

Wellington Botanical Society

Te Rōpū Manāki i Ngā Tamariki a Tāne,
o Te Whanganui a Tara



NEWSLETTER

May 2016

Previous issue: December 2015

ISSN 1171-9982

From the President

The first five months of 2016 have passed quickly. Summer has gone into autumn—cooler but beautiful light and leaves. Summer Camp 2016 was a great success—our thanks go to Mick Parsons and his team. We are planning for Summer Camp, 11–17 January 2017, based at The Outpost, Mangarakau Swamp, northwest Nelson. The prospects are fascinating botanically.

However, there has been a disappointing response to the overnight field trips—some were cancelled. Of course, there are many reasons why each of us cannot or do not leave home to botanise and socialise overnight. Should these longer trips continue? Please let us know your thoughts. Weekends, precious for many of us with family and friends, compete with every other activity available, and for many they are work times.

This newsletter contains some of the Committee's "behind the scenes" activities. The contributions made by Bev Abbott on behalf of BotSoc are very important for the future of biodiversity and protection of botanically important areas in the Wellington region. Present submissions are on Wellington City Council's Annual Plan 2016/17, and affect us all. There is also controversy about the future management of Taupō Swamp, Plimmerton, that is being addressed on BotSoc's behalf.

Karen Palmer

New members

We welcome the following: Betty Macgregor, David Nicholls, Debra Wotton.

Lea Robertson, Treasurer

Articles for web site

We welcome articles for consideration for inclusion on our web site:

www.wellingtonbotsoc.org.nz

Please send your article to:

Richard Herbert

e-mail herbert.r@xtra.co.nz

Writing for the Bulletin

Do you have a botanical observation, anecdote, or insight that you could share with others in BotSoc? If so, please consider contributing it to the Wellington Botanical Society Bulletin. There is still plenty of space in the next issue. For more details and assistance, contact Leon Perrie at leonp@tepapa.govt.nz or 381 7261.

Wellington Botanical Society

Address:	PO Box 10 412, Wellington 6143
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Annual subscription:	ordinary \$35; country \$30; student \$10; joint / group / family \$40.
Send your subscription to Treasurer, WBS, Box 10 412, Wellington 6143.	
New subscribers: Please complete form at the back of this newsletter.	

Meetings

BotSoc meetings are usually held at 7.30 p.m. on the third Monday of each month at Victoria University, W'gton – Lecture Theatre MYLT101, ground floor, Murphy Building, west side of Kelburn Parade. Enter building about 20 m down Kelburn Pde from pedestrian overbridge. No meetings December and January.

Field trips

Day trips to locations in the Wellington region are usually held on the first Saturday of each month.

Extended excursions are usually held at New Year, at Easter and the first weekend in December.

DEADLINE FOR COPY FOR NEXT ISSUE – 20 August 2016

Articles may be edited for clarity and length

ATTENDING FIELD TRIPS AND MEETINGS

Ideas please

We welcome your ideas about:

- places to visit on field trips
- topics and speakers for evening meetings
- information or photographs for BocSoc web site

Please send ideas to our secretary, Barbara Clark, PO Box 10 412, Wellington 6143, ph 233 8202.

Field trips

If you intend to join a trip, PLEASE phone the leader at least TWO DAYS beforehand, so that he/she can tell you of any changes and/or particular requirements. If you cannot ring in advance, you are welcome to join on the day.

Clothing for field trips

Sun hat, balaclava¹ or hat¹, waterproof/windproof parka, long-sleeved cotton shirt, singlet¹, bushshirt¹, 1 or 2 jerseys¹, waterproof/windproof overtrousers, nylon shorts, longjohns¹, longs¹, underclothes, swimming togs, 4pr socks¹, hut shoes, boots, gaiters, mittens¹, handkerchief.

Day trip gear

First aid kit, compass², map², insect repellent, whistle, matches in waterproof container, water purification tablets, water bottle, thermos, pocket knife, camera², binoculars², hand lens², note book², pen and pencil², sunblock, sunglasses, large plastic survival bag to line pack.

Overnight trip gear and food

As well as the day trip gear listed above, bring torch, spare bulb and batteries, candle, mug, plate, knife, fork, spoon, small towel, soap, tooth brush, tent, fly, poles and pegs, groundsheet, sleeping mat, sleeping bag, liner and stuff bag. Bring bread, butter/margarine, biscuits, fresh fruit and scroggin. SCROGGIN = Sultanas, Chocolate or Carob, Raisins, Orange peel, Glucose³, Ginger, Including Nuts.

1 = wool, polypropylene or polarfleece as applicable.

2 Optional

3 Dried apricots are recommended instead of glucose but would spoil the acronym!!

BotSoc equipment

In addition to the gas stoves, billies, kitchen utensils, flies etc., used on long field trips, the following are also available:

- first aid kit. NOTE: anti-histamines NOT included, because of short shelf-life
- ten Silva Type 3 compasses

If you are leading a BotSoc trip, and would like to take these items, please ring Chris Horne ph 475 7025, or Barbara Mitcalfe ph 475 7149.

Health and safety

- You are responsible for your own first aid kit. If you have an allergy or medical condition, please carry your own anti-histamines and medications, tell the trip leader of any problems you may have and how to deal with them.
- You are responsible for keeping with the party. If you have any doubts about your ability to do this, you must check the trip conditions with the trip leader, who reserves the right to restrict attendance.

Fitness and experience

Our field trips vary considerably in the level of fitness and tramping experience required. Although our main focus is botanical, our programme sometimes offers trips which, in the pursuit of our botanical aims, are more strenuous than others. Although leaders take care to minimise risks, everyone participates at their own risk. If you have any questions about whether you are fit enough for a particular trip, please contact the leader well beforehand.

Transport reimbursement of drivers

- We encourage the pooling of cars for trips.
- **Passengers:** Please pay your share of the running costs to your driver. We suggest 10c/km/passenger.
 - If a trip on the inter-island ferry is involved, please pay your share of the ferry fare.
 - If you change cars mid-trip, leave a *written* note for your driver.
- **Drivers:** Please ensure that you know where you are going, and who is in your car;
 - Zero the odometer at the start, and agree on a return time;
 - Account for all your passengers before you come back;
 - Collect contributions towards transport costs.

Trip leaders

Please draft a trip report for the newsletter.

If you would like to offer to lead a field trip, or be a deputy leader on a field trip, please contact our programme organiser, Sunita Singh, sunita@actrix.co.nz

Meetings

Public transport to meetings

You may find the following bus services useful. They stop on Kelburn Parade, about 50 m from Lecture Theatre MYLT101 in the Murphy Building, Victoria University:

TO MEETINGS

No. 23 Mairangi: depart Houghton Bay 6.30 p.m., Hospital 6.42, Courtenay Place 6.49, opposite Supreme Court 7.00, University 7.05.

No. 23 Mairangi: depart Southgate 7.00 p.m., Hospital 7.17, Courtenay Place 7.22, opposite Supreme Court 7.34, University 7.39.

No. 22 Southgate: depart Mairangi 7.00 p.m., University 7.13.

No. 17 Railway Station: depart Karori Park 6.35 p.m., University 6.52.

Cable Car at 00, 10, 20, 30, 40, 50 min past each hour from Lambton Quay terminus. Alight at Salamanca Station.

FROM MEETINGS

No. 23 Southgate: 9.12 p.m. from University.

No. 23 Southgate: 10.10 p.m. from University.

Cable Car at approx. 01, 11, 21, 31, 41, 51 minutes past each hour from Salamanca Station.

Last service 10.01 p.m.

For further information ring Metlink, Greater Wellington's public transport network, 0800 801-700.

FIELD TRIPS AND EVENING MEETINGS: MAY–OCTOBER 2016 & JANUARY 2017

The following programme IS SUBJECT TO CHANGE. If you wish to go on a field trip, PLEASE help with planning by giving the leader 2 days' notice before a day trip, MORE notice before weekend trips, and SEVERAL WEEKS' notice before the New Year's trip.

Non-members are welcome to come to our meetings and to join us on our field trips.

Saturday 7 May: Field trip

QEII covenant, South Makara

Botanise Janet & Mike Warren's 24-ha QEII Open Space covenant, '*Erin go Bragh*'. See original podocarp/broadleaved forest, subject to intensive goat and possum control since 1994, the year of BotSoc's first visit. It is part of Wellington city's remaining 1% of pre-European forest. See rimu c. 700 years old, with abundant regeneration of many species. Meet 9.30 a.m., at the gate of 509 South Makara Rd. Map: NZTopo50-BQ31 Wellington. Co-leaders: Chris Horne 475 7025, Barbara Mitcalfe 475 7149.

Monday 16 May: Members' evening

Please share your botanical **slides** and **photographs** taken on BotSoc trips, your **paintings, drawings** and your botanical **readings**. Slides limited to 20 per person. Bring **plant specimens** to add to a memorable evening. Please **donate any spare botanical or other natural history books** to add to our collection of books to be auctioned to raise funds for our Jubilee Award Fund.

Saturday 4 June: Field trip

Huntleigh Reserve, Crofton Downs

Botanise this podocarp/broadleaved forest, among the best preserved of Wellington's remaining pre-European bush. See large podocarps, numerous liane and fern species, first on a broad track, then down a valley. Meet Silverstream Rd, Crofton Downs, opposite Ngaio Playcentre. Catch 9.32 Johnsonville line train, WN to Crofton Downs Station, then walk 10 mins. up Silverstream Rd. Maps: street & NZTopo50-BQ31 Wellington. Co-leaders: Chris Moore 479 3924, Chris Horne 475 7025, Barbara Mitcalfe 475 7149.

Monday 20 June: Evening meeting

Mangere Island: Amazing people, landscapes, flora, fauna and adventures

Speaker: Robyn Smith, Senior Land Protection Officer, QEII National Trust. A glimpse of the remarkable restoration of Mangere Island through the eyes of a volunteer. The restoration began in the 1970s to create a better habitat for the black robin, then the world's most endangered bird. The transformation of the island from mainly bare paddock, in such extreme conditions, is inspiring.

Saturday 2 July: Field trip

Orongorongo Track

A pleasant, easy walk along a formed track. We may take a few side trips into the bush, but the day will be suitable for those who haven't been out for a while, those who are botany beginners, children and grandchildren. Meet 10 a.m. at Rimutaka Forest Park's Catchpool car park, c. 15 mins along Coast Road, south of Wainuiomata. If you require a lift from Woburn Station, ring Ian and/or Jill the night before, and we will arrange a pickup. If there are no phone calls, there will be no pickup! NZTopo50-BQ32 Lower Hutt. Leaders: Ian & Jill Goodwin 475 7248.

Monday 18 July: Evening meeting

Seeds versus safe sites: what limits recruitment of *Muehlenbeckia astonii*?

Speaker: Debra Wotton, Director and Principal Ecologist at Moa's Ark Research, providing ecological research and consultancy services to protect and restore native biodiversity. *Muehlenbeckia astonii* is a nationally endangered, small-leaved, divaricating shrub found in Wairarapa, Wellington, Marlborough and Canterbury. Almost no *Muehlenbeckia astonii* seedlings have ever been recorded in the wild. Debra has been investigating the causes of this widespread recruitment failure. Debra will present research on seed germination, seed longevity, seed dispersal and seedling establishment, and discuss factors potentially constraining regeneration and population persistence in *Muehlenbeckia astonii*.

