



# TRILEPIDEA

NEWSLETTER OF THE NEW ZEALAND PLANT CONSERVATION NETWORK

Please send news items or events to [events@nzpcn.org.nz](mailto:events@nzpcn.org.nz)

Postal address: P.O. Box 16-102, Wellington, New Zealand

E-NEWSLETTER: No 33. AUGUST 2006

Deadline for next issue: Monday 11 September 2006

## Message from the President

Seems to me that the four field trips announced at the end of this Newsletter signal the start of Spring. All take place in September or 1 October. Is this the start of the botanical field season? I am sure that signs of spring will bring much delight to people up and down the Country. With so much snow, rain, floods and landslides, many will be greatly relieved as the weather changes. Mind you, in Canterbury at least, the long periods of rain make up for about four years of dry summers and dry winters. As I write these notes, there is a cloudless blue sky with snow clad mountains in the background. That snow is also welcome in terms of helping to recharge the aquifers.

I am delighted to see two very interesting articles in this month's newsletter. There is one by Heidi Meudt on an update of the systematics and biogeography of *Ourisia*, with special reference to the New Zealand species. What a wonderful Ph.D. topic, to study a genus that prompts thoughts about Gondwanaland! The other very interesting article is from Steve Benham. He writes about an update of the Auckland Botanic Gardens threatened native plant garden. I wonder how many members of the Network have been to that garden? If not, then what about making plans to visit the garden during the annual conference in November.

Last month I made the suggestion that a native plant day or native plant week be established—an excuse to celebrate our natural heritage and to acknowledge the importance of our native flora. Well, by the magnitude of the response, readers don't seem to care whether we do or we don't. On the other hand, perhaps the lack of any comments what so ever is a signal that such topics are better discussed at meetings such as the annual conference.

Finally, I ask you to think about making a nomination for a Network Plant conservation award for 2006. Details are included in this newsletter about how to do it. In this way you can promote the good work of a local authority, a native plant nursery, or your school or community group.

*Ian Spellerberg, Lincoln University*

## Network awards for 2006

The Network has announced its plant conservation awards for 2006. The categories are: Individual; School; Local authority, Nursery and Community Group. The nomination form is available from the Conservation info/Awards area of the website and at the end of this newsletter. The awards will be made at the network conference—the Cheeseman Symposium—in Auckland on Tuesday 21 November. For more information see the website or email [info@nzpcn.org.nz](mailto:info@nzpcn.org.nz)

## Reminder—new edition of New Zealand vascular plant list

The Network has recently published an updated edition of its vascular plant checklist. This is a substantial revision of the 2005 list. Network members can download the list for free as a pdf file from the website or can order a hard copy by emailing the Network at [info@nzpcn.org.nz](mailto:info@nzpcn.org.nz) and posting a cheque to the Network (\$12 including postage).



## Plant of the Month



*Centipeda minima*, Arohaki Lagoon.  
Photo: John Hobbs.

Plant of the month for August is the Nationally Critical sneezeweed (*Centipeda minima* subsp *minima*). This is a plant of wet, or partially dried out lake, pond and stream margins. Often found in coastal areas. It requires open sparsely vegetated ground and cannot tolerate any competition, so grows in the most open sites it can find. It is an aromatic, usually prostrate, annual, bright green, spreading herb up to 250 mm diameter and 200 mm high. It is threatened by aggressive wetland weeds, such as Mercer grass (*Paspalum distichum* L.), which rapidly smothers the open muddy ground this species favours. This species is weedy and opportunistic and so can potentially be found anywhere there is suitably open, muddy, ground. This species is currently just outside the top 10 favourite plants in New Zealand on the on-line voting system. The Network fact sheet may be found at the following link: [www.nzpcn.org.nz/vascular\\_plants/detail.asp?PlantID=10](http://www.nzpcn.org.nz/vascular_plants/detail.asp?PlantID=10)

## Search Mounted for Top Native Plant

Forget Dancing with the Stars or New Zealand Idol... Kiwis with an interest in the heritage and identity of their country are being asked to vote for their favourite native plant. Organised by the Network, the web-based poll covers plants of every kind, from the smallest ferns and grasses, to lowland trees and the mighty forest podocarps.

