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DRYANDRA STUDY GROUP NEWSLETTER No. 67

AUSTRALIAN NATIVE PLANTS SOCIETY (AUSTRALIA)



Dryandra montana on Bluff Knoll. See page 3

Sarah Barrett

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DRYANDRA STUDY GROUP

LEADER

Mrs. Margaret Pieroni
 22 Ravenhill Heights
 DENMARK
 WA 6333
 Email: mpieroni@bigpond.com
 Phone: (08) 9848 3331

NEWSLETTER EDITOR

Mr. Tony Cavanagh
 16 Woodlands Drive
 OCEAN GROVE
 VIC. 3226
 Email: tonycav40@hotmail.com
 Phone: (03) 5255 1180

Hello and welcome to our July Newsletter.

I do apologise for the lateness, mostly brought about by my acquisition earlier this year of a new (Mac) computer. After some 25 years with a (Microsoft) PC, it was something of a culture shock to make the move. I managed to transfer all my files to the new system but of course there are differences in the way things operate eg I used to produce the cover in a program called Publisher but there is no equivalent to Publisher in the Mac so that had to be laid out again, and I had enormous problems in reducing the file size to acceptable levels so those who receive it by email wouldn't have their mailboxes clogged. Please let me know if you had any problems this time, otherwise I hope that you enjoy the variety of articles and information in the Newsletter.

Margaret has always had great concern about the problem that many of the rare dryandras are sadly becoming even rarer. *Dryandra montana* from the Stirlings is one such species. The causes are many and varied, small populations in the first place, frequent fires killing young plants before they have a chance to reproduce, phytophthora infestation of most populations in an environment which favours its spread and perhaps poor seed viability so that few seedlings emerge after fire and it is difficult to establish sufficient new plants for ex-situ conservation projects. We are fortunate that the WA Department of Parks and Wildlife has embarked on an extensive program to try to save this species from extinction. A similar situation exists with the very rare "Corrigin Blue" form of *Dryandra conferta* but in this case, it is partly the "fault" of the laws of botanical taxonomy whereby this form is the type specimen and represents a species which is after all very widespread so it is not classified as "rare and endangered", a status which Keith Alcock argues passionately should be reconsidered. Again, it exists in a degraded and limited area and the known number of specimens is continually falling. Please read Keith's article to learn the whole sorry story and if you would like to attempt to spread the plant by growing it in your area, contact Margaret for seed. In our other major article, Lyn Alcock details a long trip through much of southern and south-eastern WA which she, Margaret and Keith Alcock (no relation!) undertook in March. Margaret tells me they saw around 50 dryandras but sadly only about 15 were in flower. Anyone travelling to WA to see dryandras should find the details of localities invaluable in planning their trip and I would like to thank Lyn for taking such careful notes. Liesbeth is still having great success in growing and flowering dryandras in pots in her glasshouse in The Netherlands and poses an interesting puzzle for us with the "bud like" appendages on her *D. speciosa s macrocarpa*. Any suggestions? Margaret offers a couple of tips about cleaning up dead leaves on prostrate dryandras and a simple technique for opening small numbers of *Dryandra* capsules using a candle while I make belated reference to Jim Barrow's excellent coverage of WA *Proteaceae* in the summer 2013-2014 issue of *Australian Plants*.

We also include a financial statement for the Group and a reminder that membership subscriptions for the 2014-15 year are now due. Please forward completed forms and your cheque to Margaret and if you would like to receive the Newsletter by email, remember to include your email address.

Happy Dryandra growing

Tony Cavanagh

Saving *Dryandra montana*

Dryandra montana only occurs in montane heath on a few eastern peaks of the Stirling Range in the Stirling Range National Park, managed by the Department of Parks and Wildlife (DPaW).

The Stirling Range rises above the almost flat plain about 70 km north of Albany which is on the southern coast of Western Australia. It is incredibly rich in flora – containing over 1500 species, of which over 80 are endemic and many including *D. montana* as well as *D. anatonata* are declared rare and endangered.

D. montana was declared as Rare Flora under the Western Australian *Wildlife Conservation Act 1950* in 1987 and in 1995 was ranked as World Conservation Red List Category; Critically Endangered. This status is due to the loss of habitat because of the soil-borne pathogen, *Phytophthora cinnamomi* (PC), two intense fires in quick succession and paucity of seedlings after the fires. Only four populations are known on summits above 900 m above sea level, on sandstone and quartzite in dense heath and thicket – the only such habitats in the state. This Montane Threatened Ecological Community, (TEC) is also listed as Endangered under the Commonwealth *Environmental Protection and Biodiversity Act 1999*.

As a member of the Albany District Threatened Flora Recovery Team, I have been aware of the enormous efforts to save this species from extinction and it is very pleasing to know that things are progressing well despite all the odds.

A very comprehensive Interim Recovery Plan was produced in 2005 with many objectives which include: Establishing an ex-situ plantation for a seed orchard, monitoring the existing populations, caging plants to stop rabbit and quokka predation, implementing fire exclusion and aerial spraying to control PC.

D. montana was first collected in 1964 on Bluff Knoll. In 1996, the total known population size was 21 plants. Since 1995, habitats most likely to contain it, on nearby montane heath have been intensively surveyed and three new populations were discovered. In 2000, there were 137 adult and 39 juvenile plants, distributed among four

populations. In October that year, a wild fire burnt a large part of the eastern Stirling Range, including all four *D. montana* populations. The fire killed 63% of adult and 77% of juvenile plants. Less than 25 seedlings have emerged since the fire. In 2005, the number of plants had been reduced to 45 adults and 16 juveniles.

D. montana is killed by fire and does not set much seed hence the need to exclude fire from the remaining natural populations and to establish an ex-situ seed orchard. In 2003-4, almost 100 plants were propagated and are growing very well on a private property. Another seed orchard was established, more recently. Invertebrate and bird predation on the seeds has been a problem but action has been taken to manage invertebrate damage. Studies have identified (to family) the moth species responsible for the damage so that steps can be taken to control them.

Seedlings that emerged after the 2000 fire were very few. In one population 12 appeared but 41 plants were killed, in another; one seedling and 61 plants killed, in two others no seedlings emerged in the initial post-fire period but 11 and 12 plants respectively, were killed. As well, 40% of the seedlings were heavily grazed by rabbits and/or quokkas. The remaining seedlings have all been caged to prevent further losses. A small number of seedlings have been found more recently, as germination does not appear to be restricted to the immediate post-fire period, and a few 'new' mature plants found but no new populations.

PC has infected all but one of the populations of *D. montana*. The mountain range habitats with high rainfall, shallow, peaty soils and a plant community once dominated by susceptible plant families including the Proteaceae, provide ideal conditions for the pathogen. Aerial spraying of phosphite every one or two years has been fairly successful at maintaining total numbers around the 40 mature plant mark. However, at such low numbers the long-term survival of the species on the mountain tops is very uncertain and ex-situ conservation therefore critical.

Other actions that have been completed or are ongoing are: Regular seed collection for storage at DPaW's Threatened Flora Seed centre, research on tissue culture carried out at Kings Park, trials of

bird and insect exclusion devices to gain insight into pollination mechanisms at the seed orchard, testing to determine PC-susceptibility with a view to developing PC-resistant strains in the future, controlling rabbits with poison baits and fencing of plants. Track markers have been put in place on popular walk tracks to preclude visitor impact on plants.



Characteristic foliage **Margaret Pieroni**

So many dryandra populations and habitats have been destroyed since I began my collecting and observing travels more than 30 years ago. It is good to know that such efforts are being made to save the endangered species.

Other dryandras that are being looked after similarly, by the team are *D. anatona* and *D. ionthocarpa* subsp. *ionthocarpa*. The former also occurs only in the Stirling Range and the small population that Keith Alcock and I re-discovered in 1986, has long ago been wiped out by PC. Remaining populations deeper in the range, have been regularly sprayed with phosphite and test plots have proved it to be successful.

D. ionthocarpa from Kamballup, south of the Stirling Range, also a declared rare species is being grown at various locations ex-situ. The natural populations appear to be in decline. Many plants appear to be suffering from the decrease in rainfall.

Margaret Pieroni 1/6/14

Dryandra Tip March 2014

On Wednesday Mar 26th Keith Alcock (no relation!) drove down from the Perth area to Narrogin, picked me up and we drove south to Margaret Pieroni's in Denmark. After a delicious meal and an evening solving the problems of the world we headed off for a good night's sleep before an early start the next morning.

A beautiful day greeted us on Thursday morning and we admired Margaret's bush surroundings and the Dryandras on her block before we headed off with a fully packed car, hopefully not forgetting anything.

After Albany we headed up Chester Pass Rd, and then onto the South Coast Highway, making several stops along the way, noting *D. calophylla* and *D. mucronulata*, neither in flower, but the *Beaufortia anisandra* making a beautiful red/maroon display. The next stop just a little further on yielded *D. plumosa* subsp. *plumosa*, *D. tenuifolia* var. *tenuifolia* and *D. cuneata* all in flower.

At a nice pull-off 2 km before the Borden-Bremer Bay Rd/South Coast Highway junction we found *D. nervosa* with just one flower (after much searching) and then *D. drummondii* subsp. *drummondii* and *D. brownii* without flowers. While



***D. tenuifolia* v *reptans* plant, see below. Lyn Alcock**

searching for seedpods, Keith managed to have a serious argument with a *D. nervosa* and appeared with copious amounts of blood dripping from his

hand. After first aid treatment we all enjoyed a cup of tea and travelled further along the highway, passing a beautiful *Banksia media* in flower. At Jerramungup we turned right and along the road near Jacup we found quite a few *D.tenuifolia* var *reptans*. What a show this plant makes, creeping along the ground and over the banks of the road verge. There were heaps of buds, but none near opening yet. Not having seen this dryandra before, I was entranced and would love to see it in full flower.

We then stopped at the turnoff to Fitzgerald Rd where we found *D.arctodis*, *D.obtusa* and *D.cirsioides*, but none in flower. *Grevillea tripartita* also occurred here with some of the stunning flowers on view. Turning into the old Fitzgerald township site we enjoyed a delicious lunch prepared by Margaret.

Turning into West River Rd we headed into Fitzgerald River National Park, soon coming well and truly into *D.pteridifolia* subsp *pteridifolia* habitat with many hundreds of the grey-hued plants. Eventually stopping at what we felt was one of the best areas we searched long and hard, finding many



D. pteridifolia s *pteridifolia* Lyn Alcock

buds and at long last a few flowers. Unfortunately these were not the reddish coloured ones we had hoped to find, but no doubt within a few weeks there would have been many on view.

Travelling along this road we admired the beautiful scenery and stunning variety of plants. *D. quercifolia* occurred and re-occurred, with many in

flower. Despite its abundance, the flowers always entrance with their beauty. At one drain-scraped area *Verticordia sieberi* var *lomata* was still in flower, the pink flowers stunning against the white sand. Further along we came to quite a large area of *Verticordia oxylepsis* in the graded verge. At first glance the plants almost appeared to be dead, but on closer inspection they were certainly alive and a beautiful brownish/purple colour. I had seen this *Verticordia* previously but had not noticed the leaves being this colour. On rechecking my photos from 2006 there were certainly one or two which were the same colour, but of course hardly noticed with the profusion of flowers on this 'bonsai' plant.

Passing a Racehorse Goanna along the way, we eventually reached the FRNP gate near Hopetoun and again found *D.plumosa* subsp *plumosa*, although not in flower here. *D.quercifolia*, *D.falcata*, *Banksia violacea* and *Banksia nutans* were also at the gate area.

On reaching Hammersley Lookout we could not resist exploring the area beneath, and found *Banksia oreophila* giving an amazing show. There were also a few nice ginger coloured flowers of *Banksia baueri*. With the afternoon rapidly disappearing we decided on a quick trip out to No Tree Hill before checking in at Hopetoun. We found a few buds of *D.pteridifolia* subsp *pteridifolia* but none close to flowering with the lovely red hues we had hoped to see. The *Allocasuarina humilis* in this area were also noticeably purple hued. A large plant of *Petrophile longifolia* stood out with its bright red new growth creeping along the ground.

It was growing dark, so time for us to head to the Hopetoun caravan park where Margaret had booked cabins for us. We arrived to find the boss away and no record of the booking, but luckily they managed to find us cabins for the night. After a full day we were all weary and certainly did not relish the thought of sleeping on the sand or in the car!!

Off early again next morning and Mt Desmond near Ravensthorpe was the first stop. The *D.foliosissima* at the Lookout were out in full force and we all took many photos of the profusion of beautiful flowers. *D. quercifolia* and *Beaufortia orbifolia* were also

giving us a great show. A bit further along



D. foliosissima on Mt. Desmond Margaret P.

Elverdton Rd, after a little searching Margaret found the entrance into the track to the *D. corvijuga* population which was not in flower. Despite hunting through the bush she was unable to find the hybrids she had seen on a previous visit.

Back to Ravensthorpe and we turned right towards Lake King, then off on the Old Newdegate Rd where we found a nice patch of Dryandras amongst the very large road verge areas. Once again the blue hues of *D. pteridifolia subsp pteridifolia* stood out into the distance, but despite lots of buds, no flowers were found. *D. erythrocephala var erythrocephala*, *D. ferruginea subsp chelomacarpa*, *D. pallida* and *Banksia blechnifolia* were also at this site, but none in flower.

A little further on at Magdhaba Track Gravel Pit we stopped for morning tea where the same Dryandras occurred, but this time most of the *D. pallida* were flowering profusely. Why in one spot and not the other??

Onto Mallee Rd and then Reserve Rd and at the intersection with Magenta Lake Rd we stopped and found a great bush area to explore. A population of *D. porrecta* was new to Margaret and *D. arctotidis* mingled with large patches of *Petrophile helicophylla*, our target plant. Large patches of the unusual seed of this plant sat directly below the plants and none seemed to be invaded by insects. Plants of *Hakea verrucosa* were also at this site. After lunch we attempted to go through the Lake Magenta Nature Reserve, but a sign warned us there was No Thru Rd and we were not prepared to risk wasting time trying to get through, so we backtracked to the South Coast Highway and then

turned off at the Rabbit Proof Fence Rd, driving some considerable distance along this road before we came to Margaret's hot spot at Corneecup Reserve on top of the hill where there were the huge plants of *D. drummondii subsp macrorufa*, *D. cirsioides*, *D. conferta var conferta* and possible hybrids between *D. conferta* and *D. cirsioides*. Sadly no flowers were on any of the plants, and even buds were few and far between.

Further on we looked for *D. octotriginta* at a previous site on the corner of Manvel & Nyabing Rd Sth, but road works had changed the intersection and sadly a big cleared area showed no sign of any dryandras.

At a farm driveway entrance a little further on we found *D. nivea subsp nivea* and *D. sessilis var sessilis* presenting in an unusual form of large, very bushy trees. Further along Wallacup Rd we stopped at a stunning area on the side of the road where there were masses of *Banksia sphaerocarpa* covered in flowers, and then masses of *D. ferruginea subsp magna* disappearing into the distance, mixed in with some *D. rufistylis*. Sadly no flowers on any of the dryandras, but the whole display was quite magnificent.

Our final stop for the day was at the old rubbish tip at Katanning where we were lucky to find a few flowers on *D. acanthopoda*. Here I realised that in the past I had put these in with the *D. squarrosa* so a nice new discovery for me. After settling into our cabins at the Katanning Caravan Park we decided to head into town for a delicious meal at the Pub, and we all slept soundly after yet another full day.

An early start again and first stop was at King Rock where we found *D. armata var armata*, *D. armata var ignicida*, *D. porrecta*, *D. sessilis var sessilis* and *D. conferta var conferta*, but none in flower. However we noted that all of the *D. conferta* were prostrate. It appears that they have grown in the normal tall form and then for some reason have fallen over and the branches began growing upright again so that they are then wider than tall.

Next stop was the gravel pit at Johns Well Nature Reserve. What an amazing variety of dryandras in the one area. *D. armata var armata*, *D. armata var ignicida*, both the tall and prostrate forms of *D. conferta var conferta*, *D. rufistylis*, *D. preissii*, *D. fraseri var fraseri* and *D. fililoba* all intermingled. I can only imagine what it must be like when these

plants are in flower. I will certainly be visiting this site later in the season.

We tried another track in off the same road, but found very little in the way of Dryandras. Morning tea was just west of Dumbleyung where Margaret showed us a large, spreading area of *D.meganotia*. She explained this was possible cloned plants, as it appeared to almost be one large plant, but there were also separate plants off to the sides. An interesting site.

As we headed to Harrismith we found a few *D.vestita* in flower on the side of the road, as well as *Hakea brownii*. At Harrismith we drove through the Wildflower Drive up to the plane runway, finding lots of dryandras as well as one Hakea which I have been watching for the last 5-6 years. It appears to be *Hakea pritzellii* with beautiful abundant very dark red flowers in Spring, but this should only occur in the Stirlings. And just being the one plant maybe it has been planted there. Despite lots of seedpods however no new plants have ever appeared. Margaret is going to follow up with the Hakea people. We then drove along the railway line and Margaret realised this was the area she had been looking for. We saw all 9 of the Dryandras listed as occurring in Harrismith. *D.cirsioides*, *D.purdieana*, *D.fililoba*, heaps of *D.ferruginea subsp ferruginea*, *D.cynaroides*, *D.vestita*, *D.conferta var conferta*, *D.nivea subsp nivea*, *D.rufistylis* and probable *D.cirsioides/D.purdieana hybrids*. Once again no flowers, but I did revisit this site on June 11th and found some of the *D.fililoba* full of flowers.

Along Dudinin Rd we saw Dryandras as we passed but had no time to stop. Near Kulin we went into the Hopkins Nature Reserve for lunch and found *D.erythrocephala var inopinata*, *D.ferruginea subsp ferruginea*, *D.pallida*, *D.vestita*, *D.xylothemelia* and *D.epimicta*, but again none in flower. Corrigin Wildflower Drive was next where we saw *D.cirsioides*, *D.ferruginea subsp obliquiloba*, *D.fasciculata*, *D.vestita* and *D.lindleyana subsp agricola* which had their off-season greyish-blue hue.

Our last site for the trip was the Corrigin Quairading Rd, where we firstly found the fenced off area in a farmers paddock where the large population of *D.horrída* was in full flower, with some *D.vestita* amongst them. We then back-



D. horrida, lovely despite its name Margaret P.

tracked and after much searching eventually found the *D.conferta* Blue-leaved form. Where Margaret had seen 60 plants in the past we only managed to find 4 plants – a sad result of grading of the verges, farm spraying and slashing of verge vegetation. Keith did return to the site at a later date and found a few more plants, but the outlook for the population is still grim. There were also a few plants of *D.lindleyana subsp agricola* precariously perched on the roadside bank.

We returned to my place in Narrogin that night where we reviewed our results and I checked my many photos. After the last couple of years where I have pursued the Native terrestrial orchids of WA, I found my passion for Dryandras renewed thanks to Margaret and Keith. I certainly shall follow up some of the Dryandras we saw in order to see them in flower.

Lyn Alcock June 2014

The Tragedy of 'Orphan Blue'

During the trip with Margaret Pieroni and Lyn Alcock described elsewhere in this Newsletter, the trio visited the location of the small blue-leaved *Dryandra conferta* that Margaret has dubbed 'Corrigin Blue'. It could equally be called 'Orphan Blue' as it seems to have been disowned by its guardians/protectors in the Rare Flora Section of the Department of Parks & Wildlife of Western Australia.



Typical degraded habitat

Lyn Alcock

To the best of our available information, Corrigin Blue exists only as 16 plants in a 200 metre stretch of roadside verge on the Corrigin to Quairading Road. The road runs through farmland and, as in most such cases, the 10 metre verge is overrun with grassy weeds – and, somewhat ironically a number of larger dryandras (*D. armata* var. *ignicida*, *D. vestita* and *D. horrida* up the road) – and poor little Corrigin Blue is going under.

There is very little uncleared land in the vicinity. A few kilometres out of Corrigin there is a reserve with a scenic drive and lookout at which there are some splendid dryandras - *D. ferruginea* var. *obliquiloba* stands out particularly, but there are also *D. lindleyana* var. *agricola* and *D. fasciculata* - and it is the only surviving home of *Grevillea scapigera* for which there is a concerted conservation effort. However this site is a rocky hilltop and unsuited to Corrigin Blue of which there are none.

Margaret was associated with a visit to the Corrigin Blue location in 1993 by Anne Cochrane, who manages the Threatened Flora Seed Centre in the Department of Parks & Wildlife in Perth. Anne made a survey at the time and counted 63 plants. While Anne collected some seed, it is unclear whether this was part of her formal process of collecting a representative sample of the genotype and whether the seed is now lodged in the collection. Her visit made no difference to the conservation status of Corrigin Blue – it did not make it into the category of ‘Declared Rare Flora’ (DRF). There seems no doubt which way the population size is trending. Ironically there are several sections of the Corrigin to Kulin Road that have rare flora markers. None of these are in the

stretch where Corrigin Blue is isolated to and are therefore markers for some other species deemed DRF.

All of this seems cruel and unusual punishment for the little orphan - but it is all a tragic case of mistaken identity. Corrigin Blue’s true identity is as the type specimen of the enormously widespread species *Dryandra conferta*. This determination was confirmed by Alex George in his revision of the genus. The species was originally named *Josephia conferta* by Bentham in *Flora Australis* in 1870 (and renamed *D. conferta* in 1891). The specimen that was selected as the original type was collected by Drummond in the 1840s from ‘south-western Western Australia’ and labelled 3:295. Clearly, this is (a) a pretty wide ‘type location’ (!) and (b) there would have been plenty more specimens to choose, given that the species was not named until some 30 years later.

Still, we must presume that either (a) 3:295 was the FIRST collection that looked vaguely like *D. conferta* (named 30 years later) – even though its label date 184-blank, spans the decade 1840 to 1849 - or (b) in sifting through lots of specimens Bentham figured that Corrigin Blue looked the nicest or that he had the ‘best’ specimens to nominate a type with a few duplicates that hung nicely together.



***D. conferta* Blue**

Margaret Pieroni

Botanically speaking, Alex George would have had no choice in electing to nominate/confirm Corrigin Blue as the type for the species. We know that he agonised over the decision because he asked Margaret Pieroni's opinion. However, while this decision may seem on the surface to be the recognition and glorification of Corrigin Blue, it was, in fact the deed that condemned it to its awful fate of being expendable. After all, this was *Dryandra conferta* var. *conferta* and *Dryandra conferta* var. *conferta* is everywhere! Within the Department of Parks & Wildlife there is no justification for conserving Corrigin Blue as in terms of botanical classification at least it was no different from the countless populations scattered through south western Western Australia – albeit those populations are "the more common type" to quote Alex.

The trouble is that Corrigin Blue IS different – VERY different from every other population of *Dryandra conferta*. That is not to say that the taxon *D. conferta* is easy to know. There are many other forms, as discussed below but Corrigin Blue is (a) smaller than most, (b) more of a spreading plant than the normally columnar species, (c) has linear leaf lobes with revolute margins and the rest of the clan have narrowly triangular leaf lobes with recurved margins, and almost as a minor point (d) has gorgeous blue foliage whereas the rest of the species has dull, olive green foliage. Alex had to encompass these differences in his summary of the species and in doing so had to describe the two extremes of Corrigin Blue and the rest. Tellingly, he notes in his *Nuytsia* paper describing new species, including *D. conferta* var. *parva*, that *D. conferta* var. *conferta* is "A variable taxon. Typical (i.e., the 'Type' - Corrigin Blue) has linear leaf teeth and is of a spreading habit. The more common form has broad teeth and is columnar". So.....different! Alex declares it the type collection of *D. conferta* and yet it is the least like the rest of the clan that there is.

Alex George has always been most generous in his willingness to discuss genera he is working on with amateurs such as members of the *Dryandra* Study Group. Back in the eighties, Alex very kindly provided Margaret Pieroni and me photocopies of specimens of 55 'Probable New Taxa' that he was working on. These were wonderful to work with as we went searching through the vast field of unnamed dryandras. In his portfolio of new

species there were eight 'aff. *conferta*'. One became *D. rufistylis*, one *D. fasciculata* a third became *D. platycarpa* and one actually became *D. conferta* var. *parva*. The other four were all just left lumped as *D. conferta* var. *conferta*.

These four were:

- ASG 2 Nyabing – Harrismith; flowers golden
- ASG 21 Miling – Cadoux; tall shrub; flowers golden (it gets over two metres tall)
- ASG 31 – Corrigin district; bushy shrub; leaves grey-green; lobes narrow; flowers pale yellow (Corrigin Blue 50-75cm tall).
- ASG 33 - Great Southern; flowers with rusty hairs at apex.

These four are in addition to the fifth - the 'more common form' as these four were potential new species and none are good models for the one that is 'everywhere'.

For Corrigin Blue's fate, it would have been better that once Alex had determined that Corrigin Blue is Bentham's type of *D. conferta* var. *conferta*, then he could have elected to either:

- Name everything else left (ASG 2, 21, 33 and the more common form) as a different (new) species and then at his leisure decide whether the three new ones (including *species novo* var. *parva* (ASG 55) warranted subspecies or varietal status, or
- At least nominate the more common form as a different subspecies so that the Rare Flora people can, under their rules, recognise that the taxon *D. conferta* var. *conferta* is in real and immediate danger.

However the taxonomy of the rest of the remaining *Dryandra* sp. aff. *conferta* are handled, the differences between Corrigin Blue and the rest of the clan go way beyond varietal status to the status of a different subspecies – and maybe justify splitting into a new species – the question is how and when?

Plant taxonomy though is never really stationary – if you want an example, take the fantasy/travesty that dryandras should be lumped in with banksias – hopefully, sanity will one day prevail! So it is eminently possible that someone in the future will work through the clan currently known as *D.*

conferta var. *conferta* and find a way of solving the clear case of mistaken identity that is Corrigin Blue. Alas, it could well be too late to save the prize specimen of the collection.

If the potential demise of a unique taxon such as Corrigin Blue isn't bad enough in itself, it is one of the most beautiful plants in the genus. The foliage really is blue-grey rather than Alex George's grey-green and the contrasting canary yellow flowers are splendid. It has a lovely low spreading habit and anyone would like to have one. In contrast, the rest of the species are as ugly as you can get. The foliage is dull green and mostly downturned which gives the plant a sullen, down in the mouth, miserable appearance. I would list them last in a catalogue of desirable garden dryandras.

At present, under its eminently sensible rules, the Rare Flora Section of the Department of Parks & Wildlife of Western Australia do not recognise Corrigin Blue as a problem. Hopefully, Anne Cochrane has collected a genetically representative sample of seed for the Threatened Flora Seed Centre, the long term storage facility for seed of rare and threatened species of Western Australia. If so, we are lucky, but the lack of Corrigin Blue's elevation to DRF status means we are short of salvation.

Until we are blessed with a revision of the taxonomy of *Dryandra conferta*, it may well be that dryandra lovers such as us might need to do our bit. The 16 plants in the 200 metre stretch of the Corrigin to Quairading Road are struggling gamely in their current position. In fact, they look gorgeous, but they are suffering. They seem to have had an even worse than normal build-up of seed eating insects and (at an estimate based on some considerable sampling) about 95% of the set seed is destroyed. The only viable seed was to be found from earlier years - maybe 5-6 seasons back and this seed is starting to die of old age so in a few year's time this won't be viable either.

Their roadside domain is also shrinking. The authorities responsible for keeping the roadside verges free of vegetation have upgraded in their slashing equipment and are now not only able to keep the immediate roadsides clean but they are able to reach up and clear away vegetation a metre or more further in, piling it up to a further metre back, on top of whatever else is there.

There is some good news in that the beauty of Corrigin Blue is not unknown to dryandra fanciers and there are some plants in gardens – but clearly not enough. We are investigating whether we can set up populations of Corrigin Blue somewhere safe. At the moment the best opportunities are in Victoria with Neil Marriott in the Regional Botanic Gardens at Pomonal at the Wildlife Art Museum of Australia (WAMA) and also through Graeme O'Neill's efforts at the Royal Botanic Gardens Cranbourne Annex.

As one last illustration of the challenge, we are running out of botanical diversity at the Corrigin spot. While it is likely that a more concerted search will uncover some more than the 16 plants we know of, the numbers are still low. As proof of the genetic variability of the plants there, in collecting seed to send to the public gardens in Victoria, it was noted that there was a marked difference in the shape of seed capsules and even in seed colour. Of ten plants sampled, eight had 'normal' capsules but three had markedly 'winged' capsules - consistent across the range of heads examined and similar across each of the three plants. Nine of the ten had black seeds and seed wings but one had rusty brown seeds – again consistent across all of many heads examined. In this case there was nothing wrong with the brown seeds – they just represented botanical diversity! This adds to the need for an organised collection to be made across the 16 plants to conserve these and other examples of the diversity of the taxon.

Margaret has seed of Corrigin Blue in the Study Group seed bank so all Study Group members who want to help out should contact Margaret for seed. The efforts of Neil Marriott and Graeme O'Neill are a fantastic bonus but it would be wonderful if we could somehow influence the Rare Flora people to look after the field population but also, ideally to set up some *ex situ* cultivation as they have for *D. montana* and *D. anatona* (and hopefully some others). The differences noted in the seed capsule shape and seed colour support the need for a fully representative collection of the germplasm to be captured and kept alive and growing for as long as we can. Any and all ideas welcome!!

Keith Alcock July 2014

Members' News

From Liesbeth Uijtewaal, Neer, The Netherlands

What do you think of my heavily flowering *D. pseudoplumosa*! I knew it was budding up but I was surprised by the number of flowers when I had a good look at the plant. It's three years old now. The other plants the same age are more bushy, this one is quite columnar.



Healthy dryandras in pots. Liesbeth U.

We had our first 'official' open day last Sunday, it was quite rainy but almost 30 visitors were brave enough to come and have a look at the plants equipped with an umbrella (the visitors had an umbrella, not the plants). Some comments were that it was impressive to find such a vast collection of plants of the same families (i.e. *Proteaceae* and *Myrtaceae*) grouped together and to be able to see their differences and similarities.

Margaret, I have one germinant of the 2014 *D. conferta* Corrigin Form, all other seeds rotted away despite me sterilizing them before sowing. Crossfingers this one plant will grow on well! I'll do my very best.

(Eds note. Liesbeth has among her most spectacular group of plants, all growing in pots, a healthy *D. speciosa* sub. *macrocarpa* which has what appear to

be buds at the end of the branches. Margaret has not seen this previously but considers that they are probably new growth, from which buds may develop later. Liesbeth's picture is below – what do you think?)



A Couple of Good Tips

Opening seed capsules. Getting seeds out of their capsules, especially the hard, woody ones, can be difficult. Cutting the top of the capsules is time-consuming and heating them runs the risk of cooking the seeds. Here is a good way to do it: Simply hold the capsules by the pointed (seed) end, with tweezers or long-nosed pliers, in a candle flame for one to two seconds. Usually, a small flame will shoot out horizontally, as shown - often with an audible pop. The capsules will split open at the top and the two valves can be prised apart. I use a dental spatula for this purpose. Thank you to Graeme O'Neill for this tip.



Margaret demonstrates the candle technique

Cleaning up dead and diseased leaves in prostrate dryandras. Some of the prostrate (underground stemmed) dryandras are prone to

fungal (and other?) leaf diseases which make the plants look unsightly. It is a good idea to pull the dead and infected leaves off with a sharp tug and then dispose of them. New leaves will shoot from the spaces left and the plant will look much tidier.

Margaret Pieroni June 2014

Jim Barrow's article on the *Proteaceae* family, *Australian Plants*, Summer 2013/14

I meant to refer to this in the last Newsletter but ran out of time. I assume that most members have seen it but it is a masterly summing up of 14 WA genera in the family, with an introductory overview of the family characteristics and numerous pictures of

Some pictures from the archives to fill the page



D. borealis s borealis, Banksia Farm Margaret



D. comosa buds and foliage Tony Cavanagh



D. carlinoides flowerheads and foliage Tony C



D. comosa flowering plant Margaret Pieroni

representative members of all genera. It was also pleasing to see that Jim chose *D. polycephala* for the cover and that he discussed in detail the current situation with *Banksia* and *Dryandra*. He appears to favour the “split” and retaining two genera and, once again, when I see pictures of *Banksias* and *Dryandras* together, I am more than ever convinced that this is the correct path: they are two different groups of plants. If you have not seen a paper by Alex George in which he explains why it is not necessary to change *Dryandras* into *Banksias*, go to the following website:

<http://anpsa.org.au/APOL2008/sep08-2.html>

Tony Cavanagh July 2014

DRYANDRA STUDY GROUP
FINANCIAL STATEMENT 1/7/13 - 30/6/14

Cash at bank 1/7/13		\$1601.98
<u>Income</u>		
Bank Fee Rebate		\$1611.02
Members' subs.		\$190.00
Donations		\$120.00
Bank interest		.18
	Total	\$1921.20
 <u>Expenses</u>		
Stationery, postage etc.		-\$50.00
 Cash at bank 30/6/14	Total	\$1871.20

A.N.P.S.A. DRYANDRA STUDY GROUP

SUBSCRIPTIONS FOR 2014- 2015

The group's year runs from July 1, 2014 to June 30, 2015 and subscriptions are now due. Subscriptions are \$10.00 for Australian members and \$12.00 for overseas. The cost for receiving by email is \$5.00*. Please make cheques payable to the Dryandra Study Group and forward to Margaret. Thanks to all those who have paid.

***If you wish to receive the Newsletter by email, please include your email address:**

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COMMENTS OR SUGGESTIONS FOR INFORMATION:
