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## DRYANDRA STUDY GROUP NEWSLETTER No. 70

AUSTRALIAN NATIVE PLANTS SOCIETY (AUSTRALIA)



*Dryandra conferta* "Corrigin Blue", Boolanelling

Lyn Alcock

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Hello and welcome to our first Newsletter for 2016.

I guess this one could be called “The *Dryandra conferta* Newsletter”, with several major articles dealing with the Corrigin Blue Project and the wonderful trips involving the search for this somewhat elusive plant, not forgetting the Get-Together. If ever you are in Western Australia and wondering about where to go to see the wonderful flora, the detail in these articles will give you more than enough information for several weeks of travel. I am especially grateful to Margaret, Lyn Alcock and Hartley Tobin who wrote the articles for this bumper issue. I was going to include something about the Special Collection at the Cranbourne Botanic Gardens here in Victoria but that can wait till July.

You might note that seem to be a lot of pictures in this issue, mainly because I received so many good ones from Margaret, Lyn and Hartley that I felt I had to include as many as I could. I might fine myself in trouble, however, because of the huge file size due to so many pictures which might cause trouble for the mailboxes of those who receive the Newsletter by email, but I will try my best to get it down to a reasonable size.

Finally, Margaret asked me to include the following, so if you recognize it as your payment, please let Margaret know.

#### **Subscriptions paid into Study Group Cheque Account**

Some Dryandra Study Group members have requested that their subs. be paid directly into the Study Group Account. I have agreed to this and I have provided the account number to several members, asking them to register their names when they do this. Thank you to those who have done so. I receive four statements each year from the Commonwealth Bank and I rely on them to find out who has paid their subs into the account.

The statement for May-August 2015 has this item:

21 Jul	Direct Credit 301500 AUSTRALIAN PLANT	
	Dryandra SG 3 yr	60.00

Please advise me if this is your deposit. The bank can't (or won't) trace it for me.

Margaret Pieroni

All the best for hopefully some more rain this summer (but not as much as that which hammered Geelong on January 27, the flooding in the centre of the city had to be seen to be believed). And of I course I always welcome additional articles from members, Lyn and Hartley have made a good start for 2016.

Happy Dryandra growing

Tony

## Dryandra Study Group Conferta Project

The type specimen of *Dryandra conferta* var. *conferta* (*Banksia densa*), was collected by Drummond in the 1840s. It is a form that was only known to Dryandra Study Group members from a population growing on a weed-ridden roadside, about 7 km from the Brookton – Corrigin Rd, on the Brookton – Quairading Rd. We were alarmed to discover, recently, that the population had drastically declined from the estimated 60 plus plants, in the 1990s. We have 'nicknamed' this plant Corrigin Blue.

*D.conferta* is widespread and quite variable. Alex George separated the smaller growing form which has larger fruits, which occurs in the southern populations. This is *D. conferta* var. *parva*. Corrigin Blue stands out, however as being very different; having blue grey leaves with linear teeth and a spreading habit. The common form has green leaves with broad teeth and it is columnar.

Collections from 4 areas were originally separated by Alex George thus: ASG 2 Nyabing – Harrismith, ASG 21 Miling – Cadoux, ASG 31 Corrigin district and ASG 33 Great Southern. After discovering that the type specimen, collected by Drummond is almost certainly no. 31, all 4 are currently *D. conferta* var. *conferta*. (*Banksia densa* var. *densa*).

In order to ascertain whether Corrigin Blue is distinct from the common forms, it will be necessary to have DNA analysis of the leaves carried out.

Brian Moyle had several meetings with research scientist, Dave Coates at the Perth Herbarium about the possibility of the Study Group collecting leaf samples for analysis. The laboratory work could be done at one of two levels; chloroplast DNA, costing in the order of \$2,500 or chloroplast DNA and nuclear micro satellites, costing up to \$10,000.

We decided to go ahead with the less costly option in the hope of establishing whether Corrigin Blue is sufficiently different to warrant being a separate taxon and so is eligible for rare species protection.

I applied for and we have since received grants of \$1,000 each from the Wildflower Society Bushland Conservation Fund and the William Bay National Parks Association. Members of the Dryandra Study

Group have generously donated some of the remaining funds.

Brian and I had a further meeting with Dave Coates and the Herbarium curator, Kevin Thiele, who are very supportive of our project and gave us guidance and the necessary materials for the leaf sample collecting. We hoped to collect 20 samples from different plants in 20 different populations. This would include Corrigin Blue, the common form of *D. conferta* var. *conferta* and *D. conferta* var. *parva*.

Brian and I made a trip on 30<sup>th</sup> June to collect samples in the northern populations prior to the organised 4 day trip, a month later. Our first location was east of Miling, about 27 km from Dalwallinu, on Great Northern Hwy. I had seen tall plants of *D. conferta* while passing, many years ago but had failed to notice them on more recent trips so I was hoping that they were still there. When we arrived at the location, we found just 4 plants. The reason I had not noticed them in recent years is because they are no longer tall. They must be very old plants – one had a trunk about 15 cm in diameter at the base which was almost eaten out by termites. In the past, they had grown tall and top heavy and had toppled over so that the trunks are lying on the ground and the vertical branches



resemble separate plants with the result that the plants are wider than they are tall. One of the plants

was flowering sparsely. I noted that the flowers are larger than those in other populations.

