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 53 APRIL 2008 Deadline for next issue: Wednesday 14 May 2008

Message from the President

Go to the last pages first. After many years or reading student theses and dissertations, I have this habit of going to the last pages first. I tend to do this whether it be thesis, paper, report or magazine. The reason is that the most interesting contents are likely to be on the last pages. So today, when I received the final draft copy of the April edition of *Trilepidea*, by force of habit, I turned to the last pages. There, I found a bumper collection of announcements about botanical and conservation events. It is indeed very satisfying to see so many events taking place. Is this an autumn phenomenon? That leads me to ask yet again, why don't more members of the Network write a few words for us about their plant forays or conservation meetings. We really would love to hear from you and even just a photograph or a paragraph would be most welcome.

Seasonal observations would also be welcome for the Newsletter. Connected with that request, I note that in this issue there is a brief mention of the 'Father of Phenology'. Robert Marsham must have been a most interesting person. He and Gilbert White did indeed have a passion for the natural world but it was their meticulous recording of recurring events in nature that is so remarkable. Anyone who has read Gilbert White's Diary will know what I mean. Phenology was an important and integral component of natural history and it set the scene for the emerging science of ecology.

A blend of science and natural history is evident in a the intriguing story by Peter de Lange about *Parahebe* "bamboozle". It reads rather like an exciting detective story. Peter also provides us with some very detailed science in the piece entitled 'Like the Norwegian Blue, *Pratia* has ceased to be'.

So on this occasion, my expectation that the most interesting material would be on the last pages was not met. The first few pages are even more interesting. Read on.

Finally, I must keep drawing your attention to the forthcoming Conference. Please make a note in your diary. It is your Conference and there will be something for everyone! In particular, I would love to have as many Network members as possible contributing their thoughts about the activities of the New Zealand Plant Conservation Network in the next five years.

Ian Spellerberg, Lincoln University

Plant of the Month

Plant of the Month for April is the Nationally Critical moonwort, *Botrychium lunaria*. This diminutive indigenous fern grows in the alpine zone in short turf within limestone and marble karst systems. It is found in Kahurangi National Park, North West Nelson. There is also an old gathering made from Mt Torlesse, Canterbury. New Zealand plants appear to be the same as the Australian form. It is not common and it remains vulnerable to browsing animals, weeds and human recreational activities such as caving and tramping. It is very vulnerable to plant collectors. The Network fact sheet for *Botrychium lunaria* may be found at: www.nzpcn.org.nz/vascular_plants/detail.asp?PlantID=2131.

Botrychium lunaria.
Photo: John Smith-Dodsworth.

Like the Norwegian Blue, *Pratia* has ceased to be

Peter J. de Lange, Department of Conservation (Pdelange@doc.govt.nz)

In a series of papers in the March 2008 issue of the *New Zealand Journal of Botany* we kissed goodbye to some anomalies in the Lobeliaceae and welcomed a few new species to the fold.

The generic distinction of *Hypsela, Isotoma* and *Pratia* from *Lobelia* has always been problematic and, for most of the New Zealand species recognised in these genera, combinations have long existed in *Lobelia* as well. In two comprehensive papers published in the March issue of the *New Zealand Journal of Botany* Vol. 46, Heenan *et al*. (2008) and Knox *et al*. (2008) completely placed these satellite genera back into *Lobelia*. In the process, four new species *Lobelia carens, L. fatiscens, L. fugax* and *L. glaberrima* were described—all threatened to some extent. Previously, *Lobelia carens* was included within *Hypsela rivalis*, whereas *L. fatiscens* had been incorrectly regarded as the same as *Isotoma fluviatilis* (R.Br.) F.Muell. ex Benth., which, as any horticulturist would know, is an Australian species that never was in New Zealand. Because the epithet "*rivalis*" is preoccupied in *Lobelia*, a new species name—*Lobelia ionantha*—for the South Island plant long known as *Hypsela rivalis* is provided.

The newly described *Lobelia carens* from Lake Wairarapa. Photo: Jeremy Rolfe.

Both papers are based on careful consideration of morphological and cytological evidence backed up by detailed phylogenetic reconstructions based on DNA sequence data. The only New Zealand Lobelioid to remain unmolested—at least for the time being—is *Colensoa*, an oddity that was never satisfactorily placed in *Lobelia* or *Pratia*, and so had been reinstated by de Lange & Cameron (1999). Current views are that *Colensoa* is a "sound" genus but that some northern Australian taxa currently assigned to other genera may in time be placed there, as might some Malesian species which need further critical study. As for the traditionally accepted New Zealand lobelia, further study into the relationship of *Lobelia anceps* to *L. alata* is also needed.

The names now available for the New Zealand lobelioids are:

Colensoa physaloides (A.Cunn.) Hook.f.
Lobelia arenaria (Hook.f.) Heenan *et* de Lange
Lobelia anceps L.f.
Lobelia angulata G.Forst.
Lobelia carens Heenan
Lobelia fatiscens Heenan
Lobelia fugax Heenan, S.P.Courtney *et* P.N.Johnson
Lobelia glaberrima Heenan
Lobelia ionantha Heenan
Lobelia linnaeoides (Hook.f.) Petrie
Lobelia macrodon (Hook.f.) Lammers
Lobelia perpusilla Hook.f.
Lobelia roughii Hook.f.

References

de Lange, P.J.; Cameron, E.K. 1999: The Vascular Flora of Aorangi Island, Poor Knights Islands, Northern New Zealand. *New Zealand journal of botany* **37**: 433–468.

Heenan, P.B.; Knox, E.B.; Courtney, S.; Johnson, P.N.; Dawson, M.I. 2008: Generic placement in Lobelia and revised taxonomy for New Zealand species previously in *Hypsela* and *Isotoma* (Lobeliaceae). *New Zealand journal of botany* **46**: 87–100.

Knox E.B.; Heenan, P.B.; Muasya, A.M.; Murray, B.G. 2008: Phylogenetic position and relationships of *Lobelia glaberrima* (Lobeliaceae), a new alpine species from southern South Island (New Zealand). *New Zealand journal of botany* **46**: 77–85.

Celebrating the tercentenary of Robert Marsham – the father of phenology

Adapted from the Woodland Trust's Nature's Calendar website http://www.naturescalendar.org.uk/

Robert Marsham was born on 27 January 1708. He owned a country estate in Stratton Strawless, Norfolk, but from an early age he showed a passion for the natural world. He became friends with the naturalist Gilbert White, with whom he carried on a lengthy correspondence. White described Marsham as a 'painful and accurate naturalist'. It was Marsham who was the first to record the effects of nature and seasonal change. As a result of his interest in trees, he was elected a Fellow of the Royal Society in 1780.

His series of nature observations began in 1736. He meticulously catalogued detailed records of seasonal weather and temperature changes; tree foliation; crop growth and progress; migrating birds; flowering dates of individual species like snowdrops and wood anemones in spring; first sightings of butterflies and swallows; and listened for the first call of the cuckoo. Marsham continued to note significant dates for the next 62 years. He developed his ground-breaking work into the 27 "Indications of Spring", which were eventually reported to the Royal Society in 1789. His main reason for keeping these records was to improve the timber production on his estate. Successive generations of his family added to his work, and this information now provides immensely valuable data to the UK phenology database. He died in 1797.

For more information about Robert Marsham go to http://www.robertmarsham.co.uk/

Discovery in Riverhead Forest has botanists in a spin

Peter J. de Lange, Department of Conservation (Pdelange@doc.govt.nz)

Many moons ago, the 2007 NZPCN Life Time Achievement recipient, Geoff Davidson, founder of Oratia Native Plant Nurseries, and major mover in plant conservation, helped protect a small indigenous forest remnant near Riverhead, north-western Auckland. In early November last year, Geoff took a short stroll through that particular forest and was surprised to find what he thought was *Jovellana repens*. As the plant was sterile, and there are no records known of *Jovellana repens* north of East Cape and Mt Pirongia, Geoff took a small piece and grew it on. In late November, I was shown the find and immediately recognised that it was not a *Jovellana* but had some resemblance to a *Parahebe* or *Veronica*. However, without flowers or fruits little more could be done, so it remained an unresolved problem until, not long after Christmas, it flowered. The white flowers with deep magenta nectar guides, and enfolded corolla lobe bases had a remarkable resemblance to *Parahebe lanceolata*, but the bright green, orbicular-spathulate leaves, extremely hairy stems, petioles, leaf margins, peduncles and pedicels were not typical of that variable species, nor the prostrate, widely creeping, semi-herbaceous growth habit. Perplexed I suggested Geoff take images, and these I forwarded to Professor Phil Garnock-Jones of the Department of Biological Sciences, Victoria, University of Wellington.

Parahebe "bamboozle". Photos: Peter de Lange.

Phil was not long in replying. To him the foliage was reminiscent of the subalpine to alpine, North Island endemic *P. spathulata* but the flowers were more typical of *P. lanceolata*. Could it be a hybrid he wondered? Certainly it was distinctive and well worth further investigation. Samples were dually processed and sent to the University of Auckland for DNA sequencing using two chloroplast markers (trnL and rbcl) and one nuclear one (ITS). Root tips were also sampled for a chromosome count. Another more obvious problem was to see it in the wild. Thus, in late January, accompanied by Geoff Davidson, Jeff McCauley (Head Propagator, Oratia Native Plant Nurseries) and Dr Rhys Gardner (Research Associate, Auckland Museum Herbarium), I set out for Riverhead Forest.

January was an incredibly dry month, and the forest remnant was suffering. Everywhere the forest floor was carpeted with fallen, wilted, canopy tree leaves, and the shrub tier was tinder dry, and mostly dead or dying. Several hours intensive searching found no *Parahebe*, leaving all concerned bamboozled as to its fate. Luckily Geoff had managed to propagate another plant, and rooted pieces were also sent to Phil Garnock-Jones for cultivation, study and as a further safeguard.

In early March, the DNA results were in. All three DNA markers told much the same story, the plant, now dubbed *Parahebe* "bamboozle" was indeed allied to that genus, or, if you prefer the broader based concept, part of the *Parahebe* clade of Southern Hemisphere *Veronica*. Close relatives were not forthcoming, with relationships to the New Guinea *Parahebe* strongly indicated in some portions of sequences and there were also links to *Hebe*, *Chionohebe*, New Zealand *Parahebe*, and *Hebejeebie* in others. In mid March, Associate Professor Brian Murray (Department of Biological Sciences, University of Auckland) obtained clear counts of 2n = 40 chromosomes—another oddity in *Parahebe*, with that number being otherwise known in the New Zealand species only from the apparently unrelated *P. decora*. However, that number is typical of *Hebe*.

Research is now underway to determine whether *Parahebe* "bamboozle" merits formal description. While that's underway we only hope that more plants will be found in the wild soon!

Plant conservation individual award

From left: Julia Bennett (daughter), Sue Bennett (wife), Wayne Bennett receives the NZPCN individual conservation award from DOC Waikato Conservator, Greg Martin. Looking on are Wayne's daughter, Julia (left), and wife, Sue.

Wayne Bennett received the Network's 2007 individual award at a ceremony in the DOC Waikato Conservancy office for his efforts to lift the profile of ecological restoration planting and eco-sourcing in the Waikato. He was accompanied by his wife, Sue (alongside Wayne) and daughter Julia (at left) when he was presented with the award by Waikato Conservator, Greg Martin (extreme right).

Weedwise Nursery Award

Last year, the Council of the Australian Weed Societies (CAWS) introduced its Most Weedwise Nursery Award, with one award for New Zealand and one for Australia. Last year's New Zealand winner was Kerikeri Plant Production, owned by Julia Colgan and Tom Lindesay. The award acknowledges nurseries who pro-actively educate the public about plants that pose environmental risks by escaping from gardens to threaten native plants, wildlife and environments.

Winners receive a certificate, and the two over-all winners for New Zealand and Australia receive a trophy. All winners will be publicised through their local media. Further details of the award can be found on the website of the NZ Plant Protection Society at www.nzpps.org. Nominations for this year's award should be sent to the NZPPS Secretary (secretary@nzpps.org) by 30 April. Winners will be decided by 31 May and announced in June.

Toxic honey from native plant causes illness

At least nine people became severely ill from eating honey from the Coromandel that appears to have been contaminated with tutin and henanchin—a hydroxytutin derived from tutin. The toxic honey appears to have been contaminated as a result of bees visiting tutu (*Coriaria arborea*). The process involves honeydew being excreted on to the leaves of tutu by the tiny sap-sucking passionvine hopper (*Scolypopa australis*) and then bees gathering the honeydew.

Tutin and its derivative hyenanchin are extremely toxic to humans, but only a few areas in New Zealand regularly produce toxic honey. These include the Coromandel Peninsula, Eastern Bay of Plenty and the Marlborough Sounds. To produce toxic honey, all of the following conditions are required:

- High concentrations of tutu bushes
- High numbers of passionvine hoppers
- Hot dry weather to allow the honeydew to build up on the tutu (rain can wash it off)
- An absence of more attractive food sources for bees, usually caused by drought
- The presence of honey bees (*Apis mellifera*) being managed for honey production.

Tutu is the classic poisonous plant of New Zealand. It is a widely distributed native species found throughout New Zealand, particularly along stream banks and in regenerating native bush. Some of the first animals introduced to New Zealand by Captain Cook in the 18th Century were poisoned by it. The plant caused losses in cattle and sheep. All parts of the plant except the succulent black, soft petals surrounding the seeds are poisonous.

Tutin acts on the central nervous system leading to excitement, convulsions, exhaustion and can lead to a comatose state. Breathing is usually affected, so too is memory. A number of people have been killed, incapacitated and hospitalised over the years from eating toxic honey. The last recorded case from commercial honey was in 1974 involving 13 patients. There have been 9 cases since 1974 with the last known poisoning occurring in 1991 in the Eastern Bay of Plenty area.

(*Editor's comment*: *The coverage this story has had in the major news media has somewhat bemused me. In* New Zealand Insect Pests *(1976) and* New Zealand Pest and Beneficial Insects *(1984) I wrote in the section on passionvine hopper that the second reason for its pest importance was the production poisonous honey from tutu. In talking to a friend recently about the heavy media coverage I discovered he was also bemused because his wife had done the mammalian toxicity tests in the mid 1960s.)*

Succesful bid

After a year of waiting, the Network has finally heard back from TFBIS that our bid to digitise all the back issues of the regional botanical society journals has been successful. We can now work (with the regional botanical societies) to set up a system to deliver the digitised papers. This will be immensely valuable to a lot of people.

Distribution maps added to website

Distribution maps for 500 threatened and uncommon indigenous plant species have been added to the website. They are available to Network members only and can be found on the left hand side of the fact sheet along with the high resolution plant photographs. These maps have been obtained from the Department of Conservation's BIOWEB database. In due course, the Network plans to provide distribution maps of all plants.

NZPCN Conference 8–9 August 2008 – call for papers

The number of presentation slots is limited so at this stage we are seeking only titles of presentation titles – please submit these by 30 May 2008. A decision on the papers to be presented at the conference will be made in early June and for those that are accepted an abstract will be required by 11 July 2008. Presentations will be 15–20 minutes long. Conference sessions are: genetics and conservation; plant breeding systems; threatened ecosystems; restoration of rare species; and plant conservation success stories. Please send your paper title to the organisers of the scientific part of the conference: David Norton (david.norton@canterbury.ac.nz) or Peter Heenan (heenanp@landcareresearch.co.nz).

Apologies for website outage

The Network was forced to shut down the website on Saturday 5 April Saturday 12 April due to malicious hacking from overseas, leading to problems with the database and linkages from the site. We apologise for any inconvenience. To get the best performance from the site we recommend that you refresh the website links on your computer (by clearing out your old temporary internet files folder). This will ensure you are seeing the most up-to-date version of the site.

Subscriptions

Though payments have been coming in steadily, quite a large number of members still owe subscriptions for the 2007–08 year. Please make your payment NOW. Please also note that, after April 30, all those members who have outstanding subscriptions going back to the 2006–07 year will be removed from the website.

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):

New Zealand Plant Conservation Network

Conference: The Network conference will be held 8–9 August with field trip options on Sunday 10 August. Registration forms will be available on the website soon. Since accommodation at the venue is limited, it will be important to get your registration form in early. Also there will only be a limited number of reduced registration fees for students. Please see the attached flyer for further details about the conference.

Auckland Botanical Society

Meeting: Wednesday 7 May in the Unitec School of Natural Sciences, a talk titled "Mistletoes in Auckland" by Bec Stanley of ARC. **Contact**: Maureen Young (e-mail: youngmaureen@xtra.co.nz).

Field trip: Saturday 17 May, a trip to Kauri Point Domain and Soldiers Bay. **Contact**: Maureen Young (e-mail: youngmaureen@xtra.co.nz).

Meeting: Wednesday 4 June in the Unitec School of Natural Sciences, a talk titled "Fingi ecology" by Barbara Paulus of Unitec School of Natural Sciences. **Contact**: Maureen Young (e-mail: youngmaureen@xtra.co.nz.)

Field trip: Saturday 21 June, a trip to Ernest Morgan Reserve. **Contact**: Maureen Young (e-mail: youngmaureen@xtra.co.nz).

Waikato Botanical Society

Field trip: Saturday 19 April to Hangitiki Wetland, Waitomo—a good opportunity to compile a species list and locate several threatened plants (as well as the odd weed such as pampas and willow). **Meet:** Waitomo Tavern car park at 10 a.m. **Contact:** Thomas, ph: 07 878 1055 (wk) or 07 878 3437 (hm).

Field trip: Sunday 11 May to Port Waikato Coastal Remnants (Limestone Downs and Ward Farm). See Cook's scurvy grass and *Hebe speciosa* with binoculars. **Meet:** 8.30 a.m. at BP petrol station at south end of Ngaruawahia township SH1. **Contact:** Gerry Kessels or Britta Deichmann ph: (07) 825 9025, or e-mail: britta@kessels-ecology.co.nz or gerry@kessels-ecology.co.nz

Rotorua Botanical Society

Field trip: Saturday 19 April, the Okareka Mistletoe Restoration Project Weed Control Work Day. **Leader:** Paul Cashmore, ph: 07 348 4421 (hm), 07 349 7432 (wk), e-mail: pcashmore@doc.govt.nz. **Meet:** Ex-Okareka store 8:45 a.m. **Grade:** Medium–Hard—activities suitable for all ages and abilities will be provided.

Field trip: Saturday 3 May to 'Amani', Lockington Rd, Aongatete, Katikati. **Leaders:** Paul Cashmore, ph: 07 348 4421 (hm), 07 349 7432 (wk), e-mail: pcashmore@doc.govt.nz and Bruce Parsons. **Meet:** The Rotorua District Council car park on Fenton St at 8:30 a.m. or 10 a.m. at 464 Lockington Rd, near Katikati. **Grade** : Medium

Meeting: Monday 19 May in the Rotorua Women's Club, Hinemaru St., near Princes Gate Hotel at 7.30 p.m. a talk titled "Namaqualand in Spring" by Graeme Jane.

Field trip: Saturday 31 May to Ohope Scenic Reserve. **Leader:** Sarah Beadel ph: 07 362 4315 e-mail: Sarah@wildlands.co.nz. **Meet:** The Rotorua District Council car park on Fenton St at 8.00 a.m. or at Ohope Beach at 9.30 a.m. (at the bottom of the hill). **Grade:** Easy–medium

Wellington Botanical Society

Meeting: Monday 21 April at 7.30 p.m., in Theatre 101, Murphy Building, Kelburn Parade a talk titled "Plants of south-western Australia" by Leon Perrie, Curator of Botany, Te Papa.

Field trip: Saturday 3 May to Korokoro – Maungaraki Bush. Explore some of the tracks in this regenerating forest on the Western Hutt hills above Percy Scenic Reserve. **Meet:** 9.00 a.m. at pipeline in Akatea Rd, at start of track to Sugarloaf. **Transport:** catch 8.05 a.m. train on Hutt line from Wellington to Petone Station. Walk up Korokoro Rd to hairpin bend, then up Galbraiths Gully path to Singers Rd, go up it to Maungaraki Rd, then turn right into Akatea Rd, 25 minutes pleasant walk. **Leader:** Bev Abbott, ph: 475 8468.

Meeting: Monday 19 May at 7.30 p.m. in Theatre 101, Murphy Building, Kelburn Parade a talk titled "Teaching restoration at VUW: Is the emphasis right?" by Murray Williams, Senior Lecturer in Ecological Restoration and Conservation, VUW. Following Colin Meurk's recent address to BotSoc, it is a good time to reflect upon its content.

Canterbury Botanical Society

Meeting: Friday 2 May at 7.30 p.m., Room A5 University of Canterbury a talk titled "A Web of Fungi" by Jerry Cooper, Landcare Research. **Contact:** Margaret Geerkens, ph: 352 7922 e-mail: bert.marg@xtra.co.nz.

Field trip: Saturday 3 May a visit to Kowai Bush, north of Springfield, to study fungi. **Contact:** Margaret Geerkens, ph: 352 7922 e-mail: bert.marg@xtra.co.nz.

Winter Camp: Tuesday 26 August – Monday 2 September 2008, to Broadbeach, Gold Coast, Australia. Trip fully booked.

Botanical Society of Otago

Field trip: Saturday 19 April, to Kurinui, North Otago, starting at 9.00 a.m..
Contact: Scott Dunavan, ph: 027 290 3643.

Meeting: Wednesday 7 May at 5.20 p.m., a botanical "Show and tell" evening. 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**: Robyn Bridges, phone: (03) 479 8372.

Field trip: Sunday 11 May to Tavora Reserve, near Palmerston, North Otago. This will be an easy walking circuit of the reserve that takes in all the highlights. **Meet**: Botany Department car park, 8.30 a.m. **Contact** John Barkla, phone: (03) 476 3686.