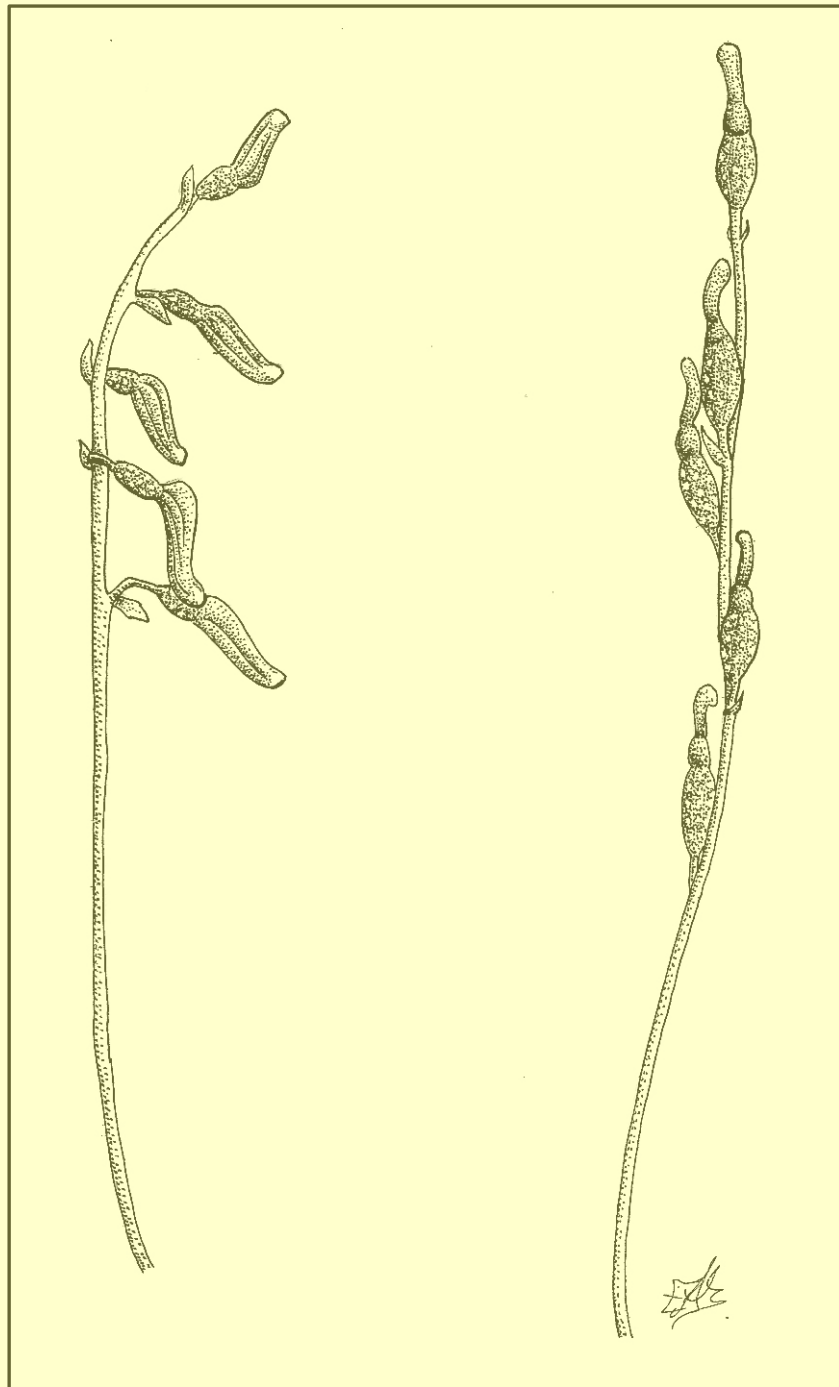


NEW ZEALAND BOTANICAL SOCIETY

NEWSLETTER

NUMBER 127

March 2017



New Zealand Botanical Society

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Secretary/Treasurer: Ewen Cameron
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Subscriptions

The 2017 ordinary and institutional subscriptions are \$25 (reduced to \$18 if paid by the due date on the subscription invoice). The 2017 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 28 February each year for that calendar year. Existing subscribers are sent an invoice with the December *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 2017 issue is 25 May 2017.

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

Send email contributions to editor@nzbotanicalsociety.org.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

Gastrodia minor by Eleanor Burton

NEW ZEALAND BOTANICAL SOCIETY
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NUMBER 127 March 2017

ISSN 0112-6865 (Print) 2230-3502 (Online)

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New Zealand Botanical Society News

■ **Call for Nominations for Allan Mere Award 2017**

Nominations meeting the following conditions are invited for the award of the Allan Mere for the year 2017.

Conditions of the Allan Mere Award

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.

The Award shall be administered by the New Zealand Botanical Society.

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 be signed by nominator and seconder, and accompanied by supporting information that must not exceed one A4 page.

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.

If, in the opinion of the Committee, no suitable nomination is received in any particular year, the Committee may refrain from making an award.

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.

The recipient shall receive an appropriately inscribed certificate.

Nominations should be forwarded by 30 June 2017 to:

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

■ **Call for suggestions for Loder Cup nomination 2017**

The NZBS is one of the named groups able to nominate people for the Loder Cup – New Zealand's premier conservation award. The Loder Cup is entrusted to the Minister of Conservation who appoints the Loder Cup committee and awards the Cup. The Department of Conservation handles the administration of the award and any other matters. The Cup is awarded annually to the person, group of people, or organisation, which has exceeded all other nominees in furthering the aims and objects of the donor of the Cup.

Suggestions for consideration by the Committee for the Society's nomination should be forwarded to the undersigned by 5 May 2017.

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

Regional Botanical Society News

■ Auckland Botanical Society

Christmas picnic/field trip, North Head DOC Headquarters

From the summit of North Head the beauty of Auckland and the Waitemata Harbour could be seen laid out before us in the early summer sunshine, with the restored villas of Devonport nestling among the flowering pohutukawa trees. First a guided tour of the threatened plant garden showed that Cook's scurvy grass (*Lepidium oleraceum*) thrives when snails are controlled, and *Sonchus kirkii* and *Picris burbidgeae* enjoy a good feed of blood and bone. A barbeque and pot-luck meal followed, then a walk along the path encircling the headland. This highlighted the difficulty of controlling weeds in one of the weediest cities in the world, a matter of importance with Rangitoto only a mynah's flight away.

Anniversary Weekend camp

This camp was based at a holiday park at Kerikeri, as the group of 35 needing accommodation was too large for the DOC hut at Puketi Forest. With the addition of three local members plus two local leaders, it was a large group that participated in an exciting "northern experience". Our American members, Carol and CJ Ralph, in New Zealand for their annual summer sojourn, were our hosts on Moturoa Island on the first day. Their organisation of transport, bush walks and a barbeque dinner was first class. On day two Dan O'Halloran led us first down the glorious Onekura Track in Puketi Forest, then into the Native Forest Restoration Trust's Puketi/Mokau Reserve adjacent to the forest. On day three we drove over the paddocks of Ian Wilson's farm to the neighbouring Waihoanga Track in Puketi. Ian amazed us by his account of the work being done in the forest by a private trust, which in ten years has trapped 57,500 pests. This track proved to be another wondrous experience of northern botany.

February Field Trip

With the planned trip to Motutapu Island postponed due to lack of a ferry service, our leader substituted a day trip to some of the many reserves on the steep slopes of the Hillsborough coastline. Climbing up and down the many well-maintained steps in the heat and humidity of an Auckland summer tested our stamina. As with most urban forests, weeds and plantings played their part, but there was enough interesting coastal forest to engage our interest, with the minute *Leptinella tenella* taking the prize for the day.