Network President Ian Spellerberg says the poll, opening to coincide with Conservation Week, is a great opportunity for people to reflect on what makes New Zealand unique and personal. Previous polls have identified pohutukawa, kowhai, cabbage tree, kauri, nikau and rimu as firm favourites, but tastes have changed and awareness of New Zealand's plant diversity is increasing. The 2005 poll identified Cook's scurvy grass (*Lepidium oleraceum*, common name "nau") as top of the popularity stakes. Over 50 plant species have already been voted for.



*Lepidium oleraceum*, Macauley Island.  
Photo: John Barkla.

"With naturalised exotic species now outnumbering native species (2440 to 2359) it is important to remember what our native plants mean to us, to our landscape, and to our native fauna," says Mr Spellerberg. Voters are also invited to make a comment about the plant of their choice, and in many cases this reveals a deeper connection between the physical environment and national identity. As an example, one voter for Cook's scurvy grass wrote: "*Hey nau, hey nau, don't dream it's over!*"

"The Network is expecting strong interest this year as the website gets about 30,000 visits a month. There are a lot of people who have a real love of our native flora, and this is a chance for them to express what is important to them."

"It's also an opportunity for landscape and conservation managers to take note of the shift in public attitudes and to find ways to incorporate these values into our public and open spaces." The poll will also determine the regional variation in the plants voted most favourite, from Northland to Southland. Votes can be cast on the Network website: [www.nzpcn.org.nz](http://www.nzpcn.org.nz) Voting closes 20 November, and results will be announced by one of the patrons of the NZPCN, Rob Fenwick, of Living Earth Ltd.

## Update on the systematics and biogeography of *Ourisia*, with special reference to the New Zealand species

Heidi Meudt - Research Scientist (Botany), Museum of New Zealand Te Papa Tongarewa, PO Box 467, Wellington. [heidim@tepapa.govt.nz](mailto:heidim@tepapa.govt.nz)

The 28 species of *Ourisia* (Plantaginaceae; Scrophulariaceae sensu lato) are distributed in high-elevation areas of South America (15 species), Tasmania (1 species), and New Zealand (12 species). Species of *Ourisia* have horizontal stems, flowers with five united sepals and five fused petals, and capsular fruits, and may be herbaceous or slightly woody; many are popular in cultivation among rock garden enthusiasts (Watson 2005). I was fortunate to have been able to study the systematics and biogeography of this fascinating genus for my PhD research, which I completed in 2004, some of the results of which I will briefly discuss here.

In a recent revision of the genus (Meudt 2006), the taxonomy and distributions of all 28 species in the genus are provided, as well general and regional keys in English and Spanish and illustrations. Although I created the keys based on analysis of herbarium (not fresh) material, the keys should still be effective in the field, especially in New Zealand where several new species had been described (Arroyo 1984), limiting the usefulness Lucy Moore's key of New Zealand *Ourisia* (1961). The twelve New Zealand species comprise a highly supported monophyletic group, and in general occur from sea level to 2300 m on all three main islands. One species, *O. vulcanica*, is endemic to the North Island, but it is the South Island that represents the area of greatest diversity and endemism for *Ourisia*. Of the eleven species of *Ourisia* that are found on the South Island, six are endemic there, whereas *Ourisia caespitosa* and *O. modesta* are found on all three islands, *O. crosbyi* and *O. sessilifolia* are also found on Stewart Island, and *O. macrophylla* is also found on the North Island.

