

DRYANDRA STUDY GROUP
NEWSLETTER NO. 35



Dryandra porrecta

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PLANTS

Dryandra porrecta. A spreading shrub to 3 m across, in the "pteridifolia" complex. Pink and yellow flowers are produced at the end of underground stems in June-July. This species appears to be quite hardy and is an excellent ground cover or rockery plant.

DRYANDRA STUDY GROUP

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Welcome to our winter edition of the Newsletter. It is a little later than I had hoped but I have been on leave and have not had access to printing facilities. I also recently took delivery of a new computer, Windows 95 and all that, and I am still finding my way around.

Now that El Nino appears to have gone, at least for the time being, we are having some welcome rain. It has been an extraordinary summer and autumn but my garden survived the drought and dryandras are coming into flower regularly. Parts of my garden are now overgrown or plants have died and areas are in dire need of rejuvenation. There is surprisingly little written on this topic which I suspect catches up with all of us eventually. I would welcome any comments or experiences and am happy to publish all information – how did you re-do your garden?

For all but very new members, I have enclosed a copy of an information/promotion leaflet originally prepared by Keith Alcock and revised and updated by Margaret. This was necessary as Alex George's revision more than doubled the number of taxa in Dryandra and we thought that some "back to basics" information and a full listing of species in alphabetical order might be appreciated. The table of species also includes features such as "good for cut flowers" etc. against each so should help with selecting dryandras for the garden. Extra copies are available from either Tony or Margaret. Reimbursement of postage costs would be appreciated. Groups organising talks on dryandras or wildflower shows might like to have some for "hand-outs".

Many of us are still coming to grips with the new names in Dryandra and every bit of information helps, especially good quality pictures. Alex George recently corrected and amended the generally excellent illustrations in John Wrigley and Murray Fagg's *Banksias, Waratahs and Grevilleas*— to incorporate names from the revision. I would like to thank Alex for readily granting us permission to reproduce this information which originally appeared in the WA Wildflower Society Newsletter.

Other information which I hope is interesting are Margaret's articles on underground dryandras, a surprising 25 of them, her very informative accounts of dryandra associations and localities in the wild and a report of her visit to South Australian gardens after the last ASGAP conference. I have seen the lists of dryandras and they are indeed impressive. Well done South Australia. And thanks also to Margaret for all this information, I am sure that everyone appreciates it. Hartley Tobin discusses his experiences with germination and provides a useful comparison table of autumn vs. spring germination times – he finds autumn best. There must be something peculiar about Ocean Grove! My spring plantings gave good results and had we had more rain in autumn, I could have planted most of them out – a saving of 4 to 6 months pot time. Any other comments are welcome. Finally, thanks to Brian Walters, I have included details of three more species from the SGAP Web Page. The SGAP Web site has shifted and can now be found at:

<http://www.silo.riv.com.au/SGAP/>

New Members

Welcome to two new members, Sandra Murray of Kulin, WA and Hugh Seeds of York, WA.

Annual Subscriptions

It's that time of year again and Margaret and I have decided to keep the fees that same as last year. Please send your cheques to Margaret – we'd appreciate any additional comments or suggestions.

And just to end on a tantalising note. Margaret tells me that there may be yet another new dryandra, from near Kelmscott. More about this in the next newsletter.

Happy Dryandra growing

Tony

Corrections and amendments to 'Banksias, Waratahs and Grevilleas and all other plants in the Australian Proteaceae family' by John W. Wrigley and Murray Fagg (Collins Australia, 1989)

These changes refer mainly to the Western Australian species, and to the species covered in the book. For the most recent account of all genera except *Banksia*, *Dryandra*, *Grevillea* and *Hakea*, see Volume 16 of the 'Flora of Australia' (CSIRO/ABRS, Canberra, 1995). The four genera listed will appear in Volume 17, to be published later this year.

- p. 83 top right *Adenanthos barbiger* (amendment to ending).
- p. 93 *Banksia conferta* The two infraspecific taxa are now classified as subspecies rather than varieties. Likewise with *B. ericifolia* (p. 96); *B. integrifolia* (p. 99, 100) except that var. *aquilonia* is now a species, *B. aquilonia* (A.S.George) A.S.George; and *B. meisneri* (p. 106).
- p. 137 top left *Conospermum densiflorum* subsp. *densiflorum*.
- p. 137 top right *Conospermum coerulescens* subsp. *dorrienii* (Domin) E.M.Bennett
- p. 137 centre left *Conospermum flexuosum* subsp. *flexuosum*.
- p. 138 centre right *Dryandra squarrosa* subsp. *squarrosa*.
- p. 138 bottom right *Dryandra ferruginea* subsp. *ferruginea*.
- p. 145 *Conospermum canaliculatum*, given as a synonym of *C. stoechadis*, is now recognised as a distinct species. *C. sclerophyllum* is now *C. stoechadis* subsp. *sclerophyllum* (Lindley) E.M.Bennett.
- p. 147 *Conospermum undulatum* is now recognised as a species.
- p. 155 top right *Dryandra mucronulata* subsp. *mucronulata*.
- p. 155 centre left *Dryandra nobilis* subsp. *nobilis*.
- p. 155 bottom right *Dryandra sessilis* var. *sessilis*.
- p. 156 top right *Dryandra glauca* A.S.George.
- p. 156 centre left *Dryandra nivea* subsp. *nivea*.
- p. 158 *Dryandra ashbyi* is now *D. fraseri* var. *ashbyi* (B.L.Burt) A.S.George.
- p. 160 *Dryandra carduacea* is now *D. squarrosa* subsp. *squarrosa*.
- p. 170 *Dryandra nivea* The mounded form is true *D. nivea*, and the prostrate forms with underground stems are mostly included in *D. lindleyana* which has five subspecies. Several closely-related species have been separated from these two.
- p. 171 *Dryandra patens* is now *D. hewardiana*.
- p. 174-176 In the account of *Dryandra pteridifolia*, typical *D. pteridifolia* subsp. *pteridifolia* is Form 2, the 'spirally twisted revolute leaf form'. Form 1 is *D. nervosa* R.Brown; Form 3 is *D. blechnifolia* R.Brown; Form 4 is *D. shanklandiorum* Randall; and Form 5 is *D. porrecta*.
- p. 178 *Dryandra sessilis*. The synonym *D. cygnorum* is now *D. sessilis* var. *cygnorum* (Gandoger) A.S.George. The form described as var. *major* is now *D. sessilis* var. *cordata* (Meisner) A.S.George.
- p. 182 *Dryandra* sp. B is *D. echinata* A.S.George.
- p. 183 *Dryandra* sp. C is *D. glauca* A.S.George; *D.* sp. D is *D. viscida* A.S.George; *D.* sp. E is *D. hirsuta* A.S.George; *D.* sp. F is *D. montana* C.A.Gardner ex A.S.George.
- p. 184 *Dryandra* sp. G is *D.*; *Dryandra* sp. H is *D. borealis* A.S.George; *Dryandra* sp. I is *D. stricta* A.S.George; *Dryandra* sp. J is *D. Meganotia* A.S.George.
- p. 185 *Dryandra* sp. (Boyagin Rock) is *D. nivea* subsp. *nivea*; *Dryandra* sp. (Newdegate) is *D. xylothemelia* A.S.George; *Dryandra* sp. (Bindoon) is *D. nivea* subsp. *nivea*.

Underground Dryandras

There are 25 taxa, presently known, which I call 'underground' dryandras. That is because the plants have stems which are either completely below ground or almost so. Most of them form clumps with upright leaves. In many of them the inflorescences form under the soil as terminal buds, then flower above ground, usually around the perimeter of the plant. Spent flower-heads are often covered again when the branch tips, with new leaf growth, continue outwards and the seed capsules, which are loosely attached to the receptacle, are buried in the soil.

As plants grow they often tend to die out in the centre. As the original point of growth, the main stem, is hidden when this occurs, one plant will appear to be several small ones with old, dead leaves on one side. They are the ends of the underground branches with the oldest leaves nearest the centre of the plant. This was demonstrated graphically when I visited the Roach garden in South Australia. I noticed what looked like several scattered plants of *Dryandra obtusa* and asked Thelma whether this was one old plant with the dead leaves removed in order to tidy the garden and she confirmed this.

I began to reconsider a subject that has concerned me for some time, namely the estimation of the number of plants of *Dryandra aurantia* existing in the wild. While completing a form for the Department of Conservation and Land Management (CALM) for consideration of *D. aurantia* as a declared rare species, I pointed out that, despite having visited the site several times, I was unable to estimate, let alone count, the number of plants in the population. The discoverer of further, almost adjacent, populations also made this comment.

As *D. aurantia* sets so few seeds, I consider it is important to know much more precisely the number of plants that exist and that a detailed survey is warranted to ascertain this.

Recently it was discovered that a grove of *Eucalyptus* trees at Meelup, near Busselton, was, in fact one enormous, incredibly old mallee. The method used to establish this fact was D.N.A. fingerprinting. This may be the best, or only way to learn how many individual plants of *D. aurantia* there are. This technique has also been used with *Grevillea dryandroides* and it has been proved that what were assumed to be a number of plants were single clones. The Meelup mallee, being the only plant in the area is self sterile and does not set seed.

Dryandra mimica, gazetted rare, appears to set seed more readily than *D. aurantia*.

Many of these underground-stemmed dryandras, which are 'resprouters', do not produce much seed. Those that are set are probably not dispersed far as they are often already buried and are a 'back-up' in any case, as the plants are not killed by fire. In some cases, however, too-frequent burning which destroys the seeds is leading to the decline of some species. For example; *D. lindleyana* subsp. *lindleyana* var. *lindleyana* in metropolitan Perth coastal bushlands and *D. lindleyana* subsp. *sylvestris* in the

Jarrah forest of the Darling Range. There must be a limit to the number of times a plant will resprout.

Unique among the *D. lindleyana* group, subsp. *lindleyana* var. *mellicula* does not have underground stems. It forms a low spreading plant. It is the 'typical' honey pot dryandra formerly known as *D. nivea* from the Darling scarp. Interestingly it sets seed readily, even in cultivation.

The underground dryandras are:

<i>D. arctotidis</i>	H		L
<i>aurantia</i>		R X	L F
<i>bipinnatifida</i> subsp. <i>bipinnatifida</i>	H		L F
<i>bipinnatifida</i> subsp. <i>multifida</i>	H		L F
<i>blechnifolia</i>	H		L
<i>calophylla</i>	H		L
<i>cypholoba</i>		X	L F
<i>epimicta</i>	H		L
<i>ferruginea</i> subsp. <i>chelomacarpa</i>	H		L F
<i>ferruginea</i> subsp. <i>flavescens</i>		X	L F
<i>lepidorhiza</i>		X	L F
<i>lindleyana</i> subsp. <i>lindleyana</i> var. <i>lindleyana</i>	H		L
<i>lindleyana</i> subsp. <i>agricola</i>	H		L
<i>lindleyana</i> subsp. <i>media</i>	H		L
<i>lindleyana</i> subsp. <i>pollostata</i>		X	L
<i>lindleyana</i> subsp. <i>sylvestris</i>		X	L
<i>mimica</i>	H R		
<i>nana</i>		X	L
<i>obtusata</i>	H		L F
<i>porrecta</i>	H		L F
<i>preissii</i>			L F D
<i>pteridifolia</i> subsp. <i>pteridifolia</i>			L F D
<i>pteridifolia</i> subsp. <i>vernalis</i>			L F D
<i>stenoprion</i>	H		L
<i>tortifolia</i>	H		L

H	Hardy
R	Rare
X	Not known in cultivation
L	Especially good foliage plant
F	Attractive flowers
D	Difficult

Margaret Pieroni
February 1998

South Australian Visit Sept.-Oct. 1997

The A.S.G.A.P. 19th Biennial Conference in Adelaide this year gave me and Elizabeth George another wonderful opportunity to visit the gardens of Study Group members in South Australia. The Conference itself was very interesting and enjoyable. It was good to meet up with members and friends and, thanks to the organising skills of Lloyd and Lorraine Carman and their hospitality we had a most marvellous post-post-conference tour to the south east of the state.

During the conference week we were taken by Lloyd and Lorraine to see various gardens, some more or less in the same areas as the official garden visits, which gave us the much appreciated privilege to see them at leisure. Nandawooka Gardens on the Tuesday and Thelma and Malcolm Vandeppeer's bush block and garden on the Thursday were also visited on the Conference bus tours.

One of the highlights of the Conference was visiting the SGAP Flower Show and Plant Sale at the Showgrounds. We were astounded and delighted with the amazing display of flowers (vases of labelled specimens, not just individual sprigs) from all over Australia but W.A. in particular, and the enormous number and variety of plants for sale. I believe there were about 30,000 of them. We could only admire them and wish we were able to take some home or that such a range was available to purchase here. Well done South Australian S.G.A.P.!

On Tuesday 30th September Lloyd and Lorraine took us to visit members of the Fleurieu Group at Victor Harbor. We started at the Richardsons who just recently begun to expand the garden on their property which had some mature banksias and a huge *Dryandra formosa* in full flower.

Frank Hartley's property, above Victor Harbor has glorious views from the house to the sea over well-established garden beds of colourful plants, mostly from W.A. I counted 18 dryandras which had flowered or were in flower. Some of the outstanding ones were *D. foliosissima*, about a metre high and spreading to about 3 m. which had flowered very well. I was to see this species doing very well in several gardens. A large mound of *D. nivea* subsp. *nivea*. was thriving and has flowered. As in all the gardens *D. formosa* and *D. praemorsa* var. *splendens* were the most frequently planted and were floriferous features. One I was surprised not to see very often was *D. fraseri*, considering that it, with all its varieties, is quite hardy. There were several plants of *D. fraseri* var. *fraseri* thriving in Frank's garden.

Nangawooka Gardens, north of Victor Harbor were well-worth a visit. About a dozen dryandras have been planted, some fairly recently, and they are doing well.

These gardens have quite sandy soil not far from the coast so it was not surprising that dryandras, and other W.A. genera do well. The next garden we visited, however, shattered all our precious misconceptions. On a cliff-top, with views to Kangaroo Island, Barbara Parsons has a magnificent garden in thin loam over hard clay - no sand, no built-up beds providing drainage. She told us she had tried to grow banksias with limited success, so she decided to grow dryandras. She has succeeded magnificently with them. Closely planted, but with room to spread and sheltered by bushy trees such as *Eucalyptus platypus* and *Banksia media* at least 36 different dryandras are thriving. In flower was a large bushy *D. echinata*. Others which attracted our attention were *D. comosa*, *D. shanklandiorum*, *D. stricta*, and *D. kippistiana* as well as the more frequently grown species. *D. brownii* had flowered. I was interested to note which growers have had this species flower as it doesn't oblige in every garden.

On the Thursday we headed in the opposite direction, towards the Barossa Valley. At Cockatoo Valley we visited Keith Pitman. I had read about his garden in the S.A. S.G.A.P. newsletter so I was aware that he had a very good selection of verticordias for Elizabeth to see. Keith has a large

property where he has a combination garden/plantation with most of the plants grown for cut flowers. The only dryandra he is currently growing is *D. polycephala*. We were amazed to see the way he has treated a row of *Banksia prionotes*. The flowers were getting beyond his reach so he reduced the height of the trees with a chain saw. As this species is killed by fire and regenerates from annually shed seed I would have thought this would be a very risky practice. The trees, however, had responded well, with new shoots proliferating.

Thelma and Malcolm Vandeppeer's 'bush block' at Houghton on the outskirts of Adelaide is a natural bush area, of sand over clay with quartzite and sandstone on which they have planted groups of other Australian plants such as hakeas, banksias, and dryandras. Among 11 dryandras species are a group of large *D. praemorsa* var. *splendens* and a *D. foliosissima*. A very dense *D. kippistiana* was in flower and a *D. tenuifolia* var. *reptans* about 4 m. across which had finished flowering attracted the attention of many visitors. The Vandeppeer's home garden at Tea Tree Gully - they've named it 'Dryandra Native Garden' - was a delight to visit. It is a large suburban lot 17 kilometres from Adelaide with a steep-banked creek, beautifully landscaped and completely planted with a marvellous collection of trees and shrubs including about 15 different dryandras. Several large shrubs provide privacy and screen unwanted views but the plants have been chosen and positioned so well that none of them appear to be inhibited when it comes to flowering. Apart from the dryandras we were thrilled to see so many of the more spectacular Western Australian plants doing so well in all of the gardens - genera such as *Conospermum*, *Lechenaultia* and *Verticordia*. At both of the Vandeppeer's properties was a dryandra, that I couldn't name immediately. It turned out to be one that had tricked me previously - *D. ferruginea* subsp. *tutanningensis*. The seed was obtained from Nindethana labelled '*D. ferruginea* large-flowered form from near Pingelly'. The leaves are much narrower than the description, however, and the plants grow taller in cultivation. Later on, we would see more of these at Brenton Tucker's nursery, the source of the plants in South Australian gardens. Most plants have the unusually narrow leaves but others look more like those at Tutanning.

During the Conference, a group of us made a dawn visit to Warrawong Sanctuary near Mt. Lofty. I was surprised to find several dryandras growing very well in established gardens in the carpark and being planted in new areas. A plant of *D. brownii* was in late full flower. As well as the most commonly grown species there were *D. kippistiana* and *D. serratuloides* subsp. *serratuloides* and, for sale in the nursery, plants of *D. columnaris* (labelled *D. seneciifolia*).

We had a very enjoyable stay on Kangaroo Island with a break from dryandras and verticordias but nevertheless revelling in the magnificent indigenous flora, there. The rest of our stay in South Australia was spent in the company of Lloyd and Lorraine and the other people, mostly Study Group members, we visited in the south east of the state.

The first day we went to Lucindale, visiting Brenton Tucker's nursery and garden at Tailem Bend on the way. Brenton's magnificent garden took three hours to view during which time I counted 31 different dryandras. Tony had been there only a few weeks before so I was expected to be the final arbiter on the identification of some species he and Lloyd were not sure about. *D. pulchella* was easy - it was flowering by the time we saw it. Another bushy plant with leaves like *D. conferta* but softer and with finer lobes had me puzzled. It had finished flowering. Eventually I managed to name it from the shape and size of the seed capsule - *D. platycarpa* - the aff. *conferta* from north of Perth (Badgingarra, Mogumber, Watheroo). Like many species I saw in South Australia that should be tall and columnar, it had a spreading habit in cultivation. Some of the other less commonly grown dryandras in Brenton's garden are: - *D. serratuloides* subsp. *serratuloides*, *D. ferruginea* subsp. *tutanningensis*, *D. erythrocephala* and the blue-grey leaf form of *D. conferta* (no. 31).

Another pet theory of mine - that more than one plant of *D. speciosa* is probably necessary to produce seed was also demolished as a result of visiting several of these gardens. There must be another reason why my plant (and others in Perth gardens) never set seed.

On arrival at Thelma and Paul Roach's home in Lucindale we renewed our acquaintance with Paul and Thelma and Claire and Bill Lithgow who had travelled down from Parrakie to join us and spend the next two days garden visiting.

Thelma had very kindly arranged with the late Ken Stuckey's daughter Marjorie, for us all to visit her property at Furner, the following day. This was a return visit for me as was the visit to the Roach's. In 1990, also with the Carmans and the Lithgows I spent a delightful day with Ken and an all-too-short visit to Lucindale. See newsletter no. 19. Since that time Diana Snape's excellent book 'Australian Native Gardens- Putting Vision into Practice' has been published and both these gardens are described and photographed much better than I'm able to do.

With more time, we explored the Roach's wonderful property with its lakes at the bottom of what had originally been a sand quarry. Plantings merge into natural bush and with many species self-seeding and a variety of indigenous orchids everywhere, the effect is absolutely stunning. Among 17 well established dryandras and several other newly planted species, those that stood out were:- *D. falcata*, a large shrub in brilliant flower, *D. tridentata*, the best I've seen in cultivation. One plant is almost 1 m. tall with many terminal flower heads as well as almost-ground-level ones. *D. longifolia* subsp. *calcicola*, *D. carlinoides* and a stand of *D. sessilis* var. *sessilis* which has well and truly established itself among self-seeding *Banksia coccinea* and W.A. Isopogons.

At Furner Marjorie Stuckey gave us a tour lasting more than 3 hours. It was a great thrill to see the various gardens again- the post-fire planting which was new when I visited in 1990- the 'naturalised' section with fire-caused regeneration which included several hybrids and the plantation areas, 'Stuckey's Folly' as Ken called it, with mixed dryandras and other W.A. genera and a 'dryandra corner'.

I was able to name the dryandras Ken had raised from Study Group seed and had recently planted out in 1990. I had forgotten just how many new and rare species he had, at the time. They are doing well and quite a few were flowering. I was delighted to find *D. mimica* which had flowered. Among the 45 different dryandras the more unusual ones were:- *D. stenoprion*, *D. ferruginea* subsp. *ferruginea* and subsp. *chelomacarpa*, *D. tridentata*, *D. lindleyana* subsp. *media*, *D. hirsuta*, *D. platycarpa*, *D. lepidorhiza*, *D. stricta*, *D. nobilis* subsp. *fragans* all these in flower, and *D. conferta* var. *parva*, *D. serratuloides*, *D. subpinnatifida* var. *imberbis*, and *D. stuposa*.

In the 'wild' area were the supposed *D. formosa* X *nobilis* hybrids, many *D. plumosa* and *D. mucronulata*. Some of the latter had fairly large spent flower heads and may have been subsp. *retrorsa*.

Among the dryandras harvested for cut flowers Marjorie showed us one of her favourites. It is a form of *D. squarrosa* with very large flowers and leaves and very long internodes. With its long straight stems it was very good for cut flowers. This was the first time I'd seen this plant though I was shown a leaf, by June Rogers and another member, which was as large. I thought it must have been a juvenile leaf of a normal *D. squarrosa*, but it was an average sized one. The juvenile leaves on this 'giant' form are enormous! It would seem that several people in S.A. and Victoria are growing this form. I would be very interested to find out its origin in the wild. Perhaps its a garden cultivar?

Before returning to Adelaide on the Saturday we visited Max and Mignon Ewer at Avenue Range. Once again, we were treated to a tour of another fascinating and beautiful garden. Max has garden

beds with sandy soil, a couple of 'plantation' type areas and a magnificent large rockery surrounding a pool. This is planted with an exquisitely selected variety of mostly mounded and prostrate plants, including grasses. His choice of dryandras for this area was perfect. *D. nivea* subsp. *nivea*, *D. subpinnatifida* var. *imberbis*, *D. brownii*, *D. obtusa*, *D. calophylla* and *D. drummondii* subsp. *hiemalis*. Other species among about 21 I counted were:

D. stricta, *D. sessilis* var. *flabellifolia*, *D. pulchella* and *D. conferta* (no. 31).

Back at Lloyd and Lorraine's home in Adelaide we finally had more than a few minutes to look at their garden. It has changed somewhat since I was there in 1990. Lloyd has done some earthworks and several dryandras are growing on terraces where they will be seen to advantage. There are about 15 well-established plants and Lloyd has propagated many more. Among the not so commonly grown dryandras in the garden are:- *D. kippistiana*, *D. preissii*, *D. porrecta* and *D. epimicta*.

Two dryandras which fascinated me were a form of *D. drummondii* subsp. *drummondii* of which Lloyd showed me a photo. It has dark pink flowers. The seed was collected between the locations of subsp. *macrorufa* and *drummondii*. I wonder if it could be an intermediate form? The other plant is a real mystery. I dubbed it the 'hairy monster'. It has long soft hairs on the petioles and new growth of the leaves which are tightly folded over the mid-rib and very narrow. The plant is mounded like *D. nivea*, not prostrate like *D. tortifolia*. The flowers are typical 'nivea' honey-pots. A photo showed them to be reddish in colour and the leaves curled like an octopus tentacles. It's a weird-looking plant. Lloyd collected the seed in W.A. about 10 years ago but he has no idea where the plant was.

All of these gardens have many more fascinating and beautiful plants besides dryandras, of course. We are in awe of the way people in S.A. and Victoria can grow our W.A. flora. Most gardens contain the commonly grown dryandras which do exceedingly well.

Elizabeth and I had a marvellous time and we would like to thank all of the members (and a few non-members) who gave us the time to show us their gardens and for their generous hospitality.

I have complete lists of dryandras in the gardens mentioned which I would be pleased to send to anyone who'd like to have them.

Most commonly grown (and apparently hardiest) dryandras in S.A. gardens.

D. formosa

D. praemorsa

D. drummondii subsp. *drummondii*

D. obtusa

D. brownii

D. quercifolia

Margaret Pieroni
October 1997

North Woogenillup Road. 13th February 1998

February is not the best time for botanical exploring in the south west of WA. It is the time, however, to collect seed of the annual-shedding species of dryandra. They flower in spring and the seed is ripe in February, the hottest month when the capsules open and the seed falls out. The purpose of my trip to Albany was for a botanical artists meeting but I had arranged to meet Kevin Collins at Mt. Barker and to try and solve the mystery of the "aff. brownii" dryandra. I have written about this one in newsletter 32 where I have described the species in subgenus Niveae.

I had always suspected that the plant in my garden was intermediate between *D. brownii* and *D. nivea* subsp. *nivea*. There is an identical plant in the Cranbourne plantation and two in the WA Herbarium garden. None of them have ever flowered. The seed, or plants were obtained from Nindethana wrongly named as *D. arctotidis*. Kevin had seen such a plant on North Woogenillup Road and in remnant bushland on a farm. We wanted to relocate the plants to see whether there are distinct populations of identical plants which could make it a separate taxon, albeit, most probably, a stable hybrid, or whether there are only a few plants with some variation. We didn't have enough time to find the plants as it turned out but, to begin at the beginning

Time was short for me to visit Kevin's Banksia Farm and our exploration of Woogenillup North Road as I had to drive down there and had promised to visit other friend on the way to Albany on the same day. I left home at 5 am and arrived at Kevins at nine. Nethertheless I was surprised to see that two hours had passed before we set off to find the dryandra. Kevin wanted to show me how his dryandras were progressing in his garden and I wanted to obtain some plants from his nursery. The dryandras are doing extremely well. The plants, with almost no exceptions, are thriving, with lush, blemish-free foliage. It made me realise how fortunate Kevin & Kathy are to be there, where the climate and soil suits the banksias and dryandras and the pests and diseases plaguing city suburban gardens are not a problem. That is not to take away from the good management and horticultural expertise of the Collins. One species that is not doing quite as well is *D. arborea*- one at least that I can claim to have succeeded with in my garden in Perth.

Woogenillup Road connects Albany Highway, from just north of Mt. Barker, to Chester Pass Road. It passes between the Porongurup and the Stirling Ranges. North Woogenillup Road branches off 18 kilometres from Albany Highway and after 23 km's. joins Chester Pass Road 7 km's. north of the junction of Woogenillup Road. It is a good gravel road signposted a 'Flora Road'. It well deserves the title and is recommended for visitors to W.A. for a distinctive variety of flora. Kevin has collected several dryandras which include some species a long way from previously known locations.

Our first stop was 7 km's. from Woogenillup Road. Among the dryandras there we found *D. conferta* var. *parva*, *D. nervosa*, *D. armata* var. *armata* and *D. tenuifolia* var. *tenuifolia*. 1.5 km's. further east we stopped to look at the site where Kevin had found *D. ferruginea* subsp. *ferruginea*. It was growing among similarly sized and shaped plants of *D. drummondii* subsp. *drummondii*. We made another interesting discovery- *D. nivea* subsp. *nivea*. I have yet to have Alex George confirm this identification but the shrub had the typical 'mound' habit of growth and the leaves are long and narrow. I was rather disconcerted though, to discover that the seed follicles are larger than typical *D. nivea* and its subspecies- almost as large as most *D. lindleyana* forms, in fact.

There is a *D. lindleyana* growing on Mt. Barker itself. Kevin showed me a plant in his garden but we didn't have time to look at plants in the wild. With all of these species in the Niveae group, including *D. brownii* and *D. arctotidis*, in the region, it is probably not surprising that there seem to be some intermediate forms. The discovery of *D. nivea* at the eastern end of North Woogenillup Road was very satisfactory as far as I was concerned because it appears to confirm my theory of the *D. nivea* X *brownii* origin of the plants we were looking for.

Another 1.5 km's. further on, that is 10 km's. from Woogenillup Road junction, we came to the population of *D. pseudoplumosa* that Kevin had found. Also growing here are more of the *D. nivea* subsp. *nivea*, *D. nervosa*, *D. tenuifolia* var. *tenuifolia*, *D. sessilis* var. *sessilis* and some of the best plants of *D. calophylla* I have seen. None of the dryandras mentioned were flowering, of course. *D. drummondii* and *D. pseudoplumosa* both flower in December-January and the rest are early to late spring flowering.

Kevin had seen the 'aff. brownii' plants growing near a farm property and in bush on the property about half-way along North Woogenillup Road but we were unable to re-locate them and time didn't permit further searching. After leaving Kevin to return to Mt. Barker I continued on towards Chester Pass Road and Albany. I was not able to spot the dryandra but could not fail to notice another population of *D. pseudoplumosa* with its neat columnar form and a magnificent stand of *Banksia baxteri* in full flower.

Before returning to Perth I visited Morande Nursery just north of Albany and, while talking to Max Luscombe brother of Peter (Nindethana Seeds) was able to confirm that the dryandras in question were likely to have been collected on North Woogenillup Road.

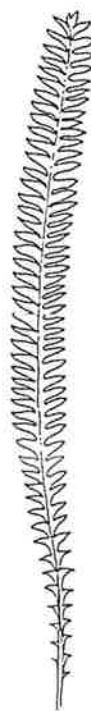
Margaret Pieroni
February 1998



D. nivea subsp. *nivea*
North Woogenillup Road
←



D. aff. brownii
My garden



D. brownii

all X 1/2

As you may be aware we have experienced one of our driest years on record, following two of our wettest. Three *D.polycephala* remain from a number I had planted for cut flowers a couple of years ago. They also produced flowers last year. These and the *D. formosa* survive without any supplementary watering and very little other attention. Two *D.praemorsa* survive under similar conditions. The third, which died 12 months ago, produced hundreds of seedlings and all but one have succumbed to the dry weather. The one surviving is very healthy and I found it by accident as the seed must have been carried across our access track and lodged at the base of one of a number of well established *Callitris columellaris*. I don't want to remove the *Callitris* and the *D.praemorsa* would be too difficult to try to transplant. I think I'll just let nature take its course.

The *D. formosa* that we use for cut flowers have survived our climatic variations with no problems although near by I have lost a number of 15 year old *Banksia baxteri* and a *B. littoralis*. These I think might have survived had we not had such a dry twelve months.

My *D.brownii* and *D. fraseri* still struggle on although my last *D.bipinnatifida* finally gave up. Of a number of new plantings I still have *D.pteridifolia*, *D.speciosa*, *D.ferruginea* and *D.quercifolia* surviving. All other small dryandras failed. I don't blame the climatic conditions alone for these failures, as I'll explain later.

I have some seedlings of *D.formosa*, *D.nivea*, *D.obtusa*, *D.proteoides* and *D.quercifolia* which should be ready for planting out in autumn. This brings me in a roundabout way to your article Germination Revisited.

I have tried to summarize/generalize my information and observations as I feel the variations in seasons from one year to the next have a significant effect on germination.

With both banksias and dryandras I have generally found quicker germination and greater numbers germinated from autumn plantings than spring plantings. For our area of South-West Gippsland I have most successful germination occurs with seed planted during the three weeks from mid February to the first week in March for autumn and the end of August to mid September for spring. In both cases, depending upon how the season is developing, I often extend my planting time by a month without too many problems. Margaret tells me she can only plant seed in late autumn and I recall from a 1992 Newsletter, both Elizabeth Brett and David Randall plant their seed in June.

I have included a list of species and minimum germination times, but unfortunately, as you'll see from my comments, I seem to have mislaid some of my germination figures.

As a little aside, last October, I decided to try some of my spare *D.formosa* seed. Very few germinated and most died from the heat. The seed trays remained unattended until recently when they got watered with my autumn seed plantings and there are the *D.formosa* coming up in respectable numbers.

In Newsletter No. 31 I mentioned pre sowing soaking of seed. This I find time consuming and I'm not sure a benefit from using Hydrogen Peroxide. Watering in the seed trays with an appropriate fungicide is probably just as effective as dusting prior to planting. If other members have found otherwise I would be interested to hear about their experiences.

I also mentioned the variation in night to day temperature. The past twelve months leads me to believe that the temperature variation need not be as great as 12°C but that the day temperature should be consistently greater than 20°C.

With seed storage for banksias and dryandras, recently I have got a 'gut' feeling that seed stored in their seed capsules or dark sealed containers retains a high degree of viability, but if stored where exposed to light and the atmosphere, can start to lose viability over time (I no real concrete evidence to support this yet).

I have also mentioned at other times that although germination can be successful I have great difficulty in getting plants to a suitable planting out size. I think (hope) I am finally getting on top of these problems thanks to comments made by some acquaintances in the plant business. I would be interested in the comments of other members who have had similar experiences.

The first problem. I always felt that my potting mix, although very sandy, would retain too much moisture and encourage root rot, even in the summer but especially during the cooler months. I now use a commercial mix which wets very easily but has excellent drainage.

The second problem. This has been a very expensive problem and also has to do with water. In an effort to get dryandras to a planting out stage, I gave a nurseryman friend 1000 *D.formosa* seed to germinate and then bought 400 of them back when they about 75mm tall and in 40mm tubes. Although potted on in my new potting mix, I promptly lost all but about half a dozen. When I emptied out the pots, the root systems all looked healthy and strong with no sign of root rot, but the foliage had discoloured, curled up and dried out. This had also been the case with the small Dryandras that I had lost during the course of last year.

A casual comment that people about 10k from us have to pump their bore water into a tank and let it stand for about 24 hours before using it on their plants, especially young ones and those with soft foliage gave me a lead. It is supposed to be connected with the iron content of the water.

Our bore water tested suitable for drinking and is far superior to the town water so I didn't think I would have a problem. Now with another 200 *D.formosa*, I set up a trial. One tray of plants I hand watered with our tank water, the others I watered with bore water which had stood for 24 hrs in 20 l. drums (I also added a little pool chlorine to each drum of water to kill any bacteria which might be in the bore water). The result - no losses in either case. Watering with a watering can over this last summer was no fun so I have put in a tank which is fed from my small potting shed and can be topped periodically from the bore. Now I can use a hose and possibly set up a sprinkler system to speed up the watering process..

I have not been able to get an explanation as to how the bore water actually affects the plants or as to what chemical is actually involved. All I've been told is that 'it' either settles out (although there doesn't seem to be any sediment) or evaporates as a gas over time. I have no explanation as to how 'it' affects the plants as not all plants are affected and some only to a small degree. From the way the leaves discoloured, I did wonder whether photosynthesis was affected resulting the eventual death of the plant. Obviously this is a case for some detailed research.

GERMINATION REVISITED – POSTSCRIPT

We are all now well into what is proving to be a wet winter. Some of my dryandras were planted out in the garden in April and May, including several from my September sowing. There is relatively little difference now (June) between the size of plants from the two sowings - the September plants are 12 to 15 cm high and very healthy. However, I had unaccountable losses in late summer of nearly all the *calophylla/drummondii/nobilis/obtusa* plants from April. I also lost several *D. praemorsa* but this was due to pots drying out. *D. praemorsa* is a fast grower with a strong root system and really does require a 6 inch pot. There could have been similar problems with the others which died but it was disappointing.

I will continue to sow seeds in August – September as it appears to suit our area. Providing I am around over summer to water the pots as needed, the success rate is high and I save 4 to 6 months of growing time.

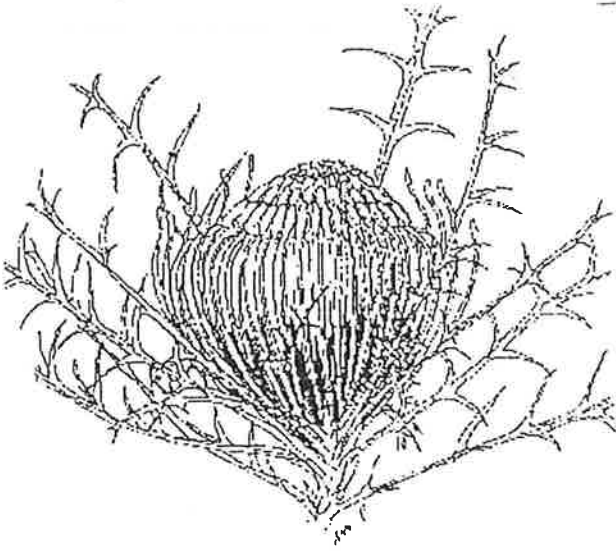
Tony Cavanagh.

CAN YOU HELP?

Does anyone have the time to update David Randall's *Dryandra Study Group Index* which was last published in 1994. This is a most useful tool for locating information on species and since the revision, a lot more useful material has been published but is not easily accessible except by going through each issue. If anyone can help, could you please let Margaret or myself know. I know that David is simply too busy at the moment but I would appreciate any offers of assistance.

Report Year 1998	<i>SPECIES</i>	<i>MIN. GERM TIME autumn</i>	<i>MIN. GERM TIME spring</i>	<i>COMMENTS</i>
	DRYANDRA			
	blechnifolia	31		* 38/53 etc. ... indicates figures from different years.
	calophylla		53	
	conferta v. conferta		40	* I should have figures for a number of other species including <i>D.arborea</i> , <i>D.baxteri</i> , <i>D.bipinnatifida</i> , <i>D.circioides</i> , <i>D.polycephala</i> , <i>D.tenuifolia</i> , but these currently have been mislaid.
	drummondii	28/34	38/53	
	drummondii ssp. hiemalis	63		
	drummondii ssp. macrorufa	95		
	epimicta	41/ 63	63	
	ferruginea	38/95	78	
	ferruginea ssp. fililoba	78	78	
	formosa	70		
	fraseri v. fraseri	35/63		
	fraseri v. oxycedra	36	46	
	lepidorhiza	46		
	mucronulata	34		
	nivea	42	42	
	obtusa	36	45	
	praemorsa		44	
	preissii	38	61	
	proteoides	35/55		
	pteridifolia	38		
	quercifolia	33/68	41/59	
	serratuloides ssp. serratuloides	78		
	sessilis	50		
	shanklandiorum	78		
	speciosa ssp. speciosa	28		
	speciosa ssp. macrocarpa	29	44	
	squarrosa ssp. squarrosa	78		
	stenoprion	48		
	stuposa	48		
	subpinnatifida v. subpinnatifida	78		
	trifontinalis	78		

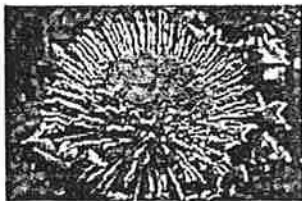
The *Dryandra* Page



Some Selected Species

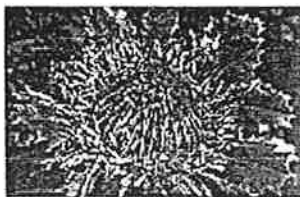
Each thumbnail image links to a higher resolution image and brief details of each plant can be seen by selecting the highlighted plant name

4. *Dryandra praemorsa*



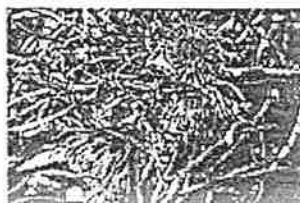
The large flower clusters of *Dryandra praemorsa* seem to have an inner glow [39k].

5. *Dryandra quercifolia* (Pink Form)



Several Dryandras have pink tones in the flowers as shown by this form of *Dryandra quercifolia* [43k]. Photo; M.Pieroni

6. *Dryandra tenuifolia*



Dryandra tenuifolia is one of the hardier members of the genus [50k]. Photo; M.Pieroni

Dryandra praemorsa



Family:	Proteaceae
Distribution:	South west of Western Australia in open forest.
Common Name:	Urchin Dryandra
Derivation of Name:	<i>Dryandra</i> ...after Jonas Dryander, a swedish botanist. <i>praemorsa</i> ...from Latin, <i>praemorsus</i> , bitten off, referring to the appearance of the ends of the leaves.
Conservation Status:	3V...a species with a range exceeding 100km and at risk in the long term.

General Description:

Dryandra praemorsa is probably the most widely cultivated species in the genus and one of the easiest to grow. There are two recognised varieties; var.*praemorsa* and var.*splendens*. The latter is distinguished by being larger overall with larger leaves and flowers. The flowers of var.*splendens* are sometimes pink, in contrast to the usual bright yellow colour.

The species is a large shrub which may reach 3 metres x 2 metres. The leaves are slightly lobed with short spines but these are not particularly pungent and do not cause any difficulty in handling the plant. As indicated by the specific name, the leaves have a "chopped off" appearance. The flower clusters may be up to 60mm in diameter and occur at the ends of the branches in spring. They are popular as cut flowers.

D.praemorsa is a spectacular, fast-growing plant which will grow and flower in subtropical climates but may not be long lived in those areas. In less humid areas the species has proven itself to be very reliable and would be a feature in any garden. The pink flowering form is particularly attractive.

Propagation from seed is relatively easy and cuttings are also successful. This species has been successfully grafted onto *Banksia serrata* and *B.spinulosa* var.*spinulosa*. Grafting should extend the range of successful cultivation.

You may have reached this description from one of several different sources.
Choose where you want to return.....

Dryandra quercifolia



Family:	Proteaceae
Distribution:	Far south coast of Western Australia in shrubland.
Common Name:	Oak-leaved Dryandra
Derivation of Name:	<i>Dryandra</i> ...after Jonas Dryander, a swedish botanist. <i>quercifolia</i> ...with leaves similar to the genus <i>Quercus</i> , the Oak.
Conservation Status:	Not considered to be at risk in the wild.

General Description:

Dryandra quercifolia is one of the most attractive species in the genus. It is a spreading shrub to about 2 metres high by a similar width. The leaves are stiff and about 100mm long with toothed margins. The new growth is a bronze colour and adds to the attraction of the plant. The bright yellow flower clusters may be up to 80mm in diameter and occur at the ends of the branches in spring. Dark brown bracts which occur at the base of the flowerheads give them a very attractive appearance. Pink flowered forms are also known and are in cultivation.

D. quercifolia has proven itself to be reliable in inland areas in well drained, sandy soils but, like many others in the genus, cannot be regarded as suitable for areas of humid summer conditions. The large flower clusters are very popular as cut flowers and the species is being farmed for the cut flower trade.

Propagation from seed is relatively easy and cuttings are also successful.

You may have reached this description from one of several different sources.
Choose where you want to return.....

[[Photo Gallery \(text descriptions\)](#)] [[Photo Gallery \(thumbnail images\)](#)]
[[Dryandra Page](#)]

Updated: Friday 26 December 1997 by Brian Walters (sgap@ozemail.com.au).

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Dryandra tenuifolia

Family:	Proteaceae
Distribution:	Far south coast of Western Australia in woodland and shrubland.
Common Name:	No generally accepted common name
Derivation of Name:	<i>Dryandra</i> ...after Jonas Dryander, a Swedish botanist. <i>tenuifolia</i> ...from Latin, <i>tenui</i> , slender and <i>folium</i> , leaf; a reference to the long, thin leaves of the species.
Conservation Status:	Not considered to be at risk in the wild.

General Description:

Dryandra tenuifolia has been cultivated by enthusiasts for many years and has proven itself to be one of the hardier species in the genus. There are two recognised varieties; *var.tenuifolia* and *var.reptans*. The former is a shrub to around 1 metre in height with the leaves having lobes along most of their length. *Var.reptans* is a prostrate plant where the leaves are lobed only towards the tips. Forms intermediate in features between the two varieties are known.

The leaves of *D.tenuifolia* are long and narrow, being up to 20 cm long, forming a tangled looking mass. The foliage is not, however, dense enough to obscure the flowers which occur on the older wood on short stems mainly in winter and spring. The flowers clusters of are about 50mm in diameter and brownish-yellow in colour.

D.tenuifolia has proven itself to be reliable in inland areas in well drained, sandy soils and has been flowered successfully in Sydney. The prostrate form makes an interesting ground cover although it may not be particularly quick growing.

Propagation from seed is relatively easy and cuttings are also successful.

You may have reached this description from one of several different sources.
Choose where you want to return.....

[[Photo Gallery \(text descriptions\)](#)] [[Photo Gallery \(thumbnail images\)](#)]
[[Dryandra Page](#)]

DRYANDRA STUDY GROUP

SUBSCRIPTIONS FOR 1998 - 1999

The group's year runs from July 1, 1998 to June 30, 1999. Subscriptions are \$6.00 for Australian members and \$10.00 for overseas. Please make cheques payable to the Dryandra Study Group and forward to Margaret. Thanks to all those who have paid.

Name: _____

Address: _____

COMMENTS OR SUGGESTIONS FOR INFORMATION:
