau Swamp – Snake Creek Road

It was sunny as we botanised the fire-induced pākihi towards Paturau River. We had an unexpected find for this habitat, *Apodasmia similis*. Some of sedges identified included: *Machaerina rubiginosa*, *M. teretifolia*, *M. tenax* and *Tetraria capillaris*. A handsome sedge turned out to be *Lepidosperma filiformis*, which reaches its southern limit here. Sedges more familiar to us were *Gahnia setifolia*, *G. xanthocarpa*, and *G. rigida*. On a track leading to the river we found the ferns: *Blechnum fraseri*, *B. minus*, *B. novae-zelandiae*, *Cyathea cunninghamii*, *Deparia petersenii*, *Diplazium australe* and *Hiya distans*. *Lycopodiella lateralis* formed mats below the mānuka scrub. Three *Metrosideros* vines were recorded: *M. diffusa*, *M. perforata* and *M. fulgens*. The sweet-scented jasmine, *Parsonsia heterophylla*, was in flower.

Day 2: The coast

Sunday dawned cloudy and we headed for the beach then dropped down a gully, where we saw *Austroblechnum banksii*. On a bank was *Selliera radicans*, *Luzula banksiana*, *Gunnera arenaria*, *Leptinella calcarea*, the rosettes of *Plantago raoulii* and *Leptinella dioica*. Climbing up a rocky outcrop we spotted the white flowers of *Myosotis pygmaea* among *Colobanthus muelleri*. Hiding under an overhanging rock was *Sonchus kirkii* and hanging from the rocky outcrops were *Hebe elliptica* and *Asplenium obtusatum*. Starting up a gully we found a patch of *Ranunculus acaulis* and on the bluffs were populations of *Anaphalioides trinervis*. At the top of the cliff we discovered the turf plants:

Plantago raoulii, *Myosotis pygmaea* and two minute plants, *Ranunculus recens* and *Chaerophyllum 'minutiflorum'*. On the cliff below was *Pimelea carnosae*. The highlight of the day was on a headland where we discovered *Mazus radicans*. Other species here were *Leucopogon fraseri*, *Leptostigma setulosum*, *Dichondra brevifolia*, *Mentha cunninghamii*, *Poa pusilla*, *Gonocarpus aggregatus*, prostrate *Coprosma rhamnoides*, *Schoenus concinnus*, *Leptinella calcarea*, *Agrostis muscosa*, *Eryngium vesiculosum* and *Wahlenbergia congesta*. We were delighted to see a population of *Lepidium flexicaule* and as we moved back towards the beach, we discovered *Libertia peregrinans*.



Ranunculus acaulis. Photo by Beryce Vincenzi

Day 3: Robin Track

On Monday morning we followed this track and saw *Machaerina teretifolia*, *Neomyrtus pedunculata*, *Rubus australis*, *Paesia scaberula* and *Alseuosmia macrophylla*. The track passes through a glade of forest with rimu, kahikatea and hard beech before climbing up a ridge where the white flowers of *Epacris pauciflora* were plentiful. Towards the lake we found *Caladenia atradenia* and as the track dropped towards the lake edge, there were numbers of *Dracophyllum urvilleanum* and we then found a few specimens of *Manoao colensoi*. We retraced our steps, spotting a large specimen of *Earina mucronata* and the white flowers of *Celmisia* 'Pupu'.

November Field Trip: Abel Tasman National Park - Anchorage to Apple Tree Bay

Fifteen members gathered at Kaiteriteri to take the ferry to Anchorage. At the top of the climb out of Anchorage, a little treasure awaited us in the form of *Korthalsella salicornioides* on *Kunzea ericoides*. *Caladenia chlorostyla*, with its red-barred labellum, was often seen, while *C. minor* was present in small numbers and *C. atradenia* was also observed. The find of the day was a prime specimen of *Pterostylis cardiostigma*. One orchid that attracted attention was *Corybas oblongus*. Ferns were abundant, with the delicate *Lindsaea linearis* much in evidence, as was *Paesia scaberula* and *Hymenophyllum nephrophyllum*. *Olearia rani* was kept company by *O. arborescens* and *Brachyglottis repanda*.

St Arnaud Camp, 29th November-1st December

Saturday

We visited a property along Bullock Road and made our way through kānuka, with small *Lophozonia menziesii*, *Fuscopora cliffortioides*, *F. fusca* and *F. solandri*. Both *Raukaua simplex* and *R. anomalus* were present, along with *Griselinia littoralis* and *Myrsine divaricata*. Gymnosperms included *Libocedrus bidwillii*, *Halocarpus bidwillii*, *H. biformis*, *Phyllocladus alpinus* and *Podocarpus acutifolius*. A stream bank provided a habitat for *Fuchsia excorticata*, *Lobelia angulata* and *Viola lyallii*. A clearing and shady banks revealed a variety of orchids: *Aporostylis bifolia*, *Caladenia lyallii*, *Chiloglottis cornuta*, *Corybas trilobus* group, *Gastrodia cunninghamii*, *Prasophyllum colensoi*, *Pterostylis graminea*, *P. montana* and *P. cardiostigma*. Fern allies included *Lycopodium fastigiatum*, *L. volubile* and *Huperzia australicum*. Some examples of *Peraxilla tetrapetala* were in a grove of pahautea.

West Bay to Kerr Bay

Two plants were in our sights during a short afternoon visit to West Bay: *Stackhousia minima* and *Discaria toumatou*. Both were in flower and a delight to see. Mainly on the lookout for orchids, we noticed that *Pterostylis* were common along the track. There were also occasional *Thelymitra* and a lovely specimen of *Adenochilus gracilis*.

Sunday: Honeydew Walk

The track began with highlighting the *Astelia fragrans* surrounded by *Podocarpus nivalis*, and overhead the profusely flowering *Rubus cissoides*. Beside the track were swarms of orchids: *Pterostylis graminea* and *Chiloglottis cornuta*.

Cobb Camp 10-12 January

Day 1

Eleven members made it up to the Cobb Valley. We observed that *Clematis forsteri* had mainly finished flowering and *Pittosporum dallii* looked to be in good health but neither flowers nor seed were seen.

Day 2

Our objective for the day was Lake Peel via Mytton's Hut. *Gentianella patula* were represented by only a few struggling specimens. Massed *Bulbinella hookeri* in flower are always one of the great sights in the Cobb. As we climbed higher the mountain foxglove *Ourisia macrophylla* subsp. *lactea* began appearing. Much in evidence was *Celmisia spectabilis*. *Celmisia dallii* was most easily identified by the presence of the stitch-like marks around the edge of its leaves. The forget-me-not *Myosotis macrantha* did show its flowers, ranging in colour from yellow, through orange, brownish-orange to almost black.