Most of the New Zealand species are found in subalpine to alpine herbfields, scrub, and/or tussock grasslands (especially rocky and/or moist sites), but *Ourisia modesta*, *O. crosbyi*, and both subspecies of *O. macrophylla* generally occur below treeline. Although a few species have restricted ranges (e.g., *O. modesta*, *O. remotifolia*, *O. spathulata*), others are common components



*Ourisia macrocarpa* subsp. *macrocarpa*.  
Photo: Heidi Meudt.

of high-elevation areas in New Zealand, and chances are you will find at least one (and usually more) species of *Ourisia* while tramping above the treeline. Perhaps two of the easiest places to observe multiple (4-6) species of *Ourisia* include Arthur's Pass National Park (Otira Track or Temple Basin ski fields) and Harris Saddle (Routeburn Track). Both of these localities also contain one of two purported natural hybrid taxa that have been formally named, i.e., *O. × cockayneana* (*O. caespitosa* × *O. macrocarpa*) (the other is *O. × prorepens*, *O. caespitosa* × *O. sessilifolia*).

Based on preliminary morphological evidence and pollen staining (Meudt 2006), it appears likely that natural hybridisation is occurring among some of the New Zealand species, and the most widespread New Zealand species, *O. caespitosa*, appears to play a particularly important role by hybridising with multiple species, but more studies are needed.

Perhaps the biggest taxonomic change that I have made regarding the New Zealand taxa is my recognition of an expanded *O. macrophylla* that includes two subspecies: 1) *O. macrophylla* subsp. *macrophylla*, which includes all North Island entities previously identified as *O. colensoi*, *O. lactea* subsp. *drucei*, and all of Moore's (1961) varieties of *O. macrophylla* except var. *lactea*, and 2) the largely South Island *O. macrophylla* subsp. *lactea* (called *O. macrophylla* var. *lactea* by Moore, 1961 and recognized as *O. lactea* subsp. *lactea* by Arroyo, 1984). In general, *O. macrophylla* is a variable and widespread taxon, yet after thorough morphological study, I could find no grounds on which to recognise any more than two subspecies (Meudt 2006).





*Ourisia glandulosa*. Photo: Heidi Meudt.

The South American species of *Ourisia* are morphologically diverse, with corollas ranging from white to red, flowers regular to zygomorphic, and a habit that is herbaceous or woody. In contrast, the New Zealand species are all white-flowered and herbaceous, and yet they are still quite morphologically and ecologically distinct. A recent molecular phylogeny of most species of *Ourisia* using four DNA markers (Meudt & Simpson 2006) contained little resolution or support within the New Zealand clade, but some trends were seen. One highly supported monophyletic group near the base of the New Zealand clade contained the South Island endemics *O. glandulosa*, *O. spathulata*, and *O. confertifolia*. These species, together with *O. simpsonii* (the next species to branch off in the New Zealand clade), have zygomorphic corollas that are internally both glabrous and yellow, irregular calyces, flat, wide petioles, and a mixture

of glandular and eglandular vestiture. These characters may thus represent plesiomorphic states in the New Zealand clade (Meudt & Simpson, submitted). Phylogenetic and geographic analyses that involve more molecular data and substantial intra-specific sampling from throughout New Zealand are currently underway and should shed more light on this issue, as well as on other evolutionary questions regarding speciation, hybridisation and evolution of the New Zealand species of *Ourisia*. This recent work represents data gathered during a postdoctoral fellowship with collaborators Peter J. Lockhart (Massey University) and Phil Garnock-Jones (Victoria University) from 2004–2006 (Meudt et al., unpubl. data). So stay tuned for more exciting news about New Zealand *Ourisia* in the next few years!

## References

- Arroyo, M. T. K. 1984. New species and combinations in *Ourisia* (Scrophulariaceae) in New Zealand. *New Zealand Journal of Botany* 22: 447–463.
- Meudt, Heidi M. and Beryl B. Simpson. 2006. The biogeography of subalpine, austral *Ourisia* (Plantaginaceae) based on molecular phylogenetic evidence: South American origin and dispersal to New Zealand and Tasmania. *Biological Journal of the Linnean Society* 87: 479–513.
- Meudt, Heidi M. 2006. A revision of the genus *Ourisia* (Plantaginaceae). *Systematic Botany Monographs* 77: 1–188. Available at <http://herbarium.lsa.umich.edu/sbmweb/> and <http://www.nhbs.com/title.php?tefno=145994>
- Moore, L. B. 1961. Scrophulariaceae. In *Flora of New Zealand*, ed. H. H. Allan, 841–952. Wellington: P. D. Hasselberg, Government printer.
- Waston, J. 2005. Elusive *Ourisia*. *The Plantsman*, new series 2(4): 96–99.

