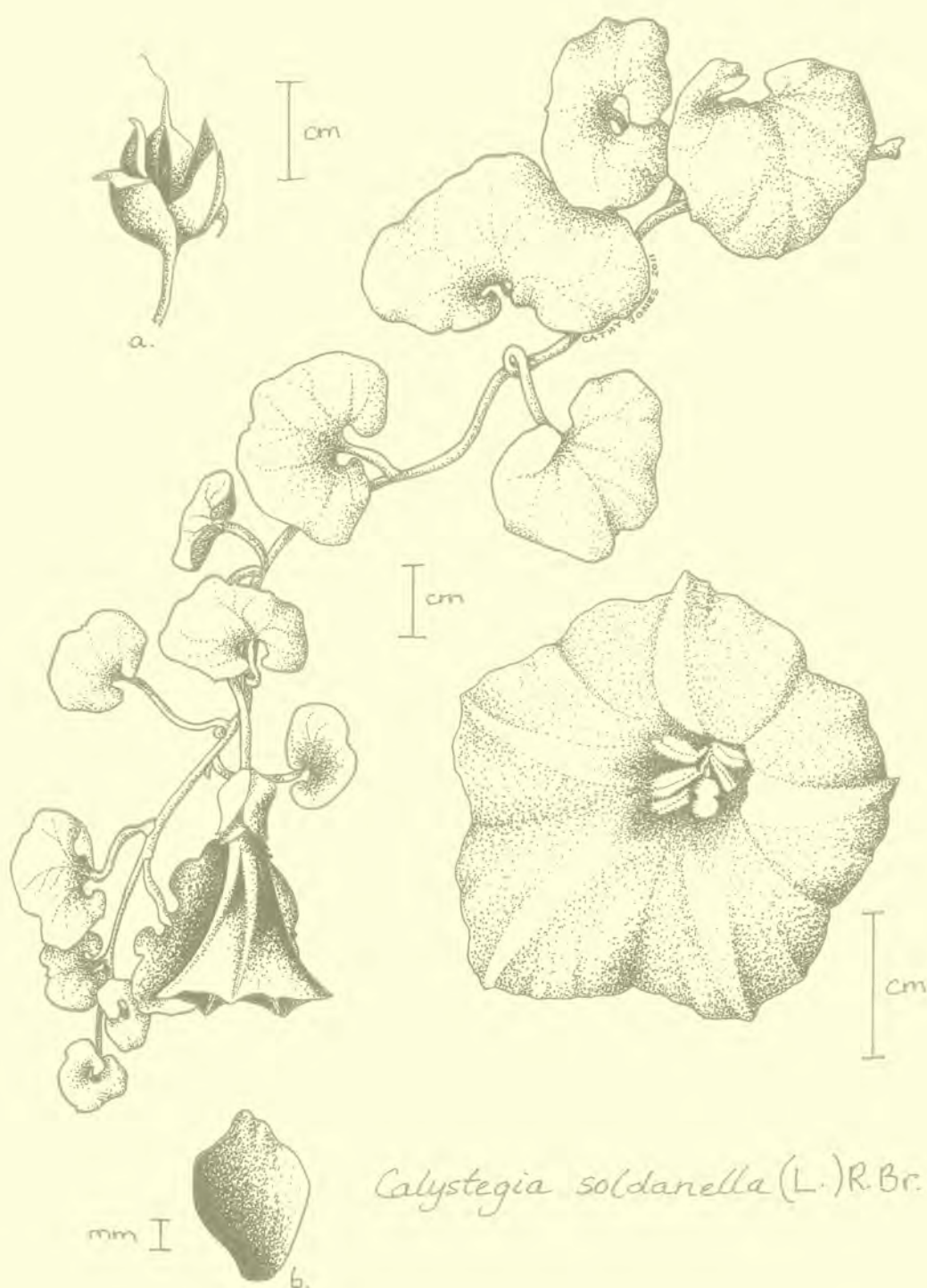


NEW ZEALAND BOTANICAL SOCIETY

NEWSLETTER

NUMBER 105

September 2011



New Zealand Botanical Society

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

The 2011 ordinary and institutional subscriptions are \$25 (reduced to \$18 if paid by the due date on the subscription invoice). The 2011 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 December 2011 issue is 25 November 2011.

Please post contributions to:
Lara Shepherd
Allan Wilson Centre for Molecular Ecology and Evolution
Massey University, Private Bag 11 222
Palmerston North

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

Calystegia soldanella (L.) R.Br. drawn by Cathy Jones from a specimen collected on the Wairau Boulder Bank, South Marlborough on 23 April 2011. a.capsule, b.seed.

NEW ZEALAND BOTANICAL SOCIETY
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New Zealand Botanical Society News

■ Allan Mere Award 2011

The NZBS Committee is pleased to announce that Wendy Nelson, NIWA, Wellington, has been awarded the Allan Mere for 2011. Wendy receives the award for her leadership and exceptional work on the taxonomy, ecology and conservation of New Zealand's marine algae.

Peter de Lange and Clinton Duffy nominated Wendy and the proposal was supported by Landcare Research colleagues: the late Murray Parsons, Phil Novis, Ilse Breitwieser; DOC colleagues: Carol West, Don Neale, Rod Hitchmough; Museum colleagues: Ewen Cameron from Auckland; Leon Perrie, Jenn Dalen and Patrick Brownsey from Te Papa. In addition, three Botanical Societies supported the nomination: Wellington (Wendy's home BotSoc), Nelson and Auckland.

The range of agency representation above reflects Wendy's career as a scientist who has worked for DSIR, the Museum of New Zealand Te Papa Tongarewa and now NIWA, as well as completing nine years of service on the NZ Conservation Authority and chairing the Algal Threat Listing Panel administered by DOC. A selection of comments below from the proposers and supporters indicates the breadth of Wendy's contribution to botany.

Dr Wendy Nelson, a leading international expert in marine macroalgae (seaweeds) and coastal ecology, is an outstanding New Zealand scientist with a stellar research and science leadership record. She is Principal Scientist at NIWA and co-leads the Marine Biodiversity and Biosecurity Outcome Based Investment research programme. Her excellent and influential research on marine macroalgae is internationally and nationally highly regarded.

Wendy is not only a remarkable scientist but she is also a dedicated teacher and mentor of many up-and-coming phycologists and amateurs with an interest in macroalgae. Wendy is the first port of call for anyone interested in these plant groups in New Zealand and, despite her extremely heavy workload, she is always quick to help anyone who has an interest in these plants.

Wendy has engaged people in marine algae in myriad ways: workshops, fieldwork, taxonomic services, conferences, popular media, scientific research and publication. She encourages others in the field by generously giving her own time to others' endeavours and interests.

Because of Wendy, WELT's marine macroalgal collection is the best curated and most significant in New Zealand. Wendy has collected nearly 20% (>4,500 specimens) of WELT's marine macroalgal specimens, which is nearly twice that of any other individual. Furthermore, Wendy is listed as the determiner for nearly a third of WELT's marine macroalgae (c. 7,000 specimens), which is a clear indication of her unique expertise; others cannot do the same job.

Wendy is New Zealand's No. 1 authority on the taxonomy of marine algae – esteemed and respected, and indeed, famous here and abroad. Wendy's scientific papers are numerous and based on meticulous research of the highest order, which has been recognised in her being made a Fellow of the Royal Society of New Zealand.

Wendy is a very talented botanist, extremely hard-working, a very clear strategic thinker, always sharply focussed on the objectives she wants to achieve, but also someone motivated by a wider view of the benefits of science to society and the environment. She has an engaging personality and a great respect for the skills of those who work alongside her. She also has a broad understanding of science issues and has proved to be an excellent advocate for science in New Zealand at every level from school education to Government task force.

