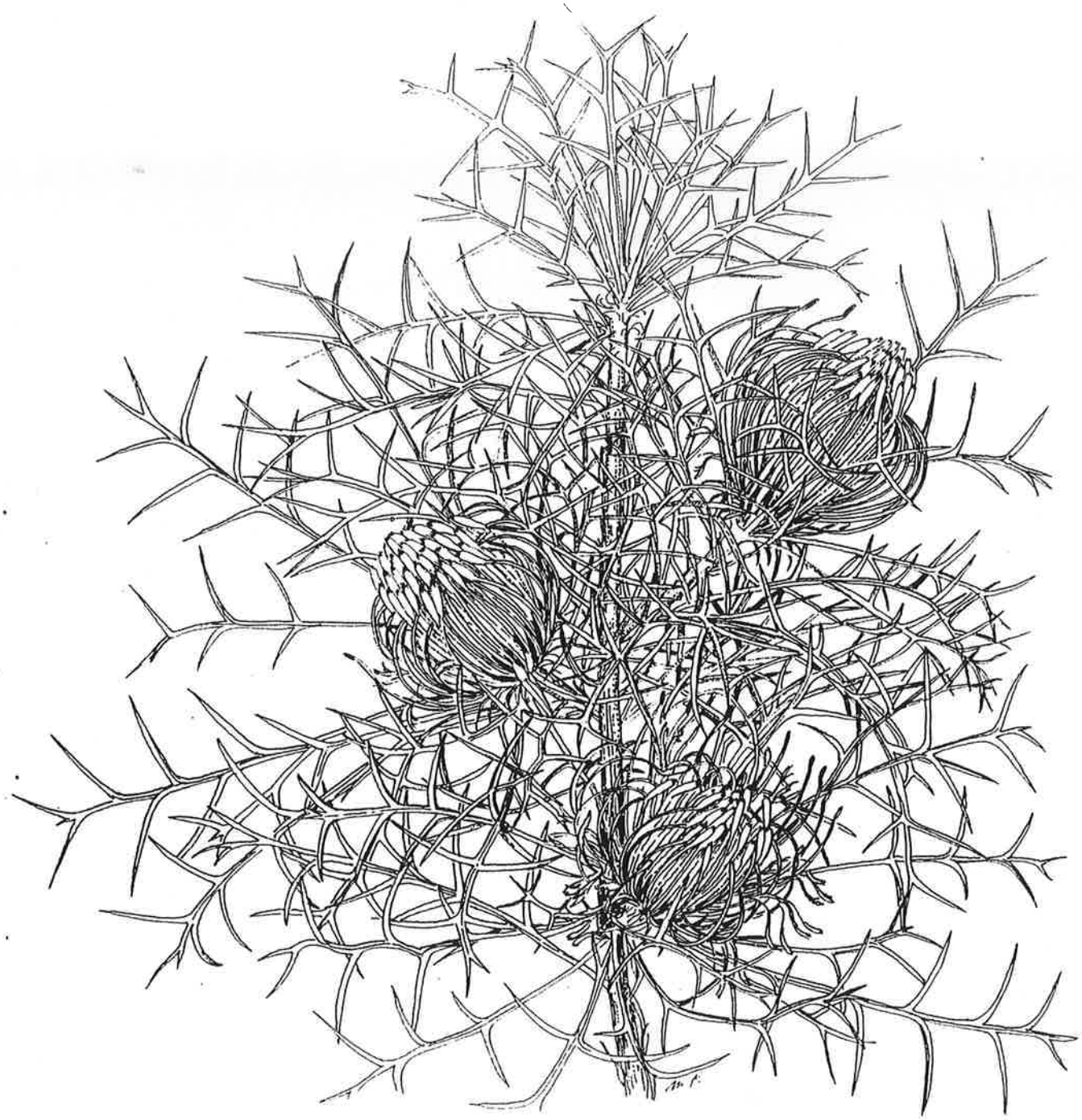
DRYANDRA STUDY GROUP
NEWSLETTER NO. 49



Dryandra fraseri var. *oxycedra*

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ASSOCIATION OF SOCIETIES FOR GROWING AUSTRALIAN PLANTS

Dryandra fraseri var. *oxycedra*

Dryandra fraseri* var. *oxycedra is a large shrub which attains a height of 6m., often branching from near the ground but sometimes resembling a small tree. It is one of the three dryandras confined to the Three Springs – Arrino area, where it usually grows in association with the other two, *D. borealis* subsp. *elatior* and *D. trifontinalis*. It has no lignotuber but is otherwise similar to *D. fraseri* var. *ashbyi*, especially the northernmost forms, e.g. at Eurardy.

DRYANDRA STUDY GROUP

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Hello and welcome to the mid year Newsletter.

Well, things are progressing with the *Dryandra* book but a little slower than anticipated. Margaret has done a mammoth job with assembling the slides and a few photographs needed for the colour illustrations for the introductory chapters and especially the individual species, and also the black and white line drawings. Each taxa (species, subspecies or variety) has as well as two or three colour pictures, an illustration of a leaf (usually at full size but for longer leaves, at half size), a capsule or fruit and a seed at twice normal size, and a seedling at normal size. These are all to help with identification and probably more than many other genera, leaves and some of the seeds of *Dryandra* are very characteristic. There is also a specially drawn map done by Margaret for each taxa to show recorded localities in the wild and we hope that the information is comprehensive enough. There are over 320 colour illustrations and more than 300 black and white line drawings and it has taken much time to organize these into a form suitable for scanning with a unique numbering system to minimize mistakes when the book text is being laid out. Through the publisher, we have received quotes for scanning and layout from local Melbourne companies and are currently finalizing an agreement for the work to go ahead. We are aiming for Christmas at this stage.

Margaret's article tells us a little about her area where only two dryandras grow naturally but as she says, she is also much closer to Banksia Farm where more than 100 taxa of *Dryandra* are growing. Let's hope that your house will be finished soon Margaret. Overseas member Liesbeth Uijtewaal has responded to my request for information on how she grows "our" plants so well the Holland. I am still very impressed that she is flowering banksias and dryandras in pots when they are only a few years old. Thanks also to members who let us know of their experiences with dryandras; again we find them being grown in obscure places like the Scilly Isles off south west England. Please continue to let us know of your successes and failures. Margaret also sent me a cutting from a local paper about the establishment of a seed orchard on private property near the Stirling Range National Park. This is being used to raise plants for restocking wild flora populations and already has notable success with the critically endangered *D. montana*. It is great to see such initiatives and let's hope that similar projects are set up. Thanks to Margaret for the photos and David Lightfoot for the reproduction of the colour page. There is little doubt that some *D. ferruginea* forms make spectacular garden plants. I have updated the Newsletter Species Index so that it now covers NL 27 to 47 inclusive. Often the information contained in an entry may be quite small but the aim of the index is to allow members to find information easily on all taxa, with the sum total often being significant over a number of issues of the Newsletter. I have also included a current list of members and a financial balance sheet for 2004-2005. We are quite healthy financially.

Subscriptions for 2005 – 2006.

Our financial year runs from 1 July to 30 June so subscriptions are now due. I have included a subscription payment form; all payments should be made to Margaret. If you have in the past paid your subscription in advance for several years, please check that your payment hasn't run out. The Newsletter is our major expense and we do need members to be currently financial to cover our costs.

Margaret and I hope that you enjoy the Newsletter,

Tony

Tony Cavanagh

Dryandras around Denmark

I have been busy propagating the two dryandras that grow on my property, *D. serra* and *D. lindleyana*, to replace those lost during the earthworks. Most of the *D. serra* was growing where my still unfinished house now stands. I expect good regeneration with many seeds germinating where the soil has been disturbed. I potted up a few seedlings and they are doing well. I have sown some seeds, collected in February, in pots and intend to do some direct seeding as well now that we've had some good rain. I roped off the *D. lindleyana* plants so they weren't disturbed.

Every second Monday I join the William Bay National Park weeding group. We have been tackling the exotic pelargonium that grows near the beaches. The native one grows there, as well, though it prefers to be on, or closer to the granite rocks. There is a dryandra that grows along the coast. It is *D. sessilis* – but which variety? To me it looks more like var. *cordata* than var. *sessilis* but I suspect it is an 'intermediate'. As soon as it flowers, I'll do the measurements. Var. *cordata* occurs at Cape Naturaliste and Cape Leeuwin and east along the south coast to Walpole. William Bay is about 16 km. west of Denmark. I have observed that plants just east of Albany also, have larger leaves and a bushier habit than var. *sessilis* as it occurs further inland. I am fairly sure that var. *cordata* grades into var. *sessilis* eastwards along the coast.

On an excursion to William Bay with the Albany branch of the Wildflower Society in March, I visited Madfish Bay and Waterfall Beach for the first time. The coastal heath is superb,there. There are lots of Proteaceae, including four banksias, *B. grandis, B. quercifolia, B. littoralis* and *B. ilicifolia* and *Franklandia fucifolia* in full flower. We also found *D. lindleyana* there. I assume it is subsp. *lindleyana* var. *lindleyana* but as far as I know, it hasn't been recorded from the Albany – Walpole region.

At Easter, I went with a group from the WA Naturalists Club, from Perth to look at some interesting eucalypts, north of the 'Valley of the Giants', between Denmark and Walpole. The brilliant orange-red *Beaufortia sparsa* was flowering prolifically on the heathlands and we stopped at a wetland to look at the fascinating Albany Pitcher Plant, *Cephalotis follicularis.* Passing through Jarrah forest, on the way to see the rare Rate's Tingle, *Eucalyptus brevistylis* and *E. ficifolia,* I spotted several populations of *D. serra* and a group of *D. formosa.*

On a recent visit to Perth, I had an opportunity to visit my old garden. Most of the dryandras are still there though the larger shrubs have been drastically pruned. *D. pteridifolia* subsp. *pteridifolia* is flowering for the first time and *D.* sp.'Jingaring' has three buds, also for the first time.

Mount Barker is only 55 km. away, so being able to see many more dryandras than I was able to grow in Perth, at Kevin and Kathy Collins's Banksia Farm, more than compensates for having to leave my old garden. The plants that I managed to lift and bring south are still in pots at the Banksia Farm and absolutely thriving – most have flowered. I hope to be able to plant them in my new place, here in Denmark, soon.

Margaret Pieroni 12/4/05

Experiments with germinating *Dryandra* seed and growing dryandras and banksias in the Netherlands

(The following information was extracted from several emails from overseas member Liesbeth Uijtewaal. What intrigued me the most was the speed of initial germination of seed and the fact that seemingly quite a number of both banksias and dryandras flower when relatively young in pots. I am sure that Liesbeth will have many more successes in the future - Ed.)

In the last newsletter, I gave a list of the dryandras I am growing here. They are all in pots (I am a member of the Dutch Container Plant Society) and are kept in a glasshouse over winter when the outside temperature can go down to -8 °C or much lower at night. During daytime the temperatures can still be below zero. We keep the glasshouse minimum just above zero. In summer, everything is out in the open.

In January I received some seed from Margaret through a UK friend, Tony Parry. I managed to extract the seed from the capsules quite well this time, even from *D. tenuifolia* var. *reptans.* The *tenuifolia* var. *tenuifolia* I had before was a disaster. I also received 14 capsules of each of the varieties of *D. erythrocephala* but, like *tenuifolia*, they wouldn't open by themselves or with some help so for all varieties, I put part of the capsules in the oven, 5 minutes at 125 °C, the other part I soaked in luke-warm water for three hours and then cut around the edges with nail clippers and managed to extract the seed. I then soaked all the seed in Kirstenbosch Smoke Primer for 20 hours. I felt this treatment might help, it wouldn't do any harm anyway. All the "oven" seeds were placed in one pre-germination box, the "non-oven" seeds in another, on 1st February; I noted down the results to see if there is a difference in germination rates between both treatments. The results can be seen below:

The number of capsules (c) and the seeds extracted from them (s) are given as well as the initial number of seedlings, germination periods and, in bold, the number of surviving seedlings early July.

erythrocephala var. *erythrocephala* **water treated** (9s:7c) gave 8 seedlings (89%), 15/2-20/3; **5**
erythrocephala var. *erythrocephala* **oven treated** (11s:7c) gave 8 seedlings (73%), 18/2-27/3; **8**

erythrocephala var. *inopinata* **water treated** (14s:7c) gave 14 seedlings (100%), 20/2-6/3, **12**
erythrocephala var. *inopinata* **oven treated** (14s:7c) gave 1 seedling (7%), 25/2; **1**

tenuifolia var. *reptans* **water treated** (3s:3c) gave 3 seedlings (100%), 15/2-20/3; **3**
tenuifolia var. *reptans* **oven treated** (4s:4c) gave 1 seedling (24%), 15/2; **0**

While the oven results were okay with *erythrocephala* var. *erythrocephala*, they were very poor with the other two so I'd strongly suggest soaking capsules rather than 'cooking' them in the oven.

One could think that the results might have been influenced by fungal infection in the oven box but as other seeds in the oven box (both banksias and dryandras) germinated okay, this might not be the case.
(In response to my comment that her germination times were much shorter than ours where we normally expect five to eight weeks for *Banksia* and *Dryandra*, she commented – "Please bear in mind that it may seem as if my seeds germinate quicker than yours but after germinating and planting into (small) pots, it takes at least an extra week, maybe two, for the seeds to appear above the ground so in the end germination times will be comparable" – Ed.)

From the pre-germination boxes, the germinated seeds are transferred to small pots (7x7x8 cm), and seedlings are later repotted into larger pots (9x9x10 or 10x10x11, depending on plant size), in a soil mix that is being specially made for me. It's peat-based, trace elements and minerals added and volcanic grit, so it's very well drained but moisture retentive. I'm very pleased with it, it certainly is a very good constant quality mix. It is not cheap but the basis of a good plant collection is a good potting mix and considering the amount of time spent on the plants, it would be a waste to try and grow plants in a cheap, inferior mix with bad results. I add native Osmocote to the potting mix when repotting (3g/l), and that's all the nutrients they get. (NOTE: After germination, the seeds are placed in the same potting mix with extra volcanic grit added and only 1.5 g/l Osmocote).

I am actually surprised at how well the plants perform in pots. I used to think that it would take much longer for them to flower compared with plants in garden situations in Australia but they don't seem to do much worse at all. In pots they're being pampered to flowering stage of course, water offered on demand, so what else could a plant wish for? There's quite a few banksias flowering within three years from sowing which is a better score than, say, most melaleucas or callistemons!

All of my *Dryandra* and *Banksia* seedlings are doing well but it's obvious that in general banksias are the more vigorous plants. Could that just be me, needing more practice with dryandras, or have you noticed that too? (I think that it depends on the species. Some banksias such as *ericifolia* and *speciosa* to name just two, are strong growers while some of the "sphaerocarpa" group for me are quite slow. *D. formosa* and *D. praemorsa* usually grow very quickly but *erythrocephala* forms (and perhaps *tenuifolia* var. *reptans)* can be slow growing – Ed.) (Actually all my dryandras are fairly comparable at the moment, *drummondii* being the most vigorous. For me *B. sphaerocarpa* and the like isn't much slower than other banksias. I'm afraid one can't really claim one plant is slower than another since they have their own ways and vices and each is responding to certain growing conditions! LU).

Many of my banksias and some of the dryandras have flowered already. The first *Dryandra* was *D. praemorsa*, (was this the one bought as a small plant in August 2003 – Ed.? Yep - LU). The buds I noticed earlier were flower buds and the first individual flowers opened over a few days in late April so they are definitely not leaves. It was interesting to follow flower development. I thought that *D. formosa* also had flower buds but now I am not so sure. *Dryandra drummondii* almost finished flowering (July 12th); it was sown Jan 2003.

A nice surprise was *B. speciosa.* Both my plants, sown at the end of September 2002, produced one bud each in late April. It is interesting to note that normally the young leaves curve inwards whereas the young leaves surrounding a flower bud curve outwards. Both *B. burdettii* plants, sown January 2003, produced a bud in June which was an unexpected surprise. There were also first buds on *B. brownii* (sown Jan. 2000) and "Honeypots" (propagated Feb. 2003). One *B. dryandroides* cutting struck last month, after more than six months in the propagator. It's a cutting from a flowering plant from a friend of mine and the only one, out of six, that survived. It will be interesting to see which flowers first, the cutting or the two plantlets that I managed to grow from seed this spring.

Time to get back to the plants. I've given up on repotting them all before putting them outside and I'm simply putting them all out of the glasshouse now. I hope I'll manage to treat them the way I should over the next months.

Liesbeth Uijtewaal-de-Vries, Neer, The Netherlands.

NOTES FROM MEMBERS

(From Kevin Collins, Banksia Farm, Mt Barker, March 2005)
Thanks for the last newsletter – keep up the good work. Here are some observations on seed set with my dryandras.

D. nivea subsp. *uliginosa, D. borealis* (both subsp.), *D. brownii,* and *D. ferruginea* (some forms) appear to be self-infertile i.e. they form follicles but don't set seed.

D. subpinnatifida var. *imberbis* sets a small amount of viable seed from a lone plant.

In contrast, most of my *fraseri* forms are self-fertile, i.e. they set viable seed even without other plants being present, as are *D. baxteri, D. cuneata* and some forms of *D. conferta*. I suspect that there are many others as well.

I collected seeds of low coastal *D. sessilis* var. *sessilis* from the cliff tops at Cape Howe recently. They were about 1 m high with about 2.5 m spread. It will be interesting to see if they retain their low form as does *Banksia grandis* from the same region.

We are still very dry here, probably our driest summer period for years. Some dryandras are showing a little stress but most are okay.

(Thanks for this information, Kevin. Keep us posted on the performance of that low form of *sessilis.* Ed.)

(From David Lightfoot, Surrey Hills, Vic. June 2005)
Just an update on the performance of some of my dryandras. *D. fraseri* is looking great at the moment while *D. drummondii* has numerous buds, also *D. obtusa* and *D. polycephala. D. formosa* also has a few buds but I am very pleased with the *D. carlinoides* you gave me which has buds although still in its pot.

(Thanks for the update, David. *D. carlinoides* has proved to be quite reliable from cuttings taken in March/April. Yours is a cutting-grown plant and it is good to see it will flower at less than 18 months.)

(From Phil Trickett and Catriona Bate, Canberra, May 2005)
Over the last five months I have been doing a lot of grafting of banksias and dryandras. Results so far are very encouraging with a number of banksias and dryandras successfully grafted on to *Banksia integrifolia.* The dryandras I have tried are: *D. borealis* subsp. *borealis, D. fraseri* var. *ashbyi* (Eurardy), *D. praemorsa, D. formosa, D. quercifolia, D. longifolia* subsp. *archeos, D. foliolata, D. nobilis* subsp. *fragrans* and *D. speciosa* subsp. *speciosa.* The first of these that I grafted, *D. borealis* subsp. *borealis, D. fraseri* var. *ashbyi* and *D. quercifolia,* are all growing well, while the remaining species are still under cover. The next month will tell if these will take, but they look very healthy at this stage. I'll let you know how they go.

I am keen to do some more trials with other dryandras, particularly with threatened species. I think that I have most of the north-of-Perth species. Can you recommend some of the ones from south of Perth, if seed and/or plants are available?

(Excellent to hear that you are experimenting with grafting, Phil, more especially as some appear to be successful. Please keep us posted on the outcomes. Is *B. integrifolia* the only stock you have used or are there other possibilities? Margaret can no doubt supply seed for some of the south-of-Perth species but I have plants of *D. baxteri, D. brownii, D. longifolia* subsp. *longifolia, D. nivea, D. squarrosa, D. anatona* and *D. carlinoides* (from the north) if we could arrange how best to get material to you and when is a suitable time - Ed.)

(From Alex George, Botanical Liaison Officer, Royal Botanic Gardens, Kew)
We visited the gardens of Tresco Abbey in the Scilly Isles in April. Among other Australian plants, they had *D. sessilis* var. *sessilis* and *D. praemorsa* var. *praemorsa* in flower. Being out in the Atlantic, about 30 km beyond Land's end, they rarely have frosts and so can grow a wide array of plants from southern Australia, South Africa etc. They have plenty of sunshine but have to grow trees and tall, thick hedges for protection from constant wind. It is fascinating to see bumble bees visiting our flowers, and apparently pollinating some as they had fruit from previous years.

(Thanks for this interesting insight Alex. Would be interested in learning more about Tresco and Australian plants. Ed)

About the Photos

The next *Dryandra* taxa, not on the list of illustrated species as published by Tony in newsletter no. 42 are the subspecies of *D. ferruginea*; *pumila, obliquiloba, chelomacarpa* and *flavescens.* Even though subsp. *tutanningensis* has appeared in print, I couldn't resist putting in photos of the magnificent plant I left behind in my Perth garden, which flowered for the first time in September, last year. Each flower head is about 10cm. across. Subsp. *tutanningensis* along with subsp. *pumila* are probably the easiest to grow. Seed of these have been available from Nindethana and I have seen plants growing in Victoria and South Australia as well as in WA. They both have a restricted distribution, in the wild. Subsp. *tutanningensis* grows on laterite ridges in Tutanning Nature Reserve, near Pingelly but thrives in sand in cultivation. It is growing in a raised, bricked bed in the front of my former house, in full sun.

The *Dryandra sessilis* that grows on coastal dunes, near Denmark, mentioned elsewhere in this newsletter, is in flower and it measures up to var. *cordata*, as I suspected. The photo was sent by Max Ewer who has it growing in his wonderful garden at Avenue Range, South Australia. It was flowering in September, 2002. It is obviously a good garden subject, growing taller in cultivation than those in the wild, which are lower and bushier because of their coastal location.

Thank you, Max.

nated to the Albany Hospice.
Albany Advertiser Weekender 9/6/05

Endangered flora's new lease of life

A PROJECT to protect critically endangered plant species in the Great Southern has proved a resounding success.

A seed orchard on private property near the Stirling Range National Park will be used in the future for restocking wild flora populations and for research into gaining a better understanding of the state's unique flora.

Established in 2003, the orchard has already doubled the known wild population of the critically endangered mountain dryandra *(Dryandra montana).*

All the plants were grown from seed conserved in the Department of Conservation and Land Management's (CALM) Threatened Flora Seed Centre.

The centre is a part of the Millennium Seed Bank, a program aimed at conserving 10 per cent of the world's dryland flora by 2010.

Albany MLA Peter Watson said the recovery actions for threatened flora were driven by the community and Government representatives through regional Rare and Threatened Flora Recovery Teams.

"Community involvement in conservation activities is vital," he said.

"Dedicated volunteers and the members of the Albany Rare Flora Recovery Team help to drive important conservation actions.

"Work on the seed orchard is being supported by the Commonwealth through the South Coast Regional Initiative Planning Team (SCRIPT)."

Earlier this month, seedlings of two more endangered species were planted at the seed orchard site.

The small flowered snotty-gobble *(Persoonia micranthera)* and the bearded heath *(Leucopogon gnaphalioides)* are only known from the summits of the Stirling Range. Both are at risk of extinction from disease, too frequent fire and grazing by both native and feral animals.

Dryandra sessilis var. *cordata* (Above)

Dryandra ferruginea subsp. *tutanningensis* (Left)

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Miscellaneous

44/6(i) (leaf of supposed hybrid between *D. longifolia* subsp. *archeos* and *D. armata* var. *ignicida*)
45/2,3(i) (hybrids of *D. quercifolia*).
46/3 (hybrids on Fitzgerald National Park).
47/11 (Ravensthorpe range hybrids)

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Lyndal Thorburn, Queenbeyan, N.S.W. 2620
Hartley Tobin, The Gurdies, Vic. 3984
Rodney Tonkin, Pomonal, Vic. 3381
Phil Trickett, Ainslie, A.C.T. 2602
Liesbeth Uijtewaal-de-Vries, Neer, The Netherlands
Christene Wadey, North Eltham, Vic. 3095
Don Weybury, Bacchus Marsh, Vic. 3341
Don & Joy Williams, Badgingarra, W.A. 6521**

Other groups and organisations
Battye Library, Perth, W.A. 6000
Library, Australian National Botanic Gardens, Canberra
Library, Deakin University, Geelong, Vic.
Library, National Herbarium, South Yarra, Vic.
Editor, *Australian Plants*, Sydney, N.S.W.
Editor, *Native Plants for New South Wales*, Sydney, N.S.W.
Editor, *ASGAP Newsletter*
Editor, *Australian Plants On-line*, and ASGAP Webmaster, N.S.W.

S.G.A.P. Regional and State Groups

Blue Mountains, N.S.W.
Canberra, A.C.T.
Fleurieu, S.A.
Maroondah, Vic.
New South Wales.
Queensland
South Australia.
Tasmania.
Victoria
W.A. Wildflower Society.

DRYANDRA STUDY GROUP

FINANCIAL STATEMENT 1/7/04 – 30/6/05

Cash at bank at 1/7/04		$1739.53
Income	Members' subscriptions	342.00
	Donations	46.00
	Sales of publications etc.	94.00
	Bank interest	7.57
		489.57
	Total	2229.10
	Printing	32.00
	Stationery, postage, photocopying, etc.	162.84
	Bank charges	1.90
	Total	196.74
Cash at bank at 30/6/05		2032.36

ASSETS

Newsletters and Occasional Publication No. 3 (Illustrated Key)
Filing cabinet
6 stackable drawer/boxes for seeds
Seeds of most spp.
About 3,000 photographic slides
Album of photographic prints
Display of 12 mounted photos etc.

DRYANDRA STUDY GROUP

SUBSCRIPTIONS FOR 2005 - 2006

The group's year runs from July 1, 2005 to June 30, 2006. Subscriptions are $8.00 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:

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