



# *The Granite Belt Naturalist*



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## **AIMS OF THE CLUB**

1. To study all branches of Natural History
2. Preservation of the Flora and Fauna of Queensland
3. Encouragement of a spirit of protection towards native birds, animals and plants
4. To assist where possible in scientific research
5. To publish a monthly newsletter and post it to members



**Meetings** 4th Wednesday of each month at QCWA Rooms, Victoria Street, Stanthorpe, at 7.30pm  
**Outings:** The Sunday preceding the 4th Wednesday of each month (Saturday outings as pre-arranged)  
**Subs:** Single \$20.00, Family \$30.00 per annum, July to June

## **CLUB OFFICE BEARERS – 2019/2020**

President	Jeff Campbell	46811420
Vice-presidents	Kris Carnell	46835268
	Peter Haselgrove	46837255
Secretary	Rob McCosker	46835371
Treasurer	Gunter Maywald	46810674
Newsletter Editor	Margaret Carnell	46835268
Publicity Officer	Jeff Campbell	46812008
Librarian	Laura Maywald	46810674

The Club thanks the Queensland Country Credit Union for their donation that enabled us to buy a printer.

Stanthorpe Field Naturalists is a group member of Granite Borders Landcare.

*Management Committee: President, Vice-Presidents,  
Secretary, Treasurer*



**SCALE OF DIFFICULTY FOR WALKS  
ON NATS OUTINGS**

1. Flat walking, road or track
2. Road or track, gentle hills
3. Track, some hilly sections
4. Track, some steep sections
5. Cross country, easy open forest, gentle slopes
6. Track, steep sections common, with steps
7. Cross country, some hills, some thick undergrowth
8. Cross country, steep sections with scrambles over rocks, etc., and some thick undergrowth
9. Cross country, steep, hilly, rough, thick undergrowth
10. Mountain climbing, hard going, higher level of fitness or plenty of time required

**Coming Up**

Sunday 22<sup>nd</sup> September: Basket  
Swamp with Jeff Campbell  
Wednesday 25<sup>th</sup> September: *Adelaide  
to Corner Country* with Jeff Campbell

**Deadline for next newsletter  
10<sup>th</sup> October 2019**

**Pre-Outing Report – Basket Swamp – 22<sup>nd</sup> September 2019**

**Leader:** Jeff Campbell

This month's field trip is to Basket Swamp on Sunday 22 September. Meet at Weeroona Park for 9.00a.m. departure or at Wilson's Downfall. The entire area has been burnt but is recovering to some extent, mainly ferns. Smoko will be at the falls. The falls track necessitates 4WD only. We will return to Landrook Rd via the picnic spot and follow eastwards to Boorook Rd and down to Bruxner Highway, returning to Stanthorpe via Tenterfield. Lunch site will be ad hoc.

Jeff Campbell will take us on a trip from Adelaide to Corner Country and back at the general meeting in the CWA rooms commencing 7.30 p.m. on Wednesday 25 September. All welcome.

**Outing Report – Wyberba – 23<sup>rd</sup> August 2019**



We had a perfect day for our outing on a property on Old Wallangarra Road at Wyberba. After some confusion at the second meeting place (which was entirely my fault and for which I apologise) we met our host and guide and set off. We took advantage of the drought conditions to walk up the creek bed. The bush is thick so it was good to have an easier though rocky path. We observed that the big angophora trees were really suffering and dropping all their leaves. Many of the acacias and other plants were in the same sorry state.

Morning tea was at a small water hole where the creek widened. It was good to see some water still available for the wildlife. We saw lots of scat on the animal tracks but no animal sighting. We were a big group so I guess they heard us coming. We deviated from the creek bed to visit a railway bridge that spanned a gully. You can look down on this bridge from the highway.

Ian and Peter were able to provide us with lots of information about the rocks and the flora. We returned to the creek and walked to a spot where there was a dry waterfall and a water hole. There

was some bird life here with swallows and a bird of prey. We noted that the water level in this water hole. Another observation was that we could see no evidence of water creatures in the pool.

After lunch here we headed up the hill to a big rock from where we had good views to the west. We passed an area where black cockatoos had been demolishing acacias to get the grubs. Jeff with his keen orchid eye found a tiny orchid in flower amongst the rough dry woodland. Other flowering plants we saw are included in his attached list. (Thanks to all who helped with this list and to Jeff for providing it)



We then walked back to cars through the bush.

*Jeanie Wylie*



Cyanicula caerulea

**Plant List:** *Acacia adunca*, *Acacia fimbriata*, *Acacia betchei*,  
*Leucopogon melaleucoides*,  
*Cyanicula caerulea*

## How I discovered the Dalveen Blue Box, a rare eucalypt species with a sweet, fruity smell May 24, 2019 1.41pm AEST

In 2002, I went on a bushwalk with plant taxonomist David Albrecht, and had a big surprise. He pointed to a plant I thought I knew, and said: “that’s probably a new species.”

