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

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Please note:

1. **Subscriptions for 2012–2013 are now due (see back page and attachments).**
2. **Changed email address for the treasurer and newsletter editor (see above).**

Program for South-east Queensland Region *Dan Johnston*

September: Instead of meeting in September, we will participate in the SGAP(Qld) Flower Show. The Show is on Saturday and Sunday, 15th and 16th September. Set up on Friday 14th.

Sunday, 7th October: Meeting at 9:30am at the home of Ray and Noreen Baxter

Sunday 4th November: Excursion to the Manorina Picnic Area in the D'Aguilar National Park (formerly Brisbane Forest Park.) Manorina is between Mt Nebo and Mt Glorious, on the eastern side of the road, a couple of km from Mt Nebo. Brisbane UBD Reference F16 on map 105. Meet there at 9:30am.

Sunday 2nd December: Christmas meeting and plant swap, Rod Pattison's residence. Meet at 9:30am.

Sunday, 3rd February, 2012: Meet at 9:30am at Peter Bostock's home

Program for the Sydney Region *Peter Hind*

August, No Meeting – Enjoy the early spring.

Saturday 15 September, Meet at 11am at the home of Dot Camp

We plan to revisit nearby Strickland Falls after lunch. 31 different ferns were seen here on our previous visit. Bring lunch, water etc. and wear comfortable walking shoes. Dot will be our guide.

Saturday 20 October, Meet about 10:30 am 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. It should be interesting to see how the new plantings are faring. Extra plants have been transplanted here

from the Tropical Centre collection in preparation for its proposed redevelopment. Contact me, Peter Hind on (02) 9625 8705 if you need more information.

Saturday 17 November, Meet at Margaret and Peter Olde`s Country Residence

December 2012 and January 2013 – No Meetings, - MERRY CHRISTMAS.

Saturday 16 February 2013, Meet from about 11am at the home of Peter and Margret Hind, Study of Australian *Pteris* species. Phone (02) 9625 8705

Saturday 16 & Sunday 17 March, 2013. Meet from 11am at the home of Kylie & Dwayne Stocks at Verdigris Nursery,

Itinerary details next Newsletter or phone Kylie & Dwayne on 02 4478 1311 closer to the event.

All outings are subject to weather conditions being favourable.

Sydney Area Meeting Reports

Meeting, Lamont's. 28th April, 2012

Mel Lamont

The Sydney fern study group met on Saturday, 28 April 2012, at Steve Lamont's home The topic was *Davalliaceae*. Peter Hind led the discussion.

Steve provided what he thought were examples of *Davallia canariensis, D. denticulata, D. fijiensis, D. hymenophylloides, D. mariesii, D. mariesii* var. *stenolepis, D. parvula, D. pentaphylla, D. pyxidata, D. solida, D. trichomanoides, D. triphylla, Humata griffithiana, H. pectinata, H. repens, H. tyermannii* (including some furcate examples) and a few mystery *Davallia*.

Kylie and Dwayne Stocks brought along some unknown *Davallia* varieties labelled 'gloriosum', 'edwardsii', 'theo gloriosum' and 'red stem from Japan'.

Natalie and John Wise also brought some interesting *Davallia*.

(It was difficult for anyone else to contribute examples because Steve had already begged, borrowed or swapped bits from all their *Davallia* plants.)

The original idea was to see whether other members could help correctly identify any specimens that Steve had misidentified, or could help name those he had been unable to recognise. In reality, most people became distracted looking at or chatting about other ferns in the yard or swapping cuttings, drinking coffee and eating cakes, biscuits and fruit. (Thanks to all those who cooked or brought food to share – this was very much appreciated.)

It took a while to get down to the business of the meeting. Peter concentrated on the Australian species – *Davallia denticulata* (generally terrestrial and suicidal in pots because the rhizome tends to grow underground and downward), *D. pyxidata* (the opposite in so far as its rhizomes tend to grow straight upward), *D. solida* (fronds coarsely-cut and variable), *Humata repens* (fronds deeply pinnately lobed to two-pinnate at the base – Steve thought that this one had behaved something like a resurrection fern in his yard, curling up in dry weather and then unfurling in rainy periods) and *H.*

pectinata (pinnate with leathery fronds – warm thanks to Ashley Field from James Cook University for the specimen we had available at the meeting).

