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 60. NOVEMBER 2008 Deadline for next issue: Monday 15 December 2008

Message from the President

We had a face to face Council meeting in Wellington on Thursday 23 October. I thought that it might be useful if, after each Council Meeting, I provided a brief summary of the business discussed. One of the main items that took up a lot of time and continues to do so is the Network Website. It is not the content that is the issue; rather it is the hosting of the site and the associated technical problems including the need to make the site more secure. All of this is taking time to resolve and there are associated costs of a not inconsiderable nature. I can assure you that this is being treated as a very urgent and high priority matter. Meanwhile, I must beg you to be patient. Other important matters that we discussed included finances, progress with existing projects (e.g. The Threatened Plant book, Marae courses, digitising botanical society journals), ideas for additional sponsors for the Network, recruitment of new members, the establishment of the Trust to administer the David Given Scholarship, the processing of our application for the Network to be an NGO member of IUCN, the content of the Newsletter and how to attract more articles. We left a good amount of time to have a debrief from the Conference. We talked about what was good and what could be improved. We have received a lot of comments about the Conference and all have been very positive. Using the material from the Conference Workshops, we are now preparing a business plan for the Network. The next face to face Council meeting will take place in Wellington on Thursday 12 March. Depending on the need, we may have the occasional teleconference. Please let me know if you would like more details about any of these topics.

While flying up to Wellington for the Council meeting, I was looking at the Air New Zealand *Inflight* magazine and was particularly interested to see the heading on the front page, "Our Eco Warriors – the business of being green". Having been drawn to that, I was delighted to read that both our Patrons (Peri Drysdale and Rob Fenwick) were featured in the article. Congratulations to them both for their leadership and their continuing good efforts.

In this Month's newsletter there are some very exciting examples of bringing some plant species back 'from the brink'. Is it not very satisfying that from a few plants, many seeds can be obtained and subsequently used to help in restoration? I do hope that those concerned will remember that the Network has established a National Native Plant Seed Bank and that seeds could be offered to that facility.

I do hope that you will enjoy as much as I did, the discussion about locations of high levels of diversity of threatened plants in New Zealand. I am sure that many members of the Network would like to add their thoughts to the discussion based on their own personal experiences and observations. It is a very interesting topic and very worthy of discussion. I am bound to say, however, that I continue to be concerned about the mis-use of the term 'biological diversity' or 'biodiversity'. I would advocate that throughout the contributed discussions in this month's Newsletter, that there was no reason at all to mention biological diversity. Rather, I suggest it is better to say exactly what is being talked about rather than using the all encompassing term biological diversity.

Finally, we have a plea for some advice about problems with the water fern *Azolla filiculoides*. Come on you aquatic plant people, please offer some advice! Is there anyone else out there with plant problems or queries? We are a Network and are there to help.

Ian Spellerberg
Lincoln University

PLANT OF THE MONTH – *Raukaua edgerleyi*

Raukaua edgerleyi. Photo: Jeremy Rolfe.

Plant of the Month for November is *Raukaua edgerleyi* (raukawa). Raukawa is endemic to the North, South and Stewart Islands. Found in lowland to upper montane forest habitats, it often starts growing as an epiphyte and can form a small tree up to 10 m tall. Raukawa is in the family Araliaceae and, as a juvenile, the relationship to other family members (such as *Pseudopanax*, the genus in which it was formerly placed) is clearly seen.

Adding to both intrigue and confusion when identifying raukawa, its juvenile and adult leaves are markedly different shapes. Juvenile leaves are quite variable, often deeply lobed or coarsely toothed with three to five fingers (up to 3.5 cm across). Adult leaves, however, are simple with wider blades (up to 5 cm across) and smooth, sometimes slightly wavy edges. There is also an intermediate stage where older juvenile leaves become trifoliate with shallower lobes and/or smooth, wavy edges. At all stages the leaves are shiny on the upper side and are scented when crushed, with a strong, somewhat lemony aromatic smell. This feature can help to distinguish raukawa from haumakaroa (*Raukaua simplex*), which, although similar in appearance to raukawa, is not so strongly scented. Raukawa flowers in spring and summer, with fruits appearing in late spring to early autumn with round berries containing 3–4 seeds.

It is categorised as in gradual decline and is intolerant of animal browse so keep up that possum control. The Network fact sheet for *Raukaua edgerleyi* may be found at: www.nzpcn.org.nz/vascular_plants/detail.asp?PlantID=208

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

Geoff Davidson, Trustee, NZ Native Forest Restoration Trust (oratia@ihug.co.nz)

In September, the question was asked by Mike Thorsen, Department of Conservation, Dunedin (*mthorsen@doc.govt.nz*). My response follows.

Although I know the floras of both the Surville Cliffs and North-West Nelson are remarkably diverse they were not where my mind went in regard to large numbers of threatened species. For me, the highest concentration of indigenous biodiversity in New Zealand is on the Chatham Islands and, regrettably, they probably have the record for the highest diversity of threatened plants. During three trips to the Chatham Islands in 18 months I have come to realise and appreciate how amazing the flora is. But, of course, it is perhaps unfair to compare 90,000 ha of the Chatham Islands to the 3,000 ha that Mike refers to at Macraes. So, in an effort to compare like-size properties, I confined the following list to the 3,500 hectares in the top north-west of the island. It is the end of the peninsula beyond the road end at Waitangi West. It is an area that has been farmed for nearly 30 years and is known as Matakitaki after a 155 m volcanic cone in the centre of the farm (or "Zimmerman's" after the current landowners, Swiss ex-pats Otto and Nick Zimmerman). The owners have farmed sustainably and self-sufficiently, protecting nearly two-thirds of their property and allowing it to develop into an advanced state of natural restoration.

Habitat types range from restiad peat bogs dominated by the Chatham Island endemic *Sporadanthus traversii*, through functional swamp forest remnants to remarkable coastal turf communities and

vegetated schist canyons. Research has only recently revealed the treasures in recovery there, but the most widespread is the endemic *Sporadanthus traversii* covering a 1000 ha expanse. Equally significant is the recent find of *Asplenium pauperequitum* (first discovered far to the north on the Poor Knights Islands). Here is the species' stronghold, where it grows in the cracks of the schist rocks along the property's southern coastline. There are many other novelties, including the largest Chatham Island populations of the endemic *Senecio radiolatus* subsp. *radiolatus*, the only known populations of an unnamed subspecies of shore cress (*Lepidium flexicaule*), and the only known place on the islands for kahikatoa (*Leptospermum scoparium*)

It is possibly too soon to give a definitive list but each visit by botanists, and experts in other fields, reveals additional nationally threatened species and, of course, many that are regionally threatened on the islands. However, the list is already extensive and contains about 100 species (Macraes = 84) with 10 Acutely Threatened (Macraes = 6), 28 Chronically Threatened (Macraes = 9). The remaining categories listed for Macraes have not been fully recorded for the Chatham Island property but it is anticipated that at least 50 species would fulfill the criteria for being "At risk/Regionally significant/ Locally notable". Also, this is a listing of only vascular plants—the area is unique on the islands for the unusual liverwort and moss associations, including those that are threatened, and several northern and southern limits for New Zealand and/or the world.

The range of ecological types within the property would ensure a suitable habitat for most of the Chatham's 448 indigenous vascular plant species (Macraes = 350). If non-vascular plants (liverworts 247 taxa, mosses 130) are included, then there is another long list with some interesting associations. The mosses, lichen and liverworts show hitherto unanticipated links with both the northern sub-tropical vegetation of Te Paki, Three Kings and the Kermadec Islands (if not the wider South Pacific and tropical Australia) and the southern sub-antarctic islands.

The property has a 30 hectare lake and a coastline of about 25 km. Initial Moriori settlement would have modified the vegetation, followed by more extensive modification by Maori and later European farming methods, which would have modified it further. As at Macraes, there are only remnants of the original vegetation communities remaining.

There are many questions about what the original vegetation might have been. Some answers will be revealed in time, but if we look to the future, we should ask:

"Can the land be given further protection? Will we find the elusive *Pterostylis micromega* there? Can we stop the decline of *Brachyglottis huntii* with another population? Will the *Leptinella featherstonii* population expand if grazing pressure is removed? Will it be possible to establish the Chatham Island forget-me-not along the coastline?"

The answers are almost certainly all "Yes".

Like Mike, I wonder where in New Zealand lies the greatest biodiversity. Is it also the area with the highest diversity of threatened plants? Is it on public land like part of Macraes, or, as on the Chathams, is it wholly in private ownership?

What are the best ways to protect such biodiversity? Can we expect the Department of Conservation to manage these critically important areas with the limited funding it receives?

I became aware of the property and its special values in November, 2007, and have since persuaded the New Zealand Native Forests Restoration Trust to campaign for its purchase as a reserve. To date, the Nature Heritage Fund has declined to provide the full funding and the Restoration Trust is looking for other ways to finance the purchase. For the sake of the flora alone, we have to. In addition, the fauna is equally threatened and diverse: freshwater fish, insects and other invertebrates, all are endangered, many are endemic. We have to save them *in situ*. We cannot save them anywhere else. Can you help?

The nationally critical endemic Chatham Island (CI) oyster catcher, CI pipit, banded dotterel, Pitt Island shag, white-fronted tern, and the CI subspecies of little blue penguin are all known from there; some even have their strong holds there. Indeed just 20 km offshore to the north is a group of three islands, "The Sisters", an important nesting ground for northern Royal albatross and Pacific mollymawk. The population pressure from these birds is such that the all important vegetation they use, which includes *Leptinella featherstonii*, *Senecio radiolatus* subsp. *radiolatus* and an unnamed segregate of Cook's scurvy grass (*Lepidium oleraceum*), are in rapid decline. Seven km from Point Somes is tiny wave washed Western Reef, once home to a small population of New Zealand shore plover that was eliminated, it is said, by burgeoning seal numbers, and is still home to major populations of *Leptinella featherstonii* and Cook's scurvy grass. All these plants and the birds that use them for nesting material desperately need a larger pest-free habitat on the main Chatham Island in which to breed. Besides, isn't it time we put back what used to be there?

I'm grateful to the botanists and others who have relayed details of their study of Chatham flora and fauna generally and specifically on the property. Amanda Baird, Peter de Lange, Peter Heenan and Brian Rance have all contributed to the growing awareness of the diversity of the threatened species to be found there.

References

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Molloy, B.P.J., 2001: *Pterostylis micromega*, an endangered orchid in the Chatham Islands. Department of Conservation, science internal series no 11. 10 pp.

Walls, G.; Baird, A.; de Lange,P.; Sawyer, J., 2003: *Threatened Plants of the Chatham Islands*. Wellington, Department of Conservation. 88pp.

Threatened Taxa on NW Chathams Zimmerman property	**Status of species and comments**
Cortaderia turbaria (endemic)	Nationally Critical – morphologically distinct from all other Chathams plants
Linum monogynum var *chathamicum*	Nationally Critical
Puccinellia chathamica	Nationally Critical
Aciphylla traversii (endemic)	Nationally Endangered
Asplenium pauperequitum	Nationally Endangered– only known population outside The Forty Fours islets
Astelia chathamica (endemic)	Nationally Endangered – best populations in northern two thirds of Chatham Island
Brachyglottis huntii (endemic)	Nationally Endangered– only known site north of the southern tablelands
Embergeria grandifolia (endemic)	Nationally Endangered
Lepidium aff. *oleraceum* (b)	Nationally Endangered
Rhopalostylis aff. *sapida*	Nationally Endangered– only known natural site north of Nikau Bush
Daucus glochidiatus	Nationally Vulnerable– only recent record for islands (last was 1864!)
Lepidium aff. *flexicaule*	Nationally Vulnerable– confined to this area on the Chatham Islands
Leptinella featherstonii (endemic)	Nationally Vulnerable– one of only two populations left on Chatham Island
Prasophyllum hectorii	Nationally Vulnerable– only known site on Chathams (= *P.* aff. *patens*)
Pimelea arenaria	Serious Decline
Plagianthus regius subsp. *chathamicus* (endemic)	Serious Decline
Deschampsia cespitosa	Gradual Decline
Epilobium chionanthum	Gradual Decline

Threatened Taxa on NW Chathams Zimmerman property	Status of species and comments
Libertia peregrinans	Gradual Decline
Sonchus kirkii	Gradual Decline
Utricularia delicatula	Gradual Decline
Apium prostratum subsp. *denticulatum*	Range Restricted
Asplenium chathamense (endemic)	Range Restricted
Atriplex billardierei	Range Restricted
Callitriche petriei subsp. *chathamensis* (endemic)	Range Restricted
Carex ventosa (endemic)	Range Restricted
Coprosma aff. *propinqua* var. *martinii* (endemic)	Range Restricted
Coprosma chathamica (endemic)	Range Restricted
Coprosma propinqua var. *martinii* (endemic)	Range Restricted
Corokia macrocarpa (endemic)	Range Restricted
Disphyma papillatum (endemic)	Range Restricted
Dracophyllum arboreum (endemic)	Range Restricted
Dracophyllum scoparium (endemic)	Range Restricted
Earina aff. *aestivalis*	Range Restricted
Festuca coxii (endemic)	Range Restricted
Gentianella chathamica (endemic)	Range Restricted
Geranium traversii (endemic)	Range Restricted
Hebe chathamica (endemic)	Range Restricted
Hebe dieffenbachii (endemic)	Range Restricted
Leptecophylla robusta (endemic)	Range Restricted
Leptinella potentillina	Range Restricted
Leucopogon parviflorus (endemic)	Range Restricted
Melicytus chathamicus (endemic)	Range Restricted
Microtis aff. *unifolia*	Range Restricted
Myrsine chathamica (endemic)	Range Restricted
Nematoceras aff. *sulcatum*	Range Restricted
Olearia aff. *traversiorum* (endemic)	Range Restricted
Olearia semidentata (endemic)	Range Restricted
Olearia traversiorum (endemic)	Range Restricted
Phormium aff. *tenax*	Range Restricted
Poa chathamica (endemic)	Range Restricted
Polystichum aff. *vestitum*	Range Restricted
Pseudopanax chathamicus (endemic)	Range Restricted
Pterostylis silvicultrix (endemic)	Range Restricted
Rumex neglectus	Range Restricted
Senecio aff. *glomeratus*	Range Restricted
Senecio radiolatus subsp. *radiolatus* (endemic)	Range Restricted
Senecio sterquilinus	Range Restricted
Atriplex buchananii	Sparse
Bromus arenarius	Sparse
Carex chathamica (endemic)	Sparse
Hierochloe fusca	Sparse
Hypolepis amaurorhacis	Sparse
Sporadanthus traversii (endemic)	Sparse
Tetragonia tetragonioides	Sparse
Atriplex australasica	Vagrant
Lepidium desvauxii	Data Deficient
Mosses: threatened and regionally important	
Beeveria distichophylloides	
Campylopus acuminatus var. *kirkii*	
Ischyrodon lepturus	
Macromitrium ramsayae (endemic)	Range Restricted

Threatened Taxa on NW Chathams Zimmerman property	Status of species and comments
Muelleria crassifolia	Northern limit – southern South Island and sub-antarctic islands
Pulchrinodus inflatus	
Tortella mooreae	Range Restricted – previously thought endemic to the Hauraki Gulf
Liverworts: threatened and regionally important	
Bazzania aff. *okaritiana*	Possibly a new species endemic to islands
Chiloscyphus erosus	Data Deficient
Chiloscyphus hattorii	Data Deficient
Drucella integristipula	Sparse
Dumortiera hirsuta	World southern limit – Nationally Critical
Goebelobryum aff. *unguiculatum*	World southern limit – Nationally Endangered
Siphonolejeunea aff. *nudipes*	
Kurzia tenax	Sparse
Regionally significant vascular plants	
Acaena pallida	
Adiantum hispidulum	
Blechnum colensoi	
Blechnum vulcanicum	
Calystegia sepium subsp. *roseata*	
Carex appressa	
Carex flagellifera	
Deyeuxia quadriseta	
Euchiton delicatus	
Hydrocotyle novae-zeelandiae	Only known site for it on Chathams
Hymenophyllum minimum	
Hypolepis dicksonioides	
Lachnagrostis elata	
Lachnagrostis lyallii	
Lemna minor	
Leptospermum scoparium	
Nematoceras orbiculatum	Only known site for it on Chathams
Polystichum neozelandicum subsp. *neozelandicum*	
Polystichum oculatum	
Polystichum wawranum	
Ranunculus aff. *royi* (endemic)	
Rumex flexuosus	
Singularybas aff. *oblongus*	
Trichomanes strictum	
Veronica plebeia	

Mike Thorsen's response

When I proposed Macraes as the site in New Zealand with the highest diversity of threatened plants I did not expect it to remain at the top of the list for long. Publication of the article had two aims: 1) to publicise the importance of Macraes to local people, and 2) to generate interest in the Important Plant Area (IPA) project being run by the Network (see www.nzpcn.org.nz/important_plant_areas/index.asp). The first aim has had overwhelming success; the Department of Conservation is taking an active interest in the area for management of threatened plants as well as the threatened skinks; there has been a front page article in the Otago Daily Times; and the local Macraes community (including Oceania Gold mining company) wants to establish threatened plants around the Macraes

township as part of local tourism activity. Geoff Davidson's article on the NW Chathams (which I have first-hand knowledge of and wholeheartedly agree on its specialness) is exactly the response I was hoping to get for the second aim. I urge Geoff, and the others involved in the Chathams, to officially nominate the NW Chathams as an IPA. Currently, only two sites have been accepted as IPAs by the NZPCN—Kapiti Island and Kopouatai peat dome. There are certainly many other sites in New Zealand worthy of IPA status. The Network (and the plants themselves) needs these sites to be nominated along with the supporting information such as provided with the NW Chathams article. The Otago Botanical Society is currently compiling a list and supporting information for potential IPAs of Otago. Perhaps other botanical societies could undertake a similar task?

I have a couple of points about Geoff's article. It appears to use the "new" threat rankings (de Lange, in press). The Macraes article used the old rankings and the numbers I provided in the article would change with the new rankings. At Risk is a national category comprising Sparse and Range Restricted so number in this category for Chatham's could be provided. Acutely Threatened, as a category, includes Nationally Vulnerable, so the total should be 14 (but see comment above).

Reference

de Lange, P.J.; Norton, D.A.; Courtney, S.P.; Heenan, P.B.; Barkla, J.W.; Cameron, E.K.; Hitchmough, R.; Townsend, A.J. *in press*: New Zealand Extinct, Threatened and At Risk vascular plant list. *New Zealand Journal of Botany*.

White maire – a restoration project

*Martin Conway, Titoki Nursery, Brightwater (*titoki98@xtra.co.nz*)*

Readers with good memories may remember an article in a 2006 *Trilepidia* newsletter describing the restoration of the narrow leaved maire, *Nestegis montana*, in Nelson. From the five remaining trees, hundreds of seedlings were propagated and have since been planted throughout the district. Most have established well and the species is safe for now.

Nestegis lanceolata. Photo: Jeremy Rolfe.

With the success of this project, attention turned to white maire, *Nestegis lanceolata*, which may have once been widespread in Nelson but, when enquiries were made in 2005, it had, by all accounts, completely disappeared. It was decided to cast the net wider and plant ecologists Geoff Walls and Philip Simpson directed me to a farm at Koromiko, near Picton, where they had recorded a few remnant trees; probably the last remaining stand in Marlborough. Contact was made with Russell Gent the owner of the farm who was enthusiastic about a restoration project and together we collected seeds and seedlings for propagation and growing on.

The project then took an interesting turn; two white maire trees were discovered in Nelson at the head of the Hacket River, then two more, one in a reserve in the Lee Valley the other in a covenant in Lower Moutere; very recently a mature tree was found in the Aniseed Valley bearing a heavy crop of seed that should ripen next year. It seems the more one looks the more one finds!

The outcome of this is that all the trees raised from Marlborough seed are being returned to that district and the first batch of 60 seedlings was recently planted in a National Trust Covenant adjoining the Gent farm. In the meantime a watch will be kept on the seed ripening on the Aniseed Valley tree and I look forward to the day when white maire can be reintroduced to the wider Nelson and Tasman districts.

Olearia gardneri planting by Wainuioru School

Robyn Smith, Greater Wellington Regional Council (robsmithii@xtra.co.nz)

Olearia gardneri, Nationally Critical, is a plant I first became familiar with at Percy Scenic Reserve in Petone. The previous curator of the reserve was Tony Silbery who moved on to work in the Wairarapa Department of Conservation office and Mount Bruce. Tony had germinated *Olearia gardneri* for a couple of years and when Christmas came in my first year at the reserve, he asked me to continue to grow the plant for DoC. At that time there were only six known plants in four different sites in Eastern Wairarapa and, near Taihape, there was another larger population of around 40 trees. Seed was picked and sent to Percy Reserve by courier. I remember one year it arriving on Christmas Eve and I stayed late awaiting delivery as the courier driver couldn't find the reserve. At the time we thought it didn't keep its viability very long, but that was later disproved.

Over the six years I worked at Percy Reserve there was only year when it germinated in abundance. Being a daisy, the trees produce huge amounts of seed and many thousands were sown each year with an average of only 30 germinating. I tried different substrates, different watering regimes and different light levels to try to get a better result but it made no difference. Extensive discussions with DoC staff took place and we thought that the seed wasn't very viable and, by this time, the population had reduced to four trees in four sites. One year, when I didn't throw out the old ungerminated seed trays, several seedlings germinated one year after sowing, thus disproving the short viability theory. Another year only eight germinated. I did have very good success one year growing from cuttings using the common method for deciduous trees of taking cuttings in winter when the tree has defoliated and leaving them outside in a cold frame, but couldn't repeat the good results.

All trees produced at Percy Reserve were planted in groups at Mount Bruce or around the DoC office to safeguard the genetics. This also allowed the trees from each site to cross pollinate. When I left Percy Reserve, I worked at Otari-Wilton's Bush, the native plant reserve in Wellington, and continued my association with *Olearia gardneri*, using Otari's experienced volunteers in the nursery to prick out and pot on plants over two years and sending the resulting young trees up to the DoC office. The seed supplied was from third generation trees.

Wainuioru School children and teacher planting a tree. Photo: Robyn Smith

As part of my present position at Greater Wellington as a Community Environmental Projects team leader, I work with the "Trees For Survival Trust" in the Wellington region (www.tfsnz.org.nz/). One of the staff, Warren Field, who works with the Wairarapa schools in the programme told me how one of the schools in the programme, Wainuioru school pupils in eastern Wairarapa, were such great propagators that I should come and visit them with him. After a visit, I saw how right he was. The children have an almost 100% success rate propagating and growing on seedlings for planting in a local restoration project.

An amazing coincidence saw the restoration project they normally planted in was a QEII covenant along the Wainuioru River, a perfect site for *Olearia gardneri*. A quick and excited phone call to Tony Silbery revealed that there were some *O. gardneri* plants available to be planted so we set up a planting day. The QEII covenantor, Ed

Beetham, was only too happy to have the trees planted in his covenant and the whole school (three rooms of children aged 5 to 12) along with various teachers and parent help and the local QEII rep, Trevor Thompson, turned out to plant. The children planted 23 in the covenant and kept back three trees for the school grounds. These children have now adopted *Olearia gardneri* as their special plant and we will be supplying seedlings to them early in term one of 2009 to grow for the next winter's planting.

The planting site is ideal, after having had discussions with Garry Foster of DoC, Wairarapa, who indicated the best place to plant them would be in areas such as the Wainuioru River so that the seed could fly onto slips, open ground or onto the papa cliffs found along the river. The children also planted *Plagianthus regius* and have kahikatea to grow on for planting next year.

The Principal of Wainuioru School, Rob Cameron, is totally behind the Trees For Survival programme and is also planning to revegetate the school's sheep paddock over the coming years, creating an outside learning environment. The school celebrates 50 years and plans to have a jubilee and reunion on 4 & 5 April 2009 (http://reunion.wainuioru.googlepages.com/)

Rediscovery of rare fern

The rediscovered fern is a maidenhair spleenwort. It had been definitively identified from just three New Zealand sites, all in Hawke's Bay, and all dating to the 1950's. Recently, a group led by Leon Perrie of Te Papa has found nine plants in the wild. The rare maidenhair spleenwort in New Zealand has been called *Asplenium trichomanes* subsp. *quadrivalens*; whether this is correct remains to be established. People, especially in Hawke's Bay are asked to keep a lookout for maidehair spleenwort plants and contact Leon with the location (e-mail: leonp@tepapa.govt.nz or ph: 04 381 7261). For more infromation see: http://blog.tepapa.govt.nz/2008/10/21/rare-fern-rediscovered/

New genus for king fern

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

The king fern or para, long known to New Zealanders as *Marattia salicina* has recently (August 2008) been transferred to a new genus *Ptisana* by American botanist Andrew Murdock. Murdock's treatment, published in *Taxon* 57(3): 737–755, (2008) is the conclusion of a lengthy study involving multiple molecular markers backed up with a critical re-evaluation of the morphology of the Marattiaceae. Most recent classifications have recognised two genera—*Angiopteris* and *Marattia*. Murdock proposes the recognition of six, *Angiopteris, Christensenia* (reinstated), *Danaea* (reinstated), *Eupodium* (reinstated), *Marattia* (recircumscribed) and a new genus *Ptisana*. It is in *Ptisana* that, along with another 19 species, Murdock places our king fern as *P. salicina* (J.M.Sm.) Murdock. Morphologically, *Ptisana* is distinguished from the other closely allied genera *Eupodium* and *Marattia* by the sporangia which lack labiate apertures, synangia that are deeply cut, valves which generally lack flaring lips, and which have a thickened beaded texture to the outer walls of the synangia. Specifically from *Eupodium*, *Ptisana* differs by having sessile synangia that are subtended by scales or uniseriate hairs, blades that lack awns, and by the plants which bear multiple fronds. The name *Ptisana* comes from the superficial resemblance of the synangium to pearl barley. Murdock retains a broad circumscription for *Ptisana salicina* including within it plants from Norfolk Island (the type locality), New Zealand, New Caledonia, Cook Islands, Austral Islands, Society Islands and the Marquesas. However, he cautions that over this wide range the species is extremely variable and that further work may recognise additional entities within it. He also notes that *P. salicina* is closely allied to *P. smithii* of Vanuatu, Fiji, Samoa and Tonga.

Reference

Murdock, A.G. 2008: A taxonomic revision of the eusporangiate fern family Marattiaceae, with description of a new genus *Ptisana*. *Taxon* 57: 737–755.

Tricky problem

Late last month, the Network received the following query:

Hello. We live on a rural property in Dairy Flat (Auckland) and have a large pond which is completely covered in the water fern *Azolla filiculoides*. We have planted extensively around the pond using indigenous grasses, sedges and the like. There is a healthy population of frogs there as well as a number of water birds. The pond is in full sun and the azolla fern has taken over. We have tried to trawl the pond when the fern was in patches and managed to scoop out some. However, this was both awkward and heavy and not that successful. We are reluctant to spray the pond with chemicals out of consideration for the wildlife and because any spray drift will destroy the surrounding plants. We have been and still are extremely frustrated by this rampant water plant. Can you suggest anything to help us?

All suggestions welcome!!

Regards,
Lorraine, Laurie and Rita.

If anyone has a possible solution for Lorraine, Laurie and Rita, please feel free to contact them at: rita.plus2@orcon.net.nz and we would also appreciate you telling us for the next issue of *Trilepidea*.

Two pieces of international news

1. A new species conservation fund was announced at the IUCN world conservation congress. This will focus on species conservation and willbe open for applications from anywhere in the world from January 2009. The fund is called the Mohammed bin Zayad Species Conservation fund. Please see the following website http://www.mbzspeciesconservation.org/ and please spread the word through your networks.

2. For those of you with log ins to the IPA database, the log in page has moved to www.plantlife-ipa.org because we have changed our hosting company.

Lucy Cranwell student grant for botanical research

Applications are invited for the Lucy Cranwell Grant of $2500 from the Auckland Botanical Society to assist a student studying for the degree of PhD, MSc or BSc (Hons.) in any tertiary institution in New Zealand whose thesis project deals with some aspect of New Zealand's flora and vegetation. Priority will be given to projects relevant to the northern half of the North Island. For more information, please contact Sandra Jones School of Biological Sciences, University of Auckland (s.jones@auckland.ac,.nz) or
Secretary,
P.O. Box 26391,
Epsom,
Auckland 1344.

A new New Zealand plant book

On 3 November, *Plant heritage New Zealand*: *Te Whakapapa o nga Rakau interpreting the special features of native plants* by Tony Foster (ISBN 9780143009795, rrp $50.00, pb) was published by the Raupo/Peguin Group.

For more information contact Kathryn Carmody (email: kathryn.carmody@gmail.com, ph: 04 385 7070, mobile 027 287 7963).

Editor's note: *A* review of the book will appear in a future issue of *Trilepidea*.

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

Dinner: Saturday 6 December, an end-of-year pot luck dinner, with a workshop on wetland plants taken by Paul Champion.	**Contact:** Maureen Young (e-mail: youngmaureen@xtra.co.nz).
Field trip: from 3–10 January to Chatham Island.	**Contact:** Maureen Young (e-mail: youngmaureen@xtra.co.nz).
Field trip: from 16–20 January the Ruahine Camp, Sixtus Lodge.	**Contact:** Maureen Young (e-mail: youngmaureen@xtra.co.nz).

Waikato Botanical Society

Field trip: Saturday 6 December to Te Tapui Scenic Reserve, near Matamata (combined trip with Rotorua Botanical Society). **Grade**: easy. **Meet:** 10:00 am at the Matamata Information Centre, 45 Broadway, Matamata or 10:15 a.m. at the track entrance on Piakonui Road.	**Contact:** Kerry Jones ph: 07 855 9700 (hm), 07 858 1055 (wk), 027 747 0733 (mob) or e-mail: kmjones@doc.govt.nz

Department of Biological Sciences, Waikato University

Summer course: 6-20 February, 2009, a course titled Flora of Aotearoa/New Zealand Biol226C. **Enquires:** to Dr Gemmill, Prof Bruce Clarkson, e-mail: clarkson@waikato.ac.nz; ph: 07 838 4237 or contact the Department of Biological Sciences, ph: 07 838 4022, University of Waikato, Private Bag 3105, Hamilton.	**Contact:** course co-ordinator Dr Chrissen Gemmill (e-mail: c.gemmill@waikato.ac.nz; ph: 07 838 4053; to enrol.

Rotorua Botanical Society

Field trip: Saturday 6 December to Te Tapui Scenic Reserve, near Matamata (combined trip with Waikato Botanical Society). **Meet:** 9.00 am at car park or 10:00 am at the Matamata Information Centre, 45 Broadway, Matamata or 10.15 a.m. at the track entrance on Piakonui Road.	See Waikato Botanical Society (above) for other details.
Field trip: Sunday 14 December to Iwitahi Reserve, Napier Taupo Highway. **Meet:** The Rotorua District Council car park on Fenton St at 9.00 a.m. or at the turn-off to Iwitahi on SH 5 (Taupo- Napier) at 10.30 a.m. **Grade:** Easy. This is the best time of year to visit this orchid reserve where about 38 species of native orchids have been recorded.	**Leader:** Chris Ecroyd, ph: 07 3479067 (hm), 07 3435609 (work).

Wellington Botanical Society

Field trip: Saturday 13 December, to the Petone rata walk. See northern and southern rata, and other species of the genus *Metrosideros*, including some in flower, plus native plantings on Petone Esplanade, a 3–4 km walk. **Meet:** 9.15 a.m., Petone Station, Hutt Road, corner Jackson St. Transport: catch no. 83 Eastbourne bus 8.50 a.m. from Courtenay Place, 8.45 a.m. from Eastbourne, 9.05 a.m. train on Hutt Line from Wellington Station, or 8.30 a.m. train from Upper Hutt.	**Leaders:** Dave Holey, ph: 04 566 3124; or Margaret Aitken, ph: 04 566 2731.

Nelson Botanical Society

Weekend camp: 19–21 December to Canaan Downs. **Venue:** The old Canaan Downs farm homestead near the start of the Rameka Track and Harwoods Hole.	**Contact:** Shannel Courtney ph: 03 546 3148, e-mail: scourtney@doc.govt.nz.
Field trip: Sunday 18 January, 2009, to Mt Murchison.	**Contact:** Shannel Courtney ph: 03 546 3148, e-mail: scourtney@doc.govt.nz

Canterbury Botanical Society

Meeting: Friday December 5, a talk by Philip Grove. **Venue:** Room A5 University of Canterbury.	
Field trip: Saturday 6 December(or Sunday 7, if wet) to Mt Hutt. Meet at the Yaldhurst Hotel car park on Yaldhurst Rd at 8.00 a.m. for carpooling. The next stop will be at the base of the hill on the Mt Hutt Ski Rd at the old toll booths where there is a large parking area. Here we will meet anyone from outside Christchurch at 9.00 a.m.	**Contact:** Marg Geerkens, ph: 03 352 7922.
Summer Camp: Friday 9 January – Friday 16 January 2009 at Totaranui Homestead, Abel Tasman National Park.	**Contact:** Margaret Geerkens, ph: 03 352 7922 or e-mail: bert.marg@xtra.co.nz with your name(s) and send a deposit of $40 per person to **Canterbury Botanical Society, Summer Camp - Totaranui, P.O Box 8212, Riccarton, Christchurch 8440.** Please make your cheque payable to the Canterbury Botanical Society.