



A.N.P.S.A. Fern Study Group

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LEADER: Peter Bostock, Qld 4069. Tel. a/h: 07 32026983,
email: pbostock@ozemail.com.au
TREASURER: Dan Johnston, Qld 4556. Tel 07 5445 6069,
email: dan.johnston@uqconnect.net
NEWSLETTER EDITOR: Dan Johnston, contact as above.
SPORE BANK: Barry White,

From the Editor

In this newsletter we have 3 articles from Claire. In one she shares her expertise at growing ferns from spore with us. Her other two articles detail the way our ferns have responded to the wonderful weather (for ferns!) we have been having this spring and summer, firstly at her home in the Brisbane suburb of Mt Gravatt and also at Boombana to the west of Brisbane in Brisbane Forest Park. An article from Kylie tells us how to go about building a case for growing filmy ferns. Peter Hind has supplied the Sydney region program. At the back of the newsletter is Barry's spore list. Thanks to Claire, Kylie, Peter, and Barry.

Program for South-east Queensland Region

Dan Johnston

Sunday, 3rd April. Meet at 9:30am at Claire Shackel's place,
Fern propagation.

Subject:

Saturday, 30th April – Monday, 2nd May (Labour Day long weekend in Queensland). Current intentions are to visit the northern rivers area of New South Wales, perhaps the Nightcap Range area.

Program for the Sydney Region

Peter Hind

Saturday 19th March, Meet about 10.30 a.m. at the fernery in the Royal Botanic Gardens, Sydney. Bring picnic lunch if you wish and it's best to use public transport. Martin Place and St James are the nearest Railway stations. I will be leading us around the fern collection. There has been much new planting and tidying up of the existing collection since our last visit. Contact me, Peter Hind on (02) 96258705 if you need more information.

Saturday 16th April, Meet from about 11 am at the home of Steve Lamont, "Tips for Growing Ferns" is this month's subject, so please scribble down a few cultivation notes that you have found useful. If lost, call Steve

Saturday 21st May, We plan to view the pictures taken by Kylie & Dwayne et. al. of ferns & places on Lord Howe Island plus ferny pics from the Otways, Victoria. Meet at Margaret and Peter Olde's

Saturday 18th June, Adelina & other waterfalls. Meet near the Soldiers Memorial at Lawson by 10 am (just off the Great Western Highway, turn left at the shopping centre), for a 10:30 am start. (We drive to the start of the track). We plan to do the walk in reverse as there is more off road parking at the Cataract Falls end of the track. Bring lunch, to eat when we get back to the cars, perhaps carry a snack if you wish or take lunch

with you; certainly carry drinking water. The full circuit could take a couple of hours. This is one of the best of the more accessible ferny areas in the Blue Mountains. Expect to find around 30 different species including *Blechnum gregsonii*. Enquiries to Peter 96258705

All outings are subject to weather conditions being favourable.

Peter Hind 96258705

Ferns from Spore Update

Claire Shackel

As it is a number of years since I wrote about my methods for growing ferns from spore, it is time for an update.

Collecting the Spore

Sections of fronds containing mature sporangia are folded into fine grained writing paper and placed in an envelope. After 48 hrs the paper is carefully opened to see if the spore had been shed. This is planted immediately if possible. If spore has not been shed it may be necessary to try a different leaf or wait some time before trying again. Some ferns shed their spore reluctantly and another method with which I have had a lot of success is holding the seed tray up under the leaf and scraping the sporangia off with a knife. This has the advantage of not needing to destroy the frond and is very good for *Platycerium superbum*.

Planting the Spore

Kiwipeat with 10% zeolite is saturated and packed into small seeding trays. These were microwaved two at a time in a closed microwave container with half a cup of extra water for 10 minutes on high. No attempt is made to separate the spore from the sporangia fragments or sterilise the mixture. It is important to plant the spore as it is very fine and slides down the paper last. The spore is sprinkled on top of the peat and washed in with a gentle stream of water. A label with the name, source of the spore and the date is added to the tray.

The date is important as many of the trays I was repotting in 2010 were from 2005. The tray is placed in the bottom two thirds of a 2.4 litre fruit juice bottle lying on its side, that has been cut a third down from the top and the top third is pushed back inside to form a seal. These mini hothouses are placed in a well lighted bush house.

The bottles are left until there was good prothalli development and are not watered unless there is evidence of it drying out or there is very vigorous prothalli growth without plantlets forming. In this case the tray is gently flooded as the sex cells are under the prothalli.

Although I am still concerned about the contamination of spore, I tend to welcome it rather than despise it. With experience it was possible to recognise the common contaminants i.e. *Cyathea cooperi*, *Christella dentata*, *Nephrolepis cordifolia*, Holly fern (*Cyrtomium falcatum*), and a large exotic *Polypodium* and remove them before they develop too large a root system. *Asplenium polyodon*, *A. australasicum* and *Platycerium bifurcatum* come up in small numbers and are slow growing so are separated and potted on without too much disturbance of the selected prothalli.

Potting up the unknowns can be interesting. Spore of *Oenotrichia tripinnata* from Nada Sankowsky yielded finely divided hairy fernlets that I hoped were right but they grew much faster than my previous experience with this fern. The survivor was transplanted and transplanted to ever larger pots and was a *Hypolepis tenuifolia*. I also have a fine specimen of *Pteris tripartita* whose fronds are on the bush house roof.

Potting up

This is where my method has changed over the years. Initially attempts to transplant prothalli were unsuccessful. Now all trays are prepared and microwaved as for spore planting. With crowded prothalli trays or when small plants have developed, small plugs are transferred to new trays and dunk watered to the top of the tray. When lifted out, the water pulls the prothalli down on to the medium. A very dilute aquasol solution is used to encourage better growth. They are placed back in bottles and back in the bush house. The original tray is treated in the same way as many of the prothalli have been disturbed and lost contact with the moist peat mix. It has been possible to go on removing fernlets from some trays for five years and in some cases it took four years before the first plants formed. Fern growing this way takes patience.

I usually put six plugs per tray and do four to six bottles per fern. When fernlets have developed they are separated to two per bottle and allowed to grow until they fill the bottle and have a good root system. The top third of the bottle is then removed to start hardening off the plantlets but care is needed as they are very prone to drying out. It is usually easy to separate the two plants with minimum root disturbance and settle them in a 100mm pot of good quality potting mix with a good dose of slow release fertiliser.

The key to all this is obtaining good spore as some loose viability very quickly. The one group I have not succeeded with is the *Polystichums*.

Garden Ferns at Mt Gravatt

Claire Shackel

This has been a very wet year, the first for about 10 years and the ferns are appreciating the water and increased humidity. My patches of *Adiantum formosum*, *A. atroviride*, *Arachniodes aristata* and *Dennstaedtia davallioides* are growing madly. A clump of *Calochlaena dubia* that had done nothing except not die for about six years has now taken off and so have *Microsorium grossum*, *M. punctatum* and the hybrid (*Microsorium* × *maximum*).

Christella dentata has become a weed all over the yard and *Cyathea cooperi* is growing well in the middle of an open garden bed. The cement paths and turkey deterrent bricks have a rim of small *Adiantum hispidulum* and/or *Pteris vittata* around their base. A *Graptophyllum ilicifolium* has a *Davallia pyxidata* and tiny *Platynerium bifurcatum* at its base. The end of a plastic drain where some organic matter has collected is sporting a collection of *Pteris vittata* and *Asplenium* sporelings.

As I garden with the help of a team of scrub turkeys, the majority of my ferns are in pots. In the autumn of 2010 many of my fern were broken up and repotted but have grown so vigorously they will probably need attention again soon.

Many 'hardy' flowering plants have succumbed to the wet condition but the ferns are loving it.

Outing to Boombana

Claire Shackel

The Brisbane Daytime branch held their February meeting at the picnic area at Boombana on the Mt. Nebo road. After the formal meeting, the group walked the 1 km loop track. At the picnic area, the vegetation was a fairly dense Eucalypt forest and became rainforest as the track wound around the ridge. The rainforest contained some very large trees with dense canopies and good examples of strangler figs where the host had rotted away leaving an empty core. Although they had finished flowering the large leaves of the Brisbane lily *Proiphys cunninghamii* were very evident in the Eucalyptus forest area.

With all the wet weather South East Queensland has experienced in the last 6 months, the ferns were at their best. There were large swaths of *Doodia aspera*, *Adiantum formosum* and *Lastreopsis decomposita* in different areas walked through. *Lastreopsis marginans* and *Pellaea paradoxa* were other ferns that featured prominently. Other ferns seen were *Adiantum atroviride*, *A. hispidulum* var. *hypoglaucum*, *A. hispidulum* var. *hispidulum*, *Doodia caudata*, *Arthropteris tenella*, *Davallia pyxidata*, *Platynerium bifurcatum*, *P. superbum*, *Arachniodes aristata* and *Asplenium australasicum*. The *Cheilanthes sieberi* had as large and weak-stemmed finely divided fronds as I have seen. The *Pyrrosia confluens* and *P. rupestris* were both very plump and fleshy. Where there was a break in the canopy or good light *Pteris tremula* thrived.

When the Fern group has visited the area, the outing has been from Jolly's Lookout to Boombana, a 4km walk, and a few more ferns were seen. The concentration of ferns on this short walk and on level ground, make it the ideal place to show off what S.E. Queensland has to offer.

The Case for Filmy Ferns

Kylie Stocks

We had always had an interest in growing filmy ferns, but had never managed to get the conditions 'quite right'. Dwayne had 'souvenired' plenty of lovely specimens, only to see them drop dead in double quick time on our misted propagation benches.

'Dead Easy!' said Martin Rickard from the British Pteridological Society (BPS). Just build yourself a glass case, and make sure you can keep the humidity under control.



So off we went to Revolve, to purchase ourselves some second hand glass windows (\$30), and then to Bunnings to buy a 'cheap' glass cutter (\$15). We also purchased some aluminium angle to do the edges (\$30). Hmmm.

Many bits of broken glass later, we had a basic case, minus a back. Rather than buy more windows to experiment with, we decided to purchase a single piece of glass to complete the case (\$50). The tank, once constructed, measured 143cm long by 43cm wide by 58 cm high.

To support the base, we initially stuck strips of cork to the glass. However, we thought better of this, and instead bought some pre-packaged cork tiles which we cut to fit and stuck on the base (after first routing them to account for the aluminium edging). The cost of these was two packets at \$13.50)



We had intended to purchase Perspex to do the lid of the case, but the guy from the glass shop recommended instead, three pieces of glass, one with a handle, which cost a further (\$60). The surrounds for the lid, on which the three pieces slide, Dwayne 'whipped up' out of some of the window edges we had left over (plenty...).

Martin advised us strongly to test for water holding capacity (or at the very least to put the tank on a piece of rubber sheeting). Good advice, as it turned out. When we

filled the tank with 1cm of water, it came gushing out all the corners, and we had a minor flood in the living room. Time for some more silicon! (We ended up going through nearly 3 tubes of silicon, which cost about \$9 a tube)

Back to Martin's instructions. We were advised to use grit at the bottom, so off we went to the pet shop to purchase some shell grit (\$35 for a 25kg bag of medium grit). We covered the base with this to a depth of around 1.5cm, just so you can't see it from outside the tank.

Martin suggested covering it the grit with a mix of acid sand and some ericaceous compost or just peat. We decided that the best option for us was some of our nursery potting mix, enriched with some aged peat moss.

And then to planting! We had an old, dead trunk of *Cyathea australis* lying around, so we decided to cut it in half to provide a structure for a *Blechnum contiguum* to grow up. (We figured that we had a few plants needing a higher humidity environment, that would benefit from the tank as well, so we have planted these in the tank as well). Martin





advised us to plant the filmies so some 'roots' and a little bit of rhizome are covered. He advised us to use stones and pieces of wood to hold them in place until they get going: 'House bricks are splendid—if you've got some which look reasonably attractive'.

So now all we need to do is souvenir some new filmy ferns, confident in the knowledge that we now have a suitable environment for them to grow and thrive in!

A note to the enthusiast—Martin also provided us with two golden rules for managing the tank environment:

Rule one: don't let weedy ferns get out of hand. However careful you are, you will get weeds. It's always tempting to leave the weedy ferns because inevitably you will get some you don't recognise! In the wild filmies do not usually thrive in competition with other plants.

Rule two: Try and keep the glass clean. Algae will grow on the inside of the glass, and it can be difficult to remove without damaging the ferns. (We purchased a magnetic aquarium glass cleaner to help accomplish this task—a snap at \$15 from the pet shop)

And finally, keep the tank covered. Mist the whole with rain water (preferably) once planted, but don't be tempted to mist too often! Keep an eye on the moisture levels—do not over water! Martin advises that tanks **without** an airtight seal seem to do better 'it's a bit like the old adage—a dry plant will often recover if watered, a waterlogged plant is usually already dead'. You can sometimes open the lid up a little to reduce the moisture levels to avoid it becoming too wet.

Oh—and the total cost of the exercise? About \$250.

We did consider purchasing a second hand aquarium. We found some suitable candidates on ebay, but the cost of these plus the travel to collect, was far in excess of what we paid to construct our own.



Spore List February 2011

Barry White

Acrostichum speciosum 4/09
Amphineuron opulentum 4/10
Angiopteris evecta 11/09
Arachniodes aristata 11/10
Asplenium milnei 10/10
Asplenium nidus 5/08
Asplenium nidus cv. 5/08
Asplenium pellucidum 12/10
Blechnum ambiguum 1/08
Blechnum chambersii 9/10
Blechnum patersonii 9/10
Blechnum watsii 12/08
Chingia australis 6/10
Christella hispidula /09
Christella subpubescens 12/08
Cyathea australis 9/10
Cyathea baileyana 12/08
Cyathea cooperi 1/09
Cyathea cooperi (Blue Stipe) 1/11
Cyathea cooperi 'Brentwood' 3/08
Cyathea felina 10/08
Cyathea howeana 10/10
Cyathea macarthuri 10/10
Cyathea medullaris 11/08
Cyathea robusta 9/10
Cyathea rebecca (crested) 9/10
Dicksonia antarctica 12/10
Diplazium australe 5/10
Diplazium assimile 6/09
Diplazium dilatatum 12/10
Doodia australis 6/10
Hypolepis glandulifera 12/08
Lastreopsis acuminata 12/10
Lastreopsis decomposita 6/09
Lastreopsis microsora 6/10
Lastreopsis nephrodioides 10/10
Macrothelypteris torresiana 6/10
Microsorium punctatum 1/09
Ophioglossum pendulum 7/08
Pellaea falcata 1/11
Platynerium superbum 4/08
Platynerium veitchii 1/11
Plesioneuron tuberculatus 12/08
Pneumatopteris sogerensis 12/08
Pneumatopteris costata 12/08
Polystichum australiense 5/10
Polystichum formosum 6/09
Polystichum proliferum 12/10
Polystichum whiteleggei 10/10
Pteris pacifica 6/10
Pteris tremula 11/10
Pteris umbrosa 6/10
Revwattsia fragilis 12/10
Sphaerostephanos heterocarpus 7/08

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