

NEW ZEALAND BOTANICAL SOCIETY

NEWSLETTER

NUMBER 75

MARCH 2004



New Zealand Botanical Society

President: Anthony Wright
Secretary/Treasurer: Doug Rogan
Committee: Bruce Clarkson, Colin Webb, Carol West

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Subscriptions

The 2004 ordinary and institutional subscriptions are \$25 (reduced to \$18 if paid by the due date on the subscription invoice). The 2003 student subscription, available to full-time students, is \$9 (reduced to \$7 if paid by the due date on the subscription invoice).

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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 28th 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 2004 issue (76) is 25 May 2004.

Please post contributions to: Joy Talbot
17 Ford Road
Christchurch 8002

Send email contributions to joytalbot@free.net.nz or talbotj@cpit.ac.nz. Files are preferably in MS Word (Word XP or earlier) or saved as RTF or ASCII. Graphics can be sent as Corel 5, TIF JPG, or BMP files. 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. Macintosh files cannot be accepted so text should simply be embedded in the email message.

Cover Illustration

Rough bristle grass (*Setaria verticilata*) – indigenous to Europe and naturalised in New Zealand at scattered localities in the North, South and Chatham Islands; first New Zealand record was in 1904. A tufted annual to 70 cm tall; occurring among crops and in urban areas.

Drawn by Alan E. Esler.

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NEWS

New Zealand Botanical Society News

■ From the Secretary

Call for nominations for Allan Mere Award 2004

Nominations meeting the following conditions are invited for the award of the Allan Mere for the year 2004.

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 30th June each year. Nominations shall be signed by a 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 to be displayed by, the Herbarium Keeper of 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 2004 to:

Doug Rogan, Secretary, New Zealand Botanical Society, C/- Canterbury Museum, Rolleston Avenue, Christchurch 8001

Balance sheet for the financial year 01 January – 31 December 2003

INCOME	\$	EXPENDITURE	\$
B/fwd from 2002	2,454.70	Printing Newsletter No. 70 (2002)	990.00
2002 Subscriptions	0.00	Printing Newsletter No. 71	907.88
2003 Subscriptions	5,294.00	Posting Newsletter No. 71	57.50
2004 Subscriptions	20.00	Discounted stamps purchase	912.00
Sponsor a Student Sub Donation	320.00	Printing Newsletter No. 72	990.00
Back Issue Sales	73.75	Posting Newsletter No. 72	51.80
Donations	27.00	Printing Newsletter No. 73	1094.63
Interest	12.86	Bank Fees	42.00
Total Income	8202.31	Total Expenses	5045.81

Excess income over expenditure of \$3,156.50 presented by current account balance of \$951.79 and cash saver account balance of \$2,204.71 carried forward to 2004.

Note that 2003 payments for printing the December *Newsletter* 74 (\$848.25) and postage and stationery for *Newsletter* 73 & 74 (\$256.74) did not come to account until January 2004 leaving an effective balance for 2004 of \$2051.51.

Note that 2002 payments for printing the December *Newsletter* 70 (\$990.00) did not come to account until early January 2003.

Note that in March 2003 NZBS had an opportunity to purchase 1200 90c Antarctic stamps at a discounted rate of 76c each which has resulted in savings on postage for the 2003 year will not be repeated in 2004.

Doug Rogan, Treasurer, New Zealand Botanical Society

25 February 2004

Regional Botanical Society News

■ Auckland Botanical Society

Trip to New Caledonia

In early December sixteen lucky members had a memorable visit to this botanically rich island. Places visited included Turtle Beach west of Bourail, Plateau de Dogny, Mt Mou, Mts Koghis, a day in Noumea, two days visiting the maquis scrub near the Yaté Dam, and two days at Mare, one of the Loyalty Islands. The botanical high-lights were probably two podocarps, the parasitic *Parasitaxis ustus*, and the strange *Retrophyllum minor*, growing with its toes in the water, and also the unforgettable *Araucaria columnaris*, the signature tree of the country.

December Meeting & Pot Luck Dinner

Following the pattern set in recent years, this event took place in the ARC Botanic Gardens, Manurewa. Speakers at the afternoon workshop were Chris McKain, "Carex spp. in the Auckland area", Rhys Gardner, "sedge genera", Mike Wilcox, "Juncus", Steve Benham, "restiads". Dinner followed a visit to the grounds to look at these monocot groups in the wild and in cultivation.

January Camp

The motel on the shores of Lake Ohau, South Canterbury, was the base for this second foray to the South Island by the ABS. The area is a hot spot for the mistletoe *Peraxilla tetrapetala*, which was in full bloom for our benefit. Many different habitats were explored as Northerners endeavoured to come to terms with unfamiliar South Island plants. It was a pleasure to meet up with fellow enthusiasts from Nelson Bot Soc.

February Trip

This was a walk on the black sand of Karekare Beach south to Pararaha Stream. The lakes and wetlands that have developed behind the dunes support an interesting mixture of native and naturalised plants. Hand lenses were required to view the tiny herbs that manage to survive the harsh conditions on the damp sand.

FORTHCOMING ACTIVITIES

3 March AGM and 2 short talks – Highlights of ABS visit to New Caledonia – Geoff Davidson
- Highlights of ABS trip to Lake Ohau – Ewen Cameron

Maureen Young, 36 Alnwick Street, Warkworth. Email: youngmaureen@xtra.co.nz

■ Wanganui Museum Botanical Group

St Johns Hill Green Belt and Victoria Park - 31 August 2003.

St John's Hill is the surface of a marine terrace, partly covered in more recent sand dunes. Whanganui River cut through the terrace leaving a steep scarp, much of which is public land managed as a 'Green Belt' by the District Council. Plantings many decades ago have left an interesting mix of exotic and native trees and shrubs, some of them now regenerating, which have been invaded by naturalised native species like kawakawa, mahoe and ferns, and a great variety of weeds. Our trip started at a very significant grove of *Eucalyptus* behind the cricket pavilion in Victoria Park. Some 20 eucalypt species have been identified here, thanks to help over the past few years from Chris Ecroyd (Forest Research) and Dr Ian Brooker from CSIRO Canberra. Among the interesting and/or less common ones in NZ are *E. occidentalis*, *E. albens*, *E. cladocalyx*, *E. oreades*, *E. paniculata*, *E. cypellocarpa*, *E. diversicolor* (karri) and *E. blaxlandii*. Near the Lookout above Great North Road we paused to compare *Araucaria columnaris* (Cook pine, from New Caledonia) with Norfolk pine close by. branches still to ground level. It is hard to know what was growing here before European settlers began clearing and planting. However, *Carex spirostris* and *Gahnia lacera* seen growing on the edge of a steep gully are unlikely to be garden escapes, nor would they have been planted. *Colin Ogle*

Bells Garden, Bastia Hill - Saturday 2 August

Twenty-seven members and friends met at Jocelyn & Ian Bell's garden. This is a mixture of natives and exotics, and amongst the plants seen were *Protea amplexicaulis* with leaves similar to a *Eucalyptus*; *Banksia dryandroides*; *Buckinghamia celsissima*, from Queensland, with spikes of cream *Grevillea*-like flowers; *Baloghia inophylla* (Euphorbiaceae), which exudes dark red sap when the bark is cut; *Discaria toumatou* (matagouri) collected as a cutting on a Bot Group trip at Lake Alice near

Marion. Of the natives, there was an almost mature *Pseudopanax ferox*; *Cordyline pumilio* in bud and *Tecomanthe speciosa* in full flower.
Ian & Jocelyn Bell

Taihape and Paengaroa Scenic Reserves – 31 Jan 2004.

The forested Taihape Reserve on Mt Stewart is in the process of being cleared of old man's beard as well as of exotic conifers, poplars and sycamore as a start to restoring it to native forest. Even with a lot of community support from the Rangitikei Environmental Group (REG), it's a massive job. About 7 km distant in a straight line, Paengaroa is the kind of forest that we hope will be back around Taihape, one day. We took a leisurely stroll through parts of this reserve and, after lunch, through a hectare or two of forest nearby that DoC leases from Tranz Rail. The special features of Paengaroa Reserve have been described in numerous other reports – the diversity of divaricating shrubs, mistletoes, large old podocarps, black and white maire trees, and numerous rare and threatened species. One of our aims this time was to see the climbing daisy *Brachyglottis sciadophila* in flower, maybe for the first time in the North Island. Mike Thorsen of DoC, Gisborne had found a fruiting vine here in June last year but when we refound it none of the plentiful flower buds were open. Close by was the uncommon native grass *Stenostachys gracilis*. DoC plantings include wind grass (*Anemanthele lessoniana*) and the tree daisy *Olearia gardneri*. The Tranz Rail block had been grazed by cattle until about 3 years ago. It has the largest number of *O. gardneri* of any one site in the world and we looked at a number of the trees here. One of the largest *Olearia* trees had collapsed and seedlings that were mapped here several years ago are now very hard to find in the rank exotic grasses and weeds. The vine bittersweet (*Solanum dulcamara*) has sprawled over much of the Tranz Rail forest this summer. Is it limiting regeneration of native shrubs?
Colin Ogle

PROGRAMME

Meetings:

- 6 April: Botanical Show and Tell.
4 May: Why we worry about weeds - an Horizons perspective. Craig Davey, Horizons Regional Council
1 June: Some plants and vegetation of Samoa. Colin Ogle
6 July: Weeds in a rural-residential matrix. Amy Hawcroft, DoC Wanganui.
3 August: AGM and Members' Evening

Field Trips

- 6 March: Restored wetlands at Castlecliff's Kokohuia and Titoki Street
27 March: Grice's Bush and Lake, Fordell.
1 May: Gordon Park Reserve - workday on Jerusalem cherry
29 May: Makirikiri Stream, Dalvey Road, Turakina.
4 July: 'Paloma Gardens', Denlair Road, Fordell.
31 July: Members' Gardens - mystery trip
4 September: Bruce Park/Silverhope restoration of SH1 route, then Pryce's Bush

Chairman: Ian Bell (06) 343 7686 115 Mt View Road, Wanganui

Secretary: Robyn Ogle (06) 3478547, 22 Forres Street Wanganui; Email: robcol.ogle@xtra.co.nz

■ Wellington Botanical Society

Trip Reports

1 November 2003 field trip: Carey Gully, Owhiro Stream catchment

In fine weather thirteen braved the nettles in this regenerating south Wellington ecosystem in a tributary of Owhiro Stream. We saw mahoe/rangiora dominant scrub, *Astelia fragrans*, *Trichomanes endlicherianum*, *Cordyline banksii*, and the progeny of a now departed "Hoheria Tararua" we had seen 10 years earlier. We also found *Clematis forsteri*, *Botrychium bifforme*, *Pterostylis banksii*, *Plantago raoulii* and *Asplenium colensoi*. Other ferns included *Hymenophyllum minimum*, *Blechnum procerum* and the less common *Hymenophyllum flexuosum*. Leon Perrie pointed out the characteristics distinguishing *Asplenium gracillimum* from *A. bulbiferum*. Unfortunately this regenerating ecosystem, with its seedling kamahi, is below the 260 m level of Wellington's planned rubbish-landfill contour.
Barbara Mitcalfe

22 November 2003 field trip: Arnold & Ruth Dench's garden, Newlands

Twenty one BotSoc members accepted Arnold & Ruth's invitation to see a wide range of New Zealand plants, including some endemic and some from remote parts of the NZ Botanical Region. Arnold & Ruth have spent 40 years learning about native plants and their growth requirements while

successfully turning an unpromising property into a garden which is surely of national significance. Hospitality included *Camellia sinensis* and *Coffea arabica* and a botanical competition featured a *Vitis vinifera* prize.

Chris Horne

6-7 December 2003 field trip: "Beauley" - Mangapakeha Taipo, Wairarapa

With a species list of Wairarapa taipos abstracted by Pat Enright from one originally developed by A P Druce in 1972, thirteen participants botanised a gully in South Wairarapa. Species found under the podocarp / broadleaf canopy included: *Adiantum diaphanum*, *Asplenium gracillimum*, *Metrosideros colensoi* and *M. diffusa*. Ascending steep greywacke, we noted kanuka, tawa, titoki matai, ngaio and pukatea. Returning from the taipo's wide views we saw *Cheilanthes humilis*, and flowering *Brachyglottis greyi*. *Arthropodium candidum*, *Galium propinquum*, *Clematis paniculata*, *Freycinetia baueriana*, *Rytidosperma gracile*, *Corybas trilobus*, *Asplenium colensoi*, *Ctenopteris heterophyllus*, *Cyathea dealbata*, *C. medullaris*, *Hymenophyllum sanguinolentum*, *Pneumatopteris pennigera*, and *Streblus heterophyllus* were additions on the day.

Climbing the taipo by another route on Sunday, we saw: *Doodia australis*, (= *media*), and two tiny *Anogramma leptophylla* (Wellington BotSoc's logo fern), and *Corybas trilobas* (both additions). *Craspedia uniflora* var. *grandis* was flowering profusely. *Helichrysum aggregatum* and *Pomaderris phyllicifolia* rounded off the weekend.

Barbara Mitcalfe

PROGRAMME

9 -11 April (Easter)	Mangawheka area – Kawhatau Valley, Paengaroa Reserve, Mt Colenso? Venue: Kawhatau Outdoor Education Centre.
19 April	Offshore Islands of New Zealand – Carol West
1 May	Te Harakeke wetland, Waikanae
17 May	Members evening

President: Vicky Froude (04) 233 9823 (home)

Secretary: Barbara Clark (04) 233 8202 (h); (04) 233 2222 (fax) P O Box 10 412, Wellington 6036.

■ Nelson Botanical Society

Labour Weekend camp, "Moonsilver", Barrons Flat, Takaka Valley

The remaining mill hut at the old sawmill site in Moonsilver Forest, Barrons Flat was our base for the weekend. The logging of rimu and other trees finished many decades ago, but the old logging tracks are now the basis for many walking tracks.

On Saturday we took the Yellow Track, climbed "Lonely Lookout", branched off to the Alph Caves, and looked into several cave entrances. High overhanging limestone cliffs shielded very dry areas where unexpected plants were growing, including *Swammerdamia glomerata* (= *Helichrysum glomeratum*). In Down Valley, where the stream has cut deeply into the underlying schist, we found quite a high waterfall. The afternoon involved a bit of bashing through pig-fern and route-finding by compass, but we managed to find the overgrown end of Yellow Track, which led us back home.

On Sunday we walked up to the Green Track, mainly following a ridge through beech forest, emerging onto a vast expanse of half-grown kanuka. However, returning by a lower route was very different, with meandering streams, small swamps, thousands of cedars, and some caves, two of which were explored with the aid of lights brought for the purpose. Two of the party climbed the prominent blocky limestone "Stardew Ridge".

On Monday, some short tracks led us to areas with lots of *Cyathea colensoi*, yellow-silver pine (*Lepidothamnus intermedius*), and some silver pine (*Lagarostrobos colensoi*). On the road out, we looked at Windwhistle Mere, the long wire span from the pylons towards the Cobb Powerhouse, and got a high view of Sam's Creek.

Other plants seen include kahikatea (*Dacrycarpus dacrydioides*), pokaka (*Elaeocarpus hookerianus*), *Pseudopanax macintyreii*, the limestone kowhai, two *Corybas* "whiskers", and *Libertia grandiflora*. Also, in the limestone areas we saw *Metrosideros colensoi*, *Asplenium lyallii*, and extensive patches of huge *Blechnum colensoi*.

John Richards

Lower Wangapeka, 16 November

The November field-trip was to a conservation block on the northwest side of the lower Wangapeka River. We had the pleasure of hosting Fayla Schwartz, a visiting botanist from Washington State, USA on this trip. The route went up a small creek, then climbed a ridge through a forest of hard and silver beech with occasional rimu and tree ferns. In the creek, we saw *Gaultheria rupestris*, *Viola filicaulis*, *Hydrocotyle dissecta* with its highly dissected leaves, and the ferns *Blechnum colensoi* and *Grammitis ciliata*. At the top at the edge of a forestry road was a very photogenic *Drosera peltata* with insect prey. Altogether we saw seven orchids: *Corybas trilobus*, *C.* "whiskers", *Pterostylis graminea*, *P.* aff. *montana*, *Thelymitra longifolia*, *T.* aff. *pauciflora*, and *Chiloglottis cornuta*.
Rob Landau

December Camp, Sedgemere, Molesworth Station. 19 – 21 December

Neither failing to find *Myosotis laingii* nor rain on Saturday night was enough to dampen the spirits of the 23 people who attended our weekend camp at Sedgemere. On Saturday we waded around the margin of Lake Tennyson in grey, cold, windy weather, maintaining cheerful spirits by spotting interesting plants. We saw *Myosotis australis* (both yellow- and white-flowered), *Hebe salicornioides*, *H. subalpina*, *H. brachysiphon*, good numbers of the penwiper, *Notothlaspi australe* (*N. rosulatum*), in full flower, *Lagenifera barkeri*, some very browsed *Pittosporum patulum*, large numbers of native violets (*Viola lyallii* and *V. cunninghamii*), and *Gaultheria crassa* putting on a good show too. We then climbed up the valley where we thought the *Myosotis* might be, stopping for lunch among *Craspedia*, *Caladenia lyallii*, and *Dolichoglottis lyallii*. At that point, some of the party returned to the vehicles, while the more intrepid climbed further up Mount Maling, reaching areas of scree which supported *Lobelia roughii*, *Stellaria roughii*, *Leptinella dendyi*, *Myosotis traversii*, and scree willowherbs. In spite of the extremely strong wind, several of us continued to the top of the mountain, finding the black mat daisy *Raoulia* "m", *Haastia pulvinaris*, *H. sinclairii*, and *H. recurva* en route. At the top we enjoyed wonderful views in all directions, and then the party split, with one group returning the way we had come. The others went on to the saddle between Mount Maling and Mount Crystal and descended via the gully between the two. They found a few species we hadn't yet seen, including *Pachycladon latisiliqua*. By then it was raining, and our main focus was getting back to the lodge and a roaring fire.

On Sunday we made our way home slowly, stopping at several places to botanize, including the minute plants in an ephemeral tarn the DOC staff are attempting to save from disappearing. Then Bert's Creek provided *Epilobium macropus* and *Dolichoglottis lyallii* in flower. We also stopped to look at *Helichrysum depressum*, *Pachycladon fastigiata*, *Cardamine* aff. *bilobata*, *Elymus* "channel", and *Traversia baccharoides*. *Gingidia montana* put on a particularly good show on roadside cliffs, almost outshining the *Echium vulgare* and briar rose.
Cathy Jones

The January field trip was cancelled due to bad weather.

Future trips:

March 21, Inwoods Lookout and North Peak, Rebecca Bowater, 545–1260.

April 8–12, Easter camp, Hanmer, Shannel Courtney, 546–9922, and Sally Warren, 546–6637

April 18, Browning Track ultramafic, Shannel Courtney, 546–9922

May 16, Hori Bay, Trevor Lewis, 547–2812

President: Cathy Jones (03) 546 9499 Flat 2, 5 North Rd, Nelson. Email: cjones@doc.govt.nz

Treasurer: Gay Mitchell (03) 548 3351 13 Albert Rd, Nelson.

■ **Canterbury Botanical Society**

Report on December Meeting

A talk by Fayla Schwartz, Everett Community College on the vegetation of Washington State, NW USA stressed the strong influence of the geography of the region the Pacific Ocean and Puget Sound on the west, and two mountain ranges, the Olympics in the northwest and the Cascades in the middle of the state. The western part of the state is dominated by dense conifer forests of Western Hemlock, Western Red Cedar and Douglas Fir with an understorey of ericaceous and rosaceous shrubs, ferns and mosses. On the moister, more temperate western slopes up to the subalpine areas, four species of *Abies* (true fir) dominate the forest. The subalpine and alpine zones (treeline about 6000ft) have many perennial herbs and shrubs with colourful, showy flowers. The drier eastern slopes of the mountains are dominated by three more drought tolerant Douglas fir. The eastern lowlands of Washington State are either covered by sparse forests of *Pinus ponderosa* or, where soils are very thin, *Artemisia* spp. (sagebrush) and grasses. There are also a number of perennial herbs and shrubs

including some showy species of *Lewisia* and the large composite *Balsamorhiza sagittata* (Balsam root Daisy).

Student Reports

Before the main talk the two students who had grants from the Society each gave a short talk about their research. Robin Mitchell's topic was the plants of the Macaulay River bed. Dan Morta's topic was *Olearia* growing at the back of the airport and the need to fence plots to protect them for the duration of his study.

Report on December Field Trip to Foggy Peak

In the small scree on the south side of the pass were numerous penwipers (*Notothlaspi rosulata*), some with very young buds, and the unnamed scree violet (*Viola* "scree") with purplish leaf stalks, flower stalks and backs of leaves. The petals are white with purple guidelines. On the ridge to Foggy Peak the plants seemed to be recently emerged from snow with only the smaller species in flower, 16% of the total on our list. The slender *Anisotome filifolia*, *Aciphylla monroi* and *Anisotome flexuosa* were common. *Ourisia caespitosa* and *Ranunculus monroi* brightened the scene with white and gold. On the screes *Lignocarpa carnosula* was frequent and in bud. Among the rocks *Polysticum cystostetia* was unfurling its sturdy pale fronds and *Gaultheria crassa* flowered abundantly. On the highest screes we reached there was much enjoyment at seeing *Ranunculus haastii* and *Leptinella atrata* in flower. On the descent we found *Coprosma fowerakeri* was still holding tomato-red berries.
Bryony Macmillan

Report on Waitangi weekend camp at Punakaiki

On Friday morning, in gorgeous West Coast weather, we began by walking up the Porarari valley track. Some, botanising slowly but thoroughly did not get far, while others got to the end of the pack track to Bullock Creek and pre-arranged transport back. For all, the day provided a welcome chance to familiarize ourselves with the wonderfully lush semi-coastal forest, replete with nikau, tree ferns, northern rata, kiekie, four species of rata vine, and many others plants. This contrasted with the forest further up the river and along the pack track, which was dominated by rimu and hard and red beech. Deep sink holes provided a reason for not straying carelessly from the track. When resting we were visited by whichever robin whose territory we were in; one hopped along the whole row of people, carefully examining each pair of boot laces.

On Saturday morning light drizzle was not enough to deter us from walking several kms up the valley of the Four Mile, or Tiropahi, River. The forest is characteristic of leached terraces with soils far less fertile than those of the Porarari valley. Though it was logged in the bush tram days, it appears to have regained its original composition, with mountain beech, red beech, rimu, yellow-silver pine, and celery pine as abundant trees. Southern rata occurs instead of the northern rata that prevails towards the coast and on limestone scarps, and a feature of the understorey is the large tussocks of *Gahnia xanthocarpa* with their cutting leaves. Two large-leaved dracophyllums, *D. traversii* and *D. townsonii*, distinguished respectively by terminal and lateral inflorescences, are frequent, and the more familiar *D. longifolium* is also present. By lunch time there were heavy showers, and we were pleased to take shelter in the studio of Rona, who had joined us on our walk in the morning. Rona's house and studio are set in pahiki, and we were able to see an assemblage of typical pakihi plants on her property, including *Lycopodium ramulosum*, *Calorophus minor*, and various rush-like sedges.

Sunday morning began with some heavy showers, but it soon cleared to a perfect day. During the morning we returned to Bullock Creek for some leisurely botanising, the highlight being a shaded limestone cliff with plants of *Brachyglottis hectorii* in full flower, *Pseudopanax macintyreii* trees, clumps of *Ourisia macrophylla* and the 'limestone kiokio' *Blechnum triangularifolium*. In the afternoon we joined the tourist throng to the Punakaiki blow holes, but we were also rewarded botanically, with plants that are rare (*Lepidium flexuosum*), vulnerable (*Euphorbia glauca*) or unnamed (a *Craspedia* with very large 'pompom' inflorescences). Here, as elsewhere along this coast, pohutukawa is becoming firmly naturalized. Our final excursion was to descend Trumans Track through dense coastal forest containing text-book examples of northern rata strangling matai trees, across a ledge with salt marsh of *Samolus* and *Selliera*, and down a cliff with taupata and *Hebe elliptica*, to a secluded beach.
Peter Wardle

Secretary: Margaret Geerkens (03) 352 7922 PO Box 8212, Riccarton, Christchurch.
Email: bert.marg@xtra.co.nz

■ Botanical Society of Otago

Meetings

Mycorrhizal fungi - ubiquitous underground partners of plants.

This year's first BSO talk, given by William Evans Visiting Fellow Prof. John Cairney, proved to be a great success, both educating and entertaining the large audience. Prof. Cairney, from the University of Western Sydney, spoke about the ubiquitous nature of mycorrhizal fungi, even on coral islands, and in particular described the work he carries out on ericoid ectomycorrhizae. Of particular interest was research on *Amanita muscaria* genotypes in New South Wales pine plantations, which showed that individual fungi may live much longer than expected, and may also be much larger than originally thought. Prof Cairney also pointed out that fundamental problems still exist when researching mycorrhizal fungi, leaving many important questions still to be answered. *Nina Hesom-Williams*

Nature conservation and grazing management in Europe and New Zealand.

Dr Jan Bokdam of Wageningen, Netherlands used his studies on the dynamics of successional grassland-heathland-forest ecosystems in the Netherlands to highlight the co-evolution and co-dependence of plants and herbivores. He showed how grasslands soon revert to heath land and then to forest when grazing animals are excluded. But grazing the grasslands also encourages succession, with wild cows recycling nutrients by depositing dung in the shelter of the forest; the resultant depletion of nutrients in the grasslands encourages invasion of less palatable species and ultimately trees take over. As this forest ages, browsing and grazing herbivores open up the canopy, suppress the growth of shrubs and forbs (tall herbs) and deposit dung laden with fertiliser and grass seed. So whenever a big tree falls over and lets in light the conditions are right for a grassy clearing to form and thus start again the well-studied European resource-mediated successional grazing cycle (RSGC).

In New Zealand the situation is a little different. Our flora co-evolved with avian herbivores, now mostly extinct and replaced by a mixed assemblage of mammalian grazers and browsers. Over the summer Dr Bokdam collected dung from a range of these, including cattle, sheep, wild goats & pigs, fallow & red deer, rabbits and hares. His growth experiments in the Botany Department glasshouse have produced thousands of seedlings and show that, as in Europe, the large grazers and browsers disperse mainly viable introduced grass seeds in their dung. The goat droppings grew more native plants, dicots as well as monocots, while the dung of the omnivorous boar was notable for the number of kanuka, *Kunzea ericoides*, seedlings it produced. *Allison Knight*

Trip reports

December Field Trip – Mt Watkin podocarp forest

A metal road round the upper slopes of Mt Watkin followed by a walking track through farmland took us to the upper edge of the forested branch of the upper Waikouaiti River. Heading down into the forest we came upon an enormous *Coprosma linariifolia* with a massive thick trunk. This was soon dwarfed by majestic podocarps stretching skywards – totara, matai, rimu and kahikatea. Their flaking bark carried lichens characteristic of old-growth, sheltered forests, such as *Thelotrema lepadinum* and the filamentous *Coenogonium implexum*. On the forest floor we were delighted to see orchids in flower, a *Microtis* sp. and several *Pterostylis* species. A possible *Polystichum silvaticum* fern and luxuriant groves of *Leptopteris hymenophylloides* attracted comment. Lower down the valley wild lettuce, *Mycelis muralis*, made a surprise appearance, while in the frost hollows *Weymouthia* and *Tmesipteris tannensis* added to the primeval atmosphere. In sunnier parts flowers of the native jasmine, *Parsonsia heterophylla* scented the air. Peter Bannister spotted on the bush edge, perching on *Coprosma propinqua*, the native mistletoe *Ileostylus micranthus* – a fitting finale for a fine December foray. *Allison Knight*

Toko Wetlands and Toko Mouth dune slack.

The Toko Wetland, adjacent to the Tokomairiro River and 3k upstream from the river mouth is protected by a QEII open space covenant and managed by Fish and Game for duck shooting. The gravel road goes through the middle of the wetland so access is easy, though there is no formed track. We could hear fern birds and eventually were delighted to see one darting in and out of a tall *Coprosma* bush. Shrubs in the wetland included *Plagianthus divaricatus*, *Coprosma propinqua* and *Coprosma decurva* with upward curving branchlets, (previously known as *Coprosma* sp. "little red fruit"). There were several species of *Carex* including *C. secta*, and *C. appressa*. Small patches of turf plants included *Lepidium* sp., *Centella uniflora* and *Apium prostratum*. After lunch we put on sunscreen and hats and headed out into the sand dunes. We were surprised to see several patches of pingao, *Desmoschoenus spiralis*, flourishing on the steep, windblown dunes, and not being invaded by marram. It was pleasing to learn that pingao occurs naturally at Toko Mouth and extends about three

quarters of the way to Measley Beach - a distance of approximately 3 km. Soon we reached a high point, from where we looked onto the flat, dune slack- green with turf plants and clumps of rushes. On hands and knees we could appreciate the variety of tiny turf plants. Moiria Parker

PROGRAMME

- 8 March The All Taxa Biodiversity Inventory being carried out in the Great Smoky Mountains National Park – Steve Stephenson
- 13 March Blue Mountains
- 3 April Full day or weekend field trip to the Rock and Pillar Range
- 21 April AGM. Guest speaker Associate Professor Helen Leach, an Anthropologist with a special interest in Paleoethnobotany. "Gardens without Weeds?"
- 1 May Trip to Waipori Forest to collect fungi with David Orlovich. Afternoon in the laboratory examining specimens and recording details for herbarium collections.
- 12 May A walk in the (paleo) woods: leaves, bark, ferns and epiphyllous fungi in the 40 million year old Pikopiko fossil forest. Daphne Lee, Ellen Cierad Jennifer Bannister
- 12 June Morning Field Trip to Moores Bush, followed by afternoon cryptogam identification workshop.

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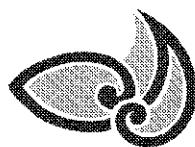
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OBITUARIES

■ **Geoffrey Thomas Sandford Baylis, 1913-2003**

It is with much sadness that we record the death of Professor Geoff Baylis early on 31 December 2003.

Many of Geoff's botanist friends had the pleasure of celebrating – along with family and other friends – his 90th birthday over the weekend of 22-23 November 2003. Geoff, although already weakened by his final illness, was in fine form and thoroughly enjoyed the various occasions centred around a celebratory luncheon at McHughs in Cheltenham, North Shore City. Birthday greetings from the New Zealand Botanical Society were duly delivered.

His funeral was held in Auckland on 03 January 2004. As many southerners were unable to attend, a memorial gathering is to be held in Dunedin on 27 March 2004. Professor Alan Mark is organising this and can be contacted at amark@otago.ac.nz

Those discussing botanical aspects of Geoff's life at this gathering will be asked to prepare a written summary of their presentation for publication in the June NZBS Newsletter. This will provide another record of Geoff's life and achievements to stand alongside the obituaries in the Otago Daily Times (31 January and 21 February 2004) and those planned by the NZ Journal of Botany and the Royal Society of New Zealand.

Until his praises can be more fully sung in the next Newsletter, suffice to say that Geoff was a true gentleman and scholar: he was a botanist and plantsman of the broad domain who achieved great distinction, and a wonderful uncle, host, friend and colleague to innumerable people.

Anthony Wright, President, New Zealand Botanical Society

■ **Robert (Bob) Cecil Cooper, 1917-2004**

Ewen K. Cameron, Botany Department, Auckland Museum, Private Bag 92018, Auckland.

Dr Bob Cooper passed away in Hamilton on 21 January 2004 after a six-month battle with cancer. He was born in Wellington on 24 November 1917. His early schooling was in Wellington, then New Plymouth. He started working life in the Education Department at Wellington, transferring to the Audit Department and then to Auckland as a clerk at the State Advances. Because of a knee injury Bob remained in New Zealand during the war. He had a BCom from Victoria University College Wellington and then finished an MA in Economics and Botany at Auckland University College.

In February 1948 he was appointed to the Auckland Museum as botanist, a position he held for 23 years. During the 1949 Seventh Pacific Science Congress held in Auckland and Christchurch Ray Forsberg of the US Geological Survey and Egbert Walker Jr of the Smithsonian Institute visited Bob in the herbarium and cautioned him in using 'Sellotape' to mount specimens and urged him to come to the States, "before further damage was done to the Cheeseman collections". The following year (Sep 1951) with his wife Jessica and two children (Robert and Jessica), Bob went to Washington University in St Louis, assisted by a Fulbright travel grant. Two years later he finished his PhD on 'The Australian and New Zealand species of *Pittosporum*' (published in 1956) and visited London (Kew and British Museum) for six weeks (Jun-Aug 1953) before returning to New Zealand.

Back in Auckland Bob attached himself to Dr Bruce Cain of the Auckland Cancer Research Unit and Professor L.H. Briggs of the Chemistry Department of the University of



Bob Cooper at Huia, west Auckland, collecting plants for the Cancer Unit; ca. 1958. Photo NZ Herald photographer.

Auckland who required plant specimens for testing. Bob began by collecting the native flora and when Cain instituted micro-tests on small plant fragments he also supplied fingernail-sized specimens from existing herbarium sheets. Native plants had given Cain the picture of the compound he needed to find to check the growth of leukaemia and in 1959 he concentrated on producing synthetic compounds.

Cain suggested that Bob compile a list of native plants used in Maori and colonial medicine and in 1962 Stan Brooker, a chemist and President of the Auckland Museum, co-authored with Bob a handbook on 'NZ medicinal plants' covering pharmacology, chemistry economic uses, Maori and missionary's medicinal plant practices. Professor R.C. (Con) Cambie, of the Chemistry Department of Auckland University, joined the two authors for a revised edition with colour photographs published by Heinemann in 1981, revised 1987 and then reprinted by Reed 1991, 1993, 1998 and 2002. A second book on 'Economic native plants of NZ' by the same three authors was published in 1988 by Botany Division for a hui on native plants. A second more lavish edition authored by Cooper and Cambie was published in 1991. Of all Bob's publications it was the NZ medicinal plant book that satisfied him the most and Con and Bob became close friends.

Bob travelled widely in the Pacific to the Kermadec Islands, Queensland, New Guinea, New Caledonia, Cook Islands, Tahiti, and Samoa gathering species in genera suggested by Cain. The work was supported by grants from the Cancer Society, a Yale University-Bishop Museum Fellowship and part of a Rockefeller Grant (shared with Douglas Yen). Bob also gathered information about taro and kumara. Dr Jack Rattenbury, Botany Department University of Auckland, accompanied Cooper to New Caledonia to make chromosome counts of the taro varieties. Bob's taro manuscript was never published through lack of funds. Yen went with Cooper to New Guinea and then onto South America by himself studying kumara varieties for his PhD from the University of Hawaii.

Although Bob enjoyed his Museum position he resented his meagre salary and resigned in April 1971 to go school teaching at Te Kao in Northland. At the time of his resignation he was Museum botanist and Assistant Director, but his salary more than doubled as a schoolteacher. While at the Museum Bob collected some 5,000-plant specimens (mainly vascular species both native & naturalised) from northern New Zealand, which were added to the herbarium. Northern Northland was one of his favourite collecting areas, and many of his collections are some of the first specimens collected from certain Northland areas. The popular annual spring Museum Cheeseman Memorial Flower Shows were a big undertaking involving some 500 helpers and Bob produced 13 of these until the last one in 1963, which attracted controversy that plants were being stripped from the wild. Phyllis Hynes, Jeanne Golding and Betty Molesworth assisted him in the herbarium. From 1949-1991 he published some 30 articles, two books, and wrote nearly 100 reports and submissions (unpublished).

His 5 years school teaching at Te Kao in an entirely Maori community was one of the happiest times of his life. His wife Jessica was also employed to take remedial reading. The Coopers retired to Ahipara at the end of 1975 and because of Jessica's ill health moved to Whangaparaoa in 1980 where she died of cancer in 1983. In 1984 Bob married Vivienne Cassie, a phycologist specialising in freshwater and marine microalgae. Bob and Vivienne have jointly published on thermal algae. They later moved to Te Kuiti and finally to Hamilton in 1992.

Bob was a clever man with at times a sharp tongue, who didn't suffer fools kindly. He could be difficult, which upset some people, especially those in authority. But he could also be kind and supportive. His close friends speak highly of him, and a past Auckland Museum colleague, Janet Davidson (pers. comm.), remembers he was an unfailing quiet source of support to her as a new staff member, encouraging her fieldwork and teaching her high editorial standards. Excluding his two books, much of his botanical contributions are not well known, but his writings and plant collections will continue be valuable to future botanists, but sadly he never really fulfilled his full botanical potential.

Main R C Cooper publications referred to in text

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- 1991 (co-authored: Cooper & Cambie, R.C.) New Zealand's economic native plants. Auckland, Oxford University Press. 234p.

WORKSHOP

■ **18th New Zealand Fungal Foray**

Brightwater, Nelson, **9-15 May** 2004.

Register by 28 March.

For more information see: www.landcareresearch.co.nz/research/biodiversity/fungiproq/foray/

NOTES AND REPORTS

Note

■ **New Zealand Plant Conservation Network - Officially Launched**

Preventing the extinction of New Zealand's most threatened native plants is the vision of the New Zealand Plant Conservation Network officially launched in Wellington (New Zealand) in early August 2003.

Over 100 people including botanists and horticulturalists and representatives of restoration groups, botanic gardens, zoos, local councils, universities and the Department of Conservation attended the meeting. Global and national plant conservation issues were discussed and strategies and priorities for action to prevent further decline in indigenous species were developed. The need for collaboration, to ensure protection for native plant species, has never been greater and the establishment of a national plant network provides one mechanism to achieve this.

Protection and recovery of threatened plants and their associated plant and animal communities and New Zealand's endangered and representative plant communities were the main focus of the inaugural meeting, structured around the targets of the Global Strategy for Plant Conservation (GSPC) that was ratified by the New Zealand Government in 2002.

Dr Kingsley Dixon (President of the Australian Network for Plant Conservation) gave the opening address to the network. He described the 16 targets of the GSPC for protection of important plant areas, education and training, cultivation of threatened species and species restoration.

Peter de Lange (Chief Plant Conservation Scientist at the Department of Conservation) then described the precarious nature of New Zealand's threatened plants and identified key areas for future work including biosystematics, legal protection of plants and the need to include cryptogams and fungi in conservation programmes.

Sir Paul Reeves, former Governor-General of New Zealand, launched the Network and received gifts from the Network in the form of threatened plants to be used in local restoration projects. The new national website (www.nzpcn.org.nz) devoted to native plant conservation was then launched. The site is intended to provide information about native plant conservation in New Zealand and, in particular, information about threatened species and key people. Workshops were held in the afternoon to determine how New Zealand is effectively to implement the GPCS. Some key recommendations and conclusions from the workshops were that:

- The Network should **act as a coordinating body** encouraging development of lists of threatened plants and communities (both national and regional) and promoting involvement of all agencies and public.

- The Network should help to **collect information** needed to be able to complete threatened species lists. Publicising gaps in knowledge of biodiversity (e.g., algae, fungi, bryophytes and data deficient species) and raising awareness of reasons to protect plant communities and species.
- An **Important Plant Area project** in New Zealand would be good advocacy for plant conservation in New Zealand and throughout Oceania, good for providing a baseline of what is the current state of important plant areas in New Zealand and good for prioritising future protection efforts for native plant life.
- The Network should **act as the lead organisation** for the Important Plant Area project establishing a key stakeholder group and coordinating meetings to develop a national process the project.
- Greater protection for acutely threatened plants in New Zealand is a high priority and the Network **should pursue legal protection** for native plants through scoping out issues and options and reviewing overseas experience.
- The Network should **identify plant conservation education resources** and programmes that currently exist (i.e., undertake a stock take) and promote examples of good practice.
- The Network should **identify gaps** in plant conservation education and aim to fill the gaps by preparing and implementing an education strategy.

Since its establishment in April 2003, the New Zealand Plant Conservation Network has grown to over 150 members and will play a key coordinating role in the drive to ensure protection for New Zealand's plant life. In the future, collaboration with the New Zealand Botanical Society may provide opportunities for increased effectiveness at achieving plant conservation goals. For more information contact the Network by emailing: info@nzpcn.org.nz or visit the website at www.nzpcn.org.nz

John Sawyer, Secretary, New Zealand Plant Conservation Network

Research Reports

■ Two New Adventive Records

Introduction

Contaminants in legally imported consignments of seed are always a possibility and cannot be entirely eliminated. Fortunately, the chances of a potentially serious weed entering the country in this manner and becoming established is very small these days. This is because of tighter regulations at our borders as well as better screening and cleaning of seeds at their source. Thus in this short article I am not trying to argue for greater border controls than at present. Anyway, both the species treated here entered New Zealand around a decade ago when controls were not as strict.

The two species that are examples of such contaminants would have been almost impossible to detect until they appeared in the nurseries into which had been accidentally introduced along with legally imported species in the mid 1990s. One of the two is a freely seeding annual that may have been eliminated and the other seems to have entirely disappeared or has been eliminated.

***Smilax china* L. (Smilacaceae)**

Low scrambling or trailing shrub, probably deciduous in New Zealand, the aerial, twining, moderately twining stems arising from a thick rhizomatous base; prickles mainly 3-4mm long. Leaves with petioles to c. 1 cm long, with prominent parallel-veined sheath; lamina to 5.2 x 2.3 cm, ovate-elliptic, rather thin, dark shining green above, with midrib and 2 main longitudinal veins; base broad cuneate to rounded.

Nelson, Motueka District, Wakefield, Main South Road. Spontaneous in nursery.
I. Plowright, 4/ 6/1996

Discussion

Of the two species that form the subject of this note this is potentially much more serious because of its spiny, rather rambling *Rubus*-like habit. The specimen is from a sterile plant that seems to have been destroyed soon afterwards. Thus its identification has to be tentative although there seems little doubt that it belongs to the genus *Smilax* L. in the Smilacaceae. Thus it is a cousin of our supplejack, *Ripogonum scandens* J.R. & G. Forst, the only member of the family indigenous to this country. It is

also reminiscent of species of *Dioscorea* L. in the yam family, especially because of its thick rhizomatous or tuberous base and leaf venation, but otherwise does not have the thin leaf lamina with a cordate base that is characteristic of most *Dioscorea* species. The Wakefield plant almost certainly belongs to one of the many hardy Northern Hemisphere species of *Smilax*. However, it does not belong to any of the North American species in CHR and does not match descriptions of any species in the North American floras. Therefore it must almost certainly be an Asian species, and of a number represented in CHR it looks extremely like *Smilax china* L., a species that I collected several times in Guangxi, South China. But I use this name tentatively because I cannot eliminate all the other 60 or so species recognised in China. However, *S. china* is a widespread and common species in China and Japan and is a likely candidate for this reason as well. Incidentally, the Wakefield nursery to which it accidentally came is well known for its range of hardy woody plants from northern temperate regions such as East Asia.

It is noteworthy that the Mediterranean region *Smilax aspera* L. is another spiny scrambling shrub and has grown in Victoria Park, on the Port Hills, Christchurch, for over 40 years and has not increased from the single small clump that was there when I first collected it in January 1963. Yet one could have expected a plant from a country with a Mediterranean climate to spread, especially because it flowers freely. Also, many plants from regions with such a climate are adventive in New Zealand, especially in eastern areas.

***Geranium lucidum* L. (Geraniaceae)**

Annual non-aromatic herb with sprawling or decumbent habit; vegetative parts often red, especially stems. Basal leaves with petioles to c .9cm long; lamina to 3 x 4 cm, shining above, 5-lobed to c. $\frac{3}{4}$ distance to lamina base, each lobe with secondary lobes or teeth, slightly pubescent. Calyx with 6-8 transverse ridges on each side of the midrib on the 5 faces. Petals 8-10 mm long; claw 5-6 mm long, narrow, white; limb 3-4 mm long, more or less elliptic, pink. Mericarps 2.2- 2.5 mm long, grey-brown, ridged and alveolate, glabrous except on distal ridges and ventral face. Seeds smooth.

Canterbury, near Christchurch, Prebbleton. Spontaneous around base of shrub in nursery. W.R. Sykes 144/03. Coll. 5/12/ 2003

Discussion

Geranium lucidum is in the list of rejected taxa for New Zealand in Flora of New Zealand Volume IV, p. 1289 (1988), the reason of exclusion being the impossibility of confirming the record of it growing here in the absence of a herbarium specimen. The specimen cited above was from a descendent of seed imported accidentally with approved ornamental geraniums from Plantworld Seeds, Newton Abbot, Devon, in the mid 1990s. *G. lucidum* L., shining cranesbill, is indigenous to a large part of Europe as well as most of the British Isles and is a common garden weed in southern England at least. However it is annual and has not been known to be a problem anywhere. From the time of introduction in the mid 1990s to the end of last year there must have been several generations in the Prebbleton nursery.

G. lucidum belongs to its own section (Lucida Kunth) that is in a related section (Ruberta Dumort.) to that which *G. robertianum*, *G. rubescens* and *G. purpureum* belong, these three being described in Volume IV. Both sections are in the small subgenus Robertium (Picard) Rouy & Fouc.) of *Geranium* L. A distinctive feature of the subgenus is the prominent petal claw that equals or surpasses the petal limb. Of the other species in New Zealand *G. lucidum* is most similar to *G. purpureum* because the other two species in this country are much hairier plants and have larger flowers than either. But *G. purpureum*, small herb Robert, like the others of its section, has the same distinctive aroma, a feature that *G. lucidum* lacks. *Geranium purpureum* is also a much more erect plant and does not have large transverse sepal ridges like *G. lucidum*, whilst its petals are smaller and the mericarps are puberulent and ridged all over and not partly alveolate as in *G. lucidum*.

Acknowledgment

I am grateful to Peter Heenan of Landcare Research, not only for his encouragement to make this information available, but also in suggesting improvements to this note.

W.R.Sykes, 115 Packe Street, St Albans, Christchurch 8001

■ **Another 'eastern' species near Taihape: *Polystichum oculatum* in the Rangitikei**

Leon Perrie, Te Papa, P.O. Box 467, Wellington. 04 381 7261. leonp@tepapa.govt.nz

Polystichum oculatum was one of three species recently recognised in place of *P. richardii* (Perrie et al. 2003). After inspection of the herbarium collections of AK, CHR, MPN, WAIK, and WELT, and extensive field-work, the distribution of *P. oculatum* in the North Island was given as "from near East Cape down the eastern side of the axial ranges, also extending westward to Wellington and Kapiti Island" (Perrie et al. 2003, p.208). In a subsequent publication, I even went as far to say: "*P. oculatum* is not found in the Manawatu, Rangitikei, or Wanganui regions" (Perrie 2003, p.4).

However, I recently (January 2004) collected *Polystichum oculatum* (WELT P020562) from alongside the westward-draining Rangitikei River, near the eastern end of Mangahoata Road, which is itself east of Pukeokahu and Taihape. *Polystichum wawranum* (WELT P020564) and *P. neozelandicum* subsp. *zerophyllum* (WELT P020563) are also present. Although *P. neozelandicum*, *P. oculatum*, and *P. wawranum* all occur in the central east of the North Island, this is the first site I know of where all three species grow together in close proximity. This Mangahoata Road site is a grazed hillside, with trees of *Hoheria sexstylosa* and *Pennantia corymbosa*, and divaricating *Coprosma* spp., and with a substrate that is at least partially calcareous. *Polystichum vestitum* is also present.

Polystichum oculatum has apparently been collected from the vicinity of this Mangahoata Road site previously, by Tony Druce in February 1975 (CHR 277376, "Rangitikei G., E. of Taihape, 1900 ft. Cliff, in scrub. N133 50-25-"). The two plants on this sheet, although with the 'look' of *P. oculatum*, are both small and lacking spores. I was consequently not confident, whilst preparing the revision of '*P. richardii*' (Perrie et al. 2003), that the CHR 277376 plants were *P. oculatum* rather than *P. neozelandicum* subsp. *zerophyllum*, especially given that all other specimens of '*P. richardii*' that I had seen from this region were assignable to either *P. neozelandicum* subsp. *zerophyllum* or *P. wawranum*.

Having all but forgotten about CHR 277376, my interest in the possibility of *Polystichum oculatum* occurring in the Rangitikei region was stimulated after hearing Colin Ogle speak of the several otherwise eastern plants that occur in the Rangitikei region, particularly around Taihape (*A.P. Druce Memorial Lecture, Wellington Botanical Society, August 2003*; see also Ogle & Barkla, 1995). After following up the approximate location of CHR 277376, and finding large plants with wide scales and small spores that are undoubtedly *P. oculatum*, another 'eastern' species can be chalked up for the Taihape/Rangitikei region. Potential explanations for this repeated biogeographic pattern are discussed by Ogle & Barkla (1995).

The closest *Polystichum oculatum* population to that of Mangahoata Road that I know of is at Sentry Box Reserve, approximately 20 km away in the foothills of the eastern side of the Ruahine Ranges. Just how widespread *P. oculatum* is in the Rangitikei region is uncertain (perhaps a challenge for the local botanists?). I have not seen it during a couple of cursory trips to Paengaroa Scenic Reserve at Mataroa near Taihape (*P. neozelandicum* subsp. *zerophyllum*, *P. vestitum*, and their hybrid are present). The Rangitikei catchment (including, for example, the Mangamaire and Waingakia Rivers) north of the Taihape-Napier road might be particularly interesting, especially given that *P. oculatum* was recently found to be common alongside several of the eastern-draining rivers of the Kaweka Ranges (e.g., the Ngaruroro and Tutaekuri. The biggest population of *P. oculatum* that I have seen north of Wellington is near the walkwire across the Tutaekuri River, near The Lakes).

Acknowledgements

I would like to thank Colin Ogle for discussion.

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■ Succulents misbehaving in my gardens

W.R.Sykes, 115 Packe Street, St Albans, Christchurch 8001

Introduction

The observations that make up this article were compiled in the extensive collections of succulent plants¹ that I have built up in the Christchurch area. They are in two places, Packe Street, St Albans, a central city suburb, and Orton Bradley Park, Charteris Bay, on Banks Peninsula. The biggest difference is that the latter is considerably warmer in both winter and summer than in central Christchurch. Thus some succulents that are killed or damaged by the frequent winter frosts outside in Christchurch, with air temperatures down to around -10°C , can grow unharmed or nearly so in parts of Charteris Bay, even to the point of being a nuisance there. The plants grown tolerate a great range of temperatures, extending from the European *Sempervivum* species that will grow in the coldest conditions on the Canterbury Plains to the Madagascan *Kalanchoe* species that tolerate no frost and need some protection even in the Charteris Bay area that includes still warmer Diamond Harbour.

Background to the collections

My intention has been to build up and maintain as diverse a collection of succulents as reasonably possible under the available conditions. All the plants were obtained in New Zealand; most of them were growing elsewhere in Canterbury (especially Banks Peninsula). Hamish and Tim Prebble of Texture Plants, Prebbleton, Canterbury, as well as the Christchurch Botanic Gardens, generously supplied a number of species and hybrids.

A brief comment about conditions of cultivation is relevant, especially soils and aspect, both being very variable. Most of the succulents grown at St Albans and Charteris Bay have either morning or afternoon sun, but a few are in brighter more exposed conditions. Many are on slopes among rocks but some are on level ground and either planted out or in pots. The soil used is very variable and at Charteris Bay is usually the local rather heavy clay, but often I put in sand to lighten it. St Albans is built on an old swamp and occasionally the garden is flooded although this only lasts one or two days. Many of the succulents there are in pots of compost and raised to some extent, including two low mounds formed of crushed Oamaru stone. A large range of succulents grow extremely successfully in this white limestone.

Incidentally, many succulents vary in size, stem and leaf colour, and to a lesser extent leaf shape, according to habitat, especially in the degree of exposure to sunlight. This can obviously cause confusion over naming sometimes.

In hindsight I regret planting a few of the species in the list below, especially when I had records of them being already adventive elsewhere in the South Island. However, initially I had a lot of bare ground available in the form of rock gardens, rock banks and a driveway, so I experimented. But I have only felt the need to try and eliminate one species, *Sedum album*, white stonecrop, because it is very aggressive within the gardens that I planted. I should hasten to add that there are no cases of regeneration beyond the confines of these gardens. The fact that these succulents have not spread into surrounding areas is of special significance in Charteris Bay because of the presence of rock outcrops on the valley sides above that support a variety of indigenous plants. One of the two succulent plants already there is what I have long known as *Crassula tetramera* (Toelken) Druce & Sykes but which I see in the recent *N.Z. Botanical Society Newsletter No. 73*, p.12 (2003) has been reclassified as *Crassula colligata* Toelken subsp. *colligata*. This indigenous plant also grows spontaneously in one of my Charteris Bay rock gardens. The other species of succulent on the rock outcrops is the commonly naturalised *Sedum acre* L., biting stonecrop, the one introduced member of its family that I did not introduce to the rock gardens below.

Regions of Origin

A brief discussion of the regions of origin of my collection of succulents is appropriate. The majority originate directly or indirectly (in the case of hybrids) from countries with a Mediterranean climate; i.e. with summers that are dry and hot or very warm and winters and spring that are mild and damp, though rainfall can vary greatly.

In addition to the countries around the Mediterranean Sea, the term includes much of California and Baja California, as well as parts of Mexico on the eastern side of the Gulf of California, central Chile,

¹ Note that Cactaceae are omitted; the term succulents usually excludes this family.

Western Cape Province of South Africa and the south-western part of West Australia. However, Chile and Australia contribute no species to the list below. The one other region of importance is Macaronesia, whose islands have a semi Mediterranean climate but with summers that are cooler than would otherwise be expected from their latitudes off the coast of north-west Africa. This is because of cool onshore winds from the cold Canary Current nearby. Incidentally, I have never encountered any Macaronesian plant that would not grow somewhere in New Zealand. A few species of succulents in my gardens originate from elsewhere, notably S.E. Africa and Madagascar.

The three most cold-hardy genera grown are the crassulaceous *Sedum* L., *Sempervivum* L. and *Dudleya* Britton & Rose. *Sedum* is a very widespread genus in both Old and New World regions north of the Equator and the species that I grow are mainly from southern Europe and Mexico, examples from both regions featuring in the list below. Although a number are southern European *Sempervivum* species and cultivars, houseleeks, none are eligible for this article. Yet the very closely related but more tender *Aeonium* species and hybrids from the Canary Is. do feature below. A parallel case is shown by the Californian *Dudleya* species that are also not relevant here, whereas several of its more tender Mexican relations, *Echeveria* and hybrids of it, are included.

Taxonomic range

The taxonomic diversity of my range of succulents cultivated is low at the family level because of the preponderance of the Crassulaceae. As well as the genera mentioned above, the southern African genera *Crassula*, *Cotyledon*, *Bryophyllum* and *Kalanchoe* feature prominently, the last two extending to Madagascar. All the species in these genera in my list were treated in Volume IV of the Flora of New Zealand. From Mexico come species of *Pachyphytum* Link, Klotzsch & Otto and *Graptopetalum* Rose species, that with *Echeveria* have given rise to the hybrid genera *x Pachyveria* Haage & Schmidt and *x Graptoveria* Rowley. *Echeveria* also has hybridised with *Sedum* to give *x Sedeveria* Moran, whilst *Graptopetalum* and *Sedum* gave *x Graptosedum* Rowley and *Sedum* and *Villadia* Rose gave *x Sedadia* Moran. Several of these hybrid genera are treated in the list.

Much lower down the scale numerically is Aizoaceae, ice plants. I grow mainly species of *Aptenia*, *Drosanthemum*, and *Lampranthus*. All my ice plant taxa came from South Africa, as are those species in my collections of the monocotyledonous *Aloe* and *Haworthia* Duval (Asphodelaceae). Of similar habit to the aloes are the Mexican species of *Agave* (Agavaceae) grown. The few succulent composites are with one exception South African species of *Senecio* (*Kleinia* group). Portulacaceae is a well-known family of succulents, but apart from the common annual *Portulaca grandiflora* Hook. which I sometimes grow for some midsummer colour (most of my succulents flower from late winter to early summer) there are only two other species, both South African, that deserve a brief mention. The small annual or short-lived perennial *Anacampseros rufescens* Sweet is never a nuisance but spontaneous plants occasionally appear unexpectedly a few metres from a mainly cleistogamous parent. Very different is the shrubby *Portulacaria afra* (L.) Jacq, jade plant, one of the largest members of this family. Incidentally, from tropical Polynesia to Canterbury I have never seen this frost-tender plant flower.

Note that none of the succulent members of the Apocynaceae (including Asclepiadaceae) is represented in the list below and don't feature significantly in the collections, mainly since they tend to need warmer conditions than I can provide. Finally I grow hardly any of the vast number of succulent southern African *Euphorbia* species for similar reasons and the two semi-succulent species that do feature below are from Europe and Macaronesia.

Identification of cultivated succulents

The compilation of this list involved consulting as much taxonomic and horticultural literature possible, especially for the very difficult taxonomic problems posed by some of the hybrid Crassulaceae involving the American genera *Echeveria*, *Graptopetalum*, *Pachyphytum*, and Mexican species of *Sedum*. Despite the fact that there are comprehensive accounts of the cultivated species of the large genera *Echeveria* and *Sedum*, the apparent ease in which bigeneric hybrids have arisen, and the lack of information about them, means that it is sometimes nearly impossible to be certain of their identification, let alone to find clonal cultivar names for them. Some of these clones grown are listed below because they spread vegetatively although never produce seed. Nearly all the horticultural accounts of succulent plants are from Europe and North America but a useful New Zealand reference work is that by Yvonne Cave (2002). The colour photographs in such works are very useful. Although lacking in this respect the dictionary of Jacobsen, H. (1977) is still very useful and a basic reference work. Identification of species of *Aeonium* and *Crassula* is also facilitated by the available floras of Macaronesia and South Africa respectively, and for *Echeveria* there is the account by Walther (1972),

whilst for *Sedum* I now turn to Stephenson (1994). Finally, for some of the more difficult taxa, especially hybrid clones, I have often consulted various overseas horticultural websites with illustrations of succulents. However one has to be aware when doing this of the fact mentioned earlier of the differences in the same clone according to the degree of light experienced. Thus it is obvious that many website illustrations are of plants in glasshouses at fairly high latitudes and tend to be atypical in appearance.

Scope of this article

The criterion for inclusion in the list below is simply whether or not the taxon grows sufficiently freely and regenerates enough, vegetatively and/or from seed, to be a nuisance to some degree, i.e. to warrant removal of plants or parts of plants because of crowding out other less vigorous ones. This may happen either by spreading too rampantly from where they were planted or by growing spontaneously in inconvenient sites elsewhere in the gardens.

A feature of many prostrate or semi-prostrate species that root freely from stem nodes is that they tend to die out after a few years if this is prevented by being confined to one small site such as a pot. If such species can escape from confinement they often spread across open ground, including gravel paths, rock banks, etc. A number of species in the following list are in this category, for although originally planted they now grow entirely unaided.

A few species regenerate from seed and it is perhaps not surprising that the greatest nuisances are in this category. Plants reproducing from seed have either an annual, monocarpic, or short-lived perennial habit. Species only reproducing vegetatively do so either by their stems rooting at the nodes, such plants having a prostrate, decumbent or spreading habit, or they reproduce by detached pieces taking root. It is noteworthy that most taxa in the list only reproduce vegetatively, indeed they must usually represent self-sterile clones. A feature of many species and hybrids of Crassulaceae, Aizoaceae, and *Senecio* in the list is the free rooting of small pieces of stem, leaf rosettes, or individual leaves. The last is especially characteristic of some Crassulaceae and some often shed leaves at the slightest touch; in fact the ease in which leaves fall is obviously correlated with the ease with which roots form from their bases. The formation of little plantlets along leaf margins in some *Bryophyllum* species is a well-known feature and the plantlets can put out tiny roots even before falling if kept in rather humid conditions.

As is to be expected, there is no sharp line separating the great majority of my cultivated succulents from those considered eligible for inclusion in this paper. Thus a number of other species, especially in the crassulaceous genera *Crassula*, *Echeveria*, and *Sedum* were considered to be not quite eligible so were omitted although unaided they do reproduce vegetatively to some extent. But a few successive slightly warmer and drier seasons, especially winters, could doubtless result in them qualifying by growing more aggressively than at present.

Status of taxa in the list

Although all the taxa in the following list increase to the point of being a nuisance they are not designated as having adventive status, even in the casual sense. This is because none have spread beyond the areas in St Albans and Charteris Bay in which they were originally planted. This absence of cited status is because they don't meet the criteria adopted for inclusion in Flora of New Zealand, Volumes III and IV, or in the first two checklists of additional records to the latter (1995 and 1998). However, the majority of the taxa in my list have been recorded as being adventive elsewhere in New Zealand and were treated as such in these publications. The remainder of the list, comprising 19 taxa, are unrecorded as being adventive anywhere in this country. But to separate them for the purpose of this paper, all in this group are noted as new records even though they are not formally accorded adventive status. Also, all in this group have a voucher specimen that has an accompanying description cited. In addition their region of origin is given where appropriate.

Conversely, if one follows the criteria adopted in the later checklists of additional records to Vol. IV (1999 and 2002), every taxon in this list would be regarded as either a casual or naturalised adventive. Thus, the definition of an adventive accepted in the present study follows that given in Volume III, i.e. "anything growing spontaneously outside a fenced area, or as a weed in a sown or planted community."

It is noteworthy that many taxa in the families Crassulaceae and Aizoaceae that are treated in Flora of New Zealand, Volumes III and IV and the supplementary checklist of additional records (1995), do not qualify for my list below, even though they are cultivated in St Albans and Charteris Bay. Many of

them were recorded wild from the North Island only, and in a few cases are damaged to some extent by winter frosts, including those in Charteris Bay. Even *Crassula multicava*, fairy crassula, the most abundantly naturalised succulent on Rangitoto Island, is often damaged by frost on Banks Peninsula, although it is sufficiently vigorous to still qualify for this list. On the other hand, *Aeonium haworthii* (Salm-Dyck) Webb & Berth., pinwheel aeonium, abundantly naturalised on the Sumner cliffs a few kilometers from Charteris Bay, is well-behaved at the latter place, whereas the much less commonly wild *A. undulatum* on Banks Peninsula is unquestionably eligible for the list below.

Non-succulent weeds

Of course there are many non-succulent weeds in the succulent collections and to keep things in perspective a number of species in this category are certainly more troublesome than any in the list of succulents below. The following aggressive non-succulent weeds illustrate the diversity of this group:- *Aquilegia vulgaris* L.; *Cardamine hirsuta* L.; *Cerastium fontanum* Baumg.; *Cymbalaria muralis* P. Gaertn.; *Euphorbia pepulus* L.; *Galium aparine* L.; *Linaria purpurea* (L.) Miller; *Oxalis corniculata* L.; *Poa annua* L.; *Polycarpon tetraphyllum* (L.) L.; *Ranunculus ficaria* subsp. *ficariiformis* Rouy. et Fouc.; *Sagina procumbens* L.; *Stellaria media* (L.) Cirillo; *Taraxacum officinale* G. Weber; *Veronica arvensis* L.; *Vicia sativa* L.

In addition, there are three troublesome indigenous species: *Epilobium nummulariifolium* Cunn.; *Hydrocotyle heteromeria* A. Rich.; *Oxalis exilis* Cunn.

Checklist of Misbehaving Succulents

AGAVACEAE

Agave americana L. 'Variegata' variegated century plant

Spreads by means of long rhizomes and the very spiny rosettes sometimes appear unexpectedly up to nearly a metre away from the parent. The green form behaves similarly elsewhere in the vicinity and is the form described in Volume III. The variegated clone has broad white bands on the leaves. Because it is such a minor variant it is not treated as new in the sense of this list.

AIZOACEAE

Aptenia cordifolia (L.) Schwant.

These are two forms of this prostrate plant with long trailing runners at Charteris Bay and St Albans. One is the form described in Volume IV that has pink flowers 0.8–1.3 cm across, and the other I introduced from the Auckland Regional Botanic Garden and has crimson flowers 1.5–1.8 cm across. Both have to be curbed at Charteris Bay.

Lampranthus spectabilis (Haw.) N.E.Br.

This large almost mound-forming species is very vigorous, spreading by its stems layering and tending to smother other plants. The usual form involved has bright pink flowers and is the one described in Volume IV.

ASPHODELACEAE

Aloe saponaria (Ait.) Haw.

soap aloe

A rhizomatous species, that gives rise to plants a short distance from the parent. In a very sheltered site at Charteris Bay soap aloe only spreads vegetatively, for although well-developed fruits are formed each year, seeds are usually or always absent.

ASTERACEAE

Othonna capensis L.

little pickles

A trailing prostrate plant that can form large, hanging curtains that drape over rocks and earth banks. The yellow capitula are freely produced but the plant spreads vegetatively at Charteris Bay and I cannot confirm the statement in Volume IV that it "probably also produces good seed."

Senecio serpens G. Rowley

A large, sprawling, succulent species with brittle stems. Thus, in addition to plants smothering less vigorous species, pieces break off and grow very easily. Treated as a minor or zeta entry in Volume IV. Often still known as *Kleinia repens* Haw, this generic name being used also for other succulent South African senecios.

CRASSULACEAE

Aeonium arboreum (L.) Webb & Berth. var. *arboreum*

One of the first aeoniums to be planted on one of the rock gardens in Charteris Bay. The plants are monocarpic or semi-monocarpic and seedlings occur frequently all over the area. This is the typical form of the species as described and illustrated in colour in Flora of New Zealand Vol. IV.

Aeonium arboreum* var. *rubrolineatum (Svent.) H.-Y. Liu ? New record

This plant grows with *Aeonium arboreum* var. *arboreum* and *A. undulatum* and like both of these it seeds and spontaneous plants result although not as frequently as *A. arboreum* var. *arboreum* especially. Var. *rubrolineatum* differs from the type variety by its firmer leaves that are not so rounded distally, as well as by its hemisphaerical inflorescence, glabrous calyx, and pale yellow petals and stamens. In addition, flowering is in the second half of October and much of November, i.e. later than var. *arboreum*.

Despite careful checking of the literature I cannot be absolutely certain of the name for this plant. There seems to be no doubt that it belongs to *A. arboreum* sens. lat. and the short description of var. *rubrolineatum* in Liu, Ho-Yih, p. 69 (1989) fits my plants better than those for the other two varieties. The only feature apparently at variance with the description of this variety is the lack of redness in the perianth because the Charteris Bay plants at most have faint reddish calyx markings. There is a slight possibility that the Charteris Bay plant is one of a number of *Aeonium arboreum* hybrids apart from those mentioned below.

My stock apparently originated from the collection of the late Marjorie E. Shields who was probably the most well-known name concerning ornamental Crassulaceae in Canterbury. She apparently distributed this plant as *A. valverdense* (Praeger) Praeger but this cannot be correct for various morphological reasons. Represented by Sykes135/03, Charteris Bay, 19/11/2003

Aeonium x floribundum A. Berger

A vigorous small-leaved shrublet that freely spreads vegetatively and forms large mats by the stems rooting. Thus on a limestone mound in St Albans it has had to be restricted because of smothering smaller succulents. It is more cold-tolerant than the large aeoniums listed here. *A. x floribundum* belongs to section *Goochia* Christ as evidenced by the short red glandular lines on the lower leaf surface. It was treated as a zeta or minor entry in Volume IV.

Aeonium undulatum Webb & Berth.

giant aeonium

A monocarpic species that thrives on the same rock garden as *A. arboreum* and as with the latter seedlings are often seen. Also like *A. arboreum* the main area of naturalisation recorded in Volume IV is Banks Peninsula.

Aeonium arboreum x A. undulatum

New record

Plants that appear to be hybrids between the two species above have become increasingly common on this Charteris Bay rock garden. In Volume IV under the heading *Aeonium haworthii* hybrids plants are described that are similar to those on my rock garden. *A. haworthii* (Salm-Dyck) Webb & Berth. also grows there but is later flowering, whereas there is a big overlap in flowering between *A. arboreum* and *A. undulatum*. In a Volume IV footnote on page 566 I suggested that *A. undulatum* parentage is involved in these putative *A. arboreum* hybrids and this seems even more likely to be the case at Charteris Bay. There the main question not solved is whether or not *A. haworthii* plays any part in hybrid formation since it nearly always flowers later than *A. undulatum* and *A. arboreum* so there is little overlap in this respect. Therefore hybrids between the last two species are treated as a new record. represented by Sykes265/87, Port hills, Sumner, 3/11/1987

Bryophyllum delagoense (Eckl. & Zey.) Schinz
(= *Bryophyllum tubiflorum* Harvey)

lizard plant

Although frost sensitive the abundance of plantlets on the leaf margins means that at Charteris Bay there are mostly spontaneous plants growing in a number of the most sheltered places at any season.

Bryophyllum 'Houghtonii'

coconut plant

The hybrid coconut plant grows even more prolifically than its parent *B. delagoense* at Charteris Bay and likewise it has numerous plantlets on the leaf margins. The other parent, *B. daigremontianum* Raym.–Hamet & Perrier, devil's backbone, also grows at Charteris Bay, but is less hardy and does not qualify for this list. This well-known hybrid was introduced to Charteris Bay and never results from hybridisation occurring there.

Cotyledon orbiculata L.

pig's ears

This well-known South African succulent is common in cultivation and the wild in New Zealand, the latter state being especially evident in coastal places such as the Wellington area and Banks and Otago Peninsulas. More than one form or variety of this very variable species grows in Charteris Bay, but only the common one as described in Volume IV has to be culled sometimes.

Crassula multicava Lem.

fairy crassula

As already stated, *Crassula multicava* grows rampantly at Charteris Bay despite being affected by frosts sometimes in the more exposed parts of the rock gardens. Plants flower freely in the spring, but their

spread is by vegetative means, including the small inflorescence plantlets that often replace some or many flowers. Incidentally I wrongly stated in Volume IV p.575 that the flowers are 5-merous whereas in New Zealand they are always 4-merous.

***Crassula pellucida* L.**

A small prostrate mat-forming plant with thread-like stems and tiny leaves that spreads vegetatively very freely; every piece that becomes detached forming a new plant. *C. pellucida* was only treated as a minor or zeta entry in Volume IV.

***Crassula tetragona* L.**

This small erect succulent shrub readily forms roots on the readily detached shoot ends, a common occurrence at Charteris Bay. Although the fragrant flowers are freely produced, the plants do not form seed.

ECHEVERIA DC. and hybrids

This genus is notoriously difficult to classify, partly because of the prevalence of hybrids in cultivation and the fact that some of the parent species seem to be poorly known in the wild. Neither of the *Echeveria* taxa treated in Volume IV qualify for this list although I grow them as well as others listed as relics of cultivation there. Some other *Echeveria* species have a propensity to grow from leaves that fall very easily and then are readily spread around by rain and almost any gardening operation. Viable seed seems to be very rarely produced by any *Echeveria* taxon or any of the bigeneric hybrids that I grow. The names of several hybrids given are tentative because of the lack of authoritative data. In addition to the lack of reliable published information there is the possibility that one or more hybrids in New Zealand have their origin here and have not yet been formally classified.

***Echeveria amoena* de Smet**

New record.

A sprawling short-stemmed rosetted plant with rosettes of rather small oblong-obovate glaucous leaves. The inflorescences are of few-flowered cymes with deep red, tubular flowers c. 1cm long and like all echeverias that I grow seed is not produced. *Echeveria amoena* seems to be rarely offered for sale now because the leaves fall so readily that the plants are troublesome to commercial growers. Indeed, new plants soon cover areas around the parents in all my succulent gardens, whether on the ground or in other pots and they even appear at a little distance, so this species is undoubtedly a nuisance by any standard. References to this feature of leaf detachment can be found in overseas literature. Originating from Mexico like the majority of *Echeveria* species, *E. amoena* is probably a montane plant judging from the hardness of my plant in St Albans.

E. amoena is represented by Sykes 116/02, St Albans, Christchurch, 19/11/2002.

***Echeveria* x '*Set. Oliver.*'**

New record

hybrid firecracker plant

Along-persistent plant tolerating a wide range of conditions in St Albans and Charteris Bay, including fairly heavy shade. The small patches formed increase slowly and pieces of shoot readily root before or after detachment. However, unlike *Echeveria amoena* I have never known individual leaves to form roots and grow. Thus *E. x 'Set. Oliver.'* is at the lowest level of eligibility for this list. Its conspicuous tubular corollas in short racemes are scarlet with yellow spreading tips and are freely and regularly produced throughout a large part of the summer. Hybrid firecracker plant also has very hairy leaves like one of its parents, a fairly uncommon feature in this genus.

My record of *Echeveria setosa* Rose & J. Purpus, based on two young plants from Rangitoto Island (Sykes 1992) is almost certainly wrong because, although only scraps, they are much more likely to be *E. x 'Set. Oliver.'* *E. setosa* is one of its parents and is acaulous with dense rosettes of leaves whereas this hybrid has obvious stems several cm long terminated by a small rosette of leaves. In these respects *E. x 'Set. Oliver.'* greatly resembles the other parent, *E. harmsii* Macbr. that also thrives in St Albans. However, the last has only 2 or 3 flowers in the inflorescences and the corollas are larger than *E. setosa* and *E. x 'Set. Oliver.'*

The second part of this hybrid name is derived from the old generic name *Oliveranthus* that *E. harmsii* used to be treated under as *O. elegans* Rose. Also although the basic hybrid name as given above is found in many works (with or without either full stops, a hyphen between the two parts, or the cultivar apostrophe), the Botanical and Horticultural Codes of Nomenclature do not cater for such a hybrid name. Since I cannot find another name composed of two Latin abbreviations like this one I have chosen the form that seems to conform best to the spirit of these codes.

Represented by Sykes 25/04, St Albans, Christchurch, 23/1/2004.

***Graptopetalum paraguayense* (N.E.Br.) Walth.**

New record

ghost plant

(Often known as *Sedum weinbergii* A. Berger)

This attractive and popular plant has long and rather sprawling stems terminated by a rosette of fairly large, flattened, obovate, pearl-grey leaves. The white flowers with tiny red dots on the widely spreading petals are in diffuse panicles; features that are typical of species of its genus. The leaves so readily fall and

subsequently form roots as do pieces of stem with a rosette of leaves that the species can be a minor nuisance.

Some plants in my collections have similar leaf rosettes and inflorescences except that the leaves are tinged mauve to deep mauve and the petals are pale yellow with minute red dots. These plants are probably hybrids of the ghost plant and are better behaved than the typical species in my experience. This possible hybrid seems to correspond to the plant sometimes wrongly called *Sedum rubrum* (Stephenson 1994). Typical *Graptopetalum paraguayense* is the intended plant for this list and the mauve-leaved one is excluded. The taxonomic problems in *Graptopetalum* are illustrated by the fact that this West Mexican species alone has been variously placed in 5 different genera. There is a reference to ghost plant being "a very persistent relic of cultivation" in Volume IV.

Represented by Sykes 157/00, St Albans, Christchurch, 29/9/2000.

x *Graptosedum* Rowley 'Francesco Baldi' New record

A trailing or pendent plant, sometimes more compact when restricted by rocks or surrounding plants; stems to c. 30 cm long, occasionally more. Leaves easily fall off and readily grow. They are narrow elliptic-oblong and more or less orange-brown covered with pale glaucous bloom, the depth of colour depending upon the degree of exposure to light. The second flowers have light yellow almost patent corollas that are faintly spotted with red inside the short tube, whilst the stamens have yellow filaments and red anthers.

As *Pachyphytum kimmachii* this plant is illustrated in Cave, Y. (2002), but this name must be incorrect, e.g. the petals don't have the appendages on their inner surface that *Pachyphytum* species have. This plant also seems to have been included in the hybrid genus x *Sedeveria* Moran but this placement is not accepted here although this plant is superficially similar to a cultivated clone in this hybrid genus. However, it is clearly illustrated as x *Graptosedum* Rowley 'Francesco Baldi' in a few websites such as <http://reia.ciao.jp/crassulaceae/index7.html>. Both parents are in this list, namely *Graptopetalum paraguayense* and *Sedum pachyphyllum*. In addition, the features to be expected from such a combination seem to be congruent with those of my plant.

Although a well-known plant in cultivation, at least in this country, and I have also seen it grown in Rarotonga, the name accepted here does not seem to be used much, if at all, in New Zealand.

Represented by Sykes 92/02, Lincoln, Canterbury, 25/9/2002.

x *Graptoveria* Rowley 'Acaulis' New record

(syn. *Echeveria acaulis* Gossot)

Represented in my collections by two very similar clones? which I am treating as a single entity because they only differ by very minor details of leaf and flower colour. Their short stems terminate in a loose rosette of glaucous, glaucous-brown or totally brown (partly depending on the season and degree of exposure), obovate leaves to c. 3.7 x 1.5 cm. The lateral inflorescences are up to about 15 cm long with 0-3 branches each with a few flowers. The partly tubular corollas are pale yellow inside and red-flushed outside with the lobes divergent in the distal half and sometimes with a few red dots inside.

The parentage of this hybrid is *Echeveria amoena* x *Graptopetalum paraguayense* but x *Graptoveria* 'Acaulis' looks much more like the former than the latter; in fact vegetatively they can be difficult to distinguish. This similarity is also evident in the ease with which the leaves of this x. *Graptoveria* fall off and take root, in fact this occurs almost as abundantly as in *E. amoena* itself in all my gardens and therefore the hybrid is almost as great a nuisance as this parent.

x *Graptoveria* 'Acaulis' is quite different to other clones of x *Graptoveria* that I have seen such as x *G.* 'Titubans'? below. This is presumably because 'Acaulis' has *Echeveria amoena* as one parent unlike the others, whereas several of them have *Graptopetalum paraguayense* as the other. Good illustrations of cv. 'Acaulis' are on Reia's "The Crassulaceae" website http://reia-cool.ne.jp/crassulaceae_gv_Acaulis.html but I have seen no reference to the name 'Acaulis' being used in New Zealand. However, the clones are very likely to be sometimes treated as part of x *Pachyveria* Haage & Schmidt for these two hybrid genera are often confused. *Pachyphytum* species that I grow can have leaves of a similar size and colour but they all have characteristic petal appendages and unbranched cymes that are features of most x *Pachyveria* clones but are absent from 'Acaulis'. On the other hand, *Graptopetalum* species typically have the features given under *G. paraguayense* above. Finally, like both its parents x. *G.* 'Acaulis' is quite hardy in Christchurch whereas no *Pachyphytum* species that I grow is properly hardy there.

Represented by Sykes 8/03, St Albans, Christchurch, 7/1/2003 (glaucous-leaved) and Sykes 9/03, St Albans, Christchurch, 7/1/2003 (brown-leaved).

x *Graptoveria* Rowley '?Titubans' New record

There are several named clones of *Echeveria* x *Graptopetalum* and they have different parents. I have not found mention of those involved in this clone although I have seen most of the meagre literature that seems to be available. The suggested name above was taken from brief information on websites, especially a photo from the succulent grower P. Lapshin, Yalta, Crimea, Ukraine, but I cannot confirm it. However, it is possible that more than one very similar clone of this generic hybrid is involved in my collections. The plants have dense rosettes of fairly thick pale glaucous leaves up to 8 cm across, each leaf being apiculate. Rosettes and individual leaves are easily detached and readily form new plants. The spreading to declined

inflorescences are not as diffuse as in *Graptopetalum* species, but the pale yellow or apricot yellow unspotted petals have a more or less spreading distal half as in *Graptopetalum* but not *Echeveria*.

The plants grow in St Albans and Charteris Bay and are included here because of their pronounced propensity to reproduce vegetatively to the point of being a nuisance in the warmer parts of the rock gardens at Charteris Bay.

Represented by Sykes 5/03, Charteris Bay, 7/1/2003.

x *Sedadia amecamecana* (Praeger) Moran New record
(= *Sedum amecamecanum* Praeger)

A ground-covering plant forming large loose mats and a similar habit to *Sedum decumbens*, both it and x *Sedadia amecamecana* grow together at Charteris Bay. It is not safe to plant either species near smaller slow-growing plants and both have to be kept in check even though they were planted in a less favourable site near the perimeter of one of the rock gardens.

Both plants have yellow flowers, are frost tolerant, and originate from Mexico. They can be easily distinguished by their leaves, those of *S. decumbens* being 1–2.7 cm wide and elliptic to suborbicular, whereas in *S. x amecamecana* they are only up to 0.8 mm wide and narrow obovate–elliptic. The latter has pale yellow flowers whereas in *Sedum decumbens* the flowers are much brighter yellow and there are many more flowers in the inflorescence. Illustrations and descriptions seen of x *Sedadia amecamecana* closely match my plants although the parentage is surprisingly said to be the shrubby *Sedum praealtum* and the small almost tufted *Villadia batesii*, both in this list. x *Sedadia amecamecana* is a natural hybrid that occurs on the volcano Iztaccihuatl not far from Mexico City.

In the footnotes under *Sedum* L. in Volume IV this plant is mistakenly referred to as *S. sarmentosum* Bunge, an unrelated Asian species.

Represented by Sykes 121/03, Charteris Bay, 14/10/2003.

Sedum album L. white stonecrop

As stated near the beginning this is the most aggressive succulent introduced and I have more or less eliminated it except for a gravel driveway in St. Albans. It spreads vegetatively and from seed, thriving in the most inhospitable sites. As expected, plants vary according to habitat with those in dry gravel being much smaller than in those in more fertile sites.

Sedum commixtum Moran & Hutch. New record

This species has a loose spreading habit and short, thin shoots which terminate in a loose rosette of short, glaucous bloomy, broadly obovate–elliptic leaves often suffused with rosy-purple. They are very readily detached and as readily form roots followed by new plants. Flowers are freely produced in early spring and are aggregated into a dense rounded head 1.5–2.0 cm in diameter. The large incurved sepals are united at their bases and between them lie the dark red reflexed upper half of the petals. The stamens are inserted around this halfway colour demarcation on the petals and thus are fairly short. Such an inflorescence and epipetalous stamens are very unusual in the genus *Sedum*. *S. commixtum* is quite hardy in Christchurch for it originates from high mountains in Oaxaca State, Mexico.

Represented by Sykes 122/03, Charteris Bay, 14/10/2003.

Sedum dasyphyllum L.

A very small species but can quickly form dense prostrate mats by vegetative reproduction. Although plants flower moderately freely (I incorrectly stated in Volume IV that this species “does not flower freely”), I am doubtful if there is much or any regeneration from seed. *Sedum dasyphyllum* was rated as a casual or zeta entry in Volume IV but has since been found wild on the Port Hills only a few km from Charteris Bay. A very variable species in Southern Europe. I also grow the very distinct Moroccan subsp. *oblongifolium* (Ball.) Maire, a slow-growing plant that has longer, glabrous leaves as opposed to small puberulent ones, and thus does not misbehave in the garden.

Sedum decumbens R.T. Clausen

Already referred to under x *Sedadia amecamecana*. Although the two taxa have a similar habit, *S. decumbens* is the more vigorous and more likely to spread by detached pieces taking root and if undisturbed form large mats. Plants flower freely but apparently never set seed in New Zealand.

Sedum mexicanum Britton

A small bright green plant with dense linear or narrow-linear leaves in whorls of (3)-4-5 that forms loose mats. Is more shade tolerant than most *Sedum* species but intolerant of confinement to a pot for more than a year or two. Hardy in Christchurch and spreads to various parts of the garden in St Albans.

Sedum mexicanum was confused with *S. forsterianum* Sm. In Volume IV, pp. 589–590, but this mistake was cleared up in the following checklist: 181 (1995). Suffice it to say here that true *S. forsterianum* does occur wild in New Zealand but does not come within the scope of this paper unlike the very closely related *S. rupestre* that is often confused with it.

***Sedum moranense* Kunth**

A small plant with close set scale leaves reminiscent of the common *Sedum acre*, but *S. moranense* is more straggling although it does form loose mats. Unlike *S. acre* however, it has white flowers instead of yellow ones. Both species grow freely from layering stems and detached pieces. *S. moranense* is thus too vigorous also for a small rock garden and can smother smaller plants in St Albans and Charteris Bay. Hardy in Canterbury generally, conforming to its Mexican habitat as given below.

As *Sedum liebmannianum* Hemsl. I accorded it a minor or zeta entry in Volume IV. However, in a checklist of naturalised plants Given (1984) did record this plant as *S. moranense*. These two Mexican species are very closely related, indeed the flowers are almost identical. As a result of re-examining New Zealand plants with the aid of more recent available literature, I can now confirm that our plant is *S. moranense*. The latter has very slender reddish stems that are clearly visible despite the fact that the tiny triangular leaves 1.5–2.5 mm long often remain withered on them after dying. These leaves often become reddish in bright light, are ± circular in T.S., and do not become silvery when they die as in *S. liebmannianum*.

S. moranense is said to be one of the commonest species in Mexico, usually growing on volcanic rock above 2000 m (Stephenson 1994).

***Sedum pachyphyllum* Rose**

New record

A small subshrub to c. 20 cm high. Cultivated especially for its thick, terete and clavate glaucous leaves that are often rosy-purple on the rounded apices in dry sunny sites. The flowers are yellow and borne in small panicles above the leaves. A Mexican species that is not as hardy as the preceding or following, although able to regenerate freely from the smallest pieces of shoot, especially at Charteris Bay. Although not treated in Volume IV, in footnotes there to its genus *Sedum pachyphyllum* is mentioned as having “a tendency to spread within gardens.” This is certainly true in Charteris Bay.

Represented by Sykes 3/03, Charteris Bay, 7/1/2003.

***Sedum praealtum* A.DC.**

shrubby stonecrop

A widespreading or sprawling shrub with fairly thick succulent main stems up to 50 cm long. Like most Mexican species that I grow, it has yellow flowers that are produced in spring. It spreads by pieces of detached stem at Charteris Bay. On the nearby Port Hills, where it is commonly naturalised, it also seems to spread entirely vegetatively and, as with most other species from that country, probably only a single clone is present.

***Sedum* × *rubrotinctum* R.T. Clausen**

jelly bean plant

This popular succulent is one of the hardest Mexican sedums cultivated and its leaves very readily fall with the gentlest touch and subsequently grow. Small pieces of shoot also form roots freely when detached and thus jelly bean plant is a minor nuisance in St Albans and Charteris Bay. It was recorded as a minor or zeta entry in Volume IV. I also grow the chimaeric cultivar ‘Aurora’ with pink or deep rosy leaves, but this is slower growing, less likely to flower, and seemingly less hardy than the ordinary green to red or reddish-brown plant, apparently because the tissues have little chlorophyll.

***Sedum rupestre* L.**

This very hardy summer-flowering European species forms loose mats and regenerates freely from detached pieces of shoot. In addition, spontaneous seedlings grow in rock crevices at Charteris Bay and in a gravel path in St Albans.

This species has been confused in New Zealand and in Europe. Thus the plants described under *Sedum reflexum* L. in Volume IV are more appropriately called *S. rupestre*. In addition, *S. rupestre* has also been confused with the closely related *S. forsterianum* Sm. in New Zealand and Europe (see also under *S. mexicanum*). Even some taxonomic works on the genus *Sedum* seem to have them mixed. Leaf texture, as well as their arrangement on the terminal part of the shoots, provide diagnostic features for differentiating them.

***Sedum sediforme* (Jacq.) Pau**

New record

Another hardy summer-flowering European species that belongs to the *Sedum rupestre* group. It is more distinct from *S. rupestre* than is *S. forsterianum* and where *S. rupestre* grows with *S. sediforme* at Charteris Bay the differences show very clearly. The leaves of *S. sediforme* are glaucous, generally longer, wider and more flattened, whilst the flowers, including stamens, are white and the petals narrower, as opposed to the broader yellow petals of *S. rupestre*. Both species spread in the same way vegetatively, but *S. sediforme* does not appear to have spontaneous seedlings as does *S. rupestre* and is consequently less of a nuisance.

S. sediforme is represented by Sykes 7/03, Charteris Bay, 7/1/2003.

Umbilicus rupestris (Salisb.) Dandy New record pennywort
Abundantly regenerating from seed at Charteris Bay and St Albans, especially growing in rock crevices and in pots of other succulents and is easily the biggest succulent nuisance in both places. The tall slender flower spikes die after flowering as do any other aerial parts during the summer. Plants persist during this dormant period by underground tubers, whilst the orbicular peltate leaves are present all winter, spring and early summer or all the year in young plants. A western European species.
Represented by Sykes 169/00, Charteris Bay, 17/11/2000.

Villadia batesii (Hemsl.) Baehni & Macbr. New record
A small herb with decumbent stems to c. 10cm long and small, subterete, shining, bright green semi-spreading leaves with minute whitish papillae that are densely clustered on the upturned terminal part of the stem. The flowers are in small terminal cymes and have prominent sepals a little over half the length of the starry white corollas. The petals appear connate lower down but are actually free although slightly imbricate. *Villadia batesii* looks very like species in the closely related genus *Sedum* L. and the flowers are very like *S. moranense* listed above and thus it seems to be rather anomalous in its genus. *V. batesii* also comes from Mexico like many sedums. Descriptions of its genus often mention that the petals are more or less united lower down but, as mentioned above, they are only apparently so in this species.

V. batesii is reasonably tolerant of the St Albans climate and quite hardy at Charteris Bay. Plants freely root from the stem nodes and small pieces of stem also root very easily when detached and the plants spread to a limited extent vegetatively. The leaves also drop easily but do not root freely as do some species in this list. Thus *Villadia batesii* is at the lowest end of the nuisance spectrum in my gardens. Jacobsen (1977) briefly describes var. *subalpina* (Froderstr.) Rowley of this species and my plants probably belong to it because of the smallness of the leaves that are mostly below 1 cm long. However, illustrations of this species without reference to variety clearly correspond to my plant.
Represented by Sykes 26/04, St Albans, Christchurch, 27/1/2004.

EUPHORBIACEAE

Euphorbia mellifera Ait. New record
A succulent-stemmed shrub forming a dense rounded bush up to 2 m high, whilst the non-succulent, elliptic leaves to c. 20 cm long are dull grass-green above and the midrib is whitish on either side. Flowering is prolific, the corymbose cyathia having prominent bright red sub-reniform glands that turn brown with age. Seedlings appear sporadically in the vicinity of parent plants in St Albans, Charteris Bay and Diamond Harbour. A Canary Islands species.
Represented by Sykes 119/03, St Albans, 5/10/2003.

Euphorbia pithyusa L. New record
A small straggling subshrub to c. 50 cm high that is also no more than semi-succulent. The shoots and non-succulent, almost linear leaves to c. 1.5 cm long are completely glaucous-white. The glaucous cyathia are not aggregated prominently, whilst the glands are yellowish. Seedlings occur sporadically, but sometimes unexpectedly, several metres from the parent plants in both St Albans and Charteris Bay. Originates from the West Mediterranean region.
Represented by Sykes 132/02, Charteris Bay, 11/12/2002.

OXALIDACEAE

Oxalis megalorrhiza Jacq. New record
Of the three fully succulent *Oxalis* species grown, only *O. megalorrhiza* qualifies for this list. Also it is the only *Oxalis* in general cultivation in New Zealand that seeds. These are produced in the typical explosive capsules of this genus that ensures the seeds are dispersed up to a few metres from the parent. After *Umbilicus rupestris* it is the next biggest nuisance in the succulent collections. *O. megalorrhiza* has shining, fleshy, deep green leaves that form a small clump, whilst the flowers have yellow petals that are surrounded by distinctive cordate sepals. As with *Umbilicus rupestris*, the plants perennate by an underground tuber, the aerial parts being annual. This South American plant is better known by its synonym *O. carmosa* Mol.
Represented by Sykes 161/00, Charteris Bay, 31/10/2000

Oxalis tetraphylla Cav. New record good-luck plant
This Mexican species is better known by the later name *Oxalis deppei* Lodd. It is included in my list although its succulence is only present in its bulbs, petioles and scapes as in some other bulbous species. It is not fully hardy in St Albans but in Charteris Bay a few plants have spontaneously appeared a few metres from the long-cultivated parent and had to be removed. Although the bulbils around the main bulb resemble those of the serious weeds *O. debilis* Kunth, *O. latifolia* Kunth, and *O. vallicola* (Rose) Kunth, they are few in comparison with these species and thus *O. tetraphylla* has only spread to a very minor extent even after some years.

O. tetraphylla has no contractile roots and the 4 leaflets are unlobed or nearly so and have an irregular dark purple band or patch near the base, unless the leaf is in shade. In contrast the other 3 species have contractile roots, 3 leaflets, each 2-lobed and lacking purple markings above. The petals of *O. tetraphylla*

are salmon-pink instead of whitish-pink to rosy-pink as in the others. The common name "good-luck plant" is presumably a reflection on the clover-like leaves with 4 leaflets. Represented by Sykes 29/04, Charteris Bay, 12/2/2004

PORTULACAEAE

Claytonia perfoliata Willd.

miner's lettuce

This ephemeral plant is included although I have never cultivated it. Plants appear in the late winter and are tolerated in some open parts of the Charteris Bay gardens because they are useful for spring salads. The leaves are only semi-succulent and the whole plant dies by early summer.

PRIMULACEAE

Lysimachia mauritiana Lam

New record

This is the only species in the Primulaceae that I know of that can be described as being more or less succulent. *Lysimachia mauritiana* is a biennial or annual species that attains a height of 60–70 cm. The bushy plants have shining stems that are often reddish and bear small shining semi-succulent leaves. The white flowers, c. 1 cm across, are followed by numerous small globose capsules. Seedlings commonly appear in the vicinity of parent plants at Charteris Bay. It is also unusual for a succulent plant in my collection in that it is a species that originates from coastal areas of East Asia and the Western Pacific as far east as Micronesia.

Represented by Sykes 127/02, Charteris Bay, 3/12/2002.

Acknowledgment

I am grateful to Peter Heenan of Landcare Research, not only for his encouragement, but also in suggesting improvements to this report.

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■ Biographical Notes (53) : Henry Bennett (1881–1953)

E.J. Godley, Research Associate, Landcare Research, P.O. Box 69, Lincoln.

Henry Bennett, the Dunedin horticulturist, was born on 6 March, 1881, in Brook Street, skirting the Botanic Gardens (1). At that time his father, Henry Ogle Bennett (1854–1925) was working at Gordon Brothers nursery (perhaps already foreman?) in nearby North-East Valley. Born in County Antrim and trained as a gardener, he had left Ireland at the age of 21, arrived in Auckland in 1875, and came south in 1877 (2). Here he obtained work on the Taieri at Hopehill, the estate of James Allan after whom the nearby settlement of Allanton was named (1,3). At Hopehill he met Lena King, also from Ireland, and they were married in 1880 (1,2).

In 1885 Henry Ogle Bennett bought 1.2 ha near Upper Junction, where the road from North-East Valley to Waitati crosses the flank of Mount Cargill. Later he bought another 1.2 ha with a house (Fig. 1), and over the years husband and wife built up a major nursery business, Broadacres, as described by Bagley (2).

Young Henry Bennett, an only child and always called “Harry” for obvious reasons, attended North-East Valley School until he began work on Broadacres in 1894 at age 13 (1,2). He can be seen in the daffodil bulb field with his parents in a photograph taken c. 1906 and published in (4). On 10 June 1908, he married Jane Longworth (1884–1963) at St Martins, North-East Valley (1); and their family of 3 sons and 2 daughters, the third generation to till the soil of Broadacres, was born as follows: Henry Ogle (1909; Herbert (1910); Lena (“Nancy”) (1912); Thomas (1914); and Mabel (1919) (1). In 1925 Henry inherited Broadacres on the death of his father; and in 1932 he expanded the business by buying land at Waitati for roses, fruit trees, and bulbs (2). And in 1931 and 1932, with the help of his wife, sons, and daughters he put Henry Bennett and Sons on the national map by winning the prestigious Loder Cup twice in succession.

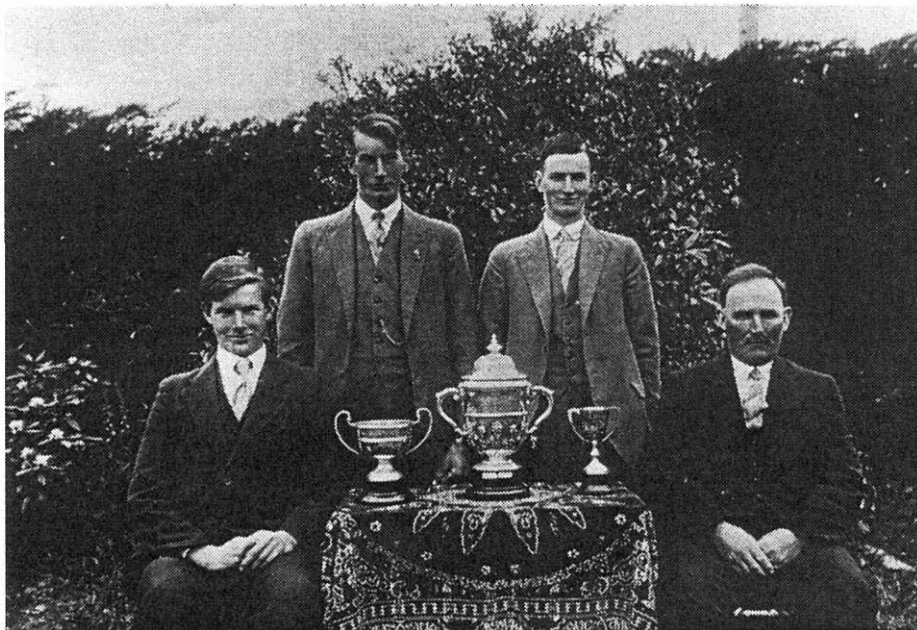


Henry Ogle Bennett Snr outside the first home at Broadacres (Bennett family collection)

The Loder Cup was presented in 1926 by Mr Gerald Walter Erskine Loder (later Lord Wakehurst) of Wakehurst Place, Ardingly, Sussex “to be held for one year by the exhibitor of the best collection of native plants and flowers at certain shows in New Zealand.” The first competition was held in 1929 in conjunction with the Auckland Horticultural Society’s Rose Show (5,6). It attracted 3 entrants who were placed as follows: Duncan and Davies Ltd (New Plymouth); Mrs J.W. Tattersfield; and D. Hay and Son (7). The winner displayed “over 500 varieties of native plants” (5,6). The judges were Auckland’s two leading botanists (after the deaths of Cheeseman in 1923 and Petrie in 1925), Mr T.L. Lancaster, lecturer in Botany, Auckland University College, and Miss M.W. Crookes, whose book *Plant Life in Maoriland* had appeared in 1926 (7).

The venue for the second Loder Cup competition was the Dunedin Horticultural Society’s Jubilee Show on 25 February 1931, and *The Evening Star* predicted (7): “Whatever the entry list will be like, Dunedin is sure to make a bold bid, thanks to Bennett and Sons and those persons who are helping the firm. For years the Broadacres proprietors have been collecting and growing natives, particularly celmisias, as part of their nursery business. When the Loder Cup competition was announced, Mr

Bennett and his sons resolved to enter for it as soon as their collection could be made complete, and they chose the 1931 competition as the earliest at which they would be ready to stage a display worthy of Otago. A plan as to further mountain searches, potting up, etc. was drawn and has been worked to, and to date the details have come out right in all respects save one, that being that many of the most floriferous natives will not be at their prettiest.” This was because the date was changed from November to February (when many species



Henry Bennett and Sons c. 1932. Back row: Herbert (Bert), Henry Ogle (Ogle). Front row: Thomas (Tom), Henry (Harry). Loder Cup (centre); on left, annual award from the Institute of Horticulture for the best exhibit at a National Show; on right, award from Dunedin Horticultural Society. (Bennett family collection)

would have finished flowering). But as the *Star* said, "all suffer alike."

In the event the entry from Henry Bennett and Sons stood alone. They had assembled "675 plants and 600 species" with their own collection supplemented by contributions from Lady Fenwick and Messrs. H. Hart, J. McIntyre, G. Simpson, and J.S. Thomson. It was displayed in the Pioneers' Hall in "a large pyramidal bed and two of lesser size, one of which is devoted to celmisias and the other to veronicas"; and it was declared a worthy winner by the judges, Dr J.E. Holloway (Botany Dept., University of Otago), Mr H.L. Darton (Christchurch) and Mr J. Speden (Gore) (8).

A visitor to the Jubilee Show was Major Reginald B. Loder of Maidwell Hall, Northampton, brother of the cup's donor, who obtained a list of the species displayed and a photograph from Henry Bennett and had them published in the *Gardeners' Chronicle* on his return to England (9). Subsequently Mr Gerald Loder wrote to Mr Bennett as follows (1):

July 19, 1931

Wakehurst Place
Ardingly
Sussex

Dear Sir

I am sending you a copy of the 'Gardeners' Chronicle' herewith, which contains a description of your remarkable exhibit of New Zealand plants at Dunedin, and I must write at the same time to congratulate you most heartily on having won the Cup.

It is very gratifying to me to hear that the competition for the Cup has made such a good start, and I hope your example and that of Messrs Duncan and Davies will be followed by others, especially by amateurs.

[Later modifications to the rules facilitated this]. You will see that the picture is a reproduction of the photograph you gave my brother, which is now in my possession.

My brother very much appreciates the kindness you showed him when he was in New Zealand.

I hope some day to have the pleasure of showing you the New Zealand plants I have been able to grow here.

With sincere congratulations,

I remain

Yours faithfully

Gerald W. E. Loder

The third Loder Cup competition was held in Christchurch in conjunction with the National Flower Show (10). Once again, Henry Bennett and Sons were the only entrants and were declared winners. The judges, Mr J. Speden (Gore), Dr W. McKay (Greymouth) and Mr C.H. Treadwell (Wellington) wrote: "There were altogether about 800 separate specimens in this exhibit, which in our opinion is deserving of high praise. The plants were robust and fresh, a fact all the more remarkable when one reflects that they had been transported by rail and lorry for over 240 miles."

The judges report gives a detailed description of the exhibit and was published in full by the NZ Institute of Horticulture (11). Extracts appeared in the *Gardening Illustrated*. A photograph of the winning team is given in the present note (Fig. 2). The official histories of the Loder Cup contain a photograph of Henry Bennett & Sons taken at a later date. The caption in the first edition (5), omitted in the second edition (6), is: "Bennett Group. Back row: Herbert Bennett, Thomas Bennett. Front row: the late Henry Ogle, the late Henry Bennett of the firm Bennett & Sons."

Henry Bennett died in the Dunedin Hospital on 23 September 1953 at the age of 72 and was buried in the Port Chalmers Cemetery where his father also lay. In 1953 Henry Ogle also died, followed by Mabel in 1977 and Herbert in 1986 (1). In 1991 Tom Bennett sold the nursery (2) but he and Nancy still live (as I write this note) near where they grew up and worked.

Eponymy

1942 *Senecio bennettii* "Type specimens — from upper forest margins, Mount Cargill, near Dunedin — 600 m altitude, in the Herbarium, Plant Research Bureau, Wellington." "It is named in honour of Mr H. Bennett, of Broadacres, North-East Valley, Dunedin, who first drew our attention to its distinct characters." G. Simpson and J. Scott Thomson *TRSNZ* 72: 39.

Acknowledgments

My first thanks go to Mrs Nancy Smith (Bennett) for information about her father, Henry Bennett, and the Bennett family, and for her hospitality when I visited her in North-East Valley, Dunedin. I am also very grateful to Mr Tom Bennett, Henry's only surviving son, for showing me over the site of Broadacres. We were kindly driven there by the late Professor Geoff Baylis. Thanks also go to Mrs Robin Bagley (Dunedin) and Dr Peter Heenan (Christchurch) for answering my questions and to Ms Ruth Lewis (Research Librarian, Landcare Research, Lincoln), Ms Jean Strachan (McNabb New Zealand Librarian, Dunedin) and Ms Hilda Godley (Mosgiel) for help with literature. Mrs Wendy Weller efficiently typed the note.

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PUBLICATIONS

New Publication

A botanical survey of the indigenous forest remnants in Wellington Botanic Garden Glenmore Street, Wellington J Mitcalfe and J C Horne, May 2003. 68 pages plus appendices.

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