Day 3



Gentianella patula. Photo by Don Pittham

Our Sunday expedition was to walk up the Cobb valley to Chaffey hut. We passed a very fine specimen of *Myosotis forsteri*, *Pseudopanax linearis*, *Luzuriaga parviflora*, *Brachyglottis buechananii*, *Rubus squarrosa*, *Pittosporum divaricatum*, intertwined with *Clematis forsteri* before emerging from the forest into a spectacular swathe of *Gentianella patula*. The landscape of tussock, *Gentianella* and rounded *Hebe topiaria* changed to a sea of gold with a profusion of *Ranunculus multiscapus*. The predominant shrubs in this area were *Olearia virgata*. Other finds lower down were *Leptinella squalida* subsp. *mediana*, *Chiloglottis cornuta*, *Oxalis magellanica*, *Stylidium subulatum* and *Arthropodium candidum*. As we approached Chaffey hut there was great excitement when we spied *Pittosporum patulum*. *Gentianella patula*, which really was breathtaking.

Field Trip to Horseshoe Basin, Mt Arthur, 19 January 2020

Our group of 17 set out from Flora carpark to Mt Arthur hut. In damp areas *Ourisia lactea* and *Myosotis forsteri* were flowering. On an open corner, yellow flowers of *Brachyglottis laxifolia* were just opening. *Celmisia dallii* appear to

have stitching around their edges, while those of *C. traversii* have brown tomentum on their underside. Along the ridge above Mt Arthur hut, shrubs of *Traversia baccharoides* were in bud. Easily overlooked among the tussock were some tiny plants, including *Ophioglossum coriaceum* and *Pterostylis tanypoda*. Some of the group found *Epilobium laingii*, *Raoulia grandiflora*, *R. eximia*, *Phyllachne colensoi* and *C. sessiliflora*. On the way into Horseshoe Basin, *Montia calycina* was flowering on the track sides, and we appreciated the sweet scent from *Helichrysum intermedium*. At the bottom of the basin, the group dropped into one of the sinkholes and discovered several flowering *Myosotis*. Also flowering down here were *Notothlaspi australe* and *Ranunculus insignis*. We noticed all around us sprawling *Poranthera alpina* growing out of cracks in the marble pavement. We admired a display of pink-flowered *Epilobium vernicosum*, and also saw the orchids *Caladenia lyallii* and *Pterostylis oliveri* in flower.

FUTURE EVENTS

March 15: Field trip to Ellis Valley.

April 20: AGM and talk by Jack Hobbs on "The role of botanic gardens in the 21st century".

President: David Grinsted (03) 5424384, davidgrinsted@gmail.com; **Secretary:** Don Pittham (03) 5451985, pitthamd@xtra.co.nz; **Treasurer:** Uta Purcell (03) 5450280, mupurcell@xtra.co.nz

■ **Other Botanical Society Contacts**

Auckland Botanical Society

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Rotorua Botanical Society

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Waikato Botanical Society

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Taranaki Botanical Society

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Hawke's Bay Botanical Group

<https://www.facebook.com/Hawkes-Bay-Botanical-Group-590670161140095/>

Manawatu Botanical Society

Jill Rapson: Massey University. Ph (06) 350 5799 Ext 7963; G.Rapson@massey.ac.nz

Wellington Botanical Society

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Canterbury Botanical Society

President: Paula Greer

Secretary: Fay Farrant www.canterburybotanicalsociety.org.nz

Wakatipu Botanical Group

Chair: Neill Simpson (03) 442 2035

Secretary: Rebecca Teele 027 314 2610

Botanical Society of Otago

Chair: Gretchen Brownstein, BrownsteinG@landcareresearch.co.nz www.bso.org.nz

ANNOUNCEMENTS

■ **Launch of Colin Webb's Seeds of New Zealand monocotyledons.**

Ilse Breitwieser's presentation launching the Seed Atlas, 16 November 2019.

Good evening! For those who don't know me, I am Ilse Breitwieser, plant systematist at the Allan Herbarium at Manaaki Whenua – Landcare Research. During my time as programme leader for plant systematics and OBI leader, then portfolio leader of Characterising Land Biota, I was also responsible for our Flora and Guide projects. Since I was so closely connected with Colin Webb and his work on Seeds of New Zealand and facilitated it over many years, I am now launching the second and final volume of Seeds of New Zealand. Colin has been an invaluable mentor for me, particularly during my first few years at Manaaki Whenua. Therefore, I feel very humbled to be given the honour of launching Seeds of New Zealand monocotyledons.

This guide provides, for the first time, an account of the seeds and other persistent parts of fruits for New Zealand plants. The first volume, published in 2001, covers the native gymnosperms and dicotyledons, while this volume covers the monocotyledons.



Debby Redmond and Colin Webb at the launch of Colin's book

This monocot "Seed Atlas", as we call it, provides more than 700 illustrations, representing all the seed types in the monocots, as well as descriptions and keys to aid identification. While the first volume on gymnosperms and dicotyledons was authored by Colin Webb and Margaret Simpson, the monocot volume is all Colin's work.

The Seed Atlas is an amazing achievement. In order to understand the magnitude of the achievement, one needs to consider that although the project was supported with operational funding and technical time by our plant systematics programme, during most of the work on the Seed Atlas, Colin was not employed by Landcare Research. As a Research Associate of Landcare Research he spent uncountable evenings and weekends during the last 25 years working on the Seed Atlas. During that time he had very demanding day-jobs, actually positions that were much more demanding than just day-jobs. From 1995 – 2001 he was Manager, then Group Manager of Investment Operations at the Foundation for Research, Science and Technology, and then until 2014 Group Manager Strategy and Research, then Acting General Manager, and finally Deputy Chief Executive of the Tertiary Education Commission. It is hard to imagine how Colin managed to have the energy and the discipline to work in each free minute on the Seed Atlas. Even in the years before he moved to Wellington, there was not much time for Seed Atlas work during work hours because of his leadership

roles at Botany Division, then Landcare Research. He was first section leader and programme manager, then Group Manager, Site Manager and then Science Planner in the Corporate Office.

Also, he worked not only on the Seed Atlas in his free time. During all these years he still made time available to support the botanical community by being on botanical and systematics advisory committees and panels. He was Trustee of the Koiata Trust from 1988 – 2013 and for most of these years also Chairman; he established in 1989 as a partnership the small publishing company, Manuka Press, to publish and market high quality, low cost botanical books [that's why the Seed Atlas is so cheap!]; he was coordinator of the foundation committee to establish the New Zealand Botanical Society and is still a Committee Member; he was for more than 20 years a committee member of the Loder Cup Committee, New Zealand's premier conservation award; and he was a member of the recent panel that wrote the Royal Society report on New Zealand's taxonomic collections.

In his free time, Colin did not only work on the Seed Atlas. He also continued following his interests in taxonomy and reproductive biology of New Zealand plants. In the 1980ies, he was, as we all know, the senior author of Flora of New Zealand Volume 4. However, his heart was in reproductive biology, and he published a series of very significant publications, many in collaboration with David Lloyd, for example, on evolution of heterostyly, evolution of plant breeding systems, or reproductive biology of the NZ flora. These achievements led to recognitions such as being made Fellow of the Royal Society of New Zealand in 1994; he was awarded the Allan Mearns for contributions to New Zealand botany in 2002 and the Hutton Medal of the Royal Society for major contributions to plant systematics and evolutionary biology in 2006. I am mentioning all this just to demonstrate Colin's huge scientific contribution in spite of his high-flying positions. But today, I would like to emphasise particularly his excellence, efficiency and his dedication to the work on the Seed Atlas.

