



TRILEPIDEA

NEWSLETTER OF THE NEW ZEALAND PLANT CONSERVATION NETWORK

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

E-NEWSLETTER: No 58. SEPTEMBER 2008

Deadline for next issue: Wednesday 15 October 2008

Message from the President

On behalf of the Network, may I congratulate Shannel Courtney on the occasion of the award of the Loder Cup. This is timely acknowledgement of the splendid work undertaken by Shannel over many years. I also congratulate the Oratia Plant Nursery as the recipient of the 2008 CAWS Weedwise Nursery Award. To achieve this must have taken a great deal of dedication by the staff at the Nursery.

This month I am so pleased to see so many contributions to the Newsletter. I did make a plea to everyone at the Conference for contributions (no matter how brief) to the Newsletter.

The Conference, by any standards, was a great success. I have been most encouraged by the number of very positive comments that I have received. Indeed all have been very positive. On October 23, the Council of the NZPCN will meet and at that time we will discuss the many ideas that came out of the workshops. If anyone at all would like to make any further suggestions about the next five years for the Network—please do contact me or any member of Council.

Finally, I would like to end on a controversial note. As everyone will know, there is much debate about climate change. Climate change has a high profile and there are many conferences, workshops and lectures on the topic. In my opinion (and I welcome views to the contrary) the attention given to climate change is out of all proportion. There are more serious environmental issues that have greater implications for life on earth. I rank the unsustainable and inequitable use of nature and biological diversity as the most important issue. I wonder if anyone would agree when I suggest that one of the main contributors to climate change has been the loss in and damage to the flora of the earth. Rather than thinking about the effects of climate change on plants I suggest that we ask “To what extent has human impact on the earth’s flora contributed to climate change?” Comments please.

Ian Spellerberg, Lincoln University

PLANT OF THE MONTH – *Hibiscus richardsonii*



Hibiscus richardsonii.
Photo: Jeremy Rolfe.

The indigenous, Nationally Critical *Hibiscus richardsonii* (the native hibiscus or puarangi)—erroneously referred to as *Hibiscus trionum*—is found in North Island, from Te Pahi eastward to Hicks Bay, including Great Barrier and Mayor (Tuhua) Islands and also in Australia (New South Wales). This annual to short-lived perennial herb up to 1 m tall is strictly coastal, growing in recently disturbed habitats, such as around slip scars, within petrel colonies, on talus slopes and under open coastal scrub and forest. It is very palatable to stock, and is prone to being outcompeted by faster growing and taller weeds. As a species requiring open ground, it is especially vulnerable to this threat.

The Network fact sheet for *Hibiscus richardsonii* may be found at: www.nzpcn.org.nz/vascular_plants/detail.asp?plantid=2378

Shannel Courtney wins Loder Cup

Cathy Jones and Simon Moore, Department of Conservation



Shannel Courtney.

Shannel started his professional botanist's career with holiday work in 1979. He has since worked for virtually every government department that has something to do with native plants: Wildlife Service, Forest Service, Botany Division of DSIR, Lands & Survey and finally the Department of Conservation for all of its 21 years. Shannel completed his Masters on pingao in 1983 and has since developed an extremely wide knowledge of the distributions and habitats of all native plants, particularly threatened plants. Shannel recognised the need a regional herbarium in Nelson (the nearest herbarium is in Christchurch) and has supervised staff in setting it up and has collected most of the plants that are in it. This has become a valuable resource for staff and amateur botanists (circa 4000 specimens).

Shannel was one of four people who founded the Nelson Botanical Society 20 years ago and has always been on the committee, leading trips and passing on his knowledge through field trips and talks. He is also currently on the Council of the NZ Plant Conservation Network. Shannel is part of the national committee of botanists that triennially assesses the threat status of New Zealand plants. He also leads the South Island Threatened Broom Recovery Group and is threatened plant Technical Support Officer for DOC in Nelson and Sounds being locally responsible for providing advice on the management of about 200 threatened species. Shannel helped Audrey Eagle when she produced her latest volumes on *Trees and Shrubs of New Zealand*—reviewing plant descriptions and distributions as well as being instrumental in ensuring that a supplement was published with important details omitted from the books by the publishers.

Shannel has also had an important mentoring role within the Department of Conservation—passing on technical expertise to other Area and Conservancy staff, not just relating to plant species but also in other fields that he has previously been involved in such as tenure review and survey and monitoring. Shannel's extensive knowledge of plant life led him to put together comprehensive recommended native planting lists for over 30 ecosystems in both Nelson City and Tasman District. Shannel has picked up much of the baseline botanical survey work in Nelson/Marlborough done by Tony Druce and added to it, covering the majority of the top of the South. In doing so, and in combination with other field excursions, he has built up a peerless knowledge of the flora and habitats of Nelson (in particular).

The Balaclava, Dillon and Sedgemere PNAP report that Shannel wrote is one of the most comprehensive and detailed PNAP works ever done and provides an incredibly useful biodiversity resource for the management of Molesworth. Shannel has also contributed to PNAP reports elsewhere (e.g., Motu, Pukeamaru, and North Taranaki). Shannel has been instrumental in the purchase by the Crown of some key land areas with high biodiversity values such as Canaan, Hadfield block (Abel Tasman NP), and Kaikoura Coast (between the Clarence River mouth and the Hapuku River mouth). The 6-ha covenant he owns at Pohara is an amazing example of what one man can do to control weeds and pests to the point where he has protected and enhanced a magnificent example of coastal northern rata-broadleaved species limestone forest (a naturally rare forest type within a national context) and undertaken an intensive weed control programme for 18 years. He maintains a threatened plant nursery and arboretum of Nelson and Marlborough species, in Golden Bay. Finally, Shannel has discovered seven new species of flowering plant including: two *Craspedia* (woollyhead), a *Geranium*, two *Hebe*, a *Euphrasia* (eyebright) and a *Gingidia* (native aniseed).

The Loder Cup was donated by English botanist Gerald Loder, in 1926, to honour those who worked to 'retain, investigate and cherish New Zealand's incomparable flora'. In announcing the award to Shannel, the Minister of Conservation, Hon Steve Chadwick said, "This award recognises Shannel's personal and professional commitment to protecting and restoring threatened indigenous plant life, particularly in the Nelson and Marlborough regions."

Oratia Native Plant Nursery wins 2008 CAWS WeedWise Nursery Award

The Council of Australasian Weed Societies (CAWS) represents weed societies in Australia and New Zealand. It promotes the importance of weeds, and the people involved in their management and science, through education, awards, travel grants and publications. The New Zealand Plant Protection Society represents New Zealand on the Council. Each year CAWS presents two WeedWise Nursery Awards—one in Australia and one in New Zealand. The purpose of the award is to create awareness and generate positive publicity regarding invasive garden plants. The award goes to retail nurseries that:

- Voluntarily remove invasive plants from their nursery and stock lists, especially those sold by other nurseries.
- Sell indigenous flora.
- Ensure that their stock is correctly labelled.
- Participate in such schemes as "Plant Me Instead".
- Educate customers about environmental issues, especially about invasive plants.

This year, Oratia Native Plant Nursery, having met all these criteria (indeed exceeding all of them), was presented with the award. The award was presented by Ruud Kleinpaste, often known as the "Bug Man", who gave a speech addressing biodiversity and biosecurity issues followed by another presentation by Dr Peter de Lange who noted the nursery's prominence in threatened plant research, conservation management and weed recognition. NZPCN members will already know of Oratia which, in 2005, won the society's award for the best run Native Plant Nursery and its owner, Geoff Davidson, who won the 2007 Life Time Achievement Award and is now a life-time member. Mr Davidson was also one of the first (2005) sponsors of the NZPCN.

***Libertia cranwelliae* rediscovered**

Graeme Atkins, Department of Conservation, East Cape



Libertia cranwelliae in cultivation.
Photo: Jeremy Rolfe.

Recently, the New Zealand botanical world was pleasantly surprised with the rediscovery of *Libertia cranwelliae*, an endemic iris not seen in the wild since the 1960s. Because it had not been seen for so long it was given the threat ranking of 'Presumed Extinct'. It is with great satisfaction I can say that it has been found in the Te Araroa/East Cape area! There is a story involved in its rediscovery that I am sure you will find interesting. The block of land where the species grows was part of the Te Araroa *Dactylanthus* Restoration Project. Part of the restoration work involved controlling pests to low levels to allow *Dactylanthus* to flower and seed. Feral pigs were one of several species that were identified as having major impacts on the long term survival of the species. Unlike possums or rats, observed at night using infra-red video, which ate the flowers, pigs would uproot the whole plant. Whereas plants attacked by possums and rats would live to try to flower again the next year, the plants pigs dug up were destroyed. Numerous pigs were caught during the duration of this project. Their stomachs were full of *Dactylanthus* flowers providing proof of the devastating impacts of pigs on this endemic plant.

So what has this got to do with *Libertia cranwelliae*? It was four years ago while we were hunting pigs to protect *Dactyloctenium* that *Libertia* was found. Not being familiar with native irises, I only casually tried to find out what I had found. Having large seed capsules over 20 cm long and finding it in the forest setting, I thought at first it was a weed. The closest I could key it out to be was *Libertia ixioides*, which is not a threatened plant but also was not on the plant species list for the Pukeamuru Ecological District. I thought it was merely a new introduction to that species list. Feral cattle had been browsing the iris and had pulled several plants out of the ground. I recovered these, as well as a few seed pods, and planted them in my garden. There they stayed for four years busily breeding and replicating themselves until May of this year.

Mike Thorsen, botanist for Otago Conservancy of the Department of Conservation, sent DOC East Coast Conservancy some information about this species to our local Technical Support Officer, Dave Carlton, who passed the information on to me. He told me to keep my eyes out for an East Cape endemic, which was presumed extinct in my neck of the woods. The information detailed where it was originally found in the headwaters of the Kopuapounamu River, a tributary of the Awatere River, which flows into the sea at Te Araroa. A site visit revealed it is now a forestry block and there is not much chance it would still remain there.

After having my interest in our native irises aroused, all the New Zealand literature on New Zealand irises ended up in my hands courtesy of Rhys Burns at DOC, Gisborne. Now I had the key and colour photos. I could hardly believe my eyes because I was 99% sure that this was the species I had in my garden! Specimens were sent to the relevant experts who confirmed my find. The presence of this species on private land has provided a catalyst to discuss the land's possible legal protection under Nga Whenua Rahi. At the time of the discovery, this species numbered fewer than 20 plants in the wild. I will re-visit the site I discovered four years ago to check its status. Watch this space!

Where in New Zealand is the highest diversity of threatened plants?

Mike Thorsen, Department of Conservation, Dunedin (mthorsen@doc.govt.nz)

If you automatically thought the Surville Cliffs or North West Nelson you may be wrong. During the past three years, I have collected records from botanical explorations of threatened or uncommon plants present at a site known locally as Macraes. This list is now extensive and contains 84 species with 6 Acutely Threatened, 9 Chronically Threatened, 21 At Risk, 15 Regionally Significant and 32 Locally Notable taxa present. This is an exceptional diversity of threatened plants within a 3000 ha area and I believe this is the highest diversity of threatened and uncommon plants of any area in New Zealand for its size—if you exclude sites that are very small fragments of formerly widespread habitats (such as Pisa Flats, which has 14 Threatened or At Risk species in 25 ha).

Macraes is situated 45 km north of Dunedin, 25 km inland from the coast and ranges in altitude from 400 m to 714 m a.s.l. The area under investigation consists of hybrid *Chionochloa* tussock grassland and short tussock grassland induced by Maori and pastoralist clearance of the original semi-arid podocarp forest and small-leaved shrubland on ridge crests and the mesic broadleaf forest from hill slopes and drainages. Only remnants of these vegetation communities remain. Twenty-six species, thought to be shade-dependent shrubland- or forest-floor



Trig J, Macraes, 2007. Photo: Mike Thorsen.

inhabitants, are now restricted at Macraes (as they are elsewhere in Central Otago) to underneath rock overhangs, which are possibly acting as a forest/shrubland surrogates. The area is a mix of DOC Scenic Reserves and Conservation Covenants and private land. Plant species diversity at Macraes is also very high, with 350 native species and 84 exotic species recorded from the site.

This diversity at Macraes is probably a result of the geographic placement and altitude of Macraes with representation from dryland Central Otago species, mesic eastern Otago lowland species, montane species, and a topography with a diversity of landforms including shallowly-impounded ephemerally wet areas on broad peneplain ridge tops and deeply-incised drainages with a plethora of rock outcropping. Another reason for the high diversity is the number of botanists that have spent time in the area. Graeme Loh, Peter Johnson, Kate Wardle, James Bibby, Graeme Jane, John Barkla, Peter de Lange, and I have all spent time at this site and contributed species records. However, new records of native species are still being made at a rate just under one species per day at the site.

Many of these threatened species have significant populations at the site, and Macraes is a national stronghold for several species. However, some of the species have declined dramatically. For some species, the reasons for this decline are unknown, but for others (particularly inhabitants of ephemeral wetlands) it is thought that regrowth of taller (usually exotic) vegetation has swamped the smaller native species. This regrowth has occurred as a consequence of excluding stock from reserve areas by fencing. Conversely, fencing has benefited some shrub and tree species; an indication that techniques used for reserve management have to be carefully considered. Two species at Macraes appear to be undescribed local endemics. These are a small *Thelymitra* orchid and an *Uncinia* hookgrass.

The wetland-transforming exotic rush, *Juncus subnodulosus*, and grass, *Narduus stricta*, have very restricted distributions at Macraes and emphasis must be given to their eradication. Several woody weed species are present that could transform some vegetation communities. These species are gorse, *Ulex europaeus*, broom, *Cytisus scoparium*, pine, *Pinus radiata*, gooseberry, *Ribes uva-crispa*, and elder, *Sambucus nigra*. Mouse-ear hawkweed, *Hieracium pilosella*, is ubiquitous, forming a distinct vegetation community that contains surprising amounts of native species diversity. Tussock hawkweed, *Hieracium praealtum*, is present in several locations, but does not currently seem to be negatively impacting native plant communities.

Though the claim of New Zealand's highest diversity of threatened plants for Macraes is deliberately provocative, diversity of threatened plants is one of the criteria adopted by the NZPCN for judging whether an area qualifies as an Important Plant Area (IPA). I would therefore like to formally propose Macraes as New Zealand's third IPA. This is also a challenge to those who think they have a site that is as good as (or even better?) than Macraes to nominate it to the NZPCN as an IPA.

And, before I forget, there are also two critically endangered skink species (grand and Otago skinks), a wealth of archaeological sites, including Maori rock shelters, tool-making sites, and moa kill sites, remnants of early European gold mining and pastoralism (including a sod wall that stretches for tens of kilometres). All in all an amazing place.

Acknowledgement: Thanks to John Barkla for humorously pointing out the flaws in a draft of this article.

A list of threatened and uncommon plants recorded from Macraes

(Note: Threat classifications follow de Lange *et al.* (2004) except for the categories Regionally Significant to denote species that are rare in the Otago region, but not considered threatened nationally, and Locally Notable to denote species that are rare or unusual for the Ecological District (ED) or Macraes environ.)

Nationally Endangered	Comments
<i>Cardamine</i> (b) (CHR 312947; "Tarn")	Recorded by G. Loh from several ephemeral wetlands. Extinct at all of these. Discovered at one new site with c. 10 plants. In cultivation
<i>Crassula peduncularis</i>	In scattered ephemeral wetlands throughout
<i>Myosotis pygmaea</i> var. <i>glauca</i>	Currently known only from c. 5 plants near Bog Pine. Was recorded by G. Loh from several sites but extinct at these now.
<i>Myosurus minimus</i> subsp. <i>novae-zelandiae</i>	Currently known only from c. 5 ephemeral wetland sites at Macraes. Was previously more common

<i>Chaerophyllum colensoi</i> var. <i>delicatulum</i> (ex. <i>Oreomyrrhis colensoi</i> var. <i>delicatula</i>)	Seasonally inundated backwash gravels beside lower Deighton Creek at one site
<i>Simplicia laxa</i>	Known from 24 sites at Macraes. National stronghold for this grass
Nationally Serious Decline	
<i>Olearia fimbriata</i>	One tree in lower Deighton Creek
<i>Tetrachondra hamiltonii</i>	Known from 9 ephemeral wetlands. Status in some of these unknown
<i>Isolepis basilaris</i>	Known from 44 ephemeral wetlands. Declining in some, still abundant in others
Nationally Gradual Decline	
<i>Carmichaelia crassicaulis</i> subsp. <i>crassicaulis</i>	Scattered individuals in south of area totalling c. 200 individuals. Regenerating in the absence of stock
<i>Epilobium chionanthum</i>	Scattered in marshy streams. Difficult to distinguish from <i>E. macropus</i>
<i>Gratiola concinna</i> (ex. <i>Gratiola nana</i>)	Known from 49 ephemeral wetlands. Declining in abundance in many of these
<i>Leptinella serrulata</i>	Known from 1 patch at Mandy's Rock. Difficult to distinguish from <i>L. pusilla</i> which is scattered in area
<i>Deschampsia cespitosa</i>	Trig J wetlands. Scattered plants
<i>Iphigenia novae-zelandiae</i>	Scattered populations throughout in heathland and <i>Hieracium</i> herbfield (small plants to 2 cm high) and rare in ephemeral wetlands (larger plants to 10 cm tall)
Nationally Sparse	
<i>Coprosma intertexta</i>	Known from a small grove in Deighton Creek
<i>Olearia lineata</i>	Previously recorded (Bibby 1997) from Lot's Wife
<i>Aciphylla subflabellata</i>	Scattered plants along stream banks and on Redbank Ridge
<i>Anemone tenuicaulis</i>	Widely distributed in damper gullies throughout
<i>Celmisia hookeri</i>	Rock faces on Redbank Ridge; 1 site on Trig J Ridge is southern limit for the species.
<i>Kirkianella novae-zelandiae</i> f. <i>novae-zelandiae</i>	Known only from 2 sites in Nenthorn. This is the "normal" form of Central Otago
<i>Myosotis</i> aff. <i>australis</i> (AK 231051; "small white")?	Provisionally identified as this taxon. Known at Macraes from several sites in the Emerald and Deighton Streams, usually in shade at the base of bluffs
<i>Senecio dunedinensis</i>	Small group in overhang at Nenthorn
<i>Carex berggrenii</i>	Previously Recorded (Wardle 1998b) from Paddy's Rock ephemeral wetland
<i>Carex tenuiculmis</i>	Reasonably common along stream margins throughout and wetlands on Trig J Ridge
<i>Uncinia elegans</i>	Overhang in Emerald Stream
<i>Hymenochilus tanypodus</i> (ex. <i>Pterostylis tanypoda</i>)	Scattered colonies throughout <i>Hieracium</i> herbfield
<i>Hymenochilus tristis</i> (ex. <i>Pterostylis tristis</i>)	Rarer than the <i>H. tanypodus</i> ; scattered plants
<i>Botrychium australe</i>	A few depauperate plants at Falcon and Old Otagense Peninsula
<i>Raoulia beauverdii</i> s.s.	Known only from 1 site above Old Otagense Peninsula
Nationally Data Deficient	
<i>Crassula mataikona</i>	Known from only 2 sites: Bog Pine and above Old Otagense Peninsula
<i>Lagenifera montana</i>	Known from 1 site in Wildlife Exlosure. This is one of few sites currently known for this species in NZ.
<i>Vittadinia australis</i> agg.	1 plant on bluff in Nenthorn
<i>Rytidosperma tenue</i> ?	1 site. Unconfirmed record
<i>Carex allanii</i>	Known from several sites in Emerald Stream; 1 of only 3 localities known nationally for this enigmatic species
<i>Carex raoulii</i>	Overhang at base of bluff in Emerald Stream
Regionally Significant	
<i>Halocarpus bidwillii</i>	Known only from 1 area.
<i>Phyllocladus alpinus</i>	Previously recorded (Bibby 1997) from Lot's Wife.
<i>Coprosma rubra</i>	Previously recorded (Bibby 1997) from Redbank Ridge.

<i>Hypericum</i> aff. <i>japonicum</i> agg. (tarn)?	Known from a few ephemeral wetlands.
<i>Kirkianella</i> aff. <i>novae-zelandiae</i>	A glaucous plant of rock bluffs. Known from 3 sites along Emerald Stream (including 2 in Wildlife Enclosure). This taxon is currently known only from 3 localities in NZ (P. de Lange pers. comm.)
<i>Myosotis</i> aff. <i>australis</i> (Tor; Middlemarch) (M. "Lammerlaw")	Known from 5 sites, 4 in the Wildlife Enclosure, 1 in Emerald Stream. An undescribed species known from rock tors at Macraes, Sutton, and on the Lammerlaw and Rock & Pillar Range. Rare and declining throughout its range
<i>Myosotis</i> sp. undetermined (cf. <i>M. forsteri</i>)	An apparently distinct taxon known only from deeply shaded overhangs at Macraes (6 sites) and near Sutton
<i>Pelargonium inodorum</i>	Known from 2 plants on tor above Emerald Stream. Rare in Otago (elsewhere known only from Stevensons Is. (Te Peka Karara), Lake Wanaka)
<i>Plantago spathulata</i> subsp. <i>spathulata</i>	Previously recorded (Bibby 1997) from Redbank.
<i>Deyeuxia quadrasita</i>	Known from 1 site.
<i>Stenostachys gracilis</i>	Known from 2 bluffs in Wildlife Enclosure.
<i>Carex</i> c.f. <i>dallii</i> "Otago"	Differs most obviously from <i>C. dallii</i> s.s. (a West Coast plant) in the wider spacing between spikelets. Known from scattered localities along stream margins at Macraes.
<i>Uncinia egmontiana</i>	Unconfirmed. Scattered plants in Emerald Stream in damp sites
<i>Thelymitra</i> aff. <i>longifolia</i> taxon indet.	An orchid known only from Falcon and Wildlife areas at Macraes. Similar to a diminutive <i>T. longifolia</i> but single flower with an urceolate column

Locally Notable

<i>Podocarpus hallii</i>	Mainly scattered individuals. A grove exists amongst tors on the eastern end of Redbank Ridge. Rare in the E.D.
<i>Podocarpus nivalis</i>	Previously recorded (Bibby 1997) from Redbank Ridge. Rare in the E.D.
<i>Aristotelia fruticosa</i>	Previously recorded (Bibby 1997) from Redbank Gully. Rare in the E.D.
<i>Coprosma cheesemanii</i>	Previously recorded (Bibby 1997) from Redbank Ridge and Emerald Stream. Rare in the E.D.
<i>Coprosma cuneata</i>	Previously recorded (Bibby 1997) from Lot's Wife. Rare in the E.D.
<i>Coprosma pseudocuneata</i>	Previously recorded (Bibby 1997) from Lot's Wife. Rare in the E.D.
<i>Fuchsia excorticata</i>	1 plant in Wildlife Enclosure.
<i>Fuchsia perscandens</i>	Previously recorded (Bibby 1997) from Lot's Wife. Rare in the E.D.
<i>Helichrysum lanceolatum</i> (ex. <i>H. aggregatum</i> , <i>H. glomeratum</i>)	Known from 2 plants in the Emerald Stream
<i>Kunzea ericoides</i> s.l.	Known mainly from the Emerald Stream. Scattered plants elsewhere. Rare in the E.D.
<i>Melicope simplex</i>	Known from Trig J and Redbank Ridges. Rare in the E.D.
<i>Myrsine divaricata</i>	Known from Trig J and Redbank Ridges. Rare in the E.D.
<i>Olearia odorata</i>	A few plants at Nenthorn above lower Deighton Creek
<i>Pseudopanax colensoi</i> var. <i>ternatus</i>	Previously recorded (Bibby 1997) from Lot's Wife. Rare in the E.D.
<i>Scandia geniculata</i>	In shrubland beside lower Deighton Creek. Rare in area.
<i>Sophora microphylla</i>	2 adults and 1 seedling in Nenthorn. Rare in Central Otago
<i>Aciphylla glaucescens</i>	Around 6 plants at one site in Emerald Stream
<i>Aciphylla scott-thomsonii</i>	1 plant in Emerald Stream. Rare in area
<i>Crassula sinclairii</i>	Known from few ephemeral wetlands
<i>Elatine gratioloides</i>	Previously recorded (Bibby 1997) from an ephemeral wetland at Nenthorn. Possibly now extinct. Uncommon in Otago
<i>Epilobium glabellum</i> s.s.	Previously recorded (Bibby 1997) from Waikouaiti Stream. A dubious record
<i>Forstera tenella</i>	Previously recorded (Bibby 1997) from Lots Wife. Rare in E.D.
<i>Galium</i> sp. aff. <i>perpusillum</i>	An inhabitant of ephemeral wetlands
<i>Galium trilobum</i>	Known from one overhang. Probably more widespread in area
<i>Mazus radicans</i>	Previously recorded (Bibby 1997) from Lots Wife. Rare in E.D.

<i>Myosotis</i> “ <i>pygmaea</i> ” agg. (form intermediate between “ <i>drucei</i> ” s.s. and “ <i>pygmaea</i> ” s.s.; Lvs green with brown base, nonwaxy, hairs c.1 mm, Central Otago mid-altitude)	Part of a poorly resolved species complex. Known at Macraes from 5 sites in the lower Emerald Stream.
<i>Senecio glaucophyllus</i> subsp. <i>discoideus</i>	2 plants on bluff in Wildlife Exclusion. Rare in Otago.
<i>Agrostis muscosa</i>	Scattered plants in Wildlife area. Rare in E.D.
<i>Agrostis pallescens</i>	Previously recorded (Bibby 1997) from Bog Pine wetland. Rare in E.D.
<i>Chionochloa conspicua</i> subsp. <i>conspicua</i>	Previously recorded (Bruce 1988). Rare in area
<i>Oreobolus impar</i>	Noted near Bog Pine site, and at Turf Depression 3 by Wardle (1998a), Paddys Rock (Wardle 1998b)
<i>Rumex flexuosus</i>	Gully wetlands in Nenthorn Area. Rare in Otago
<i>Schizeilema haastii</i> var. <i>cyanopetalum</i>	Known from a few overhangs in Emerald Stream. Southern limit for this taxon?
<i>Griselinia littoralis</i>	Spreading amongst tors on Redbank Ridge
<i>Leptocophylla juniperina</i> s.l. (ex. <i>Cyathodes juniperina</i>)	Known only from outcrops on Trig J Ridge
<i>Raoulia parkii</i>	Known only from one site on the Nenthorn sod wall
<i>Uncinia</i> cf. <i>rubra</i>	An apparently unique taxon restricted to the Macraes region. Distinguished by the greenish-red colouration, taller size, and rhizomatous habit

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New Green Fund

Are you involved with a restoration group working on public land? If so then a new fund has been launched that may be able to help you. This new fund for restoration work by community groups on public land will be launched in late September in Wellington (an initiative of the Green Party). The funding (for the next two years) will be allocated during three funding rounds using criteria such as: the project must be on public land, the project must be sustainable after funding has finished, and it must be a community initiative. The fund is mainly about ensuring restoration occurs and plants are planted. It is not specifically about species protection, fencing or weeding (although these can all be part of the bids). Grants are likely to be between \$5,000 and \$60,000. Network members who are already part of community groups working on public land may like to think about bidding to the fund for projects that involve:

- planting nationally threatened plant species and their associates within existing populations or establishing new sites;
- planting buffers to nationally threatened ecosystems;
- restoring threatened ecosystems (dunes, wetlands, shingle beaches, cliffs, riparian systems, geothermal, etc.).

If you are involved with a group that has a project on public land that assists with any of the above, then please consider bidding to the fund. If you would like a letter of support from the Network please contact us with information about your project (email: info@nzpcn.org.nz). More information will be circulated once the fund is launched. We encourage you to bid to the fund to ensure high priority threatened plant work is supported.

What is this fungus? – the Fungal Guide website

Peter Johnston, Landcare Research, (johnstonp@landcareresearch.co.nz)

The Fungal Guide website provides a new resource to assist with the identification of New Zealand's macrofungi.

Fifty species of fungi were listed as Nationally Critical in the *New Zealand Threat Classification System Lists* published in 2002. In addition, there are another 1455 potentially rare fungal species listed as 'Data Deficient'. One problem when attempting to allocate a rarity value to fungi is a lack of basic distribution data. As an illustration, of the 5140 species of New Zealand fungi with formal names represented in the New Zealand Fungal Herbarium, 1640 are known from just a single collection. We can say little about these fungi, beyond the fact that they occur in New Zealand. Even allowing for the fact that the 2002 lists were restricted to fungi with large, conspicuous fruiting bodies, the information on which they are based is often flimsy at best.

One approach to tackling this lack of data is to encourage more people to get out there looking. At present, this is hindered by the small number of published field guides for New Zealand fungi. Field guides from other countries are of little use in New Zealand, because many of our species are unique. A recent TFBIS-funded project has attempted to address this problem through the development of the Fungal Guide website (<http://fungalguidelandcareresearch.co.nz>). Access to the site is through simple, pictorial keys based on 19 informal, pragmatic groups that reflect how non-specialists may conveniently and visually group different kinds of fungi (e.g., large mushrooms on wood; leathery, soft bracket fungi; etc.).

For each of the 130 genera treated, a commentary is provided on major macroscopic diagnostic characteristics, diversity and distribution within New Zealand, ecology, and notes on other fungi with which they might be confused. For each genus, representative species are illustrated to represent the range of colours, sizes, and shapes within the genus. Each genus and species name links to the NZFungi website (<http://nzfungi.landcareresearch.co.nz>), so providing access to a full bibliography and synonymy, additional images, technical descriptions, distribution maps, etc. For those species on the Nationally Critical list, a link to the NZPCN website (www.nzpcn.org.nz) treatment of that species will be provided with the next update of the Fungal Guide pages.

A small number of books based on the website have been printed and distributed free of charge. If feedback suggests a wider demand, consideration will be given to producing an updated version of the book for commercial release.

Te Papa MSc scholarship in molecular systematics at Victoria University

The purpose of the award is to promote research between Te Papa and Victoria University in the area of molecular systematics, ecology and evolution. The Te Papa-VUW scholarship provides the successful applicant with a student stipend of \$4000 in part 1 (2009) and \$6000 in part 2 (2010). The project offered in 2009-2010 will be a molecular systematic investigation of the New Zealand species of *Pseudopanax* (Araliaceae) or *Gleichenia* (Gleicheniaceae), or another project to be determined. The thesis research will involve the DNA sequencing of chloroplast and nuclear genes, with complementary morphological analyses, and will address phylogenetic questions such as the relationships between species and generic boundaries, as well as issues of biogeography and species-delimitation. The ideal applicant will have completed a BSc degree and have an interest in New Zealand plants and molecular phylogenetic techniques. For more information about the thesis project or studying towards an MSc degree at Victoria University contact: Dr Leon Perrie (email: leonp@tepapa.govt.nz), Dr Heidi Meudt (email: heidim@tepapa.govt.nz), or Dr Peter Ritchie (email: Peter.Ritchie@vuw.ac.nz). For information about the School of Biological Sciences and a copy of the postgraduate prospectus visit: <http://www.vuw.ac.nz/sbs>.

New Zealand Liverwort Flora series Volume 1 now available

The last comprehensive treatment of New Zealand liverworts and hornworts was published in 1864. Now, 144 years later, Volume 1 of an intended three volume treatment of these diminutive yet ecologically important (and beautiful) plants has just been published by the Missouri Botanical Garden Press. It was written by John Engel, Field Museum, Chicago, and David Glenn, Landcare Research, Lincoln. The Flora is an illustrated guide to an important component of New Zealand's green plant flora. The volume provides keys and descriptions to 211 of the 595 liverwort species, along with detailed notes on the distribution and habitat of each of the species. Discussions under the family and genus place the New Zealand flora in the context of the world liverwort and hornwort flora. To complement the descriptions, black and white plates illustrate details of many of the species. Colour photographs of many of the genera are also included. A remarkable 50% of the liverwort flora is endemic to New Zealand. Strong biogeographic links exist with Australia and, at the genus level, with southern South America and the Pacific. New Zealand's liverwort flora has a significant archaic element and a large element that is interpreted as Gondwanic in origin. Volume 1 includes a detailed Introduction, which presents a history of the exploration of the New Zealand flora and provides a detailed overview of the region's climate, geology and vegetation. The volume may be ordered from Missouri Botanical Garden Press: PO Box 299, St Louis, Missouri, USA; email: orders@mbgpress.org; ph: 001-63166-0299; fax: 001-314-577-9594. Network members receive a 10% discount on orders. See the order form at the end of the newsletter.

Orthopaedic Pohutukawa

Bec Stanley, Auckland Regional Council (Rebecca.Stanley@arc.govt.nz)

Several years ago a friend of mine, who is a recovery ward nurse, gave me the list of dates below. It is from the notice board of the orthopaedic operating room at Whangarei Hospital. Staff members have been noting the first day that a large pohutukawa, which can be seen from the operating room window, starts flowering. There is a range from mid October to early December. I wonder if they are still doing this.

Year	Flowering date	Year	Flowering date	Year	Flowering date
1994	15 November	1998	16 December	2002	15 November
1995	13 November	1999	18 October	2003	6 November
1996	12 November	2000	23 October	2004	5 December
1997	29 October	2001	23 September		

Consultant ecologist – work in Rotorua's Wildlands!

Wildland Consultants Ltd is looking for a Consultant Ecologist to provide high quality ecological advice, information and technical services to its wide range of clients. Ideally, you will have: a graduate degree in plant ecology, botany or a related field; minimum of 3-5 years relevant work experience; excellent working knowledge of NZ's vegetation, plants, & other biota; excellent writing and numeracy skills; be able to use relevant computer software and information management tools; be able to work in teams, meet the challenges of deadlines, and adapt to changing priorities and requirements. Apply to Richard Gillies, Wildland Consultants Ltd, PO Box 7137, Te Ngae, Rotorua 3042; ph: 07-343 9017, email: richard.gillies@wildlands.co.nz. Please Quote Reference Number 37581.

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

Field trip: 24-27 October, Labour Weekend Camp on Waiheke Island. Contact: Maureen Young (email: youngmaureen@xtra.co.nz).

Meeting: Wednesday 5 November two talks: 1. "Galapagos Gallivanting" by Alison Wesley. 2. "Wild Flowers of Italy" by Mike Wilcox. **Venue:** Unitec School of Natural Sciences Gate 3, Building 023 Room 1018. **Contact:** Maureen Young (email: youngmaureen@xtra.co.nz).

Field trip: Saturday 15 November to Waiuku Forest. **Contact:** Maureen Young (email: youngmaureen@xtra.co.nz).

Waikato Botanical Society

Field trip: Sunday 28 September 2008 will be a working bee in the Threatened Plant Collection garden. Please bring gloves, old clothes and boots for weeding, planting and propagating activities. Meet: 9.45 a.m. at Waikato University Gate 9, Hillcrest Rd. Contact: Liz Grove ph 846 0965 email: eg3@waikato.ac.nz.

Field trip: Sunday 12 October to Miranda Coast, Firth of Thames. **Meet:** 9.30 am Miranda Shorebird Centre, just north of Miranda township, East Coast Rd. **Contact:** Doug Ashby email: dj.ashby@xtra.co.nz or ph: 07 862 4706.

Rotorua Botanical Society

Field trip: Saturday 4 October - (and Sunday 5 October, optional) East Cape revisited. **Leader:** Tim Senior, ph: 0800 368 288, ext 6010 or 07 315 7371, email: tim.senior@envbop.govt.nz. **Meet:** The Rotorua District Council car park, Fenton St at 7.30 a.m. or Opotiki DOC Area Office (Cnr Elliot & St John Street) at 9.00 a.m. **Grade:** Medium but wet underfoot. Bring gumboots! We have been offered a bach on a QEII covenant at Whanarua for the Saturday night, for the first 6 takers only, but plenty of room for camping.

Wellington Botanical Society

Field trip: Saturday 4 October, to see the coastal plants of Rocky Bay and Whitireia. **Meet:** 9.00 a.m. at Rocky Bay car park on Terrace Road, Titahi Bay. **Leader:** Robyn Smith, ph: 236 6086 or 027 437 2497.

Meeting: Monday 20 October at 7.30 p.m. a talk titled "A very merry Mere" by Dr Peter Johnson, formerly with Botany Division, DSIR, and Landcare Research, and the 2007 recipient of the Allan Mere Award. **Venue:** Victoria University, Wellington, Lecture Theatre 101, Murphy Building, Kelburn Parade.

Canterbury Botanical Society

Meeting: Friday 5 September 5 at 7.30 p.m., a talk titled "Exploring Fiordland" by Rolland Dale. **Venue:** Room A5 University of Canterbury.

Field trip: Saturday 4 October to Banks Peninsula Conservation Trust area. **Leader:** Kate Whyte.

Field trip: 13-16 November, Show Weekend camp at Kaikoura. If you are intending to attend this camp please contact Trevor Blogg, ph: (03) 338 4697, email: tblogg@xtra.co.nz.

Botanical Society of Otago

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 p.m. **Contact:** [Allison Knight](mailto:Allison.Knight), ph: (03) 479 7577.

Field trip: Sunday 28 September, Berwick bogs and bits of bush. **Meet:** Botany car park at 8.00 a.m., returning 6.00 p.m. **Leader:** John Steel, ph: 479 4572 (w) or 473 7211 (h).

Contact: [John Steel](mailto:John.Steel), ph: (03) 479 4572.

Field trip: Saturday 18 October, a Fungal Foray to Knight's Bush, Tuapeka West. **Meet:** Botany Department car park at 8:30 am, return about 6:30 p.m.

Contact: [David Orlovich](mailto:David.Orlovich), ph: (03) 479 9060.

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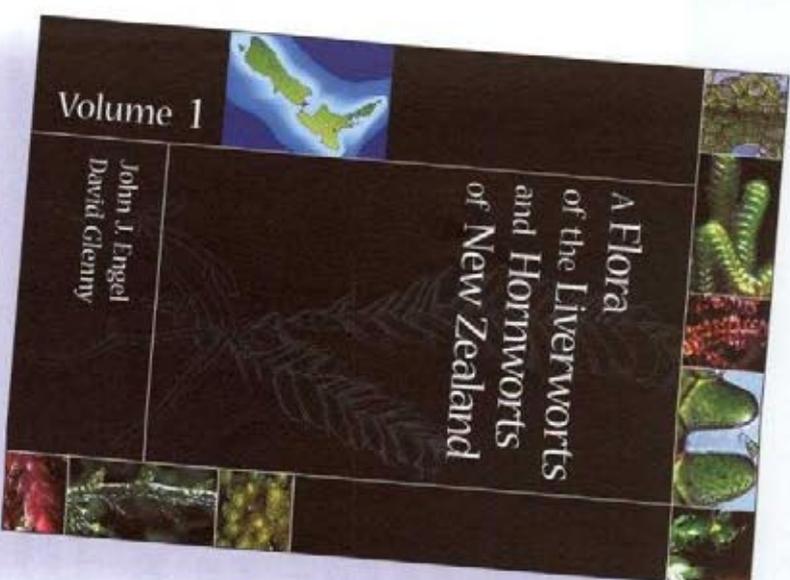
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