

Newsletter

April 2020

No 18

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Next Newsletter

The next newsletter will be published in November 2020.

We would love to hear from you and in particular if you have any photos for the photographic record of Goodeniaceae species suitable for identification purposes. It would be great to build on the already published photo-guides which were made available at the 12th FJC Rogers Seminar 2018 - Goodeniaceae. We will be able to add pages to the end of each Newsletter. You will then be able to extract them from the newsletter and add to the photo-guides which most of you will already have. For those who do not have the photo-guides please contact Maree on goodeniaceastudygroup@gmail.com.

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A Word from the Leader

Royce Raleigh

What an incredible last few months! I hope that all of our members are safe and keeping well.

We have experienced the terrible bushfire summer of 2019 – 2020 which has affected native bushland across almost the whole of the country. Parts of Queensland, huge areas in New South Wales and Eastern Victoria, Kangaroo Island and large areas of Western Australia have been burnt. These areas include where many spectacular plants and some of our rarer species had their home.

Just released by the Wildlife and Threatened Species Bushfire Recovery Expert Panel, on 23 April 2020, is a list of 471 plant species identified as the highest priorities for urgent management intervention to support recovery from the 2019 – 2020 bushfires. (More later)

Now with the Coronavirus travel restrictions, we cannot get out to see how and if the bush is recovering, or to visit friends' gardens etc.

However, for Jeanne and I the lockdown has been a bonus, as we are doing what we have been planning to do for many years – rejuvenating a 45 year old garden and finishing garden beds that should have been completed years ago. We are both getting our exercise, weight training, getting tired and sleeping better than we have for some time. While renovating, we have also replaced many of the log garden edges and widened a couple of paths.

Thanks to Jeanne's propagation we have rejuvenated and replanted two garden beds on the north side of the house. (adding just over 100 plants) and the four large garden beds on the south side of the house. (adding just over 400 plants) All the rejuvenated garden beds have now been covered with a fine scoria mulch to a depth of about 75mm.

We have managed to include many *Lechenaultia* and *Dampiera* and a small number of *Goodenia*. Most of the plants are small and we will have to wait so see when they flower as to what species or form they are. We do know that many of the *Dampiera* that we have planted whether species or just forms, are ones that we have not had in the garden before, and it will be most interesting to see how they develop.

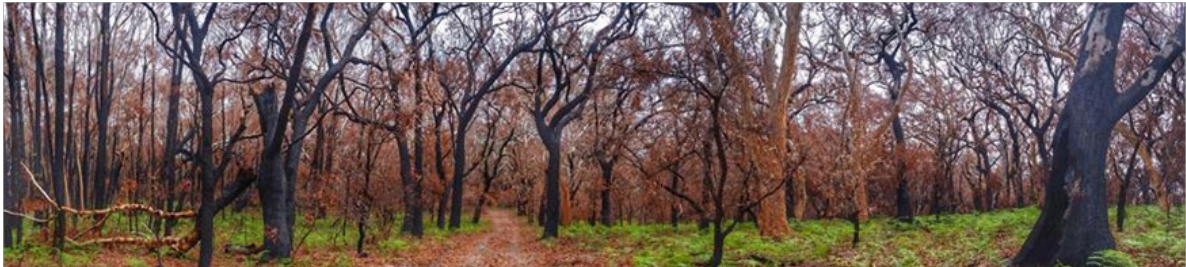
What a lovely new *Lechenaultia* Dr Kelly Shepherd has described, and I am sure that all of us would echo her words. "I would dearly love to be able to grow this plant in my own garden one day".

We must see if we can make that happen – soon!



Some of the garden beds on the south side of the Raleigh house. Royce mentions how he and Jeanne have been renovating their garden in his Word from the Leader. Can't wait to see it in a few months time.

Provisional list of plants requiring urgent management intervention



The Wildlife and Threatened Species Bushfire Recovery Expert Panel, on 23 April 2020, released a list of 471 plant species identified as the highest priorities for urgent management intervention to support recovery from the 2019-20 bushfires.

The plants span a variety of vegetation types and include rainforest trees and shrubs like Monga Waratah (*Telopea mungaensis*) and plants from subalpine vegetation, such as the Critically Endangered Bredbo *Gentiana* (*Gentiana bredboensis*).

Some species were considered threatened before the fires, and the fires have now likely increased their risk of extinction.

Many other fire-affected plant species were considered secure before the fires but have now been burnt across much of their range and may lack an ability to recover without support.

Some species, like the Forrester's Bottlebrush (*Callistemon forresterae*), Betka Bottlebrush (*Callistemon kenmorrisonii*), and Grey Deua Pomaderris (*Pomaderris gilmourii* var. *cana*) are at imminent risk of extinction because all of their known or modelled range has been burnt and they are exposed

to other stressors such as drought, high fire frequency or severity, or disease.

Australia has approximately 25,000 native plant species. About 19,000 of them were assessed by experts, led by Dr Rachael Gallagher from Macquarie University, against a set of eleven criteria - which combine the extent of the species range burnt, species fire response traits and the interactive effects of other stressors.

Although many plants have the capacity to respond positively to fire, the cumulative impact of stressors like high fire frequency or severity, drought, herbivory, weed invasion, erosion or disease places many species at risk.

The analysis includes plants in bioregions that have been impacted by fires from south-west Western Australia, southern South Australia, Victoria, southern and eastern New South Wales, south-eastern Queensland and Tasmania.

The preliminary priority list below may be revised in future as more information is uncovered.

A summary report, which includes a list of the 471 priority plants for management intervention, and a technical report prepared by Dr Rachael Gallagher, which describes the prioritisation framework and assessment method, are provided at the links below.

Download Summary Report

Go to the link below to obtain copies of the following:
<http://www.environment.gov.au/biodiversity/bushfire-recovery/priority-plants>

Summary of the provisional list of plants requiring urgent management intervention (PDF - 350.32 KB)

Summary of the provisional list of plants requiring urgent management intervention (DOCX - 81.06 KB)

Download Supporting Information

Interim report of the list of plants requiring urgent management intervention (PDF - 2 MB)

Interim report of the list of plants requiring urgent management intervention (DOCX - 2.7 MB)

Interim assessment of plants (XLSX - 4.71 MB)

Interim priority list of plants (XLSX - 88.31 KB)

The downloaded list includes the statement:

“ The list includes the highest priority plant species, but many more are at risk. More than 200 other plants are at high risk under any one of the criteria assessed and will require attention to assess the fire impacts.”

The members of the Goodeniaceae Family that are on this list are:

Dampiera fusca (Kydra *Dampiera*) ACT, NSW, Vic

Dampiera lanceolata var *insularis* (Kangaroo Island *Dampiera*) SA

Goodenia glomerata NSW

Goodenia heterophylla subsp. *montana* NSW

Goodenia macmillanii Vic

Goodenia rostrivalvis NSW

We were unable to get any cutting material for *Dampiera fusca* prior to the FJC Rogers Goodeniaceae Seminar of 2018 and it is a desirable *Dampiera* as articles in “Australian Plants” have indicated. However it is another plant that is very susceptible to too much regular burning.

I have been advocating for many years that Australian Plant Groups across Australia should be much more proactive in ensuring that many of these lovely plants and lots of others get into gardens. We cannot afford to wait until some nursery or other happens to introduce one or two of these plants. Many of our special plants have been brought into cultivation by individual enthusiasts, but there has not been any systematic process to enable this to happen.

Unfortunately some laws in some of our states do not encourage this to happen.

With climate change many of us are now able to grow plants that even 20 years ago we would not have thought possible. In our garden here at Wartook we are now growing many plants that we had only dreamed about.

We are now trying to systematically photograph all of our *Dampiera* plants, so that we do have a detailed record of what we are growing. This will include individual species and forms. We have many photos but we do not have sufficient to put together all details on individual plants and we are waiting for juvenile growth and flowering. Only then will we be able to identify the many different *Dampiera* that we are growing

It would be great if members who are keen, could do the same. It needs to be done for other members of the Goodeniaceae family as well.

It then could be a great addition to the Photo guides.

Reprinted from: <http://www.environment.gov.au/biodiversity/bushfire-recovery/priority-plants>



Dampiera lanceolata (Rankin Springs – NSW). Royce Raleigh's daughter, Ruth, standing holding a stem which is almost 1.3m tall. This photo was taken in the Wartook Gardens which is owned by Royce and Jeanne Raleigh.



Dampiera coronata last flowering season – this was on a nature strip in Eaglehawk, Vic. outside the home of Ruth Raleigh.

A new *Lechenaultia* is recognised as part of a Golden Anniversary celebration of botanical discovery in Western Australia

Dr Kelly A. Shepherd, Western Australian Herbarium, DBCA

In January this year I described a new species of *Lechenaultia* with WA Herbarium ID botanist Mike Hislop, which was published in our inhouse journal Nuytsia. (<https://florabase.dpaw.wa.gov.au/science/nuytsia/938.pdf>). The epithet for this stunning species is derived from the Greek *orchestris*, which means “a dancer” because we thought the flowers were reminiscent of a flamenco dancer with her arms upraised. Hence the common name the Dancing Lechenaultia (note I chose not to use the alternate spelling with an ‘s’). This species was discovered in 2012 by an incredibly knowledgeable wildflower enthusiast

William Archer and it is only known from a very small area in the Mallee region of the south west. William writes a fantastic blog about local wildflowers in the Esperance area that you should check out as his photos are gorgeous (<http://esperancewildflowers.blogspot.com/search/label/Goodeniaceae%20-%20Lechenaultia>). While this species appears to be naturally rare it would make a fantastic garden plant and so the Master Gardeners at Kings Park and Botanic Garden are exploring its horticultural potential. I would dearly love to be able to grow this plant in my own garden one day.



Figure 1. The dancing Lechenaultia (*Lechenaultia orchestris*) newly recognised in January from the south-west of Western Australia <https://florabase.dpaw.wa.gov.au/science/nuytsia/938.pdf>

Celebrating 50 years of botanical discovery in Western Australia.

The paper describing this new *Lechenaultia* is in fact part of a special issue being run by Nuytsia throughout 2020. Named for the local hemiparasitic Christmas Tree Nuytsia floribunda (Labill.) R.Br. ex G.Don (Loranthaceae), Nuytsia has continued to be the main publication source for WA species for 50 years.

To celebrate this Golden Anniversary staff from the Herbarium are doing something rather special. Throughout the year we will name and describe 50 new species from 50 different genera on 50 different days of the year. All of these

papers, including a preface that summarises some of the taxonomic progress we’ve made over the last 5 decades, are freely available for download from our website on FloraBase <https://florabase.dpaw.wa.gov.au/nuytsia/current>.

Perhaps more importantly we are going to some effort to publish social media posts on Facebook (<https://www.facebook.com/WesternAustralianHerbarium/>) and Twitter (@Science_DBCA) to tell the stories behind the science. In each post we may talk about how the plant was discovered, who or what the species was named for, or celebrate the



Figure 2. Collecting voucher material of *Lechenaultia orchestris* in the field and Kings Park Master Gardener Robyn Benken (top far right), who is exploring the horticultural potential of this magnificent new species. Photos: Kelly Shepherd and Juliet Wege.

staff who help make it all happen, including the important curation team that work behind the scenes with the collection. We believe this is a world first and will hope that people will enjoy this small glimpse into the world behind the science.