We collected voucher specimens of all the collections, except for those that we knew had been collected previously and pressed them, including a seed follicle or two with each specimen. If they are from populations where they have not been collected previously, the Herbarium will consider keeping them but most, if not all have already been collected.



**Typical roadside *conferta* population MP**

The populations are long distances apart: Dalwallinu – Cadoux, 240 km, Cadoux – Trayning, 260 km (as the crow flies; much further by road.) Although we took several back roads, we didn't come across any other populations of *D. conferta*. At the location east of Cadoux, on the corner of Johnson Rd, which I think was the 'type' of Alex's no. 21, where Keith and I re-visited, last year, we found the one remaining plant of *D. conferta* but didn't go into the private property, opposite. There was no sign of flowers on the *D. shanklandiorum* plants there, nor at the next site, further south, on McKay Rd, where we made our next collection of *D. conferta*. We found just one flower head on one



**Var *conferta* plants, McKay Rd MP**

plant but there was a good sized population of plants. *Eucalyptus pyriformis* with its large flowers in all shades from pale yellow to deep pink, was in full flower, here.



**Var *conferta* flower head, McKay Rd MP**

The last population we visited was on Mulcahy Rd, south west of Trayning. Here we found some plants in bud, some finished and quite a few flowering well. The plants were in much better condition than those seen previously. They were growing in deep, yellow sand.



**Var *conferta* flower head, Mulcahy Rd MP**

We got back to Perth after dark, Brian having driven for 12 hours.

Kevin Theile provided Brian and me with maps of the locations of collections of *D. conferta* var. *conferta* from around Corrigin. He also took out the actual herbarium specimens for me to look at but, not realising that I live a long way from Perth, he allowed Brian to photograph them and email them to me. I confirmed that they were all Corrigin Blue – some had Alex's previous number for this form (31) attached and 4 of them were from the same (type) location:  $\pm 7$  km north of the Brookton – Corrigin Rd on Corrigin – Quairading Rd. and there were two on private properties. The maps we were given showed a collection by Eleanor Bennett in 1998 in Boolanelling Nature Reserve but this was omitted from the group of specimens shown to us.

Brian drove out to the area on 23<sup>rd</sup> July to attempt to find some of the locations. He discovered that the Alex George location on Middleton Rd. had been burnt recently and, after looking at the plants at the type location, he drove north to look for but fail to find a C. Gardner collection from 1961, 'about 45 km north of Corrigin', passing the western boundary of Boolanelling Reserve, noting what he took to be green *D. conferta* plants on private property, south of the reserve.

On 30<sup>th</sup> July, 8 Study Group members, Keith Alcock, Lyn Alcock (no relation), Graeme O'Neill (Vic.), Kevin and Kathy Collins, Catriona Bate and Phil Trickett (NSW, Isopogon and Petrophile Study Group leaders), and Margaret Pieroni met with Brian Moyle at Gnowangerup, where we began our 4 day collecting trip. We found the *D. tenuifolia* subsp. *reptans* that I had looked at on two previous visits, in flower.



**Var *parva* plants, Wallacup Rd Lyn A.**

I had prepared maps marked with the route and the *D. conferta* locations for the three vehicles and each one had a CB radio which was very helpful. The first two locations (for var. *parva*), produced no plants. The roadsides had been cleared. I had intended to collect var. *parva* from North Woodgenillup Rd, south of the Stirling Range but on a recent visit, I discovered that the small population has disappeared from there, as well. On



**Var *parva* flowerhead, Wallacup Rd, Lyn A.**

Wallacup Rd., south of Nyabing, we stopped at the location of *D. ferruginea* subsp. *magna*, which was flowering and continued east towards our next location, when some plants were spotted before we got there. They were quite short and hard to see, because, like the plants we'd seen before, they had fallen over and put out vertical branches. We made the first collection of the trip. 20 leaf samples were collected from what I believe to be var. *parva*.



## Brian & Lyn sorting the specimens MP

Two leaves from each plant were cut to fit into the small brown envelopes which were numbered and with the GPS position noted, a voucher, flowering specimen was collected and pressed with a couple of seed follicles and a sheet with the necessary information for the Herbarium was filled out by Brian.

The next population was further east, at a road junction that has been graded and modified, recently but we found enough plants to make another collection. The next site is the type location of *D. conferta* var. *parva*; on the Rabbit Proof Fence Rd., where *D. drummondii* subsp. *macrorufa* occurs.

We went to Lake King via South Bungup Rd where *D. idiogenes* occurs. I was hoping to photograph the flowers of *D. pteridifolia* subsp. *inretita* but it was not in flower. *D. idiogenes* was flowering to the delight of those who hadn't seen it in the wild. Other dryandras there are: *D. erythrocephala* var. *erythrocephala*, *D. pallida* and *D. ferruginea* subsp. *chelomacarpa* and *D. xylothemelia*.

