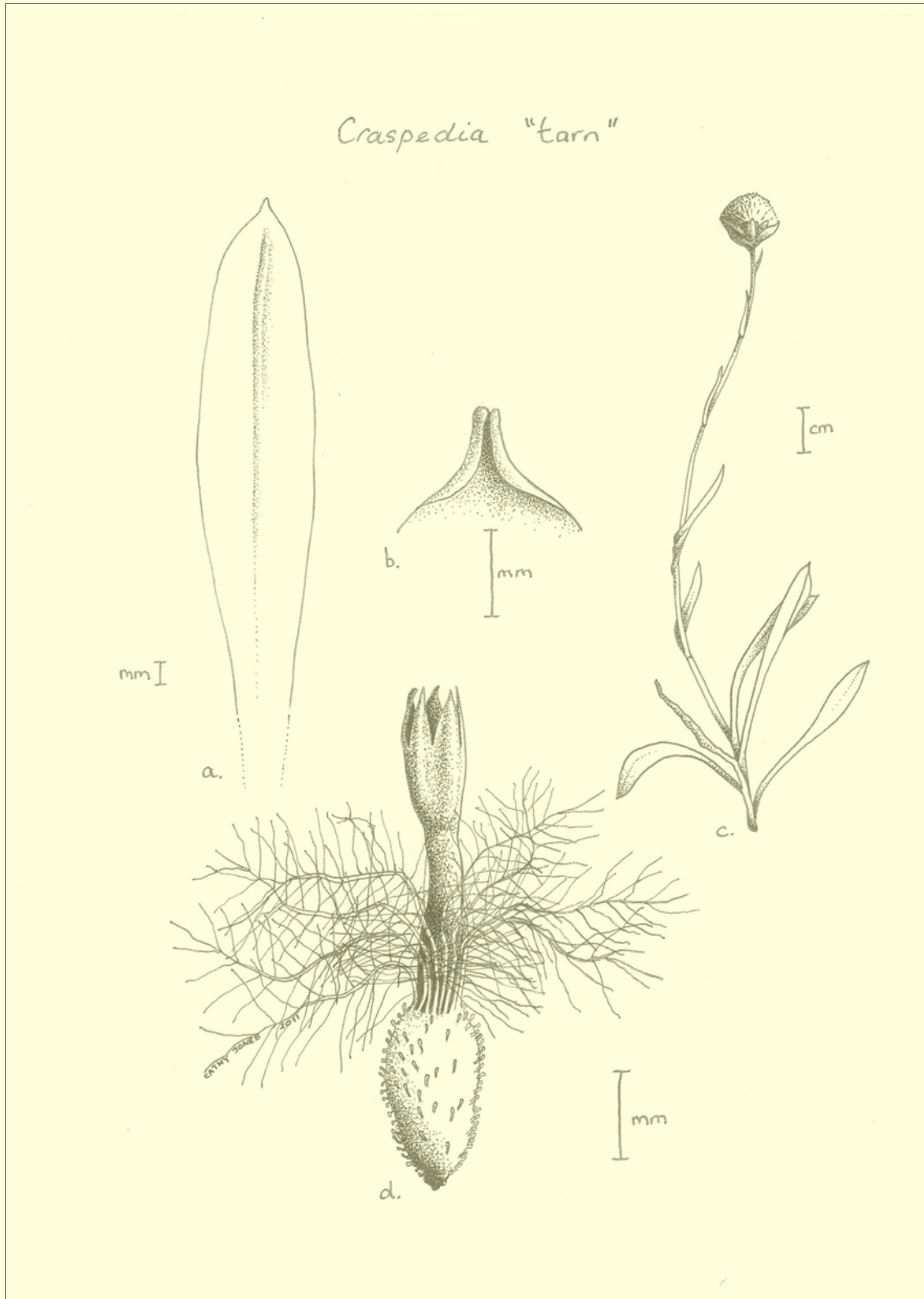


NEW ZEALAND BOTANICAL SOCIETY

# NEWSLETTER

NUMBER 103

March 2011



## New Zealand Botanical Society

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

Address: c/- Canterbury Museum  
Rolleston Avenue  
CHRISTCHURCH 8013

### Subscriptions

The 2011 ordinary and institutional subscriptions are \$25 (reduced to \$18 if paid by the due date on the subscription invoice). The 2011 student subscription, available to full-time students, is \$12 (reduced to \$9 if paid by the due date on the subscription invoice).

Back issues of the *Newsletter* are available at \$7.00 each. Since 1986 the Newsletter has appeared quarterly in March, June, September and December.

New subscriptions are always welcome and these, together with back issue orders, should be sent to the Secretary/Treasurer (address above).

Subscriptions are due by 28 February each year for that calendar year. Existing subscribers are sent an invoice with the December *Newsletter* for the next years subscription which offers a reduction if this is paid by the due date. If you are in arrears with your subscription a reminder notice comes attached to each issue of the *Newsletter*.

### Deadline for next issue

The deadline for the June 2011 issue is 25 May 2011.

Please post contributions to:  
Lara Shepherd  
Allan Wilson Centre for Molecular Ecology and Evolution  
Massey University Private Bag 11222  
Palmerston North

Send email contributions to [editor@nzbotanicalsociety.org.nz](mailto:editor@nzbotanicalsociety.org.nz). Files are preferably in MS Word, as an open text document (Open Office document with suffix ".odt") or saved as RTF or ASCII. Macintosh files can also be accepted. Graphics can be sent as TIF JPG, or BMP files; please do not embed images into documents. Alternatively photos or line drawings can be posted and will be returned if required. Drawings and photos make an article more readable so please include them if possible.

### Editor's note

My apologies for the delay in this *Newsletter*, which is my last issue as editor.

Thank you to all who have contributed items to the Newsletter over last few years. I have enjoyed reading your contributions and have really appreciated your support. I am sure you will continue to support Lara.

### Cover Illustration

*Craspedia* "tarn" drawn by Cathy Jones from a specimen collected at the Sedgemere ephemeral tarn, Molesworth Station on 17 January 2011. This taxon is known only from this site and is Critically Threatened. a. abaxial leaf surface, b. adaxial view of leaf tip, c. whole plant, d. immature achene with remains of floret.

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## NEWS

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### New Zealand Botanical Society News

#### ■ **Newsletter Editor – a farewell and a welcome**

Melanie Newfield kindly agreed to be our Editor when Ewen and I gently asked her at the Cheeseman Conference at Auckland in November 2006. Her first issue was in March 2007 and after 17 issues this is her final one. Melanie took over from Joy Talbot. Due to work commitments Melanie asked in the last issue if there was anyone interested in becoming Editor and that call has been answered.

Thank you very much Melanie for being such a capable Editor over the last four years, and in your first year I note you managed to produce a book review as well. In typical Melanie style she also managed to recruit a replacement when she felt the pressures of work increasing, and has kindly offered to assist the next Editor into the role.

Thanks also to Maxine Muscroft, my PA, who has handled the subs, banking and the quarterly mailout of the *Newsletter* during this period.

The Committee is very pleased to announce the appointment of **Lara Shepherd as Newsletter Editor** from April 2011. Lara is a research fellow at Massey University. She uses genetic analyses to investigate hybridisation, systematics and the geographic distribution of genetic variation in New Zealand's plants (and occasionally animals). Plants she has recently studied include ferns, *Sophora* and *Pseudopanax*. Outside of work Lara enjoys tramping and botanising, and is a member of the Manawatu, Wanganui and Wellington Botanical Societies.

Her contact details are:

Lara Shepherd  
Allan Wilson Centre for Molecular Ecology and Evolution  
Massey University Private Bag 11222  
Palmerston North

Email: [editor@nzbotanicalsociety.org.nz](mailto:editor@nzbotanicalsociety.org.nz)

**Anthony Wright**, President, New Zealand Botanical Society

#### ■ **Call for Nominations for Allan Mere Award 2011**

Nominations meeting the following conditions are invited for the award of the Allan Mere for the year 2011.

##### *Conditions of the Allan Mere Award*

1. The Award shall be made annually to a person or persons who have made outstanding contributions to botany in New Zealand, either in a professional or amateur capacity.
2. The Award shall be administered by the New Zealand Botanical Society.
3. Nominations for the Award may be made by regional Botanical Societies, or by individuals, to the Secretary of the New Zealand Botanical Society. Nominations shall close on 30<sup>th</sup> June each year. Nominations shall be signed by nominator and seconder, and accompanied by two copies of supporting information that must not exceed one A4 page.
4. Selection of the successful nominee/nominees shall be made by the Committee of the New Zealand Botanical Society, normally within three months of the closing date for nominations.
5. If, in the opinion of the Committee, no suitable nomination is received in any particular year, the Committee may refrain from making an award.
6. The Mere shall be formally presented to the recipient on an appropriate occasion by the President of the New Zealand Botanical Society or his/her nominee, but otherwise shall remain in the custody of, and be displayed by, the Herbarium Keeper of the Allan Herbarium

- (CHR) at Landcare Research, Lincoln, together with the book recording awards.  
7. The recipient shall receive an appropriately inscribed certificate.

Nominations should be forwarded by 30 June 2011 to:

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

■ **Call for suggestions for Loder Cup nomination 2011**

The NZBS is one of the ten named groups able to nominate people for the Loder Cup – New Zealand's premier conservation award.

On Gerald Loder's first visit to New Zealand in 1886 he was introduced to this country's unique and distinctive flora. He was captivated and became an enthusiastic collector. Over a period of time he developed an outstanding selection of New Zealand and Southern Hemisphere plants on his estate in Surrey, England.

In 1926, he donated a cup to encourage and honour New Zealanders who work to investigate, promote, retain and cherish New Zealand's indigenous flora. Gerald Loder became Lord Wakehurst in 1934. He remained passionately involved with what he called our "incomparable flora" until his death in 1936.

The Loder Cup is entrusted to the Minister of Conservation who appoints the Loder Cup Committee and awards the Cup. The Department of Conservation handles the administration of the award and any other matters.

The Cup is awarded annually to the person, group of people, or organisation which has exceeded all other nominees in furthering the aims and objects of the donor of the Cup.

Suggestions for consideration by the Committee for the Society's nomination should be forwarded to the undersigned by Wednesday 4<sup>th</sup> May 2011.

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

## **Regional Botanical Society News**

■ **Auckland Botanical Society**

### End of year picnic

A potluck luncheon picnic was held at Shakespear Regional Park, Whangaparaoa Peninsula. A survey of the dwarf mistletoe (*Korthalsella salicornioides*) growing within the park was undertaken in the morning. The picnic lunch was followed by further exploration of the park.

### Anniversary Weekend Camp at Coromandel Peninsula

The camp was based at the Karuna Falls Community, Waikawau, with Wayne Todd of the Moehau Environment Group as our guide. All the campers arrived safely on the Friday night, just before Cyclone Wilma dumped a massive amount of water on northern New Zealand. The ford over the river was quickly flooded, so no activities were possible for half a day, but the waters quickly fell and our exploration of the area commenced. We were guided over the estuary, the dunes, bush areas and river gullies. Exciting finds over the weekend were *Ascarina lucida*, *Grammitis rawlingsii* and *Daucus glochidiatus*.

### February Field Trip

On a lovely sunny day when the surfers were out in full force, Muriwai Beach was a delightful spot for a varied programme of activities. A ramble along the northern end of the Hillary Trail revealed the interesting finds of *Blechnum triangularifolium* and the west coast endemic, *Hebe obtusata*. The

coastal walk allowed us to observe the chicks in the gannet colony and the wonderful pillow lava cliffs. An extremely low tide enabled us to study the spectacular algal gardens that were revealed, together with hundreds of huge sun starfish.

#### Forthcoming Activities

2 March	AGM. Alison Wesley – “Flora of Chile & Patagonia”
19 March	Awhitu Dune Lakes
6 April	Tim Martin – “Endemic cloud forests of Rarotonga”
16 April	Hunua Ranges

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

**President:** Mike Wilcox      **Secretary:** Kristy Hall [aucklandbotanicalsociety@gmail.com](mailto:aucklandbotanicalsociety@gmail.com)

#### ■ Rotorua Botanical Society

##### December Field Trip: Dave McNeil's QEII Covenant, Te Aroha

After a steep drive to the back of the farmland with great views of the plains below, we headed off through heavily modified forest. The first part was dominated by tree ferns, matipo and mahoe. We then descended into the main stream, at first in open secondary forest of mahoe and tree ferns then in forest by the stream, wading through waist deep parataniwha. Finally we beat a path up hill to the ridge and some high forest through supplejack into stands of tawa for lunch. After some discussion we headed down the ridge to cross the stream again and a steep climb back to the vehicles on farm tracks.

##### January Field Trip: Whenuakura clearings camp

After 30 mins waiting at the meeting point near Tihoi, we realised, with heavy rain overnight, those from Opotiki probably couldn't get there. So we headed to our camp site above the Maniatangaroa Falls. During lunch one of the target plants was spotted just where we were sitting - the tiny *Hypericum minutiflorum* that looks like the heads of *Gonocarpus micrathus* (which was common around it) but distinguished by its tiny orange/yellow flowers - which open when the sun shines. After setting up a cooking shelter with tarps we headed out to explore the nearby streamside. Large amounts of the *Hypericum microflorum* were found all along the road verges and where the ground was compacted by vehicles. It was thus regarded as not threatened but declared naturally rare and unnaturally uncommon! The main clearing was dominated by manoa (*Dracophyllum subulatum*) with large extents of *Gleichenia dicarpa* in the wetter areas. Scattered emergents included *Pittosporum turneri*, *Olearia virgata* and alpine toatoa with heather in the bare soil areas. At the streamside interesting plants included *Botrychium bifforme* and *B. australe*, *Mentha cunninghamii* and *Meliccytus flexuosus*.

On Sunday we headed to the upper part of the clearing, about 2.5 km, to two large wetlands. Along the way we encountered three *Hypericums* - *H. perforatum*, *H. pusillum* and *H. minutiflorum*, the latter two often together. Large patches of *Acaena microphylla* with red fruits, *Pimelea prostrata* subsp. *vulcanica* and *Raoulia glabra* in flower were also prominent. Heather was unfortunately also common. The wetlands were dominated by *Gleichenia dicarpa* with *Lepidosperma australe* dominant in open water. Most other plants were quite uncommon except in the wet flushes. The second area, visited after lunch, drains into the Pungapunga River, a tributary of the Whanganui River. The fringes contained some huge silver pines 1.5 m in diameter and 25 m tall. We then followed the wetland where it drained eastwards into the Whanganui Stream hoping (in vain) to find *Prasophyllum hookeri* in the extensive areas of sedgeland.

On Monday we packed up tents while they were more or less dry and headed out nearby to look for *Myosotis forsteri* or *M. venosa*. That was found easily (*M. forsteri*). The fertile streamside was species rich under mainly alpine toatoa forest. A small wetland in a previous stream channel was as diverse as the larger wetlands visited the previous day. Along a species rich turfy depression we found *Hypericum minutiflorum* in perhaps its natural habitat. Other species present included *Stackhousia minima* (in prominent fruit) and *Dichondra brevifolia* (Volcanic Plateau form), all plants indicative of fertile sites. Further along *Stenostachys gracilis* (another threatened plant) was found on an opening along the streamside. Within an hour or so the drizzle had set in and by 11 am we were back at camp packing up the kitchen fly in strong winds and rain.

### February Field Trip: Matawai

The heavily logged forest was typical rather species poor red/silver beech forest with much tawari, *Raukaua edgerleyi*, *Coprosma tenuifolia*, *Alseuosmia pusilla* (in fruit) and rince of Wales feather. The roadside was marked by masses of *Cotoneaster glaucophyllus*.

After lunch Don Hammond from Gisborne departed and we headed to Raukorere Scenic Reserve. We drove through, then worked back along the reserve edge before a walk up the slope to grass and bluffs at the back of the reserve. Lower areas were dense, but logged, tawa forest and the upper slopes, typical burnt beech forest with high deer numbers. In wet areas in the scrub were a wide range of closely cropped turfy species such as *Ranunculus repens*, *Mimulus moschatus*, *Hydrocotyle moschata* and *H. novae-zelandiae*. Rock bluffs in kamahi scrub near the ridge provided spectacular views of the reserve and a few new species including *Raoulia glabra* and *Phyllocladus toatoa*. We completed the loop of Matawai Conservation Area seeing large amounts of *Tupeia* and *Ileostylus* along the last 4 km of road to SH2.

On Sunday we headed to Matawai Conservation Area, starting in a grass/*Carex secta* area near the track to Education Lodge, later walking through red/silver beech forest, probably logged over 50 years ago, to the lodge. We then returned to road to look at stream area halfway back to other track. The most exciting finds were *Hypericum androsaemum*, spreading into reserve from house nearby, and *Salix cinerea*. After lunch, at the start of the other track into the reserve, we had a very flat walk along another old logging road for 4 km or so through very pleasant red/silver beech forest with a dense ground cover of either crown fern or *Dicksonia lanata*. The main highlight was a very large tanekaha 1 m in diameter, and *Cordyline indivisa*.

### FUTURE EVENTS

6 March	Te Tuhi Track (combined with Waikato Bot Soc)
2 April	Burma Rd wetlands and Waitotane Scenic Reserve
22-25 April	Ngamawahine camp (combined with Auckland and Waikato Bot Socs)
1 May	Mountforts QEII Manawahe
11 June	Tirohanga Dunes

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

### ■ Wanganui Museum Botanical Group

#### Ashhurst Domain, 30 May 2010

Ten of us went from Wanganui, via Feilding to see about 6 slightly spinous shrubs beside the West St sports fields. Although we had seen flowers in the past (both male and female shrubs here), it was not until last year that Dave Bull put us on to the correct genus, *Schinus*, and that led to Ewen Cameron at AK coming up with the species, *S. longifolia*. We were met at the Ashhurst Domain by Leon Perrie and Lara Shepherd and Lara's father, Mike. We had an easy stroll on tracks through dry terrace forest (kanuka dominated, with totara) and soon found the extensive patches of giant maidenhair (*Adiantum formosum*) and bamboo ricegrass (*Microlaena polynoda*) that we'd come to see. Both were new to some of the Group, at least in the wild.

For lunch, we moved the cars to a new picnic area beside the Manawatu River bridge. This gave easy access to a new formalised track, thanks to Horizons Regional Council, into forest on a lower river terrace of the Domain. This contained a splendid patch of swamp forest that was remarkably weed-free apart from the outer margins. It must be one of the most accessible and intact stands of swamp maire (*Syzygium maire*) in the region. Everyone, even those who didn't want to venture off the boardwalk into the shallow water, saw the abundant pneumatophores that swamp maire produces in permanently wet conditions. There were also fine specimens of other lowland swamp trees, including matai (*Prumnopitys taxifolia*), ribbonwood or manatu (*Plagianthus regius*) and pukatea (*Laurelia novae-zelandiae*), though surprisingly few kahikatea. Colin Ogle.

### Patea coast, Sun 5 Dec. 2010

Travelling from as far afield as New Plymouth, 15 of us met in Patea with sometime local and also Wellington resident Michael Parsons. Michael's knowledge of local history and landowners made the whole day possible for us. In the dry conditions, we were able to drive cars across pasture to two cliff top sites towards Kakaramea from Patea. At both, we had vistas of mudstone cliffs, overlain by compacted tephra, sands and peat, dropping sheer to the sea. Our first site had the remains of an abandoned powerhouse built in 1907 on the cliff tops by Kaikura Stream. Michael led us to the now-breached dam and remains of pipes that had linked it to the powerhouse. On and near the cliff tops, the native 'turfs' of dwarf native plants were more extensive than I'd imagined. *Selliera* (the round-leaved forms we debated at length as to whether they could be *S. rotundifolia*) dominated many patches and the diminutive grass *Zoysia minima* dominated some small areas. Depending on factors such as shelter or exposure to coastal wind and salt, and the dampness and depth of soil or clay, other native species occurred in these mats. *Samolus repens* and *Ranunculus acaulis* were flowering. *Plantago masoniae* impressed for its tight rosettes of green and dull red toothed leaves. (New research suggests this may be just a habitat form of *P. triandra*.) The exotic swamp plantain, *P. australis* was here too and further along the cliffs we compared it with robust coastal plants of *P. raoulii*. Although it is common on cliff tops towards Cape Egmont, the invasive and exotic buck's horn plantain, *P. coronopus*, was not seen all day.

Because there has been a suggested unnamed (and highly threatened) species of *Limosella* found here first in 1972, we paid special attention to plants we found but, in the end, we couldn't decide whether we were seeing two different kinds of *Limosella*; there seemed to be a gradation from plants with linear-spathulate leaves (*L. lineata*) to those with short broad spatulate leaves. We had similar problems in deciding whether we had two *Leptinella* (button daisy) taxa – very small plants matched *L. dispersa* subsp. *rupestris*, but they seemed to grade into more lush 'forms' that might be *L. dispersa* subsp. *dispersa*. The button daisies were not flowering. We collected specimens, and also of a range of *Limosella* forms, and sent them live to Landcare Research staff at Lincoln.

After lunch on the cliff top turf, we moved the cars closer to Patea to a stream known locally as Whitikau. This gave us scrambling access down the cliffs to the beach. On the descent we could explore parts of the dripping mudstone cliffs with some dry outcrops of 'ironstone'. Seepages had lush *Leptinella* patches and the native *Montia fontana*; dry spots had coastal *Blechnum blechnoides*; *Plantago raoulii* grew in intermediate sites. Our special thanks to Michael for coming up from Wellington to guide us, and to the landowners who allowed us to traverse their farms. *Colin Ogle*

### FUTURE MEETINGS

1 March	Peter Cave: Overland from Kathmandu to Istanbul
5 April	Abbie Jury: Garden rooms and the magpie instinct of NZ gardeners to collect ideas.
3 May	Rudolf Schulz: <i>Brachychiton</i> .
7 June	Jim Campbell: Management options and opportunities for South Taranaki dunelands.
5 July	Ian Bell: Plant pollination
2 August	AGM followed by members' contributions
6 Sept	Jim and Diana Howard: Greece.
4 Oct	Jill Rapson: Topic to be determined
1 Nov	Colin and Robyn Ogle: Cape York, Queensland
7 Dec	Christmas social evening

### FUTURE TRIPS

27 Feb	Taihape search for <i>Pittosporum obcordatum</i> .
2 April	Tennet's Bush, Campbell Road, Brunswick
30 April	Parikino swamp forest, Whanganui River Road – revisit
4 June	Bushy Park weeding
3 Sept	'Paloma', Fordell
2 Oct	Moana Roa, Rangitikei River
30 Oct	Lake Waikato, Nukumarū
4 Dec	Hapuawhenua, Ohakune

**President:** Clive Higgie (06) 342 7857 clive.nicki@xtra.co.nz  
**Secretary:** Robyn Ogle (06) 3478547 robcol.ogle@xtra.co.nz



## ■ Nelson Botanical Society

### November Field Trip: Mt Starveall, Mt Richmond Forest Park.

With the benefit of a permit to use forestry roads, 19 members headed up the Lee valley as high as possible by vehicle and then walked on towards Mt Starveall. In beech forest, severely damaged by gales about two years ago we found many plants of *Hebe vernicosa* in bloom which we compared to the similar *H. canterburiensis*. *H. vernicosa* has long racemes and is not found above the bush line. We came across several patches of *Pittosporum rigidum* on which we were able to see dark red-black flowers. After an abrupt transition to mineral belt the vegetation shortened and opened up. We photographed the northern South Island endemic cress *Notothlaspi australe* in flower with its honey like aroma. As we got higher we saw *Ranunculus verticillatus* in flower and learned the meaning of verticillate (similar parts arranged in whorls so they come from one point - in this case the stem leaves). Growing beside each other were *Pimelea suteri* and the similar looking but as yet unnamed *Pimelea* which is only found at six sites on the mineral belt. *Phyllocladus* aff. *alpinus* was looking good with its bright red strobili. We saw and smelt *Pittosporum anomalum* in flower which we first mistook for *Melicytus alpinus* but Shannel pointed out that as the flowers were pointing upwards it could not be *Melicytus*. We found *Aciphylla colensoi* and compared its well defined orange/gold midribs to the green-leaved *A. ferox* growing close by. Other plants in flower were *Raoulia grandiflora*, *Euphrasia monroi* and *Wahlenbergia albomarginata* ssp. *olivina*. We got to the hut for lunch and sat admiring large shrubs of *Hebe brachysiphon* in full bloom with *Myosotis drucei* growing underneath. Also in flower were *Leucopogon fraseri* and *Acrothamnus colensoi*. Due to misty conditions we only went a short way above the hut to look at North Island edelweiss and decided to turn around and seek out the nationally endangered *Pittosporum patulum* on the way down. Shannel guided us to the edge of an area of beech forest where we were most fortunate to see several trees of this species with one over 5 metres in height.

### November Extra: Wairoa Weedbusting

Despite amazing weather, this year's turnout to weed the Inches' bush in the Wairoa River was down to five dedicated individuals. The society has weeded this patch of alluvial matai-totara forest for three years now to help protect the unique suite of nationally threatened plants that grow there. Our efforts have paid off with very little regrowth of old man's beard and blackberry and, as a result, a thriving population of *Teucrium parvifolium* in full flower. This is a huge difference from the parlous state these plants were in in 2008 when they were barely discernible under a phalanx of old man's beard. A large patch of blackberry was painstakingly tackled by Gillian while Uta, Sally and Richard scouted out rogue old man's beard on the forest margin. Having done its job as a nurse crop for mahoe and kaikomako recruitment, barberry was cut off at ground level. We had a quick look at climbing groundsel (*Brachyglottis sciadophila*) and discovered that *Scutellaria* on the lower terrace was in flower. There was a host of small-leaved shrubs to keep one's wits sharp including *Streblus heterophyllus*, *Melicytus micranthus*, *Melicope simplex*, and a real mix of coprosmas: *C. rubra*, *C. crassifolia*, *C. propinqua*, *C. rhamnoides*, *C. rigida*, *C. rotundifolia*, *C. areolata* and last but not least a single shrub of *C. obconica* which we rediscovered last year when we rescued it from old man's beard and blackberry smothering. We did not have time to tackle all the old man's beard, but hopefully it won't overtake the understorey too much before we get back to it next year.

December Camp was cancelled due to heavy rain and flooding.

### January Fieldtrip: Kaka Hill, Rainy River

An old wooden hut falling into ruin, standing alone in a moonscape of felled pine forest, was an unusual beginning for our walk but just a few metres away from this landmark we entered another world of beech forest, kaka and mistletoes, wetlands and gullies rich in lush native plants – the Kaka Hill property of Sue Bateup and Dean Walker in the Rainy River area. Eight of us BotSoccers, accompanied by Sue, Dean and their son Maitai spent all day happily wandering around the various ecosystems. The first stop was at Sue and Dean's camp site to look at an aerial map of the property and here we were also shown the first two mistletoe plants of our visit – *Alepis flavida* growing on hard beech. Over the 9 years that Sue and Dean have owned Kaka Hill, many possums have been removed, allowing the mistletoes to recover and thrive. Our first foray was along a loop track around the valley that stretches the length of the property between two beech-covered ridges, an area rich in ferns, orchids and with an understorey of tree fuchsia, wineberry, marbleleaf and many small-leaved

divaricating shrubs. Much *Blechnum colensoi* was hanging down the damp banks, with abundant fertile fronds. On steep banks running with water was a colony of *Nematoceras* sp. (probably *N. "whiskers"*). Other orchids growing in the valley included *Simpliglottis cornuta* and *Pterostylis* spp. On the higher slopes of the valley loop we saw several tall stems of *Gastrodia* sp. with large seed pods. Over 20 species of ferns were noted, including the beautiful *Leptolepia novae-zelandiae*, which many of us had not seen before.

After lunch we made our way along a track following the line of the hill, through mixed beech forest to an area of regenerating rimu which had been logged in the past. We had an eye-level view of more mistletoe, this time *Peraxilla colensoi* growing on silver beech. Later on, another plant of this species was spotted with the remnants of this year's flowers. Today's lessons included learning to identify and differentiate three species of hook sedge – *Uncinia uncinata*, *U. clavata*, and *U. ferruginea* with their differing length glumes (relative to the seed). As if to remind us of our new knowledge these plants with their successful seed distribution came home with us in large numbers on our socks! A bend on the track as it looped around the gully, aptly named "Punga Corner", was an area of four species of tree ferns – *Cyathea dealbata*, *C. smithii*, *Dicksonia fibrosa* and *D. squarrosa*. On the dry banks were several sun orchids which had flowered and gone to seed (*Thelymitra* spp. and *Petalochilus* sp.[previously *Caladenia*]).

By the time we returned to Sue and Dean's camp site, so much of the day had passed that there was no time left for us to examine the wetlands along the river bank. We look forward to doing this on a return visit! Our thanks go to Sue, Dean and Maitai for their kind hospitality and the chance to see their property.

#### FUTURE EVENTS

Mar 20: Mt Lodestone, Kahurangi National Park. Leader: David Grinsted (03) 542 4384

April 17: Wainui Bay, Golden Bay. Leader: Shannel Courtney (03) 546 9922

April 18: AGM, dinner and Simon Walls of DOC speaking on the special plants of Golden Bay

April 21-25: Easter Camp, Lower Wairau, South Marlborough. Leader: Cathy Jones (03) 546 9499

May 15: Carluke Scenic Reserve, Rai Valley. Leader: Richard Brown (03) 546 9922

May 16: Evening meeting. Geoff Ridley speaking on Fungi

June 19 & 20: Field trip and talk to be decided.

#### Contacts:

**President:** Cathy Jones, Flat 1/47A Washington Rd, Ph 03 546 9499. Email: [cjones@doc.govt.nz](mailto:cjones@doc.govt.nz)

**Treasurer:** Trevor Lewis, 22 Coster St, Nelson 7011, Ph 03 547 2812. Email: [tandjlewis@actrix.co.nz](mailto:tandjlewis@actrix.co.nz)

#### ■ Other Botanical Society Contacts

##### Waikato Botanical Society

**President:** Liz Grove [eg3@waikato.ac.nz](mailto:eg3@waikato.ac.nz)

**General contact:** [bot\\_soc@waikato.ac.nz](mailto:bot_soc@waikato.ac.nz)

**Secretary:** Andrea Brandon [abrandon@doc.govt.nz](mailto:abrandon@doc.govt.nz)

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

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**Secretary:** Barbara Clark, 04 233 8202. [Bj\\_clark@xtra.co.nz](mailto:Bj_clark@xtra.co.nz) <http://wellingtonbotsoc.org.nz/>

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**Chairman:** David Lyttle [djlyttle@ihug.co.nz](mailto:djlyttle@ihug.co.nz)

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**Chairman:** Neill Simpson (03) 442 2035

**Secretary:** Lyn Clendon (03) 442 3153

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## NOTES AND REPORTS

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■ **An updated, annotated species list for the ferns of 'Eua, Tonga**

**Leon Perrie**, Museum of New Zealand Te Papa Tongarewa, PO Box 467, Wellington, [leonp@tepapa.govt.nz](mailto:leonp@tepapa.govt.nz)

'Eua is floristically one of the richest Tongan islands. Although of only small size (c. 81 km<sup>2</sup>), it has a dissected topography, rises to a moderate altitude (c. 300 m), and still retains reasonable areas of indigenous vegetation (Sykes 1978; Drake et al. 1996). Sykes (1978) listed 54 pteridophyte (52 ferns and two lycophytes) for 'Eua, from a total of 83 for Tonga. The majority of 'Eua's pteridophytes are species widely distributed in the Pacific, particularly to the west (Sykes 1978).

In August 2010, Lara Shepherd and I holidayed for a week on 'Eua, enticed by "eco-tourism" attractions such as walking in Pacific rainforest, and the humpback whales. We visited the Fangatave Beach area (with a guide), the Latakaha Ravine (and its subtending dry channel), the Hafu Pool and surrounding areas, the Forestry Road up to the Lokupo and Lauua Lookouts on the eastern ridgeline, and the Lakufa'anga area (including rock gardens and Li'angahuo 'a Maui archway). On our travels, we saw and photographed 40 fern species.

The following is an updated pteridophyte checklist, with 55 species, based on the nomenclature and arrangement used by Brownsey & Perrie (2011). Names in [ ] were used by Sykes (1978) that are updated here. The checklist is annotated with locales and other observations. We did not have permission to collect herbarium vouchers.

Localities (denoted by numbers to the right of the species name):

- 1, Tufuvai (near The Hideaway resort)
  - 2, Hafu Pool and surrounding area.
  - 3, Forestry Road between central villages and eastern ridge.
  - 4, Ridgeline around the Lokupo and Lauua Lookouts.
  - 5, Fangatave Beach area (guided walk).
  - 6, Lakataha Ravine (near Ohonua) and its subtending channel through to the north-east of the central villages.
  - 7, Lakufa'anga area (including rock gardens and Li'angahuo 'a Maui archway)
- ^ indicates not seen by us.

### LYCOPODIACEAE

***Huperzia phlegmaria*** (L.) Rothm. [*Lycopodium phlegmaria* L.] ^  
Sykes (1978) only recorded it from two trees.

***Lycopodiella cernua*** (L.) Pic.Serm. [*Lycopodium cernuum* L.] ^  
Sykes (1978) described it as a "locally common species in the open herbaceous communities on the western upper terraces to the summit ridge" where we did not spend much time.

### OPHIGLOSSACEAE

***Ophioglossum pendulum*** L. ^  
Sykes (1978) saw only a few plants.

### PSILOTACEAE

***Psilotum nudum*** (L.) Beau 2,7

<b>MARATTIACEAE</b>	
<i>Angiopteris evecta</i> (G.Forst.) Hoffm.	2,6
<b>HYMENOPHYLLACEAE</b>	
<i>Trichomanes atrovirens</i> (C.Presl) Kunze [ <i>T. boryanum</i> Kunze]	^
NMNS 2008 synonymised <i>T. boryanum</i> with <i>T. atrovirens</i> , as <i>Cephalomanes atrovirens</i> C.Presl.	
Sykes (1978) saw it at only one site.	
<i>Trichomanes dentatum</i> Bosch	^
Not seen despite Sykes (1978) recording it as "By far the commonest species of the genus on 'Eua". We did not cover much ground in its "main habitat" of the summit ridge forest.	
<i>Trichomanes humile</i> G.Forst.	^
Not seen by Sykes (1978), who listed it on the basis of an earlier record.	
<i>Trichomanes minutum</i> Blume [ <i>T. saxifragoides</i> C.Presl] (Fig. 1)	2
Yoroi & Iwatsuki (1977) synonymised <i>T. saxifragoides</i> with <i>T. minutum</i> . This was followed, albeit in the genus <i>Crepidomanes</i> , by NMNS (2008) and Ebihara et al. (2006). The latter noted this broadly circumscribed species to be polymorphic and that "Further studies are needed". The illustration of <i>Crepidomanes minutum</i> (Blume) K.Iwats. in NMNS (2008) is quite different to the illustration of Fijian <i>T. saxifragoides</i> in Brownlie (1977) and the 'Eua plants (Fig. 1). Described by Sykes (1978) as rare, and we saw it only within the vicinity of the site he describes.	
<b>GLEICHENIACEAE</b>	
<i>Dicranopteris linearis</i> (Burm.f.) Underw.	4
<b>SCHIZAEACEAE</b>	
<i>Schizaea dichotoma</i> (L.) Sm.	^
Sykes (1978) described it as "common or very common in the lower forest on or near the summit ridge around 300 m".	
<b>CYATHEACEAE</b>	
<i>Cyathea lunulata</i> (G.Forst.) Copel. [ <i>Sphaeropteris lunulata</i> (G.Forst.) R.M.Tryon]	2,3,6
<b>LINDSAEACEAE</b>	
<i>Lindsaea agatii</i> (Brack.) Lehtonen et Tuomisto [ <i>L. ensifolia</i> subsp. <i>agatii</i> (Brack.) Kramer]	^
Sykes (1978) recorded it as uncommon or rare.	
<i>Lindsaea harveyi</i> Carruth. ex Seem.	2
<i>Odontosoria chinensis</i> (L.) J.Sm. [ <i>Sphenomeris chinensis</i> (L.) Maxon]	3
<b>DENNSTAEDTIACEAE</b>	
<i>Dennstaedtia parksii</i> Copel.	2,7
<i>Hypolepis tenuifolia</i> (G.Forst.) Bernh. ex C.Presl	2,3,5,6,7
<i>Microlepia speluncae</i> (L.) T.Moore (Fig. 2)	4
Sykes (1978) recorded this as known from 'Eua only by a 1926 H.E. Parks specimen. We saw one plant near the Lokupo Lookout.	
<b>PTERIDACEAE</b>	
<i>Acrostichum aureum</i> L.	5,7
<i>Adiantum capillus-veneris</i> L.	4,7
<i>Adiantum diaphanum</i> Blume	2,6
<i>Antrophyum plantagineum</i> (Cav.) Kaulf.	2,5,6
<i>Pteris comans</i> G.Forst. (Fig. 3)	2
Differs from the plants known by the same name in New Zealand (see Braggins 1975).	
<i>Pteris ensiformis</i> Burm.f.	6,7
<i>Pteris pacifica</i> Hieron.	2,6
<i>Pteris tripartita</i> Sw.	2,5,6,7
<i>Pteris vittata</i> L.	6,7
<b>ASPLENIACEAE</b>	
<i>Asplenium gibberosum</i> (G.Forst.) Mett. [ <i>Loxoscaphe gibberosum</i> (G.Forst.) T.Moore]	2

<b><i>Asplenium marattioides</i></b> (Brack.) C.Chr. (Fig. 4)	4
Although sharing the heavily set sori, 'Eua plants appeared to lack the frond dimorphism (with more dissected juveniles) found in Fijian plants (Brownlie 1977). They may also lack a long-creeping rhizome, although this was not rigorously checked.	
<b><i>Asplenium nidus</i></b> L. (Figs. 5,6) [ <i>A. australasicum</i> Hook.]	1,2,3,4,5,6,7
Sykes (1978) attributed the 'Eua birds-nest ferns to <i>A. australasicum</i> rather than <i>A. nidus</i> . The pronounced triangular-keel of the abaxial (lower) rachis of <i>A. australasicum</i> is absent in <i>A. nidus</i> , which instead has a more raised adaxial (upper) rachis. The two are easily distinguished in, for example, Queensland, but I found the situation less straightforward on 'Eua. However, the 'Eua plants seemed to me to accord better with <i>A. nidus</i> (Fig. 6).	
<b><i>Asplenium northlandicum</i></b> (Brownsey) Ogle (Fig. 7) [ <i>A. obtusatum</i> G.Forst. subsp. <i>northlandicum</i> Brownsey]	7
Recorded by Sykes (1978) as "only been found [on 'Eua] above the chasm of Matalangi-a-Maui on the southeast coast". We saw it there, but it was also locally common on some of the larger rocks in the area known as the Rock Garden on the south coast, with about 50 individuals seen at the latter site.	
<b><i>Asplenium polyodon</i></b> G.Forst. (Fig. 8)	1,5,6,7
A comparatively small plant that grows on limestone, with a semi-resurrection habit. Part of a wide-ranging species complex that includes the near-obligate epiphyte of Australia's tropical eastern seaboard and the usual-epiphyte of New Zealand that are known by the same name.	
<b><i>Hymenasplenium excisum</i></b> (C.Presl) S.Linds.	^
Not listed by Sykes (1978), but subsequently identified by Patrick Brownsey from material collected by Bill Sykes held in CHR.	
<b><i>Hymenasplenium unilaterale</i></b> (Lam.) Hayata (Fig. 9) [ <i>Asplenium unilaterale</i> Lam.]	6
<b>Aspleniaceae sp.</b> (Figs. 10-11)	2
Possibly stunted <i>Hymenasplenium unilaterale</i> (compare Figs. 10-11 with Fig. 9), or may represent an unrecognised species, at least on 'Eua. Smaller and occurring on wet rock, as opposed to the soil habitat of <i>H. unilaterale</i> .	
<b>THELYPTERIDACEAE</b>	
<b><i>Christella dentata</i></b> (Forssk.) Brownsey et Jermy	^
Sykes (1978) described it as "Apparently a fairly common or common fern of primary and secondary forest margins, large clearings and in scrub surrounding plantations throughout inland areas of the lower terraces on the west side". The smaller <i>Christella</i> plants I investigated all seemed to be <i>C. parasitica</i> . I noted no definite <i>C. dentata</i> , but I could easily have overlooked it.	
<b><i>Christella harveyi</i></b> (Mett.) Holttum	2,6,7
<b><i>Christella parasitica</i></b> (L.) H.Lév.	2
<b><i>Macrothelypteris torresiana</i></b> (Gaudich.) Ching	6
<b><i>Pneumatopteris macroptera</i></b> (Copel.) Holttum (Figs. 12,13)	2,4,6
Endemic to 'Eua.	
<b><i>Sphaerostephanos decadens</i></b> (Baker) Holttum	^
Not seen by Sykes (1978), who listed it on the basis of an earlier record.	
<b><i>Sphaerostephanos invisus</i></b> (G.Forst.) Holttum	^
Collected only once by Sykes (1978).	
<b><i>Sphaerostephanos unitus</i></b> (L.) Holttum	1,2,3,7
<b>WOODSIACEAE</b>	
<b><i>Diplazium harpeodes</i></b> T.Moore	2,6
<b>BLECHNACEAE</b>	
<b><i>Blechnum orientale</i></b> L.	3
<b>DRYOPTERIDACEAE</b>	
<b><i>Arachniodes aristata</i></b> (G.Forst.) Tindale	2,6
<b><i>Lomagramma polyphylla</i></b> Brack.	^
Sykes (1978) saw only one plant.	
<b>LOMARIOPSIDACEAE</b>	
<b><i>Nephrolepis hirsutula</i></b> (G.Forst.) C.Presl (Fig. 14)	2,3,4,5,6,7

Whether this is *N. hirsutula* rather than *N. brownii* (Desv.) Hovenkamp & Miyam. requires confirmation (Hovenkamp & Miyamoto 2005).

#### TECTARIACEAE

*Tectaria dissecta* (G.Forst.) Lellinger 2,6  
*Tectaria latifolia* (G.Forst.) Copel. 2,4,5,6,7

#### DAVALLIACEAE

*Davallia solida* (G.Forst.) Sw. 1,2,3,6  
*Humata heterophylla* (Sm.) Desv. ^  
 Sykes (1978) saw it only twice.

#### POLYPODIACEAE

*Drynaria rigidula* (Sw.) Bedd. 4  
*Microsorium grossum* (Langsd. et Fisch.) S.B.Andrews [*Phymatosorus grossus* (Langsd. et Fisch.) Brownlie] 1,2,5,6,7  
*Microsorium nigrescens* (Blume) Copel. [*Phymatosorus nigrescens* (Blume) J.Sm.] ^  
 Sykes (1978) made only a single, putative collection.  
*Pyrosia lanceolata* (L.) Farw. [*P. adnascens* (Sw.) Ching] 1,5,6

#### Acknowledgements

Thanks to Patrick Brownsey and Bill Sykes for their comments on a draft of this article.

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**Plate 1** (following page). Ferns of 'Eua, Tonga. **Fig. 1**, *Trichomanes minutum/saxifragoides*. **Fig. 2**, *Microlepia speluncae*. **Fig. 3**, *Pteris comans*. **Fig. 4**, *Asplenium marattioides*. **Fig. 5**, *Asplenium nidus*. **Fig. 6**, *Asplenium nidus*, with the rachis raised prominently on the upper surface (right) and barely so on the lower surface (left). **Fig. 7**, *Asplenium northlandicum*. **Fig. 8**, *Asplenium polyodon*.



**Plate 2.** Ferns of 'Eua, Tonga. **Fig. 9,** *Hymenasplenium unilaterale*. **Figs. 10-11,** unidentified Aspleniaceae. **Figs. 12-13,** *Pneumatopteris macroptera*. **Fig. 14,** *Nephrolepis* sp. (*hirsutula*?).



▪ **Wildlings of a novelty genus for New Zealand (*Xanthorrhoea*)**

**Ewen K. Cameron,** Auckland Museum, Private Bag 92018, Auckland

While holidaying on Waiheke Island in January 2010 a family relative, Graham Guthrie, informed me that his planted grass trees (*Xanthorrhoea johnsonii*), ex *Hahei Plants*, have been producing wild seedlings for about 4 years. I quickly took up his offer to visit him at his property at Church Bay on western Waiheke Island in Auckland's Hauraki Gulf. In a raised, well-drained, sheltered garden of mixed ornamentals (succulents, bromeliads, cycads, yuccas, *Cussonia paniculata*) there were 2-3 grass trees planted about 12 years ago close together at one end. The leafy clumps were c.1.5 m tall,



and there were several erect fruiting spikes c.2.5 m tall from some of the leafy trunks (Fig. 1). Evidently they have been fruiting annually now for about the last 8 years. Within 1-2 m of the adult plants seedlings were locally common in the well-drained gravel-pumice mix. Separately Guthrie had potted some of the seedlings up and they were doing well. He allowed me to dig up several of the wild seedlings (now pressed AK 309111-12, Fig. 2), gave me a piece of a fruiting spike (AK 309113, Fig. 3) and a couple of potted seedlings as well (over a year later they are alive but their growth has been negligible).

### Grass tree family (*Xanthorrhoeaceae*)

*Xanthorrhoea* (grass tree) is an endemic Australian genus containing 28 species and five subspecies (Belford 1986, Borsboom 2005) in the monocotyledon family *Xanthorrhoeaceae*. In the narrow sense it has been treated as a monogeneric family, however APG III taxonomic system (Bremer et al. 2009) treat it in the wider sense and include plants that would otherwise be treated in families Asphodelaceae (incl. *Aloe*, *Bulbinella*) and Hemerocallidaceae (incl. *Dianella*, *Herpolirion* & *Phormium*).

#### *Xanthorrhoea johnsonii* A.T.Lee

*Xanthorrhoea johnsonii* was described in 1966 and honours the famous Australian botanist Laurie A.S. Johnson (1925-97). It is widespread and is the most common *Xanthorrhoea* species along the Queensland and NSW coast, tablelands and western slopes, from Cape York Peninsula south to Singleton, usually in sclerophyll forest and heath (Belford 1986, Borsboom 2005). In his review of *X. johnsonii* and *X. latifolia*, Borsboom (2005) said of *X. johnsonii* that: in the wild the trunk is usually unbranched, mostly to 2(-5) m tall, with an estimated annual trunk growth of 0.88 cm; flower stems (scapes) are 0.6-2.0 m tall; flower spikes 0.2-1.8 m by 2-4 cm in diameter (Fig. 3); flowers are bi-sexual (protandrous), usually insect pollinated, although self-pollination is possible; a single flower spike can produce over 9000 seeds; 5 m tall plants may be over 550 years old; in SE Queensland flowering commences at c.23 years old, although in nursery conditions it can be grown from seed to flowering in c.5-6 years; flowering intensity can be influenced by fire, adult plants show some tolerance to fire but they are not fireproof; the plants are fairly drought tolerant; and the soil-borne water mould *Phytophthora cinnamomi* is known to kill xanthorrhoeas, but its impact on *X. johnsonii* is unknown.



**Fig. 1. Fruiting cultivated adult *Xanthorrhoea johnsonii* plants, xanthorrhoea tussock with weeping leaves (foreground) – two fruiting xanthorrhoea spikes between stiff-foliaged yuccas (background). Waiheke Island, Jan 2010.**

In 2000 the Environmental Risk Management Authority (ERMA) approved *Hahei Plants Ltd* to import *Xanthorrhoea johnsonii* and *X. glauca* for release in New Zealand (ERMA 2000) – the first new species introduced into New Zealand under the rapid assessment of risk for importation of new organisms under the Hazardous Substances and New Organisms (HSNO) Act 1996 (Douglas 2005). Brett Gregory of *Hahei Plants Ltd* informed me (pers. comm.) that they couldn't prove that *X. johnsonii* was already in New Zealand and their first sea container shipment of adult plants of *X. johnsonii* and



**Fig. 2.** Grass tree (*Xanthorrhoea johnsonii*) seedling with tuberous roots and leaves to 85 cm long x 1.5-2.0 mm wide (AK 309112).



**Fig. 3.** A small section of the fruiting spike of *X. johnsonii*, 4 cm across (including the open capsules) and loose black seeds c.7 mm long (AK 309113).

*X. glauca* from Queensland arrived in New Zealand in 2000-01. They have grown fast in New Zealand – they seem to love it here (Brett Gregory pers. comm.). In Queensland's 2003-04 harvest season over 41,500 plants and an estimated 41.9 tonnes of foliage (for the florist trade) of *X. johnsonii* were officially taken from Queensland (Borsboom 2005). Not surprisingly in 2005 whole plant export of xanthorrhoeas was banned from Queensland. However, seed grown plants are now obviously possible to produce in New Zealand.

### Acknowledgements

I thank Graham Guthrie for bringing to my attention his seedling grass trees and allowing me to have some; and Brett Gregory of *Hahei Plants Ltd* for useful information.

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- ***Lepidium flexicaule*** - a new location from northern New Zealand

**P.J. de Lange**, Ecosystems & Species Unit, Department of Conservation, Private Bag 68908, Newton Auckland, **E.K. Cameron**, Auckland Museum, Private Bag 92018, Auckland

In the course of working on a key to New Zealand *Lepidium* (indigenous and naturalised) as part of an ongoing revision of the *Lepidium oleraceum* complex (see de Lange 2010), a specimen in the Auckland Herbarium (AK) filed as *L. africanum* came to the attention of PdL. This gathering (AK 206897), collected by EKC on the 7 January 1989 from Saddle Island, part of the Grey Group Islands off western Aotea (Great Barrier Island), is *Lepidium flexicaule* (Fig. 1). The collection fits *Lepidium flexicaule* in all respects except that the silicle widths are narrower than is usual in this species ((2.06–)2.17(–2.22) mm in AK 206897, cf. (2.20–)3.30–3.40(–4.00) mm wide in other New Zealand and Australian specimens examined by PdL).

Previously this threatened (de Lange et al. 2009) indigenous New Zealand species had been considered extinct in northern New Zealand, with the only extant North Island record being a small population at Stent Road, on the Taranaki coastline (Peet et al. 2003). Prior to this discovery the last known record of *L. flexicaule* from the Auckland Region was a gathering made by Lucy Cranwell from Bethells Beach (Te Henga) on the west coast in 1934 (AK 100102), and the last from the east coast by Thomas Cheeseman from Rangitoto Island in 1882 (AK 4481). There are no previous records from Great Barrier Island or its associated islands.

#### **Saddle Island** (mainly from Cameron et al. 2009)

Saddle Island is administered by the Ngati Rehua Ngati Wai ki Aotea Trust Board. It is composed of two joined rocky blocks of andesite reaching 35 m asl and covering 3 ha. Native vegetation dominates the island with a vascular flora of 70 species (74% native). At the time of collection *Lepidium flexicaule* was locally common at a single locality in a cliff herbfield with *Disphyma australe*, *Einadia trigonos*, *Senecio lautus* and *Spergularia tasmanica*. Several northern New Zealand “island plant species” were also present, i.e. *Asplenium haurakiense*, *Coprosma repens*, *Einadia trigonos*, *Melicytus novae-zelandiae*, *Parietaria debilis*, *Pittosporum crassifolium*, *Solanum aviculare* and *Streblus banksii* – many of these species are now more common in northern New Zealand on islands than the mainland, possibly because they are susceptible to rodents eating plant parts (especially seeds), or requiring the high nutrient inputs now only present on mostly rodent-free seabird islands. The open nature of the vegetation (i.e. mainly a broken canopy with emergent individuals) and the lack of any mature trees suggest that the island is recovering from some past disturbance event – perhaps fire or storm. Of the 18 naturalised vascular species recorded on the island, six are grasses and the remainder dicotyledons – none are woody. Fluttering shearwaters and grey-faced petrels were present in burrows in 1990, and the island was baited for ship rats in 2008 (which were first recorded as present in the summer of 1984–85).



**Fig. 1. *Lepidium flexicaule* (AK 206897) collected on Saddle Island, western Great Barrier Island in January 1989 - the first collection in the northern half of the North Island for 55 years.**

## Discussion

Because *L. flexicaule* has a superficial similarity to some widespread naturalised *Lepidium* species present in northern New Zealand (e.g., *L. africanum*, *L. pseudotasmanicum*) and the probably indigenous *L. desvauxii*, it may well have been overlooked in the past. Saddle Island was at the time of EKC's visit still relatively pristine as is evident by its vegetation and flora being dominated by indigenous species, and by the presence of a number of burrowing seabirds. It also seems probable that ship rats had only recently colonised the island. These may all be contributing factors to the suspected survival of *L. flexicaule* on Saddle Island. In consultation with the Ngati Rehua Trust Board we would now like to ascertain if *L. flexicaule* is still present on the island and, if so, have measures taken to monitor the population and to protect the genotype. We suspect that some other Grey Group Islands are likely to be in a similar condition to Saddle Island and it would be well worth surveying for the presence of *L. flexicaule* on these.

## Acknowledgement

EKC thanks the Ngati Rehua Ngati Wai ki Aotea Trust Board for permission to survey the island in 1989 when he was a member of the Offshore Islands Research Group, and we thank the Board for their interest in the island's flora and fauna.

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## Theses

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### ■ Recent theses from the University of Otago, Department of Botany (2009-2010)

Dobbie, Lisa Rachel (2009): Morphological matching between alpine plants and their pollinators. MSc Botany Thesis, University of Otago, Dunedin. 105 p.

Thorsen, Michael (2010): Seed dispersal in New Zealand and its vulnerability to loss of dispersers. PhD Thesis, University of Otago, Dunedin.

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## BIOGRAPHY / BIBLIOGRAPHY

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### ■ Eric Godley: first and last meetings

I first met Eric Godley in May 1948, a little more than 62 years ago. He was on a visit to Botany Division DSIR in Wellington, not long after he had started his job in the Botany Department, Auckland University College. Lindsay Poole, Director, had invited John Hair, then at Lincoln, to come to Wellington to meet Eric, and the three of us talked. In 1949 I met just Eric when he gave a lecture on evolution to the Botany Department, Victoria University College, and a little later to the inaugural meeting of the N.Z. Genetics Society; his paper was on English species of *Agropyron* and mine was on New Zealand species of *Agropyron*. I think that this was his last paper on grasses and my first.

Eric was my Director for 22 years, and I had served under his three directorial predecessors: - H.H. Allan, A.C. Poole, C.M. Smith (Neville Moar, alone among Botany Division staff, served under all six Directors!). His long and careful service nurtured me as a botanist.

I said farewell to Eric in Christchurch Public Hospital in the afternoon of 27 June. I saw him last where I met him first – in a Public Hospital. The only difference was that he was the patient in 2010, and I was the patient in 1948.

Henry Connor

■ **Biographical sketch – David Rough (1815-1899)**

**Val Smith**, 80 Mill Road, New Plymouth 4310.

David Rough was born in Kintore, Aberdeenshire, Scotland. Although the year of his birth is generally given as 1815, a letter and most of his papers indicate that he was born in 1813. His father George Rough had migrated from Perth to Dundee in 1791 and started a business in High Street, where he traded for many years. David was his eleventh son! Third son George Rough Junior became Provost of Dundee; David showed an early love of the sea, and when a mere lad was bound apprentice aboard the Perth-built brig *Duke of Atholl*. After his first voyage to the Baltic he sailed mainly in Indian waters, rising to a position of command while still a young man.

He came to New Zealand via Java and Australia, landing in Paihia on 29 January 1840 with Lieutenant-Governor William Hobson; on 6 February he was a signatory to the Treaty of Waitangi. In June that year he surveyed the Tamaki Isthmus where Auckland is now centred, and it was his favourable report that led to Hobson's eventual approval of the site for the new settlement and capital of New Zealand. Early in August preparations began in the Bay of Islands for the move to the Waitemata. Rough was offered the position of Harbourmaster, and was with the party of government officers, tradesmen and labourers (including wives and children) sent to take possession of the intended settlement. Early accommodation was in tents and raupo huts –in a contemporary watercolour by John Johnson (1794-1848) Captain Rough's tent is identified as the one closest to the shore. The first building erected was the timber store, and port facilities were modest: a handcart and the harbourmaster's boat were the only ways of unloading a ship.

The population in 1841 was estimated to be 1500, but it soon doubled with the influx of settlers and immigrants. In 1842-1843 there was public outrage at the arrival of 128 boys, 11-19 years old, from Parkhurst prison on the Isle of Wight. As Immigration Agent, Captain Rough was responsible for them. His nature was said to be kindly: he and his wife (the Hobsons' former governess, Ellen Short) adopted two children, Elizabeth and Christopher Maling, when their father was killed at Wairau in 1843. In 1844 Captain Rough was asked to take charge of public works, to organise much-needed road construction and absorb settlers not yet in employment, in addition to his other duties. In 1856 he was appointed Collector of Customs at Nelson, and when he retired in 1868 on a well-earned pension he had served five successive Governors. He sailed to England in 1875 and died in Bournemouth in 1899, predeceased by his wife. They had no children of their own, but two of Rough's nephews who came to New Zealand in 1870 continued the family name here.

David Rough travelled extensively both in New Zealand and overseas and published *Narrative of a Journey through the north of New Zealand* and two books on his visits to Europe and the Orient. His reminiscences *Early Days in Auckland*, published in supplements to the *New*



*Stellaria roughii*

*Zealand Herald* in January 1896, include a brief account of the first ascent of Rangitoto by Europeans. A sketch of Auckland town that he made in 1843 is believed to be the earliest existing picture of Queen Street. He collected plants in various New Zealand localities, especially in the Nelson mountains, and sent them to J D Hooker at Kew. Two alpine plants, *Stellaria roughii*, and *Lobelia roughii* were named after him.

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Unpublished sources: information provided by family members N Rough (Wellington) & A Farrant (Paraparaumu)

### ***Stellaria roughii***

### **Caryophyllaceae**

*Stellaria* – from the Latin “stella”, a star, refers to the starry flowers. The genus is a world-wide one of about 85 species. Of the six New Zealand species, two reach the alpine zone.

*Stellaria roughii* is a highly-branched and rather delicate, fleshy, summer-green herb that forms loose patches up to 20 cm across from a branched pale rhizome. The narrow pointed leaves are smaller near the tips of the branches. By mid-summer most branch tips sport a single flower with leaf-like sepals that tend to conceal the much shorter deeply-bilobed petals. The sepals persist and also tend to hide the dry capsules. Like most other scree plants, *Stellaria roughii* blends remarkably in colour with its surroundings. It is found at 1,000-2,000 metres in South Island mountains from Nelson to western Southland, but its occurrence is erratic.

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## PUBLICATIONS

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### ■ Book Review

*Even Further, Fitter and Faster: review of “The Vegetative Key to the British Flora”. J. Poland & E. J. Clement. Southampton, J. Poland in association with the Botanical Society of the British Isles. 526 pp. c. NZ\$40.00*

Reviewed by Rhys Gardner

Decades ago, long before the DSIR giants had passed their wisdom down into the grateful hands of Men, identification of New Zealand's adventive flora was a task indeed, to be accomplished through tense and prolonged interrogation of riddlesome European multi-volumes (Tutin et al. 1964-1980; Walters et al. 1986) – slip among their arcane terms and endless, trackless keys and one fell far into the (largely unillustrated) darkness.

Some Men though looked for help elsewhere, and of companions found, none enchanted botanical eye and brain more than spritely little Fitter, Fitter and Blamey (1974), so pretty to look on but so devastatingly effective, its pages filled with deft colour sketches arranged by family and flower-colour of the flower. Her company if prolonged was said to lead to claviphobia and eventually, full-blown technical incompetence; most Men, whether hard-pressed or not, thought these things a price worth paying.

The similarly effective book reviewed here is designed around critical comparative observation of the vegetative body. Its authors, newcomer John Poland and BSBI veteran Eric Clement (see References) begin strongly by asserting that Floras have indoctrinated us with the mistaken belief "that success in identification requires flowering or fruiting material". This seems rather overstating the case but I agree with the hidden premise, that the closer one looks at pairs of "good" species (at least, the better ones) the more vegetative differences will turn up, from root to shoot tip.

All the keys, they say, have been written from personal observation of live plants. Thoroughly checked published information is combined with much new material, notably that on "technical confirmatory characters" such as number of vascular bundles and presence of stomata (for which, they say, a x10 lens is necessary but a x20 is better). Conventional morphological characters dominate but habit, colour and texture, and phenology (months of leafing) are well-represented too, nor are taste and odour neglected.

The c. 3000 spp. here include: species native to Great Britain, Ireland, the Channel Islands and the Isle of Man; "most aliens (adventives)"; and "many widely planted but not yet naturalised, species". Taxonomy and nomenclature follows Stace (1997). Authorities of names are omitted; common names are given in the keys and are indexed; names of families and genera are not regularly given but sometimes appear in key-headings.

This coverage certainly takes in nearly all Britain's wild plants, but there are numerous "borderline" cases that do not get a mention. For example, of the 50 or so species of *Eragrostis* that have been collected from the wild in Britain only *E. minor* is included; it is "a casual of wool, waste ground, docks, bird-seed and grain (Ryves et al. 1996: 76), while the others are mostly just "wool aliens".

The all-important first key, given helpfully immediately inside the front-cover, divides up the higher-plants into horsetails, clubmosses, ferns, conifers and 20 groups of flowering plants. It is based mainly on leaf characters but also on habit, e.g., "obligate water plants". It is kept as straightforward as possible, for example, stipules do not feature, nor is the distichy of the grass shoot contrasted with the 3-ranked sedge shoot.

The keys to the subgroups occupy nearly 400 pages. Most subgroups are artificial; all are given two-letter codes (and these codes rather than page numbers have been used in the index). Sometimes family or generic names appear in the heading to each key, summarizing its contents, but usually not. However, the final sixty or so keys are primarily to genera or subgenera: *Alchemilla*, *Amaranthus*, *Berberis*, *Cotoneaster* (50 of these vile weeds), etc.

The keys, polychotomous rather than dichotomous and indented in layout, are easy on the eye and easy to use. Unlike what has been done in some big Floras their botanical content has not been minimized in order to get a kind of false user-friendliness – the terminal leads are usually three to five line mini-descriptions, making it obvious when the wrong lead has been followed. Also, the majority of the keys occupy just a single page or a double-page spread, so one sees straight away the range of possibilities offered.

The informativeness of the key-leads has not been achieved without the use of abbreviation. The uncouthness that spoils some big Floras in this regard has pretty well been avoided but I do have some quibbles. For example, "usually", perhaps the term most often used in Floras but least often abbreviated, is given here as "usu": I much prefer "us.", but in this book the humble stop and single space have largely been done away with. I would also have preferred to see "v. rare" instead of "VR", which in Great Britain should surely be reserved for Queen Victoria. I also object to some of the avoidance of technical terms: for example, in grasses the blade is referred to just as the leaf and one is expected to know what "tramlines" and "false stem" mean (they are not in the Glossary). The terms "cavity" or "air-space" seem to me preferable to the book's "hollow". "Prominence" is sometimes used where "conspicuous" is meant. The novel term "hortal" appears a number of times for plants "of garden origin"; its further ecological meaning is unclear, and I wonder why the "naturalisation status classification" of Clement & Foster (1994) not been followed. Lastly, there seems to be little to gain by giving codes to the last sixty keys rather than taxonomic titles – write *Prunella*, not PRUNE.

Nearly 50 New Zealand natives are included (the Galway bogs are a favoured habitat). There are some novel observations: *Cardamine corymbosa* is said to be “annual, but often perennating at leaf tips”, and *Calystegia soldanella* is noted as having stomata all over the upper side of the leaf, in contrast to *C. sepium* and *C. silvatica*, where they are confined to the veins. There are some missed opportunities too, for example, the intense bitterness of hebes and griselinias is not mentioned, and while *Cortaderia richardii* and *C. selloana* are effectively contrasted there is no mention of the waxiness of the former's leaf-sheaths.

Preferences for particular common names is a subject best kept for field discussion or patriotic reunions but those yet to go on OE should be aware that in parts of Britain *Coprosma repens* is apparently known as “Tree Bedstraw”, *Phymatosorus diversifolius* (sic) as Kangaroo Fern, *Anemanthele lessoniana* as “Pheasant's-tail Grass” and *Cortaderia richardii* as “Early Pampas-Grass”.

The book is a compact one but its glued-in-sections pages do generally stay open on the desk. It has eighteen striking digital camera colour-plates by botanical artist Niki Simpson (see [www.nikisimpson.co.uk](http://www.nikisimpson.co.uk)), showing leaf shape and tothing, etc., and leaves typical of some taxa. Another eight colour plates show the remarkably diversity of *Carex* leaf anatomy. Sometimes space left at the end of a key has been filled by line drawings, but there is room for many more and more comparative illustration along the lines of *Carex* plates would have been valuable too. The authors are well aware of these deficiencies and say that an interactive version (hopefully, with many images of nicely prepared specimens in groups like *Cotoneaster*) is on the way. I found only one key where a later lead contradicts an earlier one, and if there are any typos I missed them.

To return to the theme of the first two paragraphs we can say then that this book is an outstanding continuation of the alternative, “helpful gnome”, tradition (the photographs of the authors, unrobed and “lensed up”, are confirmatory here), and the more so for it having taken only five years to complete. Although primarily a field guide it will raise the spirits of more than a few backlogged herbarium botanists too.

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■ **Publications Received**

Auckland Botanical Society Journal vol. 65 no. 2 December 2010, ISSN 0113-4132. Lucy Cranwell Lecture: wetlands on Great Barrier Island, trip reports including Norfolk Island, small-leaved coprosmas, *Rytidosperma*, *Sophora godleyi*, native Proteaceae, *Pittosporum kirkii*, Smith's Bush lichens, Mt Eden pasture dynamics, *Blidingia* spp., obituaries for Ross Beever and Eric Godley.

Rotorua Botanical Society Newsletter no. 55 December 2010. AGM minutes, President and Treasurer reports, obituary for John Nicholls, trip reports for Carmichael Reserve, Bowentown Heads, Thornton dunes, Mangapouri Scenic Reserve and Pataua Island, recently vouchered specimens, Okareka mistletoe, upcoming trips.

Manawatu Botanical Society Newsletter no. 42 December 2010. Trip reports for Flat Point and Makuri Scenic Reserve, *Senecio glastifolius*, Dame Ella Campbell Herbarium.

Wellington Botanical Society Newsletter December 2010, ISSN 1171-9982. Upcoming trips, talks and events, submissions, requests, observations on Wellington flora, trip reports for Tui Mines, Te Marua Bush, Mohaka St wetland and Otaki Forks.

Botanical Society of Otago Newsletter no 60 July 2010. Upcoming events, notices, book reviews, *Ripogonum scandens*, "Where did all the Scrophs go?", Otago Peninsula threatened plants, *Chondrostereum purpureum*, meeting and trip reports including Heyward Point Scenic Reserve.

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