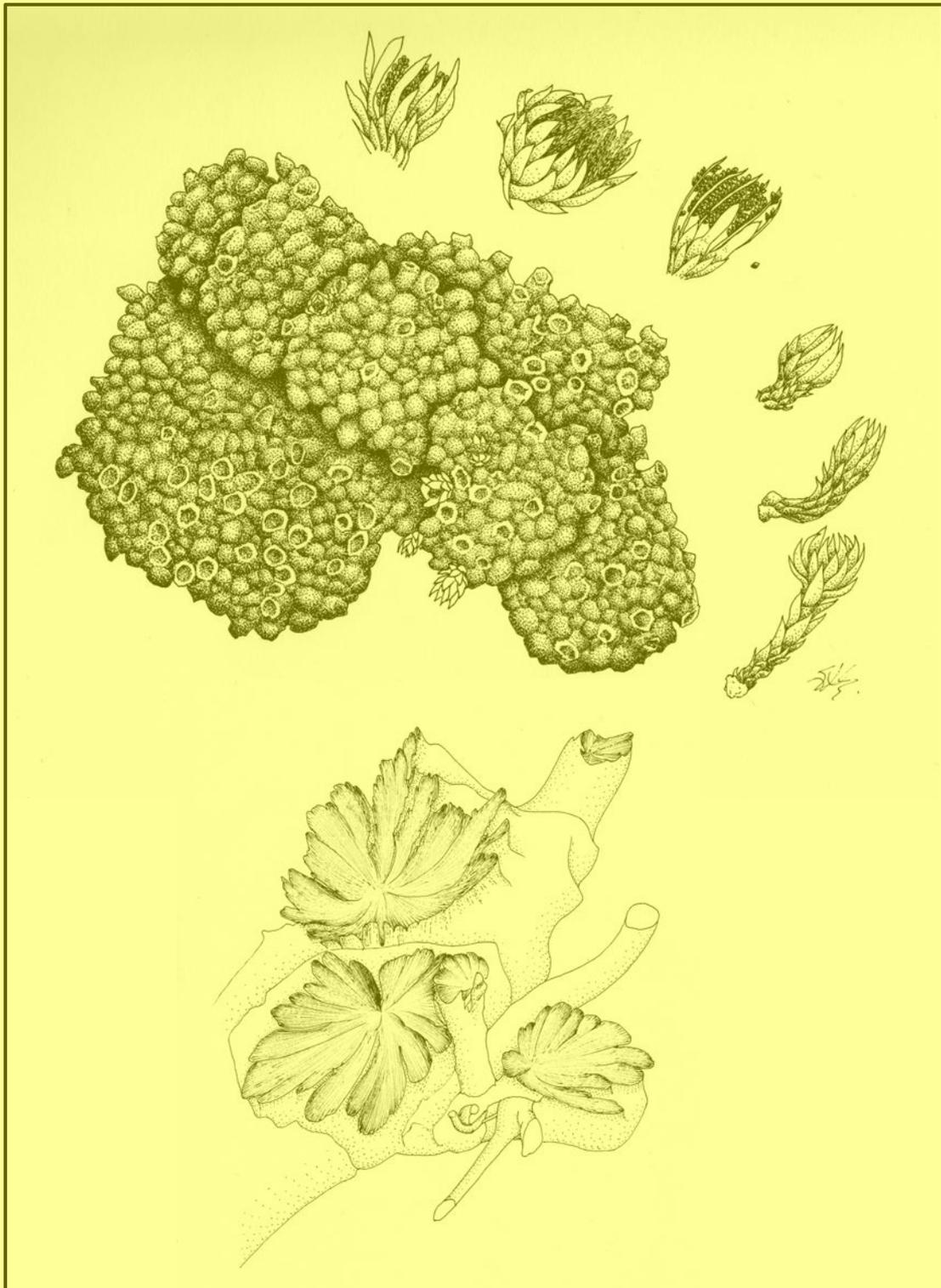


NEW ZEALAND BOTANICAL SOCIETY

NEWSLETTER

NUMBER 141

September 2020



New Zealand Botanical Society

President: Anthony Wright
Secretary/Treasurer: Ewen Cameron
Committee: Bruce Clarkson, Colin Webb, Carol West

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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 December 2020 issue is 25 November 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

Dactylanthus taylorii by Eleanor Burton.

NEW ZEALAND BOTANICAL SOCIETY
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ISSN 0112-6865 (Print) 2230-3502 (Online)

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New Zealand Botanical Society News

▪ Call for Nominations

Nominations are called for the following positions of Officers and Committee of the New Zealand Botanical Society for 2020:

- President
- Secretary/Treasurer
- 3 Committee Members
- Editor

Nominations for all positions open on 1 September 2020 and close on 20 November 2020.

Nominations shall be made in writing to the Secretary, c/o Canterbury Museum, Rolleston Avenue, Christchurch 8013, and shall be signed by the Proposer, the Seconder, and by the Nominee to indicate their acceptance of nomination. If necessary, ballot papers for a postal election will be circulated with your December *Newsletter*.

▪ Announcement of Allan Mere Award for 2020

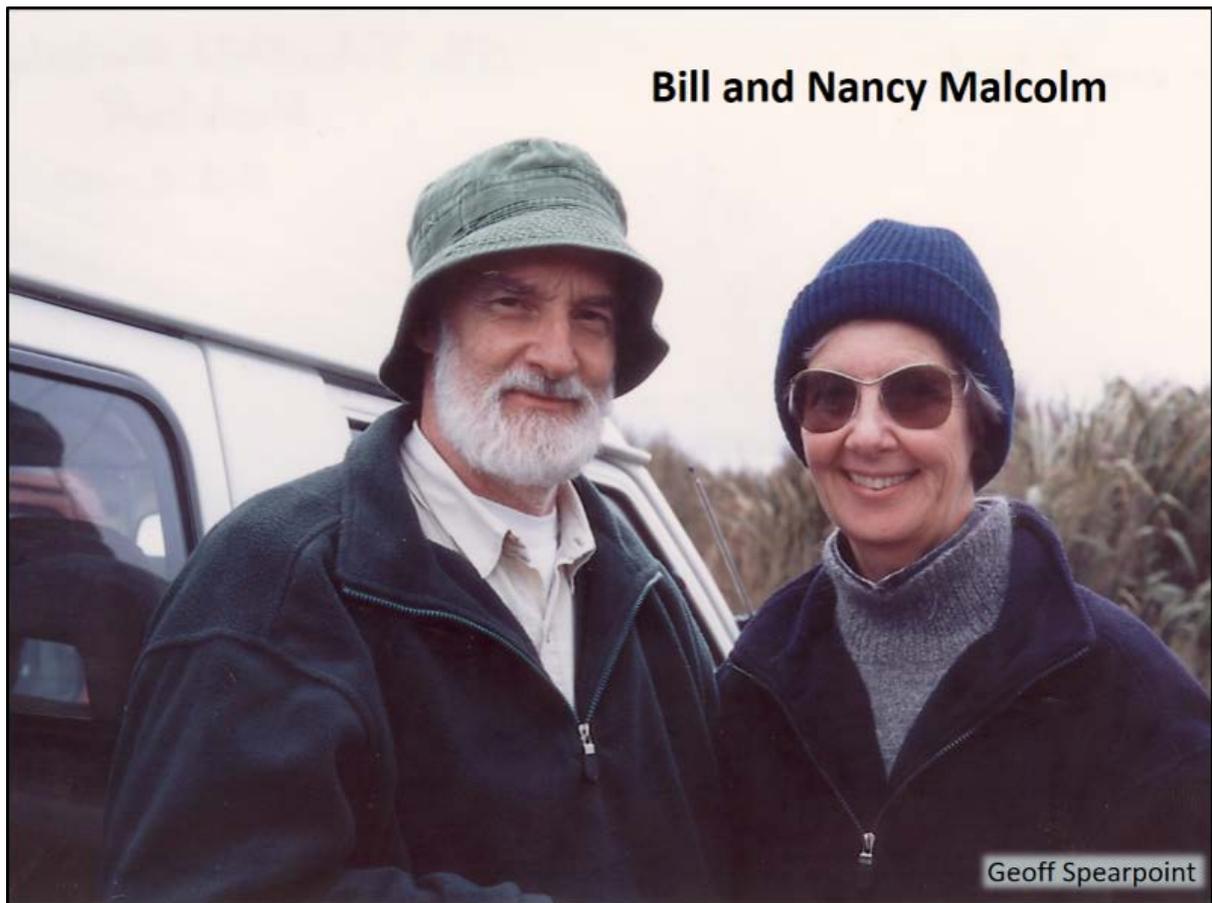
The NZBS Committee is pleased to announce that this year's award of the Allan Mere is jointly to Bill and Nancy Malcolm (Nancy posthumously) of Nelson. They were nominated by David Grinsted and Shannel Courtney of the Nelson Botanical Society, supported by four regional Botanical Societies (Auckland, Canterbury, Otago and Wellington) and ten individuals, including three from overseas.

A selection below shows the wide support behind this nomination:

“American born Nancy and Bill came to New Zealand with their three daughters in 1971. The whole family has since contributed to NZ botany: Nancy and Bill by their publications and their daughters with their botanical studies at Canterbury University. Nancy began the couple's interest in macro-photography when she won a prize in natural history photography contest. By reversing a wide-angle lens...and adding an extension tubes, she captured extremely close-up images of plants. Bill and Nancy developed this interest, which led to the publication of *NZ's alpine plants inside out: how NZ's plants survive in their harsh mountainous environment* in 1988. Lavishly illustrated this book took the botanical world by storm because of the quality of the close-up and microscopic images. The text revealed Bill's expertise as a plant physiologist.”

The proposers nicely summarised their combined botanical contributions: “Bill and Nancy have made outstanding contributions to both the discovery and the communication of botanical knowledge in New Zealand and further afield over more than three decades. Their exceptional talents and dedication have made the world of New Zealand lichens, bryophytes and ferns available to researchers, enthusiasts and the public. Their contagious enthusiasm for science, empiricism and education has influenced many.

Together they have co-authored numerous publications in book and electronic form, most of which they published and distributed internationally through their own Micro-Optics Press. These joint publications have informed and enthused a wide general audience, augmenting and extending Bill's academic research output. Written in accessible language and profusely illustrated with outstanding photography, clear diagrams and beautiful, scientifically accurate artwork, the reach of these publications is wide – from fellow botanists and botany students to natural history enthusiasts and anyone with an interest in plants. Often in collaboration with other experts on mosses and lichens, they have made a valuable contribution to the knowledge base of conservation initiatives...



Bill and Nancy Malcolm. Photo by Geoff Spearpoint supplied by Jessica Beaver.

Bill and Nancy developed their own innovative low-budget techniques for achieving high-resolution, close-up photographs to show micro-morphology long before digital optical technology was available. They produced startling images using artwork, cameras and microscopes, including differential interference contrast microscopy and thin-section microscopy to highlight micro-structures. They generously shared with readers their relatively simple techniques for photographing bryophytes with a flatbed scanner and creating clean images by removing background.

Bill's copious academic research from 1962 to the present spans plant ecology and ecophysiology, issues in science and society, and the systematics and functional biology of lichens and mosses. He is the discoverer and co-author of four new lichen genera (*Badimiella*, *Labyrintha*, *Podotara* and *Polycornum*), more than 30 new lichen species and several new combinations. He has also edited and produced *Australasian Lichenology* for over 20 years, leading its development from a society newsletter to a respected international journal.

Bill was one of the co-founders of the Nelson Botanical Society in 1989, and Bill and Nancy contributed much to that society, Wellington Botanical Society, Forest and Bird, and the University of the Third Age over many years. They have also led and contributed expertise to numerous annual lichen workshops and moss workshops around New Zealand and in Australia over three decades. Through their efforts, and by hosting numerous national and international researchers and students, assisting with field work and transport, and providing essential local knowledge and expertise, they have added to the understanding and documentation of native flora, particularly in the biodiverse Nelson region. Their talents as botanical artists and photographers have supported many projects, from original art work for *Flora of Australia*, technical and scientific support for Sir David Attenborough's TV series *Private Life of Plants*, and over 700 detailed comparative photographs for Bayly and Kellow's *An Illustrated Guide to New Zealand's Hebes* (2006)."

And more contributions from others included:

“Without a doubt, their greatest international fame spread through their publication *Mosses and other bryophytes: an illustrated glossary* first published in 2000...and an expanded 2nd edition followed in 2006. It is difficult to comprehend the effort of producing such a work with nearly 1400 detailed photographs to highlight specific morphological features, many of them obtained from NZ species. Here every bryological term one would ever find in a flora or identification key are clearly defined and illustrated...”

This book earned them “...international acclaim, being awarded the prestigious Hattori Prize by the International Association of Bryologists in 2007.”

“Bill and Nancy have done more than anyone else in NZ, professional or otherwise, to make accessible to NZers our bryophyte and lichen floras by means of highly illustrated books on these subjects prepared to a standard unmatched anywhere else in the world.”

“The Allan Mere is awarded for “outstanding contributions to botany within NZ”. Bill and Nancy Malcolm are eminently suitable recipients. Not only has their contribution to botany been outstanding within NZ, but has put our bryology and lichenology firmly on the world map.”

Congratulations Bill (and Nancy), and if the Covid-19 levels allow, the President on behalf of the Society hopes to be able to present the Allan Mere later in the year to you at an award morning/afternoon tea in Nelson.

Ewen Cameron, Secretary, New Zealand Botanical Society

Regional Botanical Society News

■ Auckland Botanical Society

August Meeting

Between the two periods of lockdown our members managed one get-together, an evening meeting in August. Helen Preston Jones' Plant of the Month talk introduced us to *Broussonetia papyrifera*, also known as paper mulberry or aute. Ben Goodwin, although his work is with animals, set himself the task of studying the flora of the Auckland volcanic field as a hobby challenge. He has explored the volcanic cones, lava fields and explosion craters in the city, and illustrated the plant communities and indigenous vascular plants that are still present. It is hoped that a field trip in September can visit some of these sites in Cornwall Park.

Forthcoming Activities

No plans have yet been made for the upcoming year, as we await the return of botanical freedom.

Auckland Botanical Society, PO Box 26391, Epsom, Auckland 1344

President: Ewen Cameron

Secretary: Stephanie Angove-Emery

aucklandbotanicalsociety@gmail.com

■ Rotorua Botanical Society

June Trip - Matata Dunes

The Matata dunes are separated from farmland by a broad raupo and grey willow-flanked wetland, which formerly formed part of the Tarawera River mouth before its path was shortened by a direct cut to the sea in 1917. The foredune is frequently dominated by spinifex and *Ficinia nodosa*, with patches of pingao and on the higher parts by marram, but much of the area has been recently burnt. Since the fire, restoration work has attempted to remove many of the significant weeds. These include gorse, smilax, pampas, privet and boxthorn. Scattered plantings of ngaio, pohutukawa, houpara and

akeake are present. A more recent concerted planting effort is concentrated near the carpark at the western end around a large lagoon and tracks for public access.

We wandered the two main parallel 4WD tracks created by fishermen seeking access to the river mouth. *Zoysia pauciflora* was present in a few places between the wheel tracks. Elsewhere, the area was dominated by a range of adventive and native herbs amongst the burnt stems and remnant patches of scrub. As the vegetation became shorter near the river mouth, kikuyu became more prominent along with pasture grasses such as cocksfoot, scattered blackberry and swathes of low *Muehlenbeckia complexa*. A few patches of wind-shorn kanuka attracted attention and debate, as there appeared to be both *Kunzea toelkinii* and *K. robusta* present. On the return a brief foray into the wetland in search of *Cyclosorus interruptus* proved unsuccessful.

July Field Trip - Jim Barnett

The Jim Barnett reserve was logged in the 1920's and most of the podocarps removed, then probably grazed. Interest in protecting the area began in 1970's when it was used as a picnic area, consequently the area has been managed by a keen group of locals for a long period. Plantings of a wide range of species date back 40 or 50 years, perhaps to this period. In the picnic area, around a recently erected shelter, plantings include a wide range of non-local species as well as the odd rhododendron and *Corokia x cheesemaniae*. In the last decade or so plantings have extended to former logging clearings.

Our group of 20 included locals, Waikato Bot Soccers and a few from Rotorua. We followed several tracks to complete a broad loop through the forest. The main tall forest is quite intact and now shows no sign of logging. The canopy is dominated by tawa, mangaeo, pukatea and the odd large rimu or northern rata with pigeonwood and mahoe beneath and dense areas of supplejack. Plants of particular interest were *Arthropteris tenella* (a fern not often seen away from the coast), and a very large rata with a basal bulge where its former host had existed. We lunched in a small clearing alongside masses of native passionfruit with orange fruits, on the edge of what was a large camping area that had been planted up. The trees now up to 4 m tall included *Hoheria sexstylosa*, *Griselinia littoralis*, *Sophora tetraptera*, and *Pennatia corymbosa*. The return loop took us through tree fern and kamahi areas before exiting to the carpark clearing through an arboretum of native trees and shrubs.

August Field Trip - Glovers Farm

Glovers farm is an island surrounded by either Forest Park or Scenic Reserve. A deep-cut gully down the centre contains recently fenced remnant forest that has been registered as a QEII covenant. The gully is crossed by two farm access tracks, which allowed easy access to opposite sides of the farm.

From the house, the track into the gully provided a good overview of logged tawa forest, showing emergent rewarewa, pukatea and odd rimu or tanekaha. Along the track there was a good cross-section of the forest showing very few adventives, only the odd broom, Himalayan honeysuckle, Spanish broom and *Miscanthus nepalensis* near the homestead. The understory was often dominated by *Dicksonia squarrosa* and mamaku. Plants of note included lots of toropapa (not yet in bud), *Urtica ferox*, native passionfruit and *Leptolepia novae-zelandiae*.

Across the gully we followed the fence line along the top of the gorge to the bottom of the property. Here the forest was drier and included hard beech, *Coprosma rhamnoides*, prickly mingimingi and toro. Near our lunch spot there were several huge patches of *Dendrobium cunninghamii*, *Earina mucronata* and *E. autumnalis* enveloping the lower stems of scattered large trees in the pasture. These would be spectacular in flower. At the end of the pasture we descended a disused track across the gully through kanuka and hard beech. On the descent we encountered our first *Pterostyllis trullifolia*, *Drymoanthus adversus* and *Bulbophyllum pygmaeum*. On the ascent out the other side - terrestrial *Pittosporum cornifolium* was hanging from a bank and on the pasture edge *Pommaderris amoena* occurred, heavy in bud.

From there we crossed the farm to the south side, to explore a large forest clearing in scenic reserve recently reclaimed by DOC (4 days grazing). A huge mangaeo on the clearing edge provided a nice frame. The return route wandered along an old farm track through forest that provided a few last species additions including a favourite: *Hydrocotyle dissecta* and *Nertera dichondraefolia*, the latter nearing its southern limits.

FUTURE EVENTS

September 6	Dickeys flat
October 4	Moanui/Matwatai
October 31-November 1	Whitianga
December 6	McLaren Falls

President: Paul Cashmore 027 650 7264 pcashmore@doc.govt.nz

Secretary: Elizabeth Miller (07) 343 5013 rotoruabotanicalsociety@gmail.com

Web Page: www.wildland.co.nz/botanical.htm

■ 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 Higgin (06) 342 7857 clive.nicki@xtra.co.nz

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

■ Nelson Botanical Society

June Field Trip to Whispering Falls

Eight members and three guests walked up the Hacket Valley and noted many weeds in the lower part of the valley, with patches of *Dryopteris filix-mas* hiding among the native ferns under the edge of the pine trees. Further up the valley among the rocks on a sunny bank we found a few plants of the native fern, *Pellaea calidrupium*, which can be recognised by the sori going right around the tips of the fronds.

One of the group managed to find a small sterile plant that was probably the serpentine endemic *Cardamine dactyloides* as it was growing very close to where this species has been previously observed. Good searching also found *Korthalsella salicornioides* growing on mānuka and the hybrid *Aristotelia fruticosa* x *A. serrata*.

Very few plants were in flower, but we did find a small blue-flowered *Wahlenbergia gracilis* and a few very late and slightly battered white flowers of the mineral belt endemic, *Gentianella stellata*. A rather puzzling find was a *Melicytus* with very fine trailing branchlets behaving more like *Coprosma perpusilla*.

Along the way we managed to find a few leaves of two very different species of unnamed *Craspedia*, one growing on the ultramafic soil and the other on limestone. Both are apparently confined to the Hacket area.



Pellaea calidrupium, note the sori continue around the tip of the pinnae. Photo by Chris Ecroyd.

June Talk: Introduction to iNaturalist (via Zoom)

Chris Ecroyd hosted an introduction to iNaturalist using Zoom. About 14 people joined the meeting, in which he gave a well-prepared presentation that convinced us of its value for plant identification and for contributing observations and photographs to the rapidly growing body of botanical – and other natural history – knowledge. He also provided helpful answers to questions. [Perhaps sessions like these could be organised nationally through the New Zealand Botanical Society?]



Korthalsella salicornioides on manuka. Photo by Dave Holland.

July Field Trip to Rowe Covenant

Thirteen of us were led by the owner through the paddocks and into the forest interior. The forest canopy is silver beech/mataī/lowland tōtara and black beech. The first thing noticed was the myriad of small-leaved plants crowding the forest floor: *Myrsine divaricata*, *Melicope simplex*, *Raukaua anomalus*, *Melicytus* "Waipapa", *Coprosma rotundifolia*, *Neomyrtus pedunculata*, *Coprosma rhamnoides*, *Coprosma propinqua*, *Coprosma rigida*, *Coprosma microcarpa* and *Pennantia corymbosa*. As we progressed along the track we came across a lovely specimen of

Clematis foetida. A feature of the forest is an abundance of tall *Prumnopitys taxifolia*, which were

displaying bright red patches where the bark was shedding. There were boulder-sized gravel deposits with a niche for ferns including: *Cranfillia fluviatilis*, *Lomaria discolor*, *Parablechnum minus*, *P. novae-*



Unusual form of *Melicytus* aff. *alpinus*. Photo by Chris Ecroyd.

zelandiae, *Austroblechnum lanceolatum* and *A. membranaceum* as well as several *Asplenium* species. About half way along the block we spotted *Hoheria angustifolia*. We were keen to see the patch of *Scutellaria novae-zelandiae* and we were guided to the spot where we were pleased to find some healthy patches.

July Talk: Turkish Silk Road, Eastern Anatolia by Uta Purcell

In May 2019 Uta joined a group of 12 people for a botanical tour through Turkey with Vira Natura. Their first few nights were at a hotel built into rock in Goreme in Cappadocia, central Turkey. The

route took them south towards the Taurus Mountains and then north towards the Black Sea via the Pontic Mountains. They then approached Georgia before heading south again, via Mount Ararat, to Lake Van. The many botanical stops during their journey across Turkey revealed numerous wonderful flowering plants. They included nine different irises, eight different fritillaries, several different *Colchicum*, tulips, *Ranunculus*, Scillas, primulas and orchids

FUTURE EVENTS

September 20	Field trip to 8 Mile, Murchison
October 18	Wairoa weeding
October 23 - 26 (Labour Weekend)	Camp in the Westport area

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

■ Canterbury Botanical Society

July meeting

Thanks to Covid 19 and the resultant border closures our first speaker post lockdown was Melanie Lapointe, currently unable to repatriate back to Canada due to lack of suitable flights. Melanie gave an expertly illustrated talk on some of the areas she has done research projects in. Canada has 25% of the world's wetlands. Only 10% of these wetlands (million hectares) are protected mostly under the RAMSAR convention. Melanie's presentation was on the plant communities found in wetlands at four latitudes. She began her talk in the north near the Inuit village of Aupaluk, an area of continuous permafrost, where the summers are short and winters long. Vegetation is mostly herbaceous plants and small shrubs with Cotton grass *Eriophorum scheuchzeri* and the snow gentian *Gentiana nivalis* being common. Caribou and Musk Ox are the largest grazers in the area. Further south are the Boreal peat and bog wetlands. The bog wetlands are the natural habitat of wild cranberries and blueberries.

July field trip: July 11th – Mears Bush Covenant, Matawai Park Reserve and Silverstream Reserve Mears Bush Covenant. Free again to mix, mingle and botanise, twenty five Bot Soc members appeared determined to make up for their down-time by venturing to Mears Bush on the outskirts of Oxford. We began with a brief stop at a memorial to the 'discovery' of Canterbury mudfish, where we were lucky to have an expert in our ranks to field a variety of questions. Mears Bush is a 4.7 ha remnant of the original Harewood Forest and was Canterbury's first QEII covenant, registered by the Mears family in the early 1980s. The vegetation of Mears Bush is dominated by black beech (*Fuscospora solandri*) with occasional kahikatea (*Dacrycarpus dacrydioides*) 3 and pokaka (*Eleocharis hookerianus*). Like any remnant close to housing, several weedy species of garden origin were making a nuisance of themselves, including holly (*Ilex aquifolium*), North Island lacebark (*Hoheria sexstylosa*), karo (*Pittosporum ralphii*) and (new to several of us) Chilean myrtle (*Luma apiculata*). Our second stop for the day was Rangiora's Matawai Park, a 4.7 ha urban scenic reserve. Formerly open farmland, the park has been developed to reflect the native vegetation of Canterbury with examples of beech forest, dryland podocarp forest, wetland podocarp forest, shrublands, wetlands and tussock-grassland vegetation. The last stop was Silverstream Reserve, a 52 hectare block in two parts based around the springfed Silverstream, a tributary of the Kaiapoi River. Despite being winter, in the wetland swale we saw *Potentilla anserinoides*, *Centella uniflora*, *Hypericum pusillum*, *Myriophyllum triphyllum*, *Microtis unifolia*. In the fen area it was good to see *Gratiola sexdentata* and *Viola cunninghamii*.

August meeting: Dr Matiu Prebble Post-Doctoral Fellow, University of Canterbury Geological Sciences gave an interesting talk on the fossil record of garden weeds in the Pacific Islands and Aotearoa.

AGM (Saturday) 8th August: A rather belated AGM was held at Ninians Presbyterian Church Hall. We welcome Sue Stevens as our new treasurer and Tom Fergusson and Paula Godfrey onto the committee. The AGM was followed by a talk by Dr Leon Perrie, Curator - Botany, Te Papa Tongarewa. Leon, in layman's terms, helped to demystify the taxonomic naming process, the rules that are generally observed and how they try to make sure the process is user friendly. Even the

experts get it wrong some times and their names have to be changed, Joseph Hooker wrongly named one NZ fern and some orchids have changed back to their original names.

August field trip: Was to Te Tihi-o-Kahukura Castle Rock to look for winter seepage flora. On a warm sunny Canterbury afternoon eight botanists gathered at Rapaki saddle. Despite promising not to look anywhere but at the road or at the view, the botanical finds in cuttings along the road were too good not to stop and check out. *Veronica lavaudiana*, *Thelymitra longifolium*, *Brachyglottis lagopus* and *Myosotis lyttletonensis* were found on south facing banks. By the time we had walked the 3 km to Castle rock we had been joined by 3 other botanists including our lichenologist Melissa Hutchinson. The native carrot *Daucus glochidiatus*, Blanket fern *Asplenium subglandulosum* and the Jersey fern *Annogramma leptophylla* remained elusive, possibly covered by earthquake rock falls.

FUTURE EVENTS

September Field Trip: Saturday 12th September: Lows Cutting Rakaia river recent terrace and scarp, Barhill; Te Awa Awa reserve beech forest, Methven.

October Field Trip: Saturday 7th October: Culverden kanuka remnants.

November meeting: Monday 4th November Ines Schönberger – Herbarium Manager, Allan Herbarium, Manaaki Whenua – Landcare Research. Did the authors of the Flora of New Zealand Vol. IV get it wrong? – Changes in the adventive flora of New Zealand documented by herbarium collections. November Field Trip:

Saturday 7th November: Cranky Tom Reserve, Motunau (difficult, immersion likely)

Show weekend spring camp: 12-15th November: Timaru limestone. Alice has booked Pareora camp for Show weekend. It sleeps 60 in bunkrooms at \$20/night per person. Please contact Alice alice@caverock.net.nz if you are interested in coming.

December meeting: Monday 7th December Dr John Hunt, Land use and Ecosystems, Manaaki Whenua – Landcare Research. The big issue - trees, carbon and climate

December Field Trip: Saturday 12th December: Waipara Reserve (moderate, off-track scramble and scratches) December Field Trip:

President: Paula Greer info@canterburybotanicalsociety.org.nz

Secretary: Fay Farrant

■ Other Botanical Society Contacts

Waikato Botanical Society

President: Kerry Jones

Secretary: Wyne Johns

General contact: secretary@waikatobotsoc.org.nz

Website: <http://waikatobotsoc.org.nz>

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](mailto:G.Rapson@massey.ac.nz)

Wellington Botanical Society

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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

Secretary: Angela Brandt, P O Box 6214, Dunedin North. bsotago@otago.ac.nz

NOTES AND REPORTS

■ Robert Langley Holmes (1833–1919), plant collector in New Zealand and Fiji

Rhys Gardner, rhysogardner@hotmail.com

Holmes' entry in the *Cyclopedia of Fiji* (Anon. 1907), written shortly before he retired to Sydney, begins as follows:

Mr Robert Langley Holmes was born in King's County, Ireland, in 1833, and educated in England and Germany, and spent one year in Dublin University. On leaving, he came out to Victoria in 1852, spending six years on the goldfields, mining. He was for two years dairy-farming, leaving for New Zealand in 1859. He spent some time in Government positions. Coming to Fiji in 1869, he purchased his present estate, ["Delanasau"], in Bua, paying what at that time was a very high price for it, viz., 4s. per acre. He returned for a short time to New Zealand, finally settling in Fiji in 1871. The estate consists of 304 acres, 120 acres of which is under cocoanuts. Cattle, sheep and horses are also run.

What might we suppose from this? Perhaps, that Holmes came of a good family and was well-educated, and that he was capable of sustained physical toil. We might guess that he practical and adaptable, and, to judge by the "very high price" he gave for his Fijian plantation, something of an optimist too.

I know nothing about Holmes' first year or two in New Zealand, but at some stage he reached Christchurch, where he was to acquire a house at the corner of Peterborough and Colombo Streets (Macdonald, unpublished). In 1862 he became an assistant to Julius Haast, who had arrived there in late 1860, along with seven cases of rocks and fossils, to become Canterbury Province's first Geologist (von Haast 1881; Burrows 2005). In travelling and surveying with Haast Holmes would have learnt how to collect plants and at this time too might also have discovered his own particular scientific passion, which was for meteorology.

Soon he was able to pursue this professionally. A country-wide network of weather stations was being set up under the directorship of Charles Knight (de Lisle 1986), and though he continued to work for Haast Holmes now gained a position as Canterbury's Provincial Meteorological Registrar. At some time in the next few years he joined the Meteorological Society in London, and thereafter, in society lists etc., would appear with "F.M.S." after his name. He continued as Registrar until 1868, when he was succeeded by his friend R. Mainwaring (von Haast 1881: 508; de Lisle 1986: 19). Some of the requirements of the work— mostly tedious table-making but with the chance for an expressive phrase or two—"delightful weather ... lovely moonlight night ... dull threatening day ... wretched weather"— can be found in his monthly reports for 1864, which were published in the *Lyttleton Times* newspaper and are now available online.

Holmes took part in one of Haast's greatest adventures, the January/February 1863 expedition from Lake Wanaka to the West Coast. Plants were collected, though a kea "who had begun to study botany" reduced their number by pulling a bundle over a precipice (H. von Haast 1943: 279, 294–298). The Haast Pass was found and crossed. Later in Christchurch a dispute about geographical priority arose, and in newspaper correspondence Holmes proved to be an effective defender of the Haast party's reputation (H. von Haast 1943).

In 1864 Holmes was helping organize the beginnings of what was to become the Canterbury Museum. Later that year Haast lent him to James Hector, who was about to become Director of the new governmental Geological Survey at Wellington and had begun planning New Zealand's first international-style Exhibition, to be held in Dunedin in January 1865. Holmes' job was to set up

Canterbury Province's contribution to it, and we learn something of his personality in the correspondence he now initiated with Haast back in Christchurch. These letters, of shop-talk, family enquiries, news, gossip and facetiousness, are occasionally quoted by H. von Haast (1945). They have been transcribed in full by Burns & Nathan (2012) and are referred to in the present article as "letter to Haast", etc. They demonstrate Holmes' aptitude for cheerful dogsbody-type work with objects and persons, and his efforts here were to bring him a well-deserved silver medal from the Canterbury Province Exhibition Committee (Macdonald, unpublished).

After the New Zealand Exhibition Holmes returned to help Haast. This seems to have been mainly in curatorial work, although in 1865 he was part of a group that went to Hokitika and back via a strenuous hike over the Browning Pass. However, in 1868 the "roads-and-bridges" faction of the Provincial Government gained a temporary ascendancy—plans for a Canterbury Museum building were suspended and other cost-cutting was proposed.

Haast (1881: 511) wrote about this time in his career:

On 30th June, 1868, my contract as Provincial Geologist having terminated, I handed the whole collections [Canterbury Museum] over to the Provincial Government. Mr. R. L. Holmes, who since 1862 had first been my companion on several of my journeys, and afterwards had acted as Meteorological Observer to the province, and as Clerk to the Geological Survey {of Canterbury Province}, left also on the same day. [Provincial Government had wanted to cut Holmes' salary from 250 to 150 pounds per year, as well as requiring him to continue as Meteorologist]. His departure was much regretted by me, as this gentleman, possessing great zeal and energy, had been of considerable assistance to me in arranging the collections, and although now settled a number of years in the Fijis as a planter, he still continues to take a lively interest in the welfare of the Museum, and sends, as opportunities offer, valuable contributions from those interesting islands. (Appendix 1).

It would be at this time that "Mr R. L. Holmes F.M.S." was elected an honorary member of the Philosophical Institute of Canterbury, a tribute to his work and character. At this time too, in thanking Haast for giving him a piece of jewellery in appreciation of his work, Holmes wrote:

I have been now about five years in your employ, partly in the field exploring in the backcountry or surveying the different passes, partly in [the] office, and I cannot call to mind in the trying circumstances of the former, or in the daily routine of the latter, one unkind look or expression towards me, although indeed I am but too well aware I was often deserving of both. (letter to Haast, 30 June 1868).

We continue to follow Holmes through his letters. In April 29 1868 he had written to James Hector's chief assistant Richard Gore, enquiring about the possibility of a position in the Geological Survey. This was immediately successful, and on arrival in Wellington Holmes was pressed into clerical work, on the burning topic of the day (the import and acclimatization of salmon), on the yearly report for a newly formed part of Hector's empire (the Colonial Museum and Laboratory), and on Hector's worthwhile but extraordinarily time-consuming project, the preparation of the first volume of the *Transactions of the New Zealand Institute*.

The letters now show Holmes developing a serious interest in plants [at last, I hear some readers say], thanks probably to his association with both the charismatic Hector and the Survey's knowledgeable and accessible botanist-artist John Buchanan (Adams 2002). Holmes acquired a copy of "Hooker's Flora 2 vols", and wrote:

I am making quite a little botanical collection, having already some 60 species nearly dry and named by Buchanan. I hope in the course of time, if I remain here, to get nearly all the plants about Wellington. (letter to Haast 12 Nov '68).

Early the next year he wrote again:

Just 200 flowering plants and some 40 ferns, not so bad for one short season, Buchanan says it is nearly as good a collection as has ever been got by one person about here in so short a time. (letter to Haast 8 Feb 69:). And then:

Gymnogramma leptophylla & *Botrychium cicutarium* grow near here, each in one little spot, tho' former has not yet appeared above ground & the latter is not yet in seed. I can get them by and bye. So much for botany; I believe the pleasantest days I spent in N.Z. were passed hunting up these collections; for some time I was seized with a mania for hunting, and passed every spare hour

in the Bush or on the hill side. (letter to Haast , 7 April '69).

Holmes also mentioned that he was sorting duplicates, especially of ferns, to go to Haast at the Canterbury Museum. I have seen none of these—perhaps they were sent by Haast overseas in exchange. Of his specimens that stayed in the Colonial Museum (now the Museum of New Zealand—Te Papa Tongarewa) just a few are known: their dates of "Dec 1868" and "Jan 1869" are right but the collector's name is handwritten on the "Herbarium T. Kirk" labels, apparently by Kirk, as "R. J. Holmes".

In 1868 Holmes had taken out a life membership in the Wellington Philosophical Society, but this optimism was now to be tested by another round of cost-cutting, a consequence of expenditure on subduing the northern Maori. Seeing no chance of a permanent position in Wellington he turned his mind to Fiji, where things were looking promising for capable colonials with capital: Fiji was relatively peaceful and cotton and copra especially were getting good prices. (Inevitably, both crops were to falter but the mention of animals in the *Cyclopaedia* note might indicate that Holmes was aware of the need to diversify).

Before he left for Fiji Holmes wrote:

I do not propose to make any collections, beyond a few curiosities, unless I am detained for a long time for want of a vessel. I know several people at Fiji, if I can only hit upon them, I shall in any case soon hear all I want to know, whether cotton planting promises to be as paying a game as is represented. (letter to Haast, May 18 1869).

This trip occupied most of the latter half of 1869. A note in the third (1870) volume of the *TNZI*, under the heading "Wellington Philosophical Society", described the Society's annual general meeting on Jan 29 1870 and mentioned that "A valuable collection of Plants from the Fiji Islands was exhibited by Mr. R. L. Holmes, and the results of a few months residence there described." These plants, which are also mentioned in the letter to Haast of 18 November 1869, might now be represented by just a dozen or so, undated, well-prepared specimens of Fijian grasses and sedges. Those in the Allan Herbarium bear a "Canterbury Museum" label and those in the Museum of New Zealand a "Herbarium T. Kirk" one. All are of common species. (See Appendix 2 for more on Holmes and grasses).

However, there may be more specimens to be discovered, since the above letter also says that "I have not yet touched my Fiji ferns beyond showing them to Dr H. & Buchanan who are much pleased with them". If these specimens did not go to the Colonial or Canterbury Museums they might have been sold to some curio dealer to help finance the Fiji trip, or, if they had been sent to the Canterbury Museum, they might have been used by Haast in his extensive exchanges—perhaps they now lie unrecognized in some European museum.

The last letter in the Burns & Nathan compilation shows Holmes at his careful, self-assured best, thanking Hector and letting him know that various last things have been attended to, notably with respect to the second volume of the *TNZI*:

I see by Mr Kirk's last letter that he is not a member of the Council, although so stated in former lists. He has himself to blame, if blame there is, for appearing as a member of that August Body, but indeed as Secy. he may be called such. I was very careful with the lists of members of Incorporated Societies, and as the lists were revised in every instance by the respective secretaries, a reference to those lists will show where the mistake if any occurs ... It appears Dr Fisher is indignant about the omission of M.D. after his name last year, I therefore inserted it now, since he may claim the title from a foreign diploma, but in other instances I followed the Medical register. (letter to Hector 9 April 1870).

Holmes went to Christchurch, perhaps to tidy up house and property matters there (Macdonald, unpublished), and then to his "Delanasau" estate, in the Bua district of Fiji's second largest island, Vanua Levu. He described its situation and something of the landscape and local flora in the first two meteorological articles he wrote from there (Holmes 1877, 1881) . Its homestead, he wrote, was a mile from the sea, on a low hill overlooking a flat through which the Lekutu River ran. (A maritime guide compiled nearly twenty years after Holmes had left the island (Anon. 1926), refers to "Delanasau Station" as being ten miles from the river mouth, that is, considerably higher-up than

present day "Ndelanasau", which is across the river from the village of Votua, and, as Holmes described it, just one mile or so from the sea).

Holmes persisted with his meteorology— see d'Aubert & Nunn (2012) for references to several more publications by him. He seems to have been Fiji's second "serious amateur" meteorologist, the first being Colonel W. J. Smythe, who in 1860 had made nearly a year's records while negotiating with the Fijians about cession to Britain (Smythe 1864).

Holmes did not turn into an avid collector of Fijian plants, but a second period of botanical interest did occur for him in the mid- to late 1880s; it concerned the increasingly valuable tropical commodity, rubber. The South American rubber tree *Hevea brasiliensis* was just beginning to be cultivated in Asia and would later be grown (though in a small and unsuccessful way) in Samoa and Fiji too, but in Holmes' day much of the world's rubber came from Brazil or the Congo, where British commercial interests were not welcome. So the Colonial Office, assisted by Kew, began searching the world for other sources.

Congo rubber comes from the apocynaceous vine *Landolphia owariensis* (see the excellent Wikipedia article) and of all the latex-bearing families the Apocynaceae seemed the strongest candidate. A preliminary account of Fiji's possibilities is to be found in a little gem of economic botany by John Horne (at that time director of the Mauritius Botanic Gardens), written after a lightning trip to Fiji in 1877–'78 (Horne 1881: 195–202; Smith 1979: 49).

A later article from Kew (Anon. 1898) mentions Holmes' observations on the latex of the endemic Fijian tree now known as *Pagiantha thurstonii*. His specimens of this, *Alstonia vitiensis* f. *glabra*, and *Carruthersia latifolia* (all apocynaceous) are in Kew; they are undated and localized only by "Bua" (Smith 1988). None yield a rubber anywhere near as good as that from *Landolphia*. Considering the painful way Congo latex was processed—the collector would spread it over his arms and chest then peel it off when dry—we have to think this was fortunate for Holmes' workers. (Anthropologist Peter Dwyer of Melbourne has told me that in New Guinea rubber from a vine is still collected in this way, for the making of hunting-catapults.)

The *TNZI* volumes from 1870 onwards show Holmes as a life member of the Wellington Philosophical Society, residing first at Bau and then (volumes 45 to 51) at "Kia Ora" [earlier "Kai Ora", a misprint Holmes would never have let through], Fern Street, Randwick, Sydney. The death of "one life member" in that society during the previous year is noted on p. 486 of volume 52, which was issued in 1920. According to a probate notice (*NSW Government Gazette* issue 119: 3763. 1920) Holmes died in North Sydney on 27 Nov 1919. I have done no further investigation of his family, except to read in various free genealogical online sites (including one on the Irish Berry family) that he had married [in the early 1870s] Margaret Jane Sharp (b. 1833) of Sydney, and that they had four children, of whom the second son, Charles Alexander, was Chief Surveyor and then Commissioner of Crown Lands in Fiji, c. 1920.

More about Holmes' time in Fiji will be found in a title *Forty Years in Fiji, being brief notes of a planter's life from 1869 to 1909*. In Snow's (1966) bibliography this seems to be a book, but it is actually a bound collection of newspaper clippings, made by Holmes himself. It is now in Sydney's Mitchell Library.

The second half of Holmes' *Cyclopedia of Fiji* entry can stand here as an epitaph for this capable, diligent and optimistic all-rounder:

Mr Holmes is strong on the labour question, and writes largely for various papers and journals. His favourite labour is Polynesian, Solomon Islander for preference. He attributes the Fijian's indolence to bad chiefs and bad government. The land laws are being altered, and he remains in expectation of a liberal course being pursued towards new settlers. He advocates either a free grant to them or a nominal rental, [and] freedom of action among the Fijians, allowing them to work when they so desire.

Acknowledgements

Thanks to Leon Perrie for assistance with the WELT database, and for geographical information from

Rod Ewins, Paul Geraghty, Robin Hide, and the staff of the Australian National University's Pacific Library.

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Appendix 1 Donation to Canterbury Museum in 1880.

From newspaper *Globe*, issue 2161, 28 Jan 1881 p. 3:

Mr Robert Langley Holmes, F.M.S., Bua, Fiji —1 Fijian skull, 14 stone implements, 6 whale's teeth (Tabua), 2 dog's teeth, one Utu toa or spear-head, one wooden dish, one earthenware drinking jug, 2 clubs, Likus native dresses [i.e., dresses made of leaves and fibres], collection of masi native cloth, various kinds, 13 pieces tortoiseshell, 1 water vessel (in clay), collection of shells, collection of fishes in spirits of wine, small tortoise preserved.

Appendix 2 Eponymy

In New Zealand Haast is said to have named a Mt Holmes near the Hooker Range (H. von Haast 1948: 1011). And in Fiji he is remembered by the name "Holmes grass", referring to *Melinis repens*, a somewhat useful pasture grass more widely known as Natal red-top. Presumably Holmes promoted it for a time. In writing about Pacific grasses I mentioned this but misspelt his middle name "Langdon" (*Rec. Auck. Mus.* 44: 59. 2007), an unfortunate assimilation from the name of Pacific historian Robert Langdon.

BIOGRAPHY / BIBLIOGRAPHY

■ Biographical Sketch – Olof Peter Swartz (1760-1818)

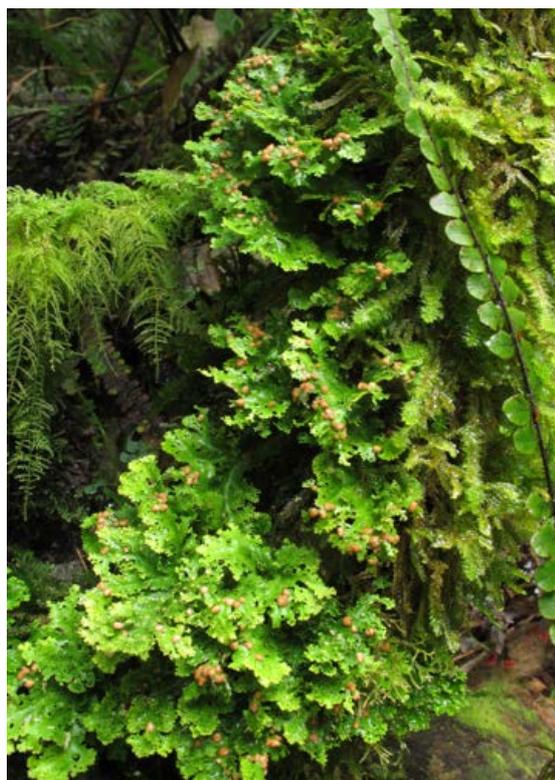
Val Smith, 80 Mill Road, New Plymouth 4310.

In his first publication, a 1781 dissertation on mosses and lichens, Olof Swartz described *Lichen filix* (now *Sticta filix*) from a collection made by George Forster in Dusky Sound, Fiordland, on Cook's second voyage (1772–1775). It was the first scientific description of a lichen from New Zealand.

Olof Peter Swartz (or the several variants of his name) was born on 21 September 1760 in Norrköping, south of Stockholm, Sweden. His parents, who were quite wealthy, were descendants of iron miners and foundry workers at Svartsången (from which the family name came) in the northern province of Västmanland. Olof was seven years old when his father died. He was tutored privately at the local school, and at the age of eighteen began studies in medicine and natural history at the University of Uppsala, mentored at first by the younger Linnaeus and primarily by Carl Peter Thunberg, who became a lifelong friend and correspondent. During summer vacations Swartz made long excursions with fellow students to northern parts of Scandinavia, including the classical route in Lapland taken by Olaf Rudbeck, Carl Linnaeus and Lars Montin, and made new discoveries. He showed an early interest in mosses and lichens, which he made the subject of his medical dissertation in 1781.

In 1783 he sailed to Boston in North America and on to Jamaica, Hispaniola and other islands of the Caribbean to collect botanical specimens. He also collected birds and insects, but most of them were lost in hurricanes and animal attacks. On his return voyage in 1786 he stopped off in London for more than six months, enjoying the hospitality of naturalist Joseph Banks as he worked on his collections. He was offered a position with the British East India Company, but homesick by then, he declined and returned to Sweden in the autumn of 1787.

With no permanent position for some years after his return, and apparently living on his inheritance, Swartz lived a frugal life devoted to science. As well as several major publications on the West Indies plants, he made drawings and watercolours of many species, but few were published and most were lost. His contributions to the taxonomy of orchids included authorship of many well-known genera. He adopted and developed German bryologist Johann Hedwig's early moss system and published a manual of Swedish mosses. Also interested in lichens, which in Linnaean taxonomy were treated with mosses, Swartz initiated publication of *Lichenes americani*, and inspired and became a close friend of Erik Acharius, who became internationally recognised in lichenology. Elias Fries was attracted to cryptogams, especially fungi, by Swartz, who made the first systematic list of mushrooms in the Stockholm area. Above all, Swartz was an ardent pteridologist who considered the study of ferns his chief amusement.



Sticta filix

In 1796 Swartz married Sara Elisabeth Bergh, a lawyer's daughter from Uppsala, but she suffered poor health and died six years later, leaving him with a young son and daughter. An active member of the Royal Swedish Academy of Sciences, Swartz was appointed curator of the natural history collections and in 1811 secretary of the academy. Described as a likeable and charming person

who easily made friends, he died after a short illness on 19 September 1818, aged 57.

Sticta filix

Sticta (Latin *stictus* 'spotted, dappled') in the family Lobariaceae is a cosmopolitan genus of around 200 species of foliose lichens distributed mainly in tropical regions. Twenty-two species are recognised in New Zealand. *Sticta filix* has thin fragile lobes with dissected margins, bright green to greenish-yellow or olive on the upper surface; the lower surface, which is speckled with cyphellae (tiny white pits), is pale greenish-white at the margins, darkening to yellowish or dark brown towards the centre, and a prominent raised rib on a short stalk. Endemic, the species is common in damp, humid forest habitats throughout New Zealand, mostly epiphytic, but also on rock and sometimes on the forest floor. It was the first Southern Hemisphere lichen to be illustrated.

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PUBLICATIONS

■ Publications Received

Auckland Botanical Society Journal 75(1), June 2020 Trip reports for Port Waikato, Miranda, Totara Park and Auckland Botanic Gardens Bush, Borland Lodge, Mahurangi Peninsula and north of Dome Forest. Articles on Waiotemarama Walkway, Waima Forest, Shakespeare Cliff Reserve, Symonds Street Cemetery, St John's College bush, uncommon grasses of northern New Zealand and flower fairies down under. Obituary for American botanist Art Whistler.

Waikato Botanical Society Newsletter 46, 2020 President's report, endangered plant garden update, talk reports on peatlands of the Waikato, kauri dieback, freshwater flora of the Waikato, trip reports and species list for Puaiti Bush Scenic Reserve, Mangaonua Gully and Nikau Walk, upcoming trips.

Nelson Botanical Society Newsletter July 2020 Upcoming trips and talks. Trip report for Whispering Falls, talk introducing iNaturalist, fungi in Abel Tasman National Park, weed information on banana passionfruit.

Nelson Botanical Society Newsletter August 2020 Upcoming trips and talks. Trip report for Rowe Covenant, AGM summary and President's report, talk on the Turkish Silk Road, weed information on sycamore.

Canterbury Botanical Society Newsletter July 2020 Upcoming trips and talks. *Solanum aviculare* for sale.

Canterbury Botanical Society Newsletter August 2020 Upcoming trips and talks. Talk report on wetlands of Quebec. Trip reports for fieldtrips to Mears Bush Covenant, Matawai Park and Silverstream Reserve.

Canterbury Botanical Society Newsletter September 2020 Upcoming trips and talks. Trip report for Te

Tihi-o-Kahukura / Castle Rock

Botanical Society of Otago Newsletter 90, June 2020 Upcoming trips and talks. Notes by the Chair, Secretary, Treasurer and Editor. Articles on patterns of epiphytic bryophytes and lichen in beech forests, identifying NZ fungi, conserving biodiversity as well as species, sexy car lichens, trip report for Invercargill, talk report on the New Caledonia flora and talk on the John Child Bryophyte Workshop.

The New Zealand Native Orchid Journal 158, August 2020 Chair's report, *Thelymitra imberbis*, editor's list of New Zealand orchids, *Thelymitra* forms, AGM minutes.