TRILEPIDEA

NEWSLETTER OF THE NEW ZEALAND PLANT CONSERVATION NETWORK

Please send news items or events to events@nzpcn.org.nz
Postal address: P.O. Box 16-102, Wellington, New Zealand

E-NEWSLETTER: NO 57. AUGUST 2008 Deadline for next issue: Monday 15 September 2008

President's Report for 2007–2008

In presenting his annual report for 2007–8, the President made the following points:

- Never before has there been such a need for plant conservation.
- During the year Dr Peter de Lange left the Council; the Vice-President position was filled by Philippa Crisp and Shannel Courtney was appointed to fill the vacancy.
- Network membership stands at 272 Individual, 74 Student/Unwaged, 14 NGOs and 26 Corporate members giving a total of 538 names on the database.
- The Network now has a representative on the Loder Cup selection panel.
- Peter de Lange was made an Honorary Member of the Network.
- The Tane Ngahere annual guest lecture was established (see later).
- A new category of "Young plant conservationist of the year" has been added to the annual wards.
- The marae-based training modules have been developed further; number five, *Marae makeover – how to landscape your marae with natives* will be commissioned soon. The Department of Conservation has adopted module one as its introductory course about plants. Volunteers are needed around the country to offer module one to marae and other groups.
- The Threatened Plant book will appear in 2009 using the new threatened plant list.
- Council has agreed in principle that the Network will apply for NGO membership of IUCN.
- The Network continues to work towards the 16 targets of the Global Plant Strategy.
- Website use continues to grow with over 500,000 hits per annum making it one of the most visited plant information sites in the world. In the current year, over 1000

PLANT OF THE MONTH

Clematis marmoraria.
Photo: Jeremy Rolfe.)

Plant of the Month for August is ***Clematis marmoraria*** (the North-West Nelson marble clematis) listed as Gradual Decline in the Threatened Plant list. This *Clematis* is a low, rupestral, dioecious subshrub with slender taproot and several stems, spreading in suitable habitats by a succession of suckers. It is endemic to New Zealand and is confined to two sites within North-west Nelson's Kahurangi National Park, South Island. The species grows in alpine marble karrenfields where it may be found in crevices in massive marble, or amongst semi-fixed rocks, stones and similar rocky sites in open herb field. It appears to be confined to only two sites at which it remains vulnerable to animal (goat, deer) browse. The Network fact sheet for *Clematis marmoraria* may be found at: www.nzpcn.org.nz/vascular_plants/detail.asp?PlantID=160

member-only, high quality plant images and 500 distribution maps have been added. We are now only about 150 species way from having fact sheets for all the threatened vascular plant flora (> 800 species). Fact sheets for 300 common plants have been completed. Problems with a Chinese hacker have led to the implementation of increased security. Please continue to provide images and feedback abut the site.

- David Given Threatened Plant Scholarship was established during the year and will be launched at the conference dinner.
- New contracts for: the website security work; the fifth module in the marae-based training series; and for fact sheets and for images will be issued soon.
- With great pleasure the President announced two new sponsors: Kiwiherb Ltd and Treescape Limited. The former will donate from the sales of its products and the latter will sponsor the website thus making the increased security possible.
- The President also expressed his thanks to the newsletter team, especially to Jeremy Rolfe for his contribution of the stylish and professional appearance of the newsletter and other publications.
- The President concluded by expressing his thanks to the Council; to the 2008 Conference organising committee, especially Karyn Burgess who organised the Enviroschools Plant Forum; and to the Patrons Peri Drysdale and Rob Fenwick.

Clean sweep for Wellington region in national plant conservation awards for 2008

The Wellington region achieved a clean sweep of the national plant conservation awards for 2008. Awards were made at a dinner in Wellington on Saturday 9 August and were presented by Ian Spellerberg, President of the New Zealand Plant Conservation Network. "These awards acknowledge the outstanding contribution made by individuals, schools, communities, nurseries and councils in protecting our globally important native plants," Ian said.

The awards were as follows:

Lifetime achievement
Winners: Barbara Mitcalfe and Chris Horne

These are two of the most passionate plant people in Wellington. Stalwarts of the Wellington Botanical Society and highly regarded as botanists and wise minds in the plant conservation world. They are truly amazing inspirational people and have assisted with hundreds of plant surveys, planting projects and guided botanical walks and Botanical Society trips.

School
Winner: Kelburn School Gully Project

Over the past decade, the Kelburn School community has returned a large blackberry infested gully to its native state. The species are based on the Wellington Botanical Gardens bush remnant species list. Plants have been ecosourced in conjunction with Otari and WCC. Of particular importance are the three black maire gifted by the Botanical Society in recognition of the commitment to restoring the gully. This gully, in earlier times, was ecologically contiguous with the Botanic Gardens.

Individual

Winner: Arnold Dench

In the 1950s, Arnold, with his wife, Ruth, began converting a steep, wind-swept paddock in Newlands, Wellington, into a native plant garden of national importance. Since then, they have specialised in our alpine flora, e.g., *Celmisia, Myosotis, Wahlenbergia, Ourisia, Ranunculus*, ground covers, grasses and grass-like plants, learning, by trial and error, how to germinate the seeds, grow on the seedlings, and raise them to adulthood. Arnold has provided threatened plant material to Percy Scenic Reserve and Otari-Wilton's Bush, Wellington, and, at other times, accepted seed and specimens from these reserves, and from botanists around NZ, for growing on, and return. Arnold and Ruth have always been ready to pass on what they have learnt about the cultivation and horticultural use of our native plants, and are as keen to learn from others. Arnold's knowledge of our alpine flora, his readiness to share that knowledge, his exchanges of plant material, and his presentations on alpine plants, have made an outstanding contribution to the profile of our threatened native plants.

Nursery

Winner: Berhampore Nursery, Wellington City Council

Each year Berhampore Nursery Manager Jonathan Bussell and his team produce 100,000 ecosourced plants for use throughout the city in restoration programmes, rehabilitation, streamside and wetland plantings and for schools. There are few parts of the city from its coastal margins to the grey scrublands at the highest points on Mount Kaukau that the Berhampore team has not touched through the growing programmes at the nursery. Jonathan has developed a core suite of ecosourced 'bombproof' species as the base for planting programmes. Plants grown include *Metrosideros robusta*, podocarps, which targets suitable sites for reintroduction of species for future emergent forest, and *Spinifex sericeus*, *Desmoshoenus spiralis* and *Lepedium oleraceum* for coastal revegetation programmes. The nursery team is an invaluable resource for the city and for supporting the community at large.

Community

Winner: Waitohu Stream Care Inc.

This group was formed in 1999 to improve the riparian environment of Waitohu Stream on the Horowhenua Coast. The group has built its own nursery and produced 1000s of native seedlings that have been planted to stabilise the Waitohu Stream and provide habitat for fauna.

Council

Winner: Greater Wellington Regional Council

Greater Wellington has been leading a range of programmes throughout the region including habitat protection, community restoration days, coordinating plant groups, undertaking pest control. The team, including Tim Porteous, Philippa Crisp, Robyn Smith and many more, is achieving great things for plant conservation in Wellington.

Brian Molloy delivers the Network's inaugural Tane Ngahere lecture

Brian Molloy delivered the Tane Ngahere lecture last Friday. This was appropriate because Tane Ngahere is the *Father of the Forest* and one can consider Brian Molloy as the *Father of New Zealand Plant Conservation*. Brian spoke of the need to "*Grab it while you can*" when opportunities arise to protect important plant communities. He also urged people to *engage with everyone* including the families of landowners. They may not know the true value of what they have on their properties and getting alongside people is vital. He also spoke of the need for disturbance, especially if you

want recruitment. He then reminded people of the significance of Cockayne's contribution to plant conservation. He said "If someone tells me they think they have found something new, I ask them if they have read Cockayne". He talked about the immense satisfaction he has had working with New Zealand plants and people and urged the Network on to greater things.

Dr Molloy was one of the men who inspired the late David Given to take an interest in threatened plants and New Zealand plant conservation issues. He has also played pivotal roles in the careers of many of our key botanists including Drs Peter Heenan and Peter de Lange. A keen collector and noted mountaineer, Brian has discovered many new species and has the distinction of having a genus named after him—an elusive orchid *Molloybas*. Most recently, Brian has been heavily involved in the Queen Elizabeth II Trust where he has worked as Science Advisor, Chair and Director and now as a noted regional representative. Never afraid of taking on the hard tasks, Brian remains a much respected voice and at times necessary critic on the conservation movement. Brian remains deeply respected on both sides of the conservation fence. Farmers have his ear as do key Government departments. In 2006 the NZPCN recognised Brian's remarkable achievements with his Lifetime Achievement award.

Canopy lichen studies in Westland

Susan Stevenson and Darwyn Coxson, University of Northern British Columbia, Canada
(sksteven@bcgroup.com)

New Zealand is an important centre of species diversity for cyanolichens—lichens that include cyanobacteria (formerly called "blue-green algae") as well as fungi and sometimes green algae. For example, of the 48 species of the cyanolichen genus *Pseudocyphellaria* described by David Galloway in the *Flora of New Zealand* (2007, Manaaki Whenua Press), an impressive 40% are endemic.

As well as representing an important reservoir of biodiversity, the cyanolichens of temperate rainforests have a key role in the ecology of these forests. Cyanolichens convert atmospheric nitrogen into forms that can be used as nutrients by green plants. Because some cyanolichens are present in large quantities in temperate rainforests, their levels of nitrogen input may be significant.

Just how productive are these rainforest lichens? In 2005 a team of researchers from the University of Northern British Columbia in Canada, in cooperation with Matthew Turnbull of the University of Canterbury, began a study of the ecology of cyanolichens in the native podocarp forests of Westland. Based at the University of Canterbury Field Station in Harihari, we have been studying growth rates and nitrogen fixation in three species of *Pseudocyphellaria*: *P. coronata, P. faveolata,* and *P. glabra*, and their relationships with canopy structure.

Pseudocyphellaria spp. (l–r): *P. coronata, P. faveolata, P. glabra*. Photo: David Stevenson.

Lichen growth rate enclosure suspended in the Westland rainforest.
Photo: David Stevenson.

Growth rates were measured in mesh-covered enclosures hung from branches in the canopy of rimu- and kahikatea-dominated stands, above the tree fern layer. Each year the lichens have been brought into the laboratory, stabilised at 75% relative humidity, weighed, and returned to the field. Although the data have not yet been analysed, there is no doubt that these lichens grow rapidly. In general, our samples doubled their mass during the three years of the growth rate study, but a few individuals doubled their mass in a single year. Biology texts often refer to lichens as slow-growing organisms. That is certainly true of some lichen groups, but not of rainforest cyanolichens.

Readers may wonder why a team of scientists from northern British Columbia would be interested in rainforest lichens. Worldwide, temperate rainforests are found in several areas, including New Zealand, Tasmania, southern South America, and western North America. British Columbia, in western Canada, has two distinct temperature rainforest formations—a coastal rainforest and a unique inland rainforest. The inland rainforest is located along the western slope of the Rocky Mountains, more than 500 km from the ocean. University of Northern British Columbia scientists have been studying the ecology of these inland rainforests, including canopy lichens and their relationships with forest structure. Like New Zealand rainforests, inland rainforests of British Columbia support abundant cyanolichens, and comparative studies in New Zealand provide an opportunity to discover similarities and differences between the two temperate rainforest ecosystems. More information is available at http://wetbelt.unbc.ca/.

Ecosourcing accreditation

In the Waikato, we wonder whether the planting of native trees on roadsides, riparian revegetation and Hamilton's Gully Restoration Programme seriously balances the removal of native vegetation for road realignment, quarry expansion and wetland reclamation. One thing is certain, plantings do not currently reflect the complexity of species removed or the diversity and natural character of the local area. Species commonly cultivated and frequently planted in these projects may not even naturally occur in the area and, with their naturalisation, knowledge of the natural range of species is being lost.

This is why Ecosourced Waikato, made up of representatives of local and regional councils, Department of Conservation, University of Waikato, ecological restoration specialists and native plant nurseries, has worked to encourage the planting of species characteristic of the Waikato landscape, grown from a representative sample of the local wild populations. Due to the lack of nearby seed sources, we also encourage the planting of not only colonising species but also the canopy trees appropriate to the area and shade tolerant shrubs, which are often more limited in range and specific to particular sites.

The move to establishing a practice of ecosourcing plant material in situations where the plants are expected to naturalise has not been plain sailing. The concept of sourcing plants from a defined geographic area is reasonably straightforward but ensuring that they come from a naturally occurring population and that they represent the diversity of that population is proving to be more difficult. There have been times when cultivars have been presented as ecosourced material and nurseries have, believing that no-one can tell the difference, "fudged" ecosourcing. Seed suppliers have even offered to claim any provenance desired for a line of seed. Difficulties assuring a high standard of ecosourcing are not limited to suppliers. Unless purchasers of plants are really familiar with the area to be planted they are at risk of requesting ecosourced plants of a species not extant in the district. Guidelines for ecosourcing developed by Ecosourced Waikato requires plants to be sourced from within or close to the boundaries of the same ecological district as the planting site. At times, plants sourced from nearby, much larger ecological regions are presented as ecosourced but caution is necessary because many species are restricted to one coast or mountain range and are not found over several regions.

Ecosourcing can work well when both the grower and purchaser understand the reasons for ecosourcing and are committed to it. However, if either or both parties are not interested, biodiversity is the victim. For these reasons, Ecosourced Waikato is working towards developing an accreditation system for either plants or growers of plants to assure a high standard of ecosourcing. We are keen to see ecosourced plants available in Hamilton garden centres but lack experience to be able to judge how much responsibility to put on suppliers, how closely to monitor and how much education is required. We are keen to hear of the experience gained in other regions and, of course, keen to share our experience, with the ultimate objective of developing national guidelines and accreditation system. If you have comments or experience to share, please contact Wayne Bennett, coordinator for Ecosourced Waikato (e-mail: wayne@forestflora.co.nz).

New weed naturalisation checklist for New Zealand

The fifth instalment of the triennial checklist of dicotyledons, gymnosperms, and pteridophytes naturalised or casual in New Zealand (Heenan *et al*. 2008) is now available in the June issue of the *New Zealand Journal of Botany*. In that paper, the authors now accept six exotic species (Japanese wax tree (*Toxicodendron succedaneum*), *Hydrocotyle bowlesioides*, *Geranium gardneri*, *Oxalis chnoodes*, and plane tree (*Platanus ×acerifolia*)) as fully naturalised. Notably, two of these are trees that have escaped from cultivation. A further 162 exotic taxa with "casual status" are recorded as establishing in New Zealand. Casual Status category is further subdivided using a new classification scheme developed to reflect the weed establishment process. The new categories are: Cultivation Escape, Spontaneous Occurrence, Garden Discard and Intentional Release.

The new classification scheme has been in development for several years. The intention is to document the degrees of exotic plant establishment to provide better information on future weed threats, the ways by which weeds enter our countryside and spread, and the degree to which they may threaten our "natural" environment. The authors developed the system to reflect that weed colonisation is ongoing, and so it is vital that botanists document any exotic plant establishment, be it seedlings germinating under the parent plant in a garden, to plants appearing "spontaneously" well outside the range of cultivation. Disturbingly, the authors saw a need for another category "Intentional Release" to reflect that individuals and some plant societies appear to have been responsible for the ill informed and deliberate attempted establishment of exotic plants.

The new checklist admits 10 new exotic ferns, 3 conifers, and 149 dicotyledonous plants to the ever-growing naturalised New Zealand Flora. The main source of all these weeds remains garden plantings. Of course, these figures pale when the naturalised monocotyledonous flora is considered—an update on weedy monocots is long overdue, the last listing being that in Flora 3 published in 1980!

Reference

Heenan, P.B.; de Lange, P.J.; Cameron, E.K.; Parris, B.S. 2008: Checklist of dicotyledons, gymnosperms, and pteridophytes naturalised or casual in New Zealand: additional records 2004–06. *New Zealand Journal of Botany* 46: 257–283.

Hypnobartlettia fontana – an unusual endemic aquatic moss is no more

Hypnobartlettia fontana was described in 1985. At the time the moss was believed so unusual that it was placed in its own genus, and a new, monogeneric family Hypnobartlettiaceae was erected to accommodate it (Ochyra 1985). However, the status of this moss, known only from sterile specimens all collected from one site, the famous Pupu Springs, near Takaka, Golden Bay, South Island has never been widely accepted.

In her revision of *The Mosses of New Zealand,* Dr Jessica Beever opined that *Hypnobartlettia* was probably a form of the widespread and very variable moss *Cratoneuropsis relaxa* (Beever *et al*. 1992). Now Beever and Dr Allan Fife of the Allan Herbarium, Landcare Research, have shown that Beever's suggestion is indeed the case (Beever & Fife 2008). Further, they reveal that molecular data seemingly supporting *Hypnobartlettia* is confused and conflicting, especially since some of the vouchers ascribed to published sequences are dubious or incorrectly identified. Therefore, their recommendation is that *Hypnobartlettia* be regarded as nothing more than part of the natural variation within the widespread, indigenous non-threatened moss *Cratoneuropsis relaxa*.

Their conclusions mean that *Hypnobartlettia* is now no longer regarded as an uncommon, endemic moss. This is a pleasing result that at last removes some of the past ambiguity over whether the moss deserved special conservation management.

References

Beever, J.; Allison, K.W.; Child, J. 1992: *The mosses of New Zealand*. University of Otago Press.

Beever, J.E.; Fife, A.J. 2008: *Hypnobartlettia fontana* is an environmental form of *Cratoneuropsis relaxa* (Bryophyta: Amblystegiaceae). *New Zealand Journal of Botany* 46: 341-345.

Ochyra R 1985. *Hypnobartlettia fontana* gen. et sp. nov. (Musci: Hypnobartlettiaceae fam. nov.), a unique moss from New Zealand. *Lindbergia* 11: 2–8.

David Given recognised with new native plant research scholarship

The late David Given was recognised at the Network's conference dinner in Wellington with the launch of a new threatened plant research scholarship in his name. The scholarship was launched by Ian Spellerberg, President of the New Zealand Plant Conservation Network, and David's wife, Karina Given.

"This scholarship is named after David in recognition of his outstanding contribution to the protection of New Zealand's globally important native plants" Ian Spellerberg said. The scholarship will be granted for research that assists the protection and recovery of New Zealand's threatened plant species and communities. Applicants must be New Zealand residents or citizens but the work could involve overseas researchers who collaborate with the principal researcher. Applications for the scholarship close 30 November 2008. Contact the Network for more information about the scholarship (info@nzpcn.org.nz).

Dr David Given FLS (1943-2005) was well known to New Zealanders for his pioneering work in the arena of indigenous plant conservation. He was Christchurch City Council Botanical Services Curator until his death in November 2005. David was also member of the Royal Society Biodiversity Committee from 1994.

2008 national pollination survey of tree fuchsia

The 2008 National Pollination Survey is underway. The purpose of the survey is to measure the health of bird-plant mutualisms throughout New Zealand. We are using the pollination service for tree fuchsia as an indicator of the health and wellbeing of our native ecosystems. This is part of ongoing research jointly run by Landcare Research, Department of Conservation and University of Canterbury.

We need your assistance. We need people to complete the survey from locations all over New Zealand this spring and summer. Please help by completing the survey for a tree fuchsia population near you. A major issue we had last year was people not taking part in the survey because they couldn't find enough fuchsia trees. Any area, with even a few tree fuchsia plants can be surveyed. Even if there are only two or three trees near you the data you collect are valuable.

For more information and the survey forms visit: www.biol.canterbury.ac.nz/pollination_survey/

While there you can also check out the 2007 survey results.

Tree fuchsia. Hermaphrodite (left) and female flowers. Photos: Jeremy Rolfe

UPCOMING EVENTS

If you have important events or news that you would like publicised via this newsletter please e-mail the Network (events@nzpcn.org.nz):

Auckland Botanical Society

Meeting: Wednesday 3 September at 7.30 p.m. a talk titled "Mangrove ecology and management" by Catherine Beard, Environment Waikato. Catherine has just completed her doctorate studying mangroves, the management of which is a hot topic in the northern part of the country. **Venue**: Unitec School of Natural Sciences Gate 3, Building 023 Room 1018. **Contact**: Maureen Young (e-mail: youngmaureen@xtra.co.nz).

Field trip: Saturday 20 September to Ayrlies Garden, Whitford, owned by Bev McConnell. **Leader**: Mike Wilcox (e-mail: mike.wilcox@xtra.co.nz).

Waikato Botanical Society and Rotorua Botanical Society

Field Trip: Sunday 7 September to Fitzgerald Glade (Tukorehe Scenic Reserve), SH 5, Mamaku Plateau (combined trip with Rotorua Botanical Society). A good chance to produce an up-to-date species list from a rarely botanised scenic reserve. Grade: Medium. **Meet**: 9.15 a.m. at Fitzgerald Glade tearooms, SH 5. **Contact:** John Hobbs ph: 07 348 6620, email: jffhobbs@paradise.net.nz.

Wellington Botanical Society

Meeting: Monday 15 September at 7.30 p.m. a talk titled "Adaptations to moa: ontogenetic colour patterns in an unusual New Zealand plant" by Kevin Burns, Senior Lecturer, VUW. **Venue:** Victoria University, Wellington. Lecture Theatre 101, Murphy Building, Kelburn Parade.

Field trip: Saturday 6 September to Dry Creek, Belmont Regional Park. **Meet:** 9.20 a.m. at Dry Creek entrance car park, Hebden Cres, off SH58 near SH2 lights. **Leader:** Sheena Hudson ph: 389 2270.

Canterbury Botanical Society

Meeting: Friday 5 September at 7.30 p.m., a talk titled "Three Kings Islands" by Anthony Wright Director of Canterbury Museum. Venue: Room A5 University of Canterbury.

Field trip: Saturday 5 September to Lyttelton reserve areas. **Contact:** Jodi Rees (mallotus@yahoo.co.au)

Botanical Society of Otago

Meeting: Wednesday 20 August, at 12.00 noon a talk titled "Sequencing the seas" by Prof. John A Raven, University of Dundee, Scotland and John Smaillie Tennant Lecturer 2008, University of Otago. **Note special venue**: Union Street Lecture Theatre. **Contact:** Robyn Bridges, ph: 03 479 8372.

Meeting: Thursday 21 August, at 6.00 p.m. a talk titled "Astrobiology" by Prof. John A Raven, University of Dundee, Scotland and John Smaillie Tennant Lecturer 2008, University of Otago. **Note special venue**: Archway 4 Lecture Theatre, cnr Union Place East and Leith Walk, Otago University. **Contact:** Robyn Bridges, ph: 03 479 8372.

Meeting: 7th Annual Geoff Baylis Lecture: Wednesday 24 September at 5.45 p.m. a talk titled "Sex in the bush: what are our native woody plants up to?" by Dr Brian Molloy, Research Associate, Landcare Research, Lincoln. **Note special venue:** Castle 1 Lecture Theatre, University of Otago. Nibbles and drinks will be available in the Castle Concourse from 5.10 pm. **Contact:** Allison Knight, ph: (03) 479 7577.

Field trip: Saturday 23 August to Bull Creek and Coastline. Meet: Botany car park at 9.00 a.m., returning mid-afternoon. Contact: John Barkla, phone: (03) 476 3686.

LIVING WITH NATIVES

Edited by Ian Spellerberg & Michele Frey
Photography by John Maillard

Politicians, artists, academics, farmers, business people – growing numbers of New Zealanders are committed to a love affair with native plants.

Whether it be in a private garden, a corporate planting, an eco-restoration area, a community or neighbourhood scheme, there is something about planting with New Zealand natives that evokes beauty, tranquillity, and the satisfaction of restoring an aspect of our environment to the way it used to be.

This collection of 44 personal narratives is sumptuously illustrated with photographs by John Maillard, who travelled from Invercargill to Auckland to bring to life the contributors' garden stories.

Contributors include Peri Drysdale, Jeanette Fitzsimons, Bob Harvey, Diana, Lady Isaac, Tim Shadbolt, Mathew Sinclair, Hugh Wilson, and a host of other New Zealanders, all well known in their neighbourhoods for their personal or community conservation projects.

The informative and often moving stories are as individual as their authors, but each records a gardener's successes (and failures) and offers sound advice based on experience.

Ian Spellerberg is the Director of the Isaac Centre for Nature Conservation at Lincoln University, and president of the New Zealand Plant Conservation Network.

Michele Frey is an Environmental and Recreational Planning Consultant in Napier.

John Maillard is the programme leader of Photography and Multimedia at Christchurch Polytechnic Institute of Technology.

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