



TRILEPIDEA

NEWSLETTER OF THE NEW ZEALAND PLANT CONSERVATION NETWORK

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President's message

I apologise for the delay in sending out this newsletter. I have been away in the Bay of Plenty helping out with the Rena oil spill because I am a member of the national team of oiled wildlife responders. It has been quite an experience being involved in the constantly changing crisis responses required when more oil is released or it moves in a new direction with a change of weather conditions (meaning a new area or island may be under threat). Though the focus has been very much on treating oiled wildlife, it is interesting to reflect on the impacts on native plants and ecosystems. I know that there have been tremendous efforts to restore dune ecosystems in the Bay of Plenty through care-group plantings and other restoration activities. The damage to that work will need to be assessed once the oil spill crisis is over. The rocky shore and estuarine ecosystems have also been impacted. Cleaning up those sites is almost impossible and, again, we can only wait to see if the damage to those environments can heal over time. Though accidents will always occur, it is hoped that an analysis of this oil spill can improve our ability to minimise the occurrence of such disasters.

Philippa Crisp
Greater Wellington

PLANT OF THE MONTH – *MYRSINE CHATHAMICA*



Myrsine chathamica. Photo: Peter de Lange.

Plant of the month for October is *Myrsine chathamica*. This handsome tree, the Chatham Island matipo, grows to about 12 m tall. It is usually multi-stemmed, often with many suckers and epicormic stems arising from the trunks when growing in exposed conditions. It occurs naturally on the Chatham Islands and further south on Stewart Island and other small islands in Foveaux Strait. It's abundant on the Chatham Islands where it's an important part of the forest canopy, although less so where soils are sandier. *Myrsine chathamica* is fairly distinct from other New Zealand *Myrsine* spp. Leaves are flat with entire margins, glossy dark green to green, lighter underneath, often with hairs on the midrib and a shallow notch at the leaf apex. Attractive violet-purple fruit appear from July to

February. *Myrsine chathamica* makes a great garden tree where it won't get too dry or too humid over summer; it certainly deserves to be more widely grown as an ornamental hedge in southerly coastal parts of New Zealand. It's easily propagated from seed, somewhat harder from cuttings but this can be achieved with semi-hardwood cuttings. The network factsheet for *M. chathamica* can be found at: www.nzpcn.org.nz/flora_details.asp?ID=1008

Kermadec Biodiscovery Expedition 2011 (Part IV – Raoul Island)

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The last two accounts of the Kermadec Biodiscovery Expedition 2011 (de Lange 2011b, c (Parts II, III)) summarised my observations of the flora and fauna of The Meyers, the Herald Islets and also Napier and Nugent during visits on 12 May and 16–18 May. During that time, due to inclement weather, the RV *Braveheart* moved from its mooring off the western side of The Meyers early in the morning of 14 May to take up a new mooring off Boat Cove on the eastern side of Raoul Island. This allowed access to the south-eastern side of Raoul Island, which was an area that I had been unable to survey in May 2009. In theory, it also allowed us to explore the Milne Islets and Dougal Rocks. However, strong swells being generated by a complex series of low pressure systems to the east meant that Warren Chinn and I were unable to land safely on the Milne Islets or the even more remote Dougal Rocks. This was probably not that serious a set back to our intended field work because the islets appeared to have been stripped bare of most of their vascular plant cover by Cyclone Bune. Thus, aside from collecting a few seaweeds from the intertidal zone of the Milne Islets, we elected instead to do a one day trip on Raoul Island by landing at the more sheltered Boat Cove.

A common theme of the three accounts of this expedition (de Lange 2011a,b,c) has been the impact of Cyclone Bune. As Warren and I were soon to discover, Cyclone Bune had made rather a mess of Raoul as well. As we climbed up the cliffs from Boat Cove to access the Boat Cove Road, we passed numerous cyclone-toppled Kermadec pohutukawa (*Metrosideros kermadecensis*). These were no surprise since we had already seen from the deck of the *Braveheart* their skeletal forms plastered all along the cliff faces of the Sunshine coast of Raoul Island; nevertheless, what we saw when we finally reached the Boat Cove Road completely shocked me.

Boat Cove Hut, somehow, had remained—miraculously—untouched by tree falls but the road, which I had intended to use as a quick access route to the Moumoukai Track (Moumoukai at 518 m a.s.l. is the highest point on Raoul Island) was not so much gone as completely buried in tree falls (Fig. 1). Thus a route that normally would take a person of average fitness 35 minutes or so to traverse took Warren and me 4½ hours of crawling under, climbing over or chopping through a myriad of fallen Kermadec pohutukawa, nikau (*Rhopalostylis baueri*), mapou (*Myrsine cheesemani*), mahoe (*Meliccytus* aff. *ramiflorus*), and tree ferns (*Cyathea kermadecensis* and *C. milnei*). I have experienced cyclone-generated tree falls in *Nothofagus* forest in the Raukumara Range, East Cape, North Island, that was “difficult” but that was nothing by comparison. The only positive thing about the widespread damage (Fig. 2) was that flora inhabiting the upper branches of the canopy trees



Fig. 1. Boat Cove Road, Raoul Island – this portion of road was relatively easy to traverse being buried under a toppled stand of nikau (*Rhopalostylis baueri*).



Fig. 2. Cyclone damaged forest above roadside leading from Boat Cove to Moumoukai Track, Raoul Island. The ground cover here has been stripped bare of most vegetation, nevertheless, in these areas at the time of our visit two months after the cyclone struck, thousands of Kermadec poplar (*Homalanthus polyandrus*) seedlings 5–15 mm tall were emerging from the exposed soil.

was now easily accessible on the ground. Thus species like the moss *Syrrhopodon armatus* or lichen *Pseudocyphellaria argyracea*, which I regarded as “rare” in May 2009, were now literally carpeting the forest floor. Indeed, many of the larger lobariaceous lichens in the genera *Pseudocyphellaria* (at least that generic name is used for now anyway) and *Sticta* were now so accessible that I was able within minutes to collect a suite of species including such new records for the Kermadecs (and some by default for the New Zealand Botanical Region as well) as *Pseudocyphellaria bartlettii*, *P. haywardiorum*, *P. homalosticta*, *P. punctularis* and *Sticta pedunculata*. I also got further specimens of several species I had only collected singletons of during the May 2009 field work, including a nice specimen of *Sticta squamata*. Although I don’t regard myself as a lichenologist, I made a supreme effort to collect a range of as many of the larger foliose species as I could as such a “wind fall” would not likely occur again for many years to come.

Eventually, we made the Moumoukai Track and mercifully it had received little damage. The weather by now had deteriorated into a thick mist with intermittent heavy rain showers, yet it was also incredibly humid and so rather unpleasant. Collecting under these conditions was rather trying. Still I hoped to find some good specimens and get better images of the unnamed endemic *Lastreopsis* that I had seen on this track in May 2009.

The existence of a new species of *Lastreopsis* (Fig. 3), apparently endemic to Raoul Island, was already noted by Sykes (1977) who briefly discussed it and illustrated it using a pot grown plant held at that time in cultivation at the former DSIR Botany Division, Lincoln. The new species had been first recognised by the late Mary Tindale who it was generally believed was going to formally describe it. As this had never happened (Mary passed away two years ago), I had encouraged Dr Leon Perrie (Museum of New Zealand Te Papa Tongarewa) to undertake a study of it. To me, the species had a passing resemblance to the Norfolk Island endemic *L. calantha* and the more widespread *L. pacifica*. Leon has now completed his research and, together with Dr Patrick Brownsey, has a paper in submission formally recognising the Raoul plant as a new species. One of its distinctions from the New Zealand species (none of which occur on the Kermadec Islands anyway) is that the Raoul plant has a pronounced creeping rhizome. Leon was keen to get better material of this; previous collectors had tended to avoid collecting this rather large, woody structure. Further, little was known about this species’ ecology (i.e. its habitat preferences and vegetation associations) and although listed as “At Risk/Naturally Uncommon” by de Lange et al. (2009), a thorough investigation of its conservation status had never been undertaken.



Fig. 3. *Lastreopsis* “Kermadec” as a yet undescribed Raoul Island endemic fern.



I soon found *Lastreopsis* to be a very common ground cover fern growing mostly within the ‘wet forest’ type of Raoul Island (Fig. 4), though I did also find scattered plants within the lower altitude ‘dry forest’. In the ‘dry forest’, *Lastreopsis* is easily overlooked because of its passing resemblance to the fern *Arachnoides aristata*. As that species doesn’t grow in the ‘wet forest’ where *Lastreopsis* seems to replace it, past field workers have tended to suggest that the *Lastreopsis* is confined to ‘wet forest’ (e.g., Sykes 1977).

Fig. 4. *Lastreopsis* “Kermadec” showing growth habit. Plant photographed on the south eastern slopes of Moumoukai, Raoul Island.

However, to be fair, such comments by earlier authors may also reflect the effect that goats may have had on the inner forest microclimate at the time—we need to remember that goats have been absent from Raoul for 28 years and so what we see now may no longer follow past goat-influenced patterns.

Some time in the mid-afternoon, Warren and I “found” the summit of Moumoukai, when in the thick fog we bumped into the solar panelling that drives the Raoul side of things for the New Zealand Tsunami and Volcanic Eruption warning framework. For a brief moment, the summit cleared allowing Warren and I to catch several unsuspecting spiders and flies and, in return, causing us to ingest plenty of near microscopic, rather irritating “sweat fly” which magically appeared out of nowhere to revel in our sweaty bodies. A brief fossick in the forest east of the summit resulted in some fine specimens of the endemic liverwort *Radula cordiloba* subsp. *erigens* and *R. javanica*, a tropical species otherwise unknown from the New Zealand Botanical Region. I was also able to show Warren a small patch of *Trichomanes venosum* growing on the ground—this is the only habitat in which I have seen this fern on Raoul where it is extremely uncommon anyway (I have yet to see it there growing on tree fern trunks like it almost exclusively does in New Zealand). Moumoukai is well known for the large amount of Kermadec nettle tree (*Pouzolzia australis*) which grows amongst the Kermadec pohutukawa, mahoe, hutu (*Ascarina lucida* var. *lanceolata*), *Coprosma acutifolia*, Kermadec five-finger (*Pseudopanax kermadecensis*) forest developed there. Although all the nettle trees had been heavily battered by Cyclone Bune, they were already covered in regrowth. Meanwhile, the generous leaf litter they had generated as a result of the cyclone damage proved a boon for micro land snails, so Warren and I set to collecting bags of leaf litter for the snail people back home.

All too soon it misted up and it was time to head back to the boat. On the way back, I marvelled at the regeneration of Kermadec poplar (*Homalanthus polyandrus*), which once was so very close to extinction due to goat browse (Sykes 1977). Kermadec poplar is now locally distributed across the island and, judging from the millions of seedlings emerging from the leaf litter in the cyclone ravaged forest, it will be a very important part of the future forest canopy for years to come. Luckily, having cleared a path on the Boat Cove Road, our return trip took only an hour and, before long, we were being whisked away on “Thomas” for the *Braveheart* where again we were treated to a show and tell session from the excited marine biologists.



Fig. 5. The author by the solar panels on Moumoukai summit, Raoul Island. These panels help keep the new Tsunami and Volcanic monitoring system on Raoul working.

The next morning Warren and I decided to explore the south-eastern portion of Raoul, so we again headed for Boat Cove and Moumoukai (Fig. 5). The weather was initially better than the previous day even allowing us very brief glimpses of the crater. At Moumoukai, we also noted that one of the original planted Kermadec koromiko (*Hebe breviracemosa*) had now died as a result of cyclone damage but that another that had been planted near the crater rim though in ill thrift was heavily flowering. We also found numerous seedlings amongst the rank grassland near the solar panels and amongst the low kiokio (*Blechnum novaezelandiae*) fern bordering the track.

Our intended destination for that night was Mahoe Hut and, as we headed that way, we were joined by Mike Ambrose from the Canterbury Conservancy, Department of Conservation, and Paul Swanson or “Swanee”, a volunteer on the island, but also a former caving buddy of mine whom I had not seen for 25 years. It’s funny who you can meet on Raoul Island! Both Mike and Paul had come to help clear the cyclone damage and, on that particular day, were checking out the track that crosses the crater rim from Prospect to Denham Bay and the loop from there to the Accommodation House.

The cyclone damage on the track from Moumoukai to Prospect (Fig. 6), though not as bad as the Boat Cove Road, was sufficiently bad that the track was still buried in places by fallen trees. I soon lost Warren, Mike and Swanee as I was taking the time to critically investigate each tree fall for bryophytes and lichens. At some point on this traverse, the weather turned foul and I was again bathed in thick fog and doused with rain. Near Prospect, I was impressed with a dense stand of the largest *Cyathea milnei* I had yet seen on Raoul Island, and on the trunks of these I found plenty of *Calomnion complanatum*, a moss I had seen very little of during the May 2009 trip. Associated with the moss was plenty of *Tmesipteris lanceolata*, itself not especially common on Raoul and lots of *Hymenophyllum demissum*, easily the most common of the filmy ferns on the island. At this point, I noticed what appeared to be the tiny fronds of *Trichomanes endlicherianum* protruding out from the *Calomnion* growth. This fern is a very common species in New Zealand proper but not on Raoul, where it had been found once by W.R.B. Oliver in 1908 and not seen again on the island until I found it in the headwaters of Ravine 8 in May 2009. The Prospect specimens looked very like *T. endlicherianum* but, having now seen the morphologically similar *T. humile* on Rarotonga, I decided to take a more critical look at the frond lamina margins. These proved to have the thickened but otherwise clear marginal cells and distinct submarginal row two cells thick (so resembling a false vein) that are features of *T. humile* not *T. endlicherianum*! This discovery caused much excitement that only a baffled kakariki was witness to. *Trichomanes humile* is the typical species of the south Pacific high islands, though *T. endlicherianum* is also present on a few islands, notably Norfolk Island, its type locality and one of the closer islands to the Kermadec group. Having picked this filmy fern up, I now decided that I had better pay closer attention to the trunks of other *Cyathea* nearby. This resulted in the discovery of *Hymenophyllum sanguinolentum* (a new record for the Kermadecs) whose presence was easily given way by the distinctly crested indusial flaps, and another *Hymenophyllum* that appeared superficially similar except that the large indusia were smooth. This gathering seems closest to *H. polyanthus*, another species common on the high islands of the Pacific as well as northern Australia, but inexplicably absent from New Zealand and both the Lord Howe and Norfolk Islands. I have yet to have this record confirmed. Another filmy fern, which I assumed to be a species of *Hymenophyllum*, was also collected. This gathering was sadly sterile though it appeared superficially similar to *H. flabellatum*, a species which is known from Raoul but I had yet to see. This specimen, on careful inspection back in New Zealand, appears to be a species of *Trichomanes* and not one that we have in New Zealand; sadly, the lack of fertile material will be a major impediment to determining its exact identity. Nevertheless, the cell structure of the frond is most unusual and, as I write, material is with Dr John Braggins who is taking critical close ups of these cells and the rhizome scales in the hope that these may enable some overseas filmy fern expert to venture a guess as to the fern's identity.



