



ISSN: 0728-151x

July 2015

DRYANDRA STUDY GROUP NEWSLETTER No. 69

AUSTRALIAN NATIVE PLANTS SOCIETY (AUSTRALIA)



D. cuneata with native bee

Margaret Pieroni

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DRYANDRA STUDY GROUP

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Hello and welcome to the July Newsletter.

The most exciting news on the Dryandras front is the *Dryandra conferta* Project. Margaret is to be congratulated on initiating this and we hope that the genetic work will prove sufficiently accurate to show any differences which may exist between the various taxa. Among other things, the field expeditions over July-August should ensure that the WA Herbarium has a very comprehensive collection of all forms of *D. conferta*, and I am sure that the participants will have a thoroughly enjoyable time. Unfortunately, genetic analysis is costly and while Margaret has applied for grants, there may be additional expenses and this is where you can help with a donation with your annual subscription. I have added a section to the subscription form so please consider how you can assist.

WA is going to be a busy place later this year because in addition to the conferta project work, Margaret has organised a member's Get-Together over the weekend of 20-21 October. If you will be in WA in October and would like to attend, it is important that you let Margaret before 1 August of your intention to participate and your accommodation requirements so that bookings can be made. An interesting program has been planned and hopefully you will see many species in flower.

Margaret reports on the Gnowangerup form of *D. tenuifolia* var. *reptans* which is unusual in that there are no other plants of either of the two taxa nearby. She has grown the Katanning form from cuttings and would like to try this form. Has anyone else grown var. *reptans* from cuttings or grafted it? *Dryandra cuneata* has long been known as a hardy and reliable garden plant (one of mine is over 30 years old) and Margaret summarises the various forms and makes a plea for members to consider growing it. I also have the dwarf/prostrate form and while not as vigorous as the one Margaret shows, it is still a great small garden plant. I talk about a novel form of *D. praemorsa* which I have named "Pygmy" because of its tiny flowerheads, small leaves and short stature. I will report on progress of the 6 or so plants I am trialling in different garden situations in future newsletters. On the downside, I also report on problems with my ageing specimens of *D. nobilis* and *D. longifolia*. Has anyone else experienced similar problems; if so I would be very interested in hearing of suggestions and/or solutions, particularly of what to do with the dead foliage on the inside of branches in *D. nobilis*. My other article deals with a very interesting book *Wildflower Country* and in particular its wonderful photographs. I have shown three of dryandras but if you have the chance, it is worth reading from cover to cover.

And just a final reminder, subscriptions are now due for 2015-2016. They remain the same as last year and a form is included on the last page of the newsletter. If you wish to receive the newsletter delivered by email, please include your email address. Oh, and two other things. I can supply email copies of the **Index to Species** (NL48-67) which Margaret compiled if you send me your email address to my address above (those who take the NL by email will receive it this time). And congratulation to Study Group member Phil Trickett for taking on the leadership of the Isopogon and Petrophile Study Group – I am sure he will do a great job.

Happy Dryandra growing

Tony

***Dryandra conferta* Project**

Since our discovery, last year, of the drastic decline in the number of plants of *Dryandra conferta* 'Corrigin Blue' in its only known location (see Keith Alcock's article, *The Tragedy of Orphan Blue* in newsletter no. 67), plans are underway to help in its recovery.

This is the type specimen of *D. conferta* var. *conferta* but it differs markedly in leaf shape and colour from the other widespread *D. conferta* plants, which in themselves vary somewhat between locations. Variety *parva* is a smaller-growing plant with larger seed follicles that occurs south of Nyabing, the western Stirling Ranges and south of Ongerup. I have found plants that appear to be intermediate between the two varieties and hope to locate the population again.

My wonderful grandmother used to say that if you want something done (properly), you have to do it yourself.

Unfortunately, there is far too much taxonomic work to be done; some dryandras are still not even described and too few botanists and funding to carry it out. Here, in WA, DEPaW has had staff and funding cuts. Added to that, the cost of DNA analysis is prohibitive.

I was advised to have the analysis done, however, in order to ascertain the differences, if any, between the various forms of *D. conferta*, including var. *parva* and Corrigin Blue. The estimated cost of the laboratory work only is: For a definitive study; chloroplast and nuclear micro satellites – up to \$10,000. A much less expensive, basic molecular systematic analysis of chloroplast DNA may cost about \$2,500. This should be enough to show whether Corrigin Blue is distinctive.

I'm hoping that it might be possible to compare it with Drummond's 1840s type specimen. I've had different opinions on whether it might be feasible to do this and whether it would be possible to extract any DNA from such an old specimen. The original has been split and divided between several herbaria.

Brian Moyle has been meeting with Dave Coates from DEPaW and I will be meeting with them both, later this month to finalise the instructions for the collection of leaf samples from 20 populations of *D.*

conferta. Brian and I plan to go to Cadoux to collect samples from around there and the rest will be collected on our field trip, later.

I have applied for grants from two conservation groups to pay for the lab work. I was too late to apply to The Australian Flora Foundation, this year but they are interested in our project and I have promised a report for their newsletter. I have indicated that the Study Group will be contributing to the cost. There could be on-going or extra costs so I am appealing to you, members who would like to help, to send a donation with your subscription. It would be very much appreciated.

Meanwhile, a 4 day trip has been organised for July – August, to collect leaf samples and herbarium specimens. If specimens already exist, in the WA Herbarium, from the various locations, then ours won't be needed. We plan to spend two days in the Lake King – Hyden area and the next two, around Harrismith and Corrigin. There will be 9 of us, including two members from NSW and one from Victoria. We are hoping to see quite a few other dryandras in flower, as well. This is the flowering time for the largest number of dryandras but it will depend on what the rainfall has been like.

I have managed to grow two plants of Corrigin Blue. I will be going to York for the Wildflower Society Annual Conference next week so I will take them with me to hand over to Robin Campbell. Robin lives in Corrigin and she has helped with locating dryandras in the past. She has recently joined the Study Group and is very much involved with conservation work, locally. She will probably arrange to have the plants added to the recovery site of *Grevillea scapigera*.

Other trips are planned for the days following the 'conferta' trip so there should be much to report in the next newsletter.

Margaret Pieroni 20/6/15

News from Denmark

I don't have any dryandra trips to report since the last newsletter, except for a day trip, last week. The objective was to check out the exact location of the plants of *D. tenuifolia* var. *reptans* at Gnowangerup, where we will be meeting on 30th July to start our *D. conferta* collecting trip.

The map that I 'googled' doesn't show the track leading to the water tower, near where the plants grow.

My friend, Julie went with me on what was a magnificent, cloudless and rather hot day. On arrival at the location, we found a new water tower being installed and a temporary fence has been erected around the area, cutting off the track. We walked around the outside of the fence and found some tracks but none of them was the right one and I was quite disoriented. After about an hour of searching, I came to a place that I recognised as the location that I had been directed to, back in the eighties, where I first saw and photographed the flowers. It is an old cemetery site which consists solely of a low, pipe rail fence around quite a small area which is difficult to see until you are close to it. The plants are completely prostrate and hard to spot.



***D. tenuifolia* var. *reptans* Gnowangerup Julie McKenzie**

We found several plants of the dryandra and then, the right track. The plants are looking very healthy but we found only one bud on one of the plants. I'm hoping that, next month, with 9 or 10 pairs of eyes looking, we'll find some open flowers.

This population is unusual in that there are no other plants of *D. tenuifolia* near there, as far as we know and there are locations elsewhere, where *D. tenuifolia* var. *tenuifolia*, an upright shrub, grades into var. *reptans* with its branches lying flat on the ground. In the Gnowangerup population, the conspicuous involucre bracts are an attractive rusty colour rather than dark brown. I am hoping to get some digital photos of it, having taken some good slides many years ago.

The seeds of *D. tenuifolia* are notoriously difficult to extract from the follicles. I have had success in growing the *D. tenuifolia* var. *reptans* from near Katanning, from cuttings and I'm keen to try the same with this one.

It was just as well that we went there, otherwise we might have wasted precious time on the next trip. There is a new track to the old cemetery so that will now become our meeting place.



***D. tenuifolia* var. *reptans*, Katanning form MP**

We drove back to Denmark along Salt River Road, which is the northern boundary of the Stirling Range National Park. There were very few plants in flower but a magnificent deep pink-flowering *Hakea lissocarpha* stopped us in our tracks. *D. cuneata* was flowering and I spotted one early flowering *D. hirsuta* on Red Gum Pass Road.

Margaret Pieroni 20/6/15

Some beautiful photographs of Dryandras

A few years ago, I came across a book called *wildflower country discovering biodiversity in Australia's southwest* by Stanley and Kaisa Breeden. This was the first of (now) three books by this husband and wife publishing team and as it dealt with WA wildflowers, I was interested to see what they had included and how many dryandras they had photographed. After the first few pages, I was hooked – the pictures were the most spectacular plant, animal and scenery pictures I have ever seen, so three dimensional that you almost feel that you could reach into the page and touch them! The authors began their quest to photograph wildflowers and habitats in the Southwest Botanical Province in August at Shark Bay and finished in November in the Fitzgerald River National Park. On the way, they visited such

iconic places as Kalbarri National Park, Mullewa, Mt. Lesueur, Wongan Hills (twice), the Dryandra Woodland north and west of Lake Grace and Tarin Rock, Stirling Range, Walpole and then along the south coast to the Fitzgerald National Park. The exquisite pictures they took, some as double A4 page spreads, are found on nearly every one of the book's 240 pages and include seven dryandras (although they bear *Banksia* names) These were- *D. brownii*, *falcata*, *ferruginea*, *formosa*, *nobilis*, *plumosa* and *polycephala*. I have included a couple of examples but as some were originally of A3 size and have been severely compressed to fit the Newsletter columns, they may not do justice to the originals.

I should say that the authors do not claim or attempt to be comprehensive in their coverage of the areas. The writing in most chapters, while short and almost philosophical in approach with very little "technical" or "botanical speak", is technically accurate, but they let the pictures do the talking. They had considerable help with plant identification from Kevin Thiele and the staff of the WA Herbarium so the names are accurate (even if they use *Banksia* names for the Dryandras).



D. ferruginea

They see themselves as "interpreters of nature" – "Above all, we wish to evoke an experience and to

draw the reader more deeply into the natural world" and "we want to make (an image) as beautiful and clear as if you were there." Such images are mainly macro close ups (as sharp and detailed as you will ever see) but include land and forest scapes such as the Murchison River cutting through the sandstone of Kalbarri National Park (pp. 58-9) and giant Karri trees at Mount Frankland (pp. 180-1).



***D. polycephala*, original of A3 size**

The double page spread of *D. polycephala* (pp. 132-3) shows why this plant's common name is "many headed dryandra" but they don't shy away from the "ugly" either. They use a large, tangled and fallen-over shrub of *D. nobilis* for an illustration of typical Kwongan (pp. 138-9), with the words "—There has been no fire for many years. Shrubs have grown into tall thickets, choking out ground plants. The Golden dryandras, *Banksia* (sic) *nobilis*, in the foreground reached their greatest possible height and then collapsed under their own weight. Relatively frequent fire maintains the maximum variety of plants." As I comment in my article on this species, below, one of its major problems is the great amount of dead foliage inside bushes, behind lush green growth on the ends of branches. The picture the Breedens show would never encourage anyone to grow *D. nobilis*!



***D. nobilis* as component of Kwongan**

Some photographic background (only read if interested)

(**Note:** I have included some information on the techniques used by the Breedens to capture and produce their images. This is fairly technical as the process is incredibly time consuming but they judge the effort worthwhile for the clarity and authenticity it produces. So, what are these techniques and why are they needed? As Stanley points out, in close up nature photography, there are two main problems – limited depth of field and coping with extremes between shadows and highlights. In a three dimensional object such as a banksia cone, in any given picture, part of the cone will be sharp, but everything in front and behind will be fuzzy. You can improve depth of field by closing down the lens (using higher numerical number f stops) but in low light conditions, there is a limit to its effectiveness. In digital photography, (if you use a tripod, and there is no wind, and you have the appropriate software on your computer), you can take a succession of pictures, each with a slightly different plane of focus, and then combine them to make a single picture where everything is sharp from front to rear. The technique is called “stacking” or “focus stacking” and according to Breeden, can be immensely frustrating and time consuming, especially in low light situations where exposure times may be up to 8 seconds, or with wind. As many as 30 separate pictures may be taken and combined to produce the final image!!! When taking a succession of pictures, it is important that each frame is in an identical position to all the others so even a puff of wind can ruin a shoot. In WA they found sunrise was the best time, preferably in sheltered pockets, and in bad conditions, sometimes went for days without taking a single picture.

In the situation of working with extremes of light and shade, say, in a forest, film can rarely cope well. If you expose for the shaded areas, the flowers in the sun will be blown out whereas if you expose for the light, flowers in the shade will appear almost black. Again with digital, you can take a series of pictures covering the full tonal range of the scene, from brightest sun to darkest shade, and on combining them (with the appropriate software in your computer) the resultant image will have clear detail with no blown highlights or black areas. The technique is known as Higher Dynamic Range photography or HDR. Both these were widely used

by the Breedens to produce many of their spectacular images, and, unbelievably, for some pictures they combined both techniques!!).

Acknowledgment:

Photographs Reproduced with permission
Wildflower Country by Stanley and Kaisa Breeden
(Fremantle Press 2010)

Tony Cavanagh
June 2015

Dryandra Get-together

We plan to meet at Wannamal on 20th October and drive to Western Flora Caravan Park, 20 km north of Eneabba, stopping at various locations on the way. We will be spending the following night there, as well, after a day at the William's Hi-Vallee farm and environs.

If you are going to be travelling in WA and would like to join us, please fill in the enclosed form and return it to me as soon as possible so that I can make the accommodation bookings.

Margaret Pieroni 22/6/15

Some problems with *D. nobilis* and *D. longifolia*

I have grown both these species for many years and, in the right conditions, they can be very long lived. My current *D. nobilis* is over 20 years old and has near perfect drainage as it stands on a small hill in a lightly shaded situation. *Dryandra longifolia* (subs. *longifolia*) is approaching its mid thirties and in recent years its position has become somewhat shaded due to neighbour's trees. Both still flower well, especially *nobilis*, but with age, both are looking a bit worse for wear.

Dryandra nobilis can often be an untidy shrub in the garden and even more so in its natural kwongan habitat. In a shaded situation, it can grow lanky with unevenly growing branches and with time, some of these break or fall over. In the garden, my main problem is the development of dead leaves on the inner branches even though the ends of the branches are lush and green, with numerous flowerheads (see attached pictures for both aspects). As far as I can see, there is no disease or any other reason for the leaves dying, rather it appears to be a characteristic of the species and the closely related *D. stuposa* (both are sometimes rather unkindly

called “kerosene bush” because supposedly they can flare up in fires due to the amount of dead foliage). I have promised myself that if I grow another *D. nobilis*, I will prune it a lot more aggressively right from the start but even this may not help. Does anyone have experience with this “dead foliage” problem or have suggestions on how to correct/remove it? Because all the new foliage is at the ends of the branches, I simply cannot see any way to clean up an old shrub but all suggestions gratefully received.



D. nobilis, the view from outside Tony Cavanagh



D. nobilis, the view from inside Tony Cavanagh

Dryandra longifolia may be simply showing its age and may not be much longer for this world. As the first picture shows, many leaves are yellowing giving the bush an overall dirty yellow-green appearance. Individual leaves often are “blotchy”, part yellow, part green. I actually have two plants of the same age in the same bed, one in a drier area and more shaded. Many of the latter’s leaves are simply dead, especially at the ends of branches although further back, they show typical yellowing. I don’t believe it is a nutritional deficiency because

none of the surrounding shrubs shows any similar symptoms and I may simply be witnessing its slow death (due to old age?). Again, I would welcome any comments or suggestions, eg does this happen to very old plants in their natural habitat?



D. longifolia, unhappy plant Tony Cavanagh



D. longifolia, leaf details Tony Cavanagh
Tony Cavanagh
July 2015

Dryandra praemorsa “Pygmy”

This species is another that I have always had in the garden, generally the var. *praemorsa* form but I have also had the large pink var. *splendens* although this was not as hardy as the former. A few years back, I noticed a small, almost spindly specimen in

a shady area, single main trunk with a few branches near the top. I cannot recall whether I bought it or grew it from seed but I put its rather unlovely appearance down to the fact that it was growing under a large gum in a dry and shaded bed. It was only when it flowered that I realized that it was very different to all other *praemorsas*, the flowerheads were tiny, perhaps 15 – 20 mm long and about 12 – 15 mm in diameter.



***D. praemorsa* “Pygmy” buds and leaves Tony**

These dimension are less than half of those we list in the book (and much less than the 10 cm diameter for var. *splendens*) but every year’s flowerheads are the same. Generally also, the leaves are much smaller. It sets good seed and I have grown new plants for each of several years and planted them out in different areas of the garden. So far, it appears to be hardy, flowers at less than 18 months from seed and retains its dwarf characteristics, my tallest plant being around 1.2 m, single main trunk with additional branches near the top. I intend to prune a couple of the younger plants to see if it will grow bushy. Several plants survived severe scorching in 45° C heat and are budding up for flowering.

As the pictures show, the flowerheads are typical var. *praemorsa*, bright yellow but quite tiny and so delicate. It is not a plant to set the world on fire but I am interested because it is “different”. The name “Pygmy” is mine and unofficial, it is yet to be registered.

Tony Cavanagh
July 2015



***D. praemorsa* “Pygmy” flowerhead Tony**

Dryandra cuneata – a very versatile species

Dryandra cuneata is a very rewarding plant for the garden. It flowers for a long period, from autumn, through winter and into spring and comes in various forms. I have a low-growing form from seed of a population growing on a wind-exposed slope above a beach on the south coast of WA. It grows true to form from seed.



***D. cuneata* prostrate**

Margaret Pieroni

When I checked my photos, I realised that this is the only plant that I have photographed with my digital camera. I've had plenty of opportunities to photograph other forms, including last week, in the Stirlings. It is very widespread from Narrogin, where it is a medium to tall, rather open shrub; in

the Stirlings, where it is a smaller and more upright and across to Mount Ragged and Israelite Bay. Around Munglinup, a small, compact form occurs with smaller but more numerous flower heads.



D. cuneata typical flowers and foliage Margaret

Some photos from Margaret's earlier trips



D. conferta McKay Rd. form (see NL 67)



The unusual *D. preissii*, north Mt Barker

On right, the flat form of *D. calophylla*



D. cuneata Stirling Range form Brian Moyle

D. cuneata was grown in England in 1803 and flowered in 1810. It was one of the dryandras illustrated in an early edition of Curtis's Botanical Magazine. (Unfortunately, I was unable to find the picture in my collection – Ed.) It was also cultivated in several European countries. It is grown in the eastern states, where it has proved quite hardy. It is growing in the Australian Garden at the Cranbourne Annex of the Royal Botanic Gardens, in Victoria. Until recently, it was mis-labelled as *Dryandra anatona*.

My plant would look better if it was "dead-headed" but I want to be able to collect more seed from it. I have seed available for members.

Margaret Pieroni 21/6/15



Current Membership List

Keith Alcock, Kalamunda WA 6926
 Lyn Alcock, Narrogin WA 6312
 Tony Cavanagh, Ocean Grove Vic 3226
 Robin Campbell, Corrigin, WA 6375
 Kevin & Kathy Collins, Mt Barker, 6324
 Val Crowley, Darkan, WA 6392
 Alex George, Kardinya, WA 6163
 David Lightfoot, Surrey Hills, Vic 3127
 Neil Marriott, Stawell, Vic 3380
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A.N.P.S.A. DRYANDRA STUDY GROUP

SUBSCRIPTIONS FOR 2015- 2016

The group's year runs from July 1, 2015 to June 30, 2016 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:**

Name:.....

Address:.....

***Email address:**

COMMENTS OR SUGGESTIONS FOR INFORMATION:

The *Dryanda conferta* Project

Please find enclosed my donation of \$ towards costs for this project.

Dryandra Weekend 20th-21st October

Please complete this form and return to Margaret Pieroni by 1st August.

By mail: 22 Ravenhill Heights Denmark 6333
email: mpieroni@bigpond.com

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What accommodation do you require at Western Flora Caravan Park?

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(Two single beds in one room and a double bed in another.)

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