In more recent years Colin's focus expanded. Since meeting Pasang Sherpa in 2006, has been involved with a range of projects supporting Sherpas of Nepal, including funding restoration of the Monastery in Lukla and following the earthquakes in Nepal establishing a give-a-little page and raising enough funding to repair houses for the six families most in need of help. He is also supporting education of children in several families. However, in spite of this endeavour, Colin did not give up on the aim of completing the Seed Atlas. Pasang, you will probably never forget all endless hours Colin spent downstairs in his own MPI approved containment facility, working away towards the completion of the Seed Atlas.

Colin, I would like to congratulate you to this tremendous achievement! I am glad that I can do this in person. When we launched the first volume of the Seed Atlas in 2001, we were fortunate that Colin was able to be present. Just four days before the launch he had a severe mountain bike accident. He managed to get to Christchurch in spite of broken bones and cuts to his face. I remember that it was really touch and go. At the Seed symposium we hosted in collaboration with the New Zealand Botanical Society to honour the launch of the Seed Atlas, Colin even managed to give the keynote address, although he had problems breathing and speaking because of the pain. Today, I also didn't know until the last minute whether Colin will be able to be here. We are very lucky indeed that Colin can be with us – not because Colin went on his mountain bike again just days before the launch of the Seed Atlas but because of ill health.

That's why I am stepping in for Colin now to say his words of thanks.

There are many people and organisations Colin thanked in his book. The publication of the book would not have been possible without the long-term financial and operational support by Manaaki Whenua – Landcare Research, and generous contributions toward the publication costs from the Koiata Botanical Trust and the Charles Fleming Fund – Publishing award. The preparation of the Seed Atlas has been supported by MBIE and its predecessor organisations. Colin thanks particularly Allan Herbarium and Manaaki Whenua library staff. He acknowledges many people in the Seed Atlas, and I am mentioning only a few here. He refers to Bryony MacMillan and the late Ruth Mason, Margaret Simpson, and Neville Moar for building up the seed herbarium, now part of the main Allan Herbarium, and the early photography by Jim Miles and Kay Card. He thanks particularly Robert Lamberts, Vaughan Myers and Murray Dawson who provided most of the high-quality images. Debby Redmond provided the technical support that enabled him to work remotely in Wellington. Kerry Ford, Phil Garnock-Jones, David Glenny, Peter Heenan, Alexis Loh, Matt McGlone, Debby Redmond, Ines Schonberger, Hugh Wilson and the late Elizabeth Edgar helped at various stages.

We would not have this book without Richard Broadhead, Colin's close friend and partner in Manuka Press, who spent uncountable hours preparing the book for publication.

Colin's personal thanks go to all his friends and family who have supported him during the long task of bringing this work to completion. I am highlighting here particularly his brother Terry and family and Pasang and family.

Colin dedicates the monocot Seed Atlas to Dr Eric Godley OBE [1919-2010.) I will finish with reading this dedication:

Eric Godley was for many years the Director of The Botany Division of the Department of Scientific and Industrial Research, the main centre in New Zealand for plant systematic research. He presided over significant expansion of the Division and its activities, including ongoing expansion of the Herbarium which supplied most of the material on which this work is based. Eric encouraged progress with the Flora of New Zealand Series, and conceived the idea of a series of systematic works on plant parts of indigenous species—this resulted in a long series of papers on chromosomes, another on wood anatomy, a Pollen Atlas, and the two volumes now completed for seeds. This book is dedicated to Eric, friend and mentor over many years."

NOTES AND REPORTS

- **Plants from "New Zealand" named by N. S. Turczaninov, and a note on collector W. Stephenson.**

Rhys Gardner, rhysogardner@hotmail.com

Introduction

The career of Russian botanist Nicolai Stepanovich Turczaninov (1796–1863) was an unusual one. In brief: after a disastrous fall from a herbarium ladder, unable to carry out his plans to explore South America, Turczaninov turned to describing the material he was acquiring from collectors the world over. This included a great many specimens from Australasia, including those of Allan Cunningham and James Everard Home (Marchant 1990).

In a series of papers between 1846 and 1863, apparently without assistance from Bentham, Hooker, or other authorities, Turczaninov published 43 genera and c. 400 spp. of Australian plants (Marchant 1990). Here I discuss only the names said to be based on collections from New Zealand, or in one case, Norfolk Island. All appear in the last two of this author's papers, published in 1863. (Readers will probably already be aware of *Clematis cunninghamii* Turcz. and *Geranium homeanum* Turcz.; Webb et al. 1988). I also note two names from a paper on new Australasian epacrids that was published in 1859 by S. Stschegleew, a student of Turczaninov. These are cited *in syn.* by Allan (1961).

The taxa

Referencing in what follows is kept to a minimum. All names appeared in the *Bulletin de la Société Impériale des Naturalistes de Moscou*, and their publication details can be seen online at the IPNI site. Turczaninov's protologues are available online from Biodiversity Heritage Library. Type material of these taxa is at KW (National Herbarium of Ukraine, Kiev). Unfortunately, the thumbnail images of the types that can be seen free on the JSTOR Global Plants site (accessed by the writer Nov 2019) are too small to allow one to decide whether or not their labels (let alone the specimen's identity) have been given accurately.

1. *Staphylorhodos* Turcz., with a single species *S. cotoneaster* Turcz.

Said to have come from New Zealand (without further locality information), and based on two collections (563, 579) of British naval captain Sir James Everard Home. Home is known to have

collected in New Zealand, some Pacific Islands, New Caledonia, and perhaps Australia (Godley 2010; Morat 2010). Turczaninow believed his new genus belonged to the Rosaceae, but Hooker (1864) was sceptical and also did not think it a New Zealand plant. In my opinion, *S. cotoneaster* is likely to be a small-leaved *Xylosma* (Salicaceae) from New Caledonia.

2. *Metrosideros homeana* Turcz.

Based on an unnumbered *Home* collection from near the Thames River of New Zealand. Said to have the vernacular name "Kohi Kohica", and to resemble *M. robusta* but without the emarginate leaf blade. (In addition to this plant, and the geranium and the clematis noted above, a number of New Caledonian species that commemorate Everard Home were named by Seemann: *Eugenia homei* *Santalum homei*, *Trachymene homei*, and *Ratonia homei*).

3. *Kunzea trinervia* Turcz.

Based on *Cunningham* 110, said to be from Norfolk Island. In a note following his key to this genus Benthams (1866: 112) said: " ... must be founded on some mistake. Cunningham's Norfolk Island collection contains no such plant. The collection sold years since with "Norfolk Island" printed labels, consisted chiefly of common N.S. Wales species". There is no *Kunzea* or anything like it on Norfolk I.

4. *Stenostachys* Turcz. (Gramineae), with a single species *S. narduroides* Turcz.