Fig. 6. Cyclone damage on the track from Moumoukai to Prospect, Raoul Island, showing toppled Kermadec pohutukawa (*Metrosideros kermadecensis*), fallen through intact nikau (*Rhopalostylis baueri*) and Kermadec poplar (*Homalanthus polyandrus*).

These finds, all in rapid succession, suggested that Prospect was well worth further investigation so, with bated breath, I began to explore the more dangerous crater rim side. That part of Prospect is covered in a spindly canopy of the doubtfully distinct endemic tutu (*Coriaria arborea* var. *kermadecensis*) with a dense understorey of kiokio sporting 1.4–2.0 m long fronds. It was whilst thrashing around in this fern on the sheer drop from Prospect to the crater that I found a small amount of *Lycopodium volubile*, another species collected by Cheeseman in 1887 and not seen again

on Raoul until now! Hooray! Beginning to think that I had now reached the maximum allocation of new discoveries that a botanist is allowed each day, I returned up the cliffs drenched but happy and started to thrash my way back down the cyclone battered forest to the Mahoe Hut track. On the way down, I found some interesting tree caves developed amongst huge Kermadec pohutukawa and Kermadec five-finger (*Pseudopanax kermadecensis*) roots and also under the undercut trunks of *Cyathea milnei*. Thinking these may be a good haunt for *Zoopsis*, I had a careful look in each of these with my head lamp. I found no *Zoopsis* but, in one of the caves, I found a very attractive, bright emerald green liverwort festooning some roots. To my naked eye, this plant resembled a very small *Chiloscyphus* of some sort, so I gave it hardly any thought until back in New Zealand. There I fished it out for Dr John Braggins to ponder and, several days later, was rung up by a very excited John who had identified the gathering as *Notoscyphus lutescens*, a new genus and species for the New Zealand Botanical Region. *Notoscyphus* is a widespread mostly tropical, liverwort ranging through India, Indo China, China, Japan, Malesia, Indonesia, New Guinea and high islands of the Pacific with an unusual outlier in South Africa. Eventually, having found the track and seeing that it was close to 4.30 p.m., I decided I had fossicked enough and had better hurry up to Mahoe Hut (Fig. 7) or the others would worry. At the hut, I found Mike and Swanee setting out for the Prospect – Denham Bay track and Warren already happily laying out yellow pan traps for the local unsuspecting invertebrates.



Fig. 7. Mahoe Hut seen here in the evening mist. This, despite its rotting piles, is one of the nicer huts on Raoul Island. The clearing around the hut has been planted with Kermadec Koromiko (*Hebe breviracemosa*) (one can be seen in this image toward the bottom right hand side) which has done exceptionally well (“too well” opined one person in the Hut log) and, in the rank growth, grew *Haloragis erecta* subsp. *erecta*, common in New Zealand but scarce on the Kermadecs.

The first moss is a common tropical species of the Pacific high islands but is apparently unknown from Australia (D. Meagher pers. comm.). I found it lying on the forest floor admixed with *Bazzania adnexa* and *Pyrrhobryum paramattense* amongst a mess of cyclone toppled Kermadec pohutukawa branches. The second moss I didn’t even know I had until many months later, back in New Zealand, Dr Allan Fife of Landcare Research e-mailed to tell me that what it was. *Symphysodontella* is apparently a widespread moss ranging from the Philippines across the Pacific to Tahiti and the Cook Islands. Clearly, searching tree falls at night time on Raoul can be rewarding...

Back at the hut, we then spent a wonderful two or so hours with the door and all the windows open and our torches and solar lamp lit collecting the moths that literally rained down upon us. We also hoovered up every spider we could find lurking around the hut walls using Warren’s “pooter”. Our collecting was only curtailed when a sudden, spectacular thunder and lightning storm necessitated some hasty door and window shutting.

Mahoe Hut was a lovely little place to stay though in serious need of re-piling, such that, whenever someone walked around the hut this caused what the hut log book jokingly referred to as “Mahoe Hut Tremors”. Initially, these were quite disturbing when you are lying down and you suddenly feel the ground swaying. Raoul has numerous earthquakes and our close proximity to the crater and the odd swaying motion caused a few moments of anxiety until Warren and I figured out the cause from reading the hut log. After a much needed cuppa and seeing that we still had some “sunlight” (mist-light really), we donned fresh clothes and head lamps and set out for Smith Bluff which we reached in total darkness an hour later. On our return, we collected leaf litter, spiders and two new mosses for the island and the New Zealand Botanical Region the rather beautiful metallic bronze-green *Cryptogonium phyllogonioides* and *Symphysodontella cylindracea*.

Our radio sked at 6.30 am the next morning (16 May) advised us that we were to be picked up at Boat Cove at 1.00 pm. Our intention, therefore, was to head down the Sunshine Valley, exploring the ravine system as we went, then rock hop the Sunshine coastline back to Boat Cove. We were pleased to see that the hut log advised this was easy going... (“Yeah Right”). The weather had also cleared somewhat, making for an enjoyable walk free of the body drenching mist and rain and allowing some fine views of the spectacular cliff and ravine network that makes up the Sunshine catchment. Initially, we walked through a reasonably intact nikau forest (Fig. 8), the forest floor sporting some interesting fungal growths (Fig. 9) that, for lack of the necessary equipment, I could only admire and photograph (a critical investigation of the mycophytes of Raoul is sorely needed). However, all too soon, the track started its precipitous descent into the upper ravine of Sunshine Valley (Fig. 10).



Fig. 8. Moderately intact nikau (*Rhopalostylis baueri*) forest at the start of Sunshine Valley track.



Fig. 9. What is probably *Clavulina cristata* var. *zealandica* (P. Johnston, pers. comm.) growing on rotting nikau (*Rhopalostylis baueri*) frond that is mostly covered in the moss *Eurhynchium speciosum*.

At the base of the first tier of cliffs, on the ravine floor, I was surprised to see that, despite the heavy rainfall of the previous night, and indeed most of the last week, the ravine was dry (though bearing much evidence of flash flooding). Progress along the ravine was reasonable, despite the numerous cyclone-felled trees and log jams. In places, the dominant shrub/tree fringing the ravine was Kermadec nettle tree. Kermadec poplar, tutu and mahoe were also common. The rock, mostly a coarse andesite interbedded with an apparently pyroclastic dacitic material, was mostly devoid of vegetation though, in places, especially where seepages emptied out into the ravine, dark green curtains of *Radula cordiloba* subsp. *erigens* and another Raoul Island endemic liverwort *Plagiochila pacifica* were common. In one of these “curtains” I discovered a small amount of *Cyclodictyon blumeinum*, another tropical moss that also grows on the northern side of Raoul at Western Spring, Eastern Spring and up Ravine 8. This species is listed as “Nationally Critical” (Glenny et al. 2011) on account of the overall small population size on Raoul, its only known location in the New Zealand Botanical Region. Further down the ravine system, we found a small area of apparently natural Kermadec koromiko, and in one place on a small eyot, growing above the flood line on an exposed root plate of a mahoe tree I found another patch of *Cryptopogonium*.

Toward the ravine base, there is a 50 m drop marked on the map as a waterfall (Fig. 11); this too was dry though it presented us with a formidable obstacle, that only some “interesting” cliff climbing got around. At the bottom, I was delighted to find under a curtain of kiokio the thalloid liverwort *Dumortiera hirsuta* (Fig. 12), which had been previously collected from Raoul at Western Spring by Bill Sykes in the 1960s (see Campbell 1977). However, that gathering, which was said to have been lodged in the Allan Herbarium (CHR) is now apparently missing (D. Glenny and S. Gibb pers. comm.) and I had failed to find this species at Western Spring or indeed in other similar habitats on



Fig. 10. Warren Chinn at the start of the descent into the top ravine of Sunshine Valley, Raoul Island. The dominant ground cover here is the Raoul Island form of kiokio (*Blechnum novaezelandiae*), to the left of Warren is a hutu (*Ascarina lucida* var. *lanceolata*) and behind him is a single *Coprosma acutifolia* (yellow-green) and Kermadec pohutukawa (*Metrosideros kermadecensis*) (grey).



Fig. 11. Looking down the 50 m “waterfall” that presents a formidable barrier that has to be climbed or descended when using the Sunshine Valley Track. Despite the heavy rain experienced during our time on Raoul Island, the waterfall and indeed the entire Sunshine Valley ravine system was fairly dry. In hindsight, this was probably a good thing as the state of the ravine and the vegetation clothing its walls indicates that it is prone to sudden, extreme, flash flooding. The dominant ferns clothing the waterfall cliff face are the Raoul Island form of kiokio (*Blechnum novaezelandiae*) and *Nephrolepis flexuosa*.



Fig. 12. *Dumortiera hirsuta* a tropical thalloid liverwort, rediscovered on Raoul Island, at the base of the Sunshine Valley waterfall during our visit. *Dumortiera* has a passing similarity to the common *Monoclea forsteri* from which it can be easily distinguished by the hairy margins of the thallus and by the hairy, spherical antheridiophores and archegoniophores (image by John Braggins based on New Zealand specimens from Herekino, Northland).

the northern side of Raoul during the May 2009 field work. *Dumortiera* is a reasonably large species easily recognised by the hairy margins of the young actively growing portion of the thallus and the spherical hairy structures that are the antheridiophores and archegoniophores (M. A. M. Renner, pers. comm.). It is a globally widespread mostly tropical species known from New Zealand proper mostly from a few sites in Northland, the Awhitu Peninsula, west of the Manukau Harbour, from Port Charles, Coromandel Peninsula and from the Chatham Islands (probably its world southern limit). Associated with the *Dumortiera*, was the even larger thalloid liverwort *Monoclea forsteri* (itself a new record for the Kermadec Islands) and two other thalloid species, *Lunularia cruciata* and *Reboulia hemisphaerica* subsp. *australis*. The latter two liverworts are very common on Raoul Island. The “waterfall” both above and below proved a very rich bryophyte habitat, providing us with further populations of three mosses (*Calymperes tahitense*, *Fissidens crispulus* var. *robinsonii* and *F. dietrichiae*) recognised as new to the New Zealand Botanical Region from my May 2009 gatherings from Ravine 8 on the northern side of the island. Further down “stream” on the lower branches Kermadec pohutukawa near the Sunshine Bivy (Fig. 13), I also found another tropical moss (*Calymperes tenerum*) that I had also previously reported from the island from a single minute gathering made in 2009 (see Fife & de Lange 2009).



Fig. 13. Sunshine Bivy, bottom of Sunshine Valley, Raoul Island. The bivy surroundings at the time of our visit were festooned with an assortment of “art” made by the “Raoulies” from rocks and piles of plastic flotsam (mostly buoys) washed up on the nearby Sunshine Coastline. The bivy was described in the Mahoe Hut log as “wonderful until night fall when the local brine mosquitoes make their presence felt *rather* too much”. The surrounding vegetation is dominated by Kermadec pohutukawa (*Metrosideros kermadecensis*). On the slope behind the bivy can just be seen *Pteris comans* (a common ground fern on Raoul Island), while the foreground vegetation is dominated by *Carex kermadecensis* with some *Cyperus insularis*, *Ficinia nodosa* and seedling Kermadec ngaio (*Myoporum rapense* subsp. *kermadecense*).

known to Raoul Island staff) because the base had been buried in a major landslide. Though the cliff climb was not to my taste, it did at least reveal several large specimens of another, as yet unnamed Raoul Island endemic, *Pittosporum* aff. *crassifolium*. This tree has, following the eradication of goats and then more recently rats, rapidly increased its range from the handful of specimens that had been recorded by Sykes (1977). Back in New Zealand, I learned that this population was new so the cliff climb wasn't in vain. I also found a strange filamentous form of *Ramalina geniculata* growing within a rock overhang that has got New Zealand's *Ramalina* expert Dan Blanchon delighted. Anyway, thanks to finding the hitherto unrecognised track, we made Boat Cove just on time for our 1.00 p.m. pick up by Matt Jolly in “Thomas”. From Matt we learned that during our two day walk the *Braveheart* had changed its mooring due to the inclement weather and it was now located back off the western side of The Meyers.

My last visit to Raoul on this expedition was on the afternoon of 18 May when I landed with a shore party of the expedition's marine biologists and a couple who had sailed in on the previous night and had a day visit permit to land. Landing at Fishing Rock, I left most of the marine biologists happily at play by a large rock pool with nets and buckets (Fig. 14). Up the cliffs, we soon caught up with Jess Clark the Head Ranger posted to Raoul for the 2010/2011 season. Jess was already hard out dealing with a new intake of volunteers who had steamed up the previous week on the RNZN *Otago* as part of the scheduled six monthly changeover of volunteers (or

Once on the Sunshine Coastline, Warren and I began the long rock hop back to Boat Cove. As the tide was out, I spent some time profitably fossicking about in rock pools for invertebrates and seaweed. A particularly beautiful red seaweed with iridescent blue apices, *Martensia fragilis*, caught my eye because it was quite common in some rock pools. The rock pools also sported some fine corals, an assortment of highly coloured fish and one fairly big (0.8 m long estimated) spotted grouper (*Ehinephelus daemeli*). After several hours, we reached an impassable bluff, which had not been mentioned in the Mahoe Hut log account of this part of the coastline. This bluff was a major headache to traverse due to yet more cyclone-damaged forest. We figured, therefore, that there had to be a track bypassing it somewhere but we simply could not find it. Indeed, it was only after some rather tricky rock climbing over a series of unstable razorbacks, tree falls and sections of cliff faces that I would rather have done without that we found at the top (curses) a track! It transpired that we had missed the base of this track (“The Ringbuster” as it is



Fig. 14. Marine biologists known on the expedition as “The Rotenone Kids” at “play” in a series of rock pools at Fishing Rock, Raoul Island. Note in the back ground from left to right Napier and Nugent Islands and The Meyers with Egeria Rock to the front of them. Also, the typical dull overcast skies we were greeted with virtually all of the time we were working in the Northern Kermadec Islands group.

“Raoulies” as they are known in the local parlance). The volunteers come to Raoul to help continue to good fight of weeding the island of a range of “undesirables”, a difficult but essential task if the island vegetation is to be fully restored. Many of the weeds were introduced as garden plants during attempts to settle and farm Raoul in the past. Thanks to successive groups of volunteers over the last 30 or so years a range of serious environmental weeds has either been eradicated from or reduced to extremely low levels on Raoul. Currently, the main weed being battled is yet another species derived from the islands past settlers, purple passion fruit (*Passiflora edulis*), but there are also many other weeds being patiently culled from the landscape. Having traversed much of Raoul, I take my hat off to these people who dedicate anywhere between 6 and 12 months of their life, unpaid, to set things right.

On this particular jaunt, I had very little time to do much botany being given the role of island chaperone and also doing a field interview about Raoul with expedition journalist Alison Balance for Radio New Zealand. Nevertheless, I was able to confirm that DOC staff and volunteers had successfully eradicated two exotic mosses (*Fissidens bryoides* and *F. taxifolius*) from the island. Due to limited time, I was, however, unable to determine if they had the same success with another exotic moss *Pseudoscleropodium purum*, which I had found growing in the lawn near the Accommodation House during my May 2009 visit. I also managed to procure specimens of *Riccardia* for a PhD student based in Paris who is revising this tricky genus, and retrieve two frozen tui (*Prosthemadera novaeseelandiae*) from the Raoul freezer for a researcher in New Zealand. The Raoul Island population of tui (Fig. 15), I believe, warrants subspecies rank because the birds are consistently smaller than their New Zealand counterpart, less highly coloured with fewer white tuft throat feathers and more white feathers on their nape. Although tui are common on Raoul, their population fluctuates widely and, following the destruction wrought by Cyclone Bune, numerous tui were being found dead from starvation. Two of the “Raoulies”, Sian and Toby, were therefore collecting specimens in the hope that they may be useful for scientists back in New Zealand.



Fig. 15. Raoul Island tui (*Prosthemadera novaeseelandiae* s.l.) eating *Coprosma acutifolia* fruit. Photo: Jess Clark, current Head Ranger on Raoul Island for the 2010-2011 season).

I left Raoul Island that evening in torrential rain, armed with a crate of Raoul Home Brew that had been traded with the *Braveheart* for a bag of apples and some bananas. Tasting it later I felt the Raoulies had the better end of the deal. In the next day or so, we were heading south for the Southern Kermadec Islands and, for Warren and me, a few days on Macauley Island. It looked to be interesting; when I had asked Department of Conservation parrot expert, Terry Greene, for advice about camping on Macauley, he'd cheerfully told me that Macauley was an absolute “hell” so that seemed something to look forward to.

Acknowledgements

I'd like to thank Jess Clark and her team on Raoul for their generosity in providing an excellent afternoon tea of home baked bread, tea and biscuits and also for their interest in the weed and plant issues raised during our brief meeting. Jess also provided the image of a Raoul Island tui reproduced here. Back in New Zealand, Jessica Beever kindly identified the two *Fissidens* I had

collected from Sunshine Valley, which was a vast improvement I am sure on my own brief field labels of “NOT *Fissidens waiensis*” and “Yet another grotty *Fissidens* specimen”. Thanks are also due to John Braggins for allowing use of his images of *Dumortiera* and also for his unfailingly interest in my liverwort gatherings from Raoul, an interest that was rewarded by his recognition of *Notoscyphus lutescens* in my gatherings from Prospect. David Glenny and Sue Gibbs are thanked for searching the Allan Herbarium (CHR) for the errant Raoul Island gathering of *Dumortiera* reported by Campbell (1977). I also thank Allan Fife for drawing to my attention to the fact that the moss I knew as *Orthorrhynchium cylindricum* is now known as *Cryptogonium phyllogonioides* and also for identifying the odd moss from Smiths Bluff as *Symphysodontella cylindrata*. I thank David Meagher (an honorary Raoulie) for his comments on the absence of *Cryptogonium phyllogonioides* from Australia. Peter Johnston (Landcare Research) kindly offered a tentative identification of the fungus illustrated in Fig. 8.

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- de Lange, P.J. 2011c: Kermadec Biodiscovery Expedition 2011 (Part III – The Herald Islets, Napier and Nugent). *Trilepidea* 94: 3–11.
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Fungology 101

Di Batchelor (dibatchelor@wise.net.nz)

The guide book *Some common fungi at Mount Holdsworth* is the culmination of the growing interest and knowledge of an amateur mycologist living at the base of Mt Holdsworth, the most popular entrance to the Tararua Range, west of Masterton in the Wairarapa. It has been published with help from the Department of Conservation with thanks to John Sawyer and Jeremy Rolfe and it is the first local guide to fungi in New Zealand.

The book gives an introduction to mycology for the beginner and includes colour photos of 25 different fungi that can be found when walking the tracks at Mt Holdsworth. It is by no means exhaustive because in most areas of New Zealand there will be hundreds of species. Also included are a few recently rediscovered by the author. Copies can be obtained from DOC’s Wellington Information Centre, the Wairarapa Area Office, Pukaha Mount Bruce, the Plant Protection Society, and selected bookshops in the Wairarapa. The cost is \$7.50. However, it can also be downloaded free as a PDF from the DOC website: www.doc.govt.nz/parks-and-recreation/places-to-visit/wairarapa/holdsworth/ .



A pale blue form of *Entoloma hochstetteri* (far left) and delicate pink *Russula roseopileata* are found at Holdsworth in Tararua Forest Park.

Arthur John Healy (Botanist) dies

Arthur Healy (1917–2011) was an outstanding botanist and provided unparalleled service to New Zealand botany and biosecurity. He helped introduce and foster the Noxious Weeds Act 1950, guiding its administration for many years, and contributing to the birth and early administration of the Noxious Plants Act 1978. He also spread the word about the dangers of adventive alien plants. He documented the spread of many species that later came into prominence as environmental weeds such as *Clematis vitalba* in the South Island.

Born in Feilding, he went to Massey Agricultural College where he was awarded the Bledisloe Prize. After graduating with a B.Ag.Sc. in 1940, he joined Botany Division. He then began his life's work of studying the taxonomy and ecology of adventive plants. His first major task was to survey the occurrence of nassella tussock in North Canterbury, a study which formed the basis for his thesis on the 'Ecology and economics of nassella tussock (*N. trichotoma*) in North Canterbury and Marlborough'. His DSIR monograph on this subject is still the authoritative work and gave impetus to the Nassella Tussock Act 1946.



He was largely responsible for drawing up the Noxious Weeds Act 1950. He was also on the Fitzharris Committee of Enquiry into Noxious Weeds Administration, whose report formed the basis for the Noxious Weeds Act 1978. He was the leading light on the Technical Classification Committee of the newly established Noxious Plants Council, whose task was to decide which weeds, proposed by district committees, were listed. In June 1946, he moved to the Public Works Department as Soil Conservator, Blenheim, before returning to Botany Division as Assistant Director. Between 1942 and 1959, he published a series of papers describing the arrival of new adventive plant species and their spread. In 1969, he was responsible for the publication Standard Common Names for Weeds in New Zealand. With Elizabeth Edgar, he worked on Volume III of the Flora of NZ - the first to integrate native and introduced species. On retiring in 1977, he was hailed by his peers as collector, taxonomist, ecologist, researcher and author.

Distinctions

1949-1977: Assistant Director, Botany Division of DSIR

1968: Life member Institute of Noxious Plants Officers (now the Biosecurity Institute).

1972: Life member New Zealand Weed and Pest Control Society (now the New Zealand Plant Protection Society)

1977: Associate of Honour of the Royal NZ Institute of Horticulture

1983: MBE, for services to agriculture.

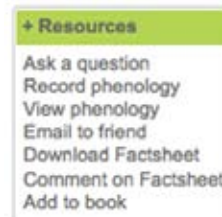
2008: Plant Protection Medal of the New Zealand Plant Protection Society

Based on Ian Popay and Paul Champion's nomination of Arthur Healy for the Plant Protection Medal in 2008.

Network's on-line resources

Have you seen the resource box (see right) on every plant species page on the Network website? When you open a page there is a series of resources on the right hand side. These resource links allow you to:

- Ask a question (on the Network forum)
- Record or view phenology data for that species
- E-mail the page link to a friend or colleague
- Download the page as a free PDF factsheet or comment on the information
- Finally, it allows you to select the species for inclusion in your own personalised book.



The factsheet PDF maker was sponsored by TFBIS (the government's Terrestrial and Freshwater Biodiversity Information System Programme). Please contact us if you have any queries about these links (info@nzpcn.org.nz).

Make your own plant books—a world first for online publishing

The Network has launched an online “Make-your-own plant book” system that can be used to create an infinite number of books (see attached poster). The system works by automatically harvesting information and images from the Network's website (www.nzpcn.org.nz). Website users select any combination of native or exotic plant species to include in their own personalised book. They then select a cover type, write their own title, choose a species to feature on the cover, write their own introduction or select a pre-written one. This innovative conservation initiative, believed to be a world first, establishes the Network as a leader in the provision of information about New Zealand's natural world.

“For gardeners, farmers, government agencies, community restoration groups and botanists, this new book making system will be a revelation,” says Network President Philippa Crisp. “Whether you want to make a book about cabbage trees or cabbages, kowhai or kiwifruit, podocarps or pine trees, or even a book about the plants in your own garden, this system enables the user to do just that”.

“New Zealand has a unique plant life which we all love. Educating people about these amazing plants is a key priority for the Network”, says Crisp. “We are talking about every plant in New Zealand including the Chatham Island forget-me-not, the towering iconic kauri and the vegetable sheep that live on our mountain tops. Whatever plant you want to include in your book, we've got it!”

As the model of traditional book production and distribution begins to falter worldwide, the Network is offering a new way to create and use online content. This project has been in development for two years and uses information stored on the Network's website. The website is a primary reference point for those interested in New Zealand's native or exotic plants and receives half a million visits annually. It holds information about all New Zealand plants with over 22,500 images and 6,500 species pages. Click on the link below for more information about how to make a book: [How to make a book](#)

For more information, contact

Project coordinator: John Sawyer, New Zealand Plant Conservation Network,
e-mail: info@nzpcn.org.nz, mobile: 021 0583 894.

CURRENT FORUM THREAD

- Can anyone supply fertile specimens and silica material of *Arthropodium candidum* for research being carried out by the Australian Tropical Herbarium ATH (Cairns) into the Laxmanniaceae?

Network website usage close to one visitor every minute

Network website usage continues to climb due to its popularity throughout New Zealand as a plant conservation information resource. The website now receives 450,000 visits annually, which equates to 1200 visits every day or nearly one every minute. More than 21,000 images and 800 documents are downloaded from the site every day! Data on website usage are also revealing some interesting things. For example, we know the 12 most searched for species on the site are:

1. Chatham Island forget-me-not (*Myosotidium hortensium*)
2. Kowhai (*Sophora microphylla*)
3. Pohutukawa (*Metrosideros excelsa*)
4. Fish-gut plant (*Chenopodium detestans*)
5. Kakabeak (*Clianthus maximus*)
6. Rimu (*Dacrydium cupressinum*)
7. Tree nettle (*Urtica ferox*)
8. Napuka (*Hebe speciosa*)
9. *Aeonium arboreum*
10. Totara (*Podocarpus totara* var. *totara*)
11. Pingao (*Ficinia spiralis*)
12. King fern (*Ptisana salicina*)



Chatham Island forget-me-not (*Myosotidium hortensium*) is the most searched for species on the NZPCN website: www.nzpcn.org.nz/flora_details.asp?ID=73. Photo: John Sawyer.

All of these species are viewed at least once daily, with the top four species being viewed up to four times daily. If anyone knows why *Chenopodium detestans* is such a sought after species, we look forward to hearing from you. The Network website was launched in August 2003 at the inaugural conference of the New Zealand Plant Conservation Network in Wellington. The site was initially funded by TFBIS (the government's Terrestrial and Freshwater Biodiversity Information System Programme), which works to increase awareness of and access to fundamental data and information about terrestrial and freshwater biota and biodiversity.

Images added to the website this month

The Network has added several hundred new images to the website including more from John Barkla, Simon Walls, Colin Ogle and Jeremy Rolfe. This has taken the overall total to over 22,500 images online. If you have great shots of plants (native or exotic) please send them to the Network.



(left) *Aciphylla aurea*. www.nzpcn.org.nz/flora_details.asp?ID=1451. Photo: John Barkla.

(centre, top) *Hectorella caespitosa*. www.nzpcn.org.nz/flora_details.asp?ID=804. Photo: John Barkla.

(centre, bottom) *Dracophyllum ophioliticum*. www.nzpcn.org.nz/flora_details.asp?ID=472. Photo: Simon Walls

(right, top) *Echium candicans*. www.nzpcn.org.nz/flora_details.asp?ID=3805. Photo: Colin Ogle.

(right, bottom) *Pelargonium inodorum*. www.nzpcn.org.nz/flora_details.asp?ID=2215. Photo: Jeremy Rolfe.

Book Review: *Native by design – Landscape design with New Zealand plants.*

Editors: Ian Spellerberg and Michelle Frey, Photography: John Maillard

Mark Seabrook-Davison, Greenscapes Ltd (Mark.Seabrook-Davison@aucklandcouncil.govt.nz)

In a former life, I used to be a landscape designer and I celebrate that New Zealand now has a book that recognises its designers that use native plants. Another reason to celebrate this book is it is published by my old alma mater, Canterbury University. *Native by design* introduces us to the broad range of talent we have amongst New Zealand landscape designers and the creative ways they use the vast palette that native plants allow. *Native by design* is a stimulating book and it reminds me of the enthusiasm for New Zealand plants expressed by New Zealand's greatest botanist, Leonard Cockayne (1910) "to stir up some interest here in the botany of the country."



It must have been agonising to decide which 20 New Zealand designers to show-case in this book because New Zealand is seen as a nation of gardeners and we have many magnificent designers not recognised in this book. Let us hope for *Native by design* volume two. With the constraint of space, the editors have chosen a representative range of New Zealand's best designers. New Zealand plants have a versatility of shape and colour and the designer's creations in *Native by design* demonstrate this versatility from ecological restoration (Sam Bourne – Project Manukau) to robust public space (Philip Blakely – Queenstown Airport). Sensitivity and contrast is displayed by Mathew Bradbury and Margaret McKegg in their use of natives that complement modern hard edge architecture (Bayes' Apartment Garden, Hamilton). It is pleasing to see designers working with local councils to create public amenities that work with biodiversity rather working against it. The Hooten Reserve in Albany, Auckland, incorporates the utilities of stormwater control and road contaminant containment in a project that restored a natural stream and created a shared public space.

New Zealand has lost three quarters of its primary vegetation since humans arrived in New Zealand 700 years ago. With New Zealand being described as a biodiversity hotspot because of the diverse range of its plant species and high level of endemism, New Zealand has a responsibility to conserve the native flora we have left. Therefore it is pleasing to see designers such as Richard Hart, Mike Tarrow and Matthew Lester who have an expansive approach to capturing the essence of the New Zealand landscape and the complexity of its floristic ecosystems.

The form and function that Daniel Kamo utilises in his designs are awe inspiring; watch out Chelsea! The native plants Daniel has chosen in the design shown on pages 120 to 129 beautifully complement his use of water, stone and timber. He has created a very contemplative garden that is nurtured especially by the foliage of the native plants used. Ralf Kruger is a designer who has let the form and function of native plants make a bold statement to complement the robustness that the hard edge architecture proclaims (pp 132–37).

I felt the format of the book could be improved with a hard front and back cover. The landscape orientation is appropriate but, being hard bound, would make the book more robust and eliminate the floppy feel of the book. I would like to see a field version of this book with a list of the plants used shown with every design.

The photography is excellent and clearly shows what the designers are trying to achieve with the plants they have chosen. I appreciate that a satin finish has been chosen for the photographs as it reduces the problem of reflected light while reading. Overall, the production values of the book are excellent with a good stock weight to the paper and photographs printed in full four colour. My only criticism is that it is inappropriate to photograph people with their sunglasses on.

I can see this book as a first in a series that celebrates New Zealand landscape designers. *Native by design* should allay the fears that some people have about using native species and hopefully gardeners will be inspired to use native plants in preference to exotic species. Let us see New Zealand gardens celebrate the uniqueness of our native plants as this book celebrates the uniqueness of our designers.

Reference

Cockayne, L. 1910: New Zealand plants and their story. Wellington, Government Printer. 190 pp.

New Zealand Plant Conservation Network annual general meeting

Please see the attached notice regarding the Network's Annual General Meeting and panel discussion. RSVPs are due by 5 November.

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):

Conservation Biology Conference 2011

Change of venue and dates: as a result of the 22 February earthquake that damaged much of Christchurch, including the Convention Centre, the ICCB conference 2011 has had to be shifted to Auckland with a consequential change of dates. The conference will now be held 5-9 December 2011 at the Sky City Auckland Convention Centre.

Website: www.conbio.org/2011. We will update it regularly to bring you the latest information on the venue, accommodations, conference trips, social events, and more.

26th John Child Bryophyte and Lichen Workshop

Workshop: Thursday 1 December – Tuesday 6 December, 2011.
Venue: Matawai, State Highway 2, 70 km north of Gisborne. Open to all who are interested in bryophytes and/or lichens. Various levels of accommodation available. A second circular will be sent out in August to those who have expressed interest. Confirmation of attendance and a deposit will be called for in that circular.

Contact: Anne Redpath, e-mail: wairataforestfarm@farmside.co.nz or Leon Perrie, e-mail: leonp@tepapa.govt.nz

Symposium on Phenology

Tuesday 6 December: as part of the 19th International Congress of Biometeorology, there will be a symposium on phenology at the University of Auckland. The symposium will feature an array of international speakers.

Further details and detailed programme: www.icb2011.com/icb2011/index.cfm?p=welcome
Contact: Dr Bruce Burns e-mail: b.burns@auckland.ac.nz

Auckland Botanical Society

Meeting: Wednesday 2 November at 7.30 p.m. a talk by David Glennly titled 'A demonstration of the online key to Coprosma'.
Venue: Unitec School of Health Sciences, Gate 4, Building 115. Room 2005.

Contact: Maureen Young, e-mail: youngmaureen@xtra.co.nz

Kaipatiki Project

Nursery Bites Workshops: Learn how to grow and care for New Zealand plants. every Tuesday in November, 9 a.m. to 12 noon.
Tuesday 1 Nov—Revegetation, pioneering & scrubland plants
Tuesday 8 Nov—Broadleaf/podocarp forest plants
Tuesday 15 Nov—Coastal plants
Tuesday 22 Nov—Wetland & riparian plants
Tuesday 29 Nov—Plants for birds

Venue: Kaipatiki Project Environment Centre, 17 Lauderdale Road, Birkdale, North Shore, Auckland. Bookings essential.

More info: www.kaipatiki.org.nz

Waikato Botanical Society

Field Trip: Saturday 5 November to Tawarau Forest, Waitomo.
Grade: medium.

Leader: Thomas Emmitt, e-mail: temmitt@doc.govt.nz
ph: 07 878 1080 (w), 07 878 4737 (h).

Field Trip: Sunday 13 November for kayaking Raglan Harbour.

Leader: Fiona Clarkson, e-mail: fmc3@waikato.ac.nz ph: 0212529187.

Meeting: Monday 14 November at 5.30 p.m. a talk by Jenie Isles titled 'Is Maungatautari restoring pollination and dispersal services to native plants?' **Venue:** Environment Centre, Level One, 25 Ward St, Hamilton.

Contact: Cynthia Roberts, e-mail: croberts@doc.govt.nz
ph: 07 8581034 (day), 07 849 4935 (evening).

Rotorua Botanical Society:

Field trip: Sunday 6 November to Rotoma Conservation Area.
Meet: the car park Rotorua at 08.30 a.m. or approximately 9.00 a.m. at the summit SH 30 on Rotoma Hill. **Grade:** medium – hard.

Leader: John Hobbs, e-mail: jffhobbs@paradise.net.nz
ph: 07 348 6620.

Field trip: Saturday 19 November to the Okareka Mistletoe Restoration Project for a weed control/plant releasing work day.
Meet: corner Summit and Loop Rds, Okareka (lake end) at 8:45 a.m. **Grade:** medium – hard; activities suitable for all ages and abilities will be provided. This will include releasing our plantings from weed growth and doing further weed control.

Leader: Paul Cashmore, e-mail: pcashmore@doc.govt.nz
ph: 07 348 4421 (h), 07 349 7432 (w)

Wanganui Museum Botanical Group

Field trip: Sunday 30 October to Lake Waikato, Nukumarū. **Meet:** Police Station 9.00 a.m. **Leader:** Jim Campbell.

Contacts: Robyn and Colin Ogle, e-mail: robcol.ogle@extra.co.nz
ph: 06 347 8547.

Meeting: Tuesday 1 November at 7.30 p.m. a talk by Colin and Robyn Ogle on Cape York, Queensland. **Venue:** Museum's Davis lecture theatre.

Contacts: Robyn and Colin Ogle, ph: 06 347 8547,
e-mail: robcol.ogle@extra.co.nz

Wellington Botanical Society

Field trip: Saturday 5 November to Puffer perambulation, Kaitoke. **Meet:** 9.00 a.m. in Tararua Forest Park car park off end of Marchant Rd, off SH2 at Kaitoke.

Leader: Pat Enright, ph: 04 495 0786 (wk), 06 308 8278 (hm).
Deputy-leader: Sunita Singh, ph: 04 387 9955.

Field trip: Saturday 19 November to Te Marua Bush for a working bee. **Meet:** at Te Marua Bush at 9.30 a.m. (250 m north of Te Marua Store and then left, off SH2 for 50 m, along the road to Te Marua Lakes, KRP). If coming by train, phone the leader to arrange to be met at Upper Hutt Station; catch 8.05 a.m. train on Hutt Line from Wellington Station.

Co-leaders: Glennis Sheppard, ph: 04 526 7450, and Sue Millar, ph: 526 7440.

Meeting: Monday 21 November at 7.30 p.m., the presentation of the Allan Mere Award followed by presentations by five VUW Students.

Venue: Lecture Theatre M101, ground floor Murphy Building, Victoria University, west side of Kelburn Parade. Enter building off Kelburn Parade about 20 m below pedestrian overbridge.

Nelson Botanical Society

Field trip: Sunday 20 November to Wakamarina orchids. **Meet:** Selwyn Place between the gum tree and Church steps at 8.00 a.m.

Leader: Don Pittham, ph: 03 545 1985

Canterbury Botanical Society

Meeting: Friday 4 November 4th a talk by Hazel Chapman titled 'Nigerian montane forests'. **Venue:** room A5, Canterbury University.

Contacts: Miles and Gillian Giller, ph: 03 313 5315.

Field trip: Sunday 20 November to Quail Island. **Cost:** \$10 for boat trip (half fare, the rest is subsidised by Quail Island Restoration Trust).

Leaders: Allan Fife and Colin Burrows. **Bookings:** to Zuni, e-mail: mas210@uclive.ac.nz ph: 03 342 1427 (evening).

University of Canterbury

University of Canterbury summer course: Practical Field Botany (BIOL305) is an intensive, short summer course designed to meet the need for training in the collection, preparation, and identification of botanical specimens. **Venue:** Mountain Biological Field Station at Cass, Canterbury. **Dates:** 17 January – 25 January 2012.

Information: www.biol.canterbury.ac.nz/biol305 or contact Dr Pieter Pelser, e-mail: pieter.pelser@canterbury.ac.nz ph: 03 364 2987 ext 45605.

Botanical Society of Otago

Field trip: Sunday 30 October to Leith Saddle to celebrate the International Year of Forests (open to the public). **Start:** 9.00 a.m. from the Botany Department car park, corner of Great King Street and Union Street (West).

Contact: David Lyttle,
ph: 03 454 5470.

Meeting: Friday 4 November at 12.00 noon a talk by Steve Ellwood titled 'What's cooking? –tips for cooking local produce'
Venue: Botanic Garden Centre.

Contact: Dunedin Botanic Garden,
ph: 03 477 4000.

Meeting: Wednesday 9 November at 12.00 noon a talk by Dr John Ogden titled 'Ecosystems in waiting or a bright new future?' to mark the International Year of Forests 2011. **Venue:** Student Learning Centre, Room GW3, Information Services Building (ISB), cnr Cumberland and Albany St.

Contact: Trish Fleming,
ph: 03 479 7577.

Public Lecture: Wednesday 9 November at 7.00 p.m. by Dr John Ogden titled 'Beech forest dynamics in a changing climate' in celebration of International Year of Forests 2011. **Venue:** 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: David Lyttle,
ph: 03 454 5470.

Meeting: Wednesday 16 November at 12.00 noon a talk by Professor Qian Wang, Chengdu Institute of Biology, titled 'Mountain earthquakes and their ecological effects: the case of the 20008 Sichuan earthquake'. **Venue:** Union St Lecture Theatre, corner Union St West & Great King St.

Contact: Trish Fleming,
ph: 03 479 7577.

Field trip: Saturday 19 November to Akatore Creek. Meet: at 9.00 a.m. at the Botany Department car park, corner of Great King Street and Union Street (West).

Contact: Robyn Bridges,
ph: 03 472 7330.



NEW ZEALAND PLANT CONSERVATION NETWORK 2011 Annual General Meeting and panel discussion

Is biodiversity offsetting good for New Zealand's plants and animals?

11
November
2011

5.30 pm AGM and Network awards ceremony

7.00 pm Food and drinks followed by panel discussion

Venue Turnbull House, 25 Bowen Street, Wellington

All welcome (gold coin donation for non-Network members)

RSVP by 5 November to info@nzpcn.org.nz www.nzpcn.org.nz

SPEAKERS:

Marie Brown is a PhD Candidate at the University of Waikato, researching mitigation and offsetting under the Resource Management Act 1991. Marie has qualifications in science and law, and a professional background in local government enforcement and policy having formerly worked for North Shore City Council.



Dr Susan Walker is a plant ecologist in the biodiversity & conservation team at Landcare Research. Her research interests range from the ecology and loss of modified dryland ecosystems to the theory and practice of biodiversity measurement, prioritisation and reporting.

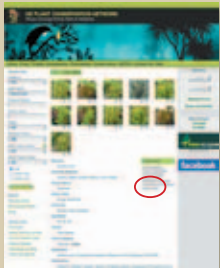


Dr Neil Mitchell is a senior lecturer at the University of Auckland's School of Environment. His research interests include species-climate interactions and the effects of climate change; restoration ecology and ecological management of production environments.



NZ Plant Conservation Network

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2 Choose a style



3 Review the layout

4 Make your book
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