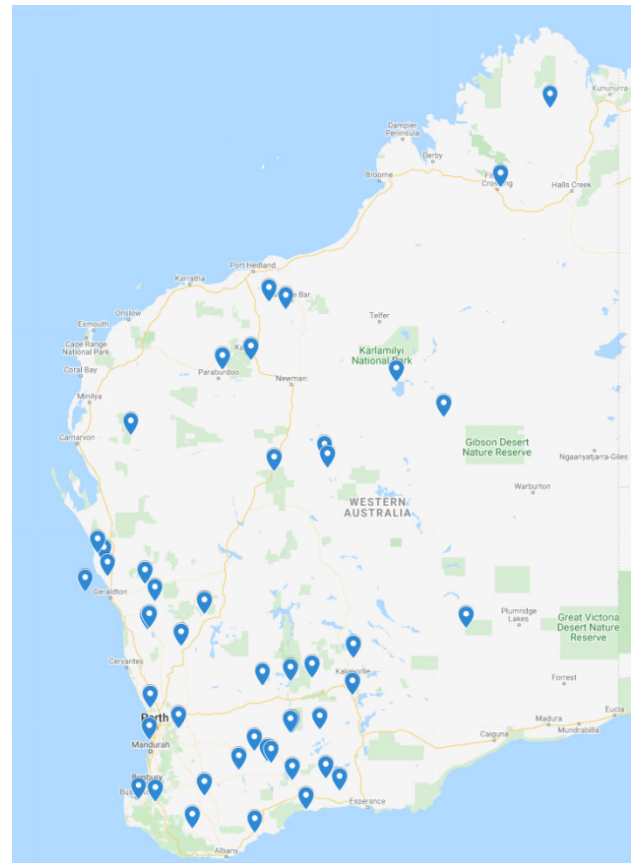
If you are interested in hearing more about this project you can listen to the WA Herbarium *Stylidium* expert Dr Juliet Wege (who came up with the idea of the special issue in

the first place!) talk about the special issue and the Dancing *Lechenaultia* https://www.abc.net.au/radio/greatsouthern/programs/breakfast/nuytsia-journal-50-years/11959136?fbclid=IwAR1E1kj_3MZTGsHSXcU8u50i398WyBJac5fULTclxpAbvcYKfjVYYryMGqE

Finally, to give you a hint of things to come, I will also be describing new species of *Goodenia* and *Dampiera* in this special issue. Stay tuned...



Nuytsia floribunda (Loranthaceae), the namesake of Western Australia's journal. Photo: K.A. Shepherd.



Type locality of all the species that will be named in the 2020 special issue of *Nuytsia*.

USA Dream Team working on evolutionary trees for *Goodenia* and *Dampiera*

Dr Rachel Jabaily (Colorado College, Colorado Springs USA)

The last few months marked an exciting time for Goodeniaceae research with the very productive launch of two projects that aim to improve the phylogeny and inform the taxonomy of *Dampiera* and provide insights to help resolve the *Goodenia pinnatifida* complex. Four undergraduate student researchers at Colorado College (Caroline, Isabel, Noah, Madeleine) worked full-time on this research under my supervision from mid-January through mid-March 2020. Prior to the start of the students work, necessary molecular biology kits and reagents were purchased with the generous \$5,000 in funding provided by the Wimmera and Grampians groups of the *Australian Plant Society Victoria* who hosted the 12th FJC Rogers Seminar on Goodeniaceae in 2018. A truly impressive set of leaf material sampled from vouchered herbarium specimens primarily housed at the Western Australian Herbarium (PERTH) and the National Herbarium of Victoria (MEL) was shipped in

December by Kelly so they were available for the student's start. Representatives from most species of *Dampiera*, including multiple accessions from widespread species and some undescribed or phrase-named taxa, are now included in our dataset, greatly expanding beyond the work we published on the family in 2012*. Due to the generous funding and access to so many talented students, we decided to expand our work on *Dampiera* to also produce an updated phylogeny of the charismatic genus *Lechenaultia*. Included in this intense round of lab work were fresh samples of the confusing *Goodenia pinnatifida* species complex that were collected by Kelly during the 2019 spring field season (see pages 5-6 of the November 2019 Newsletter) with additional Herbarium samples. These samples were processed and analysed to build on our prior work on this challenging group.



Kelly's PhD student Philipp Hühn photographing *Dampiera sp. Forrestiana* (F. Lullfitz L 4034) in Spring 2019, which was then sampled for our study. Photos: Wendy Thompson and Kelly Shepherd.