Based on several *Home* collections from New Zealand. The exact type locality is unknown. A specimen at Kew has been data-based (JSTOR Global Plants, under *Hystrix gracilis*) with the annotation *Home* 4344 and locality "Ahanoe Baoul". But its "Herb. Mus. Paris" label shows it is a French collection, with the material in quotes to be understood as "Akaroa, *Raoul*". It might be an isotype of the little-known synonym *Agropyron subeglume* P.Candargy. *Raoul* (1846) overlooked this grass in his list of New Zealand plants.

5. *Clematis cunninghamii* Turcz.

Here Turczaninow used several *Cunningham* and *Home* specimens as the basis for a replacement of the name *C. parviflora* A. Cunn., which had two earlier homonyms.

6. *Corchorus sloaneoides* Turcz.

The name (as *C. sloanoides*) first appears in Banks and Solander's *Flora Novae-Zelandiae* (copy at Auckland Museum herbarium) and was applied to what was soon named by Robert Brown as *Entelea arborescens*. Of New Zealand's flora-writers only Kirk (1899) has noted Turczaninow's name. It was based on *Cunningham* 107, which presumably bore the "*sloaneoides*" epithet.

7. *Triumfetta* sp. BSINM 36 pt 1 (1863) 574

This species, named only to genus by Turczaninow, was based on *Home* 70, supposedly from New Zealand. This seems very unlikely.

8. *Geranium homeanum* Turcz.,

Based on *Home* 86, from New Zealand, supposedly ["*loco dicto*"] from a place called Perakiteri. Mosyakin and de Lange (2019) consider whether the latter might actually be a vernacular name (cf. "pinakiteri" as recorded by early authors for geraniums and similar herbs).

Webb et al. (1988) treated *G. homeanum* as native to both Australia and New Zealand, and it is not cited by Marchant (1990 table I) as an Australian species. Nevertheless, its presence in the Banks and Solander collections from Australia (Gardner 1984; Benson & Eldershaw 2007: 120) but not those from New Zealand, and the steady increase in range it has shown in this country since the mid-19th century (data of ROG), almost certainly indicate that it is not a New Zealand native.

9. *Erodium peristeroides* Turcz.

Based on several *Cunningham* and *Home* specimens from New Zealand. These represent *Pelargonium inodorum* (Mosyakin and de Lange 2019). On one of these sheets (Mosyakin & de Lange 2019: 175 fig. 3) a piece bears on its tag "Penaketeri" or something similar; as for *G. homeanum* this might well be a Māori vernacular name.

10. *Elaeodendron* spp.

I treat here three Turczaninow names, all said to be based on New Zealand plants: *E. novae-zelandiae* (*Cunningham* 67); *E. punctulatum* (unknown collector); *E. carnosum* (*Home*, no number

cited). This genus is not otherwise recorded from New Zealand. The obvious candidates for a correct identification would be *Elaeodendron curtispiculum* Endl. (Norfolk I., Lord Howe I., New Caledonia), and *E. australe* Vent. (eastern Australia). But *Cunningham* 67 as seen on JSTOR looks to me like *Melicytus macrophyllus*, while *E. punctulatum* may be *Litsea calicaris*, and *E. carnosum*, *Griselinia littoralis*.

11. *Leucopogon brevibarbis* Stschegl.

Based on the New Zealand specimen *Ralph* 11, from near "Wellington", that is, Wellington. Allan (1961: 515) placed it in the synonymy of *Cyathodes fasciculata* (G. Forst.) Allan but had not seen any specimens.

12. *Dracophyllum setifolium* Stschegl.

Based on the New Zealand specimen *Stephenson* 77. Allan (1961: 530) tentatively placed this in the synonymy of *D. filifolium* and gave some notes hinting at a confusion over the collection locality. An isotype at Kew lacks a specialist's determination but does appear to me to be *D. filifolium*.

Note: William Stephenson

This collector appears in Hooker (1864), mainly with respect to bryophytes but also for five vascular plants. All the collections, as well as the others listed by Hooker (1844), are said to have been made from near Wellington. None indicate that Stephenson ever collected in the subalpine zone of the Tararua or Rimutaka Ranges, where his no. 77 (*D. filifolium*) could have been obtained.

I suppose that this person is William Stephenson (fl. 1810–c.63); see Desmond (1977) and Barker & Barker (1990). He had been an Army surgeon in India and China and was later the surgeon and plant collector on Mitchell's Fourth Expedition in Australia, 1845–6. Subsequently he collected a small number of Australian plants. His grave might be in Taree, N.S.W. Vegter (1986) lists the institutions that have his specimens, with New Zealand material, said to be collected in 1843–44, being held by ten European herbaria.

Acknowledgements

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References

- Allan, H.H. 1961. *Flora of New Zealand*. Vol. 1. Government Printer, Wellington.
- Barker, R.M.; Barker, W.R.. 1990. Botanical contributions overlooked: the role and recognition of collectors, horticulturalists, explorers and others in the early documentation of the Australian flora. Pp. 37–86 in Short, P.S. (Ed.) *History of Systematic Botany in Australasia*. ASBS, Canberra.
- Benson, D.; Eldershaw, G. 2007. Backdrop to encounter: the 1770 landscape of Botany Bay, the plants collected by Banks and Solander and rehabilitation of natural vegetation at Kurnell. *Cunninghamia* 10: 113–137.
- Bentham, G. 1866. *Flora Australiensis*. Vol. 3. Lovell Reeve & Co., London.
- Desmond, R. 1977. Dictionary of British and Irish botanists and horticulturalists. Taylor & Francis, London.
- Gardner, R.O. 1984. *Geranium solanderi* and allies in New Zealand. *New Zealand Journal of Botany* 22: 127–134.
- Godley, E. 2010. Biographical notes (76): Captain Sir James Everard Home (1798–1853). *New Zealand Botanical Society Newsletter* 100: 16–19.
- Hooker, J.D. 1844: Catalogue of the names of a collection of plants made by Mr Wm. Stephenson in New Zealand. *London Journal of Botany* 3: 411–418.
- Hooker, J.D. 1864, 1867. *Handbook of the New Zealand Flora*. Lovell Reeve, London.
- Kirk, T. 1899. *The Student's Flora of New Zealand*. Government Printer, Wellington.
- Marchant, N.G. 1990. The contribution of the Russian botanist Turczaninov to Australian plant taxonomy. Pp. 121–130 in Short, P.S. (Ed.) *History of Systematic Botany in Australasia*. *Proceedings* ASBS, Canberra.
- Morat, P. 2010. Les botanistes récolteurs en Nouvelle-Calédonie de 1774 à 2005. *Adansonia* 32: 159–215.

Mosyakin, S.L.; de Lange, P.J. 2019. Notes on typification and nomenclature of four taxa of Geraniaceae described by Turczaninow from New Zealand and Australia. *Phytotaxa* 419: 169–181.

Raoul, E. 1846. *Choix de plantes de La Nouvelle-Zélande*. Fortin, Masson & Cie. Paris.

Vegter, I.H. (ed.) 1986. *Index Herbariorum Part II (5) Collectors S. Regnum Vegetabile* 114.

Webb, C.J.; Sykes, W.R.; Garnock-Jones, P.J. 1988. *Flora of New Zealand*. Vol. IV. Botany Division DSIR, Christchurch.