Dr Nelson is an internationally recognised botanist of the highest calibre, specialising in marine macroalgae. Her work has been and continues to be critical to our knowledge of this very significant, yet under-appreciated, component of the New Zealand flora.

Wendy has been an energetic and articulate advocate at the highest levels for biodiversity, for the science of taxonomy, and for the professional development of taxonomists.

As well as contributing to the distributional and taxonomic knowledge of seaweeds, Wendy has realised the importance of seaweed conservation and the serious threats that exotic seaweeds can pose to our marine ecosystems. She has worked with biosecurity and conservation officers to highlight these issues and find ways of addressing them.

Wendy has been a strong role model for women in science and, in 1996, received the ZONTA Woman Scientist Award.

Although I have dwelt on Wendy's work with marine flora, I must acknowledge that she has broader interests, which include lichens and general botany. In the earlier days of the New Zealand Botanical Society, Wendy was editor of the Newsletter.

Wendy is an outstanding botanist with an enviable research record, a strong advocate for New Zealand science, and a wonderful ambassador for the scientific community on any stage.

We hope to organise that Wendy will receive the Allan Mere at the monthly Wellington Botanical Society meeting on 21 November with Anthony Wright making the presentation.

Carol West, New Zealand Botanical Society committee member

■ Call for nominations

Nominations are called for the following positions of Officers and Committee of the New Zealand Botanical Society for 2012:

- President
- Secretary/Treasurer
- 3 Committee Members

Nominations for all positions opened 1 September 2011 and close on 19 November 2011. Nominations shall be made in writing to the Secretary, c/o Canterbury Museum, Rolleston Avenue, Christchurch 8013, and shall be signed by the Proposer, the Seconder, and by the Nominee to indicate their acceptance of nomination. If necessary, ballot papers for a postal election will be circulated with your December *Newsletter*.

Ewen Cameron, Secretary/Treasurer NZBS

■ **Financial Statement for year ended 31 December 2010**

	2010
INCOME	
Donations	\$334.73
Interest	\$22.99
Sale of Back issues	\$42.00
Grant for digitisation TFBIS 216 (final payment)	\$0.00
Grant for lichen project TFBIS 227 (part 2 of 4)	\$20,000.00
2008 Subscriptions	\$0.00
2009 Subscriptions	\$0.00
2010 Subscriptions	\$4,473.00
2011 Subscriptions received in advance	\$405.00
Total Income	\$25,277.72
EXPENSES	
Printing costs	\$1,742.16
Postage costs	\$1,284.25
Bank fees	\$30.59
Calligraphy costs (Allan Mere)	\$51.75
Digitisation of Newsletter TFBIS 216	\$0.00
Lichen Project TFBIS 227	\$20,000.00
Total Expenses	\$23,108.75
Total income	\$25,277.72
Less total expenses	\$23,108.75
Net surplus	\$2,168.97
ASSETS	
Cash in bank - current account	\$3,969.74
Cash in bank - Achiever Savings (previously called Ready Money)	\$1,991.50
Total Assets	\$5,961.24
LIABILITIES	
Printing costs	\$419.17
Part payment of cheque dishonour recovered	-\$83.51
Total Liabilities	\$335.66
Total Assets	\$5,961.24
Less Total Liabilities	\$335.66
Net assets	\$5,625.58
Represented by:	
Retained earnings c/fwd from previous year	\$3,456.61
Profit for year	\$2,168.97
TOTAL FUNDS AS AT 31 DECEMBER 2010	\$5,625.58

Note: Liabilities were printing Newsletter 102 (December 2010). Printing costs have been greatly reduced by using an alternative printer.

Regional Botanical Society News

■ Auckland Botanical Society

June Meeting

Kristy Hall spoke about the native *Paspalum orbiculare* for the plant of the month. This was followed by a double bill. Rhys Gardner continued to look closely at the floral biology of *Geniostoma* and other familiar trees, and John Early, Curator of Entomology at the Auckland Museum, spoke of the complicated mutualism of figs and their pollinating wasps.

June Field Trip

A group of 20 members visited five small native bush reserves in urban south Auckland. The reserves were Peretao Rise, Hillcrest Grove, Everglade Drive, Banyan Drive and Eugenia Rise. Totara is the dominant tree in all these patches of bush, and common shrubs were *Melicytus micranthus* and *Coprosma arborea*. Native passion vine (*Passiflora tetrandra*) was prominent. Hillcrest Grove Reserve has a spectacular understorey of regenerating kohekohe. It was interesting to see *Meryta sinclairii* naturalising in the Peretao Rise and Eugenia Rise Reserves.

July Meeting

Geoff Davidson described that most underwhelming of plants, *Muehlenbeckia ephedroides*, for the plant of the month. Dr Anne Gaskett from the School of Biological Sciences, University of Auckland, could have named her talk "Sex and poo". In a racy presentation she stated that she was really a zoologist with an interest in plants that manipulate animals. First she pointed out that some orchids have the traditional relationship with insects where they offer a reward of nectar in exchange for pollination services. Others, such as *Thelymitra* species, appear to promise a reward, but in fact do not contain nectar. Then there are the really interesting orchids that deceive the insect into performing what is usually called pseudocopulation. However, Anne's studies have found that actual copulation sometimes takes place, a most unsatisfactory outcome for the propagation of the insect species. Video proof kept the audience entertained.

She then spoke on the Splachnaceae mosses that only grow on animal remains such as carcasses, dung and old bird nests. A herbarium specimen with a fascinating label was collected from the rotting remains of a bush ranger in 19th century Tasmania. While studying in Canada she developed a close relationship with moose dung - a good substrate for the mosses. She found that the mosses use bright colours and appalling smells to fool flies into carrying the spores to new sites.

July Field Trip

Gill's Reserve, Albany, consists of remnants of secondary bush on the hills north of the town. Although kanuka and manuka are dominant there is a little kauri and at least one tree of hard beech. The understorey was varied enough to keep botanists happy, and the highlight of the day was the population of *Leptinella tenella* growing around the margins of Lucas Creek.

August Meeting

Maureen Young competed with the previous plant of the month's underwhelming appearance by describing the tiny monocot, *Centrolepis strigosa*. Bruce Burns then described studies into the forest fragments found in rural Waikato. Characters such as size, understorey, fencing and pest control all influence the value of these scattered remnants, and lead to the question posed by Bruce – "Are they reservoirs of life or the living dead?"

August Field Trip

Atkinson Reserve is located in the bush suburb of Titirangi, and our Waitakere "expert", Sandra Jones, was leader for the day. Like most suburban reserves it has a considerable weed problem, but it is also home to many interesting plants. *Alseuosmia macrophylla* was flowering well, and an

interesting find was the Australian orchid, *Dendrobium kingianum*, naturalized on a puna stump overhanging the track.

After lunch the party retired to Titirangi Primary School, where an enthusiastic group consisting of Principal, several children and adults, took us on a tour of the bush surrounding the school. A recent discovery that the bush is actually on school land has led to it being used as a science resource for the children. One experiment has been to see how weeds can be controlled without using chemicals. Several pukatea, a couple of trees of swamp maire, large fuchsia trees and vines of passionflower were indications of an interesting flora.

A quick visit to the second part of Atkinson Reserve, where several species of greenhood orchids were growing near kauri trees, completed the day's field trip.

