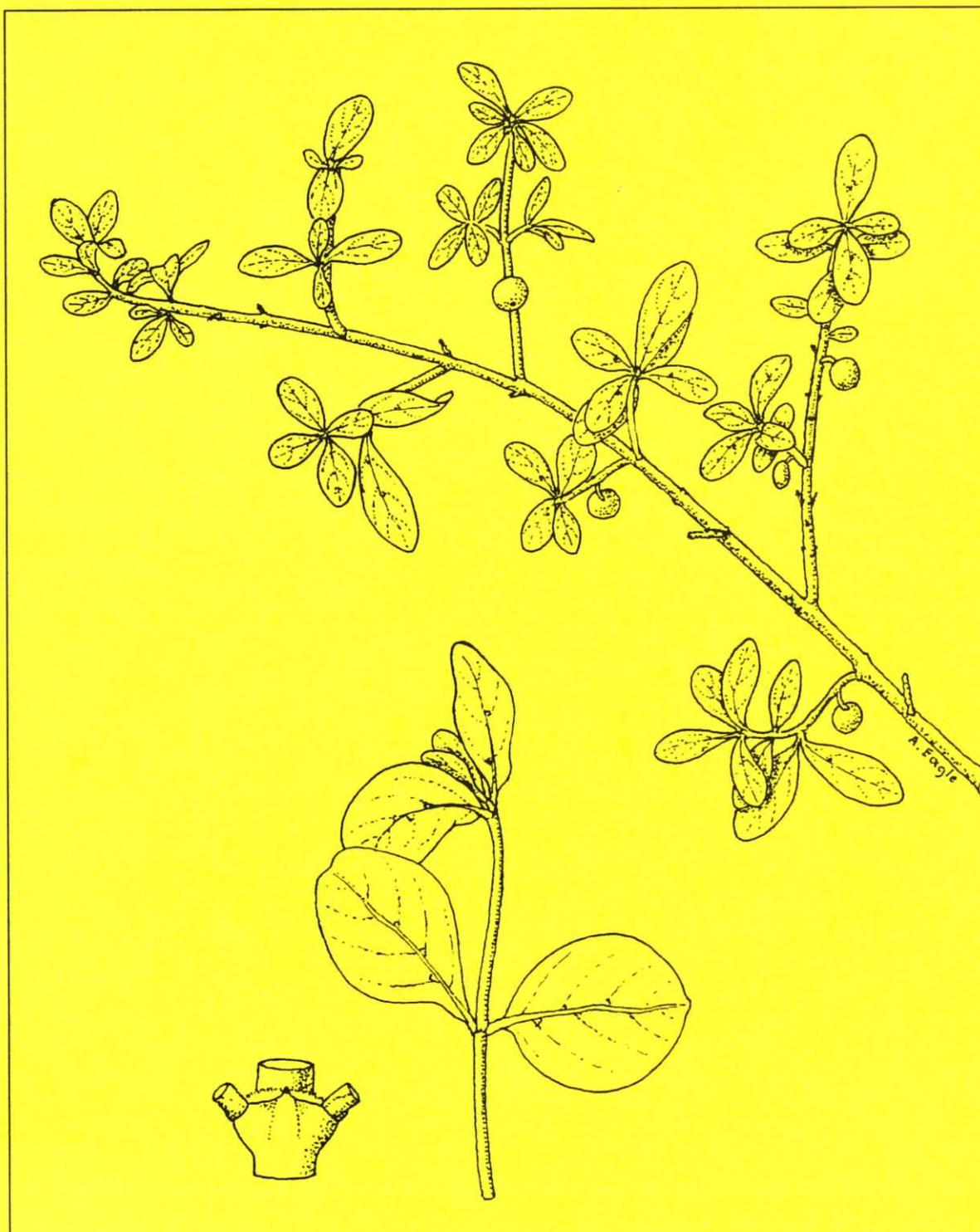


NEW ZEALAND BOTANICAL SOCIETY

NEWSLETTER

NUMBER 56

JUNE 1999



NEW ZEALAND BOTANICAL SOCIETY
N E W S L E T T E R
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New Zealand Botanical Society

President:	Jessica Beever
Secretary/Treasurer:	Anthony Wright
Committee:	Bruce Clarkson, Colin Webb, Carol West
Address:	c/- Canterbury Museum Rolleston Avenue CHRISTCHURCH 8001

Subscriptions

The 1999 ordinary and institutional subs are \$18 (reduced to \$15 if paid by the due date on the subscription invoice). The 1999 student sub, available to full-time students, is \$9 (reduced to \$7 if paid by the due date on the subscription invoice).

Back issues of the *Newsletter* are available at \$2.50 each from Number 1 (August 1985) to Number 46 (December 1996), \$3.00 each from Number 47 (March 1997) to Number 50 (December 1997), and \$3.75 each from Number 51 (March 1998) onwards. Since 1986 the *Newsletter* has appeared quarterly in March, June, September and December.

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

Subscriptions are due by 28 February of each year for that calendar year. Existing subscribers are sent an invoice with the December *Newsletter* for the next year's 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 September 1999 issue (Number 57) is 27 August 1999.

Please forward contributions to: Dr Carol J. West,
c/- Department of Conservation
PO Box 743
Invercargill

Contributions may be provided on an IBM compatible floppy disc (Word) or by e-mail to cwest@doc.govt.nz

Cover Illustration

Coprosma aff. *neglecta* is a glabrous shrub about 1 m tall which branches sympodially from the base. It grows at the foot of a rocky outcrop on a hillside in the vicinity of Whangaroa Harbour, Northland. A branch and a large-leaved shade form are illustrated at natural size, a stipule is shown enlarged. A.P. (Tony) Druce had been working on a description of this plant for submission to the *New Zealand Journal of Botany*. This paper was to have been illustrated with a colour plate by Audrey Eagle. The negatives had been prepared for the publisher when, tragically, Tony became ill and the paper was never finished.

The cover illustration has been taken from the original coloured illustration which is to be included in the proposed "Eagle's Trees & Shrubs of New Zealand Vol. Three".

NEWS

New Zealand Botanical Society News

■ New Zealand Threatened Plant Committee progress report (1999 revision)

During the second week of March the New Zealand Threatened Plant Committee met at Landcare Research, Lincoln for a three day meeting. During this time a total of 35 personal and collective submissions providing detailed information on the status – and presumed status – of 563 potentially threatened taxa was assessed using the revised threat classification system of de Lange & Norton (1998). During the meeting Peter de Lange & Peter Johnson addressed problems of list publication and subsequent usage (or lack thereof) by national and international agencies, research and teaching institutions, as a survey by the committee has shown that the list is virtually ignored outside the New Zealand Botanical Society readership. This has led to spectacular confusion over the status of New Zealand's threatened vascular plants, especially in IUCN circles where publications dating from 1976, 1981 and 1987 are routinely used. To address this problem it was agreed that the 1999 revision will be offered to the *New Zealand Journal of Botany*, both to improve its status through external peer-review, and enhance international understanding and acceptance of the work. To meet the Society's requirements of publication within this newsletter the editor of the *New Zealand Journal of Botany* has agreed to allow partial duplication of the list after its publication in the *New Zealand Journal of Botany*. Furthermore, to address concerns raised over taxonomic issues the committee seconded Peter Heenan to provide advice on how to deal with undescribed taxa/tag names. Advice on this matter was also sought from Phil Garnock-Jones, Brian Molloy and Ilse Breitwieser. At present it is anticipated that the 1999 revision will be published within the *New Zealand Journal of Botany* toward the end of this year. In the interim, we suggest that for all conservation assessments the existing list (Cameron *et al.* 1995) be used. The committee members also ask that list users please refrain from asking for the revised status of various taxa – all will be revealed in time.

Acknowledgements

The committee would also like to acknowledge the submissions received from the following individuals (in no particular order). We appreciate the time and effort required to prepare these, and are very grateful that all submissions were received well before the February 20th 1999 deadline. G. Jane, M.J. Bayly, P.J. Garnock-Jones, M.J. Heads, D. Glenny, I. Breitwieser, E. Asquith, P.J. de Lange, D.A. Norton, N. Singers, B.D. Rance, J. Barkla, G. Rogers, J.W.D. Sawyer, G.Y. Walls, P.D. Champion, A.D. Thomson, S.M. Beadel, W.B. Shaw, B.D. Clarkson, M. Merrett, B.R. Burns, P. Thomson, B.P.J. Molloy, P.B. Heenan, C.C. Ogle, E.K. Cameron, D.R. Given, L.J. Forester, L. Collins, R. Stanley, N. Head, C.J. West, G. Davidson, H.D. Wilson.

We would also like to thank Rob McColl, Don Newman and Geoff Hicks (Science & Research Unit, Department of Conservation) for funding the meeting expenses.

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Cameron, E.K., de Lange, P.J., Given, D.R., Johnson, P.N., and Ogle, C.C. 1995. New Zealand Botanical Society threatened and local plant lists (1995 revision). *N.Z. Botanical Society Newsletter* 39: 15–28.

de Lange, P.J.; Norton, D.A. 1998: Revisiting rarity: a botanical perspective on the meaning of rarity and the classification of New Zealand's uncommon plants. *Royal Society of New Zealand Miscellaneous Series* 48: 145–159.

P.J. de Lange, Committee Convenor, Science & Research Unit, Department of Conservation, Private Bag 68908, Newton, Auckland. Email: pdelange@doc.govt.nz

Regional Botanical Society News

■ Auckland Botanical Society

March Meeting

The AGM was followed by an illustrated talk by arborist Lance Goffart-Hall. Lance trained in England, then worked in Bermuda for three years and has been in New Zealand for the last seven years. In that time he has studied and photographed the historic and notable trees of Auckland. These fine specimen trees are located in parks, reserves and private gardens around town, and while most are exotics, some pohutukawa were included. Although Lance listed criteria for deciding whether or not a tree is notable, he made the apt comment that when you see one, you know it! The evening concluded with a short sound and slide presentation, which illustrated the forms, colours, fruits, flowers and leaves of these impressive plants.

March Field Trip

The annual Hauraki Gulf trip was centred on two small greywacke islands and a rock stack situated just south of Kawau Island. A calm sunny day made conditions perfect for landing on Motutara at low tide. A shoreline walk led to the tombolo between Motutara and the rock stack, Kohatutara. The halophyte community on Kohatutara was explored, as were the empty seagull nests. A blue penguin cruising close to the shore intrigued the children. Back on Motutara the area that had been quarried for road metal yielded up both species of *Cheilanthes*, *C. distans* and *C. sieberi*, and *Geranium solanderi* "coarse hairs". After lunch and a swim it was a short walk to Moturekareka Island. Here the vegetation was taller, with many large old pines. One small tawapou was seen. The wreck of the Rewa, which had been beached as a breakwater many years ago, lies rusting off the main beach. Many exotics, including tobacco, grow on the house site of the various hermits who have lived there.

Although these islands are only 3 or 4 km from the mainland, the "island influence" is seen in the presence of plants which don't grow on the adjacent mainland, such as *Melicytus novae-zelandiae* and *Einadia trigonos* (*E. triandra* was also present) and in the larger fronds of *Asplenium haurakiense* and the more robust, upright bushes of *Coprosma repens*.

Easter Field Trip

The education lodge at Pureora Forest Park was the base for the Easter camp. On day one the morning was spent on the frost flats and bush near the lodge. Many of the *Coprosma propinqua* bushes on the frost flats were coloured blue, so heavily were they in fruit. The divaricators kept people intrigued. An unusual sight in the bush was the thick covering of fallen fruit on the ground – a sign of a successful possum eradication campaign. In the afternoon, a swamp yielded up *Gahnia rigida*, *Clematis quadribacteolata* and *Sparganium subglobosum*. The next day on Mt Pureora a good sprinkling of vegetable caterpillars caused some excitement. On the summit the bog pine, *Halocarpus bidwillii*, was fruiting well. On Easter Monday some short walks were undertaken around the headquarters before the main party left for home. Finding *Dactylanthus taylori* rounded off the camp nicely. The stragglers who stayed an extra night were rewarded by finds of *Gratiola sexdentata* and one small plant of *Spiranthes sinensis*.

April Meeting

Merilyn Merrett spoke on her studies on the difficult genus, *Alseuosmia*. A plant found growing in the Waikato and tag-named *A. sp. "hakarimata"* was compared with the type specimen and original description of *A. quercifolia*. Merilyn's studies led her to conclude that the two entities were identical, and that *A. quercifolia* should be reinstated as a species. Although during her research she came across occasional hybrids between *A. macrophylla* and *Alseuosmia*, she thought that they were not as common as had previously been suggested. Her computer-generated Powerpoint display was a first for ABS.

April Field Trip

For the morning walk over a saltmarsh bordering the Kaipara Harbour it was promised that the water was never higher than gumboot level. Alas, the highest tide in over 30 years meant that the water rapidly became almost higher than leg level. The plants indicated whether the water was fresh, salt or brackish, and how high above or below (normal) tide levels they grow. Raupo and *Baumea articulata* grew in the fresh water margins, then graded through *Baumea juncea* to a mosaic of sea-rush and jointed rush. Saltmarsh ribbonwood grew on higher ridges, and out in the tidal flats were very large mangrove trees. The *Sarcocornia* flats were by this time completely under water, but it could be seen how the introduced saltwater paspalum, *Paspalum vaginatum*, was smothering the native plants. During the rush back to dry land before the tide reached uncomfortable levels, there was time to notice the many insects clambering up the rushes to escape a watery death, and the kingfishers swooping from nearby macrocarpa trees to take advantage of the easy pickings. Judging from their calls, the many fernbirds were busy also. Through binoculars it could be seen that the sea was pouring over stopbanks onto the neighbouring pastures. Plans for lunching on the Hotea wharf had to be modified, as only the top-most railings were visible above the water.

Despite the strong wind and occasional rain showers, the afternoon was spent on a nearby farm, first in a cabbage tree swamp which contained numerous *Coprosma tenuicaulis*, then in

bush that graded into gumland scrub. After a successful search for that contrary plant, *Pimelea prostrata* var. *erecta* the party straggled back over fields to the cars and dry clothes.

May Meeting

A large audience was left almost breathless after an illustrated talk by that ever stimulating, ever controversial doyen of the plant world, Graeme Platt. The first part of the talk covered his studies of members of the Araucariaceae, mainly in New Zealand, Australia and Norfolk Island. The second part, well-illustrated with slides and diagrams, expounded his theory on the six stages that vegetation passes through before climax forest is established, and the characteristics of the plants in each stage.

May Field Trip

The bush surrounding Winstone's quarry at Wainui was the site of this month's field trip. A geologist from the company explained the geology of the area and quipped that the quarrying operation separates the components of the conglomerate rock, then later on they're all recombined to make concrete. Plans to preserve some areas and to restore others were also discussed. First our leader, Rhys Gardner, took the party to an artificial pond to see *Potamogeton pectinatus*, a plant rarely seen in this locality, then led the way up an old road to the high point above the quarry. The vegetation was second growth bush with some kauri and taraire, and some good trees of northern rata were seen. *Hypolepis distans* and *Pimelea longifolia* were of special interest. After a downhill slog a second quarry was reached, then a road walk completed the round trip.

Forthcoming Activities: Evening Meetings

- 2 June – Waitangi Tribunal Claim 262
- 7 July – Visit to the new Natural History Hall, Auckland Museum
- 4 August – Student Presentations

Field Trips

- 19 June – Kauri Glen & Fern Glen, Birkenhead
- 17 July – Mt Eden rock forests
- 21 August – Rangitoto Island

Maureen Young, 36 Alnwick Street, Warkworth

■ **Waikato Botanical Society**

After some eight months in recession the Waikato Botanical Society has returned! A new committee has been elected: *President*: Marilyn Merrett; *Secretary*: Bruce Burns; *Treasurer*: Lisette Collins; *Committee*: Warwick Silvester, Mike Ogle, Karen Denyer, Bruce Clarkson, Sarah Hunger, and Chrissen Gemmill. As well, it has been decided to press ahead with a special project – the production of a book on the Botany of the Waikato. A "book" subcommittee is currently scoping out the project and identifying potential authors.

Forthcoming activities

Sunday 13 June. Hammond Bush. A chance to visit this interesting patch of indigenous forest in Hamilton City. Recent construction of a boardwalk, at the expense of some native species, has caused some controversy. Leader: Lisette Collins. Contact Ph. 855 7157 (h). Meeting time: 10 a.m. Meeting place: Malcolm Street, Hillcrest.

Monday 12 July 7.30 p.m. Raoul Island. Mike Ogle of DoC will give a talk about the species that occur on Raoul Island, weed problems, the DoC control programme, and recovery from the impact of goats. Venue: Landcare Research tearoom, Gate 10, Silverdale Rd, Hamilton.

Sunday 15 August. Kakepuku Historic Reserve. Kakepuku is an isolated, symmetrical, basaltic volcanic cone located south-west of Te Awamutu. Its highest point is 449 m above sea level, and historically was surrounded by swamp. The Reserve is 132.5 ha and primarily rimu-rata forest, with tawa, kohekohe, hinau, rewarewa, mangeao, and pukatea. There will also be an opportunity to see *Alseuosmia quercifolia*. Leader: Bruce Burns. Contact Ph: 855 4723 (h) 858 3728 (w). Meeting time: 9 a.m. Meeting place: Landcare Research carpark.

Monday 13 September 7.30 p.m. Ethnobotany. Rob McGowan of the University of Waikato will give a talk about the traditional Maori uses of native plants. Venue: Landcare Research tearoom, Gate 10, Silverdale Rd, Hamilton.

Sunday 10 October. Opuatia wetland. This is a young bog, and *Sporodanthus traversii* has been recorded in the recent past and we would like to relocate it. Orchids should be flowering, and as a bonus, we have the task of compiling a comprehensive species list. Wetsuits NOT required! Leader: Bev Clarkson. Contact Ph. 855 9534 (h) 858 3730 (w). Meeting time: 9 a.m. Meeting place: Landcare Research carpark or 10.15 a.m. at the Rangiriri Hotel.

Bruce Clarkson, 7 Lynwood Place, Chedworth, Hamilton

■ **Manawatu Botanical Society**

The Society had a busy year in 1998, with a number of trips and meetings. Our first working party was to Keeble's Bush, which is a small patch of lowland Manawatu podocarp forest under the ownership of a Trust. We began the process of putting in permanent transect lines under the guidance of trustees Peter van Essen and Mike Greenwood, the bush's long-term custodian. The intention is to remonitor the fixed plots along the transects at future intervals, and the work has already been useful in mapping locations of large podocarps within the 17 ha bush.

Our other workshops were lab-based, starting with an investigation of dendrochronological techniques, led by Peter van Essen, who demonstrated tree coring, and core preparation. Later Jill Rapson got together some native brooms, some data from Peter Heenan's latest revision of the group, and some members to help her sort out these tricky species. At least the (taxonomically unusual) lumping of species within a single genus, *Carmichaelia*, makes sense to the field ecologist.

One talk to the Society was by John Flenley, discussing pollen sampling and analysis, and issues affecting the understanding of vegetation history in New Zealand, which can usefully be addressed using palynological techniques. One issue is using vegetation disturbance as an analogue of human impacts to time arrival of people in New Zealand. Another talk was by recent doctoral candidate Brett Robinson discussing his research on the use of hyperaccumulating plants, which extract heavy metals from soils as a byproduct of nutrient and water uptake. Brett believes there is potential to use such plants to accumulate and harvest both pollutants and metals such as gold from contaminated soils. Future developments are eagerly anticipated.

We also continued our efforts at compiling a matrix of species lists for all the reserves in the region by making another attempt to complete our list for the Ashhurst Domain, a very varied and complex remnant at the mouth of the Manawatu Gorge. Our second reserve for the year was Pryce's Rahui Bush, property of the Royal Forest and Bird Society, near the Rangitikei River south of Hunterville. This is a most attractive but rarely visited patch of podocarp forest, with several pleasant tracks, and charming swamp forest of kaihikatea.

Other excursions were to Little Sutherland's Bush and Bruce Park. The former has amazing pole stands of podocarps, probably dating back to disturbance a century or more ago. The reserve is largely untracked, but has incredible atmosphere and quite a diverse flora. Bruce Park, close to the former, but much more accessible because it straddles State Highway 1, is well known, and always a treat, with its nikau stands and patches of *Marattia*. Members also joined some plant ecology students from Massey University on an excursion to Castlepoint, to check up on progress in survival and growth of the tagged populations of *Brachyglottis compacta*, the rare, restricted tree daisy.

The year finished, as it began, with a meal at a member's house, and inspection of the resident patch of bush. We started at Yvette Cottam's, where there is a small, but quite rich patch of regenerating bush, lacking tall trees, but with lots of plans for its long-term future. The Xmas party was at Mike Greenwood's fascinating home-made bush, planted progressively since 1955, and now starting to function as a self-perpetuating system, but with interesting differences in species susceptibility to drought. Another curiosity was the karaka seedling grove established underneath an old rat's nest in a rewarewa tree.

1999 is an auspicious year for the Manawatu Botanical Society as it has its tenth anniversary in July, an event which will be marked by a gathering of past and present members at Jill's place on Saturday 17th. Founder members and friends are very welcome to attend!

Regular meetings and trips are also scheduled, with the first meeting of the year having been a slide show by Jill on the recent fourth year plant ecology student trip to Great Barrier Island and Mt Moehau on the Coromandel Peninsula. Jill outlined the programme of work the students undertook, and demonstrated the interesting flora, with all its delightful northern features such as taraire and puriri, as well as adults of *Pseudopanax laetus* and *Raukaua edgerleyi*, "prostrate" *Leptospermum sinclairii*, *Olearia allomii* and deliciously flowering *Ixerba brexioides*, as well as dainty comb ferns (*Schizaea dichotoma* and *S. fistulosa*). *Lygodium articulatum*, the climbing fern, always rouses interest amongst southerners, used to more decorous pteridophytes. Bot. Soccers also toured the outstanding landscape values of these two areas by proxy. Details of the research will be recounted by the students later in the year. Our June trip will be to a local privately-owned remnant to assist the owner in species identification, and later winter trips will be to reserves in the upper Pohangina Valley.

With a small, but dedicated and faithful membership, the Society looks forward to its second decade. New members are welcome to contact Jill at the address below.

Jill Rapson, Ecology, Institute of Natural Resources, Massey University, Palmerston North.
Email: G.Rapson@massey.ac.nz

■ Nelson Botanical Society

March Field Trip: Delaware Bay

The first stop was the Paremata Flats Reserve, a remnant of fertile, lowland, coastal forest with scattered large old kowhai, ngaio, kahikatea, titoki and totara. Of particular interest were leafy mistletoe (*Ileostylus micranthus*) on hawthorn and saltmarsh ribbonwood, abundance of fruit on the native passionfruit and the leafless lawyer, *Rubus squarrosus*, with many more leaves than is normally seen. On the margins of the estuary it was then wet feet and large areas of *Samolus repens* and *Selliera radicans*. Two kms further around the estuary, and only a few hundred metres further inland, the second area was quite different. Here pukatea and tawa formed the main canopy. The bush had been fenced for six years so it had a thick understorey of kawakawa 2m high and numerous *Coprosma areolata* covered in lovely violet fruit. A large *Griselinia lucida* 20m up a pukatea tree identified (with difficulty) by its deeply grooved roots and native passionfruit vine with a circumference of 40cm were also noteworthy. (Julie McLintock)

Easter Camp: D'Urville Island

The group of 17 was based at Waitai Bay. Some arrived Thursday and the rest the following morning. We met up about 5 km back along the road from base, from where we set out to explore the forests. The upper forest was dominated by hard beech with rimu, miro, matai and the odd yellow-silver pine as emergents. In rocky areas kidney fern was prolific on the ground along with a variety of other filmy ferns. Everywhere fruits were prolific, with those of *Neomyrtus pedunculata* being the most spectacular. Other plants of interest included the shiny-leaved *Raukaua edgerleyi* and the twiggy tangles of *Raukaua anomalus*, *Pittosporum divaricatum*, and *Myrsine divaricata*. The long return walk traversed a variety of shrublands with the odd patch of kohekohe or pukatea forest along the roadside. On Saturday we were shown round Puangiangi I. by the landowner, Ross Webber. The bush near the house was a treasure of mixed coastal forest with fierce lancewood (*Pseudopanax ferox*), *Melicactus obovatus* "Cook Strait", and kohekohe densely laden with huge bunches of fruit. Around the orchard, the green mistletoe (*Ileostylus micranthus*) was widespread on a variety of fruit trees and native shrubs including tauhinu (*Ozothamnus leptophyllus*). Nearby Cook Strait kowhai, in flower, was finally located on a steep headland. The eastern slopes had mixed forest on rock bluffs with *Streblus banksii*, patches of kiekie, and many mature fierce lancewood. At the southern end of the island, cliffs were covered with sparse scrub and odd patches of kohekohe forest. At the southern tip an extensive kohekohe stand had quite a varied fern understorey, including *Lastreopsis velutina*, *Pellaea rotundifolia* and *Asplenium oblongifolium*. Trees of interest here included hinau, titoki and tawa and an abundance of huge plants of the tiny mistletoe *Korthalsella salicornioides*, on kanuka. On Sunday two forest remnants on the headlands at Pah Point were investigated. Both patches were largely dominated by tauhinu shrublands with small pockets of kohekohe forest. In the first, *Ileostylus micranthus* was quite common and a few fierce lancewood were seen. Other plants of interest here were *Gahnia*

lacera and huge wharangi. In the second patch *Korthalsella salicornioides* was abundant on kanuka and the forest contained black and hard beech, *Collospermum hastatum* (on steep slopes), *Doodia media* and *Helichrysum lanceolatum* on drier slopes. The return walk along the shore explored the beaches, cliffs and several small wetlands. One small wetland was covered with a film of bright red alga. Flax, niggerheads (*Carex virgata* and *C. secta*) and raupo were common and in one wetland a few pukatea were present.

On Monday morning we hitched a ride as far as Attempt Hill and traversed ultramafic scrub, hard beech forest and the transition to lowland kohekohe/tawa forest down to the ferry landing. In the ultramafic scrub *Carpha alpina* was common along with *Hebe urvilleana* and *Olearia serpentina*. Filmy ferns were especially prolific in the upper forest. Here *Poranthera microphylla*, red flashes of the *Metrosideros fulgens* and the heavy scent of *Earina autumnalis* provided special interest. Further on kohekohe became more common, often heavily laden with bunches of fruit and next season's flowers. Finally the forest stopped and we were within sight of journey's end – the ferry wharf.

April Field Trip: Pelorus Bridge

The dense podocarp forest at Pelorus Bridge is a rare gem. We started at the Totara Picnic Area where divaricating shrubs including *Melicope simplex* and *Raukaua anomalus* occurred under mahoe and putaputaweta which were fruiting profusely. Further along the tall podocarps tested our ingenuity to identify them by their bark alone and two *Dicksonia* species were readily distinguished. We lunched by the riverbed alongside a patch of twiggy *Muehlenbeckia ephedroides*. After lunch we found *Hebe rigidula* and *Wahlenbergia rupestris* among the rocks. From there we wandered on to the Circle Walk where the warmer, typical black beech forest had an understorey of prickly mingimingi, *Coprosma microcarpa*, *Helichrysum lanceolatum*, *Corokia cotoneaster* and the local endemic *Hebe divaricata*. Away from the podocarp/tawa forest many large, corky-barked hinau lined the track back to the carpark.

May Field Trip: Tinline

En route to Tinline we stopped briefly to see the recently discovered *P. aff. obtusa*. After lunch the "closed" nature walk nearby was investigated. This leads through a streamside remnant of hard beech forest. The remnants of a good flowering and fruiting summer were still evident with an abundance of hard beech seedlings, and plants such as *Coprosma propinqua* and kiekie still had an abundance of fruit. The area is rich in filmy ferns, including *Hymenophyllum scabrum*, *H. revolutum*, *H. bivalve*, and *Trichomanes reniforme*. Other plants of particular interest were lawyers (*Rubus australis*, *R. cissoides* and *R. schmidelioides*) and *Astelia solandri* and *A. trinervia*.

Forthcoming trips

June 20	Motueka Estuary
July 18	Mahana – Mapua
August 15	Duppa
September 19	George Creek

Graeme Jane, 136 Cleveland Terrace, Nelson

■ **Canterbury Botanical Society**

November Meeting

Trevor Partridge spoke about biological control of weeds. He gave a very interesting and thorough account of "reuniting the weed with some of its natural enemies". Initial investment is high, but after a release is done the costs are low. Great care is needed to ensure that only target plants are affected, and the screening period is often long. Organisms are now affecting ragwort, gorse, broom, nodding thistle and St. John's wort. Others are in the pipeline for buddleja, heather, hieracium, old man's beard, and boneseed. The effects are gradual and usually do not kill the targeted plants. The work is led by Pauline Syrett at Landcare Research, Lincoln.

December Camp: 4-6 December

Based at Hanmer Springs, on the first day one group climbed to the summit of Mt Isobel from Jacks Pass and the second group explored the Dunblane Track. On the second day we walked through the covenanted plantation forest dating from 1902 which is administered by

Carter Holt Harvey, Brooke Dawson and Roger Keey pointed out the special features of native regeneration under an opening canopy.

January Camp: 2–9 January

The camp at Nydia Bay, Pelorus Sound was attended by 27 members, relatives and friends. The Lodge, set in kanuka/manuka, is comfortable, the scenery beautiful, and interesting botany is close by. Murray Timbs, the honorary ranger, advised on tracks and we climbed to Nydia Saddle, Kaiuma Saddle, and up the Opouri valley, scene of a huge logging operation during the first two decades of the century. Ferns abound, and there is plenty of variety of herbs, shrubs, vines, and trees with a distinctly northern tinge. On our final day the launch picked us up to go to predator-free Maud Island, with wonderful seascapes and bird-life on the way. The tui, large invertebrates, native frogs and tame takahe on Maud Island were impressive. An article on Nydia Bay botany will appear in our journal for this year.

February Meeting

This was a chance to show slides and prints taken at Nydia Bay and Maud Island. Also a slide show entitled "Palm, cypress, and monkey puzzle – the three giants of the Chilean forest" by Peter Wardle; and plant studies in some national parks of North America by David Holyoake.

February Field Trip

The day was spent in Glentui Stream, north of Ashley Gorge. In the lower reaches is a large remnant of bush with a canopy of mahoe. Here is a tree of *Streblus heterophyllus* 6 m tall, and several saplings. In the upper reaches where the stream is gorgy with waterfalls we saw several open-crowned southern rata, and many saplings. We returned through wet forest on a terrace on the true left of the stream, where there are trees and numerous saplings of rimu, kahikatea, matai, and miro. The leaders were Allen and Matthew Cookson.

March Meeting

Warwick Harris spoke about the degree of success of New Zealand woody plants in trials in France, mainly at Angers in the Loire Valley, but also in Brittany and the Cote d'Azur. Two major problems have been incompatibility of some provenances with calcareous soils, and inability to cope with periodic bouts of severe winter cold. Among promising plants for horticultural development are *Discaria* (for hedges!), *Plagianthus divaricatus*, *Corokia cotoneaster*, *Coprosma propinqua*, *Phormium cookianum*, and some *Leptospermum scoparium* provenances. Warwick unearthed some Akaroa specimens of *Nothofagus fusca* in the Paris herbarium, collected by J. Hombron in 1840 (d'Urville Expedition) and J-J. Vedel, an officer on the *Rhin* (1843–1846).

March Field Trip

The new privately owned and public-friendly Omaha Bush Reserve on the Port Hills was visited by sixteen members led by Colin Burrows. A zig-zag track descends from the Summit Road near Gibraltar Rock through mixed broadleaved forest beside a small stream. It then traverses westwards into semi-open areas and tall manuka, with some broadleaved trees and occasional podocarps, before climbing to open grassland and gorse patches beneath Gibraltar Rock. Walking quickly, the round trip could be done in about an hour, but there are various diversions and very good botany. Among the plants seen were *Cyathea smithii* and *C. dealbata*, *Tmesipteris* cf. *elongata*, *Botrychium australe* (possibly not recorded for the Port Hills before), three species of *Asplenium*, and four species of *Blechnum*. Bearing fruit, and in some cases being visited by kereru, bellbirds, and silvereyes, were *Astelia fragrans*, *Aristolelia serrata*, *Coprosma* spp., *Cordyline australis*, *Pennantia corymbosa*, five-finger, supplejack and *Schefflera digitata*. Seed-filled droppings lay along the track. The numerous ground herbs included *Schizeilema trifoliolata* and *Acaena juvenca*.

April Meeting

Kaitorete Spit, its structure, vegetation, and many interesting features of its biology were described by Trevor Partridge.

May Meeting

Peter Heenan, Landcare Research biosystematics group, gave an illustrated talk about some of the genera which he is working on. These include the lineage of the Australian genus *Swainsona* from which he has separated our species into a new genus *Montigena*,

Ischnocarpus exilis, and the complexity in *Sophora microphylla*, *Cardamine*, and *Neopaxia* which are yielding many new entities.

May Field Trip

We visited the Herbarium at Landcare Research, Lincoln. In the preparation room Mary Korver demonstrated how angiosperm material is selected for pressing, how it is arranged and dried, and the importance of notes on the fresh appearance and scent to accompany the specimen. After seeing how the dried specimens are mounted and treated against insects, Murray Parsons, Herbarium Keeper, took the group through the dicotyledon, and fern/gymnosperm rooms where the many uses, and documentary and archival importance of the collections were explained. There was recently a gathering to celebrate the databasing of the labels of 100,000 specimens computerised, – yet over 400,000 await entry. Over morning tea there was lively discussion about Maori traditions and names of plants.

Forthcoming Events

June 12, 11 a.m.–2 p.m. A.G.M. and social at St Ninian's Church Lounge, Riccarton. The speaker will be Janet Wilmshurst, Landcare Research, Lincoln "Probing peaty problems on New Zealand's subantarctic islands". Contact: Roger Keey (03) 3588513.

July 2, 8 p.m. Max Visch will speak on "Wild Flowers".

July 3, 10 a.m. Max Visch will lead a walk in the Christchurch Botanic Gardens. Contact him at (03) 3382273.

August 6, 8 p.m. Colin Meurk will speak on aspects of urban revegetation, including recent overseas experience. Contact: Bryony Macmillan (03) 3519241.

August 7, Joe Cartman will host a visit to the Christchurch City Council's tree nursery at Styx River, and surrounding planted areas. Contact him at (03) 3522164.

To buy "Etienne Raoul and Canterbury Botany 1840–1996" edited by C.J.Burrows, and "Naturalised Vascular Plants on Banks Peninsula" by Hugh D. Wilson, published by the Society, contact The Treasurer, P.O. Box 8212, Riccarton, Christchurch. Visitors are very welcome at all our meetings.

Bryony Macmillan, Colin Burrows and Trevor Partridge, P.O. Box 8212, Riccarton, Christchurch

Obituary

■ **Anthony Peter (Tony) Druce (1920–1999)**

On 15 March, Tony Druce passed away in Lower Hutt Hospital. Tony Silbery (*pers. comm.*) put it nicely when he said, "A giant totara has fallen in the forest". There is no doubt that Tony made an enormous contribution to our knowledge of plant distributions and taxonomic limits. One only has to look in any issue of the *New Zealand Journal of Botany* in the last 20 years to see how many of Tony's specimens formed the basis of new species' descriptions or systematic revisions. Not only did he contribute through his collections but he also trained many amateur and professional botanists in the art of field botany – how to recognise differences between taxa, the importance of subtle changes of habitat, plant collection (Tony was quite annoyed when the *New Zealand Listener* was down-sized as it was no longer suitable for collecting into), and back country skills. The members of the Wellington Botanical Society and botanists throughout New Zealand benefitted from Tony's tutelage.

Tony cut his teeth, botanically, in the Ruahine Range when he accompanied Norm Elder on trips, as a schoolboy. He was not formally trained as a botanist but his keen eye and a deep interest in landscape and vegetation drew him in to the subject. In his early years at Botany Division, Tony worked for Vic Zotov, learning grasses from the master. Karl Popper provided the scientific method which Tony followed. For many years Tony concentrated his botanical excursions on the ranges of the southern North Island and northern South Island and then he expanded his round of annual trips to include Canterbury and northern Southland and he worked frequently in Northland. His first major work assignment was to undertake a vegetation survey of the Hutt River catchment (with Ian Atkinson). He then went on to interpret the vegetation patterns of Egmont National Park.

In all, Tony undertook more than a thousand trips into the hills, resulting in hundreds of cross-checked regional and local plant lists and more than 424,800 plant specimens. (All of Tony's plant collections were documented in notebooks. Notebooks 2–9 contain the details of 424,844 specimens and notebooks 1 and 10 are missing.) Tony's plant lists are used extensively by botanists throughout the country, and the herbarium at Lincoln, CHR, has been the recipient of Tony's prodigious and meticulous collections.

Tony led by example. Those who learned botany from him absorbed the skills by watching Tony and asking questions. He very rarely lectured on any topic and would only do so if pressed, as he was a shy man. His navigational and back-country skills were superlative (learned from Norm Elder) – he could get back to camp in dense mist with the greatest of ease. Any one else would have got lost.

A full obituary for Tony will be published in the September issue of the *New Zealand Journal of Botany*.

Acknowledgement

Thanks to Helen Druce for commenting on this note.

Editor

■ **Grace Marie Taylor - nee Bulmer (1930–1999)**

Marie died in Auckland on 24 April. An obituary for her will be published in the next *Newsletter*.

Editor

NOTES AND REPORTS

Plant Records

■ **Notes on the endemic Norfolk Island groundsel *Senecio evansianus* (Asteraceae)**

Introduction

Belcher (1992a) revised the Norfolk Island species of the cosmopolitan genus *Senecio*. In his treatment he recognised three endemic species: *S. australis* Willd., *S. evansianus* Belcher, and *S. hooglandii* Belcher. The last two, were described as new species (Belcher 1992a), whilst in another very thorough paper Belcher (1992b) unravelled the long and confused history of *S. australis*, with the conclusion that this species is indeed a Norfolk Island endemic.

Previously all three species had been variously treated as *S. lautus* Willd., or in the case of *S. evansianus*, possibly as *S. glomeratus* Poir. This fact, together with some ambiguity over the status of some Mokohinau Island (New Zealand) collections of the endemic *S. marotiri* C.J.Webb (de Lange 1998), led to my specific search for material of all three Norfolk *Senecio* species during my November 1998 visit to Norfolk. In this way I hoped that I could critically compare them with New Zealand members of the *S. lautus* complex.

Specific searches of all the Norfolk Island locations noted by Belcher (1992a), successfully located material of *S. australis* and *S. evansianus*. However, specimens of *S. hooglandii* remained elusive – indeed, along with its author (Belcher 1992a) I have doubts about the validity of recognising this species at all. *Senecio australis* proved less common than I had been led to believe, though this may in part have been due to the rather dry 1998 winter affecting the usual spring flush of annuals (M. Christian *pers. comm.*). Nevertheless, large populations of *S. australis* were located above Cascades Bay, and at Rocky Point (The 100 Acres), and smaller numbers of plants were seen near Cook's Monument. Herbarium specimens, preserved capitula, and achenes were acquired for critical comparison with *S. marotiri*. The remaining species, *S. evansianus* proved to be extremely uncommon, and several days searching located only a handful of plants. Again some herbarium material, capitula and achenes were acquired for further study back in New Zealand. The following brief account highlights some preliminary observations made on *S. evansianus* whilst on Norfolk, and during subsequent study of cultivated material. Based on my observations I suggest that this species may be in serious threat of extinction.

Habitat and ecology

Senecio evansianus was definitely observed in two locations, the vicinity of Bloody Bridge and at Bumbora Bay Reserve. A third sterile plant, observed on the track leading from Bird Rock to Cook's monument, may also have been this species.

As Belcher (in Green 1994) has already observed, *S. evansianus* seems to have a preference for seasonally damp granular clay and clay loams, growing in partial shade, where it grows amongst the roots (or in the vicinity thereof) of Norfolk pine (*Araucaria heterophylla* (Salisb.) Franco). Indigenous associates noted at both sites included *Carpobrotus glaucescens* (Haw.) Schwantes, *Tetragonia implexicoma* (Miq.) Hook.f., *Lobelia anceps* L.f., *Samolus repens* (J.R.Forst et G.Forst.) Pers. (?var. *strictus* Cockayne - see discussion by de Lange 1999), and *Asplenium difforme* R.Br. At Bumbora Bay a single patch was found after several hours searching, this grew on relatively bare ground on an eroding slope under an open Norfolk pine canopy. At Bloody Bridge plants were found in two locations, one immediately above Bloody Bridge on a steep slope, where specimens were confined to the shaded side of an eroding root mass derived from a stand of Norfolk pine. The second site, near a small walking track to the beach below Bloody Bridge, grew in the vicinity of a red-tailed tropic bird (*Phaethon rubicauda*) nest, at the base of Norfolk pines, on semi-compacted granular clay loam covered in pine litter. The sterile Cook's monument plant, which was possibly this species, grew with *S. australis* at the edge of the walking track near the base of a Norfolk pine which was partially smothered in a dense stand of African olive (*Olea europaea* subsp. *cuspidata* (G.Don) Cif.).

All these locations suggest that *S. evansianus* has a requirement for shade and some level of disturbance, presumably to keep the habitat free of competition, and possibly to ensure a fresh turn-over of nutrients. All the habitats occupied by the species, suggest that it is a strict basicole (*sensu* Molloy 1994) - i.e., has a strong requirement for base-rich soils and associated substrates.

Morphological variation within *Senecio evansianus*

Belcher (1992a) and Belcher (in Green 1994) provide good descriptions and illustrations of *S. evansianus*. Distinguishing features include its low sprawling habit, sparsely pilose foliage, and discoid capitula. The basal leaves of *S. evansianus* are described as crowded, obovate, obtuse, entire, rarely lobed, the mid-cauline leaves as oblanceolate, occasionally pinnately-lobed, and the upper leaves usually much-reduced, and linear-lanceolate. The wild plants I observed agree with all these characters, save those plants on the slope above Bloody Bridge, which had distinctly radiate capitula. Interestingly, seedlings raised in New Zealand from this site and the main Bloody Bridge population, were quite variable with respect to their foliage, the majority possessing distinctly pinnatifid mid-cauline leaves. However, in all other vegetative respects they are a close match for *S. evansianus*. These cultivated plants have yet to flower.

Relationships

Senecio evansianus is a distinctive Norfolk Island endemic species, which seems to be most closely related to the Lord Howe endemic *S. howeanus* Belcher, based on a preliminary examination of New Zealand holdings of that species, e.g., *J.D. McComish*, WELT 73616!). It would seem that *Senecio evansianus* has little in common with the New Zealand endemic *S. lautus*, from which it differs markedly through its much smaller, sprawling habit, leaf texture and reticulate venation, colour and shape, capitula characters (especially the few linear to linear-lanceolate, or narrowly triangular bracteoles concentrated toward the peduncle apex), achene size and morphology. A much fuller account of these differences, along with a cytological investigation is being prepared (P.J. de Lange *unpubl. data*).

Conservation status

I spent ten days on Norfolk Island, all of which was devoted to botanical research. During this time, all known Norfolk sites for *S. evansianus* were surveyed, as well as large areas of potential habitat. Philip Island, from where the species has not been reported (Belcher in Green 1994) was not visited because of high seas.

These surveys located 13 plants of *S. evansianus*, (2 at Bumbora Bay, 11 at Bloody Bridge). Despite the large areas of suitable habitat at Rocky Point, and its past documented presence there, no plants were located on my three visits to that site. Although it is possible that the

small number of plants seen, was due to the unseasonably dry weather, at the two sites where I saw the species, plants were extremely vulnerable to smothering from rampant growth of the introduced kikuyu grass (*Pennisetum clandestinum* Chiov.). This aggressive grass can tolerate a wide range of habitat types, and its smothering habit offers little hope for the much smaller, slower growing *S. evansianus*.

Pending further survey, I would suggest that *S. evansianus* be considered a Critically Endangered species (*sensu* de Lange & Norton 1998). Even if, as I partly suspect, the dry winter weather of 1998 retarded the normal spring proliferation of annual plants, such that in wetter weather *S. evansianus* may prove more widespread, the near absence of suitable weed-free habitat on Norfolk Island still points to an uncertain future. This is all the more so, as I am not aware that the species is cultivated on the island, and as a relatively small, weedy plant, it is unlikely to prove popular with the general gardening fraternity. Accordingly, I would suggest that further survey for this species is needed to correctly ascertain its distribution and status. If, as I suspect, the plant is under serious threat, some form of conservation action is merited, not only to save the species but also to continue the otherwise excellent reversal of threatened species declines that I observed elsewhere on Norfolk during my stay.

In the interim, and as a further precaution against the potential loss of genetic diversity, the Auckland Regional Botanic Gardens Threatened Plant Network successfully germinated 14 plants of *S. evansianus* from achenes I collected at Bloody Bridge. Seed harvested from these plants will be distributed to other world seed banks, and made available to Norfolk Island conservation workers as required.

Cultivation

Belcher (1992a) cultivated *Senecio evansianus* prior to formally describing it. However, beyond stating that his plants retained their distinctive attributes he did not provide any further details. Preliminary results based on seed I gathered suggest that, unlike New Zealand lautusoid *Senecios*, *S. evansianus* seed takes much longer (three months minimum) to germinate. However, once seed has germinated growth is rapid.

Acknowledgements

I thank Rhys Gardner for prompting this investigation, and Gillian Crowcroft for field assistance and photography. Especially, I thank Margaret Christian (APNWS) for field assistance, encouragement, permits, transport, useful discussion, and her astounding dedication to Norfolk Island plant conservation. I particularly thank Patrick Brownsey and Philipa Scott of the Museum of New Zealand Herbarium (WELT) for access to Norfolk and Lord Howe Island *Senecio* collections. I also acknowledge the Science & Research Unit of New Zealand Department of Conservation for the necessary grant to visit Norfolk Island. Lastly I am grateful for the dedication of Steve Benham and his team at the Auckland Regional Botanic Gardens, who have propagated and maintained the majority of my Norfolk Island experimental accessions, and offered advice on their *ex-situ* conservation.

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P.J. de Lange, Science & Research Unit, Department of Conservation, Private Bag 68908, Newton, Auckland. Email: pdelange@doc.govt.nz

■ **Mistletoe secrets revealed: a new northern record for *Alepis flavida* from Rahui Island, Lake Waikareiti**

It is a botanist's dream to visit a natural ecosystem that has been unmodified by human disturbance and/or browsing animals such as goat, deer, and the ubiquitous possum. The islands of Lake Waikareiti fulfil such a dream, and present an opportunity to encounter plant species that have become rare in mainland forests.

Lake Waikareiti is located in Te Urewera National Park (NZMS 260 W18 GR 720 680). Within Lake Waikareiti are six small islands of varying size; Motungarara, Motutorotoru, Rahui, Te Arakoau, Te Kahaatuwai, and Te Oneatahu Islands. Rahui Island with its own small, tranquil lakelet in the south-east (GR 728 684) is the largest of the six.

In March this year, we spent three days in the Lake Waikareiti area hunting for leaves of the threatened red mistletoe *Peraxilla tetrapetala* (for DNA analysis to be conducted by J. Ladley & D. Kelly of Canterbury University). Druce (1974) first recorded *P. tetrapetala* from Rahui Island in 1973, and although it was not located by Shaw (1990) during botanical surveys of all six islands it is reported as being "locally common on silver beech in Te Urewera National Park" by King and de Lange (1995). The scarlet mistletoe, *P. colensoi*, was recorded by both Druce (1974) and Shaw (1990). *P. tetrapetala* and *P. colensoi* are both currently classified as vulnerable in the New Zealand threatened and local plant lists (Cameron et al. 1995).

We confirm that *P. tetrapetala* is present in relative abundance on Rahui Island, with 21 plants located from 18 host trees during our visit, from a partial search of the island centred primarily in the area south of the small lakelet. The host tree species of *P. tetrapetala* in this area is exclusively red beech (rather than silver beech as reported by King and de Lange (1997)), whereas *P. colensoi* is found exclusively on silver beech here.

Unexpectedly, *Alepis flavida*, the yellow flowered mistletoe was also discovered during our search for *Peraxilla tetrapetala*. Six plants of *A. flavida* were found in the area south of the island lakelet, and a further five slightly north of the lakelet. The host tree species of *A. flavida* here is red beech and, in some instances, it shares the same host tree with *P. tetrapetala*. We did not have time to explore all of Rahui Island during this visit, but assume the presence of *A. flavida* where red beech occurs. In addition, *A. flavida* was also located on both Te Arakoau and Te Kahaatuwai Islands. Specimens from Rahui and Te Kahaatuwai Islands have been lodged at CHR. It is our intention to return to the islands of Lake Waikareiti in December, during *A. flavida* flowering season, to carry out a comprehensive survey to establish population abundance. This exciting discovery represents a new record for the East Coast Hawke's Bay Conservancy of the Department of Conservation, and a new northern limit for *Alepis flavida* (de Lange & Norton 1997). Initial findings suggest these islands may contain the largest remaining population of *A. flavida* in the North Island. For example, only a few plants are known from Hawke's Bay where they are described as 'highly endangered'; in the Wanganui Conservancy it has become extinct from North Taranaki, and the status of a previously recorded population from Raetihi is unknown; the Wellington Conservancy has historical records only, and it is now presumed extinct (de Lange & Norton 1997). The Tongariro-Taupo Conservancy formerly had records of *A. flavida* from Whakapapa and Lake Rotopounamu, but it is currently known only from one population on the southern slopes of Mt Ruapehu where 13 host trees have been identified (de Lange & Norton 1997).

All three mistletoe species on Rahui Island are relatively abundant, and those sighted were in healthy condition, with immature fruit present on most plants. Some plants of *P. colensoi* were huge, the crowns covering an area of three metres in diameter. *P. tetrapetala* plants are smaller than *P. colensoi* here, but were seen to have a spread of up to 1.5 m. *A. flavida* has a slightly different growth habit than *Peraxilla* species, being more flaccid, and some individuals covered an area of up to 1.5 m. As with *Peraxilla* species, *A. flavida* is currently classified as vulnerable (Cameron et al. 1995).

During our searches, we came across dead plants of both *Peraxilla colensoi* and *P. tetrapetala* at the foot of host trees. Identification was possible by checking the host tree species below which dead mistletoe plants were found, and by differences in growth habit. The interesting bark of *P. tetrapetala* is rough and knobby, whereas *P. colensoi* bark is quite smooth. The reason for the death of the plants was evident in most cases, and appeared to be either accidental breaking of a host limb by falling branches from nearby trees, or detachment of the limb on which the mistletoe was attached, probably as a consequence of overloading as evidenced by the large size of the mistletoe plant compared with the considerably smaller size of the host branch. Stem sections collected from two dead *P. tetrapetala* may enable us to establish the age of the mistletoe, and possibly the age of the host branch. The main (largest) stem sections have diameters of 8 and 8.5 cm, suggesting these two plants were very old when they fell or were dislodged from their host trees. The wood of both species is whitish with

long rays visible in cross section. Interestingly, the main stems of both samples of *P. tetrapetala* have a central section of what appears to be red beech wood that extends from the haustorium. The whitish mistletoe wood partially or completely surrounds the reddish core, and a distinct line separates the two wood colours. Rays, however, extend through this line. Is the mistletoe taking up water and nutrients through the host stem as well as the haustorium?

Curious about the 'blister galls' (Poole & Adams 1994) on the leaves of *Peraxilla tetrapetala*, inspection of these curiosities under a dissecting microscope was carried out by carefully removing raised sections with a scalpel. The 'blister galls' proved to be a small hollow cavity with a tiny hole (probably entry point) on the underside of the leaves, more or less in the centre of the raised area. Some of the cavities were empty, but some contained a small white invertebrate (mite?), and two of the cavities examined contained three tiny, round, transparent eggs. The invertebrate must somehow stretch internal cell structures of leaves to create a space for itself and egg laying, at the same time forming raised areas on leaf surfaces.

Additional notes, and new records for Rahu Island

Rahu Island has a tall (c. 30 m) canopy dominated by silver and red beech (*Nothofagus menziesii* and *N. fusca*), with occasional mountain beech (*N. solandri* var. *cliffortioides*), Hall's totara (*Podocarpus hallii*), toatoa (*Phyllocladus toatoa*) and miro (*Prumnopitys ferruginea*). Silver beech is more common than red beech around the margins of the island with red beech more dominant in the interior. The dominant sub-canopy species are kamahi (*Weinmannia racemosa*) and tawari (*Ixerba brexioides*), with a tall shrub layer of graceful neinei (*Dracophyllum latifolium*), fivefinger (*Pseudopanax arboreus*) and raurekau (*Coprosma grandifolia*). Common in the shrub layer is *Coprosma tenuifolia*, *C. lucida*, *C. foetidissima*, and neinei, with *Alseuosmia pusilla*, laden with bright pink fruit, common as a low growing shrub. The groundcover was dominated by *Astelia solandri*, numerous seedlings of tree and shrub species, and patches of mosses and liverworts. The blue toadstool *Entoloma hochstetteri*, always a delight to encounter, provided a vivid colour contrast at ground level, and *Earina autumnalis* perfumed the air with its heady scent. As we left Rahu Island for the last time, we noted *Winika cunninghamii* in full, albeit late, flower. Additional notes about the vegetation of Rahu Island are available in Druce (1974).

Species recorded during our visit, but not previously recorded by Druce (1974) or Shaw (1990) are *Alepis flavida*, rimu (*Dacrydium cupressinum*), and mingimingi (*Leucopogon fasciculatus*). In addition to confirming the presence of *Peraxilla tetrapetala*, we located *Dicksonia squarrosa*, which had been recorded by Druce (1974) but not located by Shaw (1990).

Aquatic flora

When boating on Lake Waikareiti, the clarity of the water and the lack of introduced, weedy, aquatic macrophytes is striking, particularly when compared with eutrophic lakes of the Waikato region. Although large areas of the lake bed, in shallow areas, appeared to be devoid of aquatic plants, a patch of *Chara globularis* was noted near the landing for Rahu Island. Fifteen native aquatic macrophytes have been recorded from Lake Waikareiti, and amazingly, no exotic species are present (P. Champion pers. comm.). The following species have been recorded from 2 sites (near Oneatahi and Motutorutoru Islands), all growing between 2.5 m deep and the shore: *Chara corallina*, *C. fibrosa*, *Eleocharis pusilla*, *Isoetes kirkii*, *Lilaeopsis ruthiana*, *Myriophyllum propinquum*, *M. triphyllum*, *Ranunculus limosella*, *Pilularia novaezelandiae*, *Potamogeton cheesemanii*, *Nitella hyalina*, and *Triglochin striata* (P. Champion pers. comm.). John Clayton (NIWA, Hamilton) did one deep dive near the first access to the lake, with additional records of: *Chara globularis*, *Nitella pseudoflabellata*, and *N. hookeri* (P. Champion pers. comm.).

Future research

The islands of Lake Waikareiti may provide an ideal environment and unique opportunity to study the impacts of browsing mammals (deer and possum) on beech forest vegetation in the Lake Waikaremoana/Lake Waikareiti area, and in particular, the impact of possum on three mistletoe species. Rodents and stoats are reported to be present on the islands, although population abundance is not known (B. Bancroft pers. comm.). Thus, the absence of deer and possums on the islands would give quantifiable insight into differences in vascular plant species composition.

Acknowledgements

We would like to thank the Department of Conservation for providing permits and a boat that allowed us access to the islands on Lake Waikareiti; Bruce Bancroft, Department of Conservation, Aniwanuiwa, Pt. Bag 2213, Wairoa, for showing us where *Peraxilla colensoi* was located and helping find *P. tetrapetala* on Rahu Island the first day of our visit; Richard van Dijk, volunteer, Department of Conservation, PO Box 326, Opotiki, for his exemplary field assistance; and Paul Champion, NIWA, PO Box 11 115, Hamilton, for identifying *Chara globularis* and providing a species list of aquatic macrophytes.

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Merilyn Merrett, Landcare Research, Private Bag 3127, Hamilton; **Pete Shaw**, Department of Conservation, P.O. Box 326, Opotiki

■ Chinese brake (*Pteris vittata*) – an update

The fern, Chinese brake (*Pteris vittata*) was first recorded as wild in New Zealand in 1998 (Cameron & Parris 1998). Since then I have visited/revisited both sites where it was recorded as wild: a crib wall at Bluff Hill (Napier) and in a gully trap and on a brick wall in Epsom (Auckland).

Napier

When I visited the property at 135 Thompson Road, north side of Bluff Hill in August 1998, the wooden crib wall referred to by Cameron and Parris (1998) had recently been weeded and reduced in size. All I found was a young Chinese brake on the crib wall and a single adult near the base of the drive adjacent to the crib wall (voucher: AK 237376). Neither had been planted and the new owner said many plants had been weeded out. Bluff Hill (Scinde Island) is limestone capped with clays and pumiceous deposits (Kingea 1971). The crib wall being on a steep slope virtually on the side of Bluff Hill was presumably exposed to the underlying limestone.

Auckland

After contact from Mrs Bell I revisited her Epsom property in March 1999 where the other recorded wild Chinese brake occurred (see Cameron & Parris 1998). There were now over 30 wild sporelings (voucher: AK 237258) growing from the mortar in her clay brick wall, especially along the junction of the wall and the concrete capping (Fig. 1). Most were low down but one south-facing plant was 2 m above the ground. They started to appear during 1998 (Mrs Bell *pers. comm.*) and the largest sporeling had fronds up to 190 mm long (the south-facing plant). The sporelings varied from growing in full sun to shaded situations. Most were on the north-facing part of the wall, and some in full sun dried out during Auckland's dry, hot January. The sporelings were up to 9 m away from the "cultivated" 1.6 m tall garden specimen (AK 223419-21) where the spores no doubt came from.

Australia

Kramer & McCarthy (1998) record Chinese brake as a terrestrial or lithophytic (growing on rocks) fern in Australia (W.A., Qld., N.S.W., Vic.), especially among rocks in and near creeks and in stone walls; fig. 30 (photograph) shows it growing in a stone wall (in the mortar), similar to the Epsom habitat (Fig. 1).

Conclusions

After the initial article on Chinese brake by Cameron & Parris (1998), John Braggins pointed out to me that this species likes to grow on limestone. Duncan and Isaac (1986: 130) state that it seems to prefer limestone or granite sites in East Gippsland (Australia) and as a pot plant it prefers rocky or loose substrate with some lime. This explains why the fern initially

established in the Epsom concrete gully trap, why it grew on the neighbour's brick wall, why it was weedy on the presumably calcareous Bluff Hill property, why it is restricted to the mortar in Mrs Bell's brick wall, and why its not growing elsewhere. Limestone areas where the climate is mild are probably the only natural New Zealand sites where this fern could naturalise, not to mention brick walls with calcareous mortar!

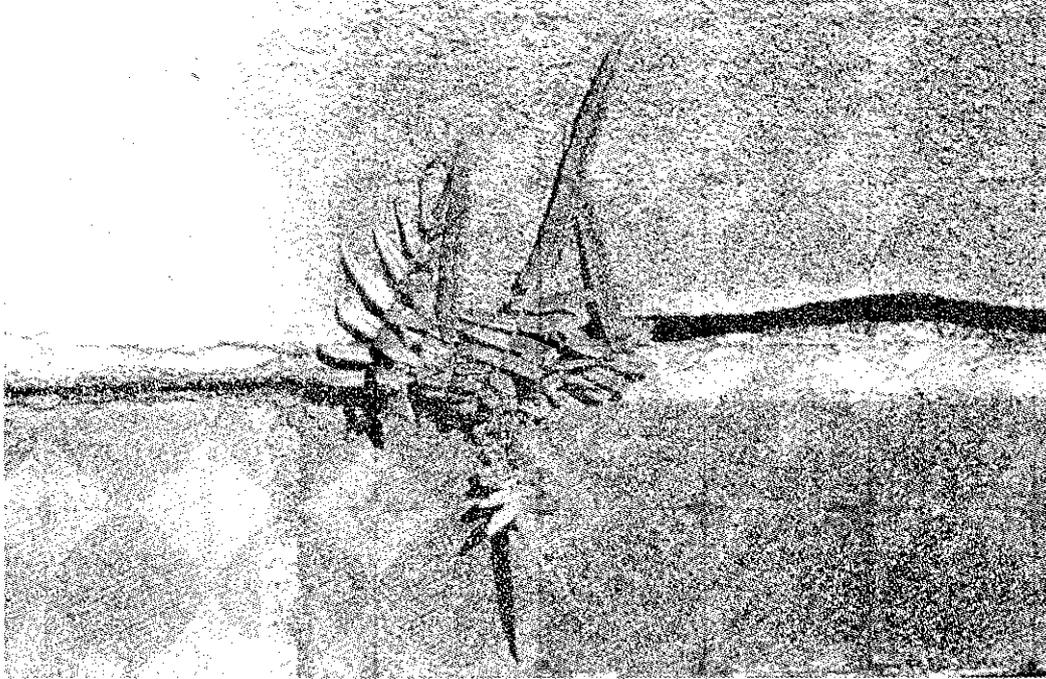


Fig. 1. A wild Chinese brake in a crack in the brick wall at Epsom, May 1999.

Acknowledgements

To Mrs K.J. Bell for informing me that her fern was starting to "misbehave", John Braggins for pointing out that Chinese brake requires calcareous substrates, Tasha Black and Les Kermode for the geological reference and Alan Hansen for letting me inspect his Napier crib wall.

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E.K. Cameron, Auckland Museum, Private Bag 92018, Auckland

Research Reports

■ Growth rates of *Wilsonia backhousei* (Convolvulaceae) on Saxton Island, near Nelson

An earlier note (Jane and Sykes 1995) described the finding of *Wilsonia backhousei* on Saxton Island and its subsequent identification. In that note several questions were posed about its recent discovery, including the length of time it has been there and the mechanisms of its arrival. This prompted me to set up a small monitoring exercise to determine its current rates of spread.

In March 1995 a series of wooden markers and steel pegs were set up along well defined margins of the populations and photographs were taken. The margins were defined as the furthest extent along the shore of a population and demarcated as a break from low tide to high tide on the shore (but usually most "forward" near the high tide mark). At the margins, the edge point was clearly defined as the base of a single "tuft" of growth. From each of 10 master pegs the bearing and distance to several edge points was measured and a steel peg forced

into the substrate and a sketch of the surrounding tufts made. Initially the sites were re-measured each spring and autumn but in the last two years, only in the autumn.

During the four years little extension of the patches was noted. The greatest distance recorded was 32 cm at one point. At six of the ten pegs there was no change and at three the margin had contracted greatly due to storm damage, especially in 1996 and 1997. The storms also revealed that the plants have a substantial, deeply buried (5–10 cm deep) rhizome that tracks along cracks in the underlying mud.

The area of storm damage provided an insight into growth within the substrate. Where the surface plants had been removed, both in the monitored areas and between them, recovery was slow and in many places sites remained largely bare two years later. In two areas where plants appeared to be growing in sand, the storms revealed a thin (1–2 cm) layer of sand over mud. In other places growth on gravel proved to be similar with mud lying a few cm below the gravel. Thus, a key element of the habitat appeared to be the mud cracks which the rhizomes penetrate.

In the bared mud areas a few scattered plantlets appeared to survive the storms but there was little regrowth along the cracks, even after three years. Similarly, at one recorded site where the margin was on the cracked mud, extension in the mud was slow with a maximum of 10 cm recorded, all in one year. The rhizome of plants which had been excavated by the storms were alive (and quite tough) even after two or more years but did not produce large numbers of new shoots on exposure. Overall the patches of plants (outside the monitored areas) on the upper shore showed a substantial decrease in coverage over the four years of monitoring. Those on the lower shore nearer the low tide level were not affected by storms and showed little apparent change over the four years. Presumably these patches had reached an optimal extent determined by the habitat.

The data indicate that the rates of rhizome extension are very slow and the buried rhizome offers little resilience to storm damage. Similarly, rates of extension of the rhizome terminus are slow. In the four years the first two summers were cold (and wet) whereas the last two summers have been quite mild, the last the warmest in many years. This has been reflected in the growth rates. In the first two years no change was recorded with slight growth at one site in summer 1998 and nearly twice the growth rate in summer 1999, but still restricted to only 3 points out of 39.

The near full occupation of suitable sites on Saxton Island suggests a presence on the island for quite a long time. It seems probable, given the slow growth rates, that the species has been present on the site for a long time in human terms, perhaps well over 100 years, and thus is unlikely to have arrived by human activity, either accidental or deliberate. The presence of the rhizome suggests to me that each of the patches is derived from one plant and perhaps the whole population is derived from a single arrival. The lack of viable seed in spite of profuse flowering also tends to affirm this conclusion.

Reference

Jane, G.T.; Sykes W.R. 1995: *Wilsonia backhousei* (Convolvulaceae) in New Zealand. *New Zealand Botanical Society newsletter* 42: 4–6.

Graeme Jane, 136 Cleveland Terrace, Nelson

■ **New names, combinations or comments from the journals (6)**

Ferns and fern allies

"The fern genus *Cheilanthes* in Australia" by H. Quirk, T.C. Chambers & M. Regan, *Australian J. Botany* 31: 501–553 (1983). Of interest to New Zealand is that two subspecies are recognised within *C. sieberi*: subsp. *sieberi* occurs in New Zealand, Australia and New Caledonia.

"A re-examination of the genus *Cheilanthes* (Adiantaceae) in Australia" by T.C. Chambers & P.A. Farrant, *Telopea* 4: 509–557 (1991). Of interest to New Zealand, *Cheilanthes humilis* (Forst.f.) Green is treated as a synonym of *C. tenuifolia* and should not be used for *C. sieberi* as it has been in New Zealand.

"*Macrothelypteris torresiana* (Thelypteridaceae) at North Cape, North Island, New Zealand – a new southern limit for a tropical fern" by P.J. de Lange, *N.Z.J.Bot.* 35: 555–558 (1997). The single collection in 1992 at North Cape is the only wild mainland collection of this fern. Otherwise it is only known in the New Zealand botanical region from the Kermadec Islands.

R.J. Chinnock in the recent *Flora of Australia* (vol. 48, 1998) sinks *Ophioglossum coriaceum* into *O. lusitanicum* L., *O. petiolatum* into *O. reticulatum* L., and states that both these species are very variable in Australia.

R.J. Chinnock in the recent *Flora of Australia* (vol. 48, 1998) follows Øllgaard (1987) in subdividing *Lycopodium* s. lat. into three groups: *Lycopodiella*, *Lycopodium* and *Huperzia*. NZ species are: *Lycopodiella cernua* (L.) Pic.Serm., *L. diffusa* (R.Br.) B.Øllg. (= *Lycopodium ramulosum* Kirk), *L. lateralis* (R.Br.) B.Øllg., *L. serpentina* (Kunze) B.Øllg.; *Lycopodium deuterodensum*, *L. fastigiatum*, *L. scariosum*, *L. volubile*; and *Huperzia australiana* (Herter) Holub, *H. varia* (R.Br.) Trevis.

P.D. Bostock in the recent *Flora of Australia* (vol. 48, 1998) confirms that *Pellaea calidirupium* occurs in Australia (Qld, NSW, ACT, Vic, Tas) as well as New Zealand. It is noted that most of the Australian material lacks the soriferous pinna apices characteristic of the New Zealand specimens.

P.D. Bostock & T.M. Spokes in the recent *Flora of Australia* (vol. 48, 1998) have used the following genera for the filmy ferns: *Cephalomanes*, *Crepidomanes*, *Hymenophyllum*, *Sphaerocionium* and *Trichomanes*. The only new combination made which affects a species also occurring in New Zealand is: *Crepidomanes venosum* (R.Br.) Bostock.

P.J. Brownsey in the recent *Flora of Australia* (vol. 48: 306, 1998) uses the earlier name *Asplenium appendiculatum* (Labill.) C.Presl subsp. *appendiculatum* for what he now regards as an Australasian species, formerly called *A. terrestre* subsp. *terrestre* in New Zealand. *A. terrestre* subsp. *maritimum* is still regarded as restricted to New Zealand and should now be referred to as *A. appendiculatum* subsp. *maritimum* (Brownsey) Brownsey *ined.* This combination is about to be published in *N.Z.J.Bot.* 37: 369 (P.J. Brownsey *pers. comm.*).

B.S. Parris in the recent *Flora of Australia* (vol. 48: 710, 1998) raises the Australasian taxon, *Doodia media* subsp. *australis* to species level: *D. australis* (Parris) Parris. It occurs in New Zealand, Australia, Norfolk Id and Lord Howe Id.

B.S. Parris in the recent *Flora of Australia* (vol. 48: 710, 1998) describes a new species of *Grammitis* from Tasmania and NW Nelson, New Zealand: *G. gunnii* Parris. It closely resembles *G. givenii* of New Zealand.

P.D. Bostock & T.M. Spokes in the recent *Flora of Australia* (vol. 48, 1998) have gone back to the more broadly circumscribed genus *Microsorium*, rather than use *Phymatosorus*. Species occurring in New Zealand affected by *Microsorium* being reinstated: *M. novae-zelandiae* (Baker) Pichi Serm., *M. pustulatum* (G.Forst.) Copel. subsp. *pustulatum*, *M. scandens* (G.Forst.) Tindale.

"*Sticherus urceolatus* (Gleicheniaceae), a new fern species from Southern Australia" by M. Garrett, G. Kantvilas and H. Laws, *Muelleria* 11: 101–111 (1998). *Sticherus tener* is revised and a new species, *S. urceolatus*, is segregated. *S. tener* from Dusky Sound (OTA 41949, A.F. Mark, 13 xi 1984) is recorded from New Zealand from the single collection.

"The *Blechnum procerum* ("capense") (Blechnaceae) complex in New Zealand" by T.C. Chambers and P.A. Farrant, *N.Z.J.Bot.* 36: 1–19 (1998). Four species are recognised in the complex in New Zealand: *B. procerum* and three new endemic species are described: *B. novae-zelandiae* (= "kiokio"), *B. montanum* (= "mountain kiokio") and *B. triangularifolium* (= "Green Bay kiokio"). All three are considered distinct from the Australian *B. minus*. This revision is well overdue and much appreciated for we now have a scientific name for what is probably New Zealand's commonest fern (*B. novae-zelandiae*).

Dicotyledons

"The Australian and New Zealand species of *Pittosporum*" by R.C. Cooper, *Annals of the Missouri Botanical Garden* 43: 87–188 (1956). This older paper is included because the combination *Pittosporum pimeleoides* subsp. *major* (Cheeseman) R.C.Cooper made here is

not mentioned by Allan (1961) under this taxon. This combination is now generally followed by NZ botanists (= *P. michiei*, *P. pimeleoides* var. *major*).

"Cladistics and family level classification of the Gentianales" by Struwe, L., Albert, V.A. & Bremer, B. *Cladistics* 10: 175–206 (1994). Of interest to New Zealand is that they remove *Geniostoma* from the Loganiaceae, erect a new family, Geniostomaceae which has two genera: *Geniostoma* and the endemic Hawaiian genus *Labordia*. They state that the Geniostomaceae is sister to the Apocynaceae and sink the Asclepidaceae into the Apocynaceae.

"*Lophomyrtus bullata* is the correct name for the New Zealand ramarama" by E.N. Lughadha, *Kew Bulletin* 51: 815–817 (1996). Although this agrees with the conclusion already pointed out by P.J. Garnock-Jones & L.A. Craven (*N.Z.J.Bot.* 34: 279–280, 1996), the reasons presented are different.

"The circumscription and systematic position of Carpodetaceae" by M.H.G. Gustafsson & K. Bremer, *Australian Systematic Botany* 10: 855–862 (1997). *Carpodetus*, *Abrophyllum* and *Cuttsia* form a monophyletic group that is well supported by molecular data. All three genera have been placed in the Saxifragaceae or Escalloniaceae in the past, but these units are paraphyletic. *Abrophyllum* and *Carpodetus* have also been placed in their own families in the past, but the authors here suggest merging all three genera into a single family Carpodetaceae.

"*Mazus pumilio* (Scrophulariaceae), an addition to the indigenous flora of New Zealand" by P.B. Heenan and L.J. Forester, *N.Z.J.Bot.* 35: 437–440 (1997). Previously this species was considered restricted to Australia until the discovery of a single population in 1996 near Whananaki, eastern Northland. It is considered most likely to be a recent arrival from Australia, possibly attached to a bird.

"A revision of the genus *Anaphalioides* (Asteraceae: Gnaphalieae)" by D. Glenn, *N.Z.J.Bot.* 35: 451–477 (1997). Evidence is presented to establish the monophyly and limits of the genus *Anaphalioides*. Five New Zealand and two New Guinea species make up the genus, new combinations are given. The New Zealand species are: *Anaphalioides alpina* (Cockayne) Glenn (= *Helichrysum alpinum* in Allan (1961)), *A. bellidioides* (G.Forst.) Glenn (= *Helichrysum bellidioides*), *A. hookeri* (Allan) Anderb. (= *Gnaphalium hookeri*), *A. subrigida* (Colenso) Anderb. (= *Gnaphalium subrigidum*), and *A. trinervis* (G.Forst.) Anderb. (= *Gnaphalium trinerve* and *G. keriense*, treated as a single variable species).

"New species and nomenclatural changes in *Phebalium* and related genera (Rutaceae)" by Paul G. Wilson, *Nuytsia* 12: 267–288 (1998). Most of the species are Australian, but of interest to NZ is the sect. *Leionema* within *Phebalium* that is raised to genus level and contains 22 species. Twenty one are eastern Australian species and the other is the New Zealand endemic *Leionema nudum* (Hook.) Paul G. Wilson (= *Phebalium nudum*).

"Delimitation of the genus *Nasturtium* (Brassicaceae)" by I.A. Al-Shehbaz, *Novon* 8: 124–126 (1998). *Nasturtium* is reinstated as distinct from *Rorippa*. It contains five species, including two species naturalised in New Zealand (*N. officinale* & *N. microphyllum*), and is more closely related to *Cardamine* than to *Rorippa*.

"Biodiversity in the New Zealand divaricating tree daisies: *Olearia* sect. nov. (Compositae)" by M. Heads, *Botanical Journal of the Linnean Society* 127: 239–285 (1998). Ten species and three subspecies are recognised, including the new: *O. fimbriata* (Canterbury to Southland), *O. gardneri* (southern North Id, split from *O. hectorii* which is now restricted to the South Id) and *O. virgata* subsp. *centralis* (central North Id; subsp. *virgata* occurs to the north and south of it). *Olearia laxiflora* and *O. lineata* are reinstated at species level.

"*Montigena* (Fabaceae), a new genus endemic to New Zealand" by P.B. Heenan, *N.Z.J.Bot.* 36: 41–51 (1998). *Swainsona novae-zelandiae* is placed in the new monotypic genus *Montigena* based on vegetative and anatomical features.

"An emended circumscription of *Carmichaelia*, with new combinations, a key, and notes on hybrids" by P.B. Heenan, *N.Z.J.Bot.* 36: 53–63 (1998). *Chordospartium* (2 spp.), *Corallospartium* (1 sp.), *Notospartium* (3 spp.) and *xCarmispartium* (1 hybrid) are sunk into *Carmichaelia*. The emended genus *Carmichaelia* now contains 23 New Zealand species.

"*Coprosma decurva* (Rubiaceae), a new species from New Zealand" by M. Heads, *N.Z.J.Bot.* 36: 65–69 (1998). A small-leaved shrub recognised as distinct in 1961 (= *C. parviflora* var. *dumosa* sensu Allan non Cheeseman) occurring from the central North Island to Stewart Island.

"New combinations in *Euchiton* (Compositae – Gnaphalieae) from New Zealand" by J.M. Ward and I. Breitwieser, *N.Z.J.Bot.* 36: 303–304 (1998). They recommend the transfer of the indigenous *Gnaphalium* species ("gnaphalioid cudweeds") to *Euchiton*. The three new combinations required are given along with the 11 others which had already been made for the New Zealand species. *Euchiton* is considered morphologically and geographically distinct from *Gnaphalium*.

"The status of *Raukaua edgerleyi* var. *serratus* and *R. x parvus* comb. nov." by P.B. Heenan, *N.Z.J.Bot.* 36: 307–310 (1998). *Raukaua edgerleyi* var. *serratus* is considered a hybrid between *R. edgerleyi* and *R. simplex*, and the new combination *R. x serratus* (Kirk) Heenan is made. The hybrid between *R. anomalus* and *R. simplex* (= *Panax simplex* var. *parvus*) is transferred to *Raukaua* as *R. x parvus* (Kirk) Heenan.

"Reinstatement of *Sophora longicarinata* (Fabaceae – Sophoreae) from northern South Island, New Zealand, and typification of *S. microphylla*" by P.B. Heenan, *N.Z.J.Bot.* 36: 369–379 (1998). *Sophora longicarinata* was originally described at species level in 1942, Allan (1961: Fl. N.Z. Vol. I) then sunk it to variety level, and Heenan now reinstates it at species rank based on a suite of characters.

"A remarkably local species of *Myrsine* (Myrsinaceae) from New Zealand" by P.B. Heenan and P.J. de Lange, *N.Z.J.Bot.* 36: 381–387 (1998). An upright shrub or small tree confined to Mt Burnett, NW Nelson. It has previously been referred to as *M. divaricata* form (ii) by Eagle and *Myrsine* "Burnett".

"*Pittosporum ellipticum* subsp. *serpentinum* (Pittosporaceae) – a new ultramafic endemic from Surville Cliffs, North Cape, New Zealand" by P.J. de Lange, *N.Z.J.Bot.* 36: 389–397 (1998). A low shrub confined to the ultramafic rocks and to date it has not been able to be cultivated.

"*Hebe perbella* (Scrophulariaceae) – a new and threatened species from western Northland, North Island, New Zealand" by P.J. de Lange, *N.Z.J.Bot.* 36: 399–406 (1998). This attractive flowering shrub was first discovered by the late John Bartlett in the Ahipara gumlands in 1980. It has previously been referred to as *Hebe* sp. "x" and *Hebe* "Bartlett".

"*Mazus novaezeelandiae* (Scrophulariaceae): taxonomy, distribution, habitats, and conservation" by P.B. Heenan, *N.Z.J.Bot.* 36: 407–416 (1998). *Mazus novaezeelandiae* subsp. *impolitus* is described as a new subspecies (occurs from Northland to central Otago), and a form with distinct hairy leaf margins is described as *M. novaezeelandiae* subsp. *impolitus* f. *hirtus* (from Northland to the East Cape area). This leaves *M. novaezeelandiae* s. str. known only from the central and lower North Island.

"*Senecio repangae* (Asteraceae): a new endemic species from the north-eastern North Island, New Zealand" by P.J. de Lange and B.G. Murray, *N.Z.J.Bot.* 36: 509–519 (1998). Primarily an offshore island species occurring from Northland to Cuvier Island. It is separated from the *S. lautus* complex and has previously been referred to as *S.* "Cuvier". A form from the Mokohinau Islands with more ray florets and longer ligules is described as *S. repangae* subsp. *pokohinuensis*.

"*Atriplex cinerea* (Chenopodiaceae) in New Zealand" by P.J. de Lange, B.G. Murray and R.O. Gardner, *N.Z.J.Bot.* 36: 521–529 (1998). Evidence is presented to support treating this primarily Australian species as a vagrant within the New Zealand flora.

"*Hebe paludosa* (Scrophulariaceae) – a new combination for an endemic wetland *Hebe* from Westland, South Island, New Zealand" by D.A. Norton and P.J. de Lange, *N.Z.J.Bot.* 36: 531–538 (1998). *Hebe salicifolia* var. *paludosa* (Cockayne) Cockayne & Allan is raised to species level.

"*Scaevola gracilis* (Goodeniaceae) in the Kermadec Islands and Tonga" by W.R. Sykes, *N.Z.J.Bot.* 36: 671–674 (1998). The Tongan *S. porrecta* from Kao is sunk into Kermadec Islands *S. gracilis*.

"*Parsonsia praeruptis* (Apocynaceae): a new threatened, ultramafic endemic from North Cape, New Zealand" by M.J. Heads and P.J. de Lange, *N.Z.J.Bot.* 37: 1–6 (1999). A non-twining and non-climbing species first recorded as different in 1957 by R. Michie.

"*Alectryon excelsus* subsp. *grandis* (Sapindaceae): a new combination for an uncommon small tree endemic to the Three Kings Islands, New Zealand" by P.J. de Lange, E.K. Cameron and B.G. Murray, *N.Z.J.Bot.* 37: 7–16 (1999). It was first described as *A. excelsus* var. *grandis* by Cheeseman in 1892, and raised to *A. grandis* in 1912.

"Whipcord hebes – systematics, distribution, ecology and evolution" by S.J. Wagstaff and P. Wardle, *N.Z.J.Bot.* 37: 17–39 (1999). Based on these results ten species and ten subspecies are recognised, seven new subspecies combinations are made: *H. hectorii* subsp. *coarctata*, subsp. *demissa*, subsp. *laingii*, subsp. *subsimilis*, subsp. *subulata*; *H. imbricata* subsp. *poppelwellii*; *H. lycopodioides* subsp. *patula*.

Monocotyledons

The Australian floras (e.g., *Flora of NSW*, vol. 4, 1993) are using the name *Fimbristylis velata* R.Br. for the Australasian-Malesian-Asian sedge referred to in New Zealand as *F. squarrosa* Vahl.

"New circumscriptions and a new family of asparagoid lilies: genera formerly included in Anthericaceae" by M.W. Chase, P.J. Rudall & J.G. Conran, *Kew Bulletin* 51: 667–680 (1996). Both molecular and morphological data have indicated that the family Anthericaceae s. lat. is polyphyletic; Anthericaceae and Lomandraceae are recircumscribed, the Tribe Boryeae is raised to family level (Boryaceae), and a broad concept of the Phormiaceae is presented. Of interest to New Zealand: *Arthropodium* and *Cordylina*, are included in the Lomandraceae; *Phormium* and *Dianella* are included in the Phormiaceae; and it is suggested that *Xeronema* is best placed in its own monogeneric family.

"Six new species of *Pterostylis* R.Br. (Orchidaceae) from New Zealand" by D.L. Jones, B.P.J. Molloy & M.A. Clements, *The Orchadian* 12 (6): 266–281 (1997). The new endemic taxa: *Pterostylis agathicola* (= *P. graminea* var. "*rubricaulis*") (Northland to the Kaimai Ra.), *P. cernua* (only known from type collection in South Id), *P. irwini* (= *P. "Erua"*) (near Erua), *P. paludosa* (= *P. furcata* var. *linearis*) (central North Id and NW South Id), *P. porrecta* (only known from two sites: E North Id and N South Id), *P. tanypoda* (= *P. aff. cycnocephala*) (Castle Hill basin, Canterbury). For comment on providing new epithet names (e.g., *P. agathicola* & *P. paludosa*) when widely known names were in use at a lower level see Gardner (*The NZNOG JI* 68: 16, 1998).

"*Waireia*, a new genus of Orchidaceae from New Zealand" by D.L. Jones, M.A. Clements and B.P. J. Molloy, *The Orchadian* 12 (6): 282–287 (1997). The new genus *Waireia* is described and the new combination *W. stenopetala* (Hook.f.) D.L.Jones, M.A.Clem. & Molloy is made to accommodate the New Zealand species previously known as *Lyperanthus antarcticus*.

"Nomenclatural corrections in the *Rytidosperma* complex (Danthonieae, Poaceae)" by H.P. Linder, *Telopea* 7 (3): 269–274 (1997). In a recent splitting of *Rytidosperma*, Linder and Verboom (*Telopea* 6: 597–627, 1996) proposed a new genus, *Thonandia*, but mistakenly included the type of *Notodanthonia* in this new genus. Consequently, the species transferred to *Thonandia* should be under *Notodanthonia*, while the species placed by Linder and Verboom under *Notodanthonia* require a new generic name. The name *Austrodanthonia* Linder is proposed, and the relevant new combinations are made. Different or new combinations by Linder & Verboom (1996) and by Linder (1997) compared with names used in New Zealand for grasses occurring in New Zealand:

<u>Names used in New Zealand</u>	<u>Names proposed by Linder & Verboom (1996) and Linder (1997)</u>
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1. New Zealand natives

<i>Rytidosperma biannulare</i>	<i>Austrodanthonia biannularis</i>
<i>R. clavatum</i>	<i>A. clavata</i>
<i>R. merum</i>	<i>A. mera</i>

<i>R. gracile</i>	<i>Notodanthonia gracilis</i>
<i>R. nigricans</i>	<i>N. nigricans</i>
<i>R. unarede</i>	<i>N. unarede</i>

2. Naturalised species in NZ

Australian *Rytidosperma* spp. *Austrodanthonia* spp. (9 Australian spp. are naturalised in NZ)

It will be interesting to see which genera Henry Connor and Elizabeth Edgar will use in the *Flora of New Zealand* vol. V (to be published soon).

"*Carex dolomitica* (Cyperaceae), a new and rare species from New Zealand" by P.B. Heenan and P.J. de Lange, *N.Z.J.Bot.* 35: 423–428 (1997). A species known only from Mt Burnett in NW Nelson where it is confined to open dolomite rock outcrops. It was first collected by Tony Druce in 1975.

"*Carex ophiolithica* (Cyperaceae): a new ultramafic endemic from the Surville Cliffs, North Cape, New Zealand" by P.J. de Lange and P.B. Heenan, *N.Z.J.Bot.* 35: 429–436 (1997). It was first recorded as unidentified and possibly adventive by Healy and Edgar (1980: 156).

"*Pterostylis* aff. *obtusa* – another vagrant in NZ?" by G. Donaghy, G. James & I. St George, *The NZ Native Orchid Group Journal* 68: 10–12 (1998). A number of plants resembling the above Australian species were found and photographed near Nelson in May 1998.

"New combinations arising from a new classification of non-African Restionaceae" by B.G. Briggs and L.A.S. Johnson, *Telopea* 8 (1): 21–33 (1998). Most changes affect Australian species but the New Zealand *Leptocarpus similis* is transferred to the new genus *Apodasmia* (see Briggs & Johnson in *Telopea* 7: 371, 1998). The authors note that the species from Chile (*A. chilensis*) shows such a close resemblance to *A. similis* that their status requires further study (Note – if united, *A. chilensis* is the earlier name).

"Supplement to checklist of Panicoid grasses naturalised in New Zealand" by E. Edgar, *N.Z.J.Bot.* 36: 163 (1998). Four species in the following genera are reported as newly naturalised in New Zealand: *Digitaria*, *Panicum* and *Pennisetum* (2 spp.).

"*Schoenoplectus californicus* (Cyperaceae) in New Zealand" by P.J. de Lange, R.O. Gardner, P.D. Champion and C.C. Tanner, *N.Z.J.Bot.* 36: 319–327 (1998). Believed to be a naturalised species and is known from only two extensive populations along the Wairoa (Northland) and lower Waikato Rivers. Although first collected by A.E. Wright in 1990 it may have been present since c. 1900.

"*Festuca* (Poeae: Gramineae) in New Zealand 1. Indigenous taxa" by H.E. Connor, *N.Z.J.Bot.* 36: 329–367 (1998). Ten species are recognised for the New Zealand botanical region, four species are described as new: *F. deflexa*, *F. luciarum*, *F. madida*, and *F. ultramafica*, and a new name, *F. actae* (= *F. ovina* subsp. *matthewsii* var. *grandiflora*). One species, *F. matthewsii*, has four subspecies, three of which are new.

"*Trisetum* Pers. (Gramineae: Aveneae) in New Zealand" by E. Edgar, *N.Z.J.Bot.* 36: 539–564 (1998). Nine indigenous species are recognised for New Zealand: four species, *T. arduanum* (North Id and Marlborough), *T. drucei* (East Cape to northern South Id), *T. lepidum* (East Cape to Stewart Id) and *T. serpentinum* (ultramafics, North Cape and NW Nelson), are described as new; and *T. antarcticum* var. *lasiorhachis* (Auckland to Marlborough) is raised to species level. *Trisetum antarcticum* is now only known from Taranaki to the northern South Id.

"*Zotovia* and *Microlaena*: New Zealand Ehrhartoid Gramineae" by E. Edgar and H.E. Connor, *N.Z.J.Bot.* 36: 565–586 (1998). A new genus *Zotovia* with three alpine species is described to replace the illegitimate name *Petriella* Zotov non Curzi: *Z. acicularis* (sp. nov., Fiordland), *Z. colensoi* (Hook.f.) Edgar & Connor (East Cape to southern South Id) and *Z. thomsonii* (Petrie) Edgar & Connor (South, Stewart and Auckland Is). *Microlaena* is maintained against *Ehrharta* with four long established species: *M. avenacea*, *M. carsei*, *M. polynoda* and *M. stipoides*.

"*Carex impexa* (Cyperaceae), a newly described sedge from New Zealand" by K.A. Ford, *N.Z.J.Bot.* 36: 587–592 (1998). A new endemic, calcicole species from NW Nelson is described. It is compared with the closely related to *C. dallii*.

"New species of *Poa* (Gramineae) and *Ischnocarpus* (Brassicaceae) from limestone, North Otago, South Island, New Zealand' by B.P.J. Molloy, E. Edgar, P.B. Heenan and P.J. de Lange, *N.Z.J.Bot.* 37: 41–50 (1999). *Poa spania* Edgar & Molloy and *Ischnocarpus exilis* Heenan are described as new from a single limestone tower in North Otago.

"*Koeleria* Pers. (Gramineae: Aveneae) in New Zealand" by E. Edgar and E.S. Gibb, *N.Z.J.Bot.* 37: 51–61 (1999). In this revision three endemic species are recognised: *K. cheesemanii*, *K. novozelandica*, and a new species *K. rigorum* Edgar & Gibb from Nelson is described.

"Species novae graminum Novae-Zelandiae 1" by E. Edgar and H.E. Connor, *N.Z.J.Bot.* 37: 63–70 (1999). Four new native grasses are described: *Poa schistacea* Edgar & Connor (Otago), *P. xenica* Edgar & Connor (Nelson), *Deyeuxia lacustris* Edgar & Connor (N.W. Nelson and N. Canterbury), and *Dichelachne lautumia* Edgar & Connor (Marlborough).

General

"Checklist of dicotyledons and pteridophytes naturalised or casual in New Zealand: additional records 1994–1996" by P.B. Heenan, I. Breitwieser, D.S. Glenny, P.J. de Lange and P.J. Brownsey, *N.Z.J.Bot.* 36: 155–162 (1998). Six taxa are reported as additional or newly substantiated naturalised records for the weed flora of New Zealand during the 3-year period, 36 species are considered to be new records of casual adventive plants, and 11 additional species that were previously poorly known are given extended distributions.

"Orthography of some geographical epithets in the New Zealand flora" by R.O. Gardner, *N.Z.J.Bot.* 36: 173–174 (1998). Twenty two names are presented for New Zealand flowering plants that have Maori place names as their epithets in the nominative case, counter to the relevant ICBN recommendations.

"Spelling New Zealand in the specific and infraspecific epithets of vascular plants" by C.J. Webb and E. Edgar, *N.Z.J.Bot.* 37: 71–77 (1999). Eighty eight taxa are listed with epithets derived from "New Zealand" for which the original publications provide 25 variations in the spelling of the epithet. Twenty nine corrected spellings are provided.

For the rest of this series see *NZBS Newsletters*: 36, 37, 42, 46, 50.

E.K. Cameron, Auckland Museum, Private Bag 92018, Auckland

BIOGRAPHY/BIBLIOGRAPHY

■ Additions and corrections to tribute to Sir Otto Frankel, F.R.S.

Dr Lloyd T. Evans of Canberra has kindly drawn my attention (1) to the evidence he has about Otto Frankel's early education. Otto asserted, somewhat surprisingly, both to me and to Dr Evans that he had no university undergraduate education before commencing his doctorate research with Professor Erwin Baur (incorrectly given as Bauer in my article, 2). Although Otto does not seem to have completed an initial degree before his doctorate, he did have credits for course work and Dr Evans has Otto's certificates signed by his various professors, including two Nobel Prize winners, R.W. Willstätter (1872–1942) in chemistry and W.K. Röntgen (1945–1923) in physics, and Karl Goebel (1855–1932) in botany. Dr Evans comments (1), "so much for no education!".

Regarding Otto's visit to USSR in 1935, Dr Evans comments (1) that N.I. Vavilov was in fact a major influence on his life. Dr Evans has the booklet in which Otto kept notes of all his travels and meetings and Otto spent a week with Vavilov in and around Leningrad.

Dr Evans also points out that Vavilov died in Saratov, not in Siberia as I record. Some of my sources, including the latest edition of Chambers Biographical Dictionary (1997) give Siberia, "...he died of starvation in a Siberian labour camp", though an earlier edition (1964) is less confident and records that he died, "...allegedly in a Siberian concentration camp". However, the entry for Vavilov in the Encyclopaedia Britannica (1992) also gives Saratov as his place of death. Incidentally, I see that in my copy of Vavilov's "The Origin, Variation, Immunity and Breeding of Cultivated Plants" (3) there is a note recording that his appointments included Professor of Agriculture, Botany, and Genetics at the University of Saratov (1917–21).

Finally, I apologise for a typographical error on p. 20, line 2 up, "teaching" should be "leading".

Acknowledgement

I thank Dr Lloyd T. Evans, FRS of Canberra for his comments.

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A.D.Thomson, Centre for Studies on New Zealand Science History, 5 Karitane Drive, Christchurch 2

■ **Tribute to pioneer botanist, mycologist and mountaineer, Dr Greta Stevenson Cone**

Dr Greta Barbara Cone (née Stevenson, 1911–1990) was a pioneer New Zealand researcher in plant science who is especially noted for her significant contributions to the study of mycology. Greta published under her maiden name Stevenson and was a versatile and enthusiastic plant researcher. Her major contribution to mycology was in her studies on the Agaricales of New Zealand.

Greta was born in Auckland, the eldest of the four children of William Stevenson and Grace Mary Scott. In 1914 the family moved to Dunedin where Greta's father became Managing Director of the family's food processing company Irvine and Stevenson's St. George Co. Ltd. (8). She was educated in Dunedin at Maori Hill Primary School, and then at St. Columba College (1925–28) where she was Dux. Greta attended the University of Otago and was an outstanding scholar. She graduated B.Sc. (1932) and was Senior Scholar in botany. She graduated M.Sc. (1933) with First Class Honours in botany. Her M.Sc. thesis was entitled "The life history of the New Zealand species of the parasitic genus *Korthalsella*" which was published in *Transactions of the Royal Society of N.Z.* (10). Greta's illustrations are a feature of this paper. Greta was a student of the leading pioneer New Zealand botanist the Rev. Dr J. E. Holloway, F.R.S. (1881–1945) who supervised her M.Sc. research. Her awards at University included the Sir George Grey and Duffus Lubecki Scholarships. Incidentally, Greta's sister Una married leading forestry researcher and son of J.E. Holloway, J. T. Holloway (1914–1977). Una Holloway recalls (6) that Irvine and Stevenson's St. George Co. Ltd. had a contract to prepare pemmican for the 1928–29 Antarctica Expedition of R.E. Byrd (1888–1957) and Greta worked in her University vacations helping prepare the pemmican. As Greta graduated during the Depression and jobs at that time were hard to come by, she took up the offer of travel to Europe with her aunt Jean Stevenson who worked for the Y.W.C.A. They visited India and Southern Italy on the way (29).

Greta became interested in tramping at University and her alpine climbing began in 1933 when, with Lella Davidson, she ascended the East Peak of Mount Earnslaw. This was one of the first significant climbs in New Zealand by an all-woman party (8). An account of Greta's climbing exploits are recorded in an article by Graham Langton (7) who wrote, "The first all-woman mountaineering group emerged in Otago, where the guided achievements of Daisy Mackie from the late 1920s may have provided an example to follow. However, it was clearly the drive, energy and leadership of Greta Stevenson which created the first small band of women climbers".

Like Kathleen Curtis (Lady Rigg, 1892–1994), (27) Greta graduated Ph.D. from the Imperial College of Science and Technology, London where she had a Shirtcliffe Fellowship (8) and worked with Professor W. Brown (1888–1975) on diseases of lettuce. Her career in science was varied and she was a Research Fellow in a number of Institutions in New Zealand and England. Greta's somewhat peripatetic existence in science must have influenced and perhaps hampered her research. In the 1940s she was a Lecturer in botany at the University of Otago. During this period Greta was also analyst to the Wellington City Council and soil microbiologist at the former DSIR's Soil Bureau. In addition, she was a science teacher at Nelson Girls' College and a Research Fellow at the Cawthron Institute, Nelson in 1955–57 (9), and in 1958 a Nuffield Research Fellow in Victoria University College's Department of Botany (28). As pointed out by Kay McFarlane (8) Greta's situation as a young working mother was unusual for the time. Greta was stationed in the University of Canterbury's Department of Botany in the 1980s (26).

I last contacted Greta in 1988 when she was living in Winchester, England. At this time she had difficulty in moving about because her double hip replacement in 1986 had been less than successful. However, she generously agreed to provide some data I had requested. Dr Lucy

Cranwell Smith visited Greta in 1968 at her home in Winchester where she was on the staff of King Alfred Teacher Training College and Lucy commented (5), "[She] always seemed to me to be a very precise and devoted worker, with a great love of plants of all kinds. She taught in England at times and rather restlessly went back and forth after her marriage failed [in 1938 Greta married Englishman Edgar Cone (1914–1993) an industrial chemist and biochemist who was also a postgraduate student at Imperial College, they were divorced in 1966 (8) though Greta retained her married name], often teaching in England. I visited her in 1968 [in Winchester] and realised there how good a teacher of science she was". Greta worked at various times at Kew Gardens, the Glasshouse Crops Research Institute at Littlehampton, and had a period at the Chelsea Physic Garden (25). Greta retired from the King Alfred Teacher Training College in 1969/70 and returned for a period to New Zealand but returned in 1986 to England where she died on a visit to her daughter in South London (29).

A complete bibliography of Greta's publications has not been compiled but I have seen most. They emphasize her versatility in research. Four papers were published in *Transactions of the Royal Society of N.Z.* As well as the *Korthalsella* paper (10) she published on the movement of waste on scree in the Orongorongo District near Wellington when she was employed by the Wellington City Engineers' Department (11), on the species of *Lilaeopsis* in reservoirs near Wellington when she was on the staff of DSIR (12), and a note on the fungus *Secotium coneii* (13). Greta made her knowledge available to the general public, e.g., in a general report on mushrooms (4) and she wrote articles for botanical society newsletters, including the *Bulletin of the Wellington Botanical Society* (e.g., 2,3). One of her notable more recent articles was on the biogeographical implications of karaka (*Corynocarpus*) in New Caledonia which was published in *Nature* (22). Regarding this latter paper Dr Lucy Cranwell Smith commented (5), "Not too many New Zealand women have anything in *Nature*".

Greta's most significant original research publications were a series of five papers on the Agaricales fungi of New Zealand published in the *Kew Bulletin* (16–20). A feature of these papers is her own watercolour illustrations, "She made collections with detailed observations and paintings over many years" (24). Greta also presented results from her researches at International science conferences and a paper entitled "Nitrogen fixation in some native plants" which was presented at the 32nd ANZAAS Meeting in Dunedin in 1957 and was published in *Annals of Botany* in 1959 (15); research for this study commenced when Greta was on the Cawthron Institute staff and the research was supported by the Nuffield Foundation. Greta published three most useful semi-popular botanical books, all with her own drawings: "A Book of Ferns" (14), "The Biology of Fungi, Bacteria and Viruses" (21), and "Field Guide to Fungi" (23).

Greta had a love of plants and the outdoors, and a great enthusiasm for her research which must have provided difficulties in its attainment because of her frequent changes of location. Mrs Marie Taylor (24) in an obituary to Greta recounts some of her achievements and comments, "All this was in addition to bringing up her family". Greta's daughter Mrs Juliet Woodman who is a violinist and teacher lives in England and Greta's son Dr Conrad Cone lives in the U.S.A. Both visited New Zealand in 1996.

Greta took an active part in the activities of New Zealand botanical societies where her enthusiasm, knowledge and ability as a teacher were an asset. Botanical societies have of course long been an important feature of the New Zealand botanical scene and have encouraged and embraced professional botanists and enthusiastic amateurs to their mutual advantage. Greta was active in the botanical societies in the regions where she was located. She was a member of the Wellington Botanical Society in the early 1940s and helped initiate with Dr Lucy Moore the *Bulletin of the Wellington Botanical Society* in 1944. She was on the Society's committee in 1941–42, 1947–48, 1950 and 1952, and was President in 1944–45. Dr Conrad Cone (1) emphasised the strong bonds the early women scientists had with each other during his mother's lifetime and he mentioned his mother's contact with Dr Lucy Cranwell Smith and Dr Lucy Moore. Mrs Juliet Woodman also commented (29), "It is interesting to note that a group of early N.Z. women scientists kept in touch throughout their lives. Among them were Lucy Cranwell Smith (who settled in U.S.A. after marriage), Lucy Moore, Elsa Kitson, Betty Batham, and my mother".

Acknowledgements

Ms Kay McFarlane kindly provided a copy of her then unpublished entry for Dr Stevenson Cone in the Dictionary of New Zealand Biography and drew my attention to the article by Graham Langton. I also thank Mrs Juliet Woodman, Dr Conrad Cone and Mrs Marie Taylor for providing biographical information and Ms McFarlane, Mrs Woodman, Mrs Taylor and Mrs Eleanor Percy kindly checked the essay.

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A.D.Thomson, Centre for Studies on New Zealand Science History, 5 Karitane Drive, Christchurch 2

■ Biographical Notes (34): Thomas Kirk and England

Thomas Kirk FLS was born in Coventry on 18 January 1828, the son of George Kirk, a nurseryman, and Sarah Kirk (born West) a nurserywoman and florist (1, 2, 3).

Britten (4) states that Kirk was occupied in a timber mill in Coventry during the earlier part of his life; and Brown (5) gives us the following important information (unfortunately without reference to sources, although some can be traced).

"Kirk had no formal schooling, though he was well educated through his father's tuition and his own studies. Plants fascinated him and he gained a thorough grounding in botany from his parents, both prominent in nursery and landscaping work. He showed exceptional facility in natural science and a paper on ferns, published when he was 19, was the first of a succession spanning his adult years. He corresponded and exchanged plants with many noted botanists. When his father died, Kirk, still only a young man, tried to support the family by taking over his father's nursery and landscaping commitments. Long hours and exposure took such toll of his health that for the rest of his life he was plagued by chest weakness, possibly pulmonary tuberculosis. Compelled to take less exacting work, he joined a large timber concern as bookkeeper, eventually earning a partnership." The sawmill was Newark's (6).

Kirk published five botanical pieces before he left England. They appeared in "The Phytologist", a small monthly magazine published by John Van Voorst of Paternoster Row, London. Of those listed below, 1, 2, 4, and 5 were catalogued by the Royal Society (7) and 3 is referred to in 4.

1. 1847 List of Ferns and Allied plants found in the vicinity of Coventry, and other localities in the vicinity of Warwick. *Phytologist* 2: 809–810.

2. 1847 Notice of a few of the rarer Warwickshire Plants. *Phytologist* 2: 969–972 (Cross Cheeping, Sept. 11, 1847).
3. 1848 A note on the occurrence of *Anacharis* in Northamptonshire. *Phytologist* 3: 990
4. 1851 *Anacharis alsinastrum* Bab. (*Udora canadensis*) in Warwickshire; with remarks on its nativity in this country. *Phytologist* 4: 274–275 (Coventry, July 26, 1851).
5. 1860 On the occurrence of *Hypericum hircinum* L., and *Impatiens parviflora* DC, near Liverpool. *Phytologist* 4: 142–143.

In his second paper on *Anacharis*, Kirk argues that this species is a native and not an exotic. He wrote: "Why, then, because it is a new plant, must the *Anacharis* be stigmatised as 'introduced'. It is not the only recent addition to the British flora that has existed for years under the eyes of our most 'lynx-eyed' botanists unrecognised and unknown." (Incidentally I feel sure that when Kirk wrote about the nativity of a species he was writing with a belief in Special Creation. After all, he was a devout Baptist (5) and his paper was dated 1851, eight years before the publication of Darwin's "Origin of Species".)

Kirk's detailed knowledge of the plants of Warwickshire, his specimens and records, were of great use to H.C. Watson's studies of plant distribution and (later) for J.E. Bagnall's "Flora of Warwickshire". Bagnall noted (8): "About 1858 Mr Thomas Kirk communicated to Mr Hewett C. Watson a "London Catalogue of British Plants", Ed. 5, checked for plants seen in Warwickshire, together with MS and specimens. Although this record was not published in "Topographical Botany" till 1873, it is only justice to an indefatigable botanist that his records should be noticed in this sequence." And when Watson acknowledged Kirk's help he wrote: "Mr Kirk's emigration to New Zealand was a loss to our home botany : but in his new country he has proved an active promoter of botany and kindred sciences." (9)

Bagnall also wrote: "Mr Kirk was, I believe a native of Warwickshire, and resided for many years at Coventry. He was an ardent botanist, giving attention not only to the flowering plants and ferns, but also to the mosses of the county. He appears to have published very little, but he appears to have corresponded with several of the more prominent botanists of that day, such as Borrer, Babington, Bloxam, and W.G. Perry. To the herbarium of the latter botanist he contributed many of the rarer flowering plants and a collection of mosses. These form a part of the Perry herbarium in the Warwick Museum." Kirk's third son was named after Borrer.

Kirk married Sarah Jane Mattocks, daughter of a warehouseman, at Coventry on 25 December, 1850. Their first four children were George, Thomas William (1856–1936), Amy, and Harry Borrer (1859–1948). Two further children — Lily May and Cybele — were born in New Zealand whence the family emigrated in November 1862 with a party of non-conformists. They arrived at Auckland on the *Gertrude* on 19 February, 1863 (3).

By the time Kirk came to New Zealand he was an experienced field botanist, familiar with the latest developments in British botany, and persona grata in the English botanical community.

In 1870, in his paper "On the Botany of the Thames Gold-fields" (*TNZI* 2: 89–100) he introduced the following terms to the New Zealand botanical literature, derived from the writings of his friend Watson: littoral, ericetal, pascual, rupestral, viatical, inundatal, paludal, lacustral, and sylvestral.

On 25 October, 1870, he was nominated as follows.

"Thomas Kirk Esqu. of Auckland, New Zealand, a gentleman well known for his knowledge of British Botany, and more especially for his Botanical Explorations of New Zealand, being desirous of becoming a Fellow of the Linnean Society, we the undersigned do recommend him as being highly deserving of that honour.

Jos. D. Hooker
Danl. Oliver
George Bentham
H. Cleghorn"

Kirk was proposed on 3 November 1870 and elected in a ballot on 19 January 1871.

In 1872 Kirk published "On the Nativity in New Zealand of *Polygonum aviculare* L." (*TNZI* 4: 238) leading to a debate on origins with W. T. L. Travers reminiscent of the earlier debate in England over *Anacharis*.

Throughout his time in New Zealand Kirk corresponded with James Britten of the Botanical Department, British Museum, who wrote: "His later letters contained many allusions to his failing health, but the end came somewhat suddenly on the 8th of March last, at Plimmerton, near Wellington." (4).

Kirk's contribution to New Zealand forestry has been described by Brown (5) and McKelvey (10) and his work in New Zealand botany by Hamlin (11) and Moore (12).

Acknowledgements

I am grateful to Ms Gina Douglas of the Linnean Society of London, and to the librarians of the the Sydney Botanical Garden, and Landcare Research, Lincoln, for help with this note.

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

PUBLICATIONS

■ Book review

What's in a name? A review of "Current names for wild plants in New Zealand". M.J. Parsons, P. Douglass and B.H. Macmillan. 1998. Manaaki Whenua Press, Lincoln. 206 p. \$42.50 (incl. GST and postage)

On the face of it, this book looks fiendishly useful. However, there are a number of traps, as I was to find when I tried using it. The first trap is explained by the full title of the publication which can be found on the title page, not the cover. It is: "**Current names list for wild gymnosperms, dicotyledons and monocotyledons (except grasses) in New Zealand as used in Herbarium CHR**". The first name I wanted to check, having seen the title on the cover, was a grass name since I find it very hard to keep track of grasses in the absence of a Flora. I presume there are good reasons why the names of grasses published to date were not included but it would have been incredibly useful if they had. To be fair, to address this shortcoming, the authors have included references to revisions and checklists of grasses which have been published in the *New Zealand Journal of Botany*. The second name I wanted to check was a fern name, having not registered that ferns were not included. Given that ferns have been dealt with in the Flora of New Zealand series, I assumed they would be included in this list but they are not. The reason for their exclusion is not given.

The second trap is that, with a couple of exceptions, the cut-off date for inclusion of names is December 1995 – three years (date of publication in the letter accompanying the book is January 1999 – another slight problem) before the list was published. As we all know, the new names have been flooding out of the journals – Ewen Cameron's update in this newsletter indicates the amount of material that has been published. I can see no reason why this list is so out of date.

To my mind, these two traps indicate a serious misjudgement with the naming of this book – the names are not current (by three years) and two large groups of wild plants (grasses and ferns and their allies) are not included. This book is all about names – correct and current ones – but the title lets them down.

A further point of confusion relates to the taxon status. What is the real oil on a species' status, and where should we get that information from? For example, *Wilsonia backhousei* (written about in this issue of the *Newsletter*) is recorded as "casual" in this book of current names yet Jane and Sykes (1995) regard it as probably indigenous.

Another difficulty for the general user of this list is the order in which families are listed. I would have preferred alphabetical listing of families, as in Flora Vol. IV, with the running title on the

page changing to reflect the family dealt with on each page. That saves the necessity of using the index every time.

Having said all of this, the concept of the book is excellent and it should be an invaluable tool for anyone using New Zealand plant names. To be of real value to the botanical community, this list should be revised and republished on a regular basis and the shortcomings identified must be addressed.

Reference

Jane, G.T.; Sykes, W.R. 1995: *Wilsonia backhousei* (Convolvulaceae) in New Zealand. *New Zealand Botanical Society newsletter* 42: 4–6.

Editor

■ **Journals received**

New Zealand Native Orchid Group Journal 70

(March 1999; ISSN 1170-4543) Edited by Ian St George. 43 p.

Original papers in this issue are: David Banks – Ten tips to better orchid photographs; George Fuller – Seeing double; E.D. Hatch – The NZ genera 7: *Calochilus* and *Chiloglottis*.

Included is a report on the NZNOG conference and field days.

Editor

DESIDERATA

■ **Tongariro National Park – vegetation and fire history**

I am an honours student at Massey University and require information on the vegetation and fire history of Tongariro National Park for my thesis. Does any member know about the vegetation history of the Ohakune side of Mt. Ruahapeka, especially any fires in the region between Blyth hut and Mangahuehu hut. I am also interested in information on the original location and building dates of these two huts. Any information will be received with great interest. I would love to hear any old stories about the area.

Please forward all communications to my email or postal address. Thank you for your help.

Miranda Olliff, Ecology Group, Massey University Private Bag 11222, Palmerston North.
Email: M.J.Olliff@xtra.co.nz

FORTHCOMING CONFERENCES/MEETINGS

■ **15th John Child Bryophyte Workshop: Friday 10 – Wednesday 15 December 1999**

The John Child Bryophyte Workshops are held annually at venues throughout the country, and allow those keen to learn more about mosses and liverworts to get together with experienced bryologists while exploring a relatively unknown part of New Zealand's flora.

This year's workshop will be held at Inglewood in Taranaki, based at the attractive Everett Road Christian Camp opposite a small DoC reserve (though more luxurious accommodation will be available). Excursions are planned to Mt Taranaki, and several small reserves in northern Taranaki and north of New Plymouth. Expected costs will be around \$150 per person for venue, meals and accommodation. Details will be given in a circular in July.

Additionally, a day-long excursion into Ahukawakawa Swamp is planned after the end of the workshop (Wednesday 15 December) for those who are keen to tackle a 5–6 hour tramp interspersed with botanising.

Details can be obtained from Jill Rapson at the address below.

Bryophytes for Beginners – Thursday 9 December 1999

A one day introductory course on bryophytes, should interest be sufficient, is planned for Massey University in December, just before the 15th John Child Bryophyte Workshop, with which it may be combined. Focus will be on understanding bryophyte morphology and taxonomy, to allow participants to name common species and to feel comfortable in accessing the standard identification texts. The course fee (notes, tuition, food) will be \$55 per person. Those interested in attending are asked to contact Jill Rapson.

Jill Rapson, Ecology, Institute of Natural Resources, Massey University, Palmerston North.
Email: G.Rapson@massey.ac.nz

■ **Native Plant Symposium: New Zealand Plants and their Story**

1–3 October, 1999 at Sharella Motor Inn, Glenmore Street, Wellington.

Otari Native Botanic Garden is New Zealand's primary collection of native plants. It was established in 1926 through the vision of Dr Leonard Cockayne. To celebrate a major redevelopment of visitor facilities and plant collections at Otari, the Royal New Zealand Institute of Horticulture and Wellington City Council are organising a native plant symposium with a focus on:

- Restoration and management of forest remnants
- Cultivation and utilisation of native plants in public landscapes and gardens
- Selection and breeding of garden plants
- Designing with natives
- The role of native plant collections

The symposium will be of interest to landscape contractors and managers, growers, designers, parks staff, gardeners, and anyone with an interest in growing native plants.

For more information please contact **Mike Oates**, Conference Convenor, 160 Wilton Road, Wilton, Wellington. Email: michael.oates@wcc.govt.nz

CORRIGENDUM

■ **Kermadec koromiko (*Hebe breviracemosa*) comes back from the brink of extinction**

In this paper we state that one species of *Hebe* is known from New Guinea. This statement is in error. Under current taxonomic assessments, there are no *Hebe* species accepted from that country. We thank Professor Phil Garnock-Jones, for querying this matter.

Peter J. de Lange, Science & Research Unit, Department of Conservation, Private Bag 68908, Newton, Auckland and **Bec Stanley**, Auckland Conservancy, Department of Conservation, Private Bag 68908, Newton, Auckland