A new species? How could it be that this plant had not already been scientifically described and named?

I was in for another surprise when I learnt there are estimated to be thousands of undescribed plant species in Australia. But just because one botanist says a plant is a new species, it doesn’t mean that everyone else automatically agrees.

As a researcher, I had the opportunity to study one of Australia’s most iconic plant groups – the eucalypts.

Herbarium records of an endangered eucalyptus species, the Northern Blue Box (*Eucalyptus magnificata*), showed populations from the Northern Tablelands in New South Wales scattered up to the Granite Belt in southern Queensland



## Dalveen Blue Box

Botanical name: *Eucalyptus dalveenica*

Family: *Myrtaceae*

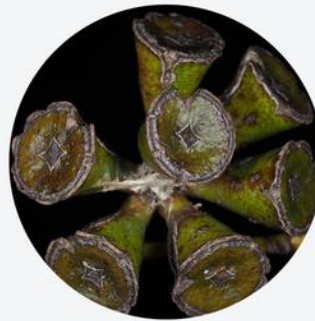
Height: up to 15m

Dalveen Blue Box, is a newly described rare tree species from the Granite Belt in southern Queensland.

It has rough bark and broad leaves that have a sweet, fruity smell.



Since it was recognised as a distinct species the local community has planted seedlings at the local school and on private properties to protect this rare plant.



 The Conversation

 Beating  
around  
the bush

But on closer inspection, I discovered there were different ecosystems between populations. *E. magnificata*, for instance, is found on rims of gorges in Oxley Wild Rivers National Park, whereas *E. baueriana* is typically found on riverbanks and flood plains.

The question I wanted answered was: are all these populations really *E. magnificata* or have some been misidentified and represent other common species? Or, alternatively, are they new, undescribed rarer species?

So when my supervisors, Professor Jeremy Bruhl and Dr Rose Andrew, and I visited the mystery trees near Dalveen in southern Queensland, we knew immediately they were something exciting. They just looked different to everything else we'd seen.

## **Eucalyptus that smells sweet and fruity**

To find out, I'd been sampling eucalyptus (collecting, pressing and drying specimens) and had spent the past two days with my supervisors. With our heads craned back, we stared through binoculars to search the tree canopy at dozens of sites on the Northern Tablelands looking for the buds and fruits that enable eucalypt identification.



Not only did these trees at Dalveen look unlike anything else we'd seen on the trip, they also had a different smell. When we crushed a leaf, the aroma was sweet, mild and fruity, quite unlike the familiar eucalyptus oil.

Back at the university, I could compare the different collections. I examined and recorded differences in the size and shapes of the leaves, buds and fruits. I grew seedlings of my field collections and saw that seedling leaves were also consistently different.

And I extracted the mixture of aromatic chemicals in the leaf oils collected during fieldwork. Then, I used a chemistry laboratory technique, called Gas Chromatography Mass Spectrometry, to compare their concentrations with closely related species, such as *E. baueriana* and *E. polyanthemos*.

The results clearly explained why the leaves had a unique scent. That sweet and fruity aroma was due to larger molecules, called sesquiterpenes, which dominated the leaf-oil. There were only traces of the familiar-smelling cineole molecule common to most eucalypts.



## A new species, or just an uninhibited sex romp?

Sequencing the DNA of the tree added another piece to the puzzle.

We had collected samples from all of the closely related common species. We had strong evidence from the shape of the leaves, fruits and flower buds suggesting the Dalveen trees were different. But the possibility remained that they were just hybrids.

Eucalyptus trees can be wickedly promiscuous and hybrid trees with similar characteristics are common. In some parts of eastern Australia, for instance, eucalypts naturally form hybrid swarms, the botanical equivalent of a wildly uninhibited sex romp!

But the DNA told us the trees from Dalveen were genetically distinct, and with no suggestion of shared ancestry.

Now, with three very different data sets all supporting the same conclusion, it became imperative we publish our findings and describe the new species, which we named *Eucalyptus dalveenica*, or the Dalveen Blue Box.

New species have to be named using a universal and internationally accepted naming system. Names and descriptions must be published, and a pressed and dried specimen must be nominated to be the representative that other collections can be compared to.



Most importantly, convincing evidence must be presented that persuades the botanical community the newly named species should be accepted.

But naming a new species is only the first step in knowing what it is. Importantly, naming tells us what it isn't. The trees at Dalveen are not *Eucalyptus magnificata*, nor do they belong to another more common species, *E. baueriana* or *E. conica*.

*Eucalyptus dalveenica* is a rare and endangered part of Australia's natural heritage. Taxonomic description of new species (classifying, describing and naming) provides the framework for ongoing accurate identification, species conservation and further study.

We are fortunate to live in a beautiful part of the world, with diverse and unique wildlife. Describing biodiversity and communicating new discoveries develops connections between people and their local environment, leading to a broader understanding of our home.

The article above by Tim Collins, a PhD candidate, University of New England was published in *The Conversation* in May 2019.

<https://theconversation.com/how-i-discovered-the-dalveen-blue-box-a-rare-eucalypt-species-with-a-sweet-fruity-smell-115561>

**Minutes of the Meeting of the Stanthorpe Field Naturalist Club Inc.  
Held in QCWA Rooms, Victoria St, Stanthorpe on Wednesday 28<sup>th</sup> August 2019**

**Meeting opened:** 7.40pm

**Attendance:** 15 Apologies 2, as per attendance sheet

**Minutes of the previous meeting:**

confirmed by Rob McCosker seconded by Lyn Collins Carried

**Business arising from the minutes:** Nil

**Correspondence:** as per folder

moved by Rob McCosker seconded by Trish McCosker Carried

**Financial Report:** Income \$460.00 Expenses \$106.60 Bank Balance \$1843.44

moved by Gunter Maywald Seconded by Laura Maywald Carried

**Outing Reports:** Jeanie Wylie's report was read by Kris. 17 members enjoyed the day on private property at Wyberba, where due to the drought, they were able to walk along Accommodation Creek. They stopped at a waterhole with a "Beach Shack" for morning tea then after detouring to look at a curved bridge on the railway line continued to another large waterhole for lunch before returning to the cars via a lookout to the west.

**Pre-outings:** Campout Black Rocks Bunjalung NP 1<sup>st</sup> - 7<sup>th</sup> September. Leader Jeff Campbell outlined the walks he had planned and commented that there should be excellent wildflower displays.

22<sup>nd</sup> September Basket Swamp. Leader Jeff Campbell. Depart Weeroona Park at 9.00am as usual with 4WD vehicles due to the road conditions.

**General Business:** Need to nominate Liz Bourne as a signatory for the ANN Bank Account.

Motion: Gunter Maywald asked for a motion to have extra signatories to the ANN bank account and after some discussion Rob McCosker moved a motion that Liz Bourne and Jeff Campbell should be included as signatories with access to the ANN Netbank Account. Seconded by Kris Carnell. Carried

**Specimens:** nil

**Next Meeting:** 25<sup>th</sup> September “Corner Country” Jeff Campbell

**Meeting closed:** 8.10pm

**Presentation:** Jeff Campbell showed photos he and Glenys had taken at the last Australian Naturalists’ Network gathering in Victoria covering many of the wildflowers seen, including several orchids that Jeff had not seen before, as well as scenes of the Grampians and the Great Ocean Road.

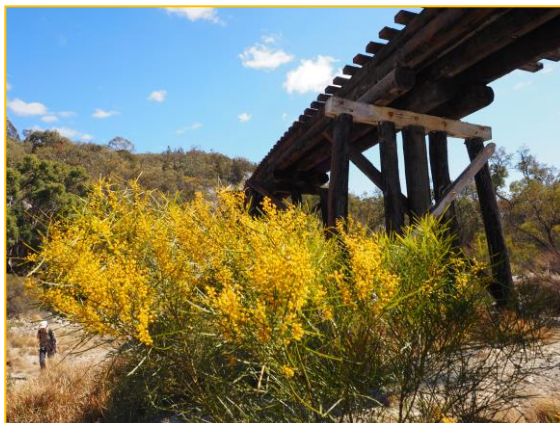
### Geology Notes

*The following excerpt from “Rocks and Landscapes of the Granite Belt” by Warwick Willmott explains the volcanic rocks we saw on the outing along Accommodation Creek at Wyberba.*

From the mid Permian to mid Triassic (265-235 million years ago) the eastern side of the continent was subjected to renewed compression– *the Hunter-Bowen Orogeny*. It is unclear why this occurred, but it might have been related to a renewed subduction zone in areas far to the east. In any case it was accompanied by widespread heating deep within the crust which generated vast bodies of molten magma which then rose upwards through the crust.

Some reached the surface to be erupted from violent volcanoes as rhyolite lavas or ‘welded tuffs’ consolidated from hot debris. These now outcrop as black, fine-grained hard rocks such as the *Wallangarra Volcanics* and *Dundee Rhyodacite* between Wyberba and Wallangarra.

However most of the magma bodies cooled slowly while still deep beneath the surface where they eventually solidified. In this district several small bodies were intruded north of Braeside in the late Permian, and then the huge *Stanthorpe Granite* was intruded 247 million years ago in the early Triassic. Small bodies of the Ruby Creek Granite were intruded slightly later north of Stanthorpe and at Sundown. Erosion gradually removed the meta-sediments above the granites to expose them at the surface. Thicknesses in the order of kilometres were stripped off but some granite bodies are still buried.



Acacia adunca at Wyberba