Saturday 23 July: Field trip

Te Mārua workbee

In partnership with Greater Wellington, BotSoc has been committed since 1989 to do weed control and revegetation in this important matai/tōtara/maire remnant in Kaitoke Regional Park. Our biennial workbees must continue so that we keep ahead of re-invasion by weeds, particularly around the plantings, so *please* come to help with this important work. Bring planting and weeding gear: gloves, kneeler, weed bag, and your favourite weeding tools, e.g., trowel, hand fork, grubber, loppers, pruning saw, jemmy. Meet at Te Mārua Bush at 9.30 a.m. (250 m north of Te Mārua Store and then left, off SH2 for 50 m, on Twin Lakes Rd, Kaitoke Reg. Pk. Catch 8.05 a.m. Hutt line train WN to Upper Hutt—ring the leader to arrange to be met at Upper Hutt Station. Maps: street & NZTopo50-BP32 Paraparaumu. Co-leaders: Glennis Sheppard 526 7450, Sue Millar 526 7440.

Saturday 6 August: Field trip

Silversky Track, Crofton Downs

Botanise along this recently completed track through regenerating native forest which includes a sole large tōtara, and the fern, *Blechnum parrisiae*. Meet 10 a.m. at the top end of Silverstream Rd, Crofton Downs. Catch Johnsonville line train 9.32, WN to Crofton Downs, then walk 15 mins. up Silverstream Rd. Maps: street & NZTopo50-BQ31 Wellington. Leaders: Chris Moore 479 3924, Chris Horne 475 7025, Barbara Mitcalfe 475 7149.

Monday 15 August: Evening meeting

1. Annual General Meeting

2. Fun with figures: A Drucean approach to the woody flora of NZ

Speaker: Matt McGlone, Research Associate, Landcare Research. Tony Druce was above all an obsessive collector of botanical data, in particular that relating to what plants are where. In recent years, with massive improvements in data-handling technology, and ready availability of environmental layers, such carefully collected and documented botanical facts are gold. Matt will talk about how even simple numeric approaches to such data can give fundamental insights into the life of NZ plants.

Saturday 3 September: Field trip Tawhai St Reserve – Horoeka St Reserve loop, Stokes Valley

Botanise these reserves on the south- and west-facing slopes above Stokes Valley, Lower Hutt. See podocarp/northern rātā/beech forest with various liane, fern and ground-cover species. Meet: 9.30 a.m. at Horoeka St Reserve car park. Maps: street & NZTopo50-BQ32 Lower Hutt. Leader: Michele Dickson 972 2350, co-leader: Sunita Singh 387 9955 / 027 4052 987.

Monday 19 September: Evening meeting Can't tell a moss from a liverwort, don't know a lichen?

Rodney Lewington, Carol West and Peter Beveridge will make three 20-minute presentations—on lichens, on mosses, and on liverworts and hornworts. Each will assume you know nothing, followed by time to get answers to any questions you may have. The talks will cover the structure and life-cycle of each phylum/division. The idea is to allow you to distinguish between them in the field, and make a start on identifying them at home.

Saturday 1 October: Field Trip

Can't tell a moss from a liverwort, don't know a lichen?

Learning by doing

Continuing our enquiry into lichens, mosses, liverworts and hornworts, we will visit Otari-Wilton's Bush to go on an exploratory walk for about two hours collecting a few of them, and getting a feel for their various habitats. The rest of the morning will be spent in the Leonard Cockayne Centre with microscopes, learning to identify our collections to genus and even species level. Depending on the weather, we may take another walk in Otari, or continue until about 3 p.m. on identification. Bring a hand lens, note book, pen and your lunch. Tea and coffee provided. Leaders & helpers: Rodney Lewington, Carol West and Peter Beveridge. Meet 9.30 a.m. at Otari-Wilton's Bush Information Centre / Te Marae o Tane, 160 Wilton Rd, Wilton. No. 14 Wilton bus, Kilbirnie 9.30, Ct Pl 9.51, Molesworth St, 10.00; alight at first stop in Warwick St.

11–17 January 2017: Summer field trip

North-west Nelson

Base camp: "The Outpost", Mangarakau. Sleeps 28 indoors, and has plenty of camping space. Located in a DOC reserve between Kahurangi National Park & Tai Tapu Marine Reserve. Next to NZ Native Forest Restoration Trust's Mangarakau Swamp, the largest remaining wetland in the Nelson / Marlborough region. Fascinating native plants and wildlife. Approx. 5 hours drive from Picton. One hour west of Collingwood. Full details and booking form in September newsletter. <http://theoutpost.kiwi>.

Letters to the editor

We would welcome your comments on any aspect of BotSoc's activities:

- places you would like to visit on field trips
- topics you would like to have covered in evening meetings
- topics you would like covered in BotSoc's Bulletin and Newsletter
- other matters of concern or interest to you.

*Thank you,
The committee*

Subscription invoices

For those members receiving print copies of this newsletter, and who have not yet paid their subscriptions for the year ended 30 June 2016, yellow invoices are attached for your attention. Invoices will be e-mailed to members who get their newsletter by e-mail, and who have not yet paid.

Subscription rates: \$35; country \$30; student \$10; joint/group/family \$40.

Perhaps someone you know would like to join us in support of native flora, or donate to botanical research efforts by way of the Jubilee Award Fund ?

Lea Robertson, Treasurer

**Help raise funds for BotSoc's Jubilee Award Fund –
bring named seedlings/cuttings for sale at each evening meeting**

AWARDS

- 2 September 2016. **Wellington Botanical Society Jubilee Award 2016.** Applications should be made in typescript to: Secretary, Wellington Botanical Society, PO Box 10 412, WN 6143, or by e-mail to: bj_clark@xtra.co.nz.
For further information, please see the article in this newsletter.
- 6 September 2016. **Wellington Botanical Society—Grant to Graduate Students.** Application should be made initially through your supervisor to Prof. Kevin Gould.
For further information, please see the article in this newsletter.
- 25 October 2016. **Tom Moss Student Award in Bryology.** Publications for consideration should be submitted, with a covering letter, to: Tom Moss Student Award, Wellington Botanical Society, PO Box 10 412, WN 6143.
Further information about the Award may be obtained from Dr Patrick Brownsey, Te Papa, PO Box 467, WN. Ph: 04 381 7135; e-mail: patb@tepapa.govt.nz.

EVENTS

- *First Saturday each month.* **Otari-Wilton's Bush Trust plant-care workbees.** Meet 9 a.m., Information Centre, 160 Wilton Rd, Wilton.
Leader: Wilbur Dovey 499 1044.
- *Monthly.* **Baring Head workbees.** Friends of Baring Head Trust. Weeding, pest-control & monitoring, planting, litter collection, etc.
Colin Ryder, 478 4301 or rydercj@xtra.co.nz.
- *To end of 2016.* **Augustus Hamilton and the gold-spangled butterfly.** Our national museum's second director was an ethnologist with broad interests in natural sciences. Te Papa turned 150 years old on 8.12.2015. To celebrate 150 years since the opening of the Colonial Museum in Wellington, the exhibition named "You called me WHAT?!" is on Level 3, Te Papa.
- 18 May. **Otari-Wilton's Bush Trust AGM.** 7.15 p.m., Information Centre / Te Marae o Tane, 160 Wilton Rd, Wilton.
- 18–20 May. **Conservation Inc2 Conference.** Fullwood Room, Dunedin Centre, Harrop St, DN. 1 day @ conference \$165.00, 2 days @ conference \$265.00. Hosted by Yellow-eyed Penguin Trust.
conference@yeptrust.org.nz
<http://yellow-eyedpenguin.org.nz/conservation-inc-conference-2016/register-online>
- 21 May. **Restoration Day.** Theme: *Resilient Restoration*. Carterton Events Centre, 50 Holloway St, Carterton. RSVP by 8 May.
Rebecca.Bird@gw.govt.nz, ph 830 4275
www.naturespace.org.nz/Wellington-Restoration-Day-2016
- 22 May. **Wellington plants & their regeneration.** Two-hour walk. Meet 2 p.m. at Otari-Wilton's Bush Information Centre, 160 Wilton Rd.
Leader: Rodney Lewington.
- 29 May. **Threatened NZ plants, - how Otari contributes to their conservation.** Easy one-hour walk. Meet 2 p.m. at Otari-Wilton's Bush Information Centre, 160 Wilton Rd.
Leader: Rewi Elliot
- 5 June. **Arbor Day.**
- 12–14 August. **ECO Conference & AGM.** Theme: "Moving through the Climate Crisis". AGM Sunday p.m. [Wesley Community Centre](http://WesleyCommunityCentre), Mt Roskill, AK.

Environment and Conservation Organisations of NZ (ECO)
Box 11057, WN 6142. Ph/Fax: 04 385 7545, www.eco.org.nz
e-mail: eco@eco.org.nz, Skype: [eco.office](https://www.skype.com/en/contacts/eco/office)

- **October: Plant identification course.** NMIT, Nelson. 2-day free course, developed in conjunction with NZ Plant Conservation Network, covers native and exotic plants found in NZ. It is designed for people interested in plant conservation or weed control. It covers: botanical terminology and technical jargon; use of plant-identification keys; observing and accurately describing a plant (including the community of plants it grows amongst and its location), and taking samples and/or photos, so that it can be positively identified later; who to contact for information, including good web sites. Source: Nelson Botanical Society April newsletter.
www.doc.govt.nz/get-involved/training/field-based-courses/plant-identification/
- 17–19 November. **The NZ polymath – Colenso & his contemporaries.** Wellington.
Deborah.Levy@vuw.ac.nz
- 17 – 27 January 2017. **University of Canterbury summer course.** Practical Field Botany (BIOL305). Intensive course in the collection, preparation, and identification of botanical specimens. Venue: Cass Mountain Research Area, Canterbury. Enrolment starts 6 October.
Dr. Pieter Pelsler (pieter.pelsler@canterbury.ac.nz; 3-364-2987 ext 45605).

PUBLICATIONS

1. **Open Space.** 90 3/16: Gordon Stephenson 1924-2015; Queen's Commonwealth Canopy Initiative; predator control on covenants; 374 *Olearia gardneri* found in Wairarapa; Covenantors Brian & Chris Rance's conservation work in Southland; edible, and non-edible, native plants; role of fungi in forests; choosing plants for covenants; eco-sourcing; good plant or bad weed?; weeding Parkers Bush, Uawa Valley; plants of a peat dome; etc.
 - *QEII National Trust, Box 3341, WN 6140.*
www.openspace.org.nz
2. **Nature Heritage Fund.** Celebrating 25 years of protection. NHF has protected 1.3% of NZ's land area. The book is available via NHF-admin@doc.govt.nz.
 - *Di Lucas.* See link to the document & book released on 6 April: <https://www.facebook.com/Nature-Heritage-Fund-450093175200526/>
- 3a. **Proposed Natural Resources Plan.** 14 4/16: 95 further submissions received; etc.
- 3b. **Restoration Publications.** Topics: forest restoration; wetland restoration; streams & ponds.
 - *Greater Wellington Regional Council*
www.gw.govt.nz/biodiversity-3
4. **NZ Indigenous Flora Seed Bank.** A4 leaflet.
 - C.R.McGill@massey.ac.nz J.L.Schnell@massey.ac.nz
5. **NZ Listener.** 23-29.4, pp 36-37: *Pseudowintera colorata* / mountain horopito being used against fungal disease *Candida albicans*, and against athlete's foot and cold sores.
6. **Trilepidea.** 145 12/15: smartphone app for orchid ID; *Senecio sterquilinus*; NZ Indigenous Flora Seed Bank (NZIF Seed Bank); *Pleurophyllum speciosum* voted favourite native plant; *Tradescantia fluminensis* voted worst weed; Arowhenua Bush, Canterbury—ecological restoration to preserve genetic integrity; etc. 146 1/16: Otago herbarium now digital; NZIF Seed Bank; *Leptinella nanna*; *Metrosideros bartlettii*; etc. 147 2/16: NZIF Seed Bank seed collector workshop; *Brachyglottis turneri*; lichen *Dibaeis absoluta* sought; Ashley Gorge & Lees Valley;

Metrosideros excelsa research; etc.

- NZ Plant Conservation Network, Box 16 102, WN 6242.
events@nzpcn.org.nz

7. **NZ Botanical Society.** 12/15: Corybas macranthus; regional botsocs news; Andrew Burn Suter (1830-1895); etc` 3/16: Haloragis erecta subsp. erecta; Allan Mark receives Allan Mere for 2015; regional botsocs news; lichen Dibaeis absoluta sought; botanist Hugh Wilson on CHCH mural; John Matthew Richardson (1797-1882); "The Flowering Plants Handbook – a practical guide to families and genera of the world. James W Byng. 619 pp; etc.

- NZBS, c/- Canterbury Museum, Rolleston Ave, CH 8013.
www.nzbotanicalsociety.org.nz

8. **Auckland Botanical Society.** 12/15: *Pterostylis brumalis*; *Thelymitra pauciflora*; *Microtis unifolia*; botanist Anthony Wright honoured by Auckland Museum; what affected *Alseuosmia macrophylla* leaves?; etc. 4/16: *Lindsaea viridis*; etc.

- ABS, box 26 391, Epsom, AK 1344.

9. **Botanical Society of Otago.** 77 2/16: benefits of possum control on Otago Peninsula; *Fuchsia excorticata*; microbial diversity in kahikatea & silver beech canopy soil; *Dibaeis absoluta* sought; problem vines on Otago Peninsula; etc.

- BOS Box 6214, North Dunedin, DN 9059.

10a. **Canterbury Botanical Society newsletter.** 4/16: wetlands: RMA definitions, ecological values, ecosystem services, losses, threats; etc.

10b. **Canterbury Botanical Society journal.** 46 15: *Veronica (Hebe) salicifolia* & *Veronica strictissima*; bird-plant mutualisms; alpine environment degraded; etc.

- CBS, Box 8212, Riccarton, Christchurch 8440.
e-mail: info@canterburybotanicalsociety.org.nz
<http://www.canterburybotanicalsociety.org.nz/>

11. **Waikato Botanical Society.** 12/15: Threatened native-plant garden; etc.

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

12. **Otari-Wilton's Bush News & Views.** 12/15: NZPCN conference; Central Otago collecting trip; Endangered Species Foundation; *Clematis forsteri*; etc. 3/16: pest-animal control in Otari and Crofton Downs; *Cassytha paniculata*; etc.

- OWB Trust, 160 Wilton Rd, WN 6012.'

13. **Ecolink.** 11-12/15: RMA Amendment Bill; Wangapeka Track – proposed road: etc.

- Environment & Conservation Organisations of NZ Inc, Box 11 057, WN. www.eco.org.nz

14. **Friends of Wellington Botanic Garden.** 12/15: The Garden's native forest areas – a response –(to six articles by B Mitcalfe & C Horne); etc. Visit the site and look under Newsletters - Latest. Also see past newsletters via the Archive link.

- <http://friendswbg.org.nz/nomenu/2015/dec15newsletter.pdf>

15. **Wellington Civic Trust.** 3/16: Town Belt legislation; Miramar/Watts Peninsula; etc.

- WCT, Box 10 183, WN.

16. **The Tararua Trampler.** The following articles by C Horne & B Mitcalfe, illustrated by J Rolfe, continue a series begun in the April 2011 issue of *The Tararua Trampler*. 10/15: *Asplenium oblongifolium*. 11/15: *A. flaccidum*. 12/15: *A. bulbiferum*. 2/16: *A. polyodon*. 3/16: *A. flabellifolium*. 4/16: *Blechnum discolor*. 5/16: *B. colensoi*.

- Tararua Tramping Club, www.ttc.org.nz

17. **Biodiversity News.** 2/16: three-year conservation project funded by the Community Environment Fund.

- FriendsofQEPark@gmail.com

18. **Fauna Recovery NZ.**

- *Puangiangi Restoration Articles, Uncategorized*
<http://wp.me/p6s2W0-vw>
<http://faunarecovery.org.nz/2016/01/12/seabirds/>

19. **Nga Uru Ora Kāpiti.** 12/15: kohekohe flowering imminent; pest control; etc.

- NUOK, Box 1, Paekākāriki 5034.

20. **Long Gully Bush Reserve Management Plan.** 12/15: A4, 56 pp. Wellington Natural Heritage Trust.

- WNHT, 75 Te Anau Rd, Hataitai, WN 6021.
C.Anstey@paradise.net.nz

21. **Polluted Inheritance.** Dr Mike Joy. 61 pp.

- *Bridget Williams Books*

SUBMISSIONS CALLED FOR

- *DOC Kāpiti-Wellington Conservation Management Strategy review. Registrations of interest sought.*

<http://www.doc.govt.nz/get-involved/have-your-say/all-consultations/2015/wellington-cms-consultation/>

Contact wellingtoncms@doc.govt.nz with your questions.

- 14 July. **Wellington City Council Open Space Access Plan.**

www.wcc.govt.nz

SUBMISSIONS MADE

- **The status of Taupō Swamp**

I reported in the December 2014 newsletter, that the attention given to wetlands was one of the pleasing aspects of Greater Wellington's Draft Natural Resources Plan (DNRP). The DNRP proposed a three-tier hierarchical classification of wetlands. 'Outstanding' wetlands as a subset of 'significant' wetlands, which, in turn, are a subset of 'natural' wetlands. At that stage of the process, only three wetlands were 'outstanding'. The number had grown to 14 by the time the Proposed Natural Resources Management Plan was released for public consultation. Somewhat surprisingly, Taupō Swamp was not among them. It's the 30-ha wetland adjacent to SH1, just north of Plimmerton. It's owned by the Queen Elizabeth II National Trust (QEII Trust). GW classified it as 'significant', along with about 200 other wetlands throughout the greater Wellington region. While many wetlands are at risk from activities such as cattle grazing in the wetland, many of the risks to the values of Taupō Swamp are associated with activities in the surrounding catchment, e.g., run-off from SH1, and the future subdivision of farmland for housing.

The QEII Trust lodged a submission saying that the indigenous biodiversity values of Taupō Swamp are such that it should be upgraded to 'outstanding'. We have lodged a Further Submission supporting this position. We were able to participate in this process because we meet the criteria in the RM Act for making Further Submissions, i.e., we represent a relevant aspect of the public interest and have an interest that is greater than that of the general public.

We also submitted that the historic values of Taupō Swamp are such that it should be listed on the Schedule of Historic Heritage Freshwater Sites. Its historic heritage values include its use by early Māori occupying the pā at the mouth of Taupō Stream, commercial flax production when attempts to drain the swamp failed, and the visit by the Queen to see the work of the Trust which was renamed in her honour to celebrate her Silver Jubilee.

Two useful, if somewhat dated, references about the Taupō Swamp are:

Bagnall, RG and Ogle, CC. The changing vegetation structure and composition of a lowland mire at Plimmerton, North Island, NZ. *NZ Journal of Botany*. (1981).

Moar, NT. A study of some mires in the South West Wellington Province. Victoria University. Unpublished thesis. (1949).

• **Wellington City Council's Annual Plan 2016/17**

Earlier this year, WCC asked for ideas before preparing its consultation document on its Annual Plan 2016/17. We asked for increased funding for implementation of *Our Natural Capital* (the Biodiversity Action Plan), and encouraged Council to initiate three projects from plans they had already approved.

- a revised Pest Management Implementation Plan, and the review of the Pest Management Programme (Project 1.3.1(a) from *Our Natural Capital*)
 - a long-term Forest Management Plan for Otari-Wilton's Bush in conjunction with Greater Wellington. (Project 5.4.3 from the Botanic Gardens of Wellington Management Plan 2014)
 - identification of the ecologically important areas on the Town Belt (Project 5.2 in the Town Belt Management Plan 2013.)
- When Council released its Consultation Document on the Annual Plan, we were disappointed to learn that only \$202,000 (operational funding) has been allocated in 2016/17 for projects from *Our Natural Capital*. We had been hoping for \$320,000, i.e., 10% of the \$3.2 million allocated in the 10-year Long-Term Plan 2015–25. We made this point in our submission on the Annual Plan.

Bev Abbott

Submissions Coordinator

Jubilee Award 2016—Applications sought

Wellington Botanical Society invites applications for an Award of up to \$2,600 to encourage and assist applicants to increase knowledge of New Zealand's indigenous flora, and to commemorate the Society's Jubilee in 1989.

Purpose of the award

The Award is open to anyone working in NZ. It will be granted for: fieldwork; artistic endeavour; publication; research; propagation or cultivation of NZ native plants for educational purposes and/or other studies which promote the better understanding of NZ's indigenous flora and vegetation. The interpretation of these conditions

will be flexible, except that the main criterion will be the furtherance of knowledge or promotion of the intrinsic value of NZ's indigenous flora and vegetation. The Award may be used to defray costs such as travel, accommodation, materials or publication.

Applications for the Award

Applications should be made in typescript to: Secretary, Wellington Botanical Society, PO Box 10 412, Wellington 6143, or by e-mail to bj_clark@xtra.co.nz, by **2 September 2016**.

There is no prescribed application form, but the following must be provided:

1. the applicant's name,
2. postal address, telephone number and e-mail address.
3. any relevant position held
4. a summary statement of the applicant's botanical accomplishments—no more than one page
5. an outline and timetable for the proposed project for which the Award is sought
6. a proposed budget for the project.

Selection

The Award will be made to one or more applicants selected by a subcommittee nominated by the general committee of Wellington Botanical Society. Award(s) will be made, and applicants informed of the results in writing, by 6 October 2016.

Successful applicants will be required to provide, at an agreed time, a short report on what they have achieved, and an account of their expenditure of Award funds. The names of the Award recipients, the value of the Award(s), and a synopsis of the project(s) will be published in the Annual Report of Wellington Botanical Society.

Wellington Botanical Society—Grant to Graduate Students

Each year Wellington Botanical Society provides small grants to assist post-graduate students in VUW's School of Biological Sciences.

These grants can be used for travel, materials and other costs related to research projects undertaken as part of the course of study. Grants to any one student will normally not exceed \$600.

Application should be made initially through your supervisor to Prof. Kevin Gould by **6 September 2016**.

Applications should be brief and to the point. (Say two A4 pages).

They should state:

- Your name and e-mail address.
- Your current education qualifications.
- The course of study you are undertaken.
- The nature and aim of your research project.
- The name of your supervisor for this project.
- The budget for your project.
- The expenses that the grant is proposed to cover.

You will be advised of the results of your application by 3 October 2016

Grants will be made through the Research Trust of Victoria University of Wellington.

Names of successful applicants will be published in the Society's newsletter.

DOC Wellington Visitor Centre

*Te Pae Manuhiri, Te Rohe
ō Te Whanganui ā Tara*

Conservation House,
18–32 Manners St

- Track, hut, conservation information
- Kapiti Island visitor permits
- Hut tickets, backcountry hut passes
- Hunting permits

Open: Mon–Fri 9 a.m. – 5.00 p.m.
Sat 10 a.m. – 3.30 p.m.

Tel: 04 384 7770 Fax: 04 384 7773

E-mail: wellingtonvc@doc.govt.nz

Web: www.doc.govt.nz

New Zealand Government



Department of
Conservation
Te Papa Atawhai

It is condition of the grant that you make a short presentation to the Society on your project and / or provide a one-page summary on the nature and results from the project to be included in the Society's newsletter or bulletin.

The small print

1. Grants will usually be to post-graduate students. Consideration may be given to applications by undergraduates where the supervisor considers that there is a special case to be made because the nature of the project is similar to that undertaken by graduate students.
2. Priority will be given to projects involving native New Zealand vascular plants and cryptogams. Consideration may be given to those projects involving other vegetation. With the anticipated competition and limited funds it is unlikely that applications for projects involving algae, fungi and coral would be successful.
3. The primary purpose of the grant is to cover field expenses – transport and accommodation, but not rations. Financial assistance towards the cost of chemicals and chemical and DNA analysis will be entertained. The Society is reluctant to fund capital items but will consider applications for these.
4. Applications for grants made after the closing date may be entertained if the Society has not already allocated the funds available for the Student Grant. Priority will be given to applications received before the close-off date.
5. The funds available are limited and priority will be given to those applications and those expenditures that agree with the main criteria set out above and are most in line with the aims of Wellington Botanical Society.

Tom Moss Student Award in Bryology – Applications sought

Tom Moss was an active member of Wellington Botanical Society for many years, and was a participant in the very first John Child Bryophyte Workshop in 1983.

To commemorate his name, his contribution to New Zealand botany, and his particular interest in bryology, a Trust Fund was established following discussion at the 2006 John Child Bryophyte Workshop. It is administered by Wellington Botanical Society. The *Tom Moss Student Award in Bryology* provides a small annual prize for the best student contribution to NZ bryology. The 2016 Award will be made at the John Child Bryophyte Workshop to be held in November on Stewart Island. Contributions that would qualify for the Award include:

- A student presentation at the Workshop relating to NZ bryology.
- A paper relating to NZ bryology.

Only one application per student will be accepted (i.e., either a presentation or a publication). The paper can be published, or accepted for publication, or a significant unpublished report. This should be published or written in the twelve months immediately before the Workshop, and submitted for judging by 25 October 2016 (see below). It is not necessary to attend the workshop where a paper is submitted for consideration.

Contributions are invited and will be considered from any student enrolled for a B.Sc., M.Sc., Ph.D., or equivalent

degree in the twelve months immediately before the Workshop. Students may be enrolled in a NZ or overseas university, and may include work on overseas bryophytes, as long as the work relates in some significant way to NZ bryology.

An Award of \$400 will be made by a panel of three judges attending the Workshop and appointed by Wellington Botanical Society. The panel may reserve the right to make no award if there are no suitable contributions.

Publications for consideration should be submitted with a covering letter by **25 October 2016** to: Tom Moss Student Award, Wellington Botanical Society, PO Box 10 412, WN 6143.

Students intending to make a qualifying presentation at the Workshop should indicate this when they enrol for the Workshop.

Further information about the Award may be obtained from Dr Patrick Brownsey, Te Papa, P.O. Box 467, WN. Ph: 04 381 7135; e-mail: patb@tepapa.govt.nz.

Plant etymology blogs

The 'You called me WHAT?!' Te Papa blog with the *Veronica thomsonii* image is now live:

Allan Thomson and the Cenozoic brachiopods

The next blog in the series (on W.R.B. Oliver) will also feature an NZPCN image – due to be published on 2 May.

You may be aware that the first two species that we sought suggestions for names for were a fern and a forget-me-not:

Help name a new species

Unforgettable names for a new forget-me-not-species

Colin Miskelly
Curator Terrestrial Vertebrates
Museum of New Zealand Te Papa Tongarewa

Protecting NZ's Indigenous Plant Biodiversity through Seed Conservation and Research

New Zealand's *in situ* conservation is being supported by a range of *ex situ* conservation activities with the aim of reversing the continuing decline in the health and diversity of indigenous flora and fauna populations across New Zealand. One such *ex situ* conservation activity is a project to collect, research and bank seed of NZ's indigenous flora. A seed bank is an effective *ex situ* method of conservation in support of *in situ* conservation, as seed of many species remains viable at low temperature (-18°C) for decades in seed-bank storage. A wider aim of the project is to increase NZers awareness of why conservation and preservation of indigenous species matter locally, nationally and globally, and what they can do to help.

Newsletter by e-mail?

If you would like to help us to reduce our postage costs by receiving your newsletter by pdf, please advise Lea Robertson: harlea@actrix.co.nz

The project is funded through Massey University's Strategic Innovation Fund and the NZ Lottery Grants Board. The George Mason Charitable Trust has also provided funding for the purchase of equipment. The project is being led from Massey University in collaboration with DOC, AgResearch, Landcare Research, the NZ Plant Conservation Network and the Royal Botanic Gardens, Kew (Wakehurst Place, West Sussex). The project is part of the Millennium Seed Bank Partnership. This is the largest *ex situ* conservation programme in the world with a network that covers 80 countries.

A key part of the project has been training collectors throughout the country to equip them with the skills needed to collect seed. This seed is then sent to the physical seed bank in Palmerston North. To date over one hundred collectors have been trained. There are now trained collectors from the Catlins to North Auckland.

Once the seed reaches Palmerston North, a dedicated group of volunteers extract, clean and dry the seed in preparation for banking. Before banking, a small portion of the seed is x-rayed to ensure the seed is full and free from pests.

Many species, particularly those of tropical origin, produce seed that cannot be desiccated to the low moisture contents (5–7%) needed for banking. Although several desiccation-sensitive species have been identified (kohekohe, nikau, kahikatea, tawa and maire) the number of NZ plant species that produce seed sensitive to desiccation is unknown. Research is needed to determine which seed can be desiccated without loss of viability. For seed that is sensitive to desiccation, protocols for storing that seed will be needed. Research into seed-storage behaviour, and the factors that affect the life-span of seed in storage, are an integral part of the project.

The process of seed collecting and banking is managed through a series of protocols. Having obtained appropriate collecting permissions, trained collectors collect seed and herbarium samples in the field, with limits on the quantity of seed that can be collected from any site. Collections are sent to Massey University (Palmerston North) for initial processing and assessment of seed quality. Seed is dried to a moisture level in equilibrium with a relative humidity of 15%, then placed in storage at -18°C at the Margot Forde Germplasm Centre (AgResearch). A duplicate accession will be held by one of the four main botanic gardens (Auckland, Wellington, Christchurch, and Dunedin). The herbarium specimens are catalogued and stored in the Dame Ella Campbell Herbarium (Massey University, Palmerston North) with duplicates sent to the Allan Herbarium, Landcare Research (Christchurch). The herbarium specimens provide the link between the seed in store, and the plants in the field from which the seed was collected. The specimens are used to ensure that the seed collected is correctly identified to species and to facilitate any subsequent research.

Seed can only be removed from the bank for a limited range of purposes, such as reintroduction of species where populations have been lost in the wild, or for research projects that will help with the conservation of the species. Seed may also be used for multiplication to replenish seed in the seed bank. All withdrawals from the seed bank must be approved by the project steering group which comprises

representatives from Massey University, AgResearch, DOC, Landcare Research and the NZ Plant Conservation Network.

Species that will be collected include both threatened and non-threatened species. Threatened species clearly have an immediate conservation need, but the threats that any species may face in the future are unknown, therefore banking seed of all species is a good insurance policy. While the aim is to collect seed of all NZ's flowering indigenous flora, four species' groups have been identified as immediate priorities, the Myrtaceae, the alpine flora, in particular the forget-me-nots, the Fabaceae and podocarps / trees of the forest. Since October 2013 94 species (31 listed as Threatened or At Risk) have been collected (including 48 new species thus far in 2016). Seeds and herbarium specimens have been collected from areas as diverse as the Waitakere and Hunua ranges, Kahurangi National Park, Bushy Park Sanctuary, Titahi Bay, Cape Palliser, Mount Arthur, Old Man Range and Enderby Island.



Jess collecting *Celmisia armstrongii* near the summit of Mueller Hut track, Mt Cook/ Aoraki National Park.

Anyone interested in becoming an active collector for the NZ Indigenous Flora Seed Bank will need to undertake collector training. For further information on training please contact Mrs Jessica Schnell on (06)951 6236 or J.L.Schnell@massey.ac.nz. Any other enquiries on the project can be directed to the project leader, Mr Craig McGill on (06) 9517803 or C.R.Mcgill@massey.ac.nz.



Rewi Elliot collecting *Veronica* seed at Titahi Bay.

Old man's beard – Wellington sightings

We all know that Wellington is a weedy city, but how weedy is it? A project on Nature Watch can answer that question, using the vine, *Clematis vitalba* / old man's beard (OMB) as an indicator pest plant.



OMB is easy to identify from a distance, or close up. It is particularly obvious at this time of year, when it flowers profusely. The creamy-white flowers are 2–3 cm in diameter; the leaves have five leaflets; the stems are very long, six-angled, strongly ribbed, with light coloured bark that rubs off easily.

The project, “Wellington: Old man's beard sightings”, was set up by Illona Keenan, WCC Parks and Reserves. The Nature Watch site features a map which shows a rash of pins in Northland, Highbury, Kelburn and down into Thorndon. I have entered 425 sightings to date, with more to follow. The block I am trying to survey is Messines Rd, Karori to the Motorway, and Te Aro to Hill Street.

The rest of the city is a blank. Help me to fill it in! I walk the dog, noting the plants I see, then put the sighting on Nature Watch. It is publicly available information in a graphic form. Just what we need when writing submissions.

The OMB project is for one species only: *Clematis vitalba*. Other pest plants sightings can be made in NZ Pest Plants project, also on Nature Watch.

Gordon Sommerville

Baring Head

Great news!! The good folks at DOC have agreed to us diverting some of the Community Conservation Fund grant we were awarded in 2014 to fence off some very precious cushion-fields on the Fitzroy Bay foreshore. (See December newsletter for detailed information). This work will be done over the next few months. Once completed, we can start hand-weeding woody exotics such as tree lupin / *Lupinus arboreus*, which will thrive once the grazing

pressure is removed. This could be a nice little project for BotSoc (hint, hint!).

Unfortunately, spraying of cape pondweed / *Aponogeton distachyos* in the river-flat oxbows has been deferred for the third consecutive year. A combination of resource consent issues and dry summers frustrated our plans. However, now that the fence is finished, and stock excluded, we will start planting around the margins of several of them, once conditions get wet enough. We hope to get some 4,000 plants in the ground this winter, so again any help you can provide would be welcomed. If you are interested call me on 478 4301 or e-mail me at rydercj@xtra.co.nz.

Carrying on from this plea, we will be organising a workbee a month so there will be plenty of opportunities for “exercise with a purpose” – my excuse to my wife for heading out to Baring Head. (I have to admit it hasn't worked yet).

Some more lines of Timms traps have been installed in the grazed areas since the last newsletter. We're catching many possums. The traps will be complemented soon by a network of bait-stations targeting possums and rodents in the ungrazed areas, plus intensive predator-control protecting several lizard “hotspots.”

The grant funding will last until July 2017, so we've suggested to Greater Wellington Regional Council that we start thinking about what happens after that. The Biodiversity Action Plan envisaged expenditure of a tad over \$115,000 during the following three years, mainly on weeding and planting. While these costs will need review in light of experience, I anticipate some interesting discussions about who pays for what.

The only other major biodiversity project we can anticipate at Baring Head is fencing-off the coastal escarpment. This is not included in the Plan, and has not been costed, but we would probably looking at a cost north of \$50,000. This will be on the table for discussion.

So, there's a lot going on. Besides this biodiversity work, we're not far off trying to raise the resources to restore the lighthouse compound (got a spare million, anyone?), and developing and implementing an interpretation strategy. There are some other ideas involving projects a bit further afield, but still within our constitutional aegis, which are being progressed. I hope to be able to report on them if and when they get progressed.

Colin Ryder
Treasurer, Friends of Baring Head

Discovery of a Nationally Critical species

A Wairarapa farmer's tentative enquiry about covenanting a small bush remnant resulted in the discovery of a population of *Olearia gardneri* (Gardner's tree daisy), one of NZ's rarest plants.

QEII National Trust's local representative, Trevor Thompson, found the plants while assessing the site's suitability for covenanting. Previously the number of plants in the wild was estimated at 160, scattered in small isolated populations, mostly around Taihape, and a few isolated plants in the Wairarapa. Those statistics made *Olearia gardneri* about as rare as our critically endangered kākāpō.

Mr Thompson has since counted 374 specimens at the

Taputeranga Marine Reserve
If you see any conservation-related illegal activity, call

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0800 362 468
For Search & Rescue—call 111

All other enquiries to your local DOC office or visit our website www.govt.nz

 Department of Conservation
Te Papa Atawhai

 New Zealand Government

site and, unlike some populations elsewhere that contain only adults, he has found plants of all ages and sizes. The discovery may lower its threat status from Threatened: Nationally Critical to Threatened: Nationally Endangered.

Landowner, Jane McKay, has her son, Tom, to thank for the discovery. They had talked about protecting the bush, but she felt shy about it as she wasn't sure it would meet covenanting criteria. Tom was keen though, so they asked Trevor to investigate. Tom felt inspired to protect the bush after talking to his friend whose parents had covenanted bush on their farm. He thought they should do the same with their bush. Ms McKay is thrilled to have such a rare plant on the farm and is determined to protect it and support its recovery. A management plan has been developed to enhance the current population, introduce plants to other tiny populations in Wairarapa, and set up new populations in other suitable covenanted sites.

Local Forest and Bird members weed the site, and collect seeds and cuttings for Norfolk Road Native Nursery to grow for the plant's recovery programme. Already 200 plants are ready for planting in this autumn.

Because of the site's importance, Greater Wellington Regional Council has supported covenanting costs with a higher than normal funding allocation to help with fencing the site, and old man's beard control.

Mr Thompson said the discovery is a highlight of his career. 'The site didn't look special from a distance, so finding the population was completely unexpected. It drives home the fact that landowners should never feel shy about proposing covenants. 'Sometimes they might think the bit of bush at the back of the farm is nothing special, but it just goes to show that you never know what taonga it might be sheltering,' he said.

Olearia gardneri, a member of the tree-daisy family, is endemic to the North Island. Pollinated by insects, its seeds have a dandelion-like parachute that helps them travel on the wind. Fortunately, it is not particularly palatable to grazing animals. *Olearia gardneri* may have had a pivotal role in helping to heal land slips, being replaced by larger forest trees over time. It is deciduous. May is the best time to spot it, because its yellowing leaves stand out. It supports at least nine moth species, five of which are tree-daisy specialists (source DOC).

Adapted from QEII National Trust 28.2.2016 news release prepared by Anne McLean.
www.openspace.org.nz



Te Mārua Bush in the drought

The following informal notes were made on 20-3-2016 during a brief visit to the Main Bush. Owing to time constraints, none of the planted extension areas were included.

Deep shade in the Main Bush has been successful in keeping the vegetation alive. Even the big trees such as matai, tōtara and maire appear healthy. The exception is the large dead matai near the NE corner which was commented on in the December newsletter, but GWRC staff think it is highly unlikely that its death is drought-related, because the tree has been dying for years. The trunk is still standing but is completely without bark, which is strewn in large sheets on the ground, and there is no foliage. Other matai with d.b.h. between c. 25-40 cm in the immediate vicinity appear perfectly healthy.

There was evidence of drought on many of the following 2–3 year-old saplings, ranging from wilt, to dead or dying foliage: *Brachyglottis repanda*, *Coprosma grandifolia*, *C. robusta*, *Veronica stricta*, *Melicytus ramiflorus*, *Myrsine australis*, and *Pseudopanax arboreus*. Those saplings that die will easily be replaced naturally, given that there has always been a plentiful supply of seedlings germinating in spring. Ground ferns in the deeply shaded areas of the Main Bush are holding up well.

Barbara Mitcalfe

Sue Millar, Glennis and Allan Sheppard sent in the following notes on 28-4-2016:

Twelve of the (50?-60?) plants put in on our 31.10.15 workbee have died, almost certainly from drought. There are no “lawns” of black maire seedlings in the Main Bush, another drought casualty? There is an excellent crop of fruit on coprosma species for Forest & Bird to propagate.

**The next Te Mārua Bush workbee:
Saturday 23 July, 9.30.
Please refer to the programme in this issue**

Dr Andrew McEwen

We congratulate Andrew who was appointed to the NZ Order of Merit (ONZM) in the New Year's Honours, for his services to forestry.

Karen Palmer, President

Wellington Botanical Society Bulletins – back-issues

Expand your collection of our “flagship” publication and boost BotSoc's bank balance!

Limited numbers of copies of the following back issues are available:

- 1950s: no. 23 (9/50), no. 30 (12/58).
- 1960s: no. 32 (12/61), no. 33 (2/66), no. 34 (11/67), no. 35 (10/68), no. 36 (12/69).
- Index to Bulletins nos. 1–35.
- 1970s: no. 37 (11/71), no. 38 (9/74), no. 39 (10/76), no. 40 (8/78).
- 1980s: no. 41 (9/81), no. 42 (9/85), no. 43 (4/87), no. 44 (11/88), no. 45 (11/89).
- 1990s: no. 46 (12/94), no. 47 (9/96).

- 2000s: no. 48 (9/02), no. 49 (12/05).

Cost \$4 per issue, incl. p&p; \$12 for any five issues incl. p&p.

Copies of more recent Bulletins, no. 50 (3/07), no. 51 (11/08), no. 52 (4/10), no. 53 (6/11), no. 54 (11/12) and no. 55 (11/14) are \$11 each incl. p&p, to members and other individuals, and \$21 each incl. p&p, to organisations, posted within NZ.

Contact Chris Horne to confirm availability: jchorne@paradise.net.nz, phone 04 475 7025.

Please make your cheque payable to Wellington Botanical Society, PO Box 10 412, Wellington 6143. Thank you!

Lea Robertson, Treasurer

National Pest Control Agencies

In 2014, the NPCA published information on nineteen vertebrate-pest species, and now seeks information and images for eleven more species. The Clues section of the web site (<http://www.pestdetective.org.nz/clues/>) covers potential field sign, e.g.:

- Droppings
- Footprints and tracks, including trails, nests, burrows and dens
- Vegetation damage, including to overall foliage, leaves, fruit, flowers, bark and roots
- Kill sign, including corpses of vertebrates and invertebrates, vestiges such as feathers, fur, bones, and exoskeletons, and damaged / predated eggs.
- Other field clues relating to the pest species, including smell, fur, hair, sound, eye shine and distribution in NZ.

We will need to know any conditions of use that might apply, particularly to images, such as acknowledgement requirements, copyrights, and copyright fees. NPCA seeks to keep costs down, so if material can be supplied free of charge that would greatly assist.

Shona McCahon, for Pest Detective

E-mail: info@pestdetective.org.nz; Ph: 027 413 2930

c/- National Pest Control Agencies (NPCA)

PO Box 11-461, WN 6142 www.pestdetective.org.nz

Devastating disease affecting Hawaiian forest trees

Metrosideros polymorpha is the dominant tree, and foundation, of native Hawaiian forests. Sadly, over the past 2–3 years, a new fungal disease, a *Ceratocystis* species, has spread rapidly across the Island of Hawai'i, where it has killed trees over much of their range. Learn more about the spread of the disease at: http://www2.ctahr.hawaii.edu/forestry/disease/ohia_wilt.html

Lyon Arboretum is storing *Metrosideros* seeds in its seed bank. Please consider supporting this important initiative. Learn more about it at: <https://www.gofundme.com/ohialove/>

Edible native plants

There are at least 190 species of edible native plants in NZ, and many toxic ones, according to Wayne O'Keefe, QEII Trust representative, Western Bay of Plenty. As a boy growing up in the UK, it was drummed into him never to

eat wild foods. Except for blackberries, all berries were poisonous. Eating mushrooms could lead to a somewhat psychedelic death, and even just touching dandelion milk would make one pee the bed! As an adult, he now knows that this was mostly folklore, with a dash of fear and ignorance thrown in for good measure.

Upon moving to NZ and starting a family, he was determined to make sure his daughters would grow up knowing what bush foods they could eat, and conversely, which ones could kill them! Their education started when they became old enough to identify common bush plants such as kawakawa in his Open Space Covenant. The orange, peppery berries of kawakawa are delicious and very popular with his eldest daughter when she was still a toddler. He will never forget once during a bush walk on his property how she got irate with a kererū for stealing 'her' berries. The education continues to this day and both daughters are developing a knowledge of bush plants that could potentially save their lives one day, if they ever found themselves in a survival situation.

When early Māori settled Aotearoa, there must have been so much to learn about which bush foods could be eaten, and which ones to avoid. Tutu / *Coriaria arborea* and its close relatives are well known to farmers and beekeepers. Tutu contains the toxin tutin, and if consumed in sufficient quantities, will likely lead to a painful demise. The only part of the plant that is not toxic is the fleshy berry - the tiny seed inside the berry holds the toxin. Tutu juice was once a popular tonic, mixed with bull-kelp to make a jelly. It required painstaking processing to ensure every seed was removed. It must have taken lots of trial and error to realise this. Karaka-berry kernels are very toxic, and required substantial processing to remove the toxin before the kernel mash could be eaten.

Horopito / *Pseudowintera colorata*, a small tree, occurs throughout much of NZ, usually at altitude. It is also known as pepper tree as the leaves are so peppery. His introduction to horopito was provided by a supposedly good friend who told him it was fruit-salad plant, named because of the fruity-tasting leaves. Wayne should have known by the grin on his friend's face that this was not correct, and the taste was not at all what he was expecting — the strong pepper taste lingered for some minutes. His favourite way to use horopito is as a marinade for fish or meat.



Horopito / *Pseudowintera colorata*. Photo: Jeremy Rolfe.

Flat-white anyone? Karamu / *Coprosma robusta*, is a common small tree in regenerating forest. The female trees produce masses of orange berries in late summer to early autumn. The genus *Coprosma* is in the *Rubiaceae* family, which includes the plant which produces coffee beans. Early European settlers processed karamu seeds to make a coffee substitute. It took a Wayne and a friend ages to strip, roast and grind the seeds. The resulting 'coffee' drink was interesting, but probably not worth the effort. All berries from the *Coprosma* genus are edible.

One of his favourite native berries is kōnini, borne on kōtukutuku / *Fuchsia excorticata*. This NZ endemic species is the world's tallest fuchsia. The colourful flowers give way to purple, juicy berries in summer/autumn. Traditionally they were made into a juice. They are popular with bellbirds / korimako and tūi, so if planted in the garden, they attract these birds. Other edible native tree berries include tawa, miro and kahikatea.



Kōnini, the fruit of kōtukutuku / *Fuchsia excorticata*. Photo: Jeremy Rolfe.

For use as greens, the koru, or unfurling young fronds, of many fern species may be harvested and cooked. Wayne has tried some and, if treated the same way as asparagus, with a dollop of butter on top, they are not too bad. Note: some species of fern are now known to be carcinogenic.

Some plant nurseries and garden centres sell species of native plants suitable for growing as vegetables. Wayne has NZ spinach / *Tetragonia tetragonioides* in his garden, a valuable source of greens in winter, packed with vitamins A and C. The older leaves can be bitter, but the growing tips are tasty. NZ celery / *Apium prostratum*, is nutritious and tasty in a salad or soup, and can thrive in a garden. Scurvy grass / *Lepidium oleraceum*, high in vitamin C, is another edible plant, named because it was fed to Captain Cook's crew to stave off scurvy. It is now rare in the wild owing to habitat loss and browsing.

As with eating anything that hasn't come from a supermarket, if you don't know it, do not eat it! There are also sustainability concerns about improper harvesting of plants in the wild. Harvesting of any plant material is not allowed on public conservation land without a permit.

Adapted from an article by Wayne O'Keefe in Open Space. 90/3/16, published by QEII National Trust.

TRIP REPORTS

17–24 January 2016: Western Waikato

We came to botanise in a region beyond our weekend reach, and increase our botanical knowledge. Focusing on a few sites provided more excitement than most of us could cope with in a week, as we had ample opportunities to learn of a new suite of flora that most of us were not familiar with.

We thank Mick Parsons, trip leader, Bev Abbott for arranging our breakfast and lunch menus, John Makin, manager, for his welcome, and opening the remarkably informative museum, and John Dodgson for describing his work destroying an invasive vine on *Merremia*, Vanuatu, and the ingenious tool he designed to poison it. Te Kauri Lodge, set in Te Kauri Reserve, the southern limit of kauri, proved to be an excellent base for our field trips.

18.1.16: Te Kauri Scenic Reserve

NZTopo-BE32 Kawhia

Eager and fresh, we all botanised a nearby bush circuit. The excellent flights of boxed steps down the Sheep Track made for easy viewing. Highlights were the orchids, the star being *Orthoceras novae-zealandiae*. We compared *Lycopodium deuterodensum* and *L. cernuum* side by side. We saw *Astelia trinervia*, new to many of us, and the fern, *Lygodium articulatum*, hanging through the lower canopy of predominantly tanekaha / *Phyllocladus trichomanoides*.



Lygodium articulatum.
Illustration: Eleanor Burton.

We stopped for lunch among carpets of *Selaginella kraussiana*, an indication of how highly trafficked these tracks were by the many visitors.

Lichenologist, Allison Knight, showed some of us her lichenicolous fungus, *Biatoropsis usnearum*, a brilliant red, grain-of-salt-sized gem. We accidentally deviated from our planned route (Mānuka Track), and took a track that on the map appears shorter—Devlin's Track. Devil's Track would have been a more apt name on the climb among limestone outcrops with many *Peperomia urvilleana* perched on them, spectacular *Rabothamnus solandri* tucked underneath, and patches of *Mida salicifolia* around every corner.

Sheelagh Leary

19.1.16: Walter Scott Private Scenic Reserve

NZTopo50-BE33 Pirongia

We drove 20 km in convoy to Scott Rd, and the reserve, owned by Forest & Bird. At the entrance to this 43-ha lowland forest is a notice board with a rather curiously handed map. We spent six hours botanising among tawa, some podocarps and nikau palms. The area was probably logged in the early days. There were very few weeds once within the forest, compared with other reserves in the area. Some limited planting had obviously been done but only of native plants. We split into two groups, one going clockwise, and one anticlockwise, to explore the reserve.

King fern / para / *Ptisana sinclarii* is regenerating here. Some at the foot bridge at the far end of the reserve appeared to be planted, and were not fertile. Towards the end of the day the anticlockwise group found one really mature plant in a gully, and around it growing numerous youngsters. This was a highlight of this trip.

The other highlight was the grove of 16 rimu, some at least 40 years old, and just shedding their lower branches. We stopped here for morning tea and celebrated the 40th anniversary of their planting, by Athol Caldwell in 1976, according to the plaque.

At a more mundane level we did botanise the reserve and added some twenty species. Notable species were the three patches of giant moss / *Dawsonia superba* / pāhau-kākāpō, a single basket-fungus / *tutae-kehua* / *Ileodictyon cibarium*, and one *Drymoanthus adversus*.

Of interest was a “vine” that appeared to be growing downwards from the crown of a mature rimu. For much of the trip we believed that this must be a northern rātā, but by day's end we had seen several similar vines growing upwards which were obviously *Metrosideros fulgens* / scarlet rātā. So we decided that the downwardly forked vine must have been a root at its base, perhaps uncovered as the ground level lowered.

Rodney Lewington

20.1.16: Mahaukura Track, Mt Pirongia

NZTopo-BE33 Pirongia

After a night of rain, the morning was partly fine, with thick cloud shrouding Mt Pirongia from the south. At the Grey Rd car-park, the party divided, some climbing the Ruapane Track, and some the Mahaukura Track. This description is of the plants along the latter, as far as the junction with the Wharauroa Track.

The lower forest is dominated by stands of tall trees—mainly rewarewa / *Knightia excelsa*, tawa / *Beilschmiedia tawa*, mangao / *Litsea calicaris*, tanekaha / *Phyllocladus trichomanoides* and kohekohe / *Dysoxylum spectabile*, with the occasional emergent rimu / *Dacrydium cupressinum*. The understorey has many hangehange / *Genistoma ligustrifolium* var. *ligustrifolium*, and the sprawling toropapa / *Alseuosmia macrophylla*, which varies greatly in leaf size and shape. Some plants had entire margins, and some had deep serrations, but none looked different enough to attempt to identify it as the oak-leaved *Alseuosmia quercifolia*. It has been a good year for flowering, so the plants had many fruits; in areas where it had more light, the fruits glowed bright red.

Tall *Cyathea medullaris* were a feature—some people estimating them to be 15 m tall. There were also the lacy *Cyathea cunninghamii*, with their narrow trunks.

As we climbed, the forest changed, with increasing numbers of *Quintinia serrata* and *Ixerba brexioides*, some in flower. *Coprosma aborea* was present as an attractive small tree with lacy foliage, the reddish undersides of the leaves giving a different colour to the canopy. The fern *Microsorium novae-zealandiae* was recognised by rhizomes that were totally covered in scales, and that did not reach the ground. It was great to see *Hymenophyllum bivalve* on a tree—a fern rarely seen this far north.

Ally, our lichen expert, had asked us all to look out for the Data-Deficient *Dibaeis absoluta*, with flat green body and flesh-pink apothecia that lack stalks. There were cries of joy when she discovered it, and went on to find two more patches.

Nearing the first knoll, we saw the very photogenic *Dracophyllum traversii*, with great spikes of terminal flowers. On the knoll we saw *Raoulia glabra*, an unexpected find so high on the mountain, and, surprisingly, a small *Orthoceras novae-zealandiae* in flower. This orchid is usually a lowland plant.

After the knoll the track became very rough, so most of us retreated at this point. Those who went on were rewarded with *Lycopodium fastigiatum* and *L. scariosum*. Some of the party went on from here to Mt Pirongia's summit, 959 m. The state of the forest seemed to be good, with palatable plants such as toropapa sprawling everywhere.

At the end of the day I compared the plants I had seen, with those on my trip up the Ruapane Track in 2014. I found the dominant species were similar, but the details different! Infrequent plants such as *Raukawa edgerleyi*, *Ptisana salicina* and *Streblus heterophyllus* which I saw on the Ruapane Track, I did not see on this track.

Both groups met at the car park, then back at Te Kauri Lodge where we compared the various routes and plants everyone had seen.

Gael Donaghy

21.1.16: Kauri Grove Track, Te Kauri Scenic Reserve

NZTopo50-BE32 Kawhia

The main purpose of this track, starting c. 1 km SE from Te Kauri Lodge on SH31, is to lead people to the area's largest stand of the southernmost naturally occurring kauri.

The track runs near a fence by a private pine plantation, slowly descending for about 0.5 km, then leaving the fence to descend a steep spur for c. 150 m into Muturangi Stream. No species not already seen in the reserve on the previous days were noted, with a fewer species overall.

Along the fence line, the vegetation, coated with pine needles, comprised several dry-tolerant fern species, mingimingi, profuse pigeonwood seedlings, *Litsea calicaris*, a few *Cordyline banksii*, *Astelia solandri* and *Quintinia serrata*, with an emergent smattering of *Phyllocladus trichomanoides*, rewarewa, occasional Hall's tōtara and rimu. Nestled among the numerous exotic intrusions were indigenous herbs, e.g., *Pterostylis banksia*, a *Ranunculus* sp. and a *Lobelia* sp. We had many discussions, including one about *Polystichum neozelandicum* and *P. wawranum*. Our meanderings assisted spore dispersal of a particularly large clump of one of the common *Lycopodon* sp. puffballs.

Once the track left the fence line, the conditions became wetter and cooler, giving rise to more forest species and fewer weeds. After a few slithery metres down, we saw numerous young kauri, the plants getting larger until we reached a group of fair-sized trees surrounding an information board. We saw two large trees of up to 1 m d.b.h. on the west side of the spur. They bore numbered metal tags, as did many of the stout smaller kauri. The trees were mostly in good condition, sporting healthy, flaking bark, and very little lichen. Accompanying them were *Astelia trinerva*, *Gahnia paucifolia* and *G. setifolia*. Four species of *Hymenophyllum*, *Drymoanthus adversus* and *Ichtyostomum pygmaeum* were spotted, mostly on rewarewa. Descending a few more metres, we reached the stream, where numerous *Cyathea smithii*, young

pukatea, nikau and parataniwha graced the stream banks. From here, we decided to return to the lodge, and for many, beach hot-pools were calling. We thank John Dodson, local Kawhia conservationist, who joined us for the morning.

Michele Dickson

22.1.16: Upper Tawarau Gorge

NZTopo50-BF33 Te Kuiti

"The largest continuous tract of native forest remaining on limestone topography in the North Island" (Flora and Vegetation of parts of Tawarau Forest, Western King Country. Ogle, CC and Druce, AP. *Wellington Botanical Society Bulletin*, (43) April 1987 pp 13–26.)

It was another glorious day - we getting used to the consistent blue skies, lack of wind, and warm temperatures. We drove through Otorohanga, along Marakopa Rd, and then tiny Apple Tree Rd to the car park. On Apple Tree Rd, we saw spectacular examples of heavily flowering *Olearia cheesemaniae*, and the site of the 'frost hollow' recalled by BotSoc members who were on the 1984 Botanical Survey, described in by Ogle and Druce's article, quoted above. The frost hollow is long gone, mainly because of invasions (or plantings?) of Tasmanian blackwood / *Acacia melanoxylon*.

Near the cars we had our first question, over two 'grassy-looking plants'. The consensus was *Carex banksiana* and *C. horizontalis*, and it was an opportunity to repeat the old tip: "Sedges have edges, rushes are round, and grasses have joints right down to the ground". We noticed that the *Pittosporum tenuifolium* had much larger leaves than we see in Wellington. Someone spotted minute flowers on *Raukawa anomalus*, we admired a grand *Cordyline indivisa*, and on our return saw five *Gastrodia minor* growing close together.

We walked down to the river, enjoying the blankets of *Leptopteris superba*, and through a majestic grove of very large and very old *Nestegis montana* (> 20 m). Below them we enjoyed seeing the small rengarenga, *Arthropodium candidum*.

The river had the typical appearance of a limestone river—tan-coloured, and with pot or mill-holes on the bed. The track follows the river downstream, often with a

limestone wall close on the right, providing opportunities for eye-level botanising. Among the plants on this very lovely stretch of the track were *Myosotis*, *Corybas*, baby parataniwha / *Elatostema rugosa*, large, leathery *Blechnum colensoi*, many species of *Hymenophyllum*, and various mosses, liverworts, algae, jellies, a dragonfly case, and beaded glow-worm threads.

We had lunch with our feet dangling down the bank, looking out over the river to a magnificent 60 m-high limestone wall, with various half-identified plants, mosses, liverworts and lichens providing topics for speculation.

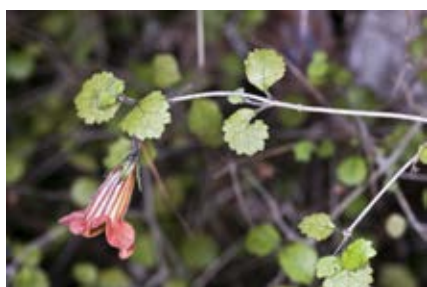
At this stage the party split, with 11 crossing the river to complete the loop track back to the cars, and 11 choosing to keep their boots dry, by returning via the morning's track.

The loop provided an opportunity to marvel over a very deep and narrow slot in the bank of the river, carved by a stream which entered the river in a waterfall. Botanically it was similar to the morning's track, with the additions of three *Senecio*, *Griselinia littoralis*, *Gunnera monroi*, *Polystichum wawranum* and *Pseudognaphalium trinerva*, among others.

We made seventeen additions to the existing Apple Tree Rd list (Jane and Donaghy, 5.4.2010).

There were various detours and mini-trips in the afternoon, with a few items of botanical interest:

- Raukuri Bush Walk—taurepo / *Rhabdothamnus solandri* in full flower



Rhabdothamnus solandri. Photo: Jeremy Rolfe.

- Waitomo Lookout Walk, among limestone crags and outcrops—*Metrosideros colensoi*, *Peperomia urvilleana*, *Asplenium lamprophyllum*(?)
- Oparau—a very large and very prolific *Prunus domestica*, which provided a couple of kilos of delicious ripe fruit

23.1.16 (a.m.): Marokopa Natural Tunnel Scenic Reserve

NZTopo50-BF32 Piopio

Today we went to the heart of Waitomo. After a drive of over 90 minutes, including the final steep descent though Murray Brandon's farm, we arrived at our carpark, the sheepyards on the flats near the forest edge. Following Murray's directions we easily found the entrance to the limestone tunnel at the end of a roughly triangular, scrubby area fenced off from the farm, with a stream flowing through it.

The streamside and limestone cliff vegetation on the farm side of the tunnel kept us busy for some time. This was mostly forest-margin type plants, with pasture grasses underfoot. The more unusual plants included the limestone obligate, the small fern, *Asplenium cimmeriorum*. According to NZPCN, in the North Island this is known only from cave entrances and limestone areas in the Waitomo area, and is more common in the western South Island. *Clematis quadribracteolata* also caught our eye with its delicate form. This would have been at or near its northern limit for the west coast. We also saw *Clematis forsteri*.

A scramble over old rock falls led us to the tunnel entrance proper where we saw *Asplenium lyallii*. The tunnel itself is spectacular – arching high overhead like an enormous cathedral, with glow-worms / titiwai / *Arachnocampa luminosa* on the ceiling in the darker sections. Not only was the height breath-taking, but the limestone formations inside, and the cave's length and ease of walking all combined to create an overall feeling of 'awe and wonder'.

After the (mostly) easy walk along the wide stream bed through the tunnel we emerged into a different world - a mature, although milled, lowland forest, with many tree ferns on the valley floor and thick undergrowth. In places the ground was carpeted with liverworts. The abundance of *Pseudopanax arboreus* and *Schefflera digitata* was a good indication of low possum numbers. Some of us followed the stream to its junction with the Marakopa River and found a few additions for Graeme's list including *Hymenophyllum rarum*, which hadn't been seen before.

Flowering *Rhabdothamnus solandri* was a feature around both entrances to the tunnel, and included some varieties with very beautiful dark red flowers.

Barbara Hammonds

23.1.16 (p.m.): Rakaunui Scenic Reserve

NZTopo50-BE32 Kawhia

This was a rewarding two-hour foray, at the end of our last day, into a 10-ha forest remnant on the edge of Kawhia Harbour's estuary. Entry was through a fence from pasture halfway up a steep slope. From there we had to slide down the hillside within the bush to the water's edge on beds of fronds from the sub-canopy of mainly *Dicksonia squarrosa* and *D. fibrosa* that were covered with unusual amounts of *Microsorium scandens* and *Metrosideros diffusa*. Alongside us were protruding limestone outcrops pocketed with *Peperomia urvilleana*. The forest canopy included titoki / *Alectryon excelsus* subsp. *excelsus*, that we had not yet seen on this trip, along with mangao / *Litsea calicaris*, *Podocarpus totara* and *P. laetus*, and some *Hoheria sexstylosa*, tawa, pūriri and pukatea. Further back there were very tall kahikatea and nikau / *Rhopalostylis sapida*. Over the tidal edge leaned large kōwhai / *Sophora chathamica* and many *Pseudopanax arboreus*. *Calystegia tuguriorum* and *Clematis paniculata* spread themselves through the estuarine vegetation nearby that was dominated by *Bolboschoenus fluviatilis* with *Typha orientalis* and *Apodasmia similis*. At the edge were *Carex virgata*, *Cyperus ustulatus*, and lots of *Blechnum fluviatile* amid a mixture of shrubby species including *Veronica stricta* var. *stricta*, *Leucopogon fasciculatus*, *Piper excelsum* subsp. *excelsum*, *Coprosma rhamnoides* and *C. propinqua* var. *propinqua*.

There were the calls of many native birds, a feature not noted in the forests we have been in up until now. Significant among them was the North Island fernbird / *Bowdleria punctata vealeae*.

Evidence of previous human disturbance on the flatter areas was marked by the revelation of a midden from under upturned māhoe roots. We thought perhaps this indicated that what we now saw as deep mud

formed from forest clearance within the catchment, was possibly once a sandy beach that was a source of kai moana. It was then a scramble to find our way out along a different route. We aimed for the top of the reserve up steep forest-floor slopes dotted with *Stellaria media*, and between limestone outcrops resplendent in ferns including *Pellaea rotundifolia*, another species not seen in other reserves we visited in the area. The top edge of the reserve was recognisable by the appearance of *Cortaderia selloana* / pampas grass, and pressing against the fenced edge of the reserve upon our exit was *Calluna vulgaris* / Scottish heather, to welcome us into the world of recent land disturbance.

We are deeply grateful for the permission and guidance to such areas by the land owners who treasure these pockets of scenic reserves within their property. Particular thanks go to Murray and Helen Brandon who not only assisted in providing us with meals, but also guided us to the natural tunnel on their property, Fiona Scott and her crew from the Kawhia women's group, Grace Marsh and the Hautapu School parents who organised our evening meals, which not only allowed us a longer



Melicytus crassifolius.

day in the field, but also allowed us a great avenue of contact within the community that we were privileged to be associated with for a short time. Many also took advantage of Beryl and her 'Eel Dorado' to learn more of the long-finned eel - an experience not to be missed for anyone who wishes to learn more about these magnificent creatures, and our other native fish species.

Mick Parsons

Participants: Bev Abbott, Margaret Aitken, Sam Buckley,

Barbara Clark, Lainey Cowan, Gavin Dench, Michele Dickson, Gael Donaghy, Raewyn Empson, Dale Every, Julia Fraser, Ken Fraser, Ian Goodwin, Jill Goodwin, Bryan Halliday, Robin Halliday, Barbara Hammonds, Chris Hopkins, Chris Horne, Sheena Hudson, Stuart Hudson, Graeme Jane, Brenda Johnston, Allison Knight, Sheelagh Leary, Rodney Lewington, Betsy Macgregor, Andy Malone, Barbara Mitcalfe, Syd Moore, Mick Parsons (leader), Darea Sherratt, Barbara Simmons, Sunita Singh, Val Smith

13 February 2016: Otari-Wilton's Bush

1. Plant propagation, Leonard Cockayne Centre and Plant nursery

Rewi Elliot – Curator:

Introduction to Otari

Botanist Dr Leonard Cockayne started developing the collection that now forms the Otari Native Botanic Garden here in 1926. He had four aims:

- Conserve and restore the native forest
- Cultivate NZ plants, grow as many as he could
- Represent NZ plant communities in the gardens
- Represent NZ horticulture and teach people about their use

Otari Native Botanic Garden and Wilton's Bush Reserve are owned and managed by Wellington City Council, it has four main functions:

1. Conservation—many threatened species are kept here (insurance populations), also return plants to the wild for restoration

2. Research—use the plants for research, classification
3. Education—help visitors learn by displaying plant names, running tours
4. Recreation—great place to visit, today a good example with lots happening, even a wedding here today

Otari-Wilton's Bush staff go on trips around Wellington and further afield to collect plants.

*At this point we admired a flock of over 20 (!) kererū, followed by a trio of kākā and we all praised pest control which has happened here since 1993.

Propagation

Propagation occurs at any time of the year at Otari, because of the special nursery set up. Most propagation to rejuvenate plants in the collections involves cuttings, owing to the risk of hybridisation from seed.

Barbara noted that she had spotted a large patch of *Asplenium x lucrosum* in Otari. Everyone now

disses *Asplenium x lucrosum* which is a hybrid of a native (*Asplenium bulbiferum*) and a Norfolk Island species (*Asplenium dimorphum*).

Practical propagation tips

If you are taking cuttings for storage (not immediate planting):

- trim big leaves cut straight across ½ of size to preserve energy
- wrap in paper towel (like a nappy!)
- dunk in water
- place in zip lock bag with water
- place in chilly bin (with freeze bags at bottom covered with newspaper)

Some species can last up to two weeks like this.

When Rewi gets them back to Otari, he uses a 150 mm nail to create a hole, pushes the cutting in, and firms up soil. Otari has a heated bench and misters.

Rewi's DIY version is: circular pot, stakes, bread bag to maintain humidity, well-lit site, but not in direct sun so cuttings don't overheat.

Otari staff use a mix of pumice, and coconut fibre from the Pacific, for their cuttings. They used to use peat, but found it came from Estonia, so wanted a more sustainable product produced closer to home. The product is available at Daltons or Caranz. If you use sand as your mix, use river sand, not beach sand which is salty. Don't use fertiliser, the idea being to encourage the cutting to grow roots in search of food. It takes between 1 week to 2 years (!) for a cutting to root, depending on the species. Once the cutting has rooted, transfer it to potting mix in a 10 cm pot, keep it well-watered, then once outgrown, transfer it to a PB2 planter bag.

Practical seed-growing tips

Use a commercial seed sowing mix with a short-term release fertiliser, then firm it down. Avoid having the seeds touching each other. Your seedlings need good air circulation to prevent 'damping off' - collective term for fungal diseases that kill plants. Do not provide too much water.

If you have small seed that is difficult to handle: fold some paper, place the seed in the folded 'V', then mix the seed with sand and sprinkle potting mix over it. Cover your seeds with loose potting mix or pumice, ensure the covering is level and even, and well watered (water will drain from the bottom when it is).

Keep the pot flat and the soil level, so that when you water the seeds they don't all bunch up, which could cause 'damping off'. Once your seedlings have sprouted, wait until you have the true leaves, not the first leaves/cotyledons. Then prick out the seedlings - hold them gently by a leaf, not by the stem which is easy to crush.

Nursery tour

Rewi then showed us the impressive nursery complete with heated bench and electronic leaf irrigation.

Many special plants are being raised here, including *Brachyglottis kirkii* var. *kirkii* a plant that used to occur in the Karori and Wadestown region. It was probably browsed out. Rewi obtained seed from a mix of five populations from the wider Wellington region. *B. kirkii* is usually epiphytic. If they are grown straight in the ground they usually die within two weeks, but they transfer well after growing in pots made from dead mamaku. N.B. If anyone has any dead mamaku, Rewi would love to have it.

References

Rewi recommends: Metcalf, L J. *The Propagation of NZ Native Plants*. It easy to obtain second-hand.

Amelia recommends: the website of Te Motu Kairangi Miramar ecological restoration, which has excellent plant lists. <http://www.temotukairangi.co.nz/>

2. Botanising in Otari

In the collections area, we saw *Raukaua edgerleyi*, uncommon in Otari, and the Nationally Critical *Metrosideros bartlettii* / rātā moehau, from the Far North. We then botanised intensively along the lower Yellow Trail in the valley of 'Bledisloe Gorge'. The efficacy of over 20 years of pest control by WCC staff, Greater Wellington Regional Council (GWRC), and by Otari-Wilton's Bush Trust's 'Rambo' volunteers, is clear. The numerous kohekohe, tawa, rewarewa and tītōki seedlings, now have the chance to repopulate the depleted understorey tiers, and in time, the canopy. The

previously abundant possum and rodent populations would have severely restricted the regeneration of these species, the possums eating the leaves, flowers and fruit, and the rodents eating the seeds. Weed control is required, because we saw numerous *Hoheria populnea*, the lacebark which occurs naturally from Waikato northwards, and abundant *Corynocarpus laevigatus* / karaka. The latter is spread by kererū whose numbers are being boosted by pest control.

With Rewi's approval, we botanised up an old track towards the skyline, then down another one into a gully with a mature nikau, numerous nikau seedlings, a large pukatea, and velvet fern / *Lastreopsis velutina*. Beyond, we admired one of the city's few mature matai / *Prumnopitys taxifolia*, and nearby a small-leaved milk tree / *Streblus heterophyllus*.

Glen Falconer, GWRC, reports that Otari is part of a large Key Native Ecosystem (KNE) called Wellington Western Forests. See <http://www.gw.govt.nz/assets/council-publications/Key-Native-Ecosystem-Plan-for-Western-Wellington-Forests-2015-18.pdf>.

GWRC maintains 82 bait stations in the KNE at 3-monthly intervals, and the volunteer group, RAMBO, maintains c. 44 mustelid traps.

Participants: Bev Abbott, Rachel Anderson-Smith (note-taker during Rewi Elliot's talk), Sam Buckley, Michele Dickson, Rewi Elliot (leader—plant propagation), Amelia Geary, Richard Grasse, Chris Hopkins, Chris Horne (leader—botanising), Mark Jones, Winifred Maindonald, Barbara Mitcalfe, Chris Moore, Karen Palmer, Sunita Singh.

5 March 2016: Tupoki Takarangi Trust, Wainuiomata Coast Rd

NZTopo50-BQ32 Lower Hutt

Following a visit to the Trust's land on 1 August 2015, BotSoccers, plus some welcome guests, botanised some of the Trust's land not traversed during the previous visit. This long but narrow strip of land (c. 177 ha), covers a wide range of ecosystems north of the Baring Head section of East Harbour Regional Park. The block is not open to the public without the Trust's permission. It runs east from Fitzroy Bay across a coastal

platform uplifted by earthquakes, up a very steep coastal escarpment, across the marine terrace, down the inland escarpment and across the Wainuiomata River flats, (including the river and an oxbow), to Coast Road. The property continues on up and over a large hill on the other side of Coast Road. We hope to be able to botanise this part in future. Marama Butler-Monu, a trustee, told me her grandparents lived on-site and crossed the river by a swing

bridge. Marama and her siblings have wonderful memories of school holidays spent on the land. They are concerned about the quality of the water in the river and lack of native fish habitat.

We walked up a spur south of the gully that we botanised last year. On the marine terrace Pat Enright showed us *Juncus distegis*, a rush new to most of us, although according to NZPCN's web site, it is widespread but local in its occurrence.

Amongst many other rush species it may be easily overlooked. Several species of rushes and sedges gave us the opportunity to learn a few more. There was much discussion about a bunch of *Carex* which were identified as *Carex testacea*, *C. raoulii* and/or *C. "raotest"*. Pat has now confirmed them as all *C. "raotest"* which differs from *C. raoulii* by all its terminal spikelets being male. The bush in this block is relatively diverse, considering its grazing history. Of note was a wonderfully shaped *Streblus heterophyllus* near the head of the gully, numerous *Pseudopanax crassifolius*, and *Clematis forsteri* in seed. The two *C. vitalba* / old man's beard plants found were pulled out by Gavin, Sunita and Eleanor.



Streblus heterophyllus.

We lunched on the marine terrace, taking in magnificent views

to the west and south. After lunch the Wairarapians left to return via the inland gully as they had not attended the previous trip, so were keen to see the wetland on their way home. The main group scrambled along and down the steep coastal escarpment on the lookout for species which have been found on adjacent Baring Head's southern and inland scarps. Although we did not find matagouri, *Brachyglottis greyii* or *Clematis afoliata*, they may be present as we did not cover the entire escarpment. Unpalatable species were abundant such as *Olearia solandri*, *Coprosma propinqua* var. *propinqua*, and numerous *Melicytus crassifolius*. We saw a tangled mass of *Rubus schmidelioides* and *R. squarrosus* near the bottom of the escarpment. Beyond it we found remnants of a stone wall which had previously protected gardens, and an area rooted by pigs. The rooted area was an old fire site, with small chunks of charcoal, and was near a grove of old karaka. Near the karaka was a thicket of Spanish heath / *Erica lusitanica*, which although abundant along Coast Road, were the only plants we saw on the land. A huge *Melicytus crassifolius*, although severely grazed by sheep, is still dense enough to provide habitat for native lizards.

We walked along the farm track heading south into the Baring Head section of East Harbour Regional

Park. We noted sprayed gorse on the coastal platform, and numerous pest-animal traps, while looking for botanical treasures, then climbed the hill, and descended to the car-park.

Although we saw few cattle, they are damaging the wetlands, and tracking through the bush, opening up light-wells for invasive pest plants. Horses may also be grazed occasionally, as we saw manure on the coastal edge.

The land would benefit immensely from allowing the block to be grazed only by sheep, as they would not enter wetland, unlike cattle, and they are not usually keen to enter thick bush. The high value areas could be fenced off from stock, or the number of sheep reduced, to allow regeneration of the bush areas. Because this land is part of the Greater Wellington Regional Council's Baring Head Key Native Ecosystem, I recommend the river margins be fenced off from stock, the old man's beard site resurveyed for any new plants next spring, and the Spanish heath controlled as soon as possible.

Participants: Bev Abbott, Naomi Baggs, Eleanor Burton, Gavin Dench, Michele Dickson, Geoff Doring, Pat Enright, Bryan Halliday, Chris Hopkins, John Hornblow, Chris Horne, Pat McLean, Mick Parsons, Sunita Singh, Robyn Smith (leader/scribe), Debra Wootton.

25–27 March 2016: North Wairarapa

25.3.16: Kōwhainui QEII Trust Open Space Covenant, Mauriceville, Wairarapa

NZTopo50-BN35 Alfredton

We thank Priscilla and John Paulik for permission to botanise their 2-ha covenant. In a tributary of the Kopuaranga River, the forest is a remnant of '90-Mile Bush', a once-vast area of native forest covering northern Wairarapa and southern Hawke's Bay, most of which was cleared for farming in the 1800s.

The Pauliks turned off the electric fence so that we could descend into the gully. Once in there, we were first impressed by the abundance of *Blechnum colensoi* / waterfall fern / peretao, some with fish-skeleton-like fertile fronds.



Blechnum colensoi. Photo: Jeremy Rolfe.

We saw numerous tawa seedlings, but few saplings or young trees of the canopy species, probably because the covenant fence is not designed to exclude goats. Our party saw four goats in the bush. We have suggested to the Pauliks that they ask the QEII National Trust and Greater Wellington Regional Council about the possibility of building a fence to exclude goats and their kids

from this ecological and heritage treasure. Later, up on the true left, we found a big *Nestegis cunninghamii* / black maire, and a massive, female kahikatea, in fruit. We admired *Hoheria sexstylosa* in full bloom, and about 41 fern species. These included *Botrychium bifforme*, *Diplazium australe*, *Leptolepia novae-zelandiae* and *Tmesipteris elongata*.

Chris Horne



Leptolepia novae-zelandiae. Photo: Jeremy Rolfe.

26.3.16: Mount Bruce Forest (Tatarua Forest Park)

NZTopo50-BN34 Shannon
DOC Conservation Unit Number
T25037

From the end of Mount Munro Rd, Mauriceville, we used the at-first unmarked legal access across farmland, then climbed a farm track over pasture to the forest boundary. The fence should be designed to exclude stock and feral goats, but it is not. Numerous pest-control lines cross the track, part of the impressive efforts to control pest animals in Pukaha / Mount Bruce forest, and we saw a Timms trap, ingeniously-boxed to exclude kiwi. Weed species require control also. We saw tutsan / *Hypericum androsaemum*, elderberry / *Sambucus nigra*, barberry / *Berberis glaucocarpa*, and Himalaya honeysuckle / *Leycesteria formosa*, and near the farm land, old man's beard and ragwort.

We used as templates, copies of the lists prepared during our field trip on the west side of Mount Bruce on 30.11.2013. Botanical highlights included five podocarps kahikatea, rimu, tōtara, miro and matai, *Alseuosmia pusilla*, *Coprosma rigida*, and the filmy ferns *Hymenophyllum demissum*, *H. flabellatum*, *H. revolutum* and *H. sanguinolentum*. Seedlings of rewarewa, tawa and titoki are common, suggesting that rodent control is effective. This must be maintained to ensure the eventual replacement of the understorey, canopy and emergent tiers, missing as result of many decades of seed-predation by rodents. Finally, a skink, merely 40 mm long, slithered off someone's palm, into the track-side vegetation.

Chris Horne



Hypericum androsaemum. Photo: Jeremy Rolfe



Sambucus nigra (top), *Leycesteria formosa*.
Photos: Jeremy Rolfe.

27.3.16: Rewanui Forest Park.

NZTopo50-BP35 Bideford.

Four of us met Pat Enright at Rewanui c. 23 km east of Masterton. Native lowland forest, which makes up about half the 334-hectare property, is fenced from the remaining grassland and exotic trees. Unlike areas we had visited the previous two days, this forest has been well-trapped and fenced. Hence there is a good understorey, and plenty of possum fodder such as *Schefflera digitata* / patē.

The Montfort Trimble Foundation, which administers Rewanui, was set up by an Act of Parliament to perpetuate the wishes expressed in the will of Dr Montfort Trimble of Masterton. Dr Trimble died in 1940 and left money to promote public afforestation. Most of the trustees are appointed by Masterton District Council.

Initially they purchased 127 ha 18 km north of Masterton, on the east side of SH2. They planted much of this with *Pinus radiata* in 1950, and a second crop in the late 1970s. Rewanui Forest Park was purchased by the foundation in 2004, using money from the sale of these trees. The foundation is developing Rewanui as a forest park, and as a trial site for native and exotic timber trees. Besides the area of native forest, they have small stands of eleven species including kauri, red beech, silver beech and pūriri.

We spent 3.5 hours botanising the low level Tōtara Loop track. There are some very good examples of tōtara, with plenty of rewarewa and matai. More exciting was the tiny *Myosotis spathulata* that Pat pointed out, and *Fuchsia perscandens* which is common on the lower track, but uncommon in Wairarapa. We added *Corynocarpus laevigatus*, *Hymenophyllum sanguinolentum* and *Metrosideros perforata* to the substantial plant list of the forest area.



Myosotis spathulata. Photo: Pat Enright.

We could have added several species on the access track which appear to be planted, but don't really belong in this area, e.g., *Pittosporum tenuifolium*.

Rodney Lewington.

Participants: Sam Buckley, Gavin Dench, Pat Enright, Chris Hopkins, Maya Hunt, Rodney Lewington, Pat McLean, Barbara Mitcalfe, Leon Perrie, Nick Saville, Darea Sherratt, co-leaders: Sunita Singh & Chris Horne.



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