We spent the night at Lake King, where it rained heavily, all night and it was still raining when we set out to find the next population, about 75km east of Hyden, where I had photographed it years ago. (The photo is on Florabase). I had planned to go from Varley, east to Forrestiana Rd, where we hoped to see *D. viscida* in flower but this would have been a bit too ambitious even on a fine day. So we decided to go north to meet the Hyden – Norseman Rd, 30 km east of Hyden. I was hoping we would find some *D. conferta* before we got to the location. After several kms of sealed road, we found the gravel surface very wet and slippery and quite hazardous. At 73 km east of Hyden, the rest of the group spotted some plants. I had not seen them because I was looking for plants at least two metres tall and these were only about a metre tall. This time, the lack of height was due to a fairly recent fire and not to the plants having fallen over. There were hundreds of plants – by far the largest population I have ever seen – stretching as far as we could see on both sides of the road, growing in deep, yellow sand. We didn't have far to go between plants but it was difficult to put the leaves in the envelopes without them getting too wet, in the pouring rain. We couldn't find any plants in flower,

there. Later that day, we learned that the road we would have taken was closed because of the wet conditions. It would have been a horrendous drive.

At our next collection spot on Soldiers Rd, north of Hyden it was still raining heavily but the *D. conferta* var. *conferta* plants were much taller and the *D. shanklandiorum* bushes were flowering, albeit sparsely. We found one flower head on one of the *D. conferta* plants.

As it was still raining we decided not to visit two sites on Cramphorne Rd because of the road conditions. The next location, on the corner of Calzoni and The Humps Rds appears to have been re-vegetated but we couldn't see the *D. conferta* and the *D. shanklandiorum* plants that once were there. Further south on The Humps Rd, where there is a population of either a narrow leafed *D. ferruginea* subsp. *chelomacarpa* or, possibly, subsp. *flavescens* – I haven't established which one it is yet, there were just enough *D. conferta* to make another collection. Most of the plants were in flower.

The rain was easing off so we decided to show our visitors Buckley's Breakaway on Karlgarin South Rd, where a new viewing area has been installed to look over the little canyon with its white walls and interesting heath vegetation. We drove back to Lake King on Holt Rock – Kulin Rd to Lake King in the dark.

The next day, we set off westwards to Dumbleyung and our first collection on Datatine Rd, south west of there. This is where I first found the *D. conferta* plants with very small leaves and flowers that I dubbed 'mini conferta'. The old gravel pit has been further disturbed and those few plants have gone. We did eventually find just enough, scattered plants of the normal size to make a collection. The columnar form of *D. meganotia* subsp. *meganotia* grows here but there are very few of those left, as well.

At John's Well Reserve, we found *D. conferta* in flower. It grows around the old gravel pit in Wandoo and casuarina woodland but not in the area of the pit where there is a variety of other dryandras.

On Patterson Rd, we found just enough, scattered plants to make a collection. The *D. ferruginea* I'd seen many years ago was in full flower with large

flower heads. I think it might be subsp. *magna*. *D. preissii* grows there and back in the early nineties, I went to look at a plant that had been collected there that looked somewhat like *D. epimicta*. It turned out to be a hybrid of *D. ferruginea* and *D. preissii*. There were lots of wonderful plants on that road including other dryandras. *D. nivea* subsp. *nivea* was in flower.

At King Rock, where the *D. conferta* plants are much smaller and wider owing to them having fallen over, as we noted elsewhere, the habitat is quite different from other locations, being a Marri woodland. Almost all of the other populations of the common, green *D. conferta* had in common the presence of casuarinas. We found a few plants of *D. porrecta* flowering there.

At our overnight stop for the next two nights at Dryandra, Brian had to heat up the silica gel crystals to dry them out. They are used to dry out the leaf samples and when they themselves have absorbed too much water, they turn from bright blue to pink and must be heated and dried again. Lyn labelled the envelopes for the next day's collecting and the collected samples were returned to the plastic boxes with the blue gel.

The next day we set out towards Harrismith, stopping for our first collection at Yilliminning Rock. My next location was south of the Old Line Rd, on Wedin South Rd but Lyn knew of a good population near Toolibin and so we made a collection, there. We usually had four people collecting leaf samples. Two would collect 10 from one side of the road and two others would collect 10



**Keith & Brian collecting from var *parva*, Wallacup Rd Lyn A.**  
from the other side or, either in front or behind the

vehicles if the plants were only on one side. At Harrismith, the *D. conferta* plants were scattered and it took longer than usual to find enough plants among the rich heath that contains several dryandras including *D. ferruginea* subsp. *ferruginea* which was not yet in flower.

We drove north towards Corrigin and decided to spend some time looking for any plants of Corrigin Blue in the small remnants of bush that had escaped the fire on Middleton Rd where Alex had collected it in 1976, to no avail. We met Robin Campbell, who has recently joined the Study Group, at Corrigin and drove up the Corrigin – Quairading Rd to the type location. This time, by covering more



**Corrigin Blue on Quairading Rd MP**

distance along the road and with more people counting, we found 21 plants still remaining. Robin showed us one more plant further along at the corner of Gill Rd. They had almost finished flowering and many didn't appear to have flowered, this year.



**Corrigin Blue in flower at the same location MP**

We had a change of plan when Brian suggested it would be a good idea to collect from the green plants that he'd seen at Boolanelling Reserve, as that would be the closest population of the common form to the Corrigin Blue location. When we arrived at the reserve, about 18 km further north, we found more plants of Corrigin Blue. They were less blue, more greenish grey and we even found a green, more columnar one but the leaf shape appeared to be the same. It looks as though my worst fears have been realised and we might have intermediates. We collected leaf samples from two populations and collected a voucher specimen. The green plants that Brian had seen were most likely *D. horrida* of which there are hundreds in the reserve, by far the largest population I've seen of this one. By this time it was getting dark and we had to head back to Dryandra.

