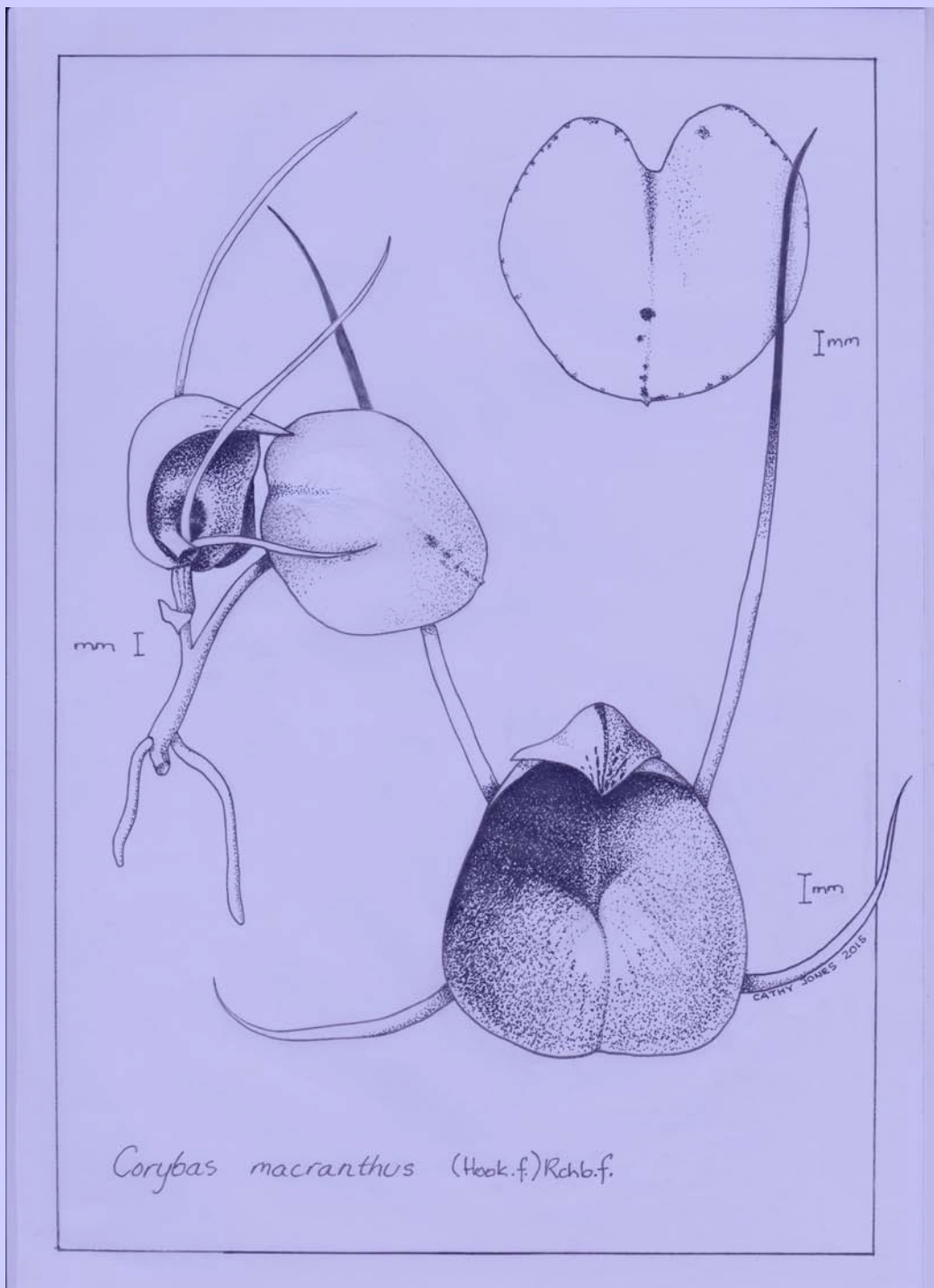


NEW ZEALAND BOTANICAL SOCIETY

NEWSLETTER

NUMBER 122

December 2015



New Zealand Botanical Society

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

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Subscriptions

The 2016 ordinary and institutional subscriptions are \$25 (reduced to \$18 if paid by the due date on the subscription invoice). The 2015 student subscription, available to full-time students, is \$12 (reduced to \$9 if paid by the due date on the subscription invoice).

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

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

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

Deadline for next issue

The deadline for the March 2016 issue is 25 February 2016.

Please post contributions to:
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169 Tory St Wellington 6021

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

Cover Illustration.

Corybas macranthus drawn by Cathy Jones from a plant collected on 15 November 2015 on Takaka Hill, northern South Island.

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CONTENTS

News

New Zealand Botanical Society News

Committee for 2016 2

Regional Botanical Society News

Auckland Botanical Society 3

Rotorua Botanical Society 3

Wellington Botanical Society 4

Nelson Botanical Society 7

Canterbury Botanical Society 9

Otago Botanical Society 10

Other Botanical Societies 11

Notes and Reports

Sonchus bulbosus subsp. *bulbosus* rediscovered after 45 years 11

Biography/Bibliography

Biographical Sketch – Andrew Burn Suter (1830-1895) 14

Publications

Publications received 16

New Zealand Botanical Society News

■ Committee for 2016

Nominations for positions of President, Secretary/Treasurer and three committee members for the New Zealand Botanical Society closed on 20 November 2015.

The following nominations, equalling the number of positions available, were received and are declared elected: President Anthony Wright, Secretary/Treasurer Ewen Cameron, Committee members Bruce Clarkson, Colin Webb and Carol West.

We are pleased to announce that Lara Shepherd has agreed to continue as editor for 2016.

Regional Botanical Society News

■ Auckland Botanical Society

September Meeting

The speaker for the 31st Lucy Cranwell lecture was Leon Perrie, Botany Curator at Te Papa. Leon spoke about how the understanding of New Zealand's ferns has changed during the 25 years since Patrick Brownsey gave the Lucy Cranwell Lecture in 1990 to coincide with the publication of the book, *New Zealand Ferns and Allied Plants*. He summarized the changes in classification and the ferns that have been discovered during that time. DNA analyses have unraveled the relationships of ferns that can be difficult to distinguish in the field.

September Field Trip

The public track up the Dome, the flat-topped hill north of Warkworth, is easily accessible but has not been visited by Bot Soc in the past. There is a good track part way up the hill to a look-out platform, but from there on the track is only of tramping quality, and was very wet and muddy on the day. However, this did not spoil the pleasure of the group, as the botany was full of interest. The first part was under a kanuka canopy, and the orchids that do well on poor soils were in evidence, some flowering and some in bud. Higher up the overall impression was of fine large trees in good condition, particularly the rata, and of a healthy regenerating understorey where the light was stronger. All made the lunch stop on the summit, then those with enough energy carried on to a magnificent kauri grove before retracing their steps.

October Meeting

Robert Hoare, Lepidoptera Systematist, Landcare Research, gave a talk entitled "Hunches about munches" that would qualify as the most hilarious presentation that Bot Soc has ever enjoyed. He slanted his talk towards the botanical, by describing the various signs left by moth caterpillars when feeding and made the point that several species are quite specific in their choice of host plants. His lively actions, and his reading of his comical poems from the book, "Poems about bugs" made sure his audience was engaged throughout. Rhyming "Microsorium" with "decorum" might leave one feeling *Pseudopanicky*. We are now better equipped to understand the leaf minings, leaf rollings and cones, and clumps of fern spores that indicate that caterpillars have been at work.

October Field Trip

Two reserves on Duck Creek, a tributary of the Mahurangi River, are unknown to the general public, so it was appropriate that Bot Soc should explore them. Duck Creek Reserve is administered by DOC, and Glen Kowhai Reserve by the Auckland Council. We found a dry-footed crossing of the creek and were immediately confronted by a spray of male-flowering *Clematis cunninghamii* – we

later found some female flowers. We followed a kauri ridge to where logging in the 1920s had left a long groove in the ground where the kauri logs were dragged out, then lunched beside six very well defined kumara pits. Botanising along the way uncovered mairehau (*Leionema nudum*), *Alseuosmia macrophylla* and *Pomaderris hamiltonii* all in flower. After lunch a track led us through lush riverine forest down to the creek edge, where there were two large patches of the giant maidenhair, *Adiantum formosum*, which had been planted there in 1935, and looks very much at home.

November Meeting

Peter de Lange gave one of his customary information packed talks, this time on his mid-winter visit to Rangatira (South East) Island, off Pitt Island in the Chathams. This island is well-known to conservationists because of the breeding programme to save the black robin. Peter's presentation began with some ornithological observations, then he proceeded to describe the flora, ranging from cryptograms through to vascular plants, and even the non-vegetable fungi. The decimation of the flora when stock grazed the island now presents managers with a king-sized headache.

November Field Trip

We bravely tackled the swamp forest of the Omaha-Taniko Scientific Reserve at Omaha, unfazed by the thickets of *Gahnia xanthocarpa* and tangles of rushes and sedges. A track had previously been forced through the sedgeland, which made our progress easier. This was an opportunity for people to come to grips with the several species of *Machaerina* (*Baumea*). A nice surprise was the species of sun orchid that has the tag-name of *Thelymitra* "darkie", and an even greater surprise was to find a plant, now in a poor condition, of the cold-adapted fern, *Blechnum penna-marina*. We agreed that although this is a difficult habitat to explore, it is important that we become familiar with a fast disappearing vegetation type. At the end of the walk we were taken to view a healthy plot of *Ophioglossum petiolatum* beside the causeway. A treat for pteridophiles!

FUTURE EVENTS

19 December	Christmas picnic/fieldtrip at Wenderholm Regional Park
21 February	Waitakere Ranges
2 March	AGM/Lucy Cranwell Award recipients (Sofie Pearson/Riki Taylor)
19 March	Awhitu

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■ **Rotorua Botanical Society**

East Cape Field Camp - 31 October- 2 November

After gathering at Tim's Bach near Whanarua Bay we headed out on Saturday for Te Araroa to meet Graeme Atkins who was the trip leader for the day. The first stop was a swamp on Hovell's property nearby. It was mainly a raupo swamp so we probed the sedges and grasses on the fringes. The main species were *Eleocharis acuta*, *Machaerina teretifolia*, *Carex secta*, *C. maorica* and a bit of manuka. Other interesting species were the coastal *Juncus caespiticus*, swamp millet (*Isachne globosa*) and the odd *Sparganium subglobosum*. Towards the head of the swamp the raupo was replaced by manuka, but we didn't go that far. The next brief stop, out towards East Cape, was to see a large population of *Pimelea orthia* on some mudstone banks alongside the road. A few km further on we stopped at a small wetland in pasture between the road and the shore which was unfenced, so grazed. Despite heavy trampling (or perhaps because of) the area was surprisingly diverse. The dominant species was *Machaerina teretifolia* (mostly trampled) but the treasure was *Mazus novaezelandiae* subspecies *impolitus* forma *hirta* on small mounds in the open areas. Other interesting species which prompted discussion included *Machaerina juncea*, *M. articulata*, *Schoenoplectus tabernaemontani*, *Schoenus maschalinus*, *Drosera binata* and *Ranunculus macropus*.

Lunch was nearby where we met up with Conservation Board on a tour of the area. Afterwards we headed out together to the beach before the lighthouse for a discussion on East Island and local

revegetation around the lighthouse nearby (which had been shifted there in the 1920's from the island). A little further on the forest near the Rangitata homestead was explored. At first a large stand of tawapou was traversed then the adjacent tawa, kohekohe, nikau, titoki and pohutukawa forest on a steep slope where *Clematis cunninghamii* was in flower, scrambling over the shrubs, along with large patches of *Jovellana sinclairii* covering the ground. The steepest places had an impenetrable ground cover of kiekie. A search for *Streblus banksii* was unsuccessful but we finally located yet another substantial patch of *Mazus* in an outwash area amongst pasture.

Finally we headed to the beach south of East Cape, at first to view *Plantago picta* on the mudstone cliffs, then southwards down the beach, past tall frittering cliffs of mudstone with few plants to the next beach. The shore and cliffs were fringed with pasture, with plants such as spinifex and *Carex pumila* in the sandy areas struggling with grazing. About halfway down the second beach we arrived at an accessible area of *Sonchus kirkii* in a lush flush area on a low cliff. A final bit of excitement occurred on the way back along the road from the lighthouse where we rescued an overseas student who had just written off his small car after losing control in the gravel (looking at view).

On Sunday we met Willie Ngamoti at Omaio and the spent day close to the road. The first part of the day was spent in tall kanuka scrub on the way down a horse track from the car park to the creek. This was rather open and held a very diverse range of seedlings and saplings including rimu, miro, kahikatea, ramarama, willow-leaved and black maire with good lot of orchids in flower. Kumeraho (localised here on this coast but better known in the western Bay of Plenty) was quite common throughout the scrub along with the odd *Pimelea tomentosa*, both in flower. Towards the stream, a residual forest patch with tawa, rewarewa and pukatea provided a change. Over the creek from our start the forest was mostly hard beech forest with *Alseuosmia macrophylla* abundant beneath or manuka scrub, often with a dense tangle fern understorey. On the edge of the stream there were several very large sprawling puriri. Downstream we explored another fork for a few hundred metres as it cut a narrow gorge through the hard beech forest. A short distance up, at the forks, waterfalls prevented further progress. Here another unusual find for the area was *Rhabdothanus solandri*. Thus ended a very interesting venture to East Cape.

FUTURE EVENTS

December 5-6 Mt Urchin & Tree Trunk Gorge.
February, March Yet to be decided.

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■ Wellington Botanical Society

June Field Trip - Kohekohe Loop track, Paekākāriki

Our party of fifteen set off from Paekākāriki in excellent weather. We walked the first 300 m of the new Te Araroa Escarpment Track, looking at Nga Uruora's most recent plantings, and a huge selection of weeds. Nga Uruora's weed control focuses on eliminating the three ivies: Cape, German and English ivy, and *Tradescantia*. We are eradicating Cape ivy from the northern part of the escarpment. The German and English species are much more difficult, but Greater Wellington Regional Council is helping us. Just beyond the picnic table we turned off up the Kohekohe Loop Track, which climbs the escarpment almost reaching Hill Road. It takes about 50 minutes to walk round if you are not botanising. The track was built by Nga Uruora Kāpiti Project (NUKP) volunteers with a grant from the Walkways Commission. The first part of the track passes through forest planted by NUKP in 2006-08. Seedlings were planted in scree, and the trees are already c. 3 m high. Some were planted in stones without any soil, but have done very well. All species were sourced locally, and grown in our two nurseries (Pukerua Bay and Paekākāriki schools). Ngaio is the most successful, other species being karamu, māhoe, and tī kōūka. These were the pioneer species. When the plants reached about 2 m, we planted kohekohe, and occasionally tōtara and milk trees.

Further up the Loop Track we entered kohekohe forest which is partly secondary, partly original native

forest. Possums have been trapped here since 2000, so there have been fourteen years for the kohekohe to recover – they are now flowering profusely. The forest is dominated by kohekohe. Other species are māhoe, tawa, ngaio, hīnau, tītoki, taupata, karamu, akiraho, with a sprinkling of nīkau, tī kōūka and karaka. The forest floor was covered in seedlings, including kohekohe, tītoki and māhoe. On the way up we passed an original (?) kōwhai with numerous seedlings. Near the top we inspected an old kohekohe with a rātā vine about 8 cm dbh climbing it, and a large puka (*Griselinia lucida*) about 12 cm dbh. Both had very good examples of girdling roots, and the puka had distinctive grooves in its bark. We couldn't see any puka foliage, so relied on the bark for id. The bark on the rātā vine indicated *M. fulgens* or *M. perforata*.

Some excitement was generated by a suspected *Streblus banksii* leaf showing the expected shape, rounded teeth, thickness and colour. It came from a seedling in a shady part of the forest. Close inspection of the seedling was not conclusive. We found that māhoe seedlings grown in the nursery have very similar leaves, with rounded teeth. Māhoe (*Melicytus ramiflorus*) leaves are very variable in shape, as well as teeth. I concluded that our seedling was māhoe.

Next door to this forest, just above Hill Road, is a huge area recently retired from sheep farming. This was Perkins Farm which stretches from the Hill Road Lookout to the top of Transmission Gully. Nga Uruora has an agreement with the NZ Transport Agency to do pest control, weed control, and perhaps some planting on steep parts of the farm. The long-term plan is to restore the farm to native bush.

June Workbee – Te Mārua Bush

The newly-fenced planting is a triangle of uneven, sloping ground bordered by SH2, the Pony Club paddock, and immediately to the south, Te Mārua Bush itself. A few years ago the Kaitoke Regional Park ranger had planted along the highway boundary, some 1.5 to 3 m-high mānuka and tōtara, both non-palatable and secured by a good fence, so we were able to plant trees that would otherwise have been eaten by the horses. However, to be on the safe side, we did plant a line of mānuka and tōtara just inside the fence.

A total of eighty-nine plants propagated by F&B were put in, and the existing plants weeded. All plants were staked and 'hare nets' were secured on juvenile plants palatable to hares, rabbits and possums. Each plant also received a small amount of fertiliser as the area is stony with poor soil.

Earlier in the week, F&B members had visited the site and removed lupin, broom, blackberry, a large old climbing rose, and lots of rubbish. We were pleased to find about ten young mānuka (10–40 cm high) that had self-seeded in a spot where there had been little grass growth to smother them. These were marked to locate them for future weeding.

After such a long, hot, dry summer Te Mārua Bush is still looking good. There has been a lot of healthy, undamaged growth on established trees, owing largely to an absence of cicadas again this year, as in 2013. Many of the huge number of emerging seedlings seen in spring have died, but a reasonable number have survived. There was little seed seen on the mature canopy and emergent trees, and some seed that did set fell off before ripening, owing to the long dry period.

July Field Trip – Porirua Scenic Reserve

The recent flooding had damaged the small stream and the grassy clearing at the track's entrance. The surrounding plants looked to have stood up well, at least those which had not had their substrate ripped away. More large podocarps were evident along this track, compared with the track from Camp Elsdon. Mataī was the most common, with some kahikatea, mostly in the valley, and an occasional miro and tōtara. Many of these trees were remarkably squat—short for their girth—reflecting the low canopy, and perhaps a windiness that makes it difficult for emergents. Kohekohe made up most of the canopy, and it was just past its flowering peak.

At a clearing a little way up the track, we looked out at the canopy on the opposite hillside and practised our long-distance identifications. We seemed to be quite good (or otherwise all wrong). Among the highlights were large-leaved milk tree (*Streblus banksii*). These were not uncommon, once we got our eye in for them. We also found a cluster of very large lancewoods (*Pseudopanax crassifolius*) near the top of the track. Nīkau were abundant at higher altitudes. Weeds were generally inconspicuous. With the reserve previously botanised thoroughly by Pat Enright and colleagues, there

were few additions to the list: *Pseudopanax crassifolius* × *P. lessonii*, Japanese hill cherry (*Prunus serrulata*), Cape gooseberry (*Physalis peruviana*), Mexican daisy (*Erigeron karvinskianus*), velvety nightshade (*Solanum chenopodioides*), and hawksbeard (*Crepis capillaris*).

Fern focus for the day was *Adiantum*. The reserve is home to four indigenous species; few NZ sites outside the northern North Island could match that. We encountered both *A. fulvum* and *A. viridescens*; the latter seemed to be more common. The hairs on the axes (rachis and costae) distinguish both from the glabrous, and usually more abundant, *A. cunninghamii*. *Adiantum fulvum* has hairs on the underside of the frond segments, while *A. viridescens* does not.

Photos of some of what we saw are available on NatureWatch at: <http://naturewatch.org.nz/observations?utf8=%E2%9C%93&q=WellingtonBotanicalSociety+July2015>

August Field Trip – Taparanga Block, Baring Head

On a cool, blustery morning, with showers forecast, twenty-two intrepid BotSoccers met at the Baring Head car-park. Before starting our botanical exploration, Robyn Smith, GWRC's Biodiversity Advisor, explained the GWRC Biodiversity Department's plans for the site, part of the Baring Head Key Native Ecosystem management area. This was the first botanical survey on the property, so a species list will be of value to GWRC and to the landowners, who will receive a copy.

After a health and safety briefing we crossed the bridge and walked along the farm road up the true right of the Wainuiomata River to the East Harbour Regional Park boundary. Once through the gate, our pace slowed as we began listing species. The vegetation at the start, along the track upstream of the boundary, was mainly exotic rough pasture species. On the slope above were native shrubs, gorse and some small native herbs and monocots. Common native species found here were *Carmichaelia australis*, *Coprosma propinqua* subsp. *propinqua*, *Lagenophora* sp., *Clematis forsteri*, *Pyrrosia eleagnifolia* and *Melicactus crassifolius*. East of the farm track, old river and creek channels contain native wetland species, e.g., *Isolepis prolifer*, but they were dominated by the exotic weeds, floating sweet grass (*Glyceria declinata*), and Cape pondweed (*Aponogeton distachyus*), and a small area of parrot's feather (*Myriophyllum aquaticum*).

We came to the first gully and some exciting finds, e.g., several large *Agave americana*, and possibly an old homestead, at the entrance to a small gully. A little way up it, a large, old *Myoporum laetum*, marked a bend in the gully to the south and back towards the park. Just up the gully we found a mature *Melicope ternata* × *M. simplex*. Dominant species in the first gully were *Leptospermum scoparium* agg. and *Kunzea robusta*, with an understorey of ferns, rushes and sedges; species such as *Blechnum membranaceum*, *B. chambersii*, *B. minus*, *Polystichum oculatum*, *P. neozelandicum* subsp. *zerophyllum*, *P. vestitum*, *Cyperus ustulatus*, *Juncus* spp., and a good population of rasp fern (*Blechnum parrisiae*).

The farm track then sidled up and over a small spur, which formed a raised flat terrace where the track crossed it. The spur was dominated by exotic grasses with a canopy of kānuka and mānuka in places. After looking at the different forms of the kānuka, we discussed if what we were seeing was all *K. robusta*, or was another *Kunzea* was also present. We then descended to the second gully, and the most exciting finds of the day. A wet area (seep) in the bottom of the gully had *Juncus pallidus*, *J. sarophorus* and *Carex secta*. A large, mature, kaihikatea, with numerous epiphytes, guards the valley entrance. However it was the plants in the vicinity that provided a flurry of activity and interest as we spread to the four winds and soon found more of Tane's taonga. The exciting finds before first lunch were a large-leaved milk tree (*Streblus banksii*) covered in native lianes, and a small-leaved milk tree (*S. heterophyllus*), also a stand of *Melicope simplex*, *Podocarpus totara*, *Brachyglottis lagopus*, more *Polystichum oculatum*, and *P. neozelandicum* subsp. *zerophyllum*, and more *Blechnum parrisiae*. At 11 a.m. people re-emerged for first lunch to discuss their finds, comment on the amount of the weedy *Selaginella kraussiana*, consider the grazing of wetlands, and decide where to head next.

After lunch, we agreed to meet near a large *Cordyline australis* further up the gully at 2 p.m. for second lunch. The fitter and keener bods headed up the second gully and onto the ridges either side where they found a remnant of black beech forest, and a suite of species associated with this habitat. The ridges on either side were dominated by a canopy of kānuka and mānuka, with an understorey with *Uncinia*, *Adiantum*, *Asplenium*, *Blechnum* and *Polystichum* species; and the orchids *Acianthus sinclairii* and *Pterostylis alobula*. Above here, gorse was more dominant in the canopy. Those wanting

to cover less ground searched up the valley a short distance, and the lower true left side of the gully where the dominant canopy species were *Cyathea*, *Pseudopanax*, *Knightia* and *Meliccytus*. The taonga found were lone plants of *Fuchsia perscandens*, *Coprosma rubra* and *Nestegis lanceolata*. There were some obvious animal trails in this area, and a lack of regeneration under the tree ferns.

Some headed down the gully to the river flats finding meandering water channels filled with *Isolepis prolifer* and *Carex* spp. The sides of the slopes along the river flats above the second gully were almost solid gorse, interspersed with native divaricates. The area we searched proved to be botanically highly diverse, with the surprises being the old forest remnants and several locally rare species.

September Field Trip – Korohiwa, East Harbour Regional Park

Our aim was to enter the bottom of the relatively new Korohiwa Track, and emerge on Kōwhai Street. In between is a ridge with a remnant of recovering beech forest adjoining the remainder of the Eastbourne hills forest, dropping away to Butterfly Creek. Because it was a recently renovated track, there were several recordings of planted origin around the entrance. Two fine *Melicope ternata*, *Sophora tetraptera*, large ngaio and some *Coprosma propinqua* subsp. *propinqua* guard the track entrance. Disturbed shady banks are covered in weed grasses, mainly *Erharta erecta*. We climbed slowly through recovering native vegetation under a canopy of gorse. Track-side were ferns, including *Polystichum neozelandicum* subsp. *zerophyllum*, *P. oculatum*, *Blechnum procerum* and *B. membranaceum*. Orchids included *Acianthus sinclairii*, *Thelymitria longifolia* and lots of *Pterostylis alobula*. There was wood rush (*Luzula picta*) and plentiful sundew (*Drosera auriculata*), among the expected *Senecio minimus*, and the ubiquitous exotic, *Senecio glastifolius*.

Of concern was *Asparagus scandens* entangled within the gorse canopy. Because of limited time, we stuck to the track, but there looked to be very interesting and more mature cover off-track, perhaps harbouring a wider range of native species, and not penetrated by the range of exotic flora we were finding on the track. The ridgeline had a canopy of *Fuscospora solandri* and *F. truncata* with many of the trunks embedded with the roots of *Drymoathus adversus*, and the forest floor smothered with newly emerged *Corybas trilobus*. A large exposed rimu, which towered over the recovering forest had clearly survived intense fires of the past as evidenced in the surface gravels. The Kōwhai Street entry to the track is characterised by numerous exotic delights such as an unknown palm, agapanthus and Cape ivy, and further up there are regular planted pōhutukawa, and banks planted with rengarenga lilies, and some exotic *Adiantum raddianum* among the natives *Adiantum cunninghamii* and *Lindsea linearis*. However, despite this, there were many delights track-side in full view, such as bunches of *Pterostylis alobula* and what we thought was *Pterostylis cardiostigma*.

FUTURE EVENTS

17-24 January Summer trip to western Waikato. Contact Mike Parsons:
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■ Nelson Botanical Society

August Fieldtrip: Adele Island

We pulled into the bay and after an encounter with a noisy saddleback we followed the track south towards the summit through low growing manuka and kanuka with occasional young *Fuscospora solandri* and *Hakea salicifolia*, which is colonising open areas. Seen in this area were *Lindsaea linearis*, *Korthalsella salicornioides* on the kanuka, *Leucopogon fraseri*, and *Drosera spatulata*. We headed down a ridge where the vegetation changed with taller species such as *Meliccytus ramiflorus*, occasional *Alectryon excelsus* and *Griselinia lucida* growing on the ground. Added to the species list in this area were *Prumnopitys ferruginea*, *Pseudotsuga menziesii*, *Aristotelia serrata*, *Schefflera digitata* and *Parsonsia heterophylla*. We kept our eyes peeled for *Streblus banksii* and encountered a few juvenile plants at the southern bay. Others plants added to the list included *Olearia arborescens*, *Asplenium gracillimum*, *Blechnum procerum*, *Notogrammitis ciliata*, *Deyeuxia avenoides*, *Euchiton*

japonicus, *Senecio hispidulus*, *Stellaria parviflora*, a *Dracophyllum*, *Hymenophyllum sanguinolentum* and *H. scabrum*.

August Evening Talk: Tantalus monkeys and seed dispersal at Ngel Nyaki, Nigeria. Abby Grassham
Abby undertook her M.Sc. field work in Nigeria at a field station in the Ngel Nyaki Forest Reserve on the Mambilla Plateau in the Cameroon Highlands. The reserve is a significant remnant of montane forest and it is important to understand whether the forest can regenerate naturally into the adjacent grassland hence the research into seed dispersal by tantalus monkeys. The monkeys are frugivorous, have a long daily ranging distance and regularly enter the grassland. These factors combined with a long gut retention time means that they are important seed dispersers. Plant species dispersed by the monkeys include *Croton macrostachyus*, *Psychotria peduncularis*, *Leea guineensis*, *Maesa lanceolata*, and *Rytigynia umbellata*. It was found that tantalus monkeys play an important role in seed dispersal with potential to aid in forest regeneration if appropriate conservation measures are taken.

September Fieldtrip Inches' Wairoa Forest (Threatened plant weeding)

The prospect of dealing to old man's beard and other nasties motivated 16 Botsoccers to take up grubbers, secateurs and glyphosate. We started from the northern end where there is scattered *Sophora microphylla* and *Pseudopanax ferox* and mopped up old man's beard and barberry seedlings. *Teucrium parvifolium* was just coming into leaf and the *Coprosma obconica* individual is still growing strongly where we first unearthed it from blackberry. The *Brachyglottis sciadophila* was starting to climb for the first time, which bodes well for it producing seed. It was encouraging that new plants of *Coprosma obconica* and climbing groundsel were discovered. We checked out the most threatened plant in the bush: *Scutellaria novae-zelandiae*. We managed to relocate two small populations of maire saplings and the first grove is *Nestegis lanceolata* while the second is *Nestegis cunninghamii*! This remnant providing the perfect place for seeing a range of divaricates: *Myrsine divaricata*, *Lophomyrtus obcordata*, *Melicytus micranthus* and its hybrid with mahoe, *Coprosma rubra*, *C. rotundifolia*, *C. rhamnoides*, *Hoheria angustifolia*, *Streblus heterophyllus* and *Pennantia corymbosa*.

September Evening Talk: Native orchids; *Corybas* and *Caladenia*. Mark Moorhouse

Mark first encountered native orchids in his school days and later working for forestry where he found himself having to fell trees that created the habitat for a multitude of orchids! Later he met Dorothy Cooper and she resurrected Mark's passion for orchids. Mark has made a special study of *Caladenia* "Bacon Creek" which was triggered by the differences he saw in this orchid from existing *C. lyallii* and the Australian *C. alpina*. He described and showed all the features used to distinguish this orchid from other *Caladenia*. It grows 150-300 mm in height, with one long thin leaf. Mark would like to know if anyone 'comes across' *Caladenia* "Bacon Creek" and where and when. Mark's other special interest is in the *Corybas* genus, and especially in *C. trilobus*. This species is very variable, with many different forms, which may live side by side without producing a hybrid.

October Fieldtrip: Coppermine Saddle

Eight members had an enjoyable day on the lower Dun Saddle track. There was a lone *Astelia grandis* flourishing, the local *Hebe stricta* var. *atkinsonii* and *H. stenophylla* var. *stenophylla*. Further along the track, we enjoyed seeing *Clematis paniculata*, *Rubus cissoides* and *Libertia mooreae* in bloom. The light rain proved ideal for examining filmy ferns and we were able to identify *Hymenophyllum bivalve*, *H. multifidum*, *H. demissum* and *H. villosum* from our list together with *H. flabellatum*, *H. sanguinolentum* and *H. scabrum* which were additions. We also found *Polyphlebium venosum* and a lush bank of *Cardiomanes reniforme*. The highlight of the forest part was finding a colony of *Corybas* "whiskers" on a low bank. Two other orchids were seen in flower – *Corybas trilobus* agg. in the forest and *Pterostylis banksii* in a more open area. *Ozothamnus vauvilliersii*, *Dracophyllum filifolium*, *D. pronum* and *Metrosideros umbellata* were prominent in this scrubland zone. We were pleased to find three ultramafic endemic species – a trackside *Carex devia*, *Chionochoa defracta* with its brittle brown leaf sheaths and *Pimelea suteri* in flower.

Labour Weekend Camp: Punakaiki

Dolomite Point, Punakaiki River loop to Pororai River

Fourteen members gathered at Punakaiki for a trip to Dolomite Point where amongst the salt-spray weathered vegetation, the *Freycinetia banksii* flowers caused great excitement. We continued up the Punakaiki River to the Pororari valley and had lessons differentiating between *M. fulgens* and *M.*

colensoi; then found *Corybas oblongus* in bud, *C. acuminatus* in full flower with its pointed leaf, and *C. longipetalus* and *C. iridescens* were observed. More orchids were *Earina mucronata*, *E. autumnalis* and *Winika cunninghamii* all perched on the same tree. Two other notable finds were *Raukaua edgerleyi* and *Phlegmariurus varius*.

Bullock Creek, Cave Creek, Truman Track

On Sunday morning 14 of us drove up Bullock Creek to the Inland Pack Track and Cave Creek. At the edge of the road, we noted a fuchsia, possibly a hybrid of *Fuchsia excorticata* and *F. perscandens*. Nearby was a *Carmichaelia odorata*, and a grove of *Lepidothamnus intermedius*, with several tree-sized *Phyllocladus* resembling *P. alpinus* were seen. *Lycopodium scariosum* and *L. volubile* growing together and *Phlegmariurus varius* was also present. We descended into Cave Creek noting a lone *Brachyglottis hectorii*. The cave mouth was screened with a curtain of *Metrosideros diffusa* and there were numerous filmy ferns, together with several *Corybas macranthus*, *C. acuminatus* and *Ourisia lactea*. A *Viola filicaulis* provided some interest along with *Pterostylis irsoniana*. We drove to the Truman Track and through forest of podocarps and *Metrosideros robusta* above *Rhopalostylis sapida* and lianes such as *Freycinetia banksii*. *Metrosideros fulgens* was present and a huge *M. robusta* was slowly strangling an ancient *Prumnopitys taxifolia*. On the cliffs we found *Pimelea prostrata* ssp. *prostrata*, *Hebe elliptica* and *Olearia avicenniifolia*. On the coastal margins there were *Samolus repens* and *Selliera radicans* with occasional *Plantago triandra*, *Lobelia anceps*, *Centella uniflora* and *Anaphalioides trinervis*.

Dolomite Point, Truman Track, Nile River

On another day a group went to Punakaiki to look at the *Freycinetia banksii* flowering beside the Pancake Rocks and Blowholes Walk. Several plants were showing female spikes, each covered in tiny flowers with a brownish-pink calyx. When we moved on to the Truman Track, several *Freycinetia banksii* were found with male flowers, which had 4-6 spikes with a pink and white calyx. Later the group headed to the Nile River where old willows were festooned with: *Earina mucronata*, *E. autumnalis*, *Coprosma grandifolia*, *C. propinqua*, *Metrosideros perforata*, *Collospermum hastatum*, *Rubus cissoides*, *Asplenium flaccidum*, *Microsorium pustulatum*, *Pyrosia eleagnifolia*, *Melicytus ramiflorus*, *Griselinia littoralis*, *Carpodetus serratus*, *Muehlenbeckia complexa*, *Notogrammitis heterophylla*, *Hymenophyllum demissum* and *H. sanguinolentum*. Several *Lophozonia menziesii* hosted *Cardiomanes reniforme*, *Metrosideros fulgens* and *M. robusta*. Further along the river track, we found a lush green *Phlegmariurus varius*; a *Lophozonia menziesii* with flowering *Earina mucronata*, and some *Winika cunninghamii*, *Fuchsia excorticata* and *Metrosideros colensoi* in flower.

FUTURE EVENTS

December 19-20	Cobb Valley. Contact: Susan Cook, 03 5446175
January 17	Rainbow Skifield. Contact: Beryce Vincenzi, 03 5451985
January 29-February 1	Hanmer. Contact: Beryce Vincenzi, 03 5451985
February 21	Mt Arthur. Contact: Chris Ecroyd, 03 5447038
March 20	Chromite Mines, Hackett. Contact Susan Cook 03 5446175

Acting President: Don Pittham, 03 545 1985, pitthamd@xtra.co.nz

Treasurer: Uta Purcell, 03 5450280, mupurcell@xtra.co.nz

■ Canterbury Botanical Society

August Meeting Report: Connecting the Dots: a conservation genetics study on *Pittosporum obcordatum*.

Pittosporum obcordatum is a cryptic small tree that intrigues botanists. The week before Sarah Wright's talk to BOTSOC on her masters research on the genetics of the threatened small tree *Pittosporum obcordatum* I had a phone call from a farmer near Wairoa, Gisbourne who had read the note about Sarah's talk in Trilepidea, NZ Plant Conservation Network newsletter and wanted to talk to Sarah about her research. Melissa's Hutchison's rediscovery of the type population on Banks Peninsula added an important and isolated group of plants into Sarah's study.

Over half the estimated 2000 individuals are found in Northland and Fiordland. In between these two strongholds most of the base-rich lowland alluvial habitat has been cleared so the remaining

populations are scattered, small and often with little regeneration. Small populations are at risk of inbreeding depression due to reduced genetic variation. Sarah sampled most of the known populations to characterise the remaining genetic diversity and uniqueness of the alleles.

From this Sarah was able to make management recommendations for each population. Some populations had below average genetic variability and were vulnerable to inbreeding and thus her recommendation is to introduce new plants from other populations to help increase seed production and seedling survival. For other populations, the presence of unique alleles means that outside plant material could swamp important local genes and she recommends that the population be boosted only with plants grown from local seed and cuttings.

September Meeting Report: Prof. Dave Kelly: "Is the Decline of bird populations threatening native plants and can we fix it?"

I hope Dave will come back and repeat this talk. It was the science equivalent of the Court Jesters *Complete History of New Zealand (Abridged)* with just as much speed and black humour. The short story is that New Zealand is a great place to study what happens to plant pollination and fruit dispersal when bird-plant mutualisms are weakened by extinction of bird species and their wholesale decline.

New Zealand forest trees are disproportionately pollinated by birds, with 29% of tree species visited by birds, a proportion is more like a tropical forest rather than a temperate forest. Many well-designed studies have demonstrated that many trees are pollen-limited, that is, there is insufficient bird pollination to produce the optimal number of seeds to retain the plant species in the long-term. If that is not enough to worry about, Dave and his students have shown there is an unseen and insidious shift in forests from reduced bird pollination resulting in more self-pollination and inbreeding depression, and ineffective seed dispersal. The news gets worse. A carpet of seeds under the canopy may not be what it seems if they are selfed seeds with inbreeding depression, which will grow into unthrifty trees and in some cases trees with sterile seeds.

How to fix this terrible decline? Retaining and protecting forest is only half the answer - it is critical to increase bird numbers and species. Trapping or predator-proof fence will reduce the bird predators and help restore the natural bird-plant mutualisms to secure the future of the forest (and alpine flora). There was so much science, PhD research, and practical conclusions condensed in this presentation that I wanted to hear it all again, at a slower speed. We look forward to inviting Dave back to hear more of this rapidly evolving drama about the future of our forests and birds.

FUTURE EVENTS

7 December Meeting	Dr Peter Heenan TBA
12 December Field Trip	Mt Torlesse alpine flora, accessed from Avoca Homestead-Torlesse, or Lees valley, TBA.
1 February Meeting	Talk on Herbarium Collections, Ines Schoenberger, Manager Allan Herbarium.
13 – 18 February 2016	Summer Camp – Arapawa Island. Contact: Gillian Giller, ph 03 313 5315 or ggillerma1@actrix.gen.nz

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Secretary: Alice Shanks **Website:** www.canterburybotanicalsociety.org.nz

▪ **Botanical Society of Otago**

FUTURE EVENTS

10 December Allan Mere Award Ceremony for Alan Mark. Benham Seminar Room, Room 215, 2nd floor, Zoology Building, 346 Great King Street, beside the Captain Cook Hotel.

19 December Trip to Old Man Range. Contact David Lyttle 454 5470, email: djlyttle@ihug.co.nz

12-14 February Trip to Borland, East Fiordland. RSVP to Gretchen Brownstein by 20 January 2016, email: brownsteing@landcare.research.co.nz

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

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Wakatipu Botanical Group

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

NOTES AND REPORTS

■ *Sonchus bulbosus* subsp. *bulbosus* rediscovered after 45 years

Ewen K. Cameron, Auckland War Memorial Museum, Private Bag 92018, Auckland 1142,
ecameron@aucklandmuseum.com

A herbarium specimen collected by Phyllis Hynes on 26 October 1970 (AK 217762, ex herbarium AE Esler, presented to AK in 1989) on the roadside "south of and near the Opononi Hotel, Northland" remained as "*Hieracium* sp." for 40 years until Rhys Gardner in 2000 worked out from the presence of a root tuber its true identity as the Mediterranean daisy, *Aetheorhiza bulbosa* subsp. *bulbosa* (= *Sonchus bulbosus* subsp. *bulbosus*) – a new naturalised record for the New Zealand flora (Gardner 2003).

On 2 October 2015 while holidaying in the Hokianga, unbranched yellow daisy-heads caught my eye poking up through the kikuyu grass along the edge of the footpath just south of the Opononi Hotel (Figs. 1,2). Remembering the Hynes Hokianga specimen from the same locality the identification was quickly confirmed back in the herbarium. The form of the plant, leaves and flowering heads superficially look like a *Hieracium* sp., however, the lack of stellate hairs (Fig. 3) and the presence of slender rhizomes with tubers separates *S. bulbosus* from *Hieraceum* which has stellate hairs, no root tubers and thick rhizomes if present.

Although occurring in a well-visited location I suspect it has evaded botanist's attention by flowering before most of us take our Northland summer holidays. Without the flowerheads the plant would not stand out amongst the kikuyu and other weeds. A quick web search did not reveal any evidence of *S. bulbosus* being a problematic species overseas.



Fig. 1. The rhizomatous mat-forming *Sonchus bulbosus* occurs for >120 m along the weedy footpath margin of SH 12 at Opononi. Photo: EKC, 2 Oct 2015.



Fig. 2. The second New Zealand collection of *Sonchus bulbosus*, AK 359007, E.K. Cameron 16569, 2 Oct 2015, Opononi.



Fig. 3. The involucre bracts and upper scape of *S. bulbosus* with prominent dark glandular hairs without stellate hairs.

Reference

Gardner, R.O. 2003: Some higher-plant records for northern New Zealand. *Auckland Botanical Society Journal* 58: 104–108.

BIOGRAPHY / BIBLIOGRAPHY

■ Biographical Sketch – Andrew Burn Suter (1830-1895)

Val Smith, 80 Mill Road, New Plymouth 4310.

Born in London, England on 20 November 1830, Andrew Burn Suter was the son of Richard Suter, an architect, of Castle Hill, Maidenhead, and Ruth Anne, the daughter of Major-General Andrew Burn. Both parents were evangelists, and Andrew was educated accordingly – at St Paul's School, London, and from 1849 at Trinity College, Cambridge. He graduated BA in 1853, topping the prestigious mathematics tripos, and after tutoring for a short period, was ordained deacon in 1855 and priest the following year. He was conferred his MA by the University of Cambridge in 1857, and for three years was curate at St Dunstan in the West, Fleet Street, London. In 1859 he became vicar of All Saints in London's East End, and on 7 August 1860, at Barham Downs, Kent, he married Amelia Damaris Harrison (born 1828), the fourth daughter of Jemima Elizabeth (née Branfill) and the Reverend Thomas Hamilton of Womenswold.

When the Synod of Nelson, New Zealand, delegated the Bishop of Canterbury to choose a new bishop, following the 1864 resignation of Bishop Hobhouse, Suter was offered the position. At Canterbury Cathedral on 24 August 1866 he was consecrated the second Bishop of Nelson; his was the last Crown appointment to the colonial church in New Zealand. He was also awarded his Doctor of Divinity degree that year. After lengthy fundraising and recruitment activities, Bishop Suter arrived in Nelson on the *Cissy* in September 1867, with his wife, four clergy, immigrant labourers and domestic servants.

His hard work, sincerity, sympathy and interest in the welfare of the community eventually overcame friction between the colonists and newcomers. Although he could neither ride nor drive, he loved



Pimelea suteri.

Photo: Shannel Courtney

walking, and made regular visits to every area of the diocese and, in the early days, the West Coast gold fields. The number of clergy, churches, vicarages and Sunday schools grew. Realising that the diocese could not rely on recruiting English clergy, he enlarged at his own expense the bishop's residence to accommodate students, and undertook the early teaching himself. Bishopdale became renowned for its hospitality, and was a gathering place on many public occasions. During his tenure Bishop Suter made three visits to England, and attended two successive decennial Lambeth Conferences. In 1886 he made an episcopal visit to Samoa, Fiji and Tonga to assess the needs of the English congregations there.

Side by side with his ecclesiastic work he promoted science and the arts. His architectural background and love of music was evident in the timbre of his church services. An amateur artist, he was the first president of the Bishopdale Sketching Club (later the Suter Art Society), and he built up a substantial collection of watercolour paintings by his friend John Gully (1819-1888), who had arrived from New Plymouth with his family in 1860. The bishop perceived no major conflict between science and religion, and as president, he urged the Nelson Philosophical Society to devote itself to the natural history of the area. Practising what he preached, he leased an area near Cable Bay to save it from destruction by fire and livestock.

After the resignation of 85 year-old Bishop Harper in 1889, Octavious Hadfield was elected Primate of New Zealand. However, the validity of the election was disputed, and dissention within the church, coupled with overwork in his diocese, may have contributed to the cerebral haemorrhage which Suter suffered in 1890 and his continuing ill health and resignation in 1891. He died in Nelson on 29 March 1895. Shortly before his death, botanist Thomas Kirk honoured him with the name of a new *Pimelea* species, citing, "It affords me great pleasure to connect the name of the Right Rev. Dr Suter with this species, and to acknowledge the help he has frequently rendered in forwarding specimens of various New Zealand plants." Immediately after the bishop's death Amelia gifted some land, money and his art collection as the founding donation for the Suter Art Gallery. Unwell herself, she returned to England and died barely a year after her husband. They had no children.

▪ ***Pimelea suteri***

The generic name *Pimelea* is from the Greek *pimele* 'fatty', referring to oil seeds or cotyledons, or glossy leaves. The family is commonly known as "daphne", after a genus with pleasantly perfumed flowers. In New Zealand *Pimelea* species are sometimes called "New Zealand daphne", and the 19 species currently recognised (all endemic) range from small prostrate or decumbent plants to erect shrubs up to about 2 m. The scientific study of *Pimelea* began with collections made on Cook's first and second voyages in the 1770s. *Pimelea suteri* is distinguished by its black stems, narrow leaves and hairy leaf tips. Low alpine and naturally uncommon, it is confined to the ultramafic rock of the mineral belt is eastern Nelson to western Marlborough, and on Mid Dome in Southland.

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- Death of Bishop Suter. Papers Past - National Library of New Zealand. *Press*, 30 March 1895 p.8: <http://paperspast.natlib.govt.nz> (accessed 9 September 2015).
- Kirk T 1894. Description of a new species of *Pimelea*. *Trans. New Zealand Institute* 259-260. Wellington, Government Printer.
- Orr, K W. Suter, Andrew Burn, from the Dictionary of New Zealand Biography. Te Ara - the Encyclopedia of New Zealand updated 26 February 2014: <http://www.TeAra.govt.nz/> (accessed 9 September 2015).
- Suter. A genealogical and heraldic history of the colonial gentry 2:214: www.mocavo.com/ (accessed 9 September 2015).
- The Suter History. Nelson Region - Te Ara Encyclopedia of New Zealand: www.teara.govt.nz/ (accessed 10 September 2015).

PUBLICATIONS

▪ Publications Received

Wellington Botanical Society Newsletter October 2015 Upcoming trips and meetings, submissions made, awards available and granted, president's and treasurer's annual reports, restoration projects on the Kāpiti coast, trip reports including Porirua Scenic Reserve and Baring Head.

Canterbury Botanical Society Newsletter October 2015 Upcoming trips and meetings, meeting reports, trip report for Te Pirita Rd Rakaia River, Canterbury Science Fair winners.

Canterbury Botanical Society Newsletter November 2015 Upcoming trips and meetings, meeting reports, trip report for Arowhenua Bush, award winning CBS member.

Canterbury Botanical Society Newsletter December 2015 Upcoming trips and meetings, meeting reports, spring trip report for Waiiau, Castle Hill buttercup on TV.

Botanical Society of Otago Newsletter September 2015 Upcoming trips and meetings, student field grant awards, articles on transparency of conservation projects, *Uncinia* now *Carex*, coprophilia and trip reports for Leith Saddle track, Bethunes Gully and Mt Cargill, Hereweka/Harbour Cone Block.

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