

# Blandfordia



North Shore Group  
(ABN 87 002 680 408)

OCTOBER 2020

## September GROUP OUTING

Seven enthusiastic members were treated to a great flower display along the Centre Track Ku-ring-gia NP on 13<sup>th</sup> September .  
Between us, we managed to find the vast majority of the 93 most visible species on the list we were working with. We even managed to find 22 more to add to the list. Thank you Wendy for compiling the list.  
So, we had a good learning experience! We enjoyed seeing heaps of *Boronia serrulata* plants flowering in particular.

*Sue Fredrickson*



*Sue F*



*Phillip Grimm*



*Four images by David Roberts*



*Mystery location*

To identify all these images join the October Zoom meeting on 9<sup>th</sup> October (See page 3).

Sue F commented "Easily accessed local Waratah display but you'll have to attend the walk next year at this time, September, to find out where!"

**Cards for sale.** Once again Covid 19 has impacted our usual activities and there has not been an opportunity for members to buy some of Pam and Jim Lawler's beautiful cards. A percentage of sales goes to the group. Once again, they have kindly offered to sell their cards to members. Please ring Pam on 9498 6093 for details. There is an answering machine. Please leave your contact number if the phone isn't answered and they will return your call.  
As information for new members, there is a large selection of images to choose from and all are of the highest quality. They are ideal for messages or as gifts for others to use & very reasonably priced.



## Monday APS NSG Walks programme KWG for the remainder of 2020

THE KU-RING-GAI WILDFLOWER GARDEN (KWG) 420 Mona Vale Road, St Ives

### Modified outdoor activity due to Covid-19

These walk sessions are free and start behind Caley's Pavilion.

In October & November we will continue to hold Walks at KWG unless major changes are made to the rules.

**It is essential to book your place by the Saturday prior to the walk and to cancel if you can't make it as numbers are limited.**

Please ring Wendy **0419 323 035** or email: [wagrimm@tpg.com.au](mailto:wagrimm@tpg.com.au)

#### MONDAY

12<sup>th</sup> Oct Ferns

19<sup>th</sup> Oct Mueller Track (Long walk 10-2:30pm bring lunch)

26<sup>th</sup> Oct Rainforest/Climbers

2<sup>nd</sup> Nov Grasses (Family Poaceae)

9<sup>th</sup> Nov Leptospermum & Callistemon (Family Myrtaceae)

Please note: We are accepting non-members on the walks but pre-registration is **essential**.

- Group numbers & social distancing will be maintained as per NSW advice.
- Walks are easy to medium. Sessions will run 10am to about 12 noon, except on 19<sup>th</sup> October.
- Please wear a hat, have suitable footwear and bring water.



Image by Maxine Jollye



#### Do you still need plants?

Sue Bowen reports that there are still some plants in shadehouse needing good homes, especially *Dendrobium X Delicatum* and *Dendrobium kingianum* that are finishing flowering.

We also have some new *Lambertia formosa*, *Patersonia occidentalis*, *Grevillea banksii* and *Hibbertia dentata*, courtesy of Pam Lawler.

Interested people need to let Sue know on 0478 957 951 or [suzanneebowen@gmail.com](mailto:suzanneebowen@gmail.com) that they'd like to come to a propagation afternoon and buy plants. (For dates see page 6). **Cash only.**

As well as the Callistemon image above, Maxine has sent some images of another couple of plants that are thriving. All these plants were purchased from the group.



### New Members

A big welcome to new members Kelly Bollinger, Samantha Hickey, Kaaren Vane & Xanthe Wells. It is wonderful to have Kelly back in the group after a break of several years

We hope that you enjoy your association with APS NSG and its members. We look forward to the return to more opportunities to meet you in person. In the meantime we hope that we can all share knowledge and enjoyment of our wonderful native plants.

One spot to find interesting and informative articles is the APS NSW site which covers all the affiliated groups in the state. <https://austplants.com.au/>



## DNA: the key to understanding evolutionary relationships between Australian ecotypes of *Themeda triandra* (kangaroo grass)

*Themeda triandra* (kangaroo grass) previously known as *Themeda australis* is widely distributed across Australia, the Indian Ocean rim and the Pacific (Fig. 1). It is possibly Australia's most widespread native grasses, occurring in all of the states and territories (Fig. 2) and thus, in widely contrasting biomes. It probably evolved in what is now Sri Lanka and dispersed to Australia only 1.3 million years ago (Dunning *et al.* 2017). The uniquely broad distribution of what appears to be a single grass species suggests that *T. triandra* should be a rich source of adaptive traits to different soils, climate regimes and photoperiods. This opens up the possibility of discovering functionally important genes that could be used to adapt plants to hotter climates and drought.



**Fig. 1.** *T. triandra* ecotypes; Department of Biological Sciences at Macquarie University

We investigated eight ecotypes of *T. triandra* from selected sites spanning southern Tasmania, eastern Victoria, South Australia, the Snowy Mountains, central NSW, western Qld and the Northern Territory. (Table 1). Wide distribution of this species in Australia and its morphologically distinct phenotypes imply high genetic diversity *between populations*. Therefore, we tested whether diversity in DNA sequences characterised these distinct populations. DNA was isolated from all ecotypes using two different approaches to obtain high-quality nucleic acid samples for downstream analysis. Being a wild grass, rich in secondary metabolites, we discovered that isolating nucleic acid was very difficult!

**Table 1.** *Themeda* ecotypes and their location in Australia

<i>Themeda</i> Ecotypes	Location
Birdwood	South Australia
Myrtleford	Eastern Victoria
Jindabyne	Southern New South Wales
Forbes	Western New South Wales
Dalby	Western Queensland
Rainbow Valley Darwin	The Northern Territory
Tasman Peninsula	Southern Tasmania
Sydney	Central New South Wales



**Fig. 2.** Distribution of *T. triandra* ecotypes across Australia (Source: Atlas of Living Australia)

Firstly, we adopted a classical approach to working out the relatedness of these *Themeda* ecotypes by using *18s ribosomal RNA* to reveal genetic diversity. This gene is commonly used to construct evolutionary trees because it is highly conserved in eukaryotic genomes, i.e. its genetic sequence diverges slowly between individuals in a time-dependent manner. Using the Polymerase Chain Reaction technique, the *18s rRNA* gene was amplified thousands of times and then the genetic code was sequenced in South Korea. Sequences were aligned using



compared with the result of the *18s rRNA*. Additionally, genetic ‘markers’ obtained from these DArT data will become a valuable tool for environmental studies because the markers can be linked to adjacent functional genes that we know to play a role in tolerance to extreme environments such as heat and drought. Using DArT, we have obtained 97,368 genetically dominant molecular markers that can be associated with plant traits of interest. One can imagine these being used in adaptation of grasses for disturbed environments and breeding programmes for particular soils and local climates. In something exceeding one million years, *Themeda* ecotypes must have adapted locally to many diverse environments. Much remains to be discovered.

The updated results will be provided on Friday, September 11, 2020.

Sincerely,

Farhad Masoomi-Aladizgeh (PhD candidate in Biology); Brian J. Atwell (Professor of Biology)

Reference:

Dunning LT, Liabot AL, Olofsson JK, Smith EK, Vorontsova MS, Besnard G, Simpson KJ, Lundgren MR, Addicott E, Gallagher RV, Chu Y, Pennington RT, Christin PA and Lehmann CER. (2017). The recent and rapid spread of *Themeda triandra*. *Botany Letters*, 164(4): 327-337.

As with all the previous VW Scholarship recipients, our members were impressed by Farhad and his dedication to his studies and to helping advance scientific understanding of the world around us. Farhad and Professor Atwell thanked APS NSG for the provision of the Val Williams Scholarship and commented that without such support this portion (approximately 20% of the research project) would not have been able to have been conducted.

Editor’s note: Farhad very kindly provided me with this summary of his presentation. I know that there was NO way that I was going to be able to accurately make notes on his talk.

Below are a few notes on the preamble to his talk.

- Many currently grown commercial crops- wheat, rice, cotton - are showing decreases in production with increases in ambient temperature. The search is ongoing for those varieties and crops which are more tolerant of a warmer climate.
- Australia has wild cotton plants in the *Gossypium* species.  
[https://www.anbg.gov.au/cpbr/program/sc/cotton\\_mole.htm](https://www.anbg.gov.au/cpbr/program/sc/cotton_mole.htm)
- The male parts of the plant reproductive cycle are particularly impacted by temperature.
- A clade is a group of organisms believed to comprise all the evolutionary descendants of a common ancestor. ( This was a term that I had not heard beforehand).



Congratulations to Noela and Bill for their magnificent contributions to so many causes to do with native fauna and flora. Recently the Friends of Lane Cove National Park held a special celebration at Carter Creek to celebrate the retirement of Bill Jones and Noela Kirkwood, as coordinators of the Quarry Creek bushcare site.

Photo is of Noela and Bill at STEP’s 20<sup>th</sup> anniversary in 1998.

Thank you both for all the enthusiasm and passion that you have given over so many years to so many people and for your willingness to share your knowledge and skills so freely. APS NSG also appreciates your many contributions to our group.

For the full report of the celebration see <https://www.step.org.au/index.php/item/454-recognition-of-the-work-of-bill-jones-and-noela-kirkwood>

#### **Group activities**

Please note that due to the pandemic it is difficult to arrange garden visits at present. The committee understands that these are very popular and of interest to many members, especially new members.

In **October** the annual trip away to Blackheath is currently still on track. It is fully booked.

**November.** The possibility of an activity will be discussed at the October committee meeting. Please see November *Blandfordia* for an update. Similarly, the Christmas party is still a matter under discussion.

**Summer months.** No group activities usually happen over the hotter summer months.

Please contact the coordinators prior to any attendance and check NSW Government restrictions as well at this website <https://www.nsw.gov.au/covid-19/what-you-can-and-cant-do-under-rules>

**Plant Propagation at KWG on Wednesdays 7<sup>th</sup> & 21<sup>st</sup> October**

Sue Bowen on 0478 957 951

**Ku-ring-gai Council Bushcare at KWG 14<sup>th</sup> & 28<sup>th</sup> October** Sue Bowen on 0478 957 951

**Modified Walks Programme: see page 2**

Ku-ring-gai Wildflower Garden St Ives

Wendy Grimm 0419 323 035

W&T **Notes** are still on website. Information on page 2 is current. Sometimes the [Walks and Talks](#)

**The Knoll KWG Contact:** Michael Griffith

[michaelgriffith1@gmail.com](mailto:michaelgriffith1@gmail.com)



*Doryanthes palmeri* at KWG Sue Bowen

## Notices and Reminders

**13<sup>th</sup> FJC Rogers Seminar 2020** on Mint Bushes & Allied Genera.

**NEW dates for webinars (Zoom) 8<sup>th</sup>, 15<sup>th</sup> & 22<sup>nd</sup> October 2020.**

Please check these websites for full details <https://apsvic.org.au/fjc-rogers-seminar-2020/>

Please register an Expression of Interest email to [fjcrogers@apsvic.org.au](mailto:fjcrogers@apsvic.org.au) if you would like to receive the Webinar (Zoom) link to be part of the FJC Rogers Seminar lectures. There is no cost to the Webinars. (Everyone who registers by sending an email will be sent the Webinar link a day or two before 8th October. So be sure to check your email.)

*Another chance to attend an event of interest from the comfort of home.*

## BREAKING NEWS

The ANPSA Conference in Kiama has been postponed from 2021 to  
**Sunday 11<sup>th</sup> - Sunday 17<sup>th</sup> September 2022.**

### September 2020 Committee Notes

Meeting was a virtual meeting using Zoom technology

1. Future meetings: October meeting will be for APS NSG members only. November meeting will be 2021 Committee elections. December Christmas date to be discussed at October committee meeting.
- Group activities: October (Blackheath trip is fully booked) & November (TBA)
  - President's meeting with KWG & KC staff

### Committee Contacts

**President:** Sue Bowen 0478 957 951

**Secretary:** Judy Jeffery 0429 438 598

Email: [secretary@blandfordia.org.au](mailto:secretary@blandfordia.org.au)

**Website:** <https://austplants.com.au/North-Shore>

**The preferred method for Membership Applications & Renewals is to go to the APS NSW website and follow the instructions at <https://austplants.com.au/Join-APS/>**

If joining or renewing online presents any problems assistance can be given at any general meeting. Please speak to Genevieve Meares or Helen Ray. Alternatively email your query to [membership@blandfordia.org.au](mailto:membership@blandfordia.org.au)  
For your convenience, an EFT payment option is now available.

**Treasurer:** Helen Ray [treasurer@blandfordia.org.au](mailto:treasurer@blandfordia.org.au)

**Newsletter Editor:** Jan Williamson 9875 2262 [janw7531@gmail.com](mailto:janw7531@gmail.com)

**Newsletter submissions:** Deadline for submissions is the third Friday of the month.

For the November 2020 edition this will be 16<sup>th</sup> October 2020 Editor: [janw7531@gmail.com](mailto:janw7531@gmail.com)

***Blandfordia*** *The Newsletter of the Australian Plants Society North Shore Group*