The students completed four weeks of labwork for this project, earning a college research credit towards their undergraduate degree. Isabel and Caroline are sophomores (2nd Year) who have just declared their Organismal Biology & Ecology (OBE) majors. Madeleine and Noah are senior OBE majors, getting ready to graduate next month and grateful to have finally gotten an opportunity to do hands-on research through this project. Their inclusion was particularly meaningful because it was their last in-person experiences of college before the campus was unexpectedly closed and all classes moved online because of the COVID virus. Madeleine is moving to Alaska to work as a botanist and Noah plans to be a physical therapist, continuing to explore plants as a hobby. Isabel and Caroline are both keen botanists in training and are planning to continue work on this project throughout the summer ahead. They might even turn this project into senior theses! Each student found their stride and they formed a great team, stepping up for extra work when they had time. They all seemed to become great friends, too, and I know the seniors were very helpful in guiding the sophomores through various challenges of college. Labwork has a lot of 'hurry up and wait' pacing, so when we were waiting for various reactions to complete, we did fun things to help the students get excited about the plants and about Australia. I brought out old pressed plants and seeds from my trip to Perth in 2011 and showed them various Goodeniaceae features under the dissecting scope. We spent a lot of time exploring Roger Carolin's seminal work in *Flora of Australia* and talked about the process of taxonomy. The students each did a report on a state of Australia and presented a current event article. The students all chose a novel by an Australian author to read as well. We also had a two minute 'race' to see who could list the most Australians (with minus points for accidental Kiwis or Canadians!). I won, but showed the generational gap to be sure!



The students dove right into the molecular work necessary to sequence DNA. I instructed them in basic laboratory techniques and gave them a brief overview of the project initially. We then extracted DNA from 141 samples. Once the students were trained and we figured out how to best set up the lab, it became very time efficient to have four students working on one project! The students were particularly thrilled to do the final test for the presence of DNA in their samples. They then did many rounds of polymerase chain reaction (PCR) to amplify our 'workhorse' genetic markers- the *trnL-trnF* spacer region of the chloroplast genome and the ITS region of the nuclear ribosomal complex. It is always helpful to do both chloroplast and nuclear sequencing as this provides two independently evolved data sets to compare results. The students worked in my lab and in several other rooms across three floors of our building, spreading out the machinery we needed to get the job done efficiently. The labwork of the students was the cleanest and most successful I have ever seen- pretty much every sample worked the majority of the time! I thought we would have to do a lot of troubleshooting and prioritizing when time fell short, but instead it was a triumph. We got as much done in one month as I did in a year as a postdoc. The quality of the samples Kelly provided is due much of the credit. We shipped away our successful gene amplifications to be sequenced by Macrogen in Korea (to which the bulk of the money ultimately went), and then enjoyed a celebratory lunch out.

We had an even more fun dinner the next week when Kelly Shepherd and her husband Spencer came to Colorado Springs. The students were so thrilled to meet them and tell about all they had done. We then moved into the data analysis portion of the project, which was a formal class with other students as well as the research students. Madeleine took over processing the sequence data when it came back from Korea, as she had previously taken my Biogeography & Phylogenetics class. The other students joined 8 others for the project-based four-week class. Kelly (and often Spencer) sat in on the class and greatly helped the students to understand the work she does as a practicing botanist and taxonomist and why phylogenetics matters. The three research students analyzed the *Dampiera* and *Lechenaultia* sequence data for their projects, and the other students in the course were encouraged to pick Australia-specific projects too, to capitalize on Kelly's visit. You'd think they'd pick marsupials or cockatoos with all options on the table, but one student chose Australian earthworms and several others chose crayfish! During the class, the students read all of the papers that Kelly and I have written over the years about the phylogenetics and taxonomy of the Goodeniaceae*, including a final draft of our recent taxonomic work revising *Goodenia*, which has been accepted for publication in the journal *Phytokeys* and should be available for download in the coming months. Kelly gave an excellent departmental seminar about taxonomy and conservation of Western Australian flora, inspiring so many students.

The Goodeniaceae project research students Noah, Caroline, Isabel and Madeleine prepare for their first DNA extractions.

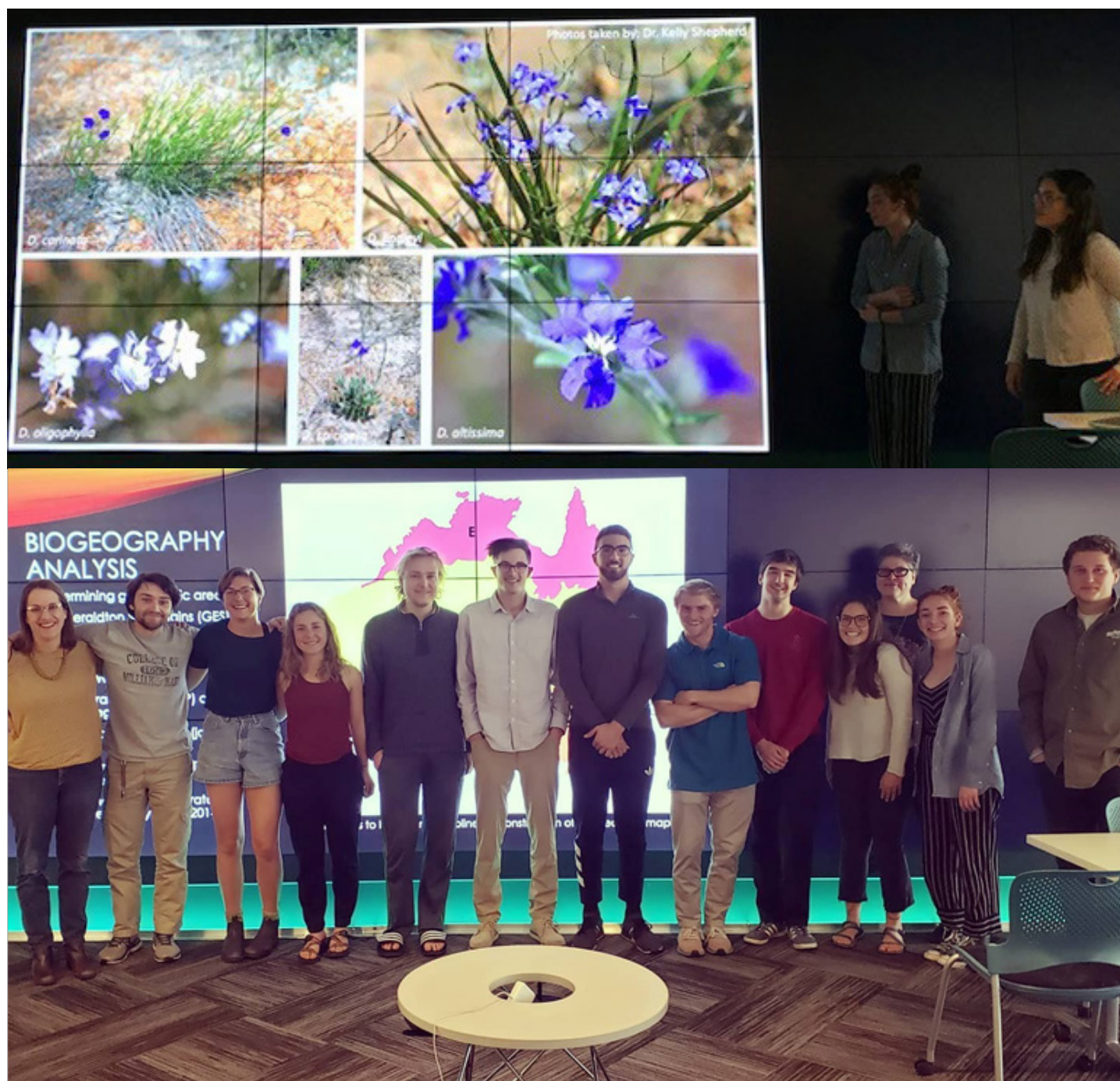


The Jabaily Lab group at a celebratory dinner to welcome Kelly and Spencer to Colorado; Kelly and the students in class processing their data to produce phylogenetic trees for their final seminar and report.

Kelly and I were thrilled to see the first phylogenies from the student's efforts in *Dampiera* (as well as a look into *Lechenaultia* and *Goodenia pinnatifida*). We won't spoil it yet, but there are some surprising clades that we didn't know about previously and potentially significant changes to the infrageneric taxonomy for both genera. As expected from our earlier research, the two workhorse genetic regions were only able to partially resolve relationships, leaving several major polytomies in which we have very low statistical confidence for relatedness. The students performed standard and fairly rigorous phylogenetic analyses, so I believe the trees that they included in their final excellent reports about the Goodeniaceae projects. The solution will be to sequence additional genetic marker(s) later this year for all the samples, as well as potentially include some additional samples so stay tuned! We are very grateful for the financial assistance

provided by the *Australian Plant Society Victoria* as it has significantly helped us undertake this work. This opportunity has also allowed the students to grow enormously in their technical knowledge and in their understanding of the value of taxonomy and phylogeny for preserving biodiversity. Their experiences in the lab, at the computer, and in their written and oral final presentations will serve them well in their futures. I am so excited to see what comes next with our project and work towards publication. The student's work provides a solid foundation for all that is to come.

*A full copy of this paper and others published by our group can be freely downloaded from Kelly's ResearchGate profile <https://www.researchgate.net/project/Goodeniaceae>



The final day of class and the student's final presentations for Biogeography & Phylogenetics, with Caroline and Isabel presenting a great talk on *Dampiera*. We weren't supposed to be this close to each other, but risked it one last time. Campus closed 24 hours later.

News from Members

Bruce Schroder

10 December 2019

Goodenia leptoclada at its peak now.

I got the plant several years ago from Richard Slade (Stylidium enthusiast from Sunbury here in Victoria). He used to get Stylidium plants sent regularly from a guy from the west whose name escapes me but I understand he is one of the foremost experts on Stylidiaceae. This guy would occasionally include other seedlings in his parcels and this was one, identified as *Goodenia leptoclada*.



Goodenia leptoclada in an old cast iron pot, outer eastern Melbourne.



Goodenia leptoclada - flowers. Photos: Bruce Schroder.

Note: I did a search on google and came up with the following meanings of *leptoclada*. They are thin stemmed, or slender branches. *Leptos* or *lepto* (an adjective) means thin, slender, delicate, narrow. and *clad* or *clados* (noun) means branch; shoot.

You may recall in the last newsletter just before Christmas I did an article on *Goodeniaceae of the Kimberley*. I included *Scaevola browniana* subsp *grandior* from the Mirima National Park on the outskirts of Kununurra. Kevin and Joyce Sparrow also visited the same area and here below are his photos. Kevin's photos were taken on the 18 July 2019 whilst mine were taken on the 26 May, nearly two months earlier. Kevin's photos are further out in flower. Thanks Kevin for sharing them with us.

Kevin Sparrow

12 December 2019

When you (Maree Goods) were in Kununurra, we were in Broome. We flew in in mid July and did a tour thorough the Kimberley on to Darwin where we flew home from at the end of July. Great trip. I photographed that *Scaevola browniana* subsp *grandior* in Mirima National Park.



Scaevola browniana subsp *grandior*, Mirima National Park, WA.
Photos: Kevin Sparrow.

Kevin Sparrow

12 December 2019

Also I have another very small *Scaevola*, can't remember where I got it from. Seem to remember *Scaevola linearis* (??) but not sure of this. Any ideas??

Note: I believe it is *Scaevola linearis* but do stand to be corrected. If you think differently please let me know.



Scaevola linearis. Photos: Kevin Sparrow.

Maree Goods

10 December 2019

The photo below of *Goodenia ovata*, I put in the November Newsletter 2019.



24 March 2020

Since then it has been attacked by grasshoppers. For some reason some plants are more palatable to them than others and the Arapiles form of *Goodenia ovata* happens to be one of them. I also have the Grampians form of *Goodenia ovata* and the grasshoppers haven't touched those plants.



The chewed plant above and the guilty culprit below.



Catriona Bate

19 April 2020

Dear editor, I wish to complain about Goodeniaceae. They are too vigorous. This one appeared out of nowhere and is monsterring this defenceless young *Eremophila rotundifolia*. What should we do?

PS. We can vaguely remember having a *Scaevola aemula* in this part of the garden but it was a long time ago....

Editor's response: Move the eremophila!



Goodeniaceae species for Alkaline Soils

Have any of our members had experience with growing species of Goodeniaceae growing successfully in alkaline soils.

Just recently the Editor received an email and some photos from Sandra McKenzie asking about suitable species of Goodeniaceae for alkaline soils.

See Sandra's comments below:

Here are a couple of photos of *Goodenia viscida* which I purchased when I was in Horsham for the Fred Rogers Seminar.

As you can see, the plant is growing in a pot on my side verandah and doing nicely. The pH of our soil is at best 8 - 8.5 and so I struggle to grow some of our great Goodeniaceae plants in the ground. I live at Moonta Bay in South Australia.

I also purchased *Dampiera salaha*, *D fasciculata*, *D sericantha* and *Goodenia willisiana* all of which are growing happily in pots.

I would like to experiment with growing some of the cuttings (both leaf and ordinary cuttings which I have managed to strike), in a raised, alkaline, garden bed. I also have *Scaevola aemula* (pink, mauve, white and variations) growing in the ground so your advice would be appreciated.

Note: the Editor did a search on Atlas of Living Australia and typed in Moonta SA with a five kilometre radius. This is the species of Goodeniaceae that came up as growing naturally in that area.

Goodenia pinnatifida

Goodenia willisiana

Goodenia pusilliflora

Scaevola crassifolia

Scaevola linearis

Scaevola spinescens

Vellia arguta

For the next newsletter it would be good to do a feature on species of Goodeniaceae that grow on alkaline soils. If you live on alkaline soil please forward the species of Goodeniaceae that you are growing and maybe even some photos of your plants.



Goodenia viscida - flowers. Photo: Sandra McKenzie.



Goodenia viscida - growing in a pot. Photo: Sandra McKenzie.

A few of the Plants in flower at Wartook over the last month – we think in response to summer watering

Text and Photos - Royce Raleigh

Here at Wartook we have always watered the garden during the drier months. It has shown dividends in that many plants continue to grow and in the following spring we get a much greater flowering impact.

A number of species respond particularly well to watering or a good rain event and are stimulated to flower.

Dampiera luteiflora particularly surprised as it has just finished flowering and is putting on good growth. Jeanne has taken some cuttings.



Dampiera luteiflora.

Here are some Goodenias that have surprised us as they were very small plants during the Conference Garden Visit in 2018. These plants are currently in flower.



Goodenia macmillanii.



A northern NSW species that we still have not been able to identify.



This one and the following Goodenia we are not sure of species as we have mislaid labels.



Useful Tool for Western Australian Goodeniaceae

This may be useful for anyone who lives or is visiting Western Australia. To bring up photos of a genus or family on Florabase you need to do the following:
Type in the genus or family first then followed by **site:<https://florabase.dpaw.wa.gov.au>**

eg. **Scaevola site:<https://florabase.dpaw.wa.gov.au>**
Only species of *Scaevola* that Florabase have photos of will come up, therefore not every species will be shown.

Below are some samples.

Scaevola site:<https://florabase.dpaw.wa.gov.au>



Scaevola calliptera Benth.: FloraBase ...
florabase.dpaw.wa.gov.au



Scaevola phlebopetala F.Muell ...
florabase.dpaw.wa.gov.au



Scaevola spinescens R.Br.: FloraBase ...
florabase.dpaw.wa.gov.au



Scaevola auriculata Benth.: FloraBase ...
florabase.dpaw.wa.gov.au



Scaevola porocarya F.Muell.: FloraBase ...
florabase.dpaw.wa.gov.au



Scaevola pilosa Benth.: FloraBase ...
florabase.dpaw.wa.gov.au



Scaevola thesioides Benth.: FloraBase ...
florabase.dpaw.wa.gov.au



Scaevola crassifolia Labill.: FloraBase ...
florabase.dpaw.wa.gov.au

Goodenia site:<https://florabase.dpaw.wa.gov.au>



Goodenia pinnatifida Schldtl ...
florabase.dpaw.wa.gov.au



Goodenia scapigera R.Br.: FloraBase ...
florabase.dpaw.wa.gov.au



Goodenia viscida R.Br.: FloraBase ...
florabase.dpaw.wa.gov.au



Goodenia coerulea R.Br.: FloraBase ...
florabase.dpaw.wa.gov.au



Goodenia odonnellii F.Muell.: FloraBase ...
florabase.dpaw.wa.gov.au



Goodenia stobbsiana F.Muell.: FloraBase ...
florabase.dpaw.wa.gov.au



Goodenia pusilla (de Vriese) de Vriese ...
florabase.dpaw.wa.gov.au



Goodenia scaevolina F.Muell.: FloraBase ...
florabase.dpaw.wa.gov.au