■ **White-flowered myrtles: An overview of white-flowered myrtaceous trees and shrubs native or cultivated in New Zealand.**

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Since myrtle rust (*Austropuccinia psidii*) was first detected in Australia on the New South Wales central coast in 2010 (Australian Government website), scientists in New Zealand have been gathering information about the possible consequences of the rust's arrival in this country. Apart from learning about the fungus, a potential host list was compiled, many herbarium specimens gathered (National Forestry Herbarium online database), and a DNA barcode reference library developed (Buys et al. 2016). Familiarity with members of the Myrtaceae Family in New Zealand grew, in association with a variety of projects carried out at Scion (New Zealand Forest Research Ltd.).

The myrtle family (Myrtaceae) includes about 140 genera and more than 5500 species worldwide (Wilson, 2011). Forty Myrtaceae genera have been recorded in New Zealand, but this number may be an underestimate because the family has been popular amongst nurseries and plantmen, who, in earlier decades, imported an assortment of material to trial in New Zealand with varying degrees of success—some of this material potentially still exists in private gardens. A wide range of species has been utilised in garden and amenity plantings due to their colourful flowers and general hardiness. They range from large forest trees to small, heath-like shrubs. In addition to the species native to New Zealand, many myrtles cultivated in New Zealand are native to Australia, such as the bottle-brushes and paperbarks (*Melaleuca* spp.), lillipillies or brush cherries (*Syzygium* spp.), and the 'gum' trees (*Eucalyptus* spp.). A few others are from South America or the Mediterranean region.

Most Myrtaceae genera (native and non-native) found in New Zealand comprise from one to a small number of species, but there are exceptions. For example, more than 200 species of *Eucalyptus* have been recorded in New Zealand (National Forestry Herbarium online database); when excluding cultivars, at least 17 species of *Metrosideros* (12 native, 5 non-native) have been recorded in New Zealand (National Forestry Herbarium online database).

The source of colour in many of the myrtle family lies in their coloured and conspicuous stamens, not their often reduced petals, as in the New Zealand pōhutukawa (*Metrosideros excelsa*), and the Australian bottlebrushes (*Melaleuca* spp.). New Zealand species such as pōhutukawa, Kermadec pōhutukawa (*M. kermadecensis*) and carmine rātā (*M. carminea*) are frequently grown, particularly in northern areas, for their showy red flowers.

Many species that do not have showy bright-coloured flowers have white flowers. Examples are *Lophomyrtus* spp. and hybrid cultivars (*Lophomyrtus* × *ralphii*), that are common garden shrubs grown for their foliage more than for their white flowers. A few species, particularly red guava (*Psidium cattleianum*) and feijoa (*Acca sellowiana*), are grown, particularly in northern regions, for their fruit rather than their flowers. Species of the myrtle family that have white flowers are less well known than a few commonly occurring species with red flowers, and a list of relevant genera with key characteristics is provided below.

There are also several heath-like genera grown in New Zealand that are not likely to be confused with trees or shrubs, particularly those trees and shrubs that possess ovate to oval leaves and fleshy fruit. Most heath-like dwarf shrubs possess small leaves that are narrow, mostly ± linear and with flowers that are not necessarily exclusively white, but may be pink or yellow as well. Flowers are arranged in clusters with petals and sepals in 5s or occasionally 6 (*Micromyrtus*), followed by dry fruit. The heath-

like genera known to be represented in New Zealand are: *Astartea*, *Baeckea*, *Calytrix*, *Chamelaucium*, *Hypocalymma*, *Micromyrtus*, *Myrteola*, *Sannantha*, *Thryptomene* and *Verticordia*.

Diagnostic characters for white-flowered Myrtaceous tree and shrub genera

Some white-flowered myrtle genera in New Zealand have been confused with each other. Here I present a summary of diagnostic characters to distinguish trees and shrubs in particular. Heath-like dwarf shrubs are excluded. Flowers and fruit, together with leaves and bark, provide the best features for identification, but sometimes foliage supported by fruit and bark information is adequate, when flowers or flower buds are not available.

Habit: Habit of species in the Myrtaceae ranges from tall, single-stemmed forest trees to smaller, often multi-stemmed trees, large or small shrubs, and some species that are woody climbers.

Bark: Although bark varies with age of the plant, it tends to be very characteristic of a species and is helpful diagnostically. Several genera have smooth, somewhat mottled bark, often creamy with green to tan-coloured patches where outer bark has peeled away. This characteristic often coincides with species having soft rather than dry fruit, including *Lophomyrtus*, *Luma*, and *Psidium* species. There are also *Eucalyptus* species with distinctive smooth bark, sometimes mottled and in other cases a uniform colour such as pale grey. Some species of *Eucalyptus* with smooth bark have what is colloquially called a 'stocking' of rough bark at the base that may extend a few metres up the trunk. In some cases, the outer bark is shed annually in long strips or 'ribbons' that may remain hanging in the tree. A feature of some *Melaleuca* species is thick, flaky bark described as 'paper-bark', a useful diagnostic feature. Other members of the family have thick, persistent, furrowed or fibrous bark such as on *Metrosideros excelsa*, and some eucalypt species—one group of these is described as 'stringybarks'. The bark may also vary in thickness and persistence between species.

Leaves: These range from needle-like, stiff and pointed, such as in *Leptospermum* and some *Melaleuca* species, lanceolate as in many *Eucalyptus* species, to broad oval or elliptic, for example *Syzygium* species. Many bear oil glands conspicuous to the naked eye, but if oil glands are smaller, a characteristic aroma is often apparent when leaves are crushed. Although opposite leaves are characteristic of the family, *Lophostemon* has leaves in whorls, distinguishing it from *Eucalyptus* and *Corymbia*, and in some with small narrow leaves such as *Leptospermum* species, some *Kunzea* species, *Taxandria juniperina*, or *Melaleuca armillaris*, their arrangement is not clearly obvious, but may be opposite, scattered, alternate or spirally arranged. Juvenile leaves that are different from adult leaves, often larger, are a feature of several genera, particularly *Eucalyptus*, but also *Agonis*.

Flowers: Some white-flowered species have terminal flower clusters or spikes, conspicuous because of the many pale stamens, but some have less conspicuous flowers amongst the leaves. However, some trees and shrubs, such as those from South America and the *Leptospermum* spp. of New Zealand and Australia, have flowers in which the petals are larger, defining the shape of the flower, and the stamens, while forming a central boss, may not always be exerted beyond the petals. The number of petals and sepals in the flowers, usually 5 or 4, can be a useful diagnostic character.

Fruit: Dry seed capsules are characteristic of many genera of the family, especially those from Australia and some from New Zealand, but a few genera have fleshy berry-like fruit, including species from Central to South America, such as feijoa and guava. The widespread genus *Syzygium* (lillipillies, N.Z. swamp maire), and the New Zealand endemic *Lophomyrtus* and *Neomyrtus* also have fleshy fruit. *Eucalyptus* and *Corymbia* have distinctive seed capsules in which the sepals and petals have united to form a protective cap or operculum over the inner parts of the flower, that is shed when the stamens and style expand. Operculum and overall capsule shape are important species characteristics. In *Agonis*, *Taxandria*, a few *Eucalyptus* and some *Melaleuca* species the woody capsules are crowded together into a globular mass. *Melaleuca* with longer flower spikes form a closely-packed or more loosely-arranged band of woody capsules on the stem below a new shoot.

Genera of white-flowered Myrtaceae trees and shrubs in New Zealand

Examples are included of species in New Zealand.

Shaded rows are species rare in NZ.

Bold typeface is used to indicate helpful diagnostic characters.

<i>Agonis</i> spp. W. Australia	Trees or woody shrubs. Bark fibrous. Leaves lanceolate to linear (willow-like), >5 cm long. Flowers in small globular heads , 5 petals & sepals. Fruit in fused, globular clusters of dry capsules. (See also <i>Taxandria</i>). One species present in NZ: <i>A. flexuosa</i> .
<i>Amomyrtus luma</i> (luma); S. America (has been confused with <i>Luma apiculata</i>) (current presence in NZ not verified)	Small tree. Bark reddish-brown with pale patches . Leaves oval-oblong to 3 cm long, pointed. Flowers in clusters, 5 petals & sepals , petals c. 3 Small tree.
<i>Backhousia</i> spp. Australia	Trees or shrubs. Leaves ovate to elliptic, bark finely flaky. Flowers in clusters, parts in 4 or 5; prominent petaloid sepals. Dry seed capsules. <i>B. citriodora</i> (lemon-scented myrtle) – Leaves lanceolate to 12 cm long, strongly lemon-scented when crushed .
<i>Blepharocalyx</i> spp. S. America, W. Indies	Tree. Leaves narrow, to 7 cm long. Flowers solitary or in inflorescence of up to 15 flowers. Flowers to 1 cm diam, parts in 4s, stamens > petals . Fruit orange-red , c. 6 mm diam., on long stalks , seeds reniforme. <i>B. salicifolius</i> , rare in NZ.
Eucalypts, including <i>Eucalyptus</i> spp., <i>Angophora</i> spp., <i>Corymbia</i> spp. Mostly Australian	Large single-stemmed trees to small, multi-stemmed trees. Bark thick and furrowed, thin and flaky, smooth, or combinations of type. Adult leaves mostly lanceolate to ovate, tapered, > 5 cm long. Flowers with conspicuous stamens, operculum (cap) and no petals , except <i>Angophora</i> that has 5 petals and no operculum. Woody capsules , dry seeds.
<i>Eugenia uniflora</i> Surinam cherry. Central & Eastern South. America	Shrub to small tree . Bark smooth grey/green/cream. Flowers solitary or in clusters on long stalks. Flower parts in 4s. Fruit red, flattened globose, ribbed . Rare in NZ.
<i>Kunzea</i> spp. NZ; Australia	NZ native species, also Australian species with white flowers. Trees or shrubs. Bark thin, flaky. Leaves small, linear to elliptic . Flowers small, c. 5 mm diam., parts in 5s, petals inconspicuous, stamens conspicuous . Small dry capsules with persistent sepals , dry seeds.
<i>Leptospermum</i> spp. NZ; Australia, S.E. Asia	NZ native species, also Australian and S.E. Asian species with white flowers. Shrubs or small trees. Leaves small, linear to elliptic . Flower parts in 5s, stamens shorter than petals ; some flowers >1 cm diam. Woody capsules, without persistent sepals , dry seeds.
<i>Lophomyrtus</i> spp. NZ endemic genus	Shrubs or small trees. Leaves broad, ovate or heart-shaped , 5-30 mm x 5-15 mm. Flowers solitary, parts in 4s; fruit red to black berry to 8 mm diam. , reniform seeds. <i>L. bullata</i> (ramarama) – leaves 'bubbly', to 30 mm long. <i>L. obcordata</i> (rōhutu) – leaves heart-shaped, to 10 mm long <i>L. × ralphii</i> – Intermediate characters
<i>Lophostemon</i> spp. Australia to New Guinea	Tree. Leaves in whorls . Flowers with 5 petals, no operculum (cf. <i>Eucalyptus</i> , <i>Corymbia</i>). Woody capsules , dry seeds. <i>L. confertus</i> (brush box) – whorls of 4-5 glossy leaves; fibrous bark on lower trunk, smooth pinkish brown above. <i>L. suaveolens</i> (swamp box) – whorls of 3-4 leaves; bark rough, flaky, fibrous to small branches, branches often twisted.
<i>Luma</i> spp. S. America	Orange-brown peeling bark with cream patches . Leaves ovate to 4.5 cm long, sharp-pointed. Flowers solitary, occasionally to 3s, to 12 mm diam., parts in 4s, petals to 5 mm long. Flowers late summer. Fruit round, purple-black , to 10 mm diam. <i>L. apiculata</i> – cream/orange velvety bark, flowers late summer, 4 petals.
<i>Melaleuca</i> spp. (including <i>Callistemon</i>) Bottle-brush. Australia, Malesia, New Caledonia, Lord Howe Is.	Small trees or shrubs. Leaves narrow, some needle-like, opposite, alternate, scattered or whorled. Flowers in bottle-brush flower spike . Fruit as woody capsules , dry seeds, e.g. <i>M. armillaris</i> , <i>M. acuminata</i> , <i>M. styphelioides</i> , <i>M. alterniflora</i> , <i>M. quinquenervia</i> .
<i>Metrosideros</i> spp.	Forest trees to small-leaved climbers, Some NZ native species, and one

NZ endemic species; Pacific Islands; S. Africa	white-flowered species in South Africa. White-flowered species of New Caledonia not known from New Zealand. Leaves mostly broad to ovate; flowers with conspicuous stamens, inconspicuous petals. Dry capsules, dry seeds. <i>M. albiflora</i> – woody climber, kauri forest. <i>M. bartlettii</i> (Bartlett's rātā) – tree, bark whitish, thin, flaky. Aupouri Peninsula & cultivated. Rare. (Threatened - Nationally Critical) <i>M. colensoi</i> , <i>M. diffusa</i> , <i>M. perforata</i> – small-leaved forest climbers. <i>M. angustifolia</i> – S. African small tree, leaves narrow, to 8 cm long, flowers c. 2 cm diam. Rare in NZ.
<i>Myrciaria cauliflora</i> (Plinia) Brazilian grape tree. S. America	Bark thin, blotchy. Flowers cauliflorous in groups of 4 on trunk and branches, parts in 4s. Conspicuous purple-black, shiny fruit , thick-skinned with white flesh. Rare in NZ.
<i>Myrtus</i> spp. (3 spp., formerly a very large genus, now split into many genera.) Mediterranean.	Shrub. Leaves ovate, to 5 cm long. Flowers solitary , to 3 cm diam., parts in 5s. Fruit blue-black, ellipsoid to sub-globose. <i>M. communis</i> (common myrtle) – fragrant flowers and foliage.
<i>Neomyrtus pedunculata</i> NZ endemic genus	Twiggy shrub , leaves 6-20 x 4-15 mm, flowers <10 mm diam., parts in 5s. Berry c. 6 mm long, broad-ovoid, red or yellow ; seeds 2-7.
<i>Pimenta dioica</i> Allspice. West Indies; Central America	Tree. Flowers in panicles in upper leaf axils, flower parts in 4s. Dioecious. Fruit a small drupe to 6 mm diam., reddish-brown when mature. Rare in NZ
<i>Psidium</i> spp. Guava. Tropical and subtropical America.	Shrubs to small trees. Bark smooth light brown/green/cream. Leaves oval to obovate, prominent mid-vein. Flowers solitary or a few in axils, often large, parts in 4 or 5, stamens numerous, < petals. Fruit fleshy, rounded or pyriform, red or yellow, relatively large , usually persistent calyx lobes, short fruit stalk. <i>P. cattleianum</i> – shiny, leathery leaves, side veins not conspicuous; <i>P. guajava</i> & <i>P. guineense</i> – leaves dull with indented lateral veins. Rare in NZ.
<i>Syncarpia glomulifera</i> Turpentine. Australia	Tree. Opposite leaves. Flowers fused at base to form globular head ; 4 or 5 petals. Fused woody capsules , dry seeds.
<i>Syzygium</i> spp. (including <i>Acmena</i> and <i>Waterhousia</i>) NZ endemic ; also widespread – Africa-S.E. Asia-Pacific-Australia	Leaves usually glossy, ovate, foliage often dense; inflorescence usually compound ; flower parts 4 or 5 or sometimes more; fruit a drupe, often crimson to purple. e.g. <i>S. australe</i> , <i>S. floribundum</i> , <i>S. jambos</i> , <i>S. paniculatum</i> . S. maire – (NZ swamp maire, maire tawake). Leaves oblong to 5 x 1.5 cm, wavy edge. Fruit red, globose, to 12 mm diam. , large solitary seed.
<i>Taxandria</i> spp. (Formerly <i>Agonis</i> .) Australia	Small trees or shrubs. Flowers in small globular heads, 5 petals & sepals. Fruit in fused, globular clusters of dry capsules. Bark fibrous. <i>T. juniperina</i> – Small tree, leaves small, heath-like. <i>T. marginata</i> – Shrub, leaves obovate to c. 3 cm long, with fringe of white hairs. (Uncommon in NZ)
<i>Ugni</i> spp. S. America, Mexico.	Low twiggy shrub. Leaves to 4 cm x 2.5 cm. Fruit red to purple , 1 cm diam. <i>Ugni molinae</i> (Chilean guava) – fruit reddish.

INFORMATION SOURCES

Allan, H. H. 1961. Flora of New Zealand Volume I. Indigenous Tracheophyta - Psilopsida, Lycopsida, Filicopsida, Gymnospermae, Dicotyledons. Government Printer, Wellington.

Australian Government, Department of the Environment and Energy.
<https://www.environment.gov.au/biodiversity/invasive-species/diseases-fungi-and-parasites/myrtle-rust>. Accessed 14 November 2019.

- Boland, D.J., M.I.H. Brooker, G.M. Chippendale, N. Hall, B.P.M. Hyland, R.D. Johnston, D.A. Kleinig, M.W. McDonald, J.D. Turner. 2006. *Forest Trees of Australia. Fifth Edition. CSIRO Publishing.*
- Buys, M. H., H. J. Flint, E. M. Miller, H. Yao, A. R. Caird, and R. J. Ganley. 2016. Preparing for the invasion: efficacy of DNA barcoding to discern the host range of myrtle rust (*Puccinia psidii*) among species of Myrtaceae. *Forestry* 89: 263–270.
- Hoffmann J., Adriana E. 1997. Flora silvestre de Chile: zona araucana. 4th Edition
- Landrum, L.R. 1988. The myrtle family (Myrtaceae) in Chile. *Proc Calif. Acad. Sciences* 45(12): 277-317.
- Miller, Elizabeth. 2019. *Luma* present – where is *Amomyrtus*? Resolving the confusion in New Zealand. *New Zealand Garden Journal Vol. 22, No. 1.* June 2019. Royal NZ Institute of Horticulture.
- MPI Plants Biosecurity Index. <https://www1.maf.govt.nz/cgi-bin/bioindex/bioindex.pl> Accessed 20 November 2018.
- Sykes, W.R. 2002. *Luma apiculata* and its relatives in New Zealand. *New Zealand Botanical Society Newsletter (Dec 2002)* 70: 7-8.
- Spencer, Roger (Editor). 2002. Horticultural Flora of South-Eastern Australia Volume 3, Part 2. Royal Botanic Gardens Melbourne.
- Taylor, Jane. 1990. The milder garden. J.M. Dent & Sons, London.
- Thompson, Peter. 2001. The looking-glass garden. Timber Press Inc., Portland, Oregon.
- Tutin, T. G., V. H. Heywood, N. A. Burges, D. H. Valentine, S. M. Walters, D. A. Webb. 1968. Myrtaceae, p. 303, in: *Flora Europaea: Volume 2: Rosaceae to Umbelliferae.* Cambridge University Press.
- Webb, C. J., W. R. Sykes, & P. J. Garnock-Jones. 1988. *Flora of New Zealand Volume IV. Naturalised Pteridophytes, Gymnosperms, Dicotyledons.* Botany Division, D.S.I.R., Christchurch.
- Wikipedia. <https://en.wikipedia.org/wiki/>. Accessed 9 May, 15 May 2018; November 2018; August 2019.
- Wilson, P. G. 2011. Myrtaceae. Pages 212–271 in K. Kubitzki, editor. *The Families and Genera of Vascular Plants. Volume X. Sapindales, Cucurbitales, Myrtaceae.* Springer-Verlag, Heidelberg.
- Wrigley, John W. & Fagg, Murray. 1993. Bottlebrushes, paperbarks & tea trees, and all other plants in the Leptospermum alliance. Angus & Robertson.

BIOGRAPHY / BIBLIOGRAPHY

■ Biographical Sketch – Hugh McCutcheon Spencer (1905-1981)

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In 1945 Wairoa solicitor and bryologist George Osborne King Sainsbury (1880–1957) described a new moss that he had collected at Waihohehu on the southern slopes of Ruapehu on 24 February 1942. He named it *Dicranoweisia spenceri*, the species "after my friend Mr H M Spencer, a companion on many collecting expeditions". In a 2019 taxonomic revision it was transferred to the genus *Kiaeria*, but the epithet *spenceri* was retained.

Thomas Spencer (1828–1894) of "Whalebones", Knossington Village, in Leicestershire, England, left the family farm for New Zealand on the *Mersey* with his wife Elizabeth *née* Berridge (1826–1890) and five children, and arrived in Auckland on 11 June 1861. When the Thames goldfield was proclaimed open in 1867, Thomas Spencer, then described as "a mechanic (perhaps an ironmonger) and a man of means with little knowledge of pharmacy", and John William Hall (1830–1915), a pharmacist and botanist, opened their business "Spencer and Co. Chemist", which would also have provided assay services for the miners and prospectors. Spencer was widowed in 1890, and died in 1894 when the *Wairarapa* wrecked off Great Barrier Island.

Thomas and Elizabeth's Spencer's third son Percy was born in Knossington on 7 April 1860, and was barely a year old when the family arrived in New Zealand. Educated at Otago Boys' High School and Auckland Grammar School at Parnell, he worked in a bank and as a stationer and printer before studying and for forty years practising law. He also had financial interests in goldmining at Thames and Waiorongomai. In his early years he was prominent in Auckland sport, especially rugby and

yachting. On 22 May 1890 in Grafton, Auckland, he married recently widowed Lucy Charlotte, *née* Nutter (1866–1948), and gained a two-year-old stepdaughter. He went on to have five sons and often took them tramping in the Ruapehu area.

Born in Auckland on 10 June 1905, Lucy and Percy Spencer's youngest son Hugh McCutcheon (or McCutchan) Spencer was named after his father's best friend, and known by the family as Peter. He finished his primary school education at King's College Lower School in 1917 and went on to Auckland Grammar School until 1923. After studying at the University of Auckland he practised as a public accountant (APANZ) in Queen Street and in 1945 established a branch in Otahuhu. An enthusiastic sportsman, he played club cricket, hockey and tennis, and is thought to have been a founding member of one of the Auckland alpine or tramping clubs. He was also on the committee of the Waitemata Motorcycle Club and secretary of the Auckland Chess Club. During the Second World War he assisted with the accounts of the Patriotic Appeal, was involved with first aid (St John Ambulance) and served as district commander of the Home Guard's One Tree Hill Unit. Sainsbury's moss was probably named after Hugh McCutcheon Spencer.



Dicranoweisia spenceri, WELT M005694, Te Papa collections online. CC BY-NC-ND 4.0

In 1948 he married New Plymouth-born Joyce Connett (1915–1996); they were to have one child – a daughter, Virginia. Joyce was a daughter of James Lewis Connett (1876–1927) and his wife Emma Maude *née* Western (1878–1968), who had moved to Epsom when she was a child. Her grandparents were pioneer settlers in Bell Block, and their family name is recognised in New Plymouth's Connett Road and Connett Walk on Taranaki/Mt Egmont. Hugh McCutcheon Spencer died on 5 July 1981, aged 76, and his wife Joyce on 2 November 1996, aged 81 years. Both were cremated and their ashes interred in Purewa Cemetery, Auckland, as were many other Spencers before them.

Kiaeria spenceri

Kiaeria (after Norwegian bryologist Franz Caspar Kiaer, 1835-1893) is a small genus of about six species, four of which have an arctic-alpine distribution in the northern hemisphere. *Kiaeria spenceri* (syn. *Dicranoweisia spenceri*) is a rare endemic moss, dull yellow or brown-green, corticolous (growing on bark) on shrubs or small trees near or above the treeline on Ruapehu, Taranaki/Mt Egmont and Mt Cassidy in Canterbury. Because of the rarity of collections, the species is classified as "nationally endangered".

PUBLICATIONS

■ Publications Received

Nelson Botanical Society Newsletter December 2019: Upcoming trips. Award for Helen Lindsay. Trip reports for Mangarakau camp, Abel Tasman National Park and St Arnaud camp.

Nelson Botanical Society Newsletter February 2020: Upcoming trips. Trip reports for Craigieburn camp, Cobb camp and Mt Arthur.

Canterbury Botanical Newsletter December 2019: Upcoming trips and talks. Meeting report for talk on the Celestial Silk Road and trip report for Motu Kānuka Scientific Reserve, Oxford.

Canterbury Botanical Newsletter February-January 2020: Upcoming trips and meetings, call for Ginkgo leaves, obituary for Daphne Banks.

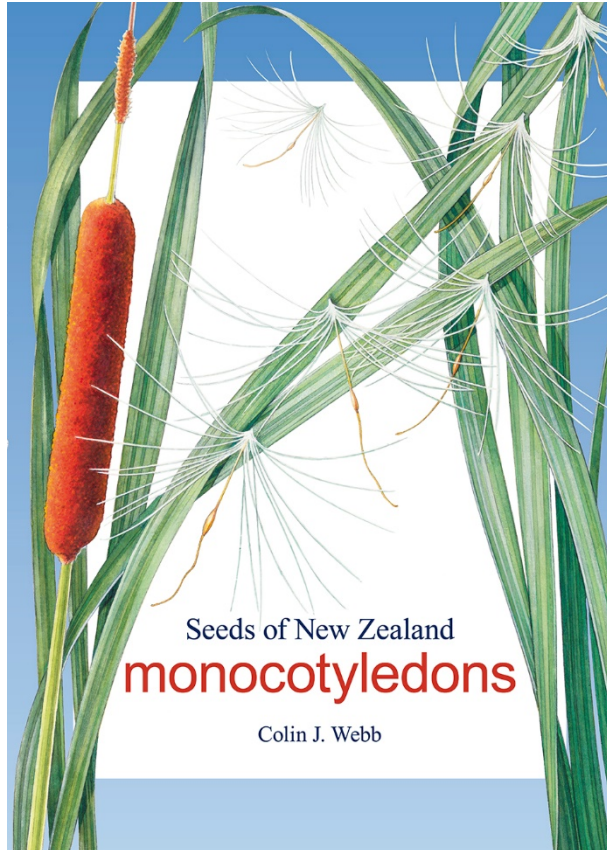
Canterbury Botanical Newsletter March 2020: Upcoming trips and meetings, meeting report for talk on New Zealand orchids, trip report for Williams Wildlife Reserve, Te Waihora.

Auckland Botanical Society Journal December 2019: Talk on Sir Joseph Banks and his Florilegium, reports on plants of Western Springs Lakeside Park, vegetation of Repo Ki Pūkorokoro Reserve, Waikato, Puriritahi, Hokianga, a very tall *Pneumatopteris pennigera*, new ferns for Great Barrier Island, red tide at Orewa, two yellow-flowered garden plants, red-gum trees in Auckland, flora and fauna of Harakeke Island, Bay of Islands.

Botanical Society of Otago Newsletter February 2020: Upcoming trips and meetings, articles on the island near Luggate Rd bridge, vicariance origin for North Island taxa, trip reports on Akatore, Catlins, Andersons Lagoon, talk report on the age of New Caledonia and Chatham Islands, botanical art, seed dispersal by flightless birds.

Seeds of New Zealand monocotyledons

by Colin J. Webb



This guide provides, for the first time, an account of the seeds and other persistent parts of fruits for New Zealand monocotyledons. The earlier volume, published in 2001, covered the native gymnosperms and dicotyledons, so this volume completes the treatment of all the native seed plants. It includes more than 700 illustrations, representing all the seed types in the monocotyledons, as well as descriptions and keys to aid identification.

Because seeds survive long after most plant parts have deteriorated, the guide will assist in many sciences: in analysing diet from the gut, gizzard contents or faeces of mammals or birds, recreating past plant distributions from deposits in bogs or soils, and determining native food and crop plants at archaeological sites. It also provides a wealth of information of use in plant identification and classification—a critical science for conservation of biodiversity.

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