



# TRILEPIDEA

Newsletter of the New Zealand Plant Conservation Network

No. 164

July 2017

Deadline for next issue:  
Tuesday 15 August 2017

## SUBMIT AN ARTICLE TO THE NEWSLETTER

Contributions are welcome to the newsletter at any time. The closing date for articles for each issue is approximately the 15th of each month.

Articles may be edited and used in the newsletter and/or on the website news page.

The Network will publish almost any article about plants and plant conservation with a particular focus on the plant life of New Zealand and Oceania.

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

### Postal address:

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Wilton  
Wellington 6012,  
NEW ZEALAND

## PLANT OF THE MONTH, p. 2



*Anogramma leptophylla*.  
Photo: Jeremy Rolfe.

## New Zealand Indigenous Flora Seed Bank (NZIFSB)

Karin van der Walt ([Karin.vanderwalt@wcc.govt.nz](mailto:Karin.vanderwalt@wcc.govt.nz)), Monica Swadel ([M.Swadel@massey.ac.nz](mailto:M.Swadel@massey.ac.nz)) and Craig McGill ([C.R.McGill@massey.ac.nz](mailto:C.R.McGill@massey.ac.nz))

### Myrtle rust response—Germplasm conservation of *Syzygium maire*, a recalcitrant species potentially threatened by myrtle rust

The arrival of Myrtle Rust (*Austropuccinia psidii*) in New Zealand has accelerated the need to secure seed of our native Myrtaceae species (already one of the seed bank's target species). However, the seed banking process, which involves drying and then freezing of seeds, is fatal to species that cannot survive drying to low seed moisture. One of these recalcitrant species is likely to be *Syzygium maire* (swamp maire).

*Syzygium maire* is New Zealand's only native *Syzygium* species and though not currently classified as 'Threatened', it is becoming scarce or absent from large parts of its range because of the destruction of swamp forest. The fruits are rather large (3 cm long), bright red drupes, maturing in late winter. No research into the seed storage behaviour of *S. maire* has been conducted but the Royal Botanic Gardens Kew Seed Information Database (SID) (<http://data.kew.org/sid/>) contains the seed storage behaviour of 11 *Syzygium* species from over the world. All of them are recalcitrant.

Research to determine an effective storage method for *Syzygium maire* was initiated in May 2017 when a collection of nearly 3000 seeds was sent to NZIFSB. Initial experiments to establish baseline information included:

- Producing seed sorption isotherms to determine when desiccation becomes fatal to *S. maire* seed. A seed isotherm gives the relationship between equilibrium moisture content (emc) and equilibrium relative humidity (eRH) at a given temperature. By assessing viability/germination at a range of relative humidities, the moisture content at which viability is lost can be determined.
- Seed germination to determine viability and germination response using various temperature settings and seed treatments.
- Determining the moisture content of seed pulp, seed coat, cotyledons and embryo).

This baseline information will reveal the seed storage behaviour of *S. maire* and, if confirmed as recalcitrant, other germplasm conservation options such as cryopreservation of the naked embryos will need to be investigated. Karin van der Walt, Conservation and Science Advisor, Wellington Gardens, is undertaking this research as part of her PhD at Massey University. The research work on *S. maire* is a joint collaboration involving Wellington City Council, Massey University and Plant & Food New Zealand.



*Syzygium maire*. Photo: Peter de Lange.

## PLANT OF THE MONTH – *ANOGRAMMA LEPTOPHYLLA*



*Anogramma leptophylla*. Photo: Jeremy Rolfe.

The plant of the month for July is *Anogramma leptophylla*. Also known as Jersey fern, this small, winter-dormant fern appears over early spring to mid-summer with pale green or yellow-green delicate fronds that dry off by mid to late summer, appearing dead. The fronds reach about 10-60 mm long, are fan-shaped and deeply notched; sterile fronds, which are smaller than fertile fronds, appear first.

In New Zealand, it is known from eastern parts from Northland to Southland, typically on clay banks, rock faces and alluvial banks. It is also known from Australia, South America, Africa, India and Europe.

*Anogramma leptophylla* is considered Threatened - Nationally Vulnerable and is mainly threatened through habitat loss, from competition with weeds, and by the removal of surrounding vegetation. You can see more about *Anogramma leptophylla* in the Network's factsheet at: [http://www.nzpcn.org.nz/flora\\_details.aspx?ID=147](http://www.nzpcn.org.nz/flora_details.aspx?ID=147)

### NZPCN biennial conference, Hokitika 14–18 November

Registration is now open for the NZPCN 2017 biennial conference which will be held in Hokitika 14–18 November. The conference website entry ([http://www.nzpcn.org.nz/page.aspx?nzpcn\\_events\\_conference\\_2017](http://www.nzpcn.org.nz/page.aspx?nzpcn_events_conference_2017)) has links to both the registration page, which also allows you to sign up for workshops and field trips, and the abstract submission page, should you be interested in delivering a presentation at the conference.