FORTHCOMING ACTIVITIES

7 September	'The botany at the tip of the great fish's tail: North Cape'. Peter de Lange.
17-18 September	Whangarei weekend. Maungatapere crater and Parahaki.
5 October	Lucy Cranwell Lecture. 'The ecology, conservation and sustainable management of the South Island high country'. Sir Alan Mark.
8 October	Torbay Heights Reserve and Awaruku Bush, Torbay.
22-24 October	Labour Weekend camp at Motu Kaikoura (Great Barrier Island).
2 November	A demonstration of the online key to Coprosma. David Glenny.
19 November	Trip to be advised. Ewen Cameron.

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

President: Mike Wilcox

Secretary: Kristy Hall aucklandbotanicalsociety@gmail.com

■ Wellington Botanical Society

Easter fieldtrip: Northern Wairarapa QEII Covenants

A small group of eleven of us arrived on the Friday and were very comfortably accommodated at Ngaire and Ron Burns' shearers' quarters for this weekend of perfect Autumn weather in the Waihoki Valley, Tiraumea. We began botanising within Jamie and Jeane Fowler's nearby covenant established about 12 years ago and fenced 5–6 years ago. Ground-cover species were mostly still at an early stage of development and we did note some ungulate browse (as well as hearing a goat) on saplings in the understorey. The canopy was of mature podocarp-broadleaved forest and, as we climbed a gently sloping face, a huge, emergent, northern rātā, *Metrosideros robusta* came into view. Further up, an emergent black maire reared its huge crown above a heavy load of epiphytes. In this vicinity I picked up a fresh leaf which looked very like *Mida salicifolia*, maire taiki/willow-leaved maire, and though I could not distinguish mida in the canopy, I was able to confirm it later in a good light, remembering that the leaf is punctulate. This was the only occurrence of mida during our visit, so it was a lucky find.

Saturday began with exploring the Liverton family covenant. In this covenant, between the road and the river, stands an impressive masonry memorial, commemorating family members who have passed on since they settled here in 1868. High above it, lean some of the largest kōwhai most of us had ever seen. Further along was an impressive stand of tawa, beyond which was a small wetland.

After lunch at the site of the former Waihoki Valley School we descended a farm track to the river. Sidling on the true right, we paused to study a feldspathic sandstone formation over which the stream tumbled, then crossed a tributary, and climbed steeply to reach the top of this second covenant of the day. We then traversed farmland above mature tawa forest, and passed through some severely slumped terrain. After reaching a farm track, we descended into impressive podocarp/tawa forest where we saw large kahikatea, mataī, tōtara and miro, with an understorey beginning to recover from browsing.

On Sunday we descended a steep farm track into tōtara forest. Here we identified the tree fern, *Dicksonia fibrosa*, the only one of this species seen during the field trip. We checked divaricating

shrubs for mistletoes, without success, and then crossed to the true right of the river. Large pines in the covenant had been poisoned, or felled. We noted that other broad-leaved species are growing up below the canopy of the mānuka shrubland, and in places, a dense ground-cover of ferns was developing.

May fieldtrip: Otari – Johnston Hill Reserve

Eight members met in light drizzle at the Wilton Bowling Club entrance. We were guided by Rodney Lewington's booklet, *Path and other location names used in the Otari Open-Air Native Plant Museum 1926 – 1965*, with its accompanying map, published in 2010. We passed many sites identified in the guide. At the waterfall of the un-named creek, described on an early map as "A" Creek, we discussed *Elatostema rugosum*, parataniwha, a russet-toned, un-armed member of the Urticaceae (nettle) family, planted there many years ago and thriving in the moist ambience. Its natural range does not extend south of northern Horowhenua. Shortly we inspected trackside patches of another indigenous, un-armed member of Urticaceae, *Australina pusilla*, and recorded our only addition to the day's list, *Loxogramme dictyopteris*. We climbed steadily on an old track through kohekohe forest which was just beginning to display its pendulous stems of creamy, cauliferous flowers.

Scarlet rātā, *Metrosideros fulgens*, was also an occasional highlight here. We stopped at Otari's only specimen of *Nestegis montana*, narrow-leaved maire, an adult tree a few metres off the track. Uncommon in Wellington, its dark green, slightly glossy leaves are very similar to black maire leaves but are much shorter and narrower. Accompanied by tūi and kākāriki song, we continued climbing, noting a lowering canopy of native species and an increasing weed presence, mostly Darwin's barberry, *Berberis darwinii*. We then sidled south along the newly completed Kohekohe Track cut through approximately 50-50 native-adventive vegetation. A short stretch of pine forest led us down to a zig-zag where trackside ferns were prolific. It was then a few minutes to the cemetery where we made the acquaintance of the bronze statue of Mrs Chippy, the cat, on the grave of Harry McNeish, the ship's carpenter on Shackleton's *Endurance*. Ten more minutes and we were at the cafe on Karori Road.

FUTURE EVENTS

- | | |
|--|---|
| 19 September | Evening meeting. Physical and social dimensions of ecological corridors - A Wellington perspective. Barry Wards, President, Forest & Bird Protection Society. |
| January 20 th -29 th : | Field trip to Taranaki |

President: Chris Moore, 04 479 3924. Moore.c@xtra.co.nz

Secretary: Barbara Clark, 04 233 8202. Bj_clark@xtra.co.nz <http://wellingtonbotsoc.org.nz/>

■ Nelson Botanical Society

May Field trip: cancelled owing to bad weather and flooding.

May Talk: Geoff Ridley, ERMA - "Mushrooms and boletes in New Zealand"

Currently a risk assessor for ERMA, Geoff published "*Mushrooms and Other Fungi of New Zealand*" in 2006 based on his years as a mycologist at FRI. Geoff introduced his audience to representatives of major fungal types like the puffballs, stinkhorns, woody brackets, toothed fungi, jelly fungi and corals. With the advent of DNA and other molecular studies, fungal classification continues to evolve, so Geoff recommended that debutant amateur mycologists begin by focusing on one group. Techniques for study include regular field observation, collecting specimens and making spore prints (spore colour is diagnostic to genus level). Some fungal features like fairy rings were highlighted, and images of some of our more colourful species were spectacular.

June Field trip: cancelled owing to bad weather.

June Talk: Rebecca Bowater - Flora and Fauna of Brazil

Nelson BotSoc Rebecca started her talk with views of the spectacular Iguazu Falls and its 275 cascades over about 3 km of the Iguazu River. Images of the Pantanal flora included giant

philodendrons, bromeliads, jacarandas and tibouchinas. We also got a chance to see pictures of the private gardens of Roberto Burle Marx – clearly the inspiration for his famous abstract paintings. Rebecca encountered an extraordinary range of birdlife including ovenbirds, macaws, toucans, parrots and herons, and some of the country's special mammals like various anteaters, caimans, coatis and armadillos. Another highlight was the tranquil port of Paraty, a real tropical paradise.

July Field Trip: Beukes' Covenant

Philip Lissaman from QEII joined 12 Nelson BotSoc members at this 11 ha covenant of tall forest and its understory. Having been fenced for about 20 years, the area is winning the battle against weeds. The alluvial forest had matai, totara and rimu emerging over a canopy of broadleaved trees such as titoki, kaikomako and mahoe. Below a primarily *Coprosma* shrub layer with *Streblus heterophyllus* (turepo) and other divaricates also present, was a rich diversity of ferns, with eight species of *Asplenium* and many large patches of *Lastreopsis microsora*. Other ferns of interest were *A. gracillimum* and *Polystichum silvaticum*. After crossing the river, we found a steep slope with a few large podocarps but the main canopy species were *Nothofagus truncata*, *N. solandri* var. *solandri* and their hybrids. *Libertia ixioides*, *Coprosma microcarpa* and *Olearia rani* were in the understory here. Sadly, on a section of open river terrace, we encountered only the remains of plantings that floods had killed or removed. Only several large *Hoheria angustifolia* (narrow-leaved lacebark) remained, and were mostly thriving. There were many fungi on the forest floor and a basket fungus opened magically before our eyes. Earthstars, birds nest fungi, bracket fungi and several different-coloured coral fungi were also found.

July Talk: Chris Ecroyd - *Dactylanthus taylorii*

Not long after relocating to Nelson, Chris treated BotSoc members to a summary of his work on *Dactylanthus*, which he had been studying since the 1980s. There is only one species in New Zealand, restricted to the North Island. However, there are old pollen sites in the South Island, and there is hope that *Dactylanthus* might yet be found in Kahurangi National Park. It is our only fully parasitic plant and grows attached to the roots of native plants. Further details of its biology were explained, including the woodrose form. As with many plants, appropriate pollinators are vital and determining likely pollination agents formed a large part of Chris's research. The considerable, highly-scented nectar, along with other evidence, led to the short-tailed bat. Unfortunately, bat populations are decreasing and possums and rats are very keen on the nectar. One conservation effort involves caging the flowers to prevent access by exotic mammals but not our native bats. Also, seeds can be grown, as Chris found in his Rotorua garden.

FUTURE EVENTS

18 September	Mt Duppa. Leader: Diana Pittham (03) 545 1985.
19 September	Evening workshop on coprosmas, run by Don Pittham, Cathy Jones, Trevor Lewis, Sally Warren.
16 October	Working bee at Inches', Wairoa, weeding for threatened plants. Leader: Shannel Courtney (03) 546 9922 or (wk, direct dial) (03) 546 3148.
21–24 October	Labour Weekend Camp: Kaikoura. Leader: Cathy Jones (03) 546 9499.
20 November	Wakamarina orchids. Leader: Don Pittham (03) 545 1985.
15-19 December	Pre-Christmas Camp: Arthur's Pass. Leader: Don Pittham (03) 545 1985

President: Cathy Jones (03) 546 9499. Flat 1, 47A Washington Rd, Nelson 7010.

Email: cjones@doc.govt.nz

Treasurer: Trevor Lewis (03) 547 2812. 71 Kingsford Drive, Stoke, Nelson.

Email: tandjlewis@actrix.co.nz

■ **Other Botanical Society Contacts**

Waikato Botanical Society

President: Jackson Efford jte3@waikato.ac.nz

General contact: bot_soc@waikato.ac.nz

Our newsletters are available on <http://cber.bio.waikato.ac.nz/Waibotsoc/WaikatoBotSoc.html>

Rotorua Botanical Society

President: Paul Cashmore (07) 348 4421 pcashmore@doc.govt.nz
Secretary: Sarah Crump (07) 349 6110 scrump@doc.govt.nz

Manawatu Botanical Society

Jill Rapson: Ecology Group, Institute of Natural Resources, Massey University, Palmerston North. Ph (06) 350 5799 ext 7963, Email: G.Rapson@massey.ac.nz

Wanganui Botanical Society

President: Clive Higgie (06) 342 7857 clive.nicki@xtra.co.nz
Secretary: Robyn Ogle (06) 3478547 22 Forres St, Wanganui. robcol.ogle@xtra.co.nz

Canterbury Botanical Society

President: Bryony Macmillan, 351 2886, or 351 9241 (for messages)
Secretary: Jodi Rees, mallotus@yahoo.com.au PO Box 8212, Riccarton, Christchurch 8440

Botanical Society of Otago

Chairman: David Lyttle djlyttle@ihug.co.nz
Secretary: Allison Knight, P O Box 6214, Dunedin North.
More information available on website: <http://www.botany.otago.ac.nz/bs/>

Wakatipu Botanical Group

Chairman: Neill Simpson (03) 442 2035
Secretary: Lyn Clendon (03) 442 3153

ANNOUNCEMENTS

■ **A.P. (Tony) Druce's Trip Book**

This hand-written, spiral-bound, photocopied book details all of the fieldtrips that Tony did throughout New Zealand from 1934 to 1994. Dates, locations and participants are listed for each trip. A few years ago, Wellington Botanical Society printed 20 copies on two different occasions. Now there is interest from a few people in having their own copy so the Society is considering printing some more copies. The cost last time was \$20 +\$5 p&p. We have yet to get a quote for printing more but don't anticipate it costing more than before. If you are interested in having a copy of this book, please let Barbara Clark know by 31 October 2011.

Contact details: bj_clark@xtra.co.nz or Secretary, Wellington Botanical Society, P O Box 10-412, Wellington 6143.

■ **Wellington Botanical Society's Jubilee and Dench Awards**

The Wellington Botanical Society invites applications for the Jubilee Award (up to \$2600) and the Arnold and Ruth Dench New Zealand Botanical Award (\$1000). The purpose of the Jubilee Award is to encourage and assist applicants to increase knowledge of New Zealand's indigenous flora, and to commemorate the Society's Jubilee in 1989. The Jubilee Award is open to anyone working in New Zealand. It will be granted for: fieldwork; artistic endeavour; publication; research; propagation or cultivation of New Zealand native plants for educational purposes and/or other studies which promote the better understanding of New Zealand's indigenous flora and vegetation. The Award may be used to defray costs such as travel, accommodation, materials or publication.

As members of the Wellington Botanical Society, Arnold and Ruth Dench derived much personal satisfaction from participating in many of its activities. Alison Dench (Arnold and Ruth's daughter) has generously made available an annual award, the Arnold and Ruth Dench New Zealand Botanical Award, of \$1,000 in memory of her parents. The Dench Award aims to enhance understanding and

awareness of New Zealand's indigenous flora including interactions between indigenous flora and invasive species (flora or fauna). This award is available to New Zealand citizens and others who are working or studying botanically oriented subjects in New Zealand. It is open to professional botanists and plant ecologists, university students, ideally pursuing post-graduate research, and horticultural apprentices or interns studying for a relevant horticultural qualification. Further details about the awards, including eligibility and how to apply are available from: <http://wellingtonbotsoc.org.nz/awards.html>

NOTES AND REPORTS

■ A cuckoo among the compactors: voucher specimens in the molecular age

Rhys Gardner, rhysgardner@hotmail.com

With herbaria having been decommissioned in several of our universities, and the unitecs and others not showing signs of wanting ones of their own, pressure is increasing on those that remain. Quaint repositories admittedly, refuges for those who think they might be able to tell the name of a plant by looking at the underside of its leaf, but it has to be conceded that their keeping of types, and ever increasingly, "DNA voucher specimens", is vital for an orderly transition into an automated, barcoding era. The present flood of DNA vouchers though threatens to exhaust shelf space, curators and herbarium volunteers alike.

Exaggeration possibly, but there is a trend. In AK the previous Director had required that only "important" new collections be accessioned, that is, novelties of some significance and, comprehensively, molecular vouchers. Collectors of course just kept collecting, material going into their backlogs rather than the data-basing queue¹. But much of what was accessioned has in fact been DNA-related: in a number of groups now a majority of the specimens there are valuable only for their DNA and their ecology/locality notes². That is, the specimens, sometimes single leaves, are what were once called "sterile scraps" and lack the wider utility a "good" fertile specimen has; they are gathered at the start of a project, to meet bullet-point deadlines, without any care for whether or not they represent the local population.

What then should be done: is it necessary to voucher every piece of plant DNA sampled? When ecologists work in a place they know well they generally do not collect all its species, often, not even all the ones under investigation. This is because ecology generally has a statistical rather than a historical character. Should taxonomy be so different?

Not so long ago the reason for keeping a voucher would have been so that its identity could be checked by conventional means. Then it would certainly have been wise to curate all samples, although digital imagery has become increasingly more capable of providing the needed amount of morphological information.

Today, refined lab techniques and a large amount of GenBank data allow one to immediately check one's sample: no longer do *Alseuosmia* and *Myrsine* show up in *Pittosporum*, or *Gaultheria antipoda* in *Nothofagus*. That is, the main reason for keeping vouchers now will often be to ensure that the study could if necessary be repeated, perhaps with new techniques and with respect to different markers.

Current "good practice" among curators is to place on a single sheet only material from one individual (tree) or one colony (herbs). I see no great danger in sometimes not doing this, if the fact is noted; the material should be seen as part of a continuum of variation rather than something unique. I have been guilty of wasting space by making several specimens as vouchers for sex-ratio studies; better to have curated a much larger number of flowering pieces to provide a statistical backing and preserve the range of floral variation. For smaller-leaved plants it would have been possible to place twenty or more neat sprigs over just a few sheets, a big saving of space and data-entry time. This could be done in those DNA studies that aim to make a connection between the molecular and morphological data-sets.

Such a procedure was approved of by Davis & Heywood (1963: 260) with respect to the innovative population-genetics /ecology studies of that time: "Such mass gatherings provide vital data on variability, but they tend to be so bulky that [Great Britain's] national herbaria ... can seldom afford space to accommodate them unless only limited parts of the plant have been collected ... It seems possible that University herbaria, which work on a much narrower geographical basis than national ones, may at least be able to share some of the burden When once these collections have been thoroughly analyzed and the results published, however, it is a moot point whether any herbarium can afford to incorporate more than a representative sample".

For example, with a species like karaka, where a single dried leaf can give enough DNA for studies in perpetuity, just one herbarium sheet could easily hold a particular locality's twenty or so "single leaf" pieces. (For the bryophytes, where gatherings are often mixed, it may be better to bite the bullet and packet up all the voucher material, with anomalies between label identification and DNA results to be sorted out later, should they arise). Or, molecular vouchers could be curated quite differently; they might be bagged up as dried fragments in silica gel or in the freezer, to be disposed at some future date when space needed to be saved or when it seemed that the relevant taxonomic problems had been solved or circumvented.

After all, unless there is some cataclysmic reduction of biodiversity in the next few decades there will usually always be the opportunity to repeat studies, even though it would be at the cost of duplicating previous efforts.

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Notes

¹As well as showing an ignorance of the way herbaria get their future value, and of the way science works, this was a failure surprising in a museum administrator: not to anticipate human deviousness, and not to realize that the herbarium environment produces a high mutation rate among botanists, turning them from otherwise normal humans into "collecting machines".

²For karaka (*Corynocarpus laevigatus*) AK now has a man-sized stack of boxes: of these nearly 400 specimens only 70 are fertile (flowers or fruit); 210 are sterile DNA vouchers.

■ William Lauder Lindsay's letters of introduction (1873) for Sven Berggren's botanical collecting visit to New Zealand (1874-1875)

David Galloway, Landcare Research, Private Bag 1930, Dunedin 9054 gallowayd@xtra.co.nz

The Lund bryologist Sven Berggren (1837-1917) made an extended visit to New Zealand in 1874-1875 to collect lichens, mosses, seaweeds and flowering plants. Berggren's decision to visit New Zealand was taken with the encouragement of the Scottish Physician and Botanist William Lauder Lindsay (1829-1880). Lindsay visited Otago in 1861-1862, staying with the Dunedin nurseryman, William Martin at his farm, *Fairfield*, on the slopes of Saddle Hill south of the infant settlement of Dunedin. During his stay in Otago, Lindsay collected geological specimens and a wide variety of cryptogams (especially lichens) and flowering plants. On his return to Scotland, Lindsay published the results of his botanical and geological collections in an impressive number of varied publications (Galloway 2007). Having made many scientific and social contacts in Dunedin, Nelson and Auckland, Lindsay was in a strong position to advise Berggren on where to go and whom to meet. In addition to giving Berggren a dossier on New Zealanders of scientific inclination in the four main centres, Lindsay also sent letters of support to both London and New Zealand on Berggren's behalf (Bagnall 1970a).

Berggren sailed from London on the *Helen Burns* on 13 September 1873, arriving at Lyttelton via Melbourne and Foveaux Strait on New Year's Day 1874 (Bagnall 1970a; Galloway 1998). During the 16 months that he was in New Zealand, supported by the Royal Swedish Academy of Sciences and

also with a grant of £100 from the New Zealand Government (Bagnall 1970a), Berggren visited many localities from the Bay of Islands in the north to Invercargill in the south, with extensive journeys to the interior of both islands, as well as many coastal excursions, meeting many notable New Zealand scientists and collectors in the process. He kept a diary of his travels and a dossier of correspondence that he received while in New Zealand (Bangal 1970a, 1970b), and he published himself several notes on his travels here (Berggren 1874, 1875). In 1876 he was made an Honorary Member of the New Zealand Institute (Fleming 1987: 304), joining such luminaries as Charles Darwin, Ferdinand von Hochstetter, Joseph Hooker, Lauder Lindsay and Charles Lyell.

Berggren's diaries and correspondence are in the University Library in Lund (Bagnall 1970a). The majority of his plant collections are in the Botanical Museum, Lund University with his lichen collection in the Naturhistoriska Riksmuseet in Stockholm (Galloway 1985, 2004). Together they constitute good materials for a detailed reassessment of Berggren as a traveller, observer, botanist and lichenologist. Only Berggren's lichen collections have been documented to any significant degree (Hellbom 1896). In 2005 my friend and colleague, Prof. Ingvar Kärnefelt, Director of the Botanical Museum, Lund University kindly sent me copies of five letters from Lauder Lindsay to Berggren that are held in the Berggren Correspondence at the University Library, Lund University. My grateful thanks to him for searching out these important documents. They are reproduced below. All are from Lindsay's house, "Gilgal", Perth, and written on the 3 and the 9 January, 1873. Lindsay's letters give a fascinating glimpse into the problems encountered by a visiting botanist to New Zealand in the latter part of the nineteenth century.

1. "... 3 January 1873

My Dear Sir,

I have to acknowledge receipt of your letter of 27 December and of your two Packets of Pamphlets. For the latter I have to offer my cordial thanks.

It will give me much pleasure in any way to assist you in preparations for your New Zealand excursion. I have already written both to New Zealand and to gentlemen of influence from New Zealand and now in London on your behalf: and I have no doubt when you arrive, you will find the colonists ready to give you every assistance.

I will send you, thro' my Booksellers [Messrs Williams & Norgate of London] a packet of Pamphlets – including-

(1) my "Observations on New Zealand Botany": which contains some account of the Physical features of Otago: and

(2) the latest published Guide to the Province of Otago which contains a map that will be useful to you. This guide will be more serviceable than any of the Works on New Zealand you mention: because I think you should make Dunedin your first Headquarters, and Otago the principal field of your labours. You will see that townships are scattered all over the Province even to the bases of the Alps: and communication is easy, by coach, between Dunedin and the grand central lakes. From the latter, you can make your way to the alps: and you can either proceed westwards to the Western fjords or northwards to the Mount Cook Range, with its glaciers, in Canterbury, or do both. At Dunedin you would obtain all information as to your further route and could make all necessary preparations. My friends in the "Otago Institute", "Naturalists Field Club", and University of Otago will give you every aid – I doubt not.

Drying Paper you may take with you: but all other equipments can be better provided in Dunedin. After examining the alps of Otago and Canterbury, I think Stewarts Island worth a visit. Thereafter the next best field is the central Lake and alpine region of the North Island. For that excursion preparations should be made in Auckland or Wellington. There is regular steam communication between all New Zealand towns of any size.

There is no occasion for the study of the Maori language: but if you desire to know something of it, Williams' "Dictionary and Grammar of the New Zealand Language" is the best – published by Williams & Norgate of London. You will meet with almost no Maoris in the South Island: and even in the North Island, European settlers are scattered all over the country and you would require to trust to their kindness.

2. "... 3 January 1873

It is difficult to advise you as to the probable expense of your tour. The most expensive part of mine was the voyage out, which cost £50 in a sailing vessel. If you go as a "Medicinal Doctor", you might get your passage out and home gratis – for your services as a ship's surgeon? The expenses of steamers and stage coaches in New Zealand are considerable: but your expenses in the interior would not be heavy if you content yourself with mere excursions into the alps from the nearest townships or stations. A thoroughly equipped exploring expedition would be costly: but it is quite possible the Provincial Government authorities in Dunedin, Christchurch, or other cities, may assist your explorations by the supply of various kinds of aid.

You should, I think, give your attention mainly to the lower cryptogams = Mosses, Hepaticae, Lichens, Fungi, Algae, Diatoms, Desmids – and the Protophyta generally. The most minute (microscopic) forms are by far the most interesting – seeing that they have been scarcely at all studied or collected in New Zealand. The least known are the Desmids, microscopic Fresh-water algae, Micro-Fungi and Micro-Lichens.

It will not be necessary for you to remain longer in the cities than to prepare yourself for your alpine excursions. But Dunedin and Nelson are surrounded by hills and form excellent headquarters for reconnaissance expeditions.

Of general works on New Zealand, Thomson's is the best. Dieffenbach's is excellent: but was published many years ago (1843). Taylor's refers chiefly to the North Island and is the most recent: but cannot be trusted as regards its Natural History. In Dunedin or other cities, you will see all the works on New Zealand topography or Natural History – including the important "Transactions of the New Zealand Institute" and the Records of the Exhibition of 1865. I enclose a circular letter of introduction to the Naturalists of New Zealand – with a list of the Societies or Persons to whom you may present it: and I will be glad to give any further information you may require in addition to that now supplied.

With earnest wishes that your tour may be abundantly successful,

Believe me,
Very Sincerely yours.

W.Lauder Lindsay

3. "... 3 January, 1873

The accompanying Circular Letter of Introduction may be presented to the following Bodies or Persons:-

I. In Dunedin – to

- (1) any of the office Bearers of the "Otago Institute"
- (2) John Hislop Esq.: Inspector of Schools
- (3) J.S. Webb Esq.: President of the Naturalists Field Club
- (4) Dr Robert Burns, Member of the University Council
- (5) Lieutenant-Colonel Cargill
- (6) Rob. Gillies C.E.
- (7) Wm. Martin Esq., Fairfield, Saddlehill
- (8) J.T. Thomson C.E., Surveyor-General
- (9) Professor Black

II. In Christchurch – to

- (1) any of the Office bearers or members of the "Philosophical Institute of Canterbury"
- (2) Dr. Haast, Provincial Geologist
- (3) W.D. Carruthers Esq., Banker
- (4) Mr Hislop, Nurseryman

III. In Nelson – to

- (1) The Members of the "Nelson Association for the Promotion of Science and Industry"
- (2) Sydney Dick Esq., Postmaster
- (3) Dr. Irvine
- (4) Capt. Rough

IV. In Wellington – to

- (1) The members of the “Wellington Philosophical Society”
- (2) Dr. Hector, Manager of the “New Zealand Institute” and Director of the Geological Survey
- (3) J. Coutts Crawford Esq.
- (4) Capt. Hutton of the Geological Survey
- (5) Chas. Knight Esq.: Auditor-General
- (6) F.A. Knell Esq.: Merchant and Consul.
- (7) Walter Mantell Esq.:

V. In Auckland – to

- (1) Members of the “Auckland Institute”
- (2) Revd. David Bruce. St Andrews Church
- (3) His Honour T.B. Gillies, Superintendent
- (4) Thos. Macfarlane Esq.: Merchant
- (5) Thos. Ball Esq.: Member for Mangonui
- (6) Major Heaphy, Surveyor-General
- (7) Thos. Kirk Esq.: F.L.S. (Botanist)
- (8) Judge Manning, Hokianga
- (9) J. Stewart C.E.

These gentlemen will introduce you to all others likely to be of service.

4. “... 3 January 1873

This is to introduce Dr Sven Berggren of the University of Lund, Sweden – an eminent Botanist, whose contributions to Bryology are well known in European Science – and who having already conducted personal investigations as to the Flora of the Alps of Scandinavia and the Tyrol – of Greenland and Spitzbergen is now devoting a year to the Botanical exploration of the alps of New Zealand.

I regard it as most fortunate for the progress of Botanical Science in New Zealand that Dr. Berggren has been induced to select that country as a field for his skilled researches: and I have no doubt the Colonial Naturalists- as well as the settlers generally will at once perceive how desirable it is to give him every facility in the prosecution of his arduous, gratuitous, volunteer duties.

Any assistance that may be ventured will be highly appreciated not by myself only: but by European and American Botanists in general.

W. Lauder Lindsay M.D.,
Honorary Member of the New Zealand Institute and of the Otago Institute.

5. “... 9 January 1873

My Dear Sir.

The writer of the enclosed letter – who is at present acting as Agent-General in England – is one of the most distinguished New Zealand Naturalists [a reference to Walter Buller]. He was born in the colony and has long held some influential position under Government in the North Island – is one of the best-known members of the New Zealand Institute – one of the most frequent contributors to its “Transactions” and he is at present in London superintending the Publication of a magnificent illustrated work on “The Birds of New Zealand”. His position both in London and New Zealand make him well acquainted with all parts of the colony – more especially with the North Island: and I therefore asked him to exert his influence on your behalf. I have no doubt you will soon have a letter of advice from him as well as a series of introductions to the North Island – which has some magnificent alpine scenery in its interior.

Regarding the South Island I have again written to J.S. Webb Esq., who is Treasurer of the “Otago Institute” and President of the Naturalists’ Field Club: and I think it probable you will also hear from him before you leave Sweden. If – as I strongly advise – you will go first to Dunedin, the members of the “Otago Institute” [who include all the Naturalists of Otago – all the Professors of the University – all the members of the Survey Staff – who have explored the whole country] would advise you in all matters concerning your expedition to the alps and give you all the benefit of their local knowledge.

The north and west of Otago, and south of Canterbury Provinces, contain unquestionably the grandest alps of New Zealand: and constitute therefore by far the most promising field for Botanical exploration.

Believe me, Very truly yours
W. Lauder Lindsay

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■ Request for information on Kangaroo grass

Ben Minehan, bmi@marlborough.govt.nz, (03) 5207400 or 021 344045

I am interested in observations of infestations of Kangaroo Grass (*Themeda triandra*) in any region other than Marlborough (contact details above). A scientist researched this weed species many years ago when the Marlborough District Council nominated it for inclusion in the Regional Pest Management Strategy for Marlborough. He wrote in a report that infestations were known to exist in Nelson and the North Island. I am yet to confirm this. It is a native plant species in Australia and is considered a valuable species over there. Here, it is an invasive grass with very little value for grazing stock. We currently have a trial in place in Marlborough to gauge the effectiveness of a herbicide not yet registered in New Zealand on Kangaroo Grass. If it is successful, I would like to include a reference to any other infestations of Kangaroo Grass in New Zealand when I make an application to include Kangaroo Grass on the label for this herbicide.



Kangaroo Grass, *Themeda triandra*

BIOGRAPHY / BIBLIOGRAPHY

■ Biographical sketch – Felix Arthur Douglas Cox (1837-1915)

Val Smith, 80 Mill Road, New Plymouth 4310.

Felix Arthur Douglas Cox, a surviving twin, was born on 9 May 1837 and baptised at Marylebone Church, London. In family military tradition, Arthur (as he was known) received an English boarding school education, and from the age of 14 was at Rugby School. He, too, joined the army, and in 1857 entered the 17th Bengal Native Infantry as an ensign. He was promoted to Lieutenant in 1858, and for his service with the 34th Regiment during the Indian (Sepoy) Mutiny was awarded the Lucknow medal and other decorations. Invalided, he returned to England and in 1862 resigned his commission. A few years later he came to Canterbury, New Zealand, to see his brother Charles Percy Cox, who had emigrated in 1853 and had recently bought Mt Somers station from his brother-in-law Charles Tripp at nearby Orari Gorge. Reports of the success of his brother's Chatham Island visitors in growing and supplying food for the whalers inspired the ex-soldier to try his luck there as well.

Arthur Cox landed on Chatham Island (Rekohu) in 1866 or 1867, and settled in the north-east, not far from the home of the first resident magistrate in the Chathams, Archibald Shand. He married Anne, one of Shand's nine daughters, and in 1870 he and his wife's brother Alex (Alexander) leased about 8,000 acres of Pomare family land at Whangamarino, between Te One and Waitangi. Two houses were built – a large two-storeyed home for Cox and his growing family of four sons and three daughters, and a separate one for Shand, who remained a bachelor. Their woolshed was also constructed that year, built to hold up to 500 sheep and accommodate eight blade shearers, and today it is one of the oldest working woolsheds in the country. Cox and Shand worked hard, ploughing (at first with bullocks and then with teams of horses bred by them), sowing and raising sheep, and Whangamarino became a well-developed and productive farm. However, both men were to become better known for their activities outside farming.



Festuca coxii

In addition to his farm work, Shand was engaged as Maori interpreter and clerk at the sittings of the Native Land Court. He was extremely interested in the Moriori and Maori history of the islands, and set out to record as much of this heritage as possible. Tragically, in 1910 the then elderly scholar died in the fire that destroyed his house, along with much of his valuable work.

Cox became the second Justice of the Peace on the Chathams, and was sought for his fair and unbiased decisions. Later he was one of the trustees in Frederick Hunt's estate. He was also an amateur botanist of considerable repute, and sent plants, with information on their habitat and distribution, to Kirk and Cockayne. Cheeseman described a rare plant of the carrot family under the name of *Coxella* (now *Aciphylla*) *dieffenbachii*, to commemorate Cox's contribution to the scientific knowledge of the Chatham Islands flora. A small-leaved matipo (*Myrsine coxii*) and a bluish-green grass (*Festuca coxii*) are also named after him.

After the lease of Whangamarino Station expired in 1912, most of the land eventually reverted to the Pomare family, and is managed today by their descendants. In 1915, with failing health, Cox and his wife retired to Geraldine, where they both died within the year.

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Unpublished family papers, photos, personal comments from BS Cox (grandson), Maitaia. 2009

Festuca coxii

Gramineae

Festuca: Latin for “stalk, stem or straw”. The genus is a large one from the temperate and tropical mountain regions. Three of the five native New Zealand mainland species reach the alpine zone.

Festuca coxii is an attractive species, sometimes grown as a garden plant. It is a small, densely tufted, stoloniferous grass, with soft, pliant leaves, bluish with in-rolled margins, up to 40 cm long. It flowers in a narrow, spike-like panicle, each spikelet with 3-5 lax flowers. Endemic to the Chatham Islands, *Festuca coxii* is found only on coastal cliffs and ledges, and is considered vulnerable. Browsing by stock has probably been the main factor leading to its decline in the wild.

PUBLICATIONS

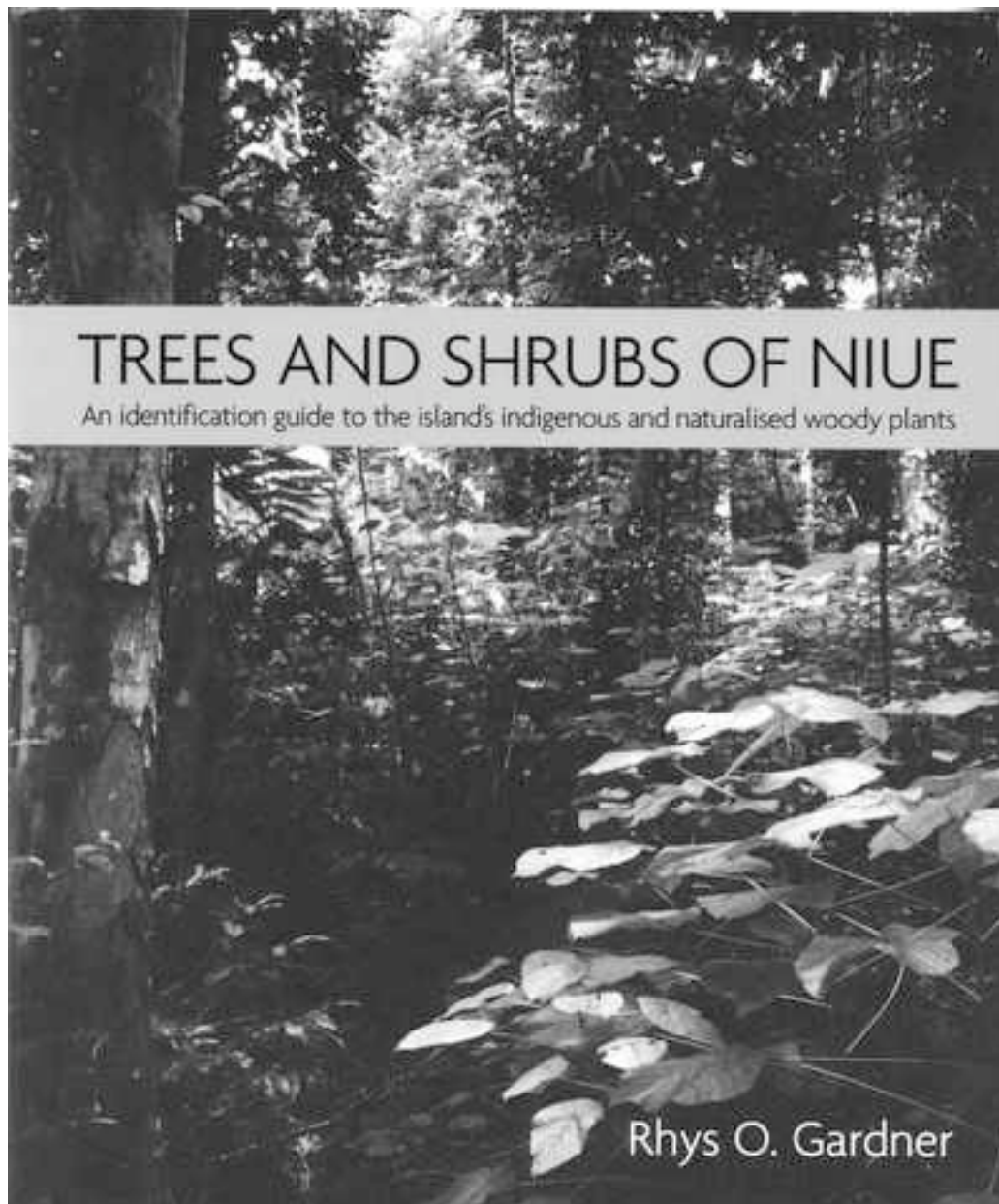
■ **Publications received**

Rotorua Botanical Society Newsletter June 2011, No. 56. National forestry herbarium, John Nicholls Memorial Research Grant, trip reports including Whangapararua dunes and Whanarua Bay Scenic Reserve, Ohope and Waitotane Scenic Reserves, Mimiha Stream headwaters, Hamurana Road Bush, Omapere Bay, Oruaiti Beach, upcoming meetings and trips.

Wellington Botanical Society Newsletter May 2011, ISSN 1171-9982. President's report, upcoming trips and meetings, submissions made, Jubilee Award 2011, Matiu/Somes Island restoration, Otari-Wilton's Bush news, Percy Scenic Reserve, trip reports including northern Fiordland, Baring Head, Breaker Bay, Northern Wairarapa QEII covenants, Johnston Hill, meeting reports.

Wellington Botanical Society Bulletin June 2011, No. 53. Lawn plants, Helen Druce and Arnold Dench obituaries, Maungaroa Rock Scenic Reserve flora, indigenous Wellington 'weeds', Wellington nikau, kauri at Otari-Wilton's Bush, *Pseudopanax* breeding system, Wellington coastal grasses.

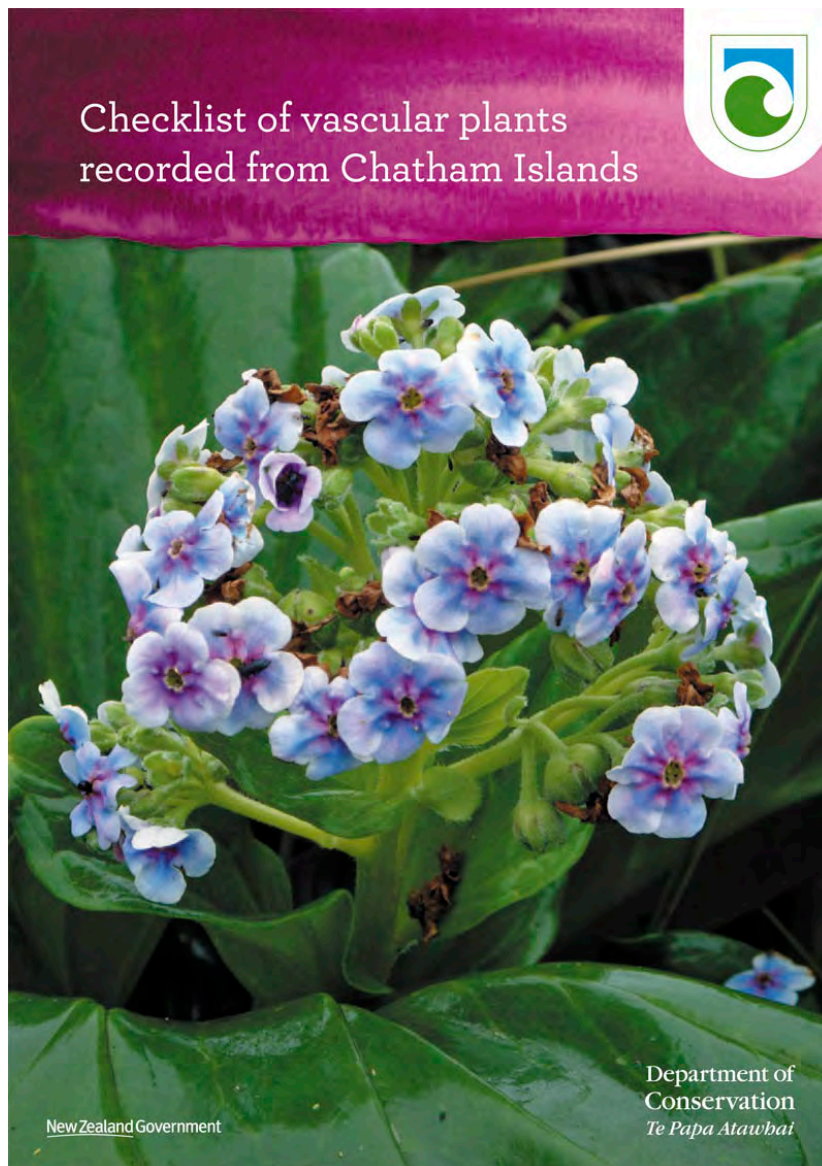
■ New books



Trees and Shrubs of Niue: an identification guide to the island's indigenous and naturalised woody plants. Rhys O. Gardner. 2011. Katsura, Auckland. 244 pp.

Each of the 107 species is given a page of text and a page of b & w sketch illustration showing habit and diagnostic details. All these plants are distributed widely in Polynesia, so the book should be of value to anyone with an interest in the flora of that region.

NZ\$50.00 per copy (includes postage in NZ), available from the author (rhysogardner@hotmail.com)



The Department of Conservation has recently published an updated checklist of the vascular flora of the Chatham Islands. Co-authored by Peter de Lange (DOC Science & Research), Peter Heenan (Landcare Research) and Jeremy Rolfe (DOC Wellington Hawke's Bay Conservancy), the checklist updates, revises and expands on the previous checklist published in 1999. That checklist dealt exclusively with the indigenous flora of the Chathams, whereas the new checklist also includes records of naturalised exotic plants.

The checklist records 902 taxa and informally recognised entities that have been confirmed by voucher records. It provides a brief history of botanical exploration on the Chatham Islands and discusses the origins and distinctive features of the indigenous Chathams flora, which has two endemic genera and 41 endemic taxa, including three hybrid combinations. The authors note that the naturalised flora has more than doubled in the last 50 years. The potential weediness of many of the naturalised taxa and the implications for biosecurity on the Chathams are discussed.

A PDF of the checklist can be downloaded from the DOC website, www.doc.govt.nz/publications/conservation/native-plants/, or printed copies may be purchased for \$15.00 from the DOC Wellington Visitor Centre, 18 Manners St, Wellington, e-mail wellingtonvc@doc.govt.nz and the Chatham Islands Area office, Te One, Chatham Island.

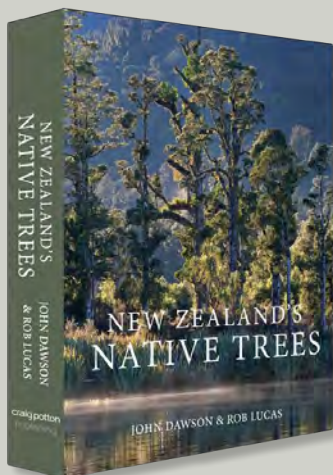
Jeremy Rolfe, Department of Conservation (jrolfe@actrix.co.nz)

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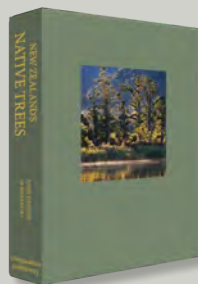
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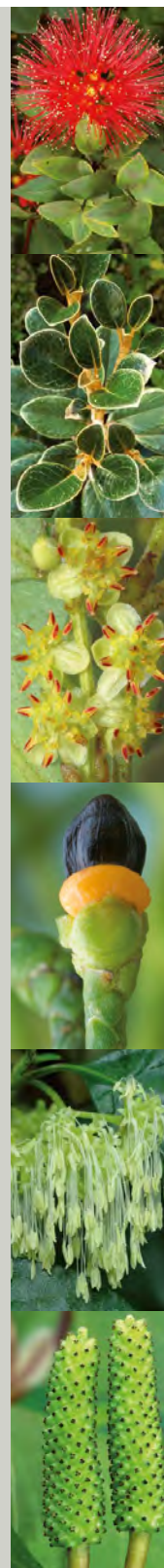
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