The result of the trip is that we now have more questions than answers. I would very much like to take part in a more thorough exploration of Boolanelling Reserve. The trip was successful and very enjoyable. We filled our quota of samples from 16 different populations. Brian delivered the samples to the Herbarium two days later. They will be dried further and sent to the laboratory for the DNA analysis. Now, we wait.

Many thanks to all the team, especially to Brian for all of his time and hard work and to Kevin Thiele and Dave Coates for their help and support.

Many thanks also, to the Wildflower Society Bushland Conservation Fund, William Bay National Parks Association and members who have donated funds to the Study Group *Conferta* Project.

Margaret Pieroni 2/10/15

## **DRYANDRA TRIP TO COLLECT D.CONFERTA VAR CONFERTA** **July 30<sup>th</sup> to Aug 3<sup>rd</sup> 2015**

On Thursday July 30<sup>th</sup> 2015 Brian Moyle picked me up from Narrogin and we headed to Gnowangerup where at 11am we met with Margaret Pieroni, Phil and Catriona Trickett (from NSW), Keith Alcock (from Perth), Graeme O'Neill (from Victoria), and Kevin and Kathy Collins from Mt Barker. We gathered at the old Cemetery site where Margaret

showed us the population of the very prostrate *D. tenuifolia* var *reptans*. Only a couple of the plants actually had flowers on them, but it was enough to keep the photographers happy.



**Flowering *D. tenuifolia* var *reptans* Lyn A.**

After a scout around the area to enjoy the other flowers in bloom, and an early lunch, we headed off on our trip to search for any possible populations of *D. conferta* to collect specimens. Margaret had organised for DNA testing to be done to ascertain if there are any major differences between the different populations, which certainly show quite considerable visual differences. The major target was *Dryandra conferta* var *conferta* Corrigin Blue from near Corrigin.

First stop was at the corner of Gnowangerup and Tie Line Roads, where there was no sign of any Dryandras. On to a curve point south of the Harvey Rd junction, where Margaret had a record of a previous siting, but the only Dryandras to be seen were a few *D. cirsioides* in flower.

We turned right onto Wallacup Rd and quickly to a known *D. ferruginea* subsp *magna* site where there were indeed many in full flower accompanied by their distinctive odour which was certainly attracting the flies. A few *D. conferta* var *conferta* were present although not in flower, and *D. rufistylis*, and *D. cirsioides* were also present and in flower. Masses of *Banksia sphaerocarpa* which had finished flowering were mixed in with the Dryandras and their greyish foliage was quite beautiful.

Just east of Addis Rd, on a road verge, a considerable population of *D. conferta* var *parva* was found with some flowers, and a collection made for the Herbarium. *D. nivea* subsp *nivea* and *D. octotriginta* were also present, although not in



flower. A big patch of Cowslip orchids was also flowering brightly across the road. (See illustrations in Margaret's article).

Turning onto Manuel Rd (which was a bit confusing as the roads had been realigned) we immediately came across our next population of *D.conferta* var *parva* and the next collection was made. A beautiful pink Grevillea also caught our eye.

Then it was east, to turn at Rabbit Proof Fence Rd where we stopped next at the *D.drummondii* subsp *macrorufa* site at Corneecup Reserve. I had visited this site in January and found them in full flower. A most impressive sight. Naturally there were only dead flower remnants left, but the *D.cirsioides* and *D.conferta* var *parva* were in flower and a collection was made of the *D.conferta* var *parva*. A Guichenotia, Verauxia and Phebalium added to the colour at this site.

After some considerable driving the next stop was on Burngup Rd Sth in the Newdegate area. This area is Dryandra rich and we found *D.idiogenes* with a nice lot of flowers just opening, much to our joy. Unfortunately the *D.pteridifolia* subsp *inretita*, *D.ferruginea* subsp *chelomacarpa*, *D.erythrocephala* var *erythrocephala*, *D.pallida* and *D.xylothemelia* were not in flower, but all plants were noted.



The fascinating *D.idiogenes* with "cobwebs" Lyn

We then made our way to Lake King where we enjoyed great meals at the local pub and a good night's accommodation. Unfortunately we woke next morning to a very wet countryside as it had rained most of the night and was still raining. We revised our plans for the day and accepted that further changes may be needed due to road closures and poor conditions. This meant we sadly had to

miss a visit to Digger Rocks to see *D.viscida* due to the road being closed.

So we headed north to Hyden and then 73km out the Hyden Norseman where we found a very large population of *D.conferta* var *conferta*. This "Wheat Belt" form were very low growing and sadly had no flowers, but looked very healthy. A collection was taken and everyone finished up very wet as the rain had not eased. A beautiful little Adenanthos was flowering in both red and yellow and brightened up the countryside. A white Hakea was also in full bloom and the masses of very tall Grevillea excelsior along the roadside were promising an amazing show in a few weeks. Lots of Banksia elderiana were also noted.



Var *conferta*, Wheatbelt form, in the rain Lyn

So we then turned around and headed back towards Hyden, with the drivers struggling with the increasingly wet and slippery road. I was just grateful I was not a driver and appreciated Brian's skilful negotiation of the really bad parts of the road. At Forbes Rd we headed north to explore a large area, deciding to continue on with the plans for that area as the roads appeared firm and safe despite the rain continuing. Once again Brian's driving managed to avoid a kangaroo who was determined to try and collide with the vehicle. There were also MANY massive sheets of water across the roads, but a flat countryside and solid roads provided safe navigation.