Early-bird registration closes on 30 September 2017 after which fees will increase by 10%. **Before registering, Network members should log in to the website to obtain the discounted member's rate.**

### Conference programme outline

**14–21 November:** NZPCN and the John Child Bryophyte Workshop present a combined exhibition dedicated to botanical art.

**Tuesday 14 November:** Welcome event, 5.30 – 7.00 p.m.

#### Wednesday 15 November

*Powhiri and welcome (8.30 – 9.00 a.m.)*

*Keynote speakers (to be announced)*

*Sessions (9.00 a.m. – 5.00 p.m.)*

- Taxonomic updates
- Distribution and population updates
- Plant ecology
- Student colloquium

NZPCN AGM (5.30 – 6.00 p.m.)

NZPCN Charity auction (6.00 – 7.00 p.m.) Proceeds from the auction will go towards the David Given Threatened Plant Research Scholarship and the NZPCN Threatened Plant Endowment Fund.

### **Thursday 16 November**

*Keynote speakers (to be announced)*

*Sessions (9.00 a.m. – 5.00 p.m.)*

- Conservation tools and successes
- Community and iwi engagement and successes
- Weed research
- Bryophytes and lichens

*Conference dinner and the 2017 NZPCN Plant Conservation Awards (6-8.30pm).* The conference dinner will be held at the Woodstock Hotel, just outside Hokitika; bus transfers will be provided. During the evening, the recipients of the 2017 NZPCN Annual Plant Conservation Awards will be announced as well as the 2017 David Given Threatened Plant Research Scholarship recipient.

### **Friday 17 November**

*Workshops*

- Workshop 1 – The art of nature journaling with Jo Ogier (9.30 a.m. – 4.30 p.m.).
- Workshop 2 – An introduction to bryophyte and lichen identification (9.30 a.m. – 12.30 p.m.).
- Workshop 3 – An introduction to fern identification (1.00 p.m. – 4.30 p.m.).
- Workshop 4 – An introduction to Naturewatch (1.00 p.m. – 4.30 p.m.).
- Workshop 5 – Ecological monitoring for community groups (9.30 a.m. – 12.30 p.m.).
- Workshop 6 – Using the law for plant protection (9.30 a.m. – 12.30 p.m.).
- Workshop 7 – How to collect seed sustainably (1.00 p.m. – 4.30 p.m.).

### **Saturday 18 November:**

*Field trips*

- Field Trip 1 – Coal Measure: north to Denniston Plateau taking in Punakaiki en route (7.00 a.m. – 5.00 p.m.).
- Field Trip 2 – Tropical West Coast: north to the Point Elizabeth, Pororari River and Truman Tracks (8.00 a.m. – 5.00 p.m.).
- Field Trip 3 – Forest and Alpine: east to the Otira Valley and the Cockayne Walk (8.00 a.m. – 5.00 p.m.).
- Field Trip 4 – Forest, Coast and Canopy: south to Mahinapua, Mananui Bush, and the Tree Tops Walkway. (9.00 a.m. – 5.00 p.m.).
- Field Trip 5 – Freshwater and Glaciers: south to Okarito Lagoon and Franz Josef Glacier. (8.00 a.m. – 5.00 p.m.).

### **Sunday 19 November**

*John Child Bryophyte and Lichen Workshop*

### **Monday 20 November**

*John Child Bryophyte and Lichen Workshop*

### **Are you interested in delivering a presentation during the conference?**

If you are interested in delivering a presentation during the conference, you will find the link to abstract submission via the conference page on the website (see above). An auto-generated email form will ask for a few of your details and will get you to identify the session in which you wish to deliver your presentation. Here you can also paste or attach your abstract. Abstract submission closes on 8 September. The NZPCN 2017 conference committee will assess abstracts and notify authors by 15 September if their presentation has been accepted. All standard presentations (not keynote addresses) should be 15 minutes long with a further 3 minutes allowed for questions.

### **Student attendance and travel grants**

The first two students to register and complete the abstract submission process will have their conference registration cost reimbursed and the NZPCN will assist their travel costs to Hokitika. Please draw this to the attention of the students and tertiary education providers you know in your region.

### **NZPCN annual awards**

It is the time of year again when the Network is seeking nominations for its prestigious annual awards which acknowledge outstanding contributions to native plant conservation. The award categories are for an individual, a school, a council, a community group, a plant nursery and a young plant conservationist (under 18 years as of June 30, 2017). Here is an opportunity to acknowledge someone/a group, within your networks and memberships who is/are doing a great job of protecting New Zealand native plants!

Anyone may make a nomination, including multiple nominations under different categories. Nominations close on Monday 25 September. Winners will be announced at the NZPCN conference in November. Please send nominations, preferably by email to Catherine Beard, email: [cbeard@doc.govt.nz](mailto:cbeard@doc.govt.nz), or by snail mail: Attention: Catherine Beard, Department of Conservation, Private Bag 3072, Hamilton 3240. A pdf of the nomination form is attached (or it can be downloaded from the NZPCN website [www.nzpcn.org.nz](http://www.nzpcn.org.nz))

### **PhD scholarship available at the University of Auckland**

The extraordinary Splachnaceae mosses often grow on animal carcasses and dung, and use bright colours and rotten odours to lure flies into acting as spore dispersers. Splachnaceae are generally hosted by the remains of native mammals – in Australia, they grow on dung from wombats, wallabies and Tasmanian Devils. Splachnaceae specimens have also been found with preserved mammal remains, e.g., giant Irish deer and Canadian caribou. In New Zealand, the Splachnaceae mosses are now hosted by introduced mammals, e.g. deer. Could Aotearoa Splachnaceae's original hosts be extinct moa or other herbivorous birds like takahe or paradise duck or seal or seabird colonies? We aim to use behavioural ecology, chemical ecology, spectral modelling, paleoecology and ancient DNA to discover how these mosses mimic the scents and odours of dung to deceive spore-dispersing flies and dung beetles, and how they switch between bird, mammal, native, and introduced hosts. More broadly, we'll explore how networks can respond to introduced species and megafaunal extinctions.

This exciting and unique project will be supervised by behavioural ecologist [Dr Anne Gaskett \(Auckland Uni\)](#) and paleoecologist [Dr Jamie Wood \(Landcare/Manaaki Whenua\)](#). It involves considerable fieldwork in New Zealand (and, optionally, Australia) and laboratory techniques including spectral modelling of insect colour vision, GC-MS of moss odours and ancient DNA analyses. Applications close Monday 13 August 2017. More information and essential criteria are here: <http://wp.me/P8qVXL-4U>

## MSc opportunity

Are you looking for a well-supported research project for your Master of Science degree? Do you want to make a difference at the cutting-edge of urban forest restoration research? Would you like to collaborate with leading researchers across New Zealand? Are you motivated and hard-working? If you answered “Yes” to all of the above, please apply now!

The MBIE-funded People+Cities+Nature project is seeking an enthusiastic MSc student to participate in urban forest restoration research starting in November 2017. The project seeks to understand how cities can maximise the efficiency and success of urban restoration plantings. Applicants must be willing to travel within the North Island. If you are interested, please send a brief CV & covering letter to [c.kirby@waikato.ac.nz](mailto:c.kirby@waikato.ac.nz) by Friday 18 August.

## UPCOMING EVENTS

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

### New Zealand Plant Conservation Network Biennial Conference

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**Conference:** Tuesday 14 to Saturday 18 November. **Venue:** Regent Theatre, Hokitika. The conference will be followed by the John Child Bryophyte and Lichen workshop on Sunday 19 November to Tuesday 21 November.

**Registration:** will open soon.

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### Auckland Botanical Society

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**Meeting:** Wednesday 2 August at 7.30 p.m. for a talk by Catherine Kirby titled 'Epiphytes and tree canopy research'. **Venue:** Unitec Room 115-2017.

**Contact:** Maureen Young, email: [youngmaureen@xtra.co.nz](mailto:youngmaureen@xtra.co.nz).

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**Field trip:** Saturday 19 August to 'Central Auckland urban trees'.  
**Leader:** Mike Wilcox.

**Contact:** Maureen Young, email: [youngmaureen@xtra.co.nz](mailto:youngmaureen@xtra.co.nz).

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### Rotorua Botanical Society

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**Field trip:** Sunday 6 August to TECT Park Forest Remnants, Te Matai. **Meet:** the car park, Rotorua at 8.30 a.m. or at 9.15 a.m. at TECT car park off SH 36. **Grade:** very easy but three minor creek crossings.

**Leaders:** Graeme Jane and Gael Donaghy, ph: 07 570 3123, email: [gtjane@kinect.co.nz](mailto:gtjane@kinect.co.nz).

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**Meeting:** Wednesday 23 August at 7.30 p.m. for the annual Rotorua Botanical Society Lecture to be given by Graeme Jane and titled 'Trinidad and Tobago'.

**Venue:** DOC Rotorua Office, 99 Sala St, Rotorua, enter through Scion (Forest Research) north entrance and turn left before the locked gates.

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### Whanganui Museum Botanical Group

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**Meeting:** Tuesday 4 July at 7.30 p.m. for a presentation by Sara Treadgold and Colin Ogle on myrtle rust and what is being done.

**Venue:** Davis Lecture Theatre.

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## Wellington Botanical Society

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**Field trip:** Saturday 5 August to Nga Manu Nature Reserve.

**Meet:** at 10.00 a.m. at Nga Manu Nature Reserve, 74 Nga Manu Reserve Rd, off Ngarara Rd, Waikanae; or by train, catch 8.44 a.m. Waikanae line from Wellington Station to Waikanae Station, ask Eleanor to meet you there.

**Co-Leaders:** Rhys Mills

(Supervisor), Nga Manu Nature Reserve, ph: 04 293 4131; and Eleanor Burton, ph: 04 479 0497, mobile: 021 0588 324.

**Meeting:** Monday 21 August at 7.30 p.m. for the AGM followed by the A P Druce Memorial Lecture given by Rodney Lewington, Tony Silbery and Chris Horne titled 'Botanist Tony Druce's methods and our memories'.

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

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## Nelson Botanical Society

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**Field Trip:** Sunday 20 August to the Grampians. **Meet:** 9.00 a.m. at the Cathedral steps.

**Contact:** Uta, ph: 03 545 0280; email: [mupurcell@xtra.co.nz](mailto:mupurcell@xtra.co.nz) by Friday 18 August if intending to come.

**Meeting:** Monday 21 August at 7.30 p.m. for a talk by Alex Fergus titled 'Sub Antarctic Flora'.

**Venue:** Jaycee rooms, Founders Park.

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## Canterbury Botanical Society

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**Meeting:** Monday 7 August at 7.30 p.m. for a talk by Dr Pieter Pelsler titled 'Untangling the genetics of the *Senecio glaucophyllus* group'. **Venue:** Upper Riccarton Library community meeting room, 71 Main South Road.

**Contact:** Alice Shanks, ph: 03 337 1256, email: [alice@caverock.net.nz](mailto:alice@caverock.net.nz).

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## Otago Botanical Society

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**Meeting:** Wednesday 23 August at 5.200 p.m. for a talk by Dr Steve Kerr titled 'Catch and Release: collecting Otago's insects and spiders without pins and needles'. **Venue:** the Zoology Benham Building, 346 Great King Street, behind the Zoology car park by the Captain Cook Hotel; use the main entrance of the Benham Building to get in and go to the Benham Seminar Room, Rm. 215, 2nd floor. Please be prompt because we have to hold the door open.

**Contact:** [Robyn Bridges](#), ph: 03 472 7330.

**Field trip:** Saturday 26 August to Moira and John Parker's property at Hoopers Inlet. **Meet:** at Botany Department car park at 9.00 a.m. or at Hoopers Inlet Hall at 9.30 a.m.

**Contact:** [David Lyttle](#), ph: 03 454 5470.

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## NEW ZEALAND PLANT CONSERVATION NETWORK

### PLANT CONSERVATION AWARDS: 2017

The New Zealand Plant Conservation Network is now accepting nominations for the 2017 awards. The purpose of these awards is to acknowledge outstanding contributions to native plant conservation.

The award categories are:

**Individual** involved in plant conservation

**Plant nursery** involved in plant conservation

**School** plant conservation project

**Community** plant conservation project

**Local authority** protecting native plant life

**Young Plant Conservationist** of the Year (under 18 years on 30 June 2017)

More information about the awards and additional nomination forms are available on the Network website - [www.nzpcn.org.nz](http://www.nzpcn.org.nz). You can make multiple nominations under different categories. Anyone is eligible to make nominations, not just Network members. The awards will be presented at the **2017 NZ Plant Conservation Network Conference** in November. Winners will be informed in advance of the meeting. Nominations close on **Monday 25 September 2017**.

#### **NOMINATION FORM**

**Category (please circle):**

*Individual*

*Plant*

*Nursery*

*School*

*Community*

*Local Authority*

*Young Plant Conservationist*

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

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

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

\_\_\_\_\_

**Phone:** \_\_\_\_\_ **Email:** \_\_\_\_\_