Peter dealt with the difference between *Humata* and *Davallia* – the indusium is generally attached only at the base for *Humata* and (generally) at the base and sides for *Davallia*. Peter indicated that this is not a reliable indication and that variation had led to differences of view in the past about inclusion or exclusion of a separate genus *Humata*.

Peter used a key recently published by Nooteboom and concluded that variation in the unknown plants Kylie and Dwayne had provided was consistent with those found in *Davallia trichomanoides* and that most were probably variants of this species.

Toward the end of the meeting, the group received a visit from Jamie North who is working on a sculpture to be located in Melbourne which is to feature live ferns growing from concrete towers. Jamie has been experimenting with a number of sun- and wind-tolerant ferns including *Pyrrosia*, *Cheilanthes* and *Pityrogramma*. Discussing Jamie's experiments and the group's experience with hardy ferns was very interesting and productive. Some of Jamie's work can be seen on his web site at www.jamienorth.com.

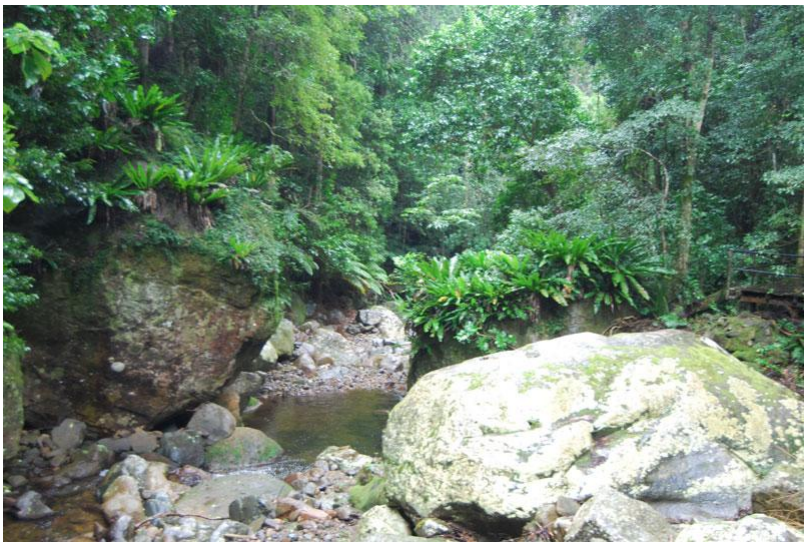
Joseph Banks Native Plants Reserve, Kareela, 19th May, 2012 *Ron Wilkins*

This Sydney reserve is a little out of the way but well worth a visit. It was established in 1970 to mark the 200th Anniversary of Captain Cook's landing in Australia. The habitat is cool temperate rainforest with warm temperate rainforest on a north facing slope. Striking *Eucalyptus grandis*, planted in the early days to provide canopy shade, are scattered through the reserve. It was a beautiful day, perfect for a leisurely stroll along the winding pathways through the well-labelled native plants. Several members of the Fern Study Group were joined by Rhonda Daniels and Aileen Phipps and other members of the Sutherland Group of the Australian Plants Society, who maintain the garden as a group effort. Australian native ferns were abundantly represented in the lower areas and Peter Hind was able to assist in identifying many of the unlabelled specimens.

The members of the FSG did a lot of planting in the reserve in the early days, though it is uncertain how many of the ferns have thrived or survived, given that over the past several years there have been very dry periods taking toll of the plantings. Of several *Angiopteris evecta*, for example, only one remains. However recent rains have revived many of the ferns. A fine example of *Macrothelypteris torresiana* reminded your correspondent he hasn't got this fern in his collection and he is now in search of one. A full list of species present in the reserve can be obtained from the Sutherland group, Australian Plants Society.

Minnamurra Rainforest, 16th June, 2012 *Kylie Stocks*

It was a wet and cold Saturday, but nonetheless the intrepid group that is the Sydney chapter of the Fern Study Group made its way to Minnamurra Rainforest National Park. It was unclear at first whether the rain would ease sufficiently for us to brave the park, so we were initially forced to sample the tasty wares from the on-site coffee shop. The atmosphere was very social, and we enjoyed catching up with our ferny friends.



The rain cleared sufficiently for us to head off for a walk shortly after lunch (convenient!). So we donned rain jackets, umbrellas and walking sticks, and headed off. We were rewarded with a variety of fern species which, whilst not

uncommon, were magnificent in their form and habit. Of particular note were the large *Asplenium australasicum* which formed large baskets high in the trees. There were also some lovely *Platycerium bifurcatum* and *Cyathea leichhardtiana*.

After the first, brief walk, our group split into those keen for some more exercise, and those who had suffered enough for the day! The walkers then went on to view the falls themselves, and observe the flora and fauna along the way. Peter Hind was able to point out to us the rare *Crepidomanes vitiense*, which was interesting to look at, but not what you would call 'beautiful' or 'desirable' in a collectable sense. We also observed a Lyrebird at close quarters, and were able to listen to it imitating the other birds in the area.

Species we observed during our walk included:

Adiantum atroviride, A. diaphanum, A. formosum, A. hispidulum var. *hypoglaucum, Arthropteris beckleri, Arthropteris tenella, Asplenium australasicum, A. polyodon, A. flabellifolium, Blechnum cartilagineum, B. nudum, B. patersonii, Calochlaena dubia, Crepidomanes vitiense, Cyathea australis, C. leichhardtiana, Davallia pyxidata, Hymenophyllum cupressiforme, Hypolepis glandulifera, Lastreopsis acuminata, L. decomposita, L. microsora , Microsorum scandens, Pellaea falcata, P. nana, Platycerium bifurcatum, Pteris tremula, P. umbrosa, Pyrrosia rupestris*

Cyathea cooperi is planted near the visitors centre. It may have been sourced from a local wild population, as this area of the Illawarra is near the type locality for this species. It may in fact be native on the Minnamurra River.

Dorothy & Kyrill Taylor's, 21st July, 2012

Dot Camp

We did not let the cold weather deter us from exploring Kyrill's fern garden with its many desirable fern species.

Peter guided us in our study of *Polystichum* with his notes – included below.

Polystichum are attractive ferns and easy to grow in the Sydney region provided they are-

- kept cool,
- well watered,
- and watch for scale.

Polystichum are commonly called shield ferns because of the filmy shield shaped structure that covers the spore.

Notes on Polystichum species of Australia

Peter Hind

Australian Mainland & Tasmania Species

Polystichum australiense	proliferous buds present on fronds, underground stolons
" *proliferum*	" " " " , ? ?
" *fallax*	proliferous buds absent, sparingly branching rosettes
" *formosum*	" " " , generally single rosettes

Lord Howe Island endemic species

Polystichum moorei	proliferous buds absent, propagating habit unknown
" *whiteleggei*	" " " , " " "

Macquarie Island

Polystichum vestitum proliferous buds absent. Extends from New Zealand

Notably there are no *Polystichum* species recorded for northern Queensland. *Polystichum* species that do occur in the tropics are only on the higher mountain areas north of Australia. They are generally cool climate ferns. In Sydney we only have one species that reaches the coast, the NSW endemic *Polystichum australiense*.

Polystichum australiense ranges from south of the Tweed River in north-eastern NSW, but doesn't make it to Victoria. It is quite common in coastal and near coastal districts around Sydney, such as in The Royal National Park

Polystichum proliferum extends from south of Tenterfield in north-eastern NSW and is widespread on the tablelands, only reaching coastal districts in southern Victoria and Tasmania, where it is the only *Polystichum* species present.

Polystichum fallax ranges from south-eastern Qld at moderate altitudes and higher altitudes in Lamington National Park Qld, to around Nundle in NSW. This species in NSW is mostly on the top and western fall of the northern tablelands, going as far west as Mt Kaputar at over 1000 m. alt near Narrabri, also present in the Warrumbungles.

Polystichum formosum has a wider distribution from The Bunya Mtns and The Lamington Plateau in Qld to eastern Victoria. In NSW usually on the eastern fall of the ranges such as at Fitzroy Falls near Robertson. This species overlaps *P. fallax* around Nundle in NSW.

Lord Howe Island has two endemic species of *Polystichum* – there are none on Norfolk Island.

Polystichum moorei according to the Flora of Australia is rare in rocky habitats around the bases of Mts Gower & Lidgbird, the two high mountains on the Island.

Polystichum whiteleggei occurs higher up the same mountains, closer to the summits. The fronds of this species have a heavy covering, particularly underneath, of large dark scales. In cultivation these scales tend to shelter mealy bugs, which can and did in my case lead to its demise.

Macquarie Island shares with New Zealand *Polystichum vestitum*. My plant of this species - from a nursery source, undoubtedly from spore ex New Zealand - is unhappy even in a shade house in western Sydney's drier and warmer climate than where it lives in cooler parts of New Zealand and subantarctic islands such as the Australian owned Macquarie Island.

Based on Flora of Australia volumes 48, 49, and 50 and personal observation in cultivation of some of these species.

South East Queensland Meeting Reports

Tallebudgera Creek outing, 4th March, 2012

Claire Shackel

The purpose of the trip was to investigate an additional population of *Selaginella andrewsii* reported by Lui Weber to be in the Tallebudgera valley. This new population was on a road cutting, while the 'original' population was on Doug and Lyn Cook's property

***Selaginella andrewsii* in situ.**

The weather had been very damp, but the trip to the Gold Coast was dry. The drizzle started as we had morning tea at the rendezvous spot at Martin Sheil Park on Tallebudgera Creek. Although it remained cloudy, it waited until we started a late lunch before the rain returned. The

convoy of cars proceeded up the valley to the Cook's residence where we car pooled into 4WD vehicles with the Cook's leading the way.

The first stop was a road side cutting [rhyolite] clothed in rainforest trees not far above the creek. As well as locating the population of *Selaginella andrewsii* there was a number of other ferns that indicated it was a moist sheltered environment (see list). We estimated that only a few square metres of *Selaginella andrewsii* was present at this site.

The road followed the creek with a number of crossings, where the creek was fast flowing and the creek bed very rocky and unstable. The last pull up was on a steep private road to reach our destination in the rainforest. Doug and Lyn led us on a track across the creek and up a steep path to a beautiful waterfall. With all the rain about, the falls were quite spectacular. The second patch of *Selaginella andrewsii* was at the base of a rock wall beside the falls. It appeared to have fallen off plants higher up the wall and had lodged in the alluvial soil but was well attached to the substrate and obviously growing well. Some plants were observed and photographed on the lower cliff face, but as everywhere was so wet no attempt was made to see if there was a population higher up the cliff. We were unable to visit a third population that was recorded above the falls.

There was an interesting array of ferns in this area. *Diplazium dilatatum, Macrothelypteris torresiana* and *Pneumatopteris sogerensis* are not often encountered in the wild in South East Queensland. *Doodia caudata* was there in all its forms, from minute to quite robust ones. *Pellaea nana* was also very variable. For me, the highlight was to see *Lastreopsis acuminata* growing profusely on the valley floor. I had previously seen only a couple of poor specimens on a dripping cliff face on Springbrook. Having grown this fern from spore when it makes a nice pot plant, it was good to see it in the wild.

Seen at the roadside cutting: *Adiantum diaphanum, A. hispidulum* var. *hypoglaucum, Arachniodes aristata, Asplenium australasicum, Blechnum cartilagineum, Calochlaena dubia, Christella dentata, Christella parasitica, Cyathea australis, C. cooperi, C. leichhardtiana, Doodia caudata, Platycerium bifurcatum, P. superbum, Pyrrosia confluens* var. *confluens, Selaginella andrewsii, Sticherus flabellatus, Vittaria ensiformis.*

On the waterfall walk: *Adiantum diaphanum, A. hispidulum* var. *hypoglaucum, Arachniodes aristata, Arthropteris beckleri, A. tenella, Asplenium australasicum, A. polyodon, Blechnum patersonii, Christella dentata, C. parasitica, Crepidomanes vitiense, Cyathea cooperi, C. leichhardtiana, Diplazium assimile, D. dilatatum, Doodia caudata, Lastreopsis acuminate, L. marginans, Macrothelypteris torresiana, Microsorum scandens, Ophioglossum pendulum, Pellaea nana, Platycerium bifurcatum, P. superbum, Pneumatopteris sogerensis, Pteridium esculentum, Pteris tremula, Pyrrosia confluens* var. *confluens, P. rupestris, Selaginella andrewsii, Sticherus flabellatus.*

Arafura Street Meeting, 1st April, 2012

Claire Shackel

The fern study group meeting for April was held After the discussion on the program for the next 6 months finished, the group toured my small garden. As all present had been subjected to my method of growing ferns from spore, it was not necessary to repeat the details.

The first point of interest was a very large *Asplenium australasicum* and a good specimen of *A. nidus* growing next to each other and the difference was obvious. A number of Rod Patterson's *Drynaria rigidula* cultivars grew in a very dry garden bed under the eaves of a shed. On the southern side of the house *Pteris vittata* thrive near a rock wall. Plants of this fern and *A. australasicum* have volunteered at the bottom corner of a drain across the path. *Adiantum hispidulum, A. atroviride, A. silvaticum* and *A. formosum* grew in this area with *A. formosum* dominating.

On a rock wall at the front of the house, *Adiantum hispidulum* var. *whitei* (picture at left) volunteered some years ago and with the wet weather has produced many more plants in the wall. This fern is native to the area but it was a surprise to see it, as the garden has a large population of various forms of *A. hispidulum var. hispidulum.*

On the northern side of the house was another *Asplenium nidus, Calochlaena dubia, Polystichum proliferum* and a patch of the *Microsorum*

punctatum/M. grossum cross [PDB: now known as *Microsorum maximum*] with the base of *M. grossum* and a long whip top of *M. punctatum*. Patches of *Arachniodes aristata* and *Dennstaedtia davallioides* were getting out of hand. *A. aristata* was sporing very heavily and everything in the area was covered with spores. Interestingly, it has not been easy to grow from spore. After many attempts to grow *Cheilanthes* by bringing plants home in their natural substrate, *C. sieberi* has now volunteered in a couple of inappropriate places.

Within the bush house at the back of the house was a collection of ferns in various conditions. A large hanging pot of *Drynaria rigidula* cv. *cristata* dominated the entry. An interesting one was *Teratophyllum brightiae* forming a bright green pot and flowing over the edge. It has taken a number of years to take off and I am hoping to make these rhizome runners root. At the back of the house were two large self watering pots of *Angiopteris evecta.* Although they have been in the pots for several years they have never been fertile.

The group were offered a number of small ferns to pot up from the propagation bush house. These included *Lastreopsis marginans, Pyrrosia longifolia, Microsorum scandens* (bifurcating form, grown from spore from a plant grown by Rod Pattison) and *Macrothelypteris polypodioides* (purchased as *Lastreopsis tenera*)

Tenterfield Area, May long weekend, 2012

Claire Shackel

The Queensland contingent met at the Golfer's Inn Motel on Friday afternoon. When Dan and Wendy Johnston arrived having driven from Myall Park Botanic Gardens, Dan was informed he was leading the weekend as Peter was too sick to come.

Saturday morning the group met Bill Bright and Steve Clemesha at Torrington and travelled to Thunderbolt's Lookout in Torrington State Conservation Area. The track went through open forest country and ferns were a bit scarce except for bracken (*Pteridium esculentum*). It was a gradual uphill climb until a large mound of rocks was reached. The track went in between boulders and with a bit of a scramble came to the base of a large rock with a solid ladder to climb to the top. This gave a 360 degree view of the country below. *Pyrrosia rupestris* covered a considerable area on the protected side of one of the lower rocks and a few other ferns found a home in the protected environment.

The next stop was Ugly Corner (so called because it was difficult to mine) and a steep track down through dry open forest to a lovely babbling brook and big patches of *Gleichenia dicarpa*. There was a nice waterfall up stream but no extra ferns. Lunch was at Blatherarm Camping Area and we returned to Tenterfield via Mole Creek and the Bruxner Highway. A rather poor count of ferns for the day, but sharp eyes in the lead vehicle resulted in a road side stop and *Blechnum cartilagineum* was added to the list.

On Sunday, after visiting the big cork tree (*Quercus suber*) in Tenterfield, the Qld members met Steve and Bill at the World War II Tank Traps. By doing a car shuffle, we were all able to do the walk from the tank traps to Thunderbolts Hideout. This was a walk down a moist gully beside the road and ferns were plentiful. Notable were the boulders covered with *Pyrrosia rupestris* on the top and clumps of *Hymenophyllum cupressiforme* lower down. *Todea barbara* formed big patches on islands in the gully and *Blechnum camfieldii* near the tank traps and *B. nudum* and *B. cartilagineum* were plentiful. There were isolated specimens of *Asplenium polyodon* and *A. australasicum*.

Timbarra Trig Lookout was another scramble up a steep slope with no ferns of note - just more bracken. Then Dan showed us the way into a steep gully on the southern side with moisture and a number of ferns were seen. The highlight was seeing *Asplenium flaccidum* [pictured with surrounding *Pyrosia*] and more *H. cupressiforme*. Lunch was at Boonoo Boonoo Falls and then we walked to the top of the fall. There was a good volume of water pouring over the rock face and would have been spectacular from the bottom but time was short. On the way back a stop at a gully allowed another look at ferns of the area. Then on to Morgan's Gully where the *Todea Barbara,* seen four years ago, grew under the bridge and *Lindsaea linearis* was seen for the first time. Big patches of *Sticherus flabellatus* and *Gleichenia dicarpa* hugged the gully wall.

On Monday we all packed up and after a discussion with the Motel Manager it was decided to head for Burra Spur. The range of ferns was not great but there were plenty of them. The scene reminded me of the Dandenong in Victoria with a light top story of Eucalyptus, a mid story of tree ferns (*Cyathea australis*) and a lower story of mixed ferns. Bracken dominated but *Blechnum nudum*, *B. cartilagineum*, *Hypolepis glandulifera* and *Calochlaena dubia* made up the visible understory and little areas of *Adiantum aethiopicum* hid in the grass. This *B. nudum* had a creeping rhizome rather than the rosette type that I am more familiar with.

Name	A	B	C	D	E	F	G	H	I	J
Adiantum aethiopicum	x			x		x	x	x		x
Adiantum hispidulum var. *hispidulum*				x						
Asplenium australasicum				x						
Asplenium flabellifolium	x		x	x	x					
Asplenum flaccidum					x					
Asplenium polyodon				x	x					
Blechnum camfieldii				x					x	
Blechnum cartilagineum	x		x	x	x	x		x		x
Blechnum nudum				x					x	x
Calochlaena dubia		x	x	x	x	x	x	x	x	x
Cheilanthes sieberi		x		x		x		x	x	
Cyathea australis				x						x
Davallia pyxidata	x		x	x	x					
Doodia aspera				x		x		x		x
Doodia caudata		x		x		x		x		
Gleichenia dicarpa		x							x	
Hymenophyllum cupressiforme				x	x					
Hypolepis glandulifera										x
Hypolepis muelleri					x					
Lindsaea linearis									x	
Lindsaea microphylla		x		x			x			
Pteridium esculentum	x	x	x	x	x	x	x	x	x	x
Pyrrosia rupestris	x			x	x					
Sticherus flabellatus									x	
Sticherus lobatus					x					
Todea barbara				x					x	
A - Thunderbolts Lookout				F - Beather Creek						
B - Ugly Corner falls				G - Boonoo Boonoo Falls						
C - Roadside Stop				H - Roadside Gully						
D - World War Tank Trap to Thunderbolts Hideout				I - Morgan's Gully						
E - Timbarra Lookout				J - Burra Spur 3 Km in						

Cooloola Area, 1st June, 2012 *Noreen Baxter*

SEARY'S CREEK DAY USE AREA	TURN OFF TO MILO CAMP	Nr SEARY'S CK MOUTH	BYMIEN PICNIC AREA
Blechnum indicum	*Schizaea bifida*	*Dicranopteris linearis*	*Asplenium australasicum*
Dicranopteris linearis	*Schizaea dichotoma*	*Gleichenia dicarpa*	*Microsorum punctatum*
Gleichenia dicarpa		*Lindsaea incisa*	*Microsorum punctatum*
Gleichenia mendellii		*Lygodium microphyllum*	*Pellaea falcata*
Lygodium microphyllum		*Psilotum nudum*	*Platycerium bifurcatum*
Pteridium esculentum		*Pteridium esculentum*	*Schizaea dichotoma* small rainforest form
		Sticherus flabellatus var. flabellatus	*Vittaria ensiformis*

Maroochy Botanic Gardens 5th July, 2012 *Wendy Johnston*

On a bright and sunny winter's day, the fern group met at the Maroochy Regional Bushland Botanic Gardens on the Sunshine Coast. After morning tea we strolled around the fern glade and mossy log gardens, checking the ID of the ferns planted there, while Peter described their natural habitats. Lunch followed and after that we took one of the bush tracks along Mountain Creek to see the ferns growing naturally there. It was good to see the extensive areas of *Lindsaea ensifolia* subsp. *ensifolia* on the slopes and a couple of *Cyathea leichhardtiana* trees near the creek.

Ferns seen on the creek walk: *Adiantum hispidulum, A. silvaticum, Blechnum cartilagineum, Calochlaena dubia, Christella dentata, C. parasitica, Cyathea cooperi, C. leichhardtiana, Doodia heterophylla, Hypolepis muelleri, Lindsaea ensifolia* subsp. *ensifolia, Platycerium bifurcatum, Pteridium esculentum, Sticherus flabellatus.*

Other Articles

Musings on Cresting *Kylie Stocks*

I attended a presentation at the IBC2011 by Stephane Doudy entitled 'Fern venation as a possible evolution from tree-like to net-like vein architecture'. In it, the presenter offered some interesting suggestions about fern evolution, suggesting that all species originally had simple venation patterns (as seen in *Asplenium australasicum*). Some of these then divided and became bipinnate e.g. *Pellaea falcata*, in response to environmental or other evolutionary stimuli. Subsequently, bipinnate ferns may have divided again, or recombined, with the recombination of the pinnae resulting in reticulate venation patterns. The presenter further suggested that looking closely at reticulate fern venation patterns would provide the observer with the ability to see the shape of the previous pinnae, and how they were now joined together. He further suggested that it was possible to see the process in action, by looking at the fronds of plants that were partially joined e.g. *Callipteris prolifera*.

So, this led me to wonder - What if the cresting seen in plants such as *Doodia aspera* '*bipinnatifida'* is (as I suspect) a response to environmental or other evolutionary pressure, and is an intermediate in the evolution of the species towards a more divided form? We have seen other Blechnaceae species (including *B. nudum* and *B. cartilagineum*) exhibiting similar cresting patterns, which I have previously suspected was related to water availability? The sterility of *Doodia aspera* '*bipinnatifida*' is unexplained by the idea that it is more advanced from an evolutionary perspective. The fertility of the *Blechnum* sp. is as yet undetermined.

Any thoughts?

Cania Gorge revisited, June 2012

Claire