The first stop from here was Soldiers Rd where an exceedingly tall form of *D.conferta* var *conferta* towered over the bush. Only very few flowers were found and the next collection was taken. This was also a site for *D.shanklandiorum* and many were in full flower, with a nice range of yellows and oranges. I had not seen this one before and was amazed by the huge, stunning flowers. A tall

*Isopogon gardneri* nearby was also a mass of beautiful pink flowers. Everyone finished up even more soaked as we helped with the collection and tried to photograph the flowers. The unique *Banksia laevigata fuscolutea* and *Banksia sphaerocarpa var dolichostyla* were also noted, although not in flower.



***D. shanklandiorum* large flowerheads Lyn**

Westwards along Soldiers Rd with many tempting stops, but we turned south and next stop was on Humps Rd where another population of lower-growing *D. conferta var conferta* was found with plenty of flowers, and our next collection was taken. *D. erythrocephala var erythrocephala* and *D. ferruginea subsp chelomacarpa* were also in abundance although not in flower. Three different *Hakeas* were noted and a *Drummondita* in flower. The prize find was an emu egg by Kathy Collins. A local farmer stopped and advised that the area was a prolific orchid area later in the season which certainly piqued my interest.

Back south and into Hyden to refuel and purchase newspapers and a couple of drivers even washed their cars at the service station, leaving a very muddy driveway. I noted the beautiful reflections in the large pools of water in the park on the side of the road while we waited. Probably not a very common sight in this country.

From here we headed further south and stopped at Buckley's Breakaway where we had afternoon tea, with the rain having ceased for a while. This breakaway is a photographer's paradise with its stunning colours and landscaping. Some of the masses of *D. ferruginea subsp ferruginea* were in flower and *D. pallida* was also in abundance. Lots of *Isopogon gardneri* were present and even a few *Conostylis argentea*.

After a good look around there we headed back via Kulin Holt Rock Rd which certainly showed signs of the rain, but appeared to be less affected than the northern country we had driven through. A late arrival back at Lake King and we headed straight over for another good meal and then attempted to sort out wet clothes for the next day.

Saturday morning dawned windy, drizzly and very cold and after packing up and checking out we headed back up to Kulin Holt Rock Rd where we found some interesting wildflowers forcing several stops. *Hakea multilineata* was putting on a beautiful display of the bright pink flowers. The first major stop near the Dragon Rocks Reserve yielded lots of *D. pallida* in flower and also plants of *D. octotriginta*, *D. ferruginea subsp ferruginea*, and *D. erythrocephala var erythrocephala*.

Further on the same road we had to stop to inspect a group of *Banksia violacea* which were most unusual in that they were very tall, large shrubs. This *Banksia* had not been seen in this form previously.

Then we went on a long drive thru Pingaring and Dumbleyung where we stopped for morning tea in cold, but dry weather. An old gravel pit on Datatine Rd was the next stop where *D. conferta var conferta* 'short leaves' was found and collected, altho only the rare flower was found. *D. erythrocephala var erythrocephala*, *D. meganotia*, *D. nivea subsp nivea*, *Hakea pritzelii* (or was it *D. prostrata*?) in stunning brownish/orange flower, and a couple of *Verticordias* in flower proved this to eventually be a fruitful stop.

South, then west and next stop was Johns Well Nature Reserve, a true Dryandra hotspot which we had visited on previous trips, and I had personally returned to many times. Dryandras abounded both in an old gravel pit and in the large areas surrounding it. A collection was taken from the *D. conferta var conferta* which were in flower, and *D. fraseri var fraseri*, *D. preissii*, and what we think are the two different forms of *D. fililoba* were also seen, but not in flower. The other flowering ones were *D. armata var armata*, *D. armata var ignicida*, *D. sessilis var sessilis*, *D. nobilis subsp nobilis* and *D. rufistylis* with just a few remaining flowers. Everyone else was most impressed with this site.

North again to Paterson Rd and again, a magnificent Dryandra hotspot, albeit just in the road verges. A nice population of *D.conferta* var *parva* was found and collection taken, with lots of flowers present. The *D.ferruginea* subsp *magna* were a mass of large plants with more flowers per plant than any of us had seen before. A magnificent sight. *D.armata* var *ignicida*, *D.nivea* subsp *nivea*, and *D.sessilis* var *sessilis* were also in flower. Plants of *D.porrecta*, *D.fraseri* var *fraseri*, *D.nivea* subsp *nivea* and *D.fililoba* were also in this area. A little further along this road *D.preissii* and *Hakea lehmanniana* were noted, with everyone enjoying the unusual blue Hakea flowers.



***D.ferruginea* subsp *magna* flowering plant, with its fabulous flowerheads below Lyn**



Eventually we moved on to King Rock, which Margaret, Keith and I had visited previously and noted the unusual prostrate *D.conferta* var *conferta*, and on closer inspection realised they were simply very tall plants which had fallen over and commenced growing upwards again. A collection was made here and *D.armata* var *armata* and *D.sessilis* var *sessilis* were also in flower. *D.porrecta* plants were abundant and while searching for seeds, Kevin came across several seeds which had sprouted following the period of rain. An exciting find.

After heading north through Narrogin, we eventually made it to The Dryandra Village where we spent the night in the cabins there. A delightful place to spend some time, with a welcome wood fire to keep us warm.

Next morning we left early, stopping at the Kwongan area where I attempted to show everyone the *D.subpinnatifida* var *subpinnatifida* which I had visited many, many times previously. Murphy's Law meant that I was unable to find them that day!! I later discovered that I was only about 3 m away from them!! We then headed out the Harrismith Rd to Yilliminning Rock, a favourite haunt of mine in orchid season. A collection of the masses of *D.conferta* var *conferta* was taken here. This site has a huge area consisting almost completely of Dryandras and continues on down Birdwhistle Rd for quite some distance. A beautiful sight as they all flower.

Further out the Harrismith Rd and we stopped at a site about 3.5km before the Wickopin Harrismith Rd. This is another favourite spot of mine throughout the seasons, and has a big population of *D.conferta* var *conferta* which was a new site for Margaret. Yet another collection was taken here. The *Isopogon* sp *Watheroo* was also in abundant flower here. Several other Dryandras also inhabit the site.

Harrismith Wildflower Drive was the next stop for morning tea, and then a wander through the large area, making a collection of the *D.conferta* var *conferta*. The usual variety of Dryandras were all seen in this area and the one, large, beautiful Hakea was also debated about. I firmly believe this to be *Hakea pritzelii* although it is out of range. Others felt it was *Hakea prostrata*. I have always marvelled at this single Hakea which I found some years ago and which always puts on a magnificent display at flowering time.

We then travelled north towards Corrigin, stopping off at Middleton Rd to look for the original site of 'Corrigin Blue', but the area had recently been burnt and no sign of it was found despite extensive searching. On to Corrigin where we found Robin Campbell's house with a note saying to meet her at the Wildflower Lookout, where we duly found her. After having lunch there, we explored a little and

found *D.fasciculata* and *Isopogon divergens* in flower.

Then it was on to the “Holy Grail”, the *Corrigin Blue* site on the Corrigin Quairading Rd. A very extensive survey located 21 plants remaining, with 1 further up the road and a collection was taken. Many of these were also nicely in flower. Sadly the site is very degraded with severe weed infestation and roadside grading destroying some plants.

As it was still relatively early we decided to go north-east to Boolanelling Reserve which none of us knew at all. Imagine our surprise and total delight when a large, brand new population of *D.conferta* var *conferta* *Corrigin Blue* was found next to a massive area of *Eucalyptus macrocarpa*. Nearby a large population of *D.horrída* was found, also previously unknown. After all the celebrating and exploring it was beginning to get quite dark and it became more difficult to identify the plants and for me to do the photographic recording of all the plants. But we were all on such a high, the lateness of the day ceased to concern us.



**Corrigin Blue Boolanelling Res, great foliage, growing with *Eucalyptus macrocarpa* Lyn**



It was eventually a long drive across the country roads back to Dryandra Village where Peter Olde was awaiting our return and wondering if we would

arrive! Dinner was late, but most welcome and we enjoyed the visiting brush tailed Possum. The evening was taken up with stimulating discussion re IDs and the Banksia versus Dryandra debate.

A sleep-in the next morning and we headed across to Kawana Rd for a group photo at the Lol Gray Lookout, a lovely bush setting.

We then headed down the hill and stopped at that particular *D.subpinnatifida* var *subpinnatifida* site and bemoaned the fact that most seemed to be hybrids with *D.squarrosa*, with very few pure forms to be found. I revisited this site several times throughout October and did an extensive survey of the area, finding to my relief that there are far more pure forms than first suspected. I believe the population remains intact at present but the hybridisation is still a concern. It appears that the plant groupings further away from the *D.squarrosa* seem have more pure forms.

We then returned to the Dryandra Village, finished packing up and checked out, heading off in our different directions. Special thanks to Margaret for organising this amazing exploratory trip and to everyone else for their great company and knowledge in so many different areas, which only added to the enjoyment of the WA bush. And what a highlight to find a new population of Corrigin Blue.

Lyn Alcock, Narrogin. Dec. 2015

### Further Afield

After our *Dryandra conferta* collecting trip, we met up with Peter Olde and had a day out with him, Graeme O'Neill, Keith Alcock, Kevin Collins, Catriona Bate and Phil Trickett to the Stirling Range via North Woogenillup Rd. We saw many isopogons and petrophiles including two that Catriona and Phil very much wanted to see in flower; *Isopogon latifolius* and *I. baxteri*. At the Lookout Hill, in the middle of the range, *D. ferruginea* subsp. *pumila* was just beginning to flower. It is flowering well in my garden, here in Denmark.

On 8<sup>th</sup> August, Kevin, Catriona, Phil and I set off for a return visit to Hi Vallee. We stayed the night at Williams, well south of Perth and spent some time exploring areas around Woodanilling, which

we missed on the conferta trip, on the way. We went to Strathmore Hill Reserve, south west of Woodanilling. I have been there several times over the years to look at *D. proteoides* at the entrance to the reserve and I've seen *D. armata* var. *ignicida* and *D. fililoba* a short distance down a track from there. After looking at the plants of *D. proteoides* which was not in flower, we attempted to drive down the track but I soon realised we were not on the one I remembered. It has been closed, apparently, and the track we were on was the firebreak boundary of the reserve. We drove about 7 km and came out at another entrance altogether.

This reserve turned out to be a real dryandra 'hot spot'. We found 13 or possibly 14 taxa; perhaps more than any other comparable small reserve. There were: *D. proteoides*, *D. preissii*, *D. nivea* subsp. *nivea*, \* *D. armata* var. *ignicida*, \* *D. armata* var. *armata*, *D. fililoba* (and aff. *fililoba*?), *D. stiposa*, *D. acanthopoda*, \* *D. nobilis* subsp. *nobilis*, \* *D. cuneata*, \* *D. rufistylis*, *D. sessilis* var. *sessilis*, \* and *D. fraseri* var. *fraseri*. (\* = In flower).

I have written about and published photos, several times in the newsletter, about a form of *D. fililoba* that looks different from the type. At Johns Well



aff. *fililoba* plant at Banksia Farm, in flower below MP



Reserve, both forms occur and we found both at Strathmore Hill Reserve. Kevin has what we think

might be the different form in his garden at the Banksia Farm. It has smaller, softer-looking leaves and flowers at a different time from typical *D. fililoba*. Flowers have a slight pink tinge. Growing



*fililoba* leaves, new form top, normal below MP side by side at Strathmore Hill Reserve, they appear to be two distinct, non-varying forms. Kevin's plants set viable seed and he has propagated several plants from his original one. He doesn't remember how he obtained seed of this plant but I might have collected it at Johns Well Reserve, many years ago.

The next day, in the Jarrah forest, south of Perth, Kevin stopped at a good location of *D. lindleyana* subsp. *sylvestris* where we found it flowering in various colour forms and combinations. North of



subsp. *sylvestris*, Darling Ra. and subsp. *pollostia* Yandin Hill, below MP



Perth, we stopped at Wannamal for some petrophiles and isopogons, 'The Patch' and Yandin Hill where *D. lindleyana* subsp. *pollosta* was flowering and continued on to stay at Western Flora, north of Eneabba, for the night.

The next morning we re-visited the remnant bush on the Reed's property, south west of Arrino and, as Catriona and Phil wanted to see the 'Three Springs Three' dryandras west of Three Springs, we continued on along Nebru Rd. At the type location of *D. trifontinalis*, (named after the town), we were appalled to see that the roadside has been cleared



Nebru Rd., *D. trifontinalis* gone forever, but *fraseri* var. *oxycedra* (below) with its beautiful flowers (bottom) lives on MP



right to the property fence and the population of dryandras, which included *D. borealis* subsp. *elatior*, has gone. On the north side of the road is a

large, deep gravel pit with both species growing in and around it. We walked around the western edge of the pit and eventually found a few, very large plants of *D. fraseri* var. *oxycedra*. All three were in flower, albeit, sparsely.

Before going to Hi Vallee we went into the town and I was surprised and pleased to see a lovely public garden with local plants, including beautiful, well established plants of *D. borealis* subsp. *elatior* and *D. fraseri* var. *oxycedra*.

We arrived at Hi Vallee in time for lunch and some rain showers. Don Williams showed us over the wonderful property and, once again, Catriona and Phil found many different isopogons and petrophiles. They have had quite a good wet season and the flowers are magnificent. Some plants are flowering early but not all, unlike last year. *D. kippistiana* var. *kippistiana* was in flower, as well as *D. sclerophylla*. *D. nobilis* var. *fragrans* was flowering and we found a few late flowers on one plant of *D. speciosa* subsp. *macrocarpa*.

For me, the highlight was a very large, mounded plant of *D. nana* with well developed buds. Other



*D. nana* plant at Hi Vallee MP

plants were not as far advanced and I decided to try to get back in about a month to get some good photos. The flowers are very difficult to photograph, with their long, slender, dark styles and strange, greenish yellow perianths. Nearby, we found *D. stenoprion* in flower. We looked for flowers on *D. tridentata* but we were too early for them.

The following day, Don took us to Big Soak Plain. Along Tootbardi Rd, we saw some spectacular isopogons and petrophiles and stopped to photograph *D. serratuloides* subsp. *perissa*. We drove for quite a distance through recently burnt

heathland and then, where the fire hadn't reached, we found *D. subulata*, in flower.



**The grass-like *D. subulata* at Big Soak Plain MP**

Five weeks later, on 19<sup>th</sup> September, while staying at York, during a three day exhibition of Botanical Art, with my friend Julie, I drove up to Hi Vallee and we spent just two hours, there. *D. carlinoides* was flowering well and we found some open flowers on *D. tridentata*. I expected that we would



***D. tridentata* in full flower at Hi Vallee MP**

be too late for the flowers on the large, mounded *D. nana*, but, surprisingly, most of the flowers were still not completely open and their long styles were still looped. We didn't get the perfect photo I'd hoped for but then, we didn't find a perfect flower head. *D. nana* is one of the few dryandras where the flower heads with open flowers are just as interesting and attractive as those with some flowers still in bud.

With more time, when we return for the get-together, in another month, I hope we will still find *D. nana*, in flower.



**Well worth the wait, *D. nana* at Hi Vallee in September MP**

Many thanks to Don and Joy Williams for their hospitality at Hi Vallee.

Margaret Pieroni 5/10/15

**DRYANDRA GET TOGETHER** (Western Flora Caravan Park, 20<sup>th</sup> and 21<sup>st</sup> October, 2015)

A highlight of the Dryandra Study Group Reunion was a trip to Don and Joy Williams' Hi Vallee Farm at Badgingarra. on October 21<sup>st</sup>.

Don, who is passionate about wildflowers and is happy to share his considerable knowledge, gave the group of six a guided tour around his farm. While he drove Keith Alcock and Hartley and Meryl Tobin, Neil Marriott drove Margaret Pieroni and Lyn Alcock in a second farm vehicle.

Hi Vallee is on Tootbardie Road, one of a number of prolific wildflower areas, especially for dryandras, between Eneabba and Badgingarra, 200 km north of Perth. Don and Joy were smart enough to leave a large area, 2000 acres of the 4900 acre farm, untouched. With 500 different species of

plants, it contains some of the greatest botanical diversity in the world. Situated at the overlap of two botanical regions where there is a mosaic of soil types the area has evolved over a long period of time to create this wide diversity. The plants have also evolved in many ways to survive fire.



**The adventurers, from left, back row Neil Marriott, Don Williams, front row Lyn Alcock, Joy Williams, Margaret Pieroni, Keith Alcock, Hartley Tobin, Meryl Tobin took the picture**

Apart from farming sheep and wheat, they offer camping, accommodation and tours. Taking a tour is a great opportunity for anyone interested in wildflowers, birds, bushwalking, camping or photography.

About to climb into the vehicles, we saw a striped bearded dragon on a dead branch at the back of the house. Apparently it is a permanent resident.



**A welcome visitor Hartley T.**

Don told us some of the ups and downs faced by the farmers of the area and some of his experiences as a consultant in the conservation of local flora. One of the first of the 20 dryandras growing naturally on his property we saw was *D. kippistiana* var. *paenepeccata*. As we were too late for the flowering of most of the dryandras, we were pleased to see this one in flower.



***D. kippistiana* var. *paenepeccata* Hartley T.**

Though we did not see *D. catoglypta* (formerly thought to be a form of *drummondii*) in flower, which Don listed as threatened, we saw the plant. Normally it flowers in June/July.

One of Don's special areas on the property is 'Dryandra Heaven'. It is so special Don and Joy received a grant to help preserve it. Although we were too late for the best of the flowers there, *Eucalyptus macrocarpa* subsp. *macrocarpa* showed off some large red flowers. Also of interest was *E. suberea*, a threatened relic species..

Don chose a shady spot under a huge eucalypt on a high spot of the farm as the ideal spot for morning tea. Thanks to Don and Joy who had organized tea, coffee and biscuits for us to enjoy as we looked out over a panoramic view of crops.



**Meryl T.**

Shortly after morning tea we came across *D. nana*. Flowering was well finished. According to Margaret, the flowering season for this year was at least one month early. Though Keith, Neil and I checked out the plants in the hope of finding some seed, we had no luck.





***D. nana*, but not a seed to be seen Meryl T.**

An aside: A fortnight later I was looking at *D. obtusa* in the Fitzgerald River area. Flowering was well finished and again I noted that the flowers had produced no seed. Guessing that these 'honey-pot type' dryandras, dwarf or with underground stems, might rely on ants or insects for pollination, so by flowering up to a month earlier, fertility of flowers might not coincide with the activities of the pollinators. Further to that, it might be logical to assume that those dryandras that regularly produce no seed, or very little seed, are very specific in their relationship with their pollinator and that pollinator activity might rarely coincide with the fertile stage of the dryandra flower.

Colourful grevilleas, hakeas and wattles were in abundance, as were other wildflowers. Some which particularly appealed to us included black and green kangaroo paws, smoke bush, eremaea, blue and red lechenaultias, blue dampiera, white/pink and red verticordias, yellow verticordias with yellow flowers which attracted pollinators and some orange flowers which indicated they had been pollinated. Banksias in bloom such as *B. attenuata* made a show as did tall yellow calytrix blooms. Unfortunately we were too late for the orchids.

Our 3 hour, 45 minute tour was not long enough to see everything, but we greatly appreciated seeing lots of dryandras, numerous other wildflowers, including rare plants, such as *Petrophile nivea*, which seems to grow only on their farm, and *E. suberea*, a threatened relic species with corky bark.

Over a late lunch in Joy and Don's cool kitchen conversation covered botanical, political, current affairs and humanitarian subjects showing the wide range of interests of those present.

Many thanks to Don and Joy for organizing a spectacular wildflower experience of us.

Here is the list for dryandras as taken from Don's flora list with ones we saw asterisked:

- \* *D. bipinnatifida* subsp. *multifida*
- \* *D. carlinoides*
- \* *D. catoglypta*
- \* *D. cypholoba*
- D. fraseri* var. *crebra*
- D. glauca*
- \* *D. kippistiana* var. *kippistiana*
- \* *D. kippistiana* var. *paenepeccata*
- \* *D. nana*
- D. nobilis* subsp. *fragrans*
- \* *D. pteridifolia* subsp. *vernalis*
- D. sclerophylla*
- \* *D. sessilis* var. *flabellifolia*
- \* *D. shuttleworthiana*
- \* *D. speciosa* subsp. *macrocarpa*
- \* *D. stenoprion*
- D. stricta*
- D. tortifolia*
- \* *D. tridentata*
- \* *D. vestita*

Hartley Tobin Jan. 2016

### And one last picture



**Dryandra habitat, *D. acanthopoda* and *D. rufistylis* in Strathmore Hill Reserve MP**