## Network website changes

More changes have been made to the Network website this month. They are:

- Plant checklists for site throughout the country are now freely available to everyone via the “NZ native Flora” section of the site.
- Threatened plant lists are now available for each regional council (PLEASE NOTE these are being updated and checked and will be finalised over the coming 2 months).

Feedback on the website may be sent to the Network at [info@nzpcn.org.nz](mailto:info@nzpcn.org.nz)

## Update on the Auckland Botanic Gardens Threatened Native Plant Garden –August 2006

Steve Benham, *Botanical Records, Plant Conservation—Auckland Botanic Gardens.*

The Threatened Native Plant Garden has proved to be one of our foremost attractions since its formal opening on that balmy, almost summer-like day on 29 September 2001 by the Rt. Hon. Helen Clark, Prime Minister of New Zealand / Aotearoa.

Accolades have been showering down upon this garden from a wide-ranging audience despite its 'unfinished' appearance. Our visitors from these islands and overseas have cherished the opportunity to become informed about our unique and treasured natural heritage.

The Threatened Native Plant Garden is probably unique in so far as threatened plants are being show-cased together with naturally occurring associated non-threatened species in replicated habitats. Replicating habitats, albeit a mere 'snapshot' of our wild environment, has meant that we have been able to show the natural diversity of our region from the mighty world of the Waitakere Ranges to the local lavafields of what is now industrial Penrose!

For the past five years we have been trying very hard to secure funding for the completion of the remaining coastal components i.e. salt meadow, dunes, including stabilised and foredunes, and shellbanks. Finally news came through earlier this year that our application to the Lottery Environment and Heritage Fund had been successful to the sum of \$33,100 with the Friends of the Gardens contributing a further \$13,000.

Botanic Gardens staff prepared concept design sketches after a visit to the Puhinui Reserve on the Manukau Harbour. This reserve has regionally significant saline wetlands and provided much inspiration for this amazing project. Excavation work began on 22 May with the site being re-contoured and construction undertaken by Dave Johnson of Outdoor Images. It is expected that construction work will be completed in August when planting will begin.

Brief descriptions of the vegetation categories that we are emulating:

### Salt meadow / marsh

A replicated sequence of vegetation zones within this saline wetland viz. below mid-tide, above mid-tide, reached only by spring tides, reached only by storm tides is planned. The last three are usually referred to as lower-, middle-, and upper-marsh respectively. Key species will be mangrove (*Avicennia marina*), glasswort (*Sarcocornia quinqueflora*), coastal rush (*Juncus maritimus*), oioi (*Apodasmia similis*), *Leptinella tenella*, *L. dioica* subsp. *dioica*, *Samolus repens*, *Selliera radicans*, *Suaeda novae-zelandiae*. Threatened species will include NZ spinach (*Tetragonia tetragonioides*), *Mimulus repens* and *Puccinellia stricta*.



*Tetragonia tetragonioides*. Photo: Lisa Forester.

### Sand dune (foredune and stabilised dunes) / dune forest

The sand dune habitat will interpret the fragility of coastal dunes and explain the importance of its integrity in maintaining diverse coastal ecology. Coastal dune systems within the Auckland region are collapsing due to inappropriate recreational disturbance. Why do we continue to allow fragile coastal areas to be used for vehicular traffic? Interpretation will include solutions on how everyone can help protect these fragile ecosystems. The endemic, sand-binding plant pingao (*Desmoschoenus*

*spiralis*) will be a feature plant of the replicated mobile dune together with *Spinifex sericeus*. A stabilised dune system will be established showing the transition from mobile dune to dune forest. Species to be included: *Carmichaelia australis*, *Corynocarpus laevigatus*, *Dysoxylum spectabile*, *Leptospermum scoparium*, *Kunzea ericoides*, *Mida salicifolia* and the regionally threatened *Hebe diosmifolia* and *Pseudopanax ferox*.

### Shell bank

The shell bank will feature transient species such as the NZ spinach (*Tetragonia tetragonioides*) now rarely found in the region and the closely related, commonly occurring native spinach (*Tetragonia implexicoma*). The threatened sand tussock (*Austrofestuca littoralis*) and Cook's scurvy grass (*Lepidium oleraceum*) will also feature.

Now that this project is well under way my attention now turns to funding for the South Pacific pavilion, which has been planned for this garden since 1999. I trust it won't take another five years to secure funds for this development! The pavilion will be of a contemporary design with overhead sailcloth, low-rammed earth walls and timber slatted seating. A place to ponder, rest, shelter and perform cultural performances such as harakeke weaving and storytelling.

### Upcoming events

If you have important events or news that you would like publicised via this newsletter please email the Network ([events@nzpcn.org.nz](mailto:events@nzpcn.org.nz)):

**Wellington Botanical Society Evening meeting: Monday 21 August – 1. Annual General Meeting 2. Wetlands – from the global to the local.** Speaker: Melanie Dixon, Policy Adviser, Greater Wellington Regional Council. Globally, the area covered by wetlands has halved over the last two hundred years, and the loss continues. What are the implications for biodiversity, flood abatement, water quality and carbon sequestration? And what is the impact on wetlands of global warming and sea level rise and the 'nitrogen cascade'? This talk starts with global wetland issues and finishes with a discussion of wetlands and wetland types in the Wellington region.

**Botanical Society of Otago - Insights of South American flora and fauna. Wednesday 23 August, 2006. Start time: 5.20 p.m. A talk by Pascale Michel.** This informal talk presents the ecological uniqueness of two main national parks in South America: Parque Nacional da Serra do Cipó (Brazil) and Parque Nacional Nahuel Huapi (Argentina). Serra de Cipó NP was created in 1984 to preserve a rich endemic flora, specific to dry high-altitude plateaux, and in particular the canela-de-ema (*Vellozia pirestana*) and a rare orchid (*Constantia cipoensis*). Nahuel Huapi NP comprises a large diversity of habitats expanding from Andean mountain beech forests to Patagonian steppes, and is home to humming birds and chinchillas. At the Zoology Benham Building, 346 Great King Street, behind the Zoology car park by the Captain Cook Hotel. Use the main entrance of the Benham Building to get in and go to the Benham Seminar Room, Rm. 215, 2nd floor. Please be prompt as we have to hold the door open. Contact [bsot@botany.otago.ac.nz](mailto:bsot@botany.otago.ac.nz). Allison Knight, phone: (03) 479 7577.

**8th International Mycological Congress (IMC8)** - Mycological Congresses are held in different parts of the world every 4 years, but never before in the Southern Hemisphere. Next year is our opportunity for several New Zealanders to participate in IMC8 at Cairns, Queensland, on 20–25 August 2006. For details of the programme, registration, associated workshops, etc, please see their website [www.sapmea.asn.au/imc8](http://www.sapmea.asn.au/imc8)

**New Zealand mycology symposium.** Following soon after IMC8 there will be a 2 day conference in Auckland to take stock of our knowledge of New Zealand fungi. This is still being planned and notification of its timing, programme, and location will be advised early 2006.

**Wellington Botanical Society Field trip: Saturday 2 September – Makara Foreshore Reserve.**

This small reserve of coastal sand-and-gravel huggers has been the focus of BotSoc study visits in 1995 and 2001. It's time for us to revisit it. We will recheck our transect lines to see how the native plants have fared over the last five years. Weeds are a constant problem in this small reserve, so we will also be investigating whether control methods are holding them at bay. Bring all the usual gear, plus pen / pencil and a clipboard (optional). MEET: 9.30 a.m. Makara Beach. Leader: Maggy Wassilieff (also contact for all transport arrangements), Ph 383 6100, Email: [zl2afp@internet.co.nz](mailto:zl2afp@internet.co.nz).

**Waikato Botanical Society Field trip—Tairua and Sailors Grave, Whenuakite, Coromandel.**

**Sunday 3 September.** Starting with Red Bridge walk to find *Brachyglottis myrianthos* and to see typical Coromandel regrowth, with abundant *Pseudopanax discolor* and *Alseuosmia macrophylla*. Then relocate to The Sailors Grave Historic Reserve from where we can walk along the coast and on into the Whenuakite Block of the Coromandel Forest Park. Threatened species to look out for include *Picris burbidgei*, *Pimelea tomentosa* and *Sicyos australis*.

Contact: Doug Ashby [dj.ashby@xtra.co.nz](mailto:dj.ashby@xtra.co.nz) or to carpool from Hamilton Andrea Brandon ph. 07 858 1018 (wk) or [abrandon@doc.govt.nz](mailto:abrandon@doc.govt.nz). Meet: 10am at the Tairua Community Hall, Main Road , on right , just before the bridge into town (opposite Pepe Road).

**Botanical Society of Otago – Field trip to Waipori River Valley - Saturday 16th September, 2006.**

Start time: 8.30 a.m. An exploratory visit to a patch of beech forest on the slopes of the Maungatua Range. Find out what plants and winter fungi inhabit this silver beech forest remnant. Trip leaves 8.30 a.m. from Botany Carpark, returning c. 4.00 p.m. Contact [mike.esr@xtra.co.nz](mailto:mike.esr@xtra.co.nz). Mike Thorsen, phone: (03) 453 6800.

**Waikato Botanical Society Field trip - Peter Morris gully restoration & Botanical Society**

**Native Threatened Plant Collection working bee #4. Sunday 1 October.** A visit to the 20 year old gully restoration project of Peter Morris in Mangaharakeke gully, on the edge of Hamilton at Newstead/Matangi. The six acres of restoration contains a wide variety of site types - from dry bank top areas to very wet backswamp so there is a large range of species to see. After lunch we return to another working bee to weed the collection, plant out and propagate. Bring your old gardening clothes. Contact: Liz Grove ph. 07 846 0965 (hm) or [eg3@waikato.ac.nz](mailto:eg3@waikato.ac.nz) Meet: 9.30 a.m. University of Waikato Gate 9, from here we will proceed to Peter Morris, returning to the threatened plant garden site in the glasshouse compound at the University at 1 p.m.



## NEW ZEALAND PLANT CONSERVATION NETWORK

### PLANT CONSERVATION AWARDS: 2006

The New Zealand Plant Conservation Network awards for 2006 are now accepting nominations. The purpose of these awards is to acknowledge outstanding contributions to native plant conservation.

The award categories are:

- Individual involved in plant conservation
- Plant nursery involved in plant conservation
- School plant conservation project
- Community plant conservation project
- Local authority protecting native plant life

More information about the awards scheme and additional nomination forms are available on the Network website—[www.nzpcn.org.nz](http://www.nzpcn.org.nz). You can make multiple nominations under different categories. Everyone is eligible to make nominations, not just Network members. The awards will be made at the Network conference on Tuesday 21 November 2006. See the website for more information about the conference (Auckland 20–21 November 2006).

#### **NOMINATION FORM**

Category (please circle):

Individual                      Plant nursery                      School  
Community                      Local authority

NAME OF NOMINEE: \_\_\_\_\_

Contact details for person, school, nursery, community group or local authority:

Address: \_\_\_\_\_  
\_\_\_\_\_

Phone: \_\_\_\_\_

Email: \_\_\_\_\_



**REASONS FOR NOMINATION:**

---

---

---

---

---

---

---

---

---

---

Please add more details on separate pages if required.

YOUR NAME: \_\_\_\_\_

RELATIONSHIP TO NOMINEE: \_\_\_\_\_

Your contact details:

Address: \_\_\_\_\_

---

Phone: \_\_\_\_\_

Email: \_\_\_\_\_

PLEASE SEND YOUR NOMINATION FORM BY 6 November 2006 TO:

New Zealand Plant Conservation Network

P.O. Box 16-102

Wellington

New Zealand

Email: [info@nzpcn.org.nz](mailto:info@nzpcn.org.nz)

[www.nzpcn.org.nz](http://www.nzpcn.org.nz)