Forthcoming Activities

1 March	AGM/"Stevie Noe, "Nectar yield in Manuka"
18 March	Awhitu
26-31 March	Autumn camp, Tongariro National Park
5 April	Holly Cox "Bio-control"
22 April	North Piha-Whites Beach

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

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Secretary: Vijay Soma

aucklandbotanicalsociety@gmail.com

■ Rotorua Botanical Society

December - Mamaku

The intended trip was hastily re-planned because access couldn't be obtained. Instead, the Capella Block near Galaxy Rd (off SH6), on a gently rolling part of the plateau, was visited. The day was overcast and punctuated by frequent light showers but the valiant group plodded on. The area is a maze of logging tracks and old tramways and has been logged several times, perhaps the last in the 1970's and the best areas planted in pines.

Initially we followed a forest track through monoao and manuka clearings. Highlights included *Coprosma tayloriae*, here near its northern limit, pokaka, and wetland plants such as *Nertera*

scapanioides, *Gleichenia dicarpa* and *Drosera binata*. We then headed off track under the misguidance of a GPS. We soon entered kamahi/tawari forest, at first through *Astelia grandis* on an apparently typical transition from natural frost clearing to forest. The forest had been logged of its podocarps long ago but was showing good regeneration. The understorey was quite sparse but varied, containing wide variety of shrubs including *Alseuosmia macrophylla*, *Raukaua anomalus* and a range of ferns. Highlights included *Corybas cheesemanii* in fruit and *C. acuminatus* still in flower and uncommonly abundant *Hymenophyllum scabrum*.

After lunch, on a re-planned route we headed around then across a broad grassy browntop-dominated clearing into red beech forest. Here we circumnavigated the clearing just inside the forest margin to an old logging road. Red silver and hard beech were present although there was some debate about which were hard beech. There were few new species apart from *Coprosma rotundifolia* and *Lindsaea trichomanoides*. In places our route took us back through kamahi/tawari forest. At one point a tall knoll was explored with little reward apart from recording *Gaultheria antipoda*.

On meeting a tramway we headed northwards along it to explore an old storage pond, heavily covered in *Eleocharis acuta* and further on, a bare area, perhaps an old quarry. En route orchids were quite common among kiokio overhanging the track. One plant of *Caladenia chlorostyla* was noted, still in flower. At the bare area we were rewarded with three lycopods - *Lycopodium deuterodensum*, *L. scariosum* and *L. volubile* as well as *Lindsea linearis*. There was also young grey willow, silver birch, Spanish heath, radiata pine and *Pinus strobus*, all in an area perhaps 50 m across.

Our return was another exercise in GPS navigation but we finally arrived on the correct forest track and were rewarded with our vehicles parked at its entrance.

FUTURE EVENTS

March 5	Otawa Forest Sanctuary Kauri
March 18	Mt Tarawera
April 2	Pakahi Track
April 8	Whakamarama wetlands
May 7	Motuoapa Peninsula walk
June 11	Maungaongaonga Scenic Reserve

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

■ Nelson Botanical Society

November Field Trip: Kill Devil Track, Upper Takaka

Nine members headed up the Kill Devil track from Uruwhenua Road. The first part of the track is a mix of mature bush including *Fuscospora solandri*, *Podocarpus totara* var. *totara*, *Fuchsia excorticata*, *Leptospermum scoparium*, *Kunzea ericoides*, *Schefflera digitata* along with *Rubus fruticosus*, *Ulex europaeus* and *Cytisus scoparius*. Then as the track began to ascend we were amongst *Cyathea dealbata*, *C. medullaris*, *Dicksonia squarrosa*, *Blechnum novae-zelandiae*, *B. procerum*, *B. vulcanicum* and *Paesia scaberula*. As the track opened out we began to look in earnest for *Calochilus paludosus* and *C. robertsonii* being rewarded with a lone, beautiful *C. paludosus* in flower - this was a much-photographed specimen! We also found numerous *Thelymitra pauciflora*, *T. longifolia* and *T. nervosa* in the early stages of flowering on the clay banks. *Caladenia chlorostyla* and *C. lyallii* were also flowering. The track zig-zagged and gained altitude and a second *Calochilus paludosus* was found. Then the bush began to vary with *Pseudopanax crassifolius*, *Raukaua simplex*, *Dracophyllum urvilleanum*, *D. filifolium*, *Sticherus cunninghamii*, *Hymenophyllum rufescens*, *Lycopodiella cernua*, *Earina autumnalis*, *E. mucronata*, *Pterostylis* aff. *montana*, *Weinmannia racemosa*, *Quintinia serrata* in flower and even *Drosera spatulata* and *D. auriculata*.



Calochilus paludosus
photo by Susan Cook

December Camp: Mangarakau, 9–11 December

Day 1: 9 December

A group of 14 set off along one of the tracks at Mangarakau and soon found a cluster of *Corybas orbiculatus* on a roadside bank. In a trackside area, we found *Thelymitra pulchella* buds almost ready to open. In similar open terrain, we found *T. formosa* also with unopened buds and on another bank we found a lone *Celmisia* "Pupu" a local endemic. We came to a damp area and were pleased to find *Drosera binata* and *Lobelia fatiscens*. Among the larger trees growing in the swamp margins were several *Pittosporum tenuifolium*, *Melicactus lanceolatus* and a possible hybrid between it and *M. ramiflorus*. *Phyllocladus trichomanoides* provided some interesting discussion as it is one of several predominantly North Island taxa which occur in North-West Nelson. Similar distribution is shown by *Blechnum fraseri*, *Epacris pauciflora*, *Astelia trinervia*, *Alseuosmia macrophylla* and *Dicksonia lanata* – all of which we saw during the weekend.

Day 2: 10 December

We walked along Cowin Road towards the Paturau River mouth and were impressed by the lushness of the bush with large pukatea, kahikatea and northern rata supporting lofty gardens of *Astelia hastata*, festoons of kiekie, supplejack, *Metrosideros colensoi*, *M. diffusa*, *M. perforata*, *M. fulgens* and a host of ferns including *Microsorium scandens* and *Blechnum filiforme*. The species that wowed us most were the perching orchids. We were confident that both *Earina mucronata* and *E. aestivalis* were present. *Corybas oblongus* in full flower was spotted under hard beech forest. We perchanced upon a limestone outcrop where we noted a few of the special calcicoles, including *Pseudopanax macintyreii*. The other calcicoles we saw were *Hoheria ovata*, *Brachyglottis hectorii*, *Rubus schmidelioides* var. "strawberry", *Hebe stenophylla* subsp. *hesperia* and amazingly, the newly published – *Asplenium lepidotum*. Later we walked out onto the peninsula at the south end of Westhaven Inlet. Orchids on the track were mainly *Thelymitra pauciflora*, but also *T. formosa*. Dense young rimu lined the track, but so also was *Dracophyllum urvilleanum*. A few botanical gems were spotted including *Korthalsella salicornioides* on kanuka, a few shrubs of *Ileostylus micranthus* hiding in the *Coprosma propinqua*, as well as a few coastal *Metrosideros umbellata*. The slow ascent was punctuated by other species - the notable ones being *Alseuosmia macrophylla*, *Cardiomanes reniforme*, *Blechnum fraseri* and *Tmesipteris tannensis*.

Day 3: 11 December

We left our cars near the Anatori River mouth to botanise along the coast. Across sand dunes we noted *Coprosma areolata* and large clumps of *Phormium tenax*. Dropping to the beach we started finding our first coastal species with *Colobanthus muelleri*, *Calystegia soldanella*, *Lobelia anceps* and *Ficinia spiralis*. *Tetragonia implexicoma* was flowering and the coastal form of *Leucopogon fraseri*. *Coprosma acerosa*, *Myoporum laetum*, a distinct variety of *C. rhamnoides* and *Metrosideros perforata* were flattened by the wind. We took shelter up a creek and discovered *Ranunculus acaulis* in flower. Here we also found *Apium* "slender", *Leptinella dioica* ssp. *dioica* and *Asplenium obtusatum*. *Isolepis prolifera* was growing in the water and further up the slope the very rare *Libertia peregrinans*. *Hebe elliptica* was growing on craggy areas above the shore together with *Gunnera arenaria* and *Blechnum blechnoides*. *Sonchus kirkii* was present and *Senecio lautus* and *Disphyma australe* ssp. *australe* were in flower. Afterwards we found *Epilobium komarovianum*, *Myosotis pygmaea* and *Plantago raoulii*. On an exposed headland the turf included *Chaerophyllum "minutiflorum"*, *Leptinella calcarea*, *Mazus radicans*, *Scleranthus brockiei*, *Pimelea carnosae*, and *Wahlenbergia congesta*. The diminutive grasses *Agrostis muscosa*, *Poa pusilla* and *Zoysia minima* were also present.

December Field Trip: Mount Arthur

Ten Botsoccers meet at Flora car park for the walk up to Mt. Arthur Hut. The "waterfall bend" gave us a chance to revise our knowledge of *Olearia lacunosa* and *Ourisia macrophylla* ssp. *lactea*. We saw *Chiloglottis cornuta* in flower and *Adenochilus gracilis* and *Archeria traversii* which from a glance resembles tea tree. The *Dracophyllum traversii* did not appear healthy with many dead branches and tired looking leaves. An area of *Libocedrus bidwillii* gave us an opportunity to find *Hymenophyllum malingii*. *Hebes* were common beside the track and some such as *H. albicans*, *H. macrantha* and *H. masoniae* were identified by leaf shape. Above the tree-line we came into *Celmisia spectabilis*, *C. traversii*, *C. monroi* and *C. dallii*, along with *C. incana*. Adjacent to the *Traversia baccharoides*, *Hebe* bushes sheltered *Pterostylis oliveri* and the small *P. humilis* and over the rock face, *P. tanypoda*. We saw the variable *Caladenia lyallii*, patches of *Myosotis drucei* and the nationally critical *Montia drucei* perched in full flower in crevices in the rocks.



Hebe societatis photo by D Pittham

January Field Trip, Mount Murchison

Eighteen of us drove in 4WD vehicles up Mt Murchison. We soon found *Coprosma fowerakeri* and *Euphrasia townsonii*. *Hebes* were discussed, but with ten species recorded on our list we need help from a member familiar with the species to show us *Hebe societatis*. We soon found it, but only one plant was seen in flower. This species is named after the Nelson Botanical Society as it was first found in February 2000 on a society trip and has only been found on Mt Murchison. Ericaceous shrubs were a challenge with *Acrothamnus colensoi*, *Androstoma empetrifolia*, and *Montigena dealbata* all being found. *Dracophyllum prunum* and *D. rosmarinifolium* showed the usual incredible variation in colour and habit. The variation in *Celmisia lateralis* was also studied; *C. lateralis* var. *villosa* has leaves clad with hairs on both surfaces and *Celmisia lateralis* var. *lateralis* is less hairy. We managed to add *Caladenia lyallii* and *Euphrasia townsonii* to the species list and enjoy a day on the mountain top.

FUTURE EVENTS

March 19	Moa Park
April 7 - 10	Pre-Easter camp at Totaranui
April 23	Picton
May 21	Upper Moutere remnants

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■ Botanical Society of Otago

FUTURE EVENTS

8 March Talk: Breaking down decomposition. Speaker: Barbara Anderson

Chairman: David Lyttle djlyttle@ihug.co.nz www.otago.ac.nz/botany/bsoc/

Secretary: Allison Knight, P O Box 6214, Dunedin North. bsoc@otago.ac.nz

■ Other Botanical Society Contacts

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NOTES AND REPORTS

■ A Māori plant-name from Lord Howe Island

Rhys Gardner, rhysgardner@hotmail.com

In the on-line site "Endangered Languages and Cultures" Australian linguist-blogger Jim Smith (2016) has examined a nearly forgotten Lord Howe Island plant-name with an unusual, New Zealand ancestry. The name is "kilmogue", and derives, everything indicates, from the Maori word *kirimoko*. At first I thought *kirimoko* was one of the few names to have been omitted from the admirable compilation of Beever (1991). But it is there, at the end of the entry for *Leptospermum scoparium*, as "outer bark *kiri amoko*". Williams' dictionary (1971: 119) continues the chain of reasoning, indicating that *kirimoko* not only has the primary meaning of "skin" but is also a tree-name in the Southern Maori dialect.

Further identification of *kirimoko* as pertaining to manuka (*L. scoparium*) in the far south of the South Island is to be found in Orsman's dictionary (1997: 411; Appendix 1 below).

The name, written "kilmogue" by Lord Howe Island's early settlers and botanist-visitors, was applied to the native bottlebrush *Melaleuca howeana* (*Leptospermum* is absent from the island). Gradually, from about the middle of last century (as documented in Smith's blog) it fell into disuse, being replaced by "tea-tree". In the botanical works of the 1980s (Rodd and Pickard 1983; Green 1994) it is wrongly attributed to another of the island's small trees, *Cassinia tenuifolia* (Asteraceae).

Smith pointed out that although Lord Howe was unknown to the ancient Polynesians the first settlers there in the 1830s did include some New Zealand Maori women, who would readily have seen the affinity between manuka and a flaky-barked melaleuca. However, he continued, this group had left the island in 1841 and might not have been there when the next settlers arrived. So it is possible that it was a subsequent group of visitors from New Zealand, whalers perhaps, who brought the name with them.

In southern New Zealand the name seems to have survived just as a topographical one: inland from Blueskin Bay near Dunedin there is a "Kilmog Hill" and an "Kilmog Creek", and near Oreti Beach at Invercargill there is a "Kilmock Bush" (e.g., Dollimore 1962; Otago Daily Times 2008).

Acknowledgements

I am grateful to indefatigable explorer of Pacific byways Robin Hide (Australian National University) for passing on Jim Smith's discovery.

References

- Beever, J. (1991) *A dictionary of Maori plant names*. 2nd edn. Auckland Bot. Soc. Bulletin no. 20.
Dollimore, E. S. (1962) *The New Zealand guide*. H. Wise & Co., Dunedin.
Orsman, H. (1997) *The Dictionary of New Zealand English: a dictionary of New Zealandisms on historical principles*, Oxford University Press, Auckland.

Otago Daily Times (2008) Anyone for a cup of kilmog? <https://www.odt.co.nz/opinion/anyone-cup-kilmog/> (accessed 1 February 2017).

[Smith, J.] <http://www.paradisec.org.au/blog/2016/08/polynesian-plant-names-used-on-lord-howe-island/> (accessed 29 September 2016)

Williams, H. W. 1971: *A Dictionary of the Maori language*. 7th edn. Government Printer, Wellington.

Appendix 1

Orsman (1997: 411):

kirimoko. s South Island. Also in south SI (with Ma./r/ being represented by //, and often /k/ being represented by /g/, and final vowel unvoiced) kilimoko, Killmogue, Kilmog.

[omitted material]

1892 Osborn in RICHARDS *Foveaux Whaling Yarns* (1995) 42 The eleven miles through Killmogue swamp [some miles from the Bluff] was only a narrow footpath made by the natives... The leaves of this bush, or Killmogue, makes [sic] excellent tea, and both the whites and natives use it for that purpose. The bush is about ten feet in height and the brush part is very fine.

c. 1920 BEATTIE *Trad. Lifeways Southern Maori* (1994) 191 The kilimoko or kirimoko, a kind of small manuka, comes out in white flowers and later in berries.

1995 *Dominion* (Wellington) 21 Aug. 1 [He] had crossed the centre line while driving over the Kilmog hill [20 km north of Dunedin].

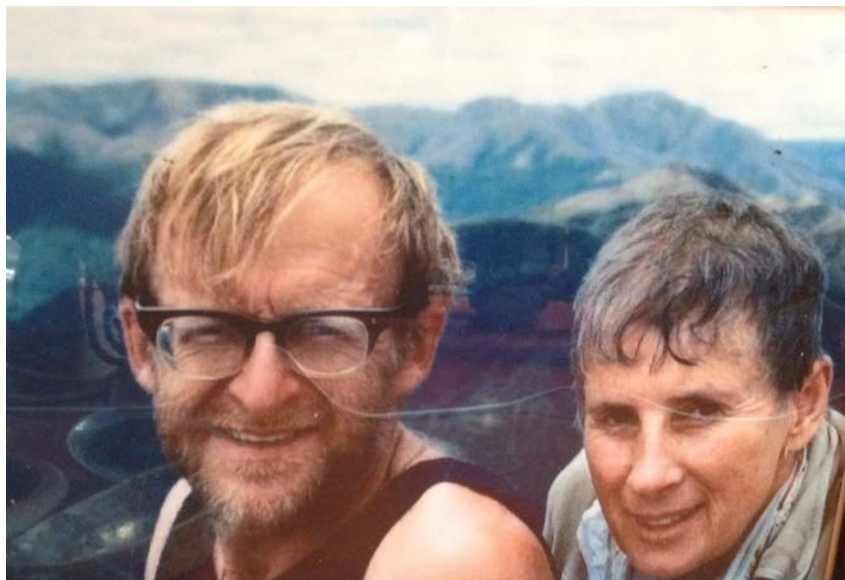
■ Obituary - Barbara Jean Mitcalfe née Fougère 25 November 1928 – 7 January 2017

Bachelor of Arts in French, 1951, Victoria University College. Wellington Teachers Training College, 1947 - 1948.

Chris Horne (jchorne@clear.net.nz); the **Mitcalfe whanau**; **Lara Shepherd**, President, Wellington Botanical Society

Barbara was born in New Brighton, Christchurch. With a well-reputed Chatham Island naturalist great-grandfather, and farmer grandfather (both named James Johnny Fougère), it could be said that Barbara's love for New Zealand ecology, and her indefatigable work ethic, were in her blood.

A celebration of Barbara's remarkable life was held on 15 January 2017, at Tapu Te Ranga Marae, Island Bay, Wellington. This was fitting. Barbara had been asked in the late 1980s by kaumatua, Bruce Stewart, to assist with the Manawa Karioi Society's (MKS) revegetation project around Tapu Te Ranga. From 1989 to 1991, Barbara, and her partner, Chris Horne, had helped to tend seedlings in the MKS nursery, cut narrow tracks across the gorse-covered hillsides, and to plant seedlings in small clearings near the tracks. People



Chris Horne and Barbara Mitcalfe

attending Barbara's celebration could admire, through the windows of the whare kai, the results of years of work by MKS volunteers since then – mostly native vegetation, with little gorse remaining.

The eventual goal of Manawa Karioi and other kindred organisations is for a stretch of native bush, "holding hands", all the way from Wellington's South Coast to the Tararua Range. Barbara's advocacy

for the restoration of Wellington's indigenous ecosystems, using her botanical knowledge, and her practical involvement, are evident right across this region, as well as in the city itself.

Barbara had an irrepressible love of the backcountry, for its native flora and fauna, its adventures and, later, for the companionship with her partner it brought. They met on a Wellington Botanical Society field trip in 1981, on the Red Hills, Marlborough.

At college and at university, Barbara was a keen tramper. Her five children and many grandchildren are also lovers of the outdoors, and have been heard to comment that Barbara was hard to keep up with, and that she will be a hard act to follow.

In the North Island, Barbara's botanical tramps included a traverse of Raukumara Range, from Waiorongomai Valley near Ruatoria, via Te Kahika and Motu valleys, to Toatoa. Other traverses included two in Te Urewera; a crossing of the Kaimanawa Mountains and Kaweka Range; two in Tongariro National Park; Mt Egmont National Park, from York Rd to Mangorei Rd; and three traverses in each of the Ruahine, Tararua and Rimutaka ranges.

In the South Island, her botanical tramps included Picton - Mt Robertson – Whites Bay; Nelson Lakes National Park (NLNP): Travers Valley – Arnst River – Six Mile Creek; Molesworth Station to NLNP: Lake Tennyson – Waiau Valley – Lake Thompson – D'Urville River – Lake Rotoroa outlet; Kahurangi National Park: (1) Cobb Valley – Adelaide Tarn – Aorere Valley; (2) Murchison / Lake Matiri – Thousand Acre Plateau – Larrikins Creek - Mokihinui Valley – Seddonville; (3) Mt Arthur Range from Wangapeka Track to Moran Tarns; Mt White Station – Minchin Saddle – Turnbull Ck – Taramakau River– Harper Pass – Hurunui Valley – Windy Point. With former colleagues from WN Polytechnic – the 'PolyPlodders' group: (1) ascent of Mt Tapuae-o-enuku (2885 m); (2) Queen Charlotte Track; (3) Travers & Sabine valleys – Lake Angelus – Robert Ridge.

For thirty-four years, together, Barbara and Chris enjoyed hundreds of Wellington Botanical Society field trips and meetings. They botanised numerous Wellington-region bush areas, sharing their interest in native plants and indigenous ecosystems. After many tramps into the city's rugged south-west hinterland, Barbara and Chris presented the paper *Some Indigenous Plant Communities on the Wellington Southwest Peninsula* to the Department of Conservation (DOC), in 1992. They co-wrote many submissions on environmental topics to influence decision-makers, and prepared over 200 lists of native and adventive plants. Many of the plant species lists compiled by Barbara and her partner were included in *Bibliography of plant checklists and vegetation survey data for Wellington Conservancy (excluding Chatham Islands)*, DOC, 2001.

Since 2011, they have written sixty-five articles on native plants for the Tararua Tramping Club's monthly newsletter, *The Tararua Trumper*. For the club's bush-craft courses, Barbara and Chris provided lectures and field sessions about native plants and on the Environmental Care Code.

Forever a dedicated student of the natural world, Barbara, despite lacking formal qualifications in botany, became known for her expertise as a field botanist specialising in native plant ecology. Barbara was President of the Wellington Botanical Society from August 1989 to April 1991, including the society's Jubilee year (1989). She was then Vice-President 1992 to 1994; Committee Member and Submissions Coordinator in the 1990s; and field trip co-leader at least twice a year for these last 20 years. Barbara instigated the Wellington Botanical Society Jubilee Award, which funds botanical research with grants of approximately \$2,500 p.a. to recipients from, amongst others, Victoria University's School of Biological Sciences.

Barbara was also a member and driving force within numerous other conservation and environment groups. In 1989, Barbara, with Angela Sears, founded the Wellington Polytechnic Environment Group. Barbara was a foundation member of Karori Sanctuary / Zealandia and was awarded her 20-year Volunteer Badge in 2015. Her last work there was in November 2016, setting mouse-traps on Mouse-Line A. Barbara's work at the Sanctuary was diverse, including track cutting and pest control in the 1990s; capture of weka and little-spotted kiwi on Kāpiti for release in the valley; recapture of escaped weka(!); northern rātā trials; and guiding botanical walks. To encourage botanical awareness rather than too narrow a zoological focus for Zealandia, Wellington Botanical Society funded a Botanical Trail there. True to form, Barbara's personal contribution was the compiling of plant descriptions, a

glossary of plant names, and some ecological notes for this trail. Barbara received an Outstanding Volunteer Award at the Sanctuary's inaugural awards ceremony in 2001.

Barbara and her partner received a 2001 Conservation Week Award "For inspirational commitment to the protection and restoration of the natural environment".

There were many particularly special areas for Barbara's focus – Otari-Wilton's Bush; Long Gully Bush Reserve; Te Mārua Bush; Mākara Foreshore Reserve to name a very few. Barbara led botanical walks for Otari-Wilton's Bush for many years. During their Open Days when native plants were offered to the public for sale, Barbara was available in her Otari uniform, complete with Wellington Botanical Society T-shirt and name tag, to offer advice on which plants were most suitable.

Long Gully Bush is a 55-hectare block of regenerating native forest, and adventive shrublands, protected in perpetuity by a QEII National Trust Open Space Covenant. Barbara was a foundation Trustee (c. 1998) of the Wellington Natural Heritage Trust¹, which owns and manages Long Gully Bush. The trust also manages approximately 50 hectares of contiguous private land, adjacent to and west of Karori Sanctuary. Barbara was co-compiler of the first plant list for Long Gully Bush, and contributed to the management plan for the site.

Te Mārua Bush, in Upper Hutt, is a regionally rare mataī - tōtara - black maire terrace forest. After leading difficult negotiations to save this site from proposed State Highway 2 expansion in the 1980s, Barbara has spearheaded Wellington Botanical Society's liaison with Greater Wellington Regional Council (GWRC) and Upper Hutt Forest & Bird (F&B) to foster the continued restoration of this forest. Since 1989, there have been two joint workbees annually, and these were often led by Barbara.

Barbara advocated, on behalf of Wellington Botanical Society, for the cessation of quarrying on Wellington's south coast (*Evening Post* 29.5.1991), and for the planting of northern rātā, rather than pōhutukawa in Wellington (*The Dominion Post* 26.12.2016).

Barbara was an excellent author. Amongst other works, she compiled *NZ Native Plants Recommended for Restoration and / or Amenity Purposes in Wellington Regional Parks* (2002) for Wellington Regional Council, and reports for DOC's Protected Natural Areas Programme. She appeared before the Environment Court, on behalf of Wellington Botanical Society, in the successful attempt to save Larsen Crescent Bush, Redwood, from clearance for subdivision. In 1999 Barbara provided botanical advice for the compilation of the *Wellington Regional Native Plant Guide*, of which 20,000 copies were sold. She was involved in the preparation of DOC's publication *Native plants for streamsides in Wellington Conservancy*, and wrote the leaflet *Six reasons why not to plant pōhutukawa in Wellington*. Barbara also provided various contributions to the Wellington Botanical Society Bulletin².

After Barbara's retirement from Wellington Polytechnic, she was offered a range of botanical contracting work, often in partnership with Chris. Examples of her field work include:

Department of Conservation. 1994-1999: helping to establish c. thirty-five 20 m x 20 m permanent plots in the Tararua Range and in coastal forest from Waikanae to Colonial Knob, Porirua. **1992:** Listing plant species in aviaries at Pūkaha / Mt Bruce. **1996:** Listing plant species in Crichton's / Richards' forests, Otaki Forks. c **1997:** Monitoring predation of *Powelliphanta* snails in Makahika Reserve, Ohau Valley, near Levin. **1997/1998:** Listing native and pest plant species in coastal vegetation in Cape Turakirae Scientific Reserve & Parangarahu (Pencarrow) Lakes, **2000:** Monitoring

¹ The Wellington Natural Heritage Trust has set up the Barbara Mitcalfe Memorial Fund to enable acquisition and protection of natural areas in Wellington. The account number is 06 0541 0155208 00. If donors would like a receipt for a tax refund, they can send their contact details to Colin Ryder (rydercj@xtra.co.nz).

² Barbara's co-authored articles for the Wellington Botanical Society Bulletin include Mākara Foreshore Reserve (Nos. 48, 49, 54); nīkau in Wellington city (No. 54); plus on non-local indigenous vascular plants in Wellington (No. 53).

northern rātā, Waiohine Valley, Tararua Range. **2004:** Recording locations of the orchid, *Drymoanthus flavus*, and the iris, *Libertia edgariae*, in East Harbour Regional Park.

Greater Wellington Regional Council. 1998: Listing native plant species on cliff faces at Baring Head / Orua Pouanui. **2001:** Listing native and adventive plant species in Queen Elizabeth (QE) Park. **2002-03:** First botanical survey of Wainuiomata & Upper Orongorongo catchments, 16 plant lists prepared. **2002:** Fruit-fall plots, East Harbour Regional Park. **2003:** Monitoring seedling plots in Pakuratahi Forest. **2003 & 2004:** Listing native plant species in QE Park. **2003:** Listing native plant species in wetlands, Akatarawa Forest. **2003:** Listing native plant species on Mt Climie ridge. **2004:** Monitoring exclosure plots in QE Park.

Hutt City Council. 1996: Botanical surveys of private native forests, being Significant Natural Resource Areas in HCC's Proposed District Plan. This resulted in *The Mitcalfe Report on the Ecological Significance of Seven, Selected, Privately-owned Sites in the Hutt City Area of Jurisdiction*. Barbara prepared evidence on behalf of the Minister of Conservation.

Wellington City Council. 1990s: Leader and co-leader of "Feeling Great" recreation programme walks, including titiwai / glow-worm walks in Otari-Wilton's Bush and in Wellington Botanic Garden. **1999:** Co-compiler of report on the natural, historical and recreational values of Brian Kilmister's former farm on Wellington's Outer Green Belt; and for the upper Karori Stream tributary parallel to Mākara Rd. **2003:** Co-collector of kōwhai seed from Long Gully Station coastal forest. **2003:** Co-compiler of report on the native and adventive vegetation of Tapu Te Ranga Island, Island Bay, Wellington.

Mākara Foreshore Reserve. 1997: Co-compiler of *Botanical survey of Mākara Foreshore Reserve, Owhariu Bay, Mākara*. Since **1998**, co-designer of the text and selector of images for the information display, co-writer of the text for a leaflet, co-reporter on problems with fencing and litter in the reserve, and co-weeder and co-planter in it – her last visit weeding was 20.12.2016.

EnergyDirect Corporation Ltd. 1994: Co-compiler of a list of native plant species on the raised marine terrace portion of Baring Head / Orua Pouanui.

Friends of Wellington Botanic Garden. 2003: Co-compiler of *A Botanical Survey of the Indigenous Forest Remnants in Wellington Botanic Garden, Glenmore Street, Wellington*.

Fauna Recovery NZ – Sue Freitag & Barry Dent Charitable Trust. 2013: Co-compiler of plants lists on Pūangiangi Island, Marlborough Sounds.

Winstone Aggregates. 2013, Western Hutt hills. Co-compiler of a report on a botanical survey.

Voluntary and unpaid botanical work continued throughout Barbara's life. In recent years, she revegetated road reserves, provided advice to other revegetation projects and was involved in establishing and monitoring riparian planting trials on the banks of the Hutt River. Barbara advocated for the five native forest areas in Wellington Botanic Gardens (WBG) to be given more publicity and interpretation, and for work to prevent encroachments by neighbours, weeds and exotic plantings into these heritage forest areas. She discovered seedlings of black maire in WBG, near the sole remaining adult tree and arranged for Garden staff to grow these on in the nursery, for later planting in the Garden's native forest areas. Barbara was involved with the Wellington Plant Conservation Network (WPCN), which was the forerunner of the NZ Plant Conservation Network.

Barbara was a keen guardian of Nga Rengarenga³, her treasured QEII Open Space Covenant, protecting 0.06 ha of regenerating native forest in Boundary Rd, Kelburn. She was an environmentalist to the end. She specified in her will that her remains "... be enclosed in a cardboard container and cremated ...". Barbara's wishes were granted. Without any embalming required, Chris

³ Donations have been received in Barbara's memory, towards the maintenance of her "Nga Rengarenga" covenant in Kelburn. Thank you. If you wish to make a donation, it can be made to M A Mitcalfe, at The Co-operative Bank: 02-1242-0866223-031.

and Barbara's whanau were able to be her personal undertakers and funeral directors, showing her respect for the environment to the end⁴.

Barbara was a passionate educator, and a dedicated advocate for the environment. Even as initiator of the first Māori pre-school in 1959⁵, a primary-school teacher in the 1970s, a teacher of Communications and Māori pre-employment and Women's re-training at Wellington Polytechnic, Barbara brought the environment, particularly the plant world, to the fore of her students' minds. Barbara was also an advocate for the use of and correct pronunciation of Te Reo. She included a column of Māori names in her plant lists, in addition to the botanical and common names.

As a member of Wellington Botanical Society she will be remembered for her botanical enthusiasm and knowledge, and her willingness to share this knowledge with others. Her energetic capacity to inspire enthusiasm in others was a gift. She was indeed a 'mighty tōtara', but as Wellington Botanical Society member Mick Parsons says, "To the plant conservationists and botanists among us, she will not be the mighty tōtara that fell; she was a great chunk of the forest, and especially the bits that few would notice. Those of us who focus on those little bits will always have her in our thoughts as we fossick about on our knees, adoring the plants she so loved. We won't be allowed to forget her."

Rewi Elliot, President, NZPCN, and Acting Manager, Wellington Botanic Garden, wrote: "Barbara has been an inspirational person for me, her passion for plants and her expressiveness about her passion I have always admired". Sheelagh Leary, a long-standing member of Wellington Botanical Society, wrote: "She offered everyone challenges and support for nearly every aspect of our natural world, its importance to the future of the world in fact. I'm thinking about her humour, strength, for making us think ... so many wonderful things in a wonderful person." Barbara's neighbours, Sarah Stevenson and Phil Gurnsay wrote: "Barbara was an amazing and inspirational lady, her passion for the bush at the back of our properties was effervescent." Haami Piripi wrote: "Barbara was a wise and humble person who deserves accolades for the contribution she made to New Zealand society across a range of genre. She is the first Pākehā woman I met who I put up there with my own whaea and kuia." Di Buchan wrote: "Barbara was a great woman – full of integrity and so selfless in the way she shared her knowledge with others to repair our damaged environment." James Fraser wrote: "Barbara is my gardening guru." James has felled a pōhutukawa in his garden, and replaced it with a northern rātā.

▪ **Discovery of the New Zealand endemic fern *Hypolepis ambigua* (Pig-fern) growing wild in Scotland.**

Angus Hannah (BSBI recorder vice-county 100, Clyde Isles) butesedge@yahoo.co.uk

Last winter I came upon an unfamiliar large fern in an area of conifer forestry on my home island of Bute, in the west of Scotland (Figs 1 and 2). The colony occupied an area of blow-down in the plantation (Fig 3). At its nucleus there were fronds over 2m in height, and it extended for about 25m. I had dismissed it momentarily as bracken, until I remembered that it was March, and there was only dead litter of bracken. What could it be? I took some photos and a specimen pinna home with me (Fig 4), and half an hour on the internet convinced me that the genus was *Hypolepis*, but I had no idea of the species. Only one *Hypolepis* had previously been found growing 'wild' in the British Isles, and that was *H. millefolium*, recorded in Buckingham Palace gardens! Web images suggested that my plant could not be the low-growing *millefolium*.

I sent a frond to Fred Rumsey, fern authority at the British Museum. Tim Pyner, the British expert on *Hypolepis*, kindly spent a day in the BM herbarium checking my specimen, and concluded

⁴ The plywood-based, casket-shaped cardboard coffins are viewable here <http://www.cardboardcasket.co/index.html>

⁵ The free book about this is available here <http://www.teaheritage.co.nz/store.htm>

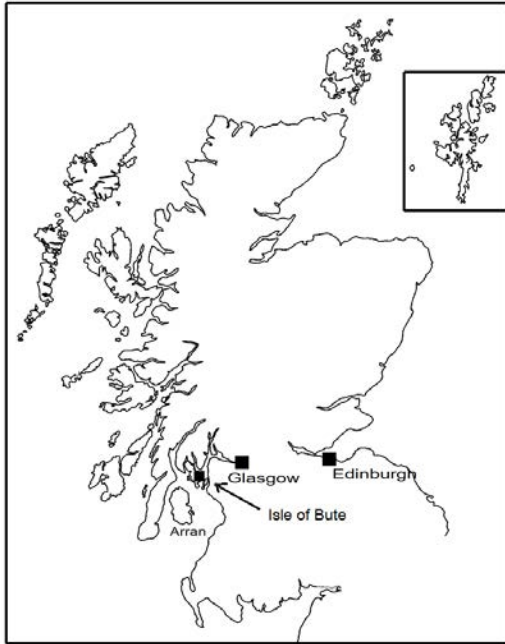
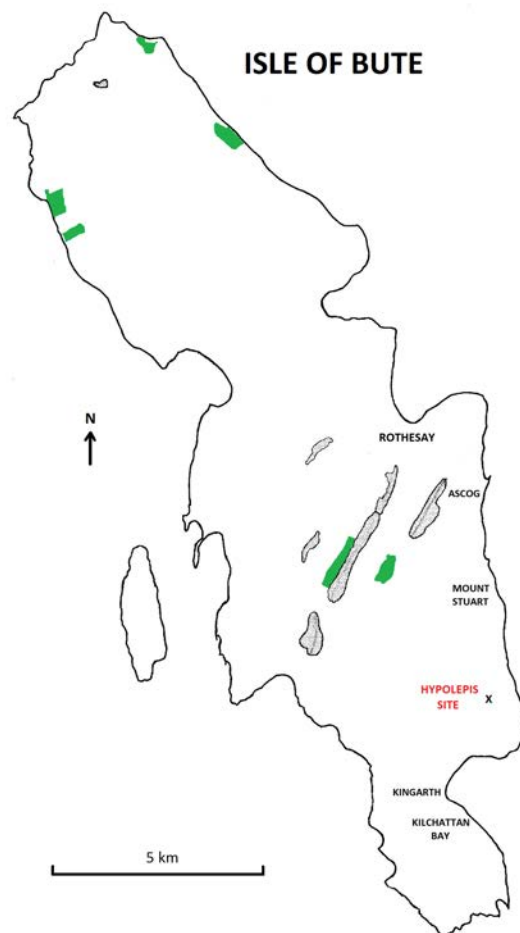


Fig 1 Location of the Isle of Bute

could not have reached its current size very rapidly, and must have been present before the clear-felling of the Sitka spruce three years ago, though this operation probably spread it further around the site. Before this it must have survived mainly as rhizomes for 30 years under the blanket shade of the trees. These had swiftly succeeded an earlier generation of conifers planted in the 1920s, and it seems likely that when these were felled and cleared in the 1970s, a similar spreading of rhizome fragments would have taken place. The original Achamor plantation, dating from around 1800, was mixed broad-leaf (sycamore, beech, oak etc.) along with some spruce, pine and larch. This was felled and cleared during WW1, when timber was in short supply, and for a few years the ground would have lain open, bare and disturbed, an ideal site for germinating any spores that happened along. It is not improbable that *Hypolepis* spores might have been around then, as the war led to gardens being less well cared for, and a 'weedy' fern imported accidentally with other material during the earlier Victorian fern craze (when every garden had to have a collection of ferns) might have had an opportunity to sporulate. Achamor is within a mile of Rothesay, and any town garden could have been the source. In any case, Pig-fern clearly found Achamor very much to its liking.

Fig 2, right, Location of *Hypolepis ambigua* the Isle of Bute



provisionally that it was the New Zealand endemic *H. ambigua* (as redefined by Brownsey & Chinnock, 1984). The following month I was able to study the *Hypolepis* collection in the herbarium of the Royal Botanic Garden Edinburgh, and see similar specimens formerly labelled *tenuifolia* and re-determined by Brownsey as *ambigua*, helping to confirm Tim's determination.

Earlier this winter I was recording near Rothesay (the only town on Bute), in an area of recently felled and replanted Sitka spruce, when some clumps of green fern among the brash drew my attention. On inspection these proved to be *Hypolepis ambigua*, and on looking up I could see that the colony extended uphill to the horizon. On climbing the hill I saw beyond it another hillside, also bright green with the fern. In all, this colony occupies about 20 hectares in Achamor plantation and must contain tens of thousands of plants.

As there is no evidence that Pig-fern was ever grown on Bute, the origin of this huge colony is a puzzle. It



Fig 3 *Hypolepis ambigua* on the Isle of Bute

It is reasonable to postulate that my first colony was derived from Achamor, 6km distant, by wind-borne spores, and this is made more likely by my discovery of a few further plants and small colonies scattered in similar habitats in the intervening area. Some of these seem likely to be recent arrivals, and there is every reason to suppose that the fern will continue to spread. The mild moist climate and acidic soils are clearly favourable to it, while the regular disturbance resulting from harvesting spruce forestry ensures a supply of open ground for germination. I anticipate that within a generation it will have colonised widely in western Scotland. It may in some circumstances prove capable of out-competing bracken, over which it has the advantages of high fertility and winter-

green fronds. It also seems to tolerate higher levels of acidity and greater exposure: to what extent it will invade more mesotrophic and circumneutral sites remains to be seen.

Reference

Brownsey P.J. & Chinnock R.J. 1984. A taxonomic revision of the New Zealand species of *Hypolepis*, *New Zealand Journal of Botany* Vol.22 pp.43-80.



Fig 4, right, Frond underside of Bute *Hypolepis ambigua*

- **The Pteridophyte Phylogeny Group's recommendations in relation to ferns and lycophytes in the eFloraNZ**

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Introduction

In a series of papers, the Angiosperm Phylogeny Group (APG, 1998; APG II, 2003; APG III, 2009) recommended a higher-level taxonomic classification based on the latest understanding of relationships among flowering plants. This has been widely followed. It is a practical and authoritative classificatory-framework for the vast majority of us who do have the time or knowledge to make our own independent decisions about which orders and families of extant flowering plants to recognise.

Following the success of the Angiosperm Phylogeny Group, a Pteridophyte Phylogeny Group (PPG) has been instigated to cover extant lycophytes and ferns. Their first publication recently appeared, and, being an open access paper, it is available to all (PPG I, 2016).

Both of the authors of this current article contributed to PPG I (2016). However, we disagree with several of the recommendations of PPG I, and we currently plan to not implement these in our contributions to the electronic Flora of New Zealand (eFloraNZ). The eFloraNZ is freely available online and is intended to provide “easy access to the most authoritative, accurate, and up to date information on New Zealand plants” (“About” page of Breitwieser et al. 2017). Here, we outline our involvement in PPG I, and detail the discrepancies between PPG I and what we have done or are intending to do in eFloraNZ where it directly affects New Zealand species.

The Pteridophyte Phylogeny Group

The PPG I was organised by Eric Schuettpelz and Harald Schneider, with the former being the heroic chief ‘cat-herder’ of the 94 participants, who were spread around the globe. Polling was conducted to determine which higher groups (e.g., orders and families) should be recognised. Participants were then asked to volunteer for subcommittees that would resolve the genera to be recognised within each of these higher groups. We contributed to the subcommittees for Aspleniaceae and Dennstaedtiaceae. Subcommittees reported back to the broader group, but the broader group was not polled as to their agreement with the subcommittee.

It is worth noting from the Philosophy section of PPG I (2016, p. 565) that the aim was to “recognize only monophyletic lineages” and to “preserve existing taxa and circumscriptions that are widely accepted and consistent with our understanding of lycophyte and fern phylogeny”. We support these sentiments.

Discrepancies between PPG and eFloraNZ

The discrepancies between the recommendations of PPG I (2016) and what we have done or are intending to do with eFloraNZ concern *Blechnum*, *Botrychium*, *Lycopodiella*, *Lycopodium*, *Cyathea*, and *Trichomanes*. In each of these cases, PPG I (2016) split genera that were more-or-less monophyletic and arguably long-established into smaller monophyletic genera. One of us (PB) believes that such changes should only be made when there is very strong morphological or other evidence that also supports the concept of smaller genera. The other (LP) believes that, regardless of other evidence, this kind of change is generally unnecessary and contrary to taxonomic stability.

PPG I (2016) split *Lycopodiella* into four genera (three in New Zealand), *Lycopodium* into nine (four in New Zealand), *Botrychium* into four genera (two in New Zealand), *Trichomanes* into eight genera (three in New Zealand), *Cyathea* into three genera (two in New Zealand), and *Blechnum* into 18 genera (seven in New Zealand).

As PPG I (2016) itself noted, this disintegration of genera in ferns and lycophytes is against the prevailing trend of recognising larger genera in flowering plants. Several of the genera that PPG I (2016) segregated are comparatively small even at a global scale (e.g., *Lycopodiella* sensu lato with 54 species worldwide; *Lycopodium* sensu lato with 58; *Botrychium* sensu lato with 63). Many of the genera in PPG I (2016) that are not recognised by us are rather small, with 23 of them having 10 or fewer species, including eight monotypic genera. Conversely, some very large genera remained intact in PPG I (2016), such as *Asplenium* and *Selaginella* with some 700 species each, *Elaphoglossum* with 600, *Polystichum* with 500, and *Dryopteris* with 400.

We have already published eFloraNZ chapters for Cyatheaceae (including *Cyathea*; Brownsey & Perrie 2015a), Hymenophyllaceae (including *Trichomanes*; Brownsey & Perrie 2016), and Ophioglossaceae (including *Botrychium*; Brownsey & Perrie 2015b). We do not intend to update these in light of PPG I, with the chapters including *Cyathea* and *Trichomanes* already explaining our use of the broader generic concept in those instances. Chapters covering *Blechnum*, *Lycopodiella*, and *Lycopodium* are forthcoming, and our current intention is to use the broader generic concept for each of these.

It may seem contrary that we will not be following some of the recommendations of a paper to which we contributed. However, the paper itself notes that “disagreements exist even among the contributors” (PPG I, 2016, p. 565), which is no surprise given the large number of contributors. Moreover, and understandably, the proponents of the segregate genera were strongly represented on the relevant subcommittees. Even if we had participated in these subcommittees, it is likely our views would have been in the minority.

In the case of *Blechnum*, we had already made clear our view that the best way to address its non-monophyly was to subsume a few small genera like *Doodia* into *Blechnum* rather than segregate *Blechnum* into many genera, because of the many fewer name changes needed by the former option (Perrie et al. 2014). However, Gasper et al. (2016) implemented the segregation of *Blechnum*, with this requiring the creation of some 170 new names, but they provided no justification for why this was a better approach. Such taxonomic practice does little to counter the common complaint that taxonomists change names for no good reason. The four authors of Gasper et al. (2016) were all part of the seven-member subcommittee that addressed Blechnaceae, and it is accordingly their scheme promulgated by PPG I (2016).

For *Botrychium*, *Lycopodiella*, and *Lycopodium*, splitting them can produce morphologically recognisable segregates but many of these contain very few species. Our present judgement is that the benefits of these segregations are not sufficiently high to offset the ‘costs’ of the taxonomic changes.

In passing, because it is a change adopted by PPG I (2016) that may not be widely known in New Zealand, we will be following the recommendation to segregate *Parapolystichum* from an otherwise non-monophyletic *Lastreopsis*, once the necessary combinations are published for some Australasian members of the former.

Future

Because of its authoritative underpinnings, it is likely that PPG I (2016) will be widely adopted and followed. Unless PPG revises its opinions in future iterations, then the cases that we here regard as discrepancies will likely become established as the global norm. If so, then in time a reset of the fern and lycophyte classification used by eFloraNZ may be required.

We also acknowledge that our temporal reference point for judging taxonomic stability is arbitrary and subjective. The same accusations can be made against our criterion of minimising taxonomic change. Nevertheless, our contributions to eFloraNZ will be guided by trying to minimise change to the scientific names in use by the New Zealand botanical community while still having a classification that reflects evolutionary relationships. Of course, those wishing to embrace all or any taxonomic change are free to do so.

References

APG. 1998. An ordinal classification for the families of flowering plants. *Annals of the Missouri Botanical Garden* 85: 531-553.

APG II. 2003. An update of the Angiosperm Phylogeny Group classification for the orders and families of flowering plants: APG II. *Botanical Journal of the Linnean Society* 141: 399–436.

APG III. 2009. An update of the Angiosperm Phylogeny Group classification for the orders and families of flowering plants: APG III. *Botanical Journal of the Linnean Society* 161: 105-121

Breitwieser I, Brownsey PJ, Nelson WA, Wilton AD, eds. 2017. Flora of New Zealand Online. Accessed at www.nzflora.info, 28 January 2017.

Brownsey PJ, Perrie LR. 2015a. Cyatheaceae . In: Breitwieser I, Heenan PB, Wilton AD. *Flora of New Zealand - Ferns and Lycophytes*. Fascicle 13. Manaaki Whenua Press, Lincoln.

Brownsey PJ, Perrie LR. 2015b. Ophioglossaceae . In: Breitwieser I, Heenan PB, Wilton AD. *Flora of New Zealand - Ferns and Lycophytes*. Fascicle 14. Manaaki Whenua Press, Lincoln.

Brownsey PJ, Perrie LR. 2016. Hymenophyllaceae . In: Breitwieser I, Heenan PB, Wilton AD. *Flora of New Zealand - Ferns and Lycophytes*. Fascicle 15. Manaaki Whenua Press, Lincoln.

de Gasper AL, Dittrich VAO, Smith AR, Salino A. 2016. A classification for Blechnaceae (Polypodiales: Polypodiopsida): New genera, resurrected names, and combinations. *Phytotaxa* 275: 191-227.

Perrie LR, Wilson RK, Shepherd LD, Ohlsen DJ, Batty EL, Brownsey PJ, Bayly MJ. 2014. Molecular phylogenetics and generic taxonomy of Blechnaceae ferns. *Taxon* 63: 745-758.

PPG I. 2016. A community-derived classification for extant lycophytes and ferns. *Journal of Systematics and Evolution* 54: 563-603.

BIOGRAPHY / BIBLIOGRAPHY

■ Biographical Sketch – George Boris Rawlings (1906-1978)

Val Smith, 80 Mill Road, New Plymouth 4310.

George Boris Rawlings (usually known as Joe) was born in 1906 at Claverton Down on the outskirts of Bath in Somerset, England. He was the younger son of George Francis Rawlings, a "gentleman of independent means", and his wife Margaret Christine née Bumpus, a miller's daughter from Stowe, Buckinghamshire. They had married at Marylebone, London, on 20 August 1903, and in the register Francis Charles Rawlings, chemist, is noted as father of the groom. The Bumpus family is of French extraction, and the name still exists in the west of France. Joe's very early years in the Somerset countryside gave him a lifelong appreciation of the natural world; friends and visitors in his later life recall him showing them photographs of himself as a baby in a pram and as a toddler in Bath, but nothing more about his childhood and family. He lived in the present and looked forward to the future, rather than dwell on the past.

In 1926 Joe Rawlings arrived in New Zealand. He enrolled at the Auckland School of Forestry and in 1933 graduated from Canterbury College with a degree in forestry. After a stint of goldmining during the depression years, he was appointed entomologist/pathologist to the State Forest Service in 1938. During World War Two, forestry companies of the New Zealand Engineers contributed to the allied war effort. After three months' basic military training, 645 men arrived in England in June 1940, a week after the evacuation of Dunkirk. The 14th company, with Sapper G J Rawlings, was sent to Grittleton and Savernake forest in Wiltshire and engaged in tree felling, mill construction – and poaching! From July 1943 until August 1944, they served in Algeria and Italy. Rawlings was then assigned to study forest entomology in the United States and Canada for six or seven months before



Notogrammitis rawlingsii. Photo by
Jeremy Rolfe

returning home. In 1947 he was relocated to the newly established Forest Research Institute at Rotorua, where staff handled collections and data sent from field staff throughout New Zealand. The early emphasis was on monitoring insect populations and fungal problems in exotic forests, and a wood wasp outbreak in the late 1940s and looper caterpillar infestation in 1951 led Rawlings to push for national forestry surveillance. Although his work was specialised, his scientific interests embraced many fields, and when he resigned in 1962 he turned to botany.

He moved to a scrubby 10-hectare block with a very basic house at Opito Bay, Kerikeri, and lived at one with nature - no electricity, running water or routine, except the dictates of the rising and setting sun. *Boletus rawlingsii*, a fungus he found there in 1966, was "named in honour of Mr G B Rawlings, who first collected the fungus, and whose field work on the introduced Boletaceae of this country amply deserves recognition". His retirement plan was to find every native and introduced plant species recorded in Northland. He had an affinity with plants; anything he was unsure of was sent to Botany Division DSIR for identification, and led to many new records for the region. A favourite story about Joe is that he realised before the "proper" botanists that more than one species of *Tmesipteris* existed. His pet name for *Tmesipteris elongata* was *T. moronicus* because it had a "dull" surface (moron/dull). He often joined botanists on their forays in the north, and although not everyone appreciated his leg pulling, his humour came to the fore when company or occasion warranted. He was with pteridologist Barbara Parris in the Waipoua Forest in 1970 when she saw a scruffy *Grammitis* fern in an unusual habitat. When later study confirmed it was a new species, she offered to name it after him if he collected a better specimen for her. Indicating that he would like to be remembered by something more attractive than a slimy fungus, he headed for Waipoua almost immediately!

Always ready to assist others, and to make his knowledge freely available, he was there again in early January 1974 to help John Woodhams from Kew locate and collect species he otherwise may have missed. A few weeks later Joe moved to Tokerau Beach on the Karikari Peninsula in the Far North, where friends cared for him in his final years. He died at his home on 28 April 1978.

Notogrammitis rawlingsii

Formerly *Grammitis rawlingsii*, *Notogrammitis rawlingsii* (Greek *noto* 'southern') is a species of strap fern characteristically associated with kauri (*Agathis australis*) forests or forest remnants, where it grows on mossy mounds (often the common milk moss *Leucobryum candidum*), on rotting logs, exposed roots or (rarely) as a low epiphyte. However, populations tend to be very localised and small, and prone to over-zealous collecting. The tufted habit with long, narrowly elliptic fronds, the winged and sparsely hairy stipe to the base, and the red-brown hairs encircling the green sori are diagnostic of the species.

References

- British Columbia Forest Service Newsletter. 1946 58: 5
<https://www.for.gov.bc.ca/> (accessed 27 November 2016).
- Bulman, L. History of Forest Surveillance in New Zealand: <http://www.nzfoa.org.nz/>
(accessed 25 November 2016).
- Bumpus Marriages: <http://www.armadale.org.uk/> (accessed 29 November 2016)
- Esler, A E 2006. An appreciation of Joe Rawlings (1909–1978). *Auckland Botanical Society Journal* 61: 128-129.
- George Boris Rawlings: <http://www.ukcensusonline.com/> (accessed 30 November 2016).
- Kershaw, D J 1989. History of Forest Health Surveillance in New Zealand:
<https://www.scionresearch.com/> (accessed 25 November 2016).
- McKelvey, P 2001. New Zealand Foresters at War: *New Zealand Journal of Forestry* 45(4): 34-39:
<http://www.nzjf.org/> (accessed 25 November 2016).
- Mcnabb, R F R 1968. The Boletaceae of New Zealand. *New Zealand Journal of Botany* 6(2) 171-172:
<http://www.tandfonline.com/> (accessed 4 December 2016).
- Parris, B S. Memories of finding *Grammitis rawlingsii*, and of Joe Rawlings, retired forest botanist:
(accessed online 23 November 2016).
- Parris, B S 2016. pers. comm.
- Sexton, A M 1978. Obituary: George Boris Rawlings, 1906-1978. *New Zealand Journal of Forestry* 23(2): 166-167 (accessed online 23 November 2016).

Woodham, J 1975. Some notes on an excursion to New Guinea and New Zealand. *The Journal of the Kew Guild - Events of 1974*, p.320. Royal Botanic Gardens Kew (accessed online 2 December 2016).

Young, M E 2016. pers. comm.

PUBLICATIONS

■ Publications Received

Auckland Botanical Society Journal 71 (2) December 2016 Lucy Cranwell lecture – ferns by Leon Perrie, trip reports – Karekare to Pararaha dune country, Waimakau reserves, Oratia Native Plant Nursery, Gittos Domain, Blockhouse Bay. Flora of Thomas Grace Scenic Reserve, Woodhill, *Arthropteris tenella* on One Tree Hill, oleander seeding down, tall weedy willowherbs, the scent of *Viola odorata*, obituary of Alan Esler.

New Zealand Native Orchid Journal 143 February 2017 The type locality: *Corybas oblongus*, *Corybas dienemus*, *Caladenia* aff. *atrochila*.

Canterbury Botanical Society Newsletter Jan/Feb 2017 Upcoming meetings and trips, talk report for flowers of the Caucasus, trip report for Goodwin reserve, Banks Peninsula.

Canterbury Botanical Society Newsletter March 2017 Upcoming meetings and trips, talk report for Danseys Pass summer camp, 2017 Canterbury Botanical Society student grant awarded to Yuriy Malakhov, Canterbury Museum Exhibition: the NZ tree project.