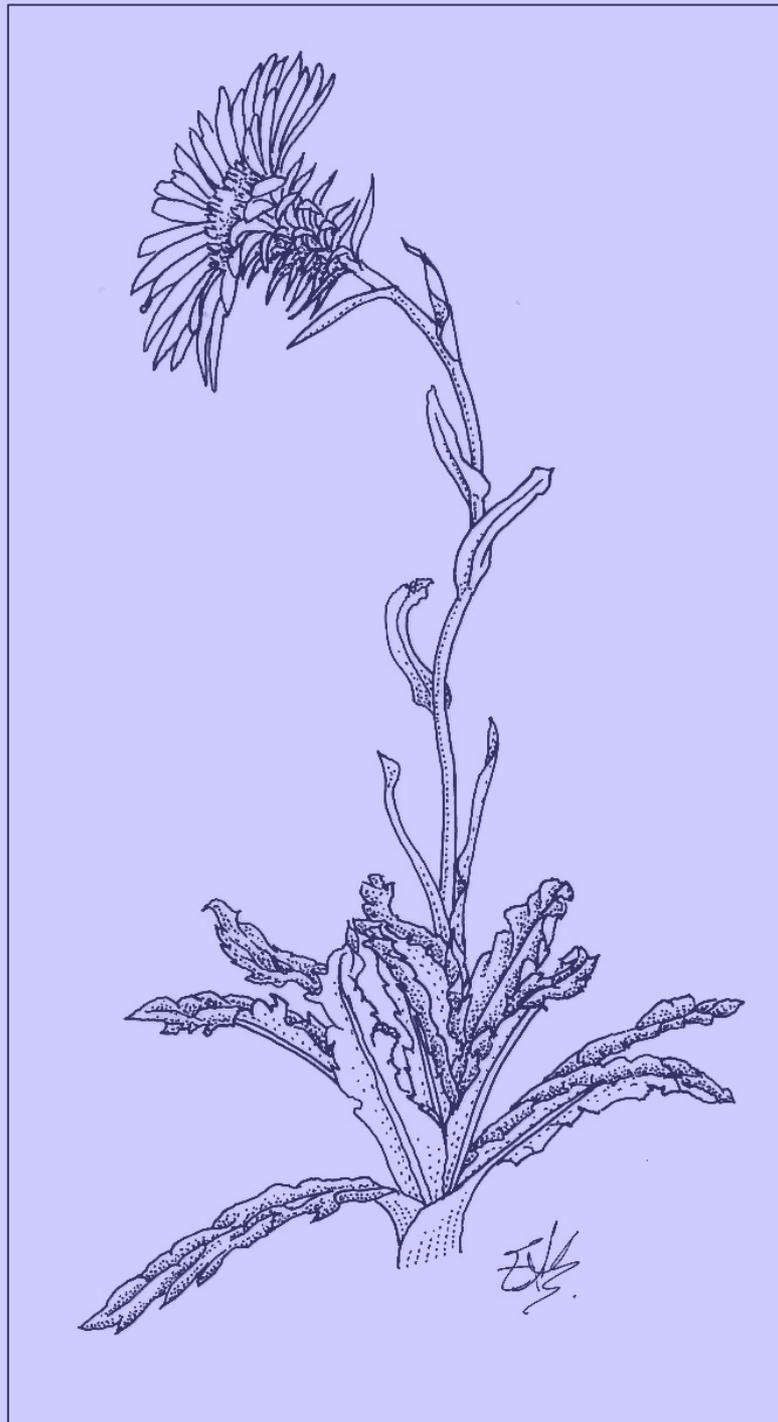


NEW ZEALAND BOTANICAL SOCIETY

NEWSLETTER

NUMBER 134

December 2018



New Zealand Botanical Society

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

Address: c/- Canterbury Museum
Rolleston Avenue
CHRISTCHURCH 8013
Webmaster: Murray Dawson
URL: www.nzbotanicalsociety.org.nz

Subscriptions

The 2018 ordinary and institutional subscriptions are \$25 (reduced to \$18 if paid by the due date on the subscription invoice). The 2018 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 March 2019 issue is 25 February 2019.

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

Celmisa prorepens by Eleanor Burton.

NEW ZEALAND BOTANICAL SOCIETY
NEWSLETTER
NUMBER 134 December 2018

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

CONTENTS

New Zealand Botanical Society News

From the President: Results of Postal Ballot.....	2
President's speech at presentation of Alln Mere 2018 to Dr Ilse Breitweiser, Manaaki Whenua Landcare Research, Lincoln, 19 September 2018.....	3
Allan Mere Award - reply	5

Regional Botanical Society News

Auckland Botanical Society	6
Rotorua Botanical Society	7
Whanganui Museum Botanical Group.....	8
Wellington Botanical Society	8
Nelson Botanical Society.....	9
Other Botanical Societies	12

Notes and Reports

B. E. V. Parham (1902-87), botanist, agriculturalist, and administrator.....	12
Eastwoodhill herbarium donated to Auckland Museum (AK)	15

Biography/Bibliography

Biographical Sketch – Rachel Chisholm (1915-2017).....	16
--	----

Publications

Publications received.....	18
----------------------------	----

NEWS

New Zealand Botanical Society News

■ From the President: Results of Postal Ballot

Anthony Wright, President, New Zealand Botanical Society

As outlined in the Newsletter 133, September 2018, a Postal Ballot was held to change the Rules to allow the Society to maintain its registration. 59 voting papers were received by the due date of Friday 5 October 2018.

The first resolution, that the Society's Rules be amended by the replacement of sections 2, 9 and 10 was carried unanimously, obviously greater than the required two-thirds majority to change the Rules. The second resolution, that the 2017 Annual Financial Statements be adopted was also carried unanimously, also greater than the required simple majority to decide the matter. The Rules, as amended, have therefore been filed with the Registrar of Incorporated Societies, and the financial statements have been filed online.

In the course of the ballot, Barbara Hammonds, a member of the Society, drew our attention to two issues as follows.

'Quorum', found in clauses 9 (b) and 10 (a) of the new amended rules, needs to be defined, as it is not defined anywhere else.

In the original Rules, a quorum at any General Meeting was defined as 15 financial members. It was an oversight that this was not carried forward into the amended Rules, and applied to all the methods of decision-making.

Barbara also pointed out that the original Rule 9 (b) had disappeared without a trace. This also was unintentional. It read as:

9 (b) A special Postal Ballot shall be called by the Secretary within 3 months after the receipt by the Secretary of a request in writing signed by at least 15 financial members requesting the calling of a Special Postal Ballot.

The Committee proposes that this be re-inserted into the Rules, with the slight change to allow the new range of 'meetings'.

The Committee has agreed that a further ballot be called to further amend the Rules to provide for quorums for the various types of 'meetings' now possible.

Therefore the committee will be recommending the following further amendments to the Rules marked in bold:

9 General Meetings and Ballots

- (b) General Meetings (including an Annual General Meeting) may be held by a quorum **of 15 financial** members:
 - (i) being assembled together at the time and place appointment for the meeting;
or
 - (ii) Participating in the meeting by means of audio, audio and visual, or electronic communication; or
 - (iii) By a combination of both of the methods described in paragraph 9 (b) (i) and 9(b) (ii)
- (c) **A Special General Meeting or Ballot of the Society shall be called by the Secretary within 3 months after receipt by the Secretary of a request in writing**

signed by at least 15 financial members requesting the calling of a Special General Meeting or Ballot.

Note that the Rules require a two-thirds majority to vote in favour to effect changes to the Rules.

The Committee proposes to seek the membership's agreement to the above amendments by way of email ballot.

Please forward your email address to Holly Benson at hbenson@canterburymuseum.com by 24 December 2018. If you do not forward your email address to Holly, you will not be included in the ballot email which will be sent on 21 January 2019.

If you do not have an email address and wish to vote by another means please arrange this by writing to the Secretary, New Zealand Botanical Society, c/- Canterbury Museum, Rolleston Avenue, Christchurch 8013 by 24 December 2018.

Members will have until 5pm on 4 February 2019 to cast their vote on the proposed Rule change. The results of the Email Ballot will be notified in Newsletter 135, March 2019.

▪ **President's speech at presentation of Allan Mere 2018 to Dr Ilse Breitwieser, Manaaki Whenua Landcare Research, Lincoln, 19 September 2018**

Tena koutou, tena koutou, tena koutou katoa
Nga mihi nui ki a koutou
Tihei mauriora!

I'm delighted to be here today to celebrate the achievements of Ilse Breitwieser and make the 2018 presentation of the Allan Mere.

To give a little background to the award, the Allan Mere was donated by Dr Lucy Moore in 1982 to commemorate the 100th anniversary of the birth of Harry Howard Barton Allan, first Director of Botany Division, DSIR, and author of Volume 1 of the *Flora of New Zealand*. The Allan Mere is awarded annually by the New Zealand Botanical Society from nominations made by Regional Botanical Societies or individual members to persons who have made outstanding contributions to botany in New Zealand. The Mere is housed here at the Allan Herbarium at Manaaki Whenua. More about that in a few minutes.

The New Zealand Botanical Society Committee has voted to award the Allan Mere for 2018 to Ilse Breitwieser, and it is my pleasure to present this award to Ilse today.

The nomination was made by Drs Patrick Brownsey and Wendy Nelson and supported by the Canterbury, Otago, Wellington and Auckland Botanical Societies. Further support came from individuals at the Ministry for Primary Industries, the New Zealand Plant Conservation Network,



Te Papa and the Department of Conservation. In a first, letters of support came from offshore: the Australian Academy of Science and the State Herbarium of South Australia. Added to that were personal letters of support from Colin Webb, Peter de Lange, David Penman, Leon Perrie, Heidi Meudt, Jeremy Rolfe, Jill Rapson, Phil Garnock-Jones, Peter Heenan and Carlos Lehnebach. Finally, your colleagues here at Manaaki Whenua Landcare Research – Ines Schönberger, Hamish Maule, Debby Redmond, Kerry Ford, Mary Korver, David Glenny, Sue Gibb, Allan Fife, Kate Boardman, Chris Morse, Rob Smissen, Aaron Wilton – signed a letter urging the award of the Mere to you.

So, Ilse, we can see that you've been well-and-truly nominated and seconded for this award!

One of the pleasures of the nomination and award process is learning so much more about botanical colleagues I thought I knew pretty well, and that has certainly been the case with Ilse, who joined the Manaaki Whenua team in 1995 as an emerging researcher in the Plant Systematics Programme. In those days, she made her mark as a leader for the future with her ability to advance science and support staff.

Ilse has provided outstanding stewardship of plant systematics in New Zealand over the past decade and a half, and has provided exceptional leadership, professional guidance and scientific vision, for both Manaaki Whenua and partner agencies.

As Science Leader at Manaaki Whenua, she was responsible for determining research priorities, maintaining partnerships with other agencies and attracting funding. Whilst undertaking this extensive workload, she also maintained the services of the Allan Herbarium. As a manager, Ilse took the time to know her staff individually, and get to know their capabilities and harness these strengths for the smooth running of the team.

These last 10 or so years have also seen an extremely difficult period of static funding and a change in priorities for government funded science. It is to Ilse's credit that in a period of funding decline, she managed to maintain a functional herbarium, botanical expertise in most plant groups, a range of plant informatics services and a research programme, which continues to deliver exceptional outputs. Her main achievements in the area of plant systematics have been the Flora volumes – the *Grasses* in 2000 (updated in 2010), the *Seed Atlas* in 2001 (with a second volume in press), two volumes on *Lichens* in 2007, the first four volumes on *Liverworts and Hornworts* in 2008, and the *Flora of the Cook Islands* in 2016. Ilse regularly promoted these nationally and internationally, and along with the online publishing of the eFlora, a huge amount of information on some poorly documented plant groups has been made available.

Ilse has also been a long-term member of the NZ National Herbarium Network, where she has been a tireless and passionate advocate for funding of taxonomic collections, maintenance of systematic capabilities and research on priority plant groups, notably whilst participating in the Royal Society's Expert Panel on *National Taxonomic Collections in New Zealand*.

Often, these stewardship roles can be invisible to the wider population, and Ilse's strength and passion to keep staff, resources and projects going over these difficult years has resulted in outstanding plant systematics gains and has successfully halted the decline in this important area of science.

Normally at this point in the proceedings, I need to let the recipient know that it was one of Lucy Moore's rules that the Mere be kept safe at the Allan Herbarium, and only "let out" for the presentation ceremony. So I'll leave it to the herbarium staff and Ilse to negotiate the "safe return" period! But Ilse, you do get to keep a fine calligraphed certificate marking the award, as well as a bound copy of your nominators' and seconders' letters.

Before making the presentation, I'd like to read out the formal citation entered into the Allan Mere Book of Record:

Ilse Breitwieser

Ilse is a plant taxonomist and systematist of high standing. Over the past thirteen years she has made an outstanding contribution as science leader of the National Land Biota Systematics Portfolio. Ilse's drive and dedication has maintained a functional Allan Herbarium,

botanical expertise in most plant groups, a range of plant informatics services and an exceptional research programme resulting in several Flora volumes and 56 family treatments towards the eFlora launched in 2011.

2018

Congratulations Ilse on your dedication to botany and the significant achievements you've made. I have great pleasure in presenting you with the Allan Mere.

Anthony Wright, President, New Zealand Botanical Society

■ **Allan Mere Award - Reply**

Ilse Breitwieser, Manaaki Whenua Landcare Research, Lincoln.

Thank you! I was very surprised when Anthony rang me and told me that I am this year's Allan Mere recipient and I am very touched by this award. I would like to thank you, my botanical community, for it from the bottom of my heart. Thank you!

Henry Connor used to say that Eric Godley was the "Father of New Zealand post-War botany" and that New Zealand botany is really like a big family, and that Eric was certainly the patriarch of this family. I promised Eric and then later Henry that I would do what I can to keep at least the Allan Herbarium part of the botanical family together. I am very proud that I have had the opportunity to be part of this family, and receiving the Allan Mere connects me even more with the previous recipients of the Allan Mere, with Eric and Henry and so many more of you wonderful New Zealand botanists.

I came to Manaaki Whenua in 1995 to work on everlasting daisies, but my main duty turned out to be the leadership of the plant systematics programme, then from 1999 also the Allan Herbarium, from 2005 the Outcome Based Investment (OBI) Defining New Zealand Land Biota, followed by the Backbone contract, and until last year the Characterising Land Biota (CLB) portfolio. Although it was not always easy, overall I did enjoy my various leadership roles. I believe I had many opportunities here I could not have had anywhere else. It is of course fantastic to live in a country with such an interesting flora. Working with you, my Allan Herbarium colleagues, has been such an honour. I believe I could not have had a better group to work with anywhere else. Thank you all for your friendship, for your support and for being such a good team.

I would also like to thank our Te Papa botanists. Pat Brownsey and I decided in 1994 to put our two research programmes together – and by doing that, competition developed into the most fantastic collaboration across those two organisations. I would like to thank Pat particularly. Some of you might remember that our GM, David Penman, had a heart attack while we were developing the Outcome Based Investment bids. This meant that I was suddenly on my own with the Defining New Zealand Land Biota bid. Pat helped me tremendously to pull it together and to turn it into a successful bid.

Also, Pat, Wendy Nelson from NIWA and I collaborated over many years towards better recognition of systematics in New Zealand. This work, for example, contributed to the development of the Backbone contracts, and then later to the Royal Society Report on our New Zealand taxonomic collections and this year to the Decadal Plan for taxonomy and biosystematics in Australia and New Zealand.

During OBI days and while leading CLB portfolio, I had fantastic support from the Research Office, Aaron McGlinchy in OBI days and Kate Boardman for CLB, and Daile Hendry helped me through a lot of financial worries. Thank you! And there was of course the CLB Research Leadership Group with Peter Buchanan, Peter Johnston, Peter Heenan, Aaron Wilton, Jerry Cooper, Thomas Buckley, Sue Scheele, and Kate Boardman. A big thank you for working with me, for helping me think, for replying to countless requests, and for being patient with me! I would also like to thank the Advisory Group for CLB, who insisted that they wanted to continue working with me even when the OBIs and other Advisory Groups dissolved. David Penman, who lobbied so much for systematics while being General Manager at Manaaki Whenua – Landcare Research, and was for more than a decade the chair of this

Advisory Group, continued lobbying for systematics, was for me a great mentor and gave me a lot of support. I would also like to acknowledge the other two general managers I had the opportunity to work with: the late Dave Choquenot and Justine Daw.

During all these years, I continued with my research on New Zealand's everlasting daisies. I could not have done that without Kerry Ford's, Rob Smissen's and Steve Wagstaff's collaboration, or without Dave Purcell's magic skills in growing the craspedias in our glasshouses, nor without Jo Ward's support. Jo supervised my PhD in the late 80ies and continues collaborating with us.

I would also like to thank the wider botanical community in New Zealand and Australia. So many of the collaborations, may they have been on daisies, Council of Heads of Australasian Herbaria, New Zealand National Herbarium Network, New Zealand Plant Radiation Network, botanising together or just discussing plants, have led to life long friendships.

Last not least, I would like to thank my husband Rainer Vogt. Rainer, who never complained about the many evenings and Sunday afternoons I worked, who accepted that we had to cancel long planned holidays because of work issues, who was always there when I needed to let steam off, who enjoyed the work parties we had at our home, and who does a lot of fieldwork with me and usually spots the plants I am looking for faster than I do. Thank you, without your love, help and tolerance, I could not have done all this....and actually would never have moved to New Zealand in the first place.

Regional Botanical Society News

■ Auckland Botanical Society

September Meeting – Lucy Cranwell Lecture

Willie Shaw, Director and Principal Ecologist at Wildlands, delivered the 34th Lucy Cranwell Lecture. He pointed out that there is increasing understanding of and concern for the loss of indigenous biodiversity in New Zealand, and a desire to ramp up indigenous revegetation. While this can be achieved with small-scale planting, large-scale work can be challenging and costly, with substantial risks, some of which he illustrated.

September Field Trip

Craigavon Park, Blockhouse Bay, is an Auckland Council Reserve covering 11.8 ha. Botanists and entomologists joined together to walk the many paths and bush tracks, recording the plants and insects in this area of gumland scrub, pine and black wattle woods and stream margins.

October Meeting

Plant of the Month illustrated a few *Caladenia* orchids from both Australia and New Zealand. Peter de Lange gave a very thought provoking talk on that most frustrating of subjects – *What's in a name? The politics of New Zealand plant systematics*. He deplored not only our loss of native biodiversity, but the loss of investment in taxonomists, and the competitive nature of applying for science funding. The resulting loss of collaboration leaves the ordinary person floundering when it comes to deciding which flora classification to follow and which names to use. Is there an objective pathway to follow? We would all be grateful if one was found.

October Meeting – Motutapu Camp

Motutapu Island, joined to Rangitoto by a causeway, was the site of this weekend camp. The Motutapu Outdoor Education Camp was a comfortable base from which to explore the island, which is largely under pasture, with planted areas and a few gullies of natural growth. With pest animals having been eliminated it has become a haven for several species of translocated birds, but weed species, such as moth plant, are a serious problem.

November Meeting

Plant of the Month illustrated some megaherbs from the Subantarctic Islands. Ian Horner from Plant & Food Research has specialized in soil diseases, with a focus on disease ecology and control. He gave a very well-presented talk about kauri dieback, covering the symptoms and biology of the disease, how it spreads, possibilities for control, and some of the research that is currently happening.

All members left with a much clearer idea of the problems we face, and the hope that injecting the effected trees with phosphite might save the day.

November Field Trip

Mangere's Watercare Walkway provided a somewhat different habitat to explore compared with our usual field trips. First it was down on hands and knees to spy the tiny turf plants on the edge of the holding pond. The minute *Limosella lineata* was flowering profusely. A taller plant, the introduced *Veronica anagallis-aquatica* was prettily in flower. Gumboots were needed in the adjacent wetland, with *Thyridia (Mimulus) repens*, in full flower, taking the prize for the day's treasure. The native *Azolla rubra* was of interest, as the introduced *A. pinnata* has displaced this floating fern north of the city. The landscape planting, covering large areas with ngaio, karo and taupata, showed the usual lack of imagination and knowledge by those responsible.

Forthcoming Activities

3 December	Christmas lunch and field trip at Schlaepfer Park, Pukekohe
February Field Trip	Awa awaroa Bay Eco Village, Waiheke
March Meeting	AGM, Rachel Nepia "The role and impact of honey bees in NZ indigenous submontane forest"
March Field Trip	Restoration sites, private land.
April Meeting	Pieter Pelser – <i>Senecio</i>
April Field Trip	Miranda saltmarsh

Auckland Botanical Society, PO Box 26391, Epsom, Auckland 1344
President: Ewen Cameron
Secretary: Stephanie Angove-Emery
aucklandbotanicalsociety@gmail.com

■ **Rotorua Botanical Society**

October Field Trip - Meremere Hill

After a stay overnight at Mike Butcher's place we headed out the Motu Road in light drizzle to be followed it turned out by a seventh member of the party - Hiriri. The rain then suspended performance till 4 pm as we headed home. We started near the foot of the Meremere Hill on the Motu side, up an easy spur from fenced but grazed reserve margin. Slow climb up the ridge through mainly tawa and kamahi forest with large old emergent rimu, miro, rewarewa and ancient stumps of large totara, probably cut for posts by settlers. The understorey was quite light with mahoe, tree ferns, *Coprosma rhamnoides* and hangehange. The ground cover was frequently mats of *Hymenophyllum demisum* or patches of crown fern. Of special note was lots of *Alseuosmia pusilla* in full flower, mostly cream flowered but one seen pinkish, some over 1 m tall - is it *A. pusilla*? In all, a good lot of ferns were recorded adding *H. scabrum* and *Loxogramme dictyoptera* to the area list. Several orchids were also added for the area including *Corybas acuminatus* and *C. trilobus* agg., which were both in flower.

We were down to the road for lunch nearby. Next stop was back at the saddle for a short trip up to see *Archeria traversii* resplendent in flower alongside *Dracophyllum latifolium* on a steep rocky area. Then after two brief roadside stops down hill to explore the roadsides (the banks too steep to access more) especially to see *Arthropodium cirrhatum* and hard beech we headed home.

November Field Trip - Woodlands Road Waihi

This was a combined field trip with Waikato Botanical Society with a good turnout, mainly from the Waikato. We were accompanied by the owner Colin Nash. The drizzly day restricted our options and perhaps shortened the trip.

Prior to 1928 the forest had been logged for kauri and rimu, and puriri and totara had been taken for posts. The area has only had stock fenced out since 2015 but was strikingly free from the usual weeds such as *Carex divulsa*, *Tradescantia fluminensis* and *Selaginella kraussiana*. Over the years goats had also been removed by the current owner and he is currently trapping possums and other pests.

The main canopy near the entrance on the upper slope was somewhat broken containing tawa, kohehohe, mahoe, hinau, pigeonwood and mapou along with regenerating puriri, miro and mango. Rimu, rewarewa and the odd northern rata were prominent emergents. On the fringes it was unusual to see a large mature milk tree. As a result of the openness, the edges of the area had dense swards of *Microlaena stipoides* and just a few new seedlings and saplings under the main forest. There was a good range of climbers and epiphytes. Of particular interest was a good population of *Metrosideros carminea* and one tree fern was covered by four species of climbing rata.

Further in, as the ridge descended into the creek, kauri had obviously been present and as there were the odd small kauri and patches of tanekaha and kanuka or manuka. Here *Alseuosmia macrophylla* and *Brachyglottis kirkii* formed a low shrub tier that was apparently a few years ahead of the fringe areas. Under the kauri *Pterostylis agathicola* was still in flower adding to the 14 orchids already seen. On many of the slopes there were extensive areas of tree ferns such mamaku, wheki and silver fern and patches of supplejack or kiekie. These damper areas supported a good variety of ferns including 10 species of filmy ferns. A deeply entrenched little creek wound its way at the foot of the slope. Here we found *Trichomanes elongatum* on its banks.

The area has a wide variety of species and several different vegetation types so, although it has only recently been protected, it has promise to be a very valuable area in the future.

FUTURE EVENTS

December 2	McLaren Falls
February 17	Arnolds Bush (Piarere)
March 2	Mamaku wetland
April 7	Athenree saltmarsh and wetland

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

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

■ Wellington Botanical Society

June fieldtrip – Island Bay

The Paekawakawa Reserve is characterised by regenerating, semi-coastal forest. Weed control and planting in the Reserve are continuing. Each year 500-600 native plants are planted. We added 85 species to the plant list compiled in 2009 with our morning of botanising. The Oku St Reserve comprises planted and regenerating coastal vegetation. Following arson on Oku Hill in the 1980s and local opposition to proposed development of the area, the area became a reserve and planting began in 2003 on the ridge crest to beat the karo (*Pittosporum crassifolium*) invasion. In some areas, trees are now up to 15 m tall. Highlights included seeing some large thick-leaved māhoe and several northern rātā (*Metrosideros robusta*) planted in partnership with Project Crimson.

July fieldtrip –Manawa Karioi

We traversed the main tracks in the northern part of the reserve and spent most of our time in two gullies where a range of restoration plantings have been concentrated. All species planted since the start have been locally eco-sourced. We were pleased to see the range of planted species that are

now freely regenerating, including tōtara, ngaio (very prolific and probably now the most significant forest canopy dominant), kōwhai, and many smaller broadleaved trees. We made several additions to the list, including six fern species.

July workbee – Te Mārua Bush

We planted some replacement trees, weeded, then cut 'light wells' in the fast-closing canopy of the young trees in our newer plantings. It is pleasing to see so many self-sown tōtara, mataī and kahikatea seedlings. Black maire seeds are not often germinating, and the adults will not produce fruit this year. Black maire that we planted into the first of the new plantings are now big and bushy, and have reached the top of their part of the canopy. Many of the *Veronica stricta*/koromiko and *Coprosma robusta*/karamu are reaching the end of their short but useful lives as shelter for slower-growing, longer-lived species.

August fieldtrip – 'Post Office Bush' Makara

The 135-ha covenant comprises the two small blocks named "Post Office Bush", which we botanised, either side of the former Post Office Radio Station village, plus a much larger block which we did not visit in the valley of Opau Stream to the west. The southern bush block had extensive kohekohe canopy and associated kohekohe seedlings, along with some interesting fungi and numerous lianes. Fungi included waxcaps, earthstar, coral, *Scytinopogon pallescens*, and *Gloiocephala xanthocephala*. On the northern block summit we saw a fine miro and stunted kohekohe. During the return we passed two substantial kahikatea that were visible from the Meridian building. We finally found the sought-after *Syzygium maire*/swamp maire in the north block not far from the road edge. We saw several substantial planted kauri from the road edges, and made about 25 additions to the 1998 BotSoc list.

September fieldtrip – Wainuiomata River West Branch

The Wainuiomata catchment contains one of the largest areas of un-logged lowland podocarp forest in the lower North Island. It is regarded as being nationally representative of this forest type. The Wainuiomata River West Branch is at the centre of this pre-european podocarp-broadleaf forest. On the valley floor are gigantic emergent rimu, northern rātā, miro and mataī, soaring above a canopy of kāmahī, hīnau, rewarewa, kahikatea, tawa and maire. We saw a huge diversity of shrubs, ferns, and lianes, plus some especially grand liverworts, mosses and fungi. We saw one individual of *Coprosma rubra*, a bushy, small-leaved, wide-angled shrub that is rare within the region. We also found the largest moss in the world, *Dawsonsia superba*, growing in dense colonies along the stream bank—it can grow to 60 cm tall. We had 181 species on the plant list before we began, and added five more species. The only downside of the day was seeing the widespread pig-rooting throughout the remnant forest; sometimes the churned-up areas were as far as the eye could see. Urgent action is needed to reduce the numbers of wild pigs in this area.

FUTURE EVENTS

25 January – 1 February Bannockburn, Central Otago

President: Jon Terry

Secretary: Lara Shepherd, lara.shepherd@tepapa.govt.nz <http://wellingtonbotsoc.org.nz/>

■ Nelson Botanical Society

Nelson Botanical Society

August Field Trip: Canaan Downs, with Dr Philip Simpson

A cold day saw 29 people meet by the Woolshed Cafe on the road to Canaan Downs then proceed to sites of interest. Stop 1 - At 'Tremolite Corner' where the main interest was the fern *Botrychium australe*, the only plant known of in this area. Stop 2 - At Canaan Saddle where Philip mentioned two unusual aspects of the Canaan Downs basin. Firstly, there are no watercourses flowing out of the basin; after heavy rain the area floods and water drains underground through the limestone.

Secondly, because of its low-lying nature relative to the surrounding landscape, a temperature inversion occurs. Cold air pools within the basin and as a result alpine species are to be found at a height that is below the treeline of the hills around the depression. Stop 3 - In an area described as 'pakihi forest' contained a number of delights: *Lepidothamnus intermedius*, *Pseudopanax crassifolius*, *Metrosideros umbellata*, *Leptecophylla juniperina*, *Leucopogon fasciculatus* and *Raukaua simplex*, *Lophozonia menziesii*, *Podocarpus laetus* and *Libocedrus bidwillii*. Stop 4 - A number of the beech trees had galls caused by the genus *Cyttaria* – the parasitic beech strawberry fungus. The park is home to all of the New Zealand *Cyttaria*: *C. nigra*, *C. pallida* and *C. gunnii*. Plants typically found in this cold place included: *Olearia virgata*, *Corokia cotoneaster*, *Aristotelia fruticosa*, *Coprosma dumosa* and an unnamed *Melicytus*. Growing on a rock stack was *Asplenium trichomanes*. Stop 5 - Beneath a decaying beech tree where the orchid *Gastrodia cunninghamii* had been observed, Philip emphasised the devastating effects that pigs have on plants in the park. Stop 6 - The *Dracophyllum elegantissimum* overhanging the creek were impressive. However, the most fascinating aspect of the area was the number of hybrids: *Olearia lacunosa* and *O. arborescens* with *O. arborescens* x *O. lacunosa*, *Raukaua simplex* and *R. anomala* with *Raukaua* x *parvus* and a patch of *Gaultheria depressa* x *G. macrostigma*. Stop 7 - Here a damp rock face was home to *Melicytus obovatus*, *Olearia lacunosa* and *Lycopodiella lateralis*.



Raukaua x *parvus* (photo by Chris Ecroyd).

August Evening Meeting: Nature's Rainbow – discovering New Zealand's butterflies by Brian Patrick

Brian specialises in the study of butterflies and moths. Every butterfly species has only one plant family on which it will lay its eggs, so that on hatching, the caterpillar may consume that plant. In New Zealand there are just six native plant genera eaten by the caterpillars of endemic butterflies: *Muehlenbeckia*, *Urtica* and *Carmichaelia*, *Chionochoa*, *Gahnia* and *Poa*. The endemic butterflies include: the red admiral *Vanessa gonerilla* on the mainland and *V. ida* on the Chatham Islands. Ten ringlet butterflies that are only found on the South Island, with six species of alpine black butterflies feeding on *Poa*. Three blue butterfly species occur in New Zealand. The common blue and long-tailed blues are blow-ins from Australia that have become established on introduced plants. The caterpillars of the long-tailed blue feed on gorse while those of the common blue feed on clover and other Fabaceae. Of all the endemic species, the commonest are the coppers. The various *Muehlenbeckia* species are the host plants for their larvae, the most favoured being *M. axillaris*, *M. complexa* and *M. australis*. Leaving gardens to contain wild areas and deliberately planting food sources, such as native nettle species, for butterfly caterpillars, as well as nectar sources, such as hebes and pimeleas, could help their survival as well as preserving key habitats.



Olearia arborescens x *O. lacunosa* (photo by Chris Ecroyd).

September field trip: Booth's Cottage, Howard Valley

Fifteen members proceeded to the Howard Valley camping area, where we climbed into 4WD vehicles, crossed the Louis Creek ford and navigated the track through the pine forest. The vegetation changed from bracken fern and low scrub to beech forest, recovering vigorously from clearance during the mining days. The forest has shown remarkable recovery and is dominated by red beech with some silver beech. Filmy ferns were common in places, with *Hymenophyllum bivalve*, *H. flabellatum*, *H. rarum*, *H. rufescens* and *H. villosum* all recorded. There were a number of divaricating shrubs, including *Coprosma colensoi*, *C. microcarpa*, *C. rhamnoides*, *C. dumosa* and *Myrsine divaricata*. Booth's Cottage was built by Sid Booth and Ray Clarke in 1933 during the Depression, when both were on the government Gold Prospecting Subsidy Scheme. There were a few garden plants lingering around the cottage, including daffodils and a mystery deciduous shrub, which keyed out to a *Deutzia* (see: keys.landcareresearch.co.nz/nzfloweringgenera/).

September evening meeting: Botany in Abel Tasman National Park, by Dr Philip Simpson

Philip highlighted the park's central New Zealand location, showing that all species can theoretically occur here – but don't. All beeches are present, as well as *Archeria traversii* of wet subalpine forest. On the other hand, cabbage trees are virtually absent, flaxes not common and tawa non-existent. Why? Philip explained the factors influencing the occurrence and distribution of plants. Granite dominates the landscape, producing acidic soils that limit plant distribution and size. We saw examples of desert-like conditions on granite domes then by contrast, various wetlands. A maritime climate and fertility afforded by seabirds enable *Streblus banksii* to flourish on islands, but it is rare on the mainland. Northern rātā is limited to a few coastal locations including islands. Temperature is important, with frost hollows of *Olearia virgata* on Canaan Downs being a good example. The park is 'a tough place to live' for many native plants and animals. A large number of species are 'hanging on' at single locations or even as single plants, such as *Myosotis venosa*, *Tupeia antarctica*, *Melicytus crassifolius* and *Lepidium banksii*. Philip's book is due out in November.

October field trip: Weedbusting at Wairoa Valley riparian forest remnant

This year we programmed our weeding a month later and this proved to be the best time as many of the new sprouts of old-man's beard and blackberry were well and truly up, obvious and most vulnerable to herbicide. As the sun hit the vines we had dispatched they began wilting at the tips and this proved to be a useful indicator, highlighting the non-wilting vines that we had missed. The fierce lancewoods and *Teucrium* were thriving, and we discovered that the climbing *Brachyglottis*

sciadophila had indeed started climbing, spotting a vine that was 6m high. The *Scutellaria* didn't appear to be faring very well, with understorey species slowly shading it out. We visited the sole *Coprosma obconica* and, nearby, the large specimen of *Coprosma rubra*, which we discovered by its flowers, was a female. *Teucrium parvifolium* was a healthy bush edge component, making the most of the dappled shade afforded by semi-deciduous canopy trees such as kōwhai and narrow-leaved ribbonwood.

FUTURE EVENTS

2019 January 20: Rainbow Skifield. Contact: Beryce Vincenzi, 03 5451985

2019 February 1-4: Summer camp to Westport, at the University of Canterbury's field station. Contact Jane Gosden, 021498645 or jlgosden@gmail.com by 18th January.

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

■ Other Botanical Society Contacts

Waikato Botanical Society

President: Paula Reeves

Secretary: Kerry Jones

General contact: secretary@waikatobotsoc.org.nz

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

Taranaki Botanical Society

Contacts: Barbara Hammonds 06 7597077; Email: barbara_ha@outlook.com

Janica Amooore 06 7520830. Email: waiongona@clear.co.nz

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

Canterbury Botanical Society

President: Paula Greer

Secretary: Fay Farrant **Website:** www.canterburybotanicalsociety.org.nz

Wakatipu Botanical Group

Chairman: Neill Simpson (03) 442 2035

Secretary: Rebecca Teele 027 314 2610

Botanical Society of Otago

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

NOTES AND REPORTS

■ B. E.V. Parham (1902–87), botanist, agriculturalist, and administrator

Rhys Gardner, Auckland War Memorial Museum, Private Bag 92018, Auckland 1142, rhysgardner@hotmail.com

In the first volume of his monumental *Flora Vitiensis Nova* Albert C. Smith (1979) gives a history of plant-collecting in Fiji. He records there the achievements of four generations of the Parham family, in particular, those of B.E. V. "Bay" Parham (a member of the second generation, and Smith's close contemporary) and Bay's son John W. Parham (1929–2002).

Bayard "Bay" Parham, whose family had started a plantation on Vanua Levu in 1920, joined Fiji's Department of Agriculture in 1933 as Plant Mycologist, Pathologist and Agricultural Officer. Among his duties was that of researching banana diseases (and he was to publish several times on them). Despite his work load, and a lack of funds and facilities, he began to form a departmental herbarium. Smith made it clear how highly he regarded what Bay had accomplished here, noting that a major portion of the first 6000 or 7000 "DA" [Dept of Agriculture] numbers were largely due to his efforts alone (Smith 1979: 76). These collections are now part of the South Pacific Regional Herbarium (SUVA) at Suva, Fiji. A detailed account of the early years of this herbarium has been given by J. W. Parham (1970–2), along with a much shorter version (J. W. Parham 1972).

Bay Parham rose to become Fiji's Deputy Director of Agriculture. He received an OBE in 1949, presumably for his war-time role in ensuring that Fiji was able to feed the thousands of troops stationed there. In 1956 he moved to Western Samoa as its Director of Agriculture, Forestry & Fisheries.

In 1964 he retired to Christchurch, the place of his secondary and university schooling and also the home of his wife, Dorothy Alice Joynt, whom he had married in 1928. When in Samoa he made plant-collections but wrote only four short papers (B. E. V. Parham 1959, and three references cited by B.E. V. Parham 1972: 151). In association with Botany Division DSIR at Lincoln, however, he was now able to write about the vegetation and flora of the Tokelau Islands (B. E. V. Parham 1971) and make a substantial descriptive list of Samoa's plants (B.E. V. Parham 1972). He was also part of the 1970s renewal of interest in New Zealand's adventive flora, co-authoring with Arthur Healy an illustrated weed guide (Parham & Healy 1976).

John W. Parham took over the running of SUVA in 1953. He too collected thousands of specimens, and contributed the account of Poaceae to *Flora Vitiensis Nova*. He retired first to Hobart, where he took a major part in setting up the herbarium of the Tasmanian Museum and Art Gallery, and then to Brisbane. His obituary (Kantvilas 2003) contains much of personal interest, and a bibliography. No botanical memorial, however, followed Bay Parham's death in Christchurch, aged 85. This may be because John Parham, or other members of the family, had at that time the intention of preparing a comprehensive one.

I am not able to make such an account myself. But I commend to those interested in Pacific botany the story of the Parham family on their Fijian plantation. Written by Bay's niece Phyllis Parham Reeve (1989), it is based on the journals of her father, Bay's older brother Laurier, who was himself a good practical botanist in Fiji. It is rich in incident, several of which illustrate Bay's character and capabilities.

For example, here is his account of the building of a Fijian house at the family plantation (at Rukuruku Bay on the Bua coast, Vanua Levu), written when he was just eighteen:

For tying the posts (in this case *cevua*, a kind of sandalwood) they use *duva*, a vine, which grows near the sea and is very strong. Then for tying the rafters they use a giant rattan called *tui*. They split one length into three and of these three lengths one is *mau-maluma* (or weak, and not used) and two are *kaukauwa* or strong. The rafters are of *nokonoko*, a kind of iron wood. When the framework is complete, they make a kind of basketwork over the sides and roof using the reed (or *gasau*). For fastening here they use *vau*, the bark of the *Hibiscus tiliaceus*. They scrape off the skin and then bite through the bark and break the stock at the point where they begin peeling off the bark, which comes off complete. Then comes the thatch and the fastenings used are all of the *tui* or rattan. This part of the work is done very quickly. Last of all they use a giant climber called *wataqiri*, which they split and make into ropes and weave in and out across the length of the ridge-pole on the house. The house is finished save for the carpet, which is usually of *qato* (pronounced *ngato*) either common bracken or swamp umbrella fern. (Reeve 1989:49) [Scientific names: *cevua Vavaea amicorum*; *duva Derris trifoliata*; *nokonoko Casuarina equisetifolia*; *tui*, perhaps *Flagellaria* sp., since the Fijian rattan *Calamus vitiensis* is not known from Vanua Levu); *gasau Miscanthus floridulus*; *wataqiri Entada scandens*; common bracken *Pteridium esculentum*; swamp umbrella fern *Dicranopteris linearis*].

I give the last word here to the urbane and astute colonial administrator Philip Snow (1997: 55):
Opposite my house over the river at Navuso was an agricultural station, consisting simply of a few little huts for research ... Bayard Parham, who came from New Zealand, was a botanist of the highest

quality and a man of deep integrity ... It was only a few years later, during my second posting to Naduruloulou and then in Suva, that I got to know him and we became good friends. We were both members of the small Fiji Society [Bay became President for some time during 1949–54], which had been set up to gather all forms of information about Fiji. He had mellowed as success inevitably rewarded his diligence ...".

Bibliography

Bay Parham's work on all aspects of Fijian botany, from plant names to crop diseases to the use of herbicides, was published entirely in the journals of the Fiji Department of Agriculture and The Fiji Society. These are referred to in the first edition of J. W. Parham's *Plants of the Fiji Islands* (1964), in the first of its two bibliographies (loc. cit. pp. 313–42); the second (loc. cit. pp. 350–53, tucked away following the glossary) concerns "Cryptogams" and includes all Bay's plant-pathology work and his paper on Fijian fungi at large. The second edition (J. W. Parham 1972) omits this "Cryptogams" list.

There also are two pieces of work done in New Zealand, published more or less between the time Bay finished his M.A. thesis at the University of Canterbury and when he left to work in Fiji. The first, Parham (1933a), on the wood anatomy of *Nothofagus*, comes from his 1930 M.A. thesis. It has been omitted from the "Taxonomic Annals" sections of all *Flora of New Zealand* volumes, as has been the revisiting of this work by Middleton (1987). There is also a piece of plant-pathology research, Parham (1933b), carried out in 1931.

The agricultural bibliography by Lim & Fleming (2000) contains publications by four members of the Parham family: Helena Beatrice Richenda Parham, Bay, Laurier, and John W. Parham.

Eponymy

Bay Parham has three Fijian species named for him ("*parhamii*"), in *Croton*, *Casearia* and *Peperomia*. (Names in *Melochia*, *Pandanus* and *Pteris* refer to J. W. Parham).

Parentage

Bayard Eugene Vincent Parham (named by his high-minded parents for the French knight of medieval times, "*sans peur et sans reproche*") was born 19 Jan 1902, in East London, Cape Province, South Africa. He was the son of mining engineer Charles John Parham (b. 1859 Quebec, d. 1926 Suva) and Helena Beatrice Richenda Parham, née Saunders (b. 1862 Peckham, Surrey, d. 1947, Suva). Bay was the third child, after brothers Charlie John and Wilfred Laurier; two sisters Beatrice and Helena followed. A biographical note on H. B. Richenda Parham, who developed her sons' serious interest in botany, is given by Macmillan (2000).

Acknowledgements

I am grateful for assistance from Bryony Macmillan and Anthony Wright.

References

- Kantvilas, G. 2003: Obituary, John W. Parham 1929–2002. *Austrobaileya* 6: 575–579.
- Lim, T. K.; Fleming, E. M. 2000: Food and other crops in Fiji: an annotated bibliography. *ACIAR Monograph* 55. Canberra.
- Macmillan, B. M. 2000: Richenda Parham (1862–1947). *Canterbury Botanical Society Journal* 34: 29.
- Middleton, T. M. 1987: Vessel distribution, grouping and frequency in the stem wood, of New Zealand *Nothofagus* (Fagaceae) taxa. *Mauri Ora* 14: 9–14.
- Parham, B. E. V. 1933a: New Zealand beech timbers, their structure and identification. *New Zealand Journal of Science and Technology* 14: 372–82.
- Parham, B. E. V. 1933b: Apple and pear black spot. *New Zealand Journal of Science and Technology* 14: 184–92.
- Parham, B. E. V. 1953: Some Fiji Fungi. *Transactions and Proceedings of the Fiji Society of Science and Industry* 2: 169–182. [Read 1942].
- Parham, B. E. V. 1959: Plant Introduction in Western Samoa. *South Pacific Commission Quarterly Bulletin* 9: 44–47.
- Parham, B. E. V. 1971: The Vegetation of the Tokelau Islands with special reference to the plants of Nukunonu Atoll. *New Zealand Journal of Botany* 9: 576–609.
- Parham, B. E. V. 1972: *Plants of Samoa*. DSIR, Wellington.
- Parham, B. E. V. ; Healy, A.J. 1976: *Common weeds in New Zealand, an illustrated guide to their identification*. Govt Printer, Wellington.
- Parham, J. W. 1964: *Plants of the Fiji Islands*. Suva.

- Parham, J. W. 1970–72: The Fiji Herbarium. *Transactions and Proceedings of the Fiji Society* 12: 8–24 [cited by Kantvilas (2003) as an unpublished work].
- Parham, J. W. 1972: *Plants of the Fiji Islands*. Ed. 2. Suva.
- Reeve, P. P. 1989: *On Fiji soil; memories of an agriculturalist*. Institute of Pacific Studies, USP, Suva.
- Smith, A. C. 1979: *Flora Vitiensis Nova*. Vol. I. Pacific Tropical Botanical Garden, Hawaii.
- Snow, P. 1997: *The Years of Hope*. The Radcliffe Press, London.

■ **Eastwoodhill herbarium donated to Auckland Museum (AK)**

Ewen K. Cameron, Auckland Museum, Private Bag 92018, Auckland, ecameron@aucklandmuseum.com

In September this year Auckland Museum herbarium staff (Yumiko Baba and Dhahara Ranatunga) drove a large van down to Eastwoodhill and picked up their non-registered herbarium, comprising c.2000 specimens (Fig. 1). They were greatly assisted by Arboretum staff. The collection is from the Eastwoodhill Arboretum which covers 131 ha and is situated 35 km NW of Gisborne. The arboretum is the largest collection in the southern hemisphere of trees of the temperate climate zone of the Northern Hemisphere and includes about 4,000 different species/taxa of trees, shrubs and climbers (Fig. 2), including 170 species currently on the IUCN world endangered species list. These voucher specimens of cultivated plants will add many new taxa to the Museum collection and will strengthen our present holdings of over 11,600 New Zealand cultivated specimens. They will be databased and scanned in the New Year and will be available online as soon as they are accessioned.



Fig. 1. Yumiko Baba, emptying the metal cabinets of the Eastwoodhill Herbarium. Photos by D. Ranatunga, 12 Sep 2018.

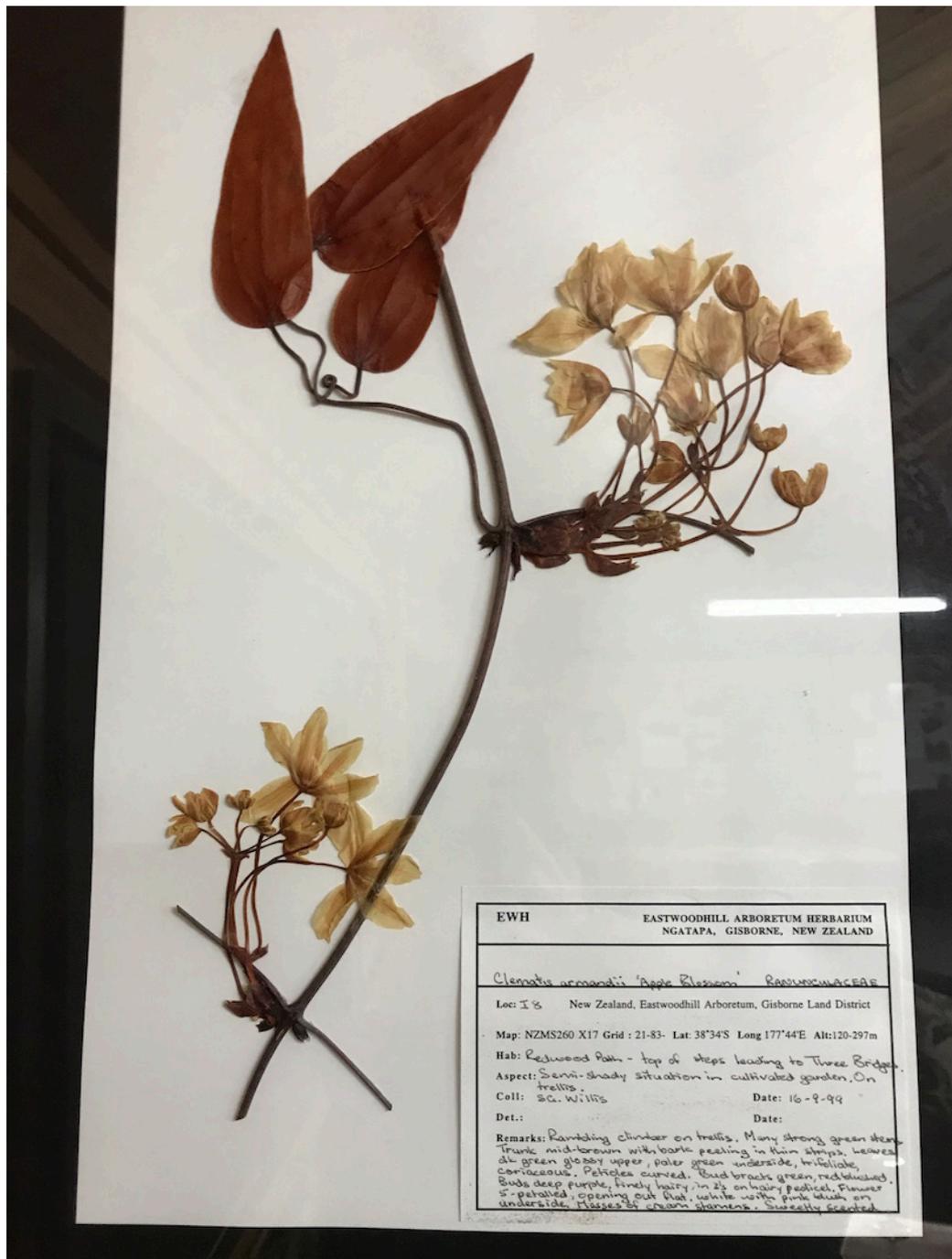


Fig. 2. An Eastwoodhill sheet of *Clematis armandii*.

BIOGRAPHY / BIBLIOGRAPHY

- Biographical Sketch — Rachel Chisholm (1915 – 2017)

Val Smith, 80 Mill Road, New Plymouth 4310.

Born in Invercargill on 12 May 1915, Rachel was the second child of Mary Myrtle Kevern (née Baker) and George Mathias Kevern, a timber yard tally clerk, and sister of Mavis and Leslie. George bought a small bush farm on Gorge Road, and with the children's help, cleared part of it and milked cows. After taking a domestic course at Southland Technical College, Rachel became a proficient dressmaker and pianist, and played hockey for Southland. When she was 19 she met Mervyn Mackie (Bill) Chisholm from a blacksmithing family. He, too, grew up in Southland, and after leaving school worked on



Rachelia glaria. Photo by Simon Walls

his uncle's farm at Matura, where the Millard children (Bill's cousins) were Rachel's close friends. Rachel and Bill married at St Pauls' Church, Invercargill, in 1939. Bill's new work as a government deer culler and operations manager entailed five moves in the next three years. Then, in 1942, he was offered management of the vast rabbit-infested, denuded and virtually bankrupt Molesworth Station in Marlborough.

It could have been a lonely life for Rachel, with the nearest neighbours seven miles away and her husband often camping out (later there was twice-daily contact by radio telephone), but there was always plenty to do and she quietly got on with it: cutting firewood to heat the neglected cobb homestead, and for the first few years cooking for the staff, milking cows and making butter, keeping hens and tending beehives, developing a garden of frost-hardy plants. Their son Bruce was born in Blenheim in 1944 and daughter Ann in Motueka in 1950, but there was no washing machine at the homestead until 1958. There were correspondence lessons to supervise until Bruce went to relations in Christchurch when he was seven, and Ann went to Rangī Ruru Girls' School in Christchurch for her secondary education. (Tragically, Bruce was killed in a motorbike accident in 1966, when he was 22.) Rachel phoned weather data to Wellington every morning, sometimes listened to Aunt Daisy on the radio, and every week for 22 years she and her sister Mavis exchanged letters. There were books from the station library, her piano and many an evening singsong around it. Her greatest pleasure was hosting Molesworth's many visitors, especially DSIR botanists Lucy Moore and Margaret Bulfin (née Simpson) who during their extensive plant trials at Molesworth from 1944 to 1971 became very good friends of both Bill and Rachel Chisholm.

By the mid-seventies, when Bill could no longer get on a horse and was ready to retire, Molesworth had wintered up to 10,000 beef cattle and was making a profit. The new appointee in 1978 was his head stockman and son-in-law Don Reid, in partnership with Ann, who had returned to Molesworth after finishing secondary school and become her father's "right-hand girl". The Chisholms retired to Blenheim, and in 1979 each was honoured with a Queen's Service Award. While Rachel was able to continue many of her usual activities such as cooking and gardening, Bill had difficulty adapting to not being the "king-pin". After his death on Christmas Day 1999, aged 86, Rachel continued for over ten years on her own, moving into a Blenheim retirement village after a fall in 2010. She died in her 102nd year, on 23 April 2017.

Mount Chisholm and Rachel Range, backdrops to the Molesworth homestead, are named after them. A scree daisy originally collected in 1949 from Mt Terako near the southern end of the Seaward Kaikoura Range, and found again in 1980 on Mt Barefell in the Rachel Range, was named *Rachelia glaria*, "the genus after the mountain range where the holotype was collected and after Rachel Chisholm".

Rachelia glaria

Originally collected by J K Forbes of Waiau, and once thought to be a hybrid between *Haastia sinclairii* and edelweiss, *Rachelia glaria* ('of scree') was described as recently as 1997. It is an endemic alpine scree daisy known from only a few localities in the northeast of the South Island. Long, slender, branched rhizomes beneath the argillite scree produce groups of unbranched or sparingly branched silver-grey, densely hairy shoots and tapered, slightly folded leaves. These emerge after the spring thaw, grow 1-3 cm in height above the scree and die down in autumn. The 4-6 small flower heads are clustered at the stem tips, each with 7-11 reddish florets, in the axils of the uppermost leaves.

REFERENCES

- Broad, H 2013. *Molesworth: stories from New Zealand's largest high-country station*. Craig Potton.
- Brook-White, J S 2018. Interview with Rachel Chisholm, Oral History (abstract).
(accessed online 12 June 2017).
- Brook-White, J S 2018. Interview with Ann Reid, Oral History (abstract).
(accessed online 12 June 2017).
- Powell, S 2015. Blenheim centenarian takes birthday in her stride. Marlborough Express
(accessed online 10 June 2017)
- Reid, A 2017. pers. comm.
- Ward, J M; Breitwieser, I; Lovis J D 1997. *Rachelia glaria* (Compositae), A new genus and species from the South Island of New Zealand. *New Zealand Journal of Botany* 35(2): 145-154.

PUBLICATIONS

■ **Publications Received**

Canterbury Botanical Society Newsletter 2018:9 Upcoming meetings and trips, fieldtrip report for Port Hills, landscape of dreams exhibition, committee news.

Canterbury Botanical Society Newsletter 2018:10 Upcoming meetings and trips, meeting report for Yuriy Malakhov's talk on benthic microalgae of the Avon-Heathcote estuary, trip report for Chaffey kowhai garden.

Canterbury Botanical Society Newsletter 2018:11 Upcoming meetings and trips, meeting report for Hermann Frank's talk on South Canterbury limestone, trip report for Tiromoana Bush.

Canterbury Botanical Society Newsletter 2018:12 Upcoming meetings and trips, meeting report for Jamie Wood's talk on vertebrate fungi interactions, trip report for Lower Conway Rover Spring Camp.

Nelson Botanical Society Newsletter September 2018 Upcoming meetings and trips, talk report on Tibetan Plateau, tripe report for Canaan Downs, talk on New Zealand's butterflies.

New Zealand Native Orchid Journal 150 November 2018 *Corybas hatchii*, pollination by sexual deception in orchids, rediscovery on *Chiloglottis trapeziformis*, *Caladenia minor*, *Chiloglottis*.

Wellington Botanical Society Newsletter September 2018 Upcoming meetings and trips, submissions made, GWRC pest plant review, seed germination of *Muehlenbeckia astonii*, obituary – Roger Michael Greenwood, meeting and trip reports.