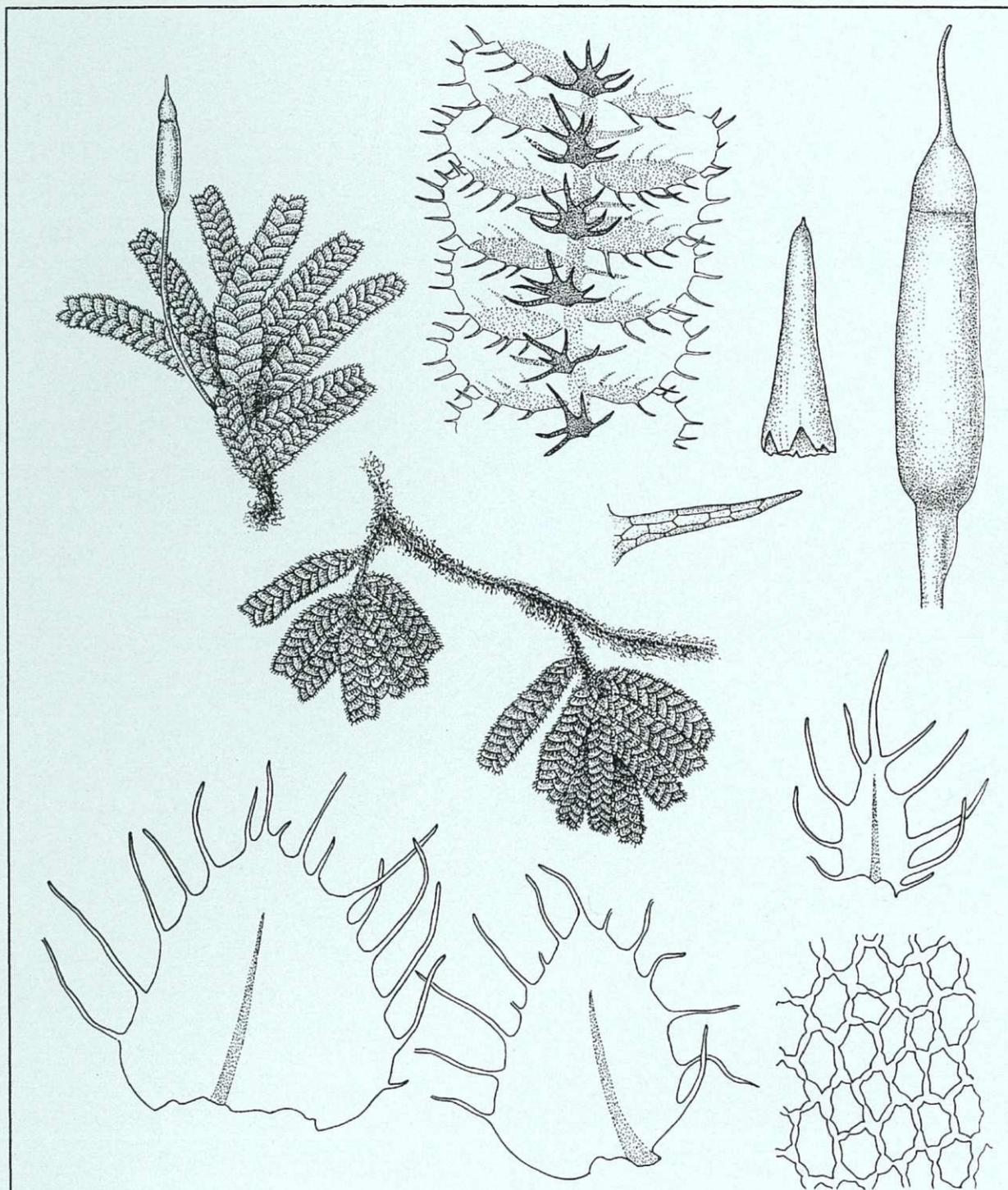


NEW ZEALAND BOTANICAL SOCIETY
NEWSLETTER

NUMBER 66

DECEMBER 2001



New Zealand Botanical Society

President: Jessica Beever
Secretary/Treasurer: Anthony Wright
Committee: Bruce Clarkson, Colin Webb, Carol West

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Subscriptions

The 2002 ordinary and institutional subs are \$18 (reduced to \$15 if paid by the due date on the subscription invoice). The 2002 student sub, available to full-time students, is \$9 (reduced to \$7 if paid by the due date on the subscription invoice).

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Subscriptions are due by 28th February each year for that calendar year. Existing subscribers are sent an invoice with the December *Newsletter* for the next 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 March 2002 issue (67) is 25 February 2002.

Please post contributions to: Joy Talbot
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Send email contributions to joytalbot@free.net.nz Files can be in WordPerfect (version 8 or earlier), MS Word (Word 97 or earlier) or saved as RTF or ASCII. Graphics can be sent as Corel 5, TIF or BMP files. Alternatively photos or line drawings can be posted and will be returned if required. Drawings and photos make an article more readable so please include them if possible. Macintosh files cannot be accepted so text should simply be embedded in the email message.

Cover Illustration

Catharomnion is a monotypic genus endemic to New Zealand; the ventral row of reduced leaves places this genus in the family Hypopterygiaceae, together with some of the forest floor mosses commonly known as "Umbrella Mosses". *Catharomnion ciliatum* (Hedw.) Hook.f. & Wilson occurs primarily on the caudices of certain tree fern species and occasionally on other tree species, including manuka, five-finger, and nikau palm. Like many epiphytes, it also sometimes grows on shaded vertical rock faces, and many of the records from the southern portion of its range are from epilithic habitats. Such a shift in substrate can be seen in many predominantly epiphytic mosses at the periphery of their distribution.

The epiphytic or epilithic substrate, the deflexed and frondose habit, the row of ventral reduced leaves, and the strongly ciliate leaf margins distinguish this beautiful species from any other New Zealand moss. *Catharomnion ciliatum* is widespread on the main islands but rare or absent from large portions of the eastern South Island; it also occurs on the Chatham Islands.

Line drawing by Rebecca Wagstaff for the Moss Flora of New Zealand being written by Allan Fife, Landcare Research, Lincoln. The "frond" at upper left is 7 mm high, exclusive of the sporophyte.

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New Zealand Botanical Society News

■ **From the President**

After 6 years as President of the Society, the time has come for me to step aside. During this time the Society has been involved in two very successful botanical conferences. In June 1999 we celebrated both the end of the millennium and the 80th birthday of our founding President, Eric Godley, with the conference 'New Zealand Botany at the end of the Millennium' and in November 2001, the 'Symposium on New Zealand Seeds – their morphology, ecology and use as indicators', both these conferences being organised in conjunction with Landcare Research. Already planning has begun for a celebration of the centenary of the publication of T.F. Cheeseman's 'Manual of the N.Z. Flora', in 2006, to be centred on the Cheeseman Herbarium at Auckland Museum.

Such conferences are an important function of the Society – enabling us members of the botanical community to initiate and maintain scientific friendships at a personal level. In his closing remarks at the Seed Symposium David Penman commented on the perennial nature of botanists, which we are well aware of. The Society has a role in fostering this, and maintaining a sense of history when today's institutions struggle to maintain institutional memory.

In 1999 the administration of the award of the Allan Mere passed to the Society, and three presentations have since been made, to Hugh Wilson, Bruce Irwin and Neill Simpson. In each case the presentation has taken place in conjunction with another botanical function, the launch of the "Grass Flora", a Lucy Cranwell Memorial Lecture at the Auckland Botanical Society, and the Whakaingoahanga of the Allan Herbarium, respectively. These occasions have enabled us to celebrate outstanding contributions to New Zealand botany, and to do so in a wider botanical forum.

I would like to take this opportunity to formally thank members of the Society, and particularly the other officers and committee members for their support over the last six years. Committee members have been Catherine Beard, Bev Clarkson, Bruce Clarkson, Colin Webb and Carol West, and of course the Secretary /Treasurer of the Society since its inception, Anthony Wright. In the closing moments of the 'New Zealand Botany at the End of the Millennium' conference Eric Godley paid tribute to the long line of Editors of the NZ Botanical Society Newsletter, which is indeed the mainstay of our Society. In my time as President the editorship of the Newsletter has been expertly handled by Bruce and Bev Clarkson, by Ewen Cameron, Carol West, and since 2000 by Joy Talbot. Thank-you all very much.

I hand over the Presidency to Anthony Wright, who has been a botanical colleague since he was a first year botany student and I a first year Junior Lecturer. Anthony will be ably supported in the Secretary's role by Doug Rogan, and by the 2002 committee of Bruce Clarkson, Colin Webb, and Carol West. I look forward to a strong future for the Society at a time when pressures on the working lives of botanists make its role even more important.

Jessica Beaver, c/o Landcare Research, Private Bag 92170, Auckland

■ **From the Secretary/Treasurer**

"New Zealand Seeds - their morphology, ecology and use as indicators". Lincoln University 29th November 2001.

A report on this symposium can be found further on in this Newsletter. The minutes of the General Meeting of the New Zealand Botanical Society held during the Symposium will appear in a future issue of the Newsletter

Anthony Wright, c/- Canterbury Museum, Rolleston Avenue, Christchurch

Regional Botanical Society News

■ Auckland Botanical Society

September Meeting

After the herbarium conference (CHAH) at Perth in October 2000, the delegates attended a field trip at Fitzgerald River National Park, southern Western Australia. Ewen Cameron's talk to the ABS illustrated some of the sights to be seen during the peak of the flowering season, in one of the most flora-rich conservation areas in Western Australia. The 'wildflowers' were not herbaceous species, as might be expected, but were largely flowering shrubs. Familiar genera such as hakea and protea were present, as was a tree-sized mistletoe.

September Field Trip

Arthur and Val Dunn of Puhoi have given 108 ha of bush to DoC and the QE II National Trust. It was planned to visit the two QE II owned areas, totalling 96 ha, with the added bonus of seeing the carmine rata, *Metrosideros carminia*, in flower. Due to deterioration of the weather after lunch, and the notorious 'botanical pace' of the participants, only one patch was visited. The taraire/podocarp bush has a small grove of kauri trees, which sheltered *Pterostylis brumalis*, *Dracophyllum latifolium* and *Alseuosmia macrophylla*, which was flowering fragrantly. The damp gully sheltered several *Cyathea smithii*, and *Asplenium lamprophyllum*. Two large kahikatea and a rimu were remeasured to see how they had grown in the 15 years since our last visit. A narrow ridge sported gardens of *Libertia grandiflora*, *Collospermum hastatum*, and tiny plants of *Asplenium hookerianum*, all showing the benefits of possum control. It was agreed that it was a little early for the carmine rata flowers, and the second bush could be visited on a later date.

October Meeting – 17th Lucy Cranwell Lecture

Ken Hill from the Royal Botanic Gardens, Sydney, spoke to a large meeting on the recent exciting discovery near Sydney of a new conifer, the Wollemi Pine, *Wollemia nobilis*. This new member of the Araucariaceae was found in 1994, growing in deep sandstone gorges in a remote part of a national park. Showing similarities to, and differences from, both *Agathis* and *Araucaria*, it was decided to place *Wollemia* in a new genus. Slides showed the habitat and the form, which is unusual in that the trees often coppice from old rootstock, and morphological details. New plants are being grown in large numbers from seeds and cuttings, and will be released for sale in 2005. We all look forward to seeing the Wollemi Pine growing in our parks and botanic gardens.

October Field Trip

A misty day on the Kohukohunui Track, high in the Hunua Ranges, made conditions perfect for viewing the vegetation of what is obviously a high rainfall area. Pukatea, some huge and dripping with epiphytes, were very common, and *Cyathea smithii* was the commonest tree fern. *Raukaua edgerleyi*, *Quintinia serrata* and *Corybas acuminatus* were all along the track, and *Blechnum nigrum* and *Libertia* aff. *pulchella* were growing in the higher reaches. All agreed that an epiphytic *Alseuosmia macrophylla* just smothered in deep pink flowers was the most floriferous they had ever seen. The occasional kokako call was heard (intense control of predators has had a positive effect on the vegetation too), and a pied tit and a robin were seen.

November Meeting

Student talks, by recipients of grants from the Lucy Cranwell Fund, are becoming an end-of-the-year custom. This year there were two very different discussions. Matt Renner gave a lively power point presentation of the work he has done on the liverwort genus, *Radula*. Matt's grant had allowed him to travel to the South Island and Stewart Island, thus widening the scope of his study. Tim Martin spoke on *Ascarina lucida*, a species that is very local in the north. Tim discussed the plant's distribution, site characteristics, seed ecology, phenology, environmental tolerances, and ecological niche. Having potted plants of *Ascarina* and pukatea at the meeting helped people differentiate between the two.

November Field Trip

ARC Ranger Andy Spence and some local enthusiasts led the day's walk through Whakanewha Regional Park on Waiheke Island. This 250 ha park has areas of regenerating scrubland, and gullies containing broadleaf coastal forest. Taraire, puriri, pohutukawa and kohekohe form the canopy in these gullies, with many nikau starting to mature underneath, now that cattle are excluded. Also growing well are the many

young kohekohe coming up through the kanuka on this possum-free island. Only a few podocarps were seen. Ferns of interest were *Lastreopsis velutina*, *Asplenium gracillimum*, *A. lamprophyllum*, *Hymenophyllum flexuosum* and *Trichomanes endlicherianum*.

The track led to the beach, where we inspected the vegetation of the wetlands and shellbanks before boarding the bus that returned us to the ferry.

FORTHCOMING ACTIVITIES

8 December	Workshop at 2 pm followed by pot luck dinner at the Botanic Gardens
3-10 January	South Island trip led by Cathy Jones
25-28 January	Great Barrier Island
16 February	Martins Bay/Scandrett Regional Park
6 March	Talk on threatened plants of the Waikato region. Eamonn Ganley
16 March	Karioi Slopes, Te Toto, Raglan

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

■ Wellington Botanical Society

TRIP REPORTS

Easter 13-16 April: Manawatu/Rangitikei/Wanganui

[The first day's field trip was written up in Newsletter No. 65 by the Manawatu Botanical Society – Ed]

Saturday 14: We met Tony Silbery at Paengaroa Scenic Reserve which lives up to its reputation as having one of the most diverse collections of divaricating plants in the country. Without having to move very far we spent several hours with Tony gamely trying to educate us on their I.D. My personal highlight was seeing *Brachyglottis sciadophila* creeping along the ground in shade – contrary to how I thought it would grow. I also thought the *Coprosma obconica* looked a bit different from the South Island versions. In the afternoon we went south to Mangaweka to meet the legendary Henry Dorian who was to show us the elusive *Dactylanthus taylorii*. Chris Horne got the first sniff of the only intact flower and then the rest of us followed suit. The scent is very difficult to categorise but has some citrus influence? Henry reflected on the irony of preserving this patch of bush where many years ago while working for the Forest Service he had cleared a portion of it.

P.S. Viv Nicholls reports that the largest snowfall in recent years toppled many big trees in the reserve.

Sunday 15: Jim Campbell and Colin Ogle escorted us to Whitiau Scientific Reserve south of Whanganui. This reserve is where *Sebaea ovata* can be found and we got into a detailed description of the problems of its survival. *Sebaea* has been in decline for several years with factors such as 4WD vehicles, weed invasion, rabbits and cattle contributing. Not only is the number of *Sebaea* in decline, but the size of the plants is diminishing too. Jim had the soil analysed and found only 4 ppm of nitrogen present at Whitiau, so is experimenting with seeding and fertilising man-made scrapes. We wandered around part of the rest of the reserve and also saw a naturally occurring hybrid of *Coprosma acerosa* and *C. propinqua*, and the brown form of *Carex testacea*. In the afternoon we hunted for *Pimelea* "Turakina" along Castlecliff Beach Reserve in Whanganui. Colin Ogle had previously found one plant there and after much cliff climbing by the group, Colin re-discovered the plant on a slip. We counted about 20 plants in that one small area. These are vulnerable if the cliff slipped again. There are huge numbers of exotic plants in the reserve, many species obviously planted.

10 June: Wainuiomata Catchment

In phase one of the public access strategy to the Wainuiomata Catchment, Wellington Regional Council (WRC) is allowing only one group of 20 (plus Council guides) into the catchment each month. We visited part of the finest podocarp/northern rata forest in the Wellington region. It is truly magnificent. I personally spent much more time gazing skyward than is usual on a BotSoc trip. WRC rangers led, and brought up the rear, of the party. After an introduction at the water treatment plant, we walked along a 4WD track through regenerating scrub and forest before reaching the podocarp/northern rata forest. Unfortunately we were not allowed to follow the road up the hill to see other plant communities and species. Pat Enright

recorded the species seen, adding about 6 to the list updated by Barbara Mitcalfe and Chris Horne on a Tararua Tramping Club trip there on 17 December 2000. Vicky Froude

5 May: Threatened species plantings, Tapu Te Rangi Marae

Anxious days of hoping for rain culminated at last in substantial showers as kaumatua Bruce Stewart came out to greet and encourage us. DoC biodiversity officer Rob Stone arrived with plants grown on by DoC's Jeremy Rolfe from seed and/or cuttings collected by Dean Baigent-Mercer last spring from Wellington south coast locations: *Clematis afoliata*, *Acaena pallida* and *Rubus squarrosus*. We set to work to find spaces on the slope above the carpark which had already been planted in a wide range of rare native species last year, e.g. Chatham Is. and Surville Cliffs endemics, all clearly named with strong aluminium tags.

7 July: Galbraiths Gully and "Jasmine Grove" Scenic Reserve, Lower Hutt

This was a joint BotSoc/Korokoro Environmental Group (KEG) trip, to help KEG and Hutt City Council with the preparation of a management plan for Galbraiths Gully on the Western Hutt hills. Kate Malcolm, a member of BotSoc and KEG, provided species lists for three nearby reserves, to give us an idea of species we might find in Galbraiths Gully, and Chris Horne and Barbara Mitcalfe did a quick "recce" beforehand.

Galbraiths Gully is a delight – an interesting plant community and an enjoyable tramp. In 2 hours, we added 22 species to the preliminary list, including gully tree fern, *Cyathea cunninghamii*, *C. smithii*, *Hymenophyllum demissum*, *H. flexuosum* and *Trichomanes endlicherianum*.

After lunch in Te Whiti Grove Park we had 2 hours botanising along the gully track and upper track in "Jasmine Grove" Scenic Reserve. This important kohekohe remnant is in the catchment of Percy Stream which flows through Percy Scenic Reserve. Among the 20 species we added to the preliminary list were the ferns *Blechnum membranaceum*, *Cyathea smithii*, *Hymenophyllum flexuosum* and *Lastreopsis velutina*, the epiphytic orchids *Earina autumnalis* and *E. mucronata* and the sedge *Uncinia scabra*.

28 July: Planting at Te Marua Bush

Te Marua Bush is a small, valley-floor remnant of predominantly totara, matai and maire, at the north end of the Upper Hutt Valley. This is the third consecutive year that planting has been done here as joint project between BotSoc and Upper Hutt Forest and Bird, who have grown locally-sourced plants and overseen their releasing during summer. The "soil" is extremely bouldery, with crowbar and pick essential, with volunteers doing a great job over the last 3 years in planting ca. 540 plants in an effort to extend and consolidate this small but valuable remnant. Other workbees during this time have removed assorted weeds. Wellington Regional Council (WRC) rangers have provided valuable help with planting, pest animal control and pest plant removal. Sue Millar and Glennis Sheppard

4 August: Cannons Creek Covenant

Seventeen Botsoccers and Friends of Maara Roa Project botanised in the Cannons Creek Covenant, on the north side of Belmont Regional Park, adding to and amending the preliminary species list.

Cannons Creek Covenant on the east side of the valley includes a highly modified forest remnant – tawa/kohekohe and tawa/kahikatea/kohekohe. This has been surrounded and invaded by gorse, encouraged by several fires. Takapu Covenant on the west side of the valley, was in pasture 20 years ago. Since then there has been secondary regeneration in the stream bed and tributary gullies – mainly mahoe and tree ferns. These were fenced when the covenant was created. Since retirement of the surrounding farmland, gorse has covered the ridges and encircled the regenerating natives. In both covenants, tall gorse that has survived fires is now giving way to regenerating natives. The single specimen of totara was confirmed as *Podocarpus totara*, not Hall's totara. The list of dicot trees and shrubs was expanded to include karaka and kohuhu, making a total of 36 species of dicot trees/shrubs, and 9 dicot lianes. Also found were *Coprosma propinqua* x *C. robusta* and *Muehlenbeckia australis* x *M. complexa*.

The list of ferns was expanded from 22 to 32. Notable are tree ferns in the heads of gullies, including *Cyathea cunninghamii*, *C. dealbata*, *C. medullaris*, *C. smithii* and *Dicksonia squarrosa*.

2 September: Waipapa Stream, Wellington South Coast

The vegetation of the small "bush" remnant in the upper reaches of the lower true left branch of Waipapa Stream was surprisingly diverse given its size and location. There was a good range of fern species including *Asplenium appendiculatum*, *A. hookerianum*, *A. bulbiferum* x *hookerianum*, *Pellaea rotundifolia*, *Adiantum cunninghamii* and *Lastreopsis velutina*. This area also contained our first sighting of *Scandia geniculata* – a fine dicot liane with aniseed-scented leaves. The remnant contains kaikomako, karaka, kanuka and mahoe trees of reasonable size.

Above Waipapa Stream forks, we explored an area of low *Coprosma propinqua*-tauhinu scrub with extensive areas of leafless clematis, *Clematis afoliata*, and leafless lawyer, *Rubus squarrosus*. The frayed stem ends of the *Clematis* showed that the goats we had seen were damaging these rare plants.

After lunch we went upstream to find the rare Wellington lacebark *Hoheria* "Tararua" that Barbara Mitcalfe and Chris Horne saw nine years ago. We found only one tree and that had been almost completely defoliated. It seems that the combined effects of browsing goats and possums, last summer's drought and a gall infection had been too much. The species is regionally endangered. The poor condition of this tree has been reported to the Department of Conservation and Wellington City Council (as landowner). We saw a few seedlings near the creek bed.

We then began the largely in-creek trip to the coast. Barbara and Chris noted how much the vegetation had grown since their last visit. Interesting streamside plants include *Fuchsia perscandens*, *Sophora microphylla* in flower, and a large *Griselinia lucida*. Travel in the stream was slippery in places, leading to several wettings. Barbara Clark slipped climbing a bank and badly gashed her knee. While it was being bandaged, a newly born goat was killed. Prevention is better than cure! Vicky Froude

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■ Nelson Botanical Society

May Field Trip: Harwoods Covenant - Takaka Hill

Around 20 keen botsoccers braced themselves against the stiff southerly blowing across Takaka Hill to walk the various loop tracks on the relatively recently developed Harwoods Covenant walk. We all took initial shelter in a recently fenced off tract of silver beech forest in the depression near the start of the track, and were surprised by the wealth of native plants we encountered here. The small stream was lined with numerous ferns including both species of crepe fern (*Leptopteris*), and seedlings of southern cedar (*Libocedrus bidwillii*). The disappearance of the stream down a sink hole was graphic evidence of a marble substrate, as well as the presence of characteristic calcicoles such as *Melicytus obovatus* s.s. at its type locality, the large flannel-leaved *Brachyglottis hectorii*, the highly palatable *Pseudopanax macintyreii*, and the leathery *Asplenium lyallii*. It was also fascinating to see such an intermixing of upland and lowland species, for example rangiora growing with *Pittosporum rigidum*! One of the most intriguing forest finds though, was *Alseuosmia pusilla* in fruit, and doing a very passable impression of the nearby horopito, *Pseudowintera colorata*.

We broke out of the forest into the sunshine and a grazed landscape of karst outcrops and scattered trees and shrubs. Here, in cracks in the marble rocks, we found colonies of *Asplenium* aff. *trichomanes*. How they have survived the Nelson drought in such a dry habitat is remarkable. We fossicked amongst shrubland groves of *Corokia cotoneaster*, *Hebe albicans* and *Hebe venustula*, and, after lunch, the more intrepid of us explored the exposed karrenfield of marble around the summit loop.

Brief stops to look at the very narrow-leaved unnamed *Libertia* and the juvenile foliage of *Pittosporum rigidum* seedlings were preceded by a deterioration in the weather. Steady rain accompanied us through a frost hollow of mountain beech forest, where we encountered the hebe look-alike *Pimelea longifolia*, and a giant landsnail (*Powelliphanta hochstetteri*) on the move. Shannel Courtney

May Talk: "Is gardening a dirty word?"

Jude Petheram of Nelson Mail and radio fame was our speaker. She decided that something different was in order, and different it certainly was. There was a large carton produced with various potions in it, and on went the rubber gloves. Jude obviously feels very strongly about modern-day gardening and the production of food. The containers in the carton were meant to control all the weed and insect nasties which interfere with plant growth. But as well, many are dangerous to humans and can have horrendous effects on us and our plants. For example, pea straw bought as a mulch had hormone residues and put a daffodil breeder back a number of years, and compost from the Christchurch transfer station, containing grass clippings and spray residues, was a disaster.

Her message was, use as few chemicals as possible, dispose of old ones legally, and spread the message. Thanks Jude for a stimulating and thought-provoking talk. Sally Warren

June Talk: *Wahlenbergia* Taxonomy

Judith Petterson from Waikanae, has been studying native harebells, *Wahlenbergia*, for nearly 50 years, and, with the help of her husband Graeme, provided us with a very informative overview of our ten species with slides and overheads. Judith's paintings of each species also highlighted her artistic talent.

There are two main groups of *Wahlenbergia* in New Zealand: the radicate or tap-rooted group with chromosome counts of $2n=54$ and 72 , and the rhizomatous group with chromosome counts of $2n=36$.

The purple-flowered *W. violacea* is the most widespread of the five radicates, and is found throughout the country. The others are the northern North Island *W. vernicosa* with its shiny opposite leaves, the central New Zealand *W. ramosa* which lives on the coast; the large pale blue-flowered *W. akaroa* from Banks Peninsula; and the inland white-petalled *W. rupestris*. In the past all these species were confused with the northern pacific species *W. gracilis* and *W. marginata*, which are in-fact not indigenous to NZ. All these tap-rooted species are relatively easy to grow and provide a good flowering display over most of the growing season.

The five rhizomatous species are a diverse bunch and appear to be very substrate-dependent in their ecology - consequently they are not as easy to grow. They are centred on Nelson and Marlborough, which makes these regions the most diverse for harebells in the country. They include the very distinctive *W. cartilaginea*, the fleshy scree harebell from South Marlborough with its incredibly long root system; the lowland limestone endemic *W. matthewsii* which is a narrow-leaved sub-shrub with large flowers, found in South Marlborough and also eastern Golden Bay; and the dainty little *W. congesta* of the coastal turfs between Cape Farewell and Invercargill. This has a subspecies which lives on the coastal schist sands in South Westland (ssp. *haastii*).

The remaining two rhizomatous species are the widespread *W. albomarginata* that most people in the South Island know as the common harebell, and *W. pygmaea* of the North Island mountains. Both species have numerous subspecies, which are separated by geography, geology, altitude and rainfall. There are two Nelson-Marlborough endemics: *W. albomarginata* ssp. *flexilis* of the South Marlborough limestones, and *W. albomarginata* ssp. *olivine*, which occurs on the mineral belt between Red Hills and Dun Mountain.

Although many of these species appear to be notoriously difficult to identify, with the discovery of all this harebell diversity on our backdoor step as a result of Judith's talk, we have an incentive to sharpen up our *Wahlenbergia* identification skills. Shannel Courtney

July Field Trip: Pepin Island

Last winter we looked at the plants on the southern part of Pepin Island, so the northern end was the focus of this year's trip. As we walked up and around the farmland track, *Metrosideros diffusa* - which was sprawling over rocky ground - joined *M. fulgens* and *M. perforata* on the previous year's list, as did *Meliccytus* "Waipapa Bay". In damper spots *Cyperus ustulatus* with its broad leaves was a striking contrast to the narrow stems of *Juncus* spp. *C. ustulatus* (our only native *Cyperus*) differs from the 13 naturalised species in its large size and dark seed heads.

Our lunch break was at the top of the cliffs where a small remnant of bush has survived grazing and burning. To my delight this rocky outcrop has recently been fenced and the large old *Griselinia lucida* trees now have new epicormic shoots. *Drymoanthus adversus* has survived the summer drought and looked very healthy clinging to large rock faces. *Peperomia urvilleana* and *Parietaria debilis* were also interesting finds. A poor flowering of kohekohe (*Dysoxylum spectabile*) was noted and no fruit from last year could be seen.

Julie McLintock

July Talk Report: Subantarctic Islands by Lawrie Metcalf

Lawrie and Lena gave us a fascinating trip to the Subantarctic Islands, with Lawrie detailing the plants they saw there and Lena talking about the wildlife, which was just as interesting. They started with Campbell Island, which was grazed and burnt for about a hundred years but is now recovering strongly. Plants there included *Bulbinella rossii* (mostly in bud), *Pleurophyllum hookerii*, *P. speciosum* (large ribbed rosettes), *P. criniferum*, *Damnameraia vernicosa* (white daisies with purple centres), *Stilbocarpa polaris* (cream and maroon flowers), *Colobanthus muscoides*, *Carex trifida*, *Hebe benthamii*, *Poa litorosa* (some large tussocks on pedestals), *P. foliosa* (broadleaved tussock), *Acaena minor*, *Leptinella plumosa* (leaves up to 15cm long), *Dracophyllum scoparium* and other more familiar species such as *Polystichum vestitum*, *Oreobolus pectinatus* and *Dracophyllum longifolium*. The royal albatross here was particularly beautiful with dark lacy patterns on its wings.

Macquarie Island was next on the itinerary. This is a small mountainous island with very deep water around it. It has only been above sea level for about half a million years. The interior of the island is protected and can only be visited by local staff and scientists. Forty vascular plant species are found on the island, including *Colobanthus muscoides* and a very hairy form of *Leptinella plumosa*, with *Poa foliosa* being the main tussock there. *Stilbocarpa polaris* is known as the Macquarie cabbage. The wildlife on Macquarie is extremely interesting with elephant seals, gentoo penguins, king penguins, royal penguins and skuas.

The Auckland Islands (Enderby, Auckland and Adams Islands) were next on the agenda. Here we started with a walk on Enderby where we saw Hookers sea lions and sooty albatross. Plants included southern rata with brilliant red new leaves and *Gentiana serena*. *Bulbinella rossii* was in full flower on the moorland here amidst acid-loving *Oreobolus*, *Dracophyllum*, *Sphagnum* species and *Poa foliosa*. Auckland Island shags and dotterel, Yellow-eyed penguins and parakeets feeding on dock, and Auckland Island teal in a lake were the next delights. Canley Harbour between Auckland and Adams Islands gave us *Blechnum durum* on the shoreline and the wondrous "Fairchild's Garden".

The Snares were our last port of call. North East Island is very much a bird island (6 million seabirds) with gnarly cover of *Olearia lyallii* and *Brachyglottis stewartii* over a maze of muttonbird burrows. *Hebe elliptica* grows here on the coast, and the Snares endemic *Stilbocarpa robusta* (just a glimpse). Wildlife included fur seals, leopard seals, Antarctic terns and Snares crested penguins.

A wonderful trip, with a little parting advice from Laurie and Lena to take fast film if you ever go there as the weather has a tendency to be overcast with poor light conditions.

Cathy Jones

August Field Trip: Pupu Walkway

Twelve people set off up the walkway hoping to see many filmy ferns to help our learning for the following evening's workshop. In this respect we were disappointed as the only species found were *Hymenophyllum rarum*, *H. demissum*, *Trichomanes venosum* and *T. strictum*. Other ferns were numerous though, notably *Blechnum fraseri* with its very similar fertile and non-fertile fronds.

Before climbing up to the water race we found *Alseuosmia macrophylla* (unfortunately not yet in flower), *Astelia trinervia* and *Chionochoa cheesemanii*.

Gay Mitchell

August Workshop: Filmy Ferns

Shannel Courtney put a lot of work into setting up fresh samples and herbarium specimens so that they worked as a key based on frond size, the presence or absence of teeth, and wings on the stipe and rachis. This led to a very interesting evening full of new insights for the people who attended. His efforts were very much appreciated. Gay provided a scrapbook of dried specimens. All the species of

Hymenophyllaceae were represented in one form or another and there was much discussion over the identity of specimens brought along by other members.

September Field Trip: Tinline, Pelorus

Eight of us explored the riparian forest in the Tinline Valley in the Pelorus Catchment. Most of this part of the Tinline Valley is in farmland and forestry, but a riparian strip has been protected, and although it is relatively narrow it is quite diverse and contains some interesting plants.

The highlight among the ferns was a beautiful rock face near the bridge absolutely covered in *H.rarum*. There was no shortage of small leaved shrubs, so we had a good go at these. Among the species we saw were *Carpodetus serratus*, *Coprosma linariifolia*, *C.propinqua*, *C.rotundifolia*, *Corokia cotoneaster*, *Helichrysum lanceolatum*, *Lophomyrtus obcordata* and *L.bullata* (with a bewildering range of hybrids), *Melicope simplex*, *Olearia serpentina* and *Raukaua anomalus*. We also found and collected a specimen of a "funny-looking" *Melicytus*, which turned out to be the find of the day. It was *Melicytus* "Tinline", a little known and undescribed species believed to be quite rare.

There was a lot of walking around with our noses close to the ground as we looked for some of the other special plants of Tinline, *Scutellaria novae-zelandiae* (endangered), *Brachylottis traversii* and *Poranthera microphylla*. Our efforts were rewarded with finds of the *Scutellaria* and *Brachylottis*, but the *Poranthera* was rather elusive and we had to admit defeat on that one.

Although the focus of the trip was on native plants, a few weeds were spotted as well. Several old man's beard (*Clematis vitalba*) seedlings were pulled, as well as some English ivy (*Hedera helix*). The cattle damage was also a concern, as most of this bush is unfenced. Although the bush is legally protected, its long-term survival is by no means assured.

On this trip we were lucky enough to have a visitor from the Rotorua Botanical Society, John Hobbs. It was an excellent opportunity to share knowledge about the plants in the North Island. So I thought I would take this opportunity to tell people from other Botanical Societies how much we enjoy it when they come and join us.

Melanie Newfield

September Talk

When you look at the gorse-covered hills around Nelson or the old man's beard in the Motueka catchment, it seems odd to be worrying about weeds that almost nobody has heard of. But that was the topic of September's talk – "Little Shop of Horrors, or why you should worry about the weeds that nobody has heard of".

The weeds we have already are bad enough, but unless we do something, the problem will get much worse. This is where a group such as the Botanical Society can play an important role. Nelson Botanical Society has been provided with three sets of DoC weed surveillance kits for DoC's Nelson/ Marlborough Conservancy. By being aware of some of the new nasties that might turn up, and reporting when they are found we can all help prevent new problems developing.

Melanie Newfield

Labour Weekend Camp: Totaranui

Saturday 20th: Following a wet Friday night the weather cleared to give a beautiful day for the expedition to Separation Point in the care of David Jackson. The bush was a joy to see, being so lush and fresh after recent rain. *Pterostylis banksii* was flowering luxuriantly and *Thelymitra* sp promising a grand display later. *Pittosporum cornifolium* captured our interest but the first really exciting find was *Drosera auriculata* ssp. *peltata* with stems/trailing inflorescences 600mm long. When we reached the coast, the search began in earnest for some of the rare and unusual plants thought to be in the area. *Rorippa divaricata*, *Oplismenus hirtellus*, *Arthropodium candidum*, *Poa anceps*, and thriving examples of *Peperomia urvilleana* were found. Later a great whoopee by Les Moran signalled that *Lepidium banksii* had been found. Known also as coastal peppercress or nau, this plant has a critically endangered ranking. Some seedlings were also found, providing hope for the future. Along the coastline *Linum monogynum* poked its white flowerheads through surrounding vegetation while in the bush *Dianella nigra* and *Libertia grandiflora* were in flower.

Mac Crampton

Sunday 21st: Heavy rain delayed botanising until after lunch. We resumed botanical study with a detailed look at flowers on a mature *Ascarina lucida*. Ferns of particular interest were *Lindsaea trichomanoides* with its red-brown stipes. Growing side by side, the fern allies *Tmesipteris elongata* and *Huperzia varia* with only its sterile form looked very similar. An interesting interlude was getting a possum munching leafy material out of the low canopy and ending its days. A splendid example of an epiphytic *Griselinia lucida* with its ribbed root was seen on a matai tree. At ground level the root diameter had tapered down to 120mm from some 300mm higher up.
Mac Crampton

Monday 22nd. In the sunshine on Monday we had a relaxed wander on the beaches en route to Awaroa Inlet. After seeing several dozen *Rorippa divaricata* on our Saturday trip we had our eye in which led to the discovery at a new site on the track south of Goat Bay. Other highlights were a large clump of *Earina mucronata* in full flower at waist height and *Thelymitra longifolia*, much of it heavy in bud but one with its first white flower.
Julie McLintock

UPCOMING EVENTS

Field Trips:

- 16 December – Drive to top of Raglan Range – Leader Cathy Jones, 03 546 9499
- 20 January - Lodestone – Leader Jocelyn Lewis, 03 547 2812
- 17 February – Rainbow Skifield – Leader Cathy Jones
- 23 or 24 February – Monitoring mistletoe recruitment at Lake Rotoiti – Leader Cathy Jones
- 17 March – Rai Saddle – Leader Shannel Courtney, 03 548 7537

Camps:

- Anniversary Weekend – February 1-4 – Lewis Pass/Maruia Springs – Leader Melanie Newfield
 - Easter – March 28-April 1 – Kokiri, Greymouth – Leader Julie McLintock/Phil Knightbridge
- To book for camps please phone Julie McLintock on 03 545 0989

President: Cathy Jones, Ph 03 546 9499 Email: cjones@doc.govt.nz

Secretary-Treasurer: Jocelyn Lewis, 22 Coster St, NELSON. Ph 03 547 2812

Email: tjlewis@xtra.co.nz

■ Canterbury Botanical Society

September Meeting

Professor Brian Butterfield of the Department of Plant and Microbial Sciences, University of Canterbury gave a talk to a well attended meeting on “The inside of trees – a journey of exploration inside the trunks”. He began at the large scale of wood anatomy (i.e. magnification in the order of hundreds of times), with 3-dimensional pictures showing the structure of xylem. This differs between conifers and dicot trees. In conifers, xylem consists mostly of relatively narrow cells called tracheids which perform the dual role of conducting water and giving the stem mechanical strength, whereas in dicots, the water-conducting elements, or vessels, are wide and dispersed among narrow, thick-walled cells called fibres. There had been uncertainty about the length of individual cells that make up vessels, but through a rather hazardous experiment using blue paint, Brian’s team was able to show that most were in the order of a centimetre or two.

Magnified thousands of times the walls of tracheids consist of three layers of cellulose microfibrils, that lie at different angles in each layer, thereby giving added strength. In some species the interiors of tracheids also have helical thickenings. In softwoods subjected to uneven growth stresses, the alignment of microfibrils alters resulting in commercially undesirable compression wood being formed, for example, where large branches leave the main trunk. Finally, Brian showed how the centres of trunks consist of structurally weak juvenile wood which, in Canterbury-grown *Pinus radiata*, makes up an undesirable proportion of a log’s cross-section. Brian is involved in trials that aim to reduce the proportion of juvenile wood, though there is a trade-off involved, as it is this wood that gives a sapling the flexibility to withstand wind.
Peter Wardle

September Field Trip

Twenty-two people meet at Otahuna to investigate one of Canterbury's best-kept botanical secrets. Although we took the wrong fork of the creek, we all saw some worthwhile plants, including young matai and totara trees, milk trees (*Streblus heterophyllus*), a grove of titoki, and many kowhai. After lunch, we ascended to the crest of the spur that separates the two forks. Some returned to the cars by an easy route down the spur, while the others descended to the real Otahuna Bush, to be impressed by the large podocarps. The bush is a reserve owned by Christchurch City, and is a valuable remnant of the original forest. Unfortunately, it is infested by goats, and the damage to the understorey seems worse than it was when we visited in May.

October meeting

Susan Wiser recently visited Tongatapu, the largest and most densely-populated island in the Tonga group, as a member of an interdisciplinary team from Landcare Research carrying out a survey of natural forests. Her topic was the remnants of original and second-growth forest on the island. Even though native forest covers only three percent of the island and is highly fragmented, most of the native trees show a surprising degree of persistence and regeneration potential. Nevertheless, introduced species (particularly those introduced since European contact) pose real threats. In response to questions, Susan enlarged on the social and economic environments that are so relevant to the continued survival of native forest on Tongatapu.

October Field Trip - Waterfall Track near Ashley Gorge

The well-signposted track follows a moderate gradient up the valley to the base of the waterfall which, despite the dry winter, still had a good flow and supported a lush cover of mosses and liverworts in its spray. The track is through forest, which appears to be mainly second-growth following a fire that probably occurred over one hundred years ago. On the lower slopes and valley floor the trees include fivefinger, lemonwood, kanuka, fuchsia, broadleaf, mahoe, and pepper tree. Black beech is mainly on the upper slopes and spurs, and ranges from mature trees to dense sapling growth. Despite the apparent dryness, there is a good variety of ferns, including both soft and harsh tree ferns. About 75 native vascular species were listed. Unfortunately, there is considerable evidence of browsing, not only by possums, but also by sheep and cattle, which are able to gain entry despite fences. Peter Wardle

November Meeting

Matthew Turnbull gave an interesting talk about new ideas and initial findings regarding why much of New Zealand's flora has a divaricate form. There have been two theories: a response to browsing by large ratites and a response to environmental stress. Experiments on the browsing habits of modern ratites have put doubt on this theory. However, the divaricate structure provides protection from the inner parts of the plant from the wind and, particularly, from excessive light levels.

Spring Camp - Geraldine area

We began by visiting Derrick Rooney's covenanted area (12 ha) of regenerating low hardwood bush and grey shrubland by the south Te Moana River. Afterwards we surveyed two components of the Lynn wetland covenant, dominated by *Schoenus pauciflorus* and *Carex coriacea* with a rich associated flora. We added *Microseris scapigera* to Colin Meurk's species list. In the mid-afternoon we arrived at the Woods farm to see their covenanted podocarp-hardwood bush in a gully high on the downs. Finally, we visited the native nursery of Ines Stäger and Peter Keller beside Talbot Forest.

On Sunday, we met David Musgrave at his Waihi Bush Farm. In Waihi Bush is the breathtaking sight of massive totara, matai and kahikatea, which have escaped milling. The subcanopy is mahoe and many divaricating shrubs grow including *Coprosma rubra*. David and Forest & Bird members have had a massive task in felling sycamore, clearing subsequent weeds and killing possums, with resultant increase in kereru. Afterwards we had a brief look at Vanstone Covenant for riverbed kanuka and kowhai. The day was completed with a walk through Orari Gorge Scenic Reserve, with its tree ferns (*Cyathea smithii*), regenerating kahikatea, goblin moss hanging from twigs, and prickly shield ferns up to 2 metres high. Bryony Macmillan

TRAVIS WETLAND

Travis Wetland Work mornings are held on the 3rd Saturday of each month. Meet at Mairehau Rd car park (almost opposite the Burwood Hospital Spinal Unit) at 9 am. There's an interesting variety of work, which

often includes new plantings, and morning tea is provided. If you have not been to the wetland for a while see the new developments as well. Wear old clothes and bring your gumboots.

Secretary: Roger Keey, PO Box 8212, Riccarton, Christchurch. Ph/Fax: 03 358 8513 or Ph/Fax: 03 315 7510; email: r.keey@xtra.co.nz

■ **Botanical Society of Otago**

MEETINGS AND FIELD TRIPS

15th November - end of year BSO wine & cheese and seminar. Dr Jill Rapson, Massey University, talks on the ecology of Great Barrier Island and Coromandel Peninsula.

18th November, Sun, 10.30 am – 5pm. Dr Anni Watkins will lead a full day workshop on grass collection and identification. Field trip will be followed by further identification in the laboratory.

27th December – 7 January. Summer Field trip with Wellington Botanical Society.

20th February, Wed evening. AGM. Keep this date free.

REPORTS

The last three meetings have continued the wide-ranging theme of botany outside Otago, with 3 splendid and very different talks: Alan Mark on his seven weeks with local ecologists in Tibet, Mongolia and the Russian Caucasus Mountains; Barbara Anderson on the plants she met on her journey through Patagonia, and Sue Bennett on the weeding of the steep, volcanic slopes of Raoul island, the northernmost piece of New Zealand territory. If you didn't go you missed some very interesting talks and colourful slides full of exotic, mind-broadening botany.

NOTES AND REPORTS

Note

■ **Some further tricky names**

E.J. Godley, Research Associate, Landcare Research, PO Box 69, Lincoln

1. Spaniards

The sharp bayonet-like leaves of the larger species of *Aciphylla* obviously led to the popular name *speargrass*; but the other popular name *spaniard* was considered of "uncertain origin" by Andersen (1). However, if we note Cockayne's comment that the growth-form of *Aciphylla colensoi* and its allies "recalls that of certain species of *Yucca* rather than one of the Umbelliferae" (2), and also remember that in southern North America certain species of *Yucca* are called *Spanish bayonets*, the derivation of *spaniard* seems clear.

2. The Mount Cook Lily

This puzzling name for the buttercup, *Ranunculus lyallii*, was not bestowed because of anything to do with the flowers, but because of the large, round, deep-green flattish leaves with the stalk in the centre. The clue is to be found in the original description by J.D. Hooker (3) which gives the common name as "Water lily of the shepherds".

3. *Scirpus caligenis* Cook

In December 1949, Mr Harry Talbot (teacher at Springfield Primary School) and Mr Varner Cook (teacher at Ohakune DHS) went over to the Coast looking for sedges (4). At Jacksons, on the Taramakau River, they gathered an undescribed *Scirpus* (already collected elsewhere by Talbot), and in 1953 Cook described it as *S. caligenis* (5) adding a variety *tristigmatosa* (also known to Talbot).

Cook did not explain his (or their) choice of epithet. But before speculating on his intention it is necessary to identify the word. In any of my dictionaries, including Lewis's *A Latin Dictionary for Schools* (which originally belonged to Talbot himself) the word *caligenis* is not listed. There is plenty about *caliginis* but nothing about *caligenis*. Thinking that some grammatical point might be involved I phoned Dr Elizabeth Edgar, but she could not find the word in either dictionaries or grammars. It is therefore considered that *caligenis* is an orthographic error for *caliginis* (genitive singular of the feminine noun *caligo*).

The various meanings of *caligo* are “a thick air, mist, vapour, fog” or “darkness, obscurity, gloom, obtuseness”. These meanings were considered (as if for *caligenis*) by Wilson (6) who wrote “*Scirpus caligenis* [sic] of dark misty places (?)”. But Cook does not mention any ecological niche among the distinctive characters that he lists of this “variable species”, and one notes that several of the localities are in Canterbury. Cook’s main comment begins with: “The above species well illustrates the difficulties associated with the determination of *Scirpus* species. H. Talbot, who has had considerable experience with these plants in the field, considers that there are two distinct species involved, but the differences are not, in my opinion, consistent enough to warrant this view. What I regard as typical *S. caligenis* is larger than the variety in both the fruit and the spikelet, and the elongated glume is more frequently present. Some specimens, however, approach the variety *tristigmata* in the fruit and in the smaller size. On the other hand, some specimens of the variety have the elongated glume, and fruits similar in shape to those of the species although smaller in size”. I can imagine these two teachers arguing about these points (and others mentioned by Cook) as they progressed from the Taramakau to the Buller in December, 1949, and wonder whether the epithet is a kind of wry joke meant to indicate that they were “looking through a glass darkly” and that the situation was one “of obscurity” and hard to understand. Unfortunately I did not put the question to Mr Talbot before he died.

Acknowledgements

I am very grateful to Elizabeth Edgar, Lyn Minchington, and Wendy Weller for their help.

References

(1) Popular names of NZ plants. *TNZI* 1926; (2) *The Vegetation of NZ*, 1921; (3) *Handbook of the NZ Flora*, 1864; (4) E.J. Godley 2000: Biographical Notes (38) H. Talbot *NZ Bot. Soc. Newsletter* (June); (5) *TRSNZ* 81: 158; (6) *Wild Plants of Mount Cook National Park*, 1978.

Reports

■ Naming of the Allan Herbarium and presentation of the Allan Mere

On 29th November Landcare Research hosted a whakaingoahanga or ‘naming ceremony’, in which the official title of the CHR herbarium at Lincoln became the ‘Allan Herbarium’, in honour of the first director of Botany Division, DSIR, Dr H.H. Allan. Guests, including the grand-daughter of Dr Allan, were clustered comfortably on chairs around one of Eric Godley’s historic kowhai on the lawn outside the herbarium, where they were welcomed by Andy Pearce, CEO of Landcare Research. Henry Connor, a former Director of Botany Division, DSIR, his lithe dancing figure glimpsed through the spreading trunks of the kowhai, gave an insightful personal account of his impressions of H.H. Allan, when as a young recruit he had joined Botany Division in Wellington. Henry spoke with affection, but somewhat in awe, of a Director who led research by example, and fostered further educational opportunities for his staff. The brief naming ceremony was then conducted by Ian Donald, Chairman of the Board of Directors of Landcare Research, and a plaque unveiled at the entrance to the Herbarium.

The Allan Herbarium is the home of the eponymous Mere, gifted by Lucy Moore in 1982 to commemorate the achievements of H.H. Allan, and now awarded by the New Zealand Botanical Society each year to a member of the botanical community who has made an outstanding contribution to New Zealand botany. During the ceremonies at Lincoln on 29th November, the presentation was made for 2001, to Neill Simpson of Queenstown.

Neill’s contribution to NZ botany has been in both an amateur and a professional capacity and has stretched across the country. In 1968 Neill was the founder of the Wanganui Museum Botanical Group, and more recently of the Wakatipu Botanical Group. Nominations for him for this award came from both the Canterbury Botanical Society and the Botanical Society of Otago with a letter of support from the Wellington Botanical Society. From 1968 to 1975 he was honorary botanist at the Wanganui Museum, and from 1975 his paid employment also began to involve botany when he became a ranger at Tongariro National Park with responsibility for the botanical garden at Whakapapa. There followed a long career with the Department of Conservation. Since his retirement in 1995, through both his consultancy company and through voluntary organisations, he has continued his botanical contributions, whether it be in assessing weed problems or in locating populations of rare or threatened plants. Neill is held in high regard as a field botanist with an exceptionally sharp eye and passes on his extensive knowledge and enthusiasm through his plantings, photographs, publications, and talks.

The Mere now resides in a handsome display case in the foyer of the Herbarium, alongside a portrait of H.H. Allan.

Jessica Beever, c/o Landcare Research, Private Bag 92170, Auckland

■ Launch of the 'Seed Atlas'

A highlight of the botanical events in Canterbury at the end of November was the launch of the long-awaited 'Seed Atlas' - or, to give it its full title, 'Seeds of New Zealand - gymnosperms & dicotyledons'. This magnificent volume authored by Colin Webb and Margaret Simpson, and published by Manuka Press, was officially launched at the Canterbury Museum. Anthony Wright, Director of the Museum and President-elect of the New Zealand Botanical Society, welcomed the large audience, on a warm night. He was followed by Andy Pearce, CEO of Landcare Research, under whose auspices (and those of its predecessor institutions) the work has been undertaken. The book was then officially launched by Helen Anderson, Government's Chief Science Advisor at the Ministry of Research Science and Technology. Helen eloquently described the major part the Seed Atlas has played in Colin's life for the last 12 years. Andy Pearce then introduced Colin and invited him to 'approach the podium', which took a little time because of Colin's injuries from his recent biking accident.

Colin thanked the many people (not to mention the cat) who have contributed to the volume over its years of gestation, beginning with Dr H.H. Allan, who had the idea of making a Seed Atlas of native plants during his time as first Director of Botany Division, DSIR. Subsequent directors, Eric Godley, Henry Connor and Warwick Harris all fostered the project. Special acknowledgment was made of co-author, Margaret Simpson, who sadly died in 1995, and thus did not live to see the completion of this major work. Colin thanked the New Zealand botanical community for their input to the project and speculated on the future of such books versus electronic forms.

The Atlas provides keys, descriptions and illustrations of seeds, and of other persistent parts of fruits that enclose seeds. These are all structures that have often been given cursory treatment in previous works, and this publication is thus a very valuable addition to the documentation of the New Zealand flora. It is ready to be tested as a new identification aid for botanists and all others with an interest in seeds.

Jessica Beever, c/o Landcare Research, Private Bag 92170, Auckland

■ New Zealand Seeds their morphology, ecology and use as indicators - A symposium held on 29 November 2001

To celebrate the launch of the long-awaited seed atlas "Seeds of New Zealand gymnosperms and dicotyledons" by Colin J. Webb and Margaret J. A. Simpson, a one day symposium was held on the topic of seeds. The symposium was hosted by the New Zealand Botanical Society and Landcare Research, and was held at Lincoln University. The venue and the catering were excellent and the only problem experienced related to the hair-trigger desktops which jettisoned the papers of several participants onto the floor with a great crash!

The symposium was opened by Jessica Beever, President of NZBS, with a splendid Maori greeting and two stories from Alan Esler which illustrate the value of seeds. Both stories relate to court cases where Alan was an expert witness. In the first, the lawyer for the defence attempted to catch Alan out by saying "Mr Esler, could you distinguish the seeds of *Cannabis sativa* from those of *Papaver somniferum*?" To which Alan responded "With my eyes closed". In the second instance, another defence lawyer said "Tell me, Mr Esler, could one of these tiny seeds grow into a plant of the opium poppy?" Alan's reply was "That is the nature of a seed".

The keynote address "Seeds of New Zealand gymnosperms and dicotyledons" was given by Colin Webb. We were fortunate that Colin was able to present his talk as he was recovering from a severe mountain bike accident sustained just four days earlier. Colin's talk dealt with the nature of seeds, their value for species identification, their beauty and their dispersal mechanisms and associated structures. He finished by showing us pictures of his seven most favourite seeds: *Coriaria* hybrid, *Ourisia modesta*, *Spergularia media*, *Leptinella atrata*, *Rorippa palustris*, *Scutellaria novae-zelandiae* and *Carmichaelia kirkii*.

Sixteen papers, in addition to the keynote address, were presented in four sessions. Of these, three papers dealt with *Sophora* seeds: two on viability of seeds that had been stored for up to 40 years and one on the identity of *Sophora* seeds dispersed to the Chatham islands. Both Bill Sykes and Eric Godley, whose seminal (excuse the pun!) paper on transoceanic dispersal of *Sophora* seeds was published in Nature in 1968, were in the audience.

With the exception of the *Sophora* papers, seven papers were broadly on the topic of seed ecology. Topics covered were seeds which successfully germinate in the face of weed competition, variation in seedfall as recorded in seed traps, dispersibility of native species, post-dispersal seed predation in native forest, *Ascarina lucida* germination requirements, splitting and non-splitting manuka capsules, and hygrochastic capsules of native species especially some alpine cushion plants. There was a lot of food for thought presented in this fascinating line-up of papers and there is clearly a lot more to learn.

Contrasting with these papers were three papers that were more in the line of classical seed testing. These demonstrated the difference in approach between some of the ecological research and agricultural research where seed science is well developed. Many standard tests have been developed to assess seed viability, dormancy requirements and seed vigour. John Hampton's review of seed quality included some interesting observations. For example, it is most likely that the low viability reported for many New Zealand seeds relates to dormancy mechanisms which are not recognised. Also, the majority of New Zealand seeds are orthodox, i.e., they can be dried to c. 10 % seed moisture content without losing viability. John's closing statement was that until the seed quality of New Zealand seeds is known it will be difficult to meet the requirements of the NZ biodiversity strategy. He called for the establishment of a NZ native seed centre, noting that such centres and collections already exist in New Zealand for agriculture, horticulture and forestry.

Rounding out this range of papers was one on the value of seed macrofossils for reconstructing vegetation histories and one on the tricky business of apomixy and how seed size can be a clue to reproductive goings on.

The papers presented were of a high standard and technical glitches were few. Speakers, almost without exception, kept to time and they were chaired by a nicely gender- and workplace-balanced mix of people with an interest in seeds.

The symposium was closed by David Penman from Landcare Research who gave a brief summary of the day's proceedings.

Carol J. West, Southland Conservancy, Department of Conservation, P. O. Box 743, Invercargill

BIOGRAPHY/BIBLIOGRAPHY

■ From entomology to horticulture and garden history: the notable achievements of Mrs Winsome Shepherd

A.D. Thomson, Centre for Studies on New Zealand Science History, 5 Karitane Drive, Christchurch, 8002

Mrs Rona Winsome Shepherd (née Denne, b.1921) has contributed to various facets of applied biological science, including research on timber preservation and horticulture, and has also a specialist interest in garden history, a facet of horticulture. Winsome is the granddaughter of pioneer New Zealand pomologist J.C. Blackmore (1845-1925, 16,17). Winsome's husband Ronald Henry Shepherd (1918-1988) was an industrial chemist with I.C.I. (N.Z.) Ltd. and they are included in a compilation of notable husband and wife researchers in science in New Zealand (15). They also shared an interest in art and antiques, with Ronald developing a special interest in silver and nineteenth century pressed glass. Two of Winsome's major contributions have been fine accounts of the Wellington Botanic Garden (with Walter Cook, 13) and Wellington's plants, gardens and landscape (11). The latter includes a foreword by Geoff Park.

My contact with Winsome goes back to 1983 when I was recording something of the work of Mr J.C. Blackmore on a theme "botanists and bicycles" in the *Botany Division Newsletter* (16,17).

Winsome was born in Christchurch and her Primary School education was at Oxford, Dannevirke and Taihape, and Secondary education at Samuel Marsden School, Wellington and St Cuthbert's College, Auckland. Her father was a school teacher and later became Senior Inspector of Schools. Winsome comments about her formative years (8), "Two years before I left school I knew I was going to study science at University."

Winsome graduated B.Sc. in botany and zoology from Auckland University College in 1942 and comments (8), "Of 1000 students at the University in 1942 only three women graduated in science."

After the completion of her B.Sc. degree, Winsome spent five years on the staff of the former DSIR's Plant Diseases Division, Auckland, in the field of timber preservation, involving timber mycology and technology. The mycological research focussed on the prevention of moulds in State houses and she published a paper with Mr R.M.Brien (1905-1963) on this topic (12). The chemical recommended to control the problem was the sodium salt of pentachlorophenol (PCP). Although recommended with explicit instructions to its use, this chemical came into disrepute in later years because of its toxicity and danger to humans. Contamination of timber treatment sites around New Zealand remains a serious problem. One interesting aspect of her research on fungi attacking wood was a study of the wooden lining of air raid shelters built in World War II under Albert Park in Central Auckland. The tunnels were examined for wood-destroying fungi and Winsome recalls that the tunnels became festooned with fungi shortly after they were built.

On the entomological side of timber preservation (14), Winsome participated in the control of infestations of Australian termites in Tauranga, New Plymouth and Auckland. The outbreaks caused panic and she records (8), "I crawled under buildings searching for possible termite infestations, inspected incoming sleepers and poles on the wharves, separating infested poles to go for treatment, and trained State Advances Building Inspectors in all types of insect and fungal damage to wood. Fortunately for New Zealand the termite outbreak was controlled and the termites failed to mate on the wing and spread into the local forest. In infested areas it was recommended as a building by-law that metal termite shields be mandatory on the top of foundation structures."

A major aspect of Winsome's work was the search for a suitable chemical for the treatment of *Pinus radiata* so that the timber would be suitable for housing construction. The success of the sodium salt of PCP in the prevention of mould in State houses meant that this chemical was examined for the control of sap stain on radiata pine. It was successful and subsequently recommended for commercial use, but again with explicit instructions for care in handling. In spite of these initial instructions, dangers arising from careless or inadequate precautions taken when using PCP gave problems many years later. Experiments were conducted to find a suitable chemical to control both fungi and insects in pressure-treated *Pinus radiata* timber. One-inch cubes of timber were pressure-treated with a range of chemicals and exposed to mated borer beetles or sprayed with the spores of wood-destroying fungi. The blocks were then examined for the survival of borer grubs or fungal decay. Of the chemicals used, Tanalith (Wolman salts), PCP and boric acid were the most promising and boric acid was preferred both on cost and safety criteria.

In response to a query about aspects of her early career in science in the 1940s, Winsome commented on the attitude of some of the male scientists she was associated with in the timber preservation project at the former Plant Diseases Division; some of her results on borer (*Anobium punctatum*) and the boric acid treatment were published by D.Spiller (b.1916) without acknowledgement for her work, her knowledge or approval, and on reflection she comments (8), "I was regarded not as a scientist, only as a technician." And further (10), "The Director openly said 'democracy ceased when women got the vote' and 'it takes 5 years to train a research worker and a woman will then up and leave and get married' (the assumption being she no longer worked)".

In his brief account of the achievements of the timber preservation work at Plant Diseases Division, J.D. Atkinson (1909-1990) in his history of DSIR "DSIR's First Fifty Years" (2, p.42) writes, "As supplies of native timber were rapidly dwindling under the impact of the 1936-37 building boom, some means had to be found to preserve the plentiful but poorly regarded *Pinus radiata* against insect and fungus attack. DSIR undertook this task in 1938. Fifteen years later Plant Diseases Division had perfected the momentary-dip, boron diffusion process, which made possible the utilisation of radiata pine for any part

of a building not exposed to the weather, and revolutionised the New Zealand timber industry." This satisfactory outcome was due to entomological and mycological work initiated by Winsome with D.Spiller followed after the war by the commercial application of the boron diffusion process by K.M. Harrow (b.1915).

After five years in DSIR's Plant Diseases Division, Winsome moved to Wellington and worked for three years for the Shell Oil Company and during this time she wrote the pest and disease section of the Shell Oil Company's Orchardists Handbook (5).

Today it is in the field of horticulture that Winsome is perhaps best known, and she was made an Associate of Honour of the Royal N.Z. Institute of Horticulture in 1983. Her initial interest in horticulture developed during a period when she lived in Christchurch when she grew and exhibited chrysanthemums and became interested in displaying plant material in aesthetic and interesting ways. Returning to Wellington she was an executive committee member of the Wellington Horticultural Society and the Wellington District Council of the Royal N.Z. Institute of Horticulture, serving for a time as the District Council's Secretary. Her interest in floral art continued to develop and she co-authored the Royal N.Z. Institute of Horticulture's "Floral Art Show Handbook" (4).

Notable and Historic Trees is another aspect in Winsome's contribution to horticulture. As founding Chairman, the R.N.Z.I.H. Notable Trees Scheme was introduced. A study relating to the genetic make-up of New Zealand stocks of *Pinus radiata* (6,7) followed from research undertaken for her most notable published work "The Botanic Garden, Wellington: A New Zealand History 1840-1987" (13). Challenger in his review of this book writes (3), "It is much more than a local history about the evolution of a garden, it is a well-researched and interesting social document, which places its scientific, horticultural and landscape content firmly within the context of the times. It is also a very attractive piece of book production, pleasant to handle and easy to read". Another major contribution relating to Wellington is Winsome's "Wellington's Heritage: Plants, Gardens, and Landscape" (11).

A summary account of Winsome's contributions to horticulture is recorded in the citation for her election as an Associate of Honour of the Royal N.Z. Institute of Horticulture in 1983 and the citation concludes (1), "Mrs Shepherd's energy and enthusiasm is reflected in this long and varied summary of her involvement over many years in horticulture. Her influence and dedication has obviously had a much wider impact than with the many groups and associations listed."

As well as being an Associate of Honour of the Royal N.Z. Institute of Horticulture, Winsome in 1983 was appointed an Honorary Research Associate of the Museum of New Zealand Te Papa Tongarewa and received a Wellington City Council Civic Award in 1990 for her work for the Wellington Botanic Garden and as co-author of the history of the garden (13) and in 1992 deposited with the Wellington City Council a voluntary project "Botanic Garden Wellington - the Documentation, Mapping and Photographs of Historic Trees and Plants". Winsome was awarded an ONZM in the 1998 Queen's Birthday Honours.

In 1995 the Museum of New Zealand published Winsome's second major work "Gold and Silversmithing in Nineteenth and Twentieth Century New Zealand" (9). It is based on research initiated by her late husband, Ronald Shepherd and won the 1996 Montana Book Award, category illustrated art.

In surveying her varied career and activities in science after graduating B.Sc. in 1942, Winsome concludes (8), "My initial training in botany and zoology has served me well and I hope many young women with a bent in that direction, and even if jobs are hard to get, will take a degree in science. Women are now accepted as professional scientists, not just technicians as was the case in the 1940s."

Acknowledgement

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■ Biographical Notes (44): George Stevenson (1878–1960)

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George Stevenson, Marlborough runholder and North Otago farmer, was born on 28 August 1878. He was the fifth son in a family of 6 boys and 5 girls born to John and Jane Stevenson, pioneer settlers at Flaxton near Rangiora, Canterbury (1). He attended Flaxton Primary School and his secondary education was probably at Rangiora. He then worked on the family farm (2).



In late 1904 Mr Stevenson took up a 15-year lease on an 18,212-acre sheep run in the lower valley of the Clarence River, Marlborough (2,3); and at Ohoka on 27 January, 1905, he married Miss Kate Bussell, daughter of Henry Bussell of Ohoka, headmaster of the Flaxton Main School (4,5).

Mr Stevenson called his run "Waiau-toa" the Maori name for the Clarence River, and he described it as follows: "Any moderately detailed map of the South Island shows the Clarence River flowing north-east between the seaward and the inland Kaikouras till it makes two sharp bends to turn first east and then south-east for the sea. The south-west oblong thus enclosed embraces the sheep runs Glen Alton and Waiau-toa, the *Chordospartium* area with which I am dealing".

This extract is taken from Stevenson's account of his discovery of the New Zealand tree broom (*Chordospartium stevensonii*) (3) dictated in his retirement to his daughter, the journalist Jean Bertram (wife of Professor James Bertram, Victoria University College). She later based an article on her father's recollections (6) and wrote "A good metalled road goes over the Woodbank Downs on the northern side of the Clarence, crossing by a new bridge at Harkaway Point opposite the Glen Alton homestead, and picking up the old road for the last 5 kilometres to Waiau-toa. In our time—we were the first inhabitants—the road went in on the south side of the river, 10 hard miles up and down steep spurs with dangerous corners and across boulder-strewn fds. No-one travelled in gig, buggy, dray or wagon without a pick and shovel!" Mail for this isolated station was left at the Clarence bridge on the Christchurch–Blenheim coastal highway. Reference on Stevenson specimens to "Clarence Bridge" (the postal address) or "near mouth of Clarence River" should be interpreted as "Waiau-toa".

In what follows I have given further quotes from Stevenson's account and have added comments where they might be helpful.

1904 (Dec.)

"I first saw *Chordospartium stevensonii*—a nameless tree at that time—in December, 1904, when my neighbour and a fencing contractor and I were following the surveyed line for the boundary fence on the sheep run I had just taken up in the Clarence Valley." "This first tree I saw was just past blooming and was thick with pods which at that time I did not examine closely. It was a fine tree about 20 feet with the spread and habit of a weeping willow without leaves and with stringy stems. The fencing contractor established his camp near it and I came to know its shape well by the end of the autumn. I was not a botanist and still am not; but I noticed that the seed pods were round and invariably had only one seed

each, unlike the seed pods of the pink brooms that grew near the comparative civilisation of the homestead site. These pink brooms had longer pods containing anything from one to twelve seeds." (3).

1905 (Nov.)

"But the real moment of interest came during the November mustering in 1905 when my tree turned itself into a huge umbrella of light purple." (3).

1906 (March)

"The following autumn, March, 1906, I took some seed pods to Christchurch to my brother who had been collecting pods from the pink brooms at Upcot in the Awatere for a naturalist friend, the late Mr T. Keir, of Boyd and Keir, Rangiora. Mr Keir was greatly excited and got me to send seeds to Mr Cheeseman (Curator, Auckland Museum), who pronounced that this was an entirely new species. Mr Cheeseman and also Mr Petrie of Auckland asked me for flowers and seeds in the next season, and so, too, did a Dunedin man whose name I have forgotten." (3).

The following notes give background to these events.

1. The brother to whom George took seed pods would have been James (1864–1934), the eldest son, who now ran the family farm. George later wrote: "By 1910 there were several dozen plants from the Glen Alton and Waiau-toa seed growing in gardens from Queenstown to Auckland. My brother had his first plant flowering at our old home at Flaxton, near Christchurch, about 1912 or 1913—" (1, 3).
2. The Upcot run in the Upper Awatere where James collected pink broom pods for Mr Keir had been taken up by the third of the brothers, William Boyd Stevenson (1871–1933) at about the same time as George took up Waiau-toa in the Clarence (1).
3. The firm of Boyd & Keir was described in 1903 as "Hugh Boyd and Thomas Keir, Timber Merchants and Sawmillers, Rangiora. This firm has erected a large number of private and public buildings in the district, probably more than any other north of the Waimakariri." (5).
4. The Dunedin man whose name Stevenson forgot was possibly Henry John Matthews (1859–1909) friend of Cockayne. He was then Chief Forester, Dept. of Lands and Survey, and his *Tree Culture in New Zealand* had appeared in 1905. Another possibility (and perhaps more probable because he was less widely known and hence less "memorable") was John Wood McIntyre (1850–1931) who was gardener to Matthews's mother at "Hawthorn Hill", Dunedin. An authority on the cultivation of native plants he gave Cheeseman information on the dehiscence of the pod of *Corallospartium* (TNZI 1911) (7,8).

1907 (Nov.)

Stevenson continues: "The next big find was during the November muster of 1907, when I had the luck to have to chase after some sheep over a fence that had been flattened by snow. About half a mile from my original tree, in a sheltered basin above the source of Cuckoo Creek, I came on a grove of more than 50 trees in full bloom, some of them 25 feet high and magnificently proportioned." (3).

1910–11

It appears that Stevenson's main contact with Cheeseman was through Keir. He did not write to Cheeseman until 13 April, 1910 (from "Waiau-toa, Clarence Bridge") when he apologised "for not having answered any of your letters before this". He had been waiting until he could send pods of all the varieties but still had only pods of the "purple variety" [*Chordospartium*]. He adds: "I will try again next year to send flowers and pods of any of the pink varieties [*Notospartium*] if that will not be too late for you. I am forwarding box with specimens to Mr T. Keir for him to see if packed right." This box would have contained AK210743 labelled "New genus of Leguminosae, Clarence Bridge, G. Stevenson, Mar. 1910" which Heenan (10) has selected as the type specimen. On 22 November 1910 at a meeting of the Auckland Institute, Cheeseman described a new genus *Chordospartium*, and the new species *C. stevensonii* "species *unica*". His account was published in 1911 (TNZI 43: 75). He thanked Mr Stevenson "for his kindness in forwarding an ample supply of both flowering and fruiting specimens" and Mr T. Keir of Rangiora "for placing me in communication with Mr Stevenson, and for much valuable assistance in obtaining specimens and information".

1914

Extracts from the 1911 account were published in Cheeseman's *Illustrations of the New Zealand Flora* (1914) to accompany drawings of flowers and fruit by Martha King of Kew. In 1921 Petrie described his *Notospartium glabrescens* (TNZ 53: 366-367) and in 1995 Heenan (10) selected WELT 26868 as the type specimen. It came from "near the mouth of Clarence River, Marlboro" and was collected by Geo. Stevenson in 1914.

Cheeseman described *Chordospartium stevensonii* as "a very remarkable plant, in some respects connecting the genera *Corallospartium*, *Carmichaelia* and *Notospartium*" and suggested that some botanists might prefer to merge them. He would not have been surprised, therefore, when Dr P.B. Heenan (11) after studying a much larger number of characters, enlarged the circumscription of *Carmichaelia* to include the other three genera *Chordospartium stevensonii* Cheeseman becomes *Carmichaelia stevensonii* (Cheeseman) Heenan and *Chordospartium muritai* A.W. Purdie, described in 1985 from the Marlborough coast, becomes *Carmichaelia muritai* (A.W. Purdie) Heenan.

This note would be incomplete without the following story published by Martin (9). "Mr Humphrey Weld, son of Frederick Aloysius Weld who was Premier of New Zealand in 1864-65, while a guest of Mr C.G. Teschemaker at Avon Valley, Marlborough, both saw and admired two kinds of flowering broom indigenous to the district—one the so-called Pink Broom and the other the subject of this paper. He asked that ripe seed might be sent to his home at Chideock Manor, Bridport, Dorset, which in due course arrived and from which plants were successfully raised. As a result Mr Weld had trees flowering in England before Cheeseman first described the tree and gave it its name."

About 1920, when the lease expired, George Stevenson left Waiau-toa and bought a mixed-farming property in Weston, Oamaru (2). His only son, Henry John Stevenson, a well-known mountaineer and a member of the original Mount Cook National Park Board, settled on adjacent land (12).

About 1945 Mr Stevenson retired to 8 Augusta Street, Redcliffs, Christchurch (2, 13). From here he wrote of a seedling of his broom "still at the stage where it looks like a posy of straw-coloured raffia" and "going ahead in a healthy way to prove that *Chordospartium* can be successfully grown in Redcliffs sand—" (3).

Also from Redcliffs Stevenson wrote (3): "If I had a second lifetime I could perhaps have some fun with a helicopter and scientific gear tracing the narrow track of *Chordospartium* from the Clarence bridge across the inland Kaikouras through Marlborough; perhaps I would become a kind of geo-botanist with a theory about the ancient age of this old-looking plant of broom and the ancient river it grew beside in the centuries when this country had a different shape. Or perhaps I would just put on a pair of mustering boots and take my manuka stick to climb about the Marlborough hills and gullies looking for something that is as nameless now as *Chordospartium* was fifty years ago."

George Stevenson died on 3 March, 1960, at the Kaikoura Public Hospital and next day there was a private service at the Crematorium Chapel, Linwood Avenue, Christchurch. He was in his 82nd year (13). I have yet to confirm that three features in the great loop of the Clarence are named after him: George Stream, George Saddle, and George Spur.

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PUBLICATIONS

Journals Received

New Zealand Native Orchid Group Journal 81 - December 2001

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Original papers in this issue are: Tricia Aspin - Orchids of the Manukau Peninsula; Tricia Aspin & Ian St George - *Pterostylis thigmonasty*; David Shaw - New Zealand Native Orchid Seed Bank: "Conservation through accessibility"; Graeme Jane - Orchid Keys 3: The New Zealand genera.

LETTER TO THE EDITOR

■ T.F. Cheeseman (1906) Manual of NZ Flora

The centenary of the first edition of T.F. Cheeseman's *Manual of the N.Z. Flora* is in 2006 C.E. We have had a hundred years notice to prepare for the event. I think that there should be a conference of some sort, somewhere, to celebrate Cheeseman's life and times, his taxonomic work, his flora writing, and the advent of the *Manual*. There is time to plan such an event and to take a new emphasis on taxonomy as well as a discussion of the old.

There are several organisations and people who could accept that responsibility, but the first should be the Auckland Museum, Cheeseman's intellectual home, and with that Ewen Cameron, University of Auckland, and the local Botanical Society. A second choice could be the National Museum (Te Papa) for the reasons that it once was the Colonial Museum and that W.R.B. Oliver of the Museum, saw Cheeseman's second edition through the press in 1925. Patrick Brownsey and his colleagues, as well as Victoria University of Wellington, could be approached.

I have no third choice; the DSIR was not founded until after 1925, but Botany Division has hosted one such gathering already (1984), and its successor in the form of Landcare Research has been a recent sponsor.

I think that Cheeseman deserves the honour of a centennial botanical conference – "The New Zealand Botanical Congress". Who should, or would, organise it if there is general support? The President for such a Congress is obvious – the present President of the Society.

I hope that we have the historical respect to honour Cheeseman's work.

H.E. Connor, Department of Geography, University of Canterbury, Christchurch.

[See "From the President" on page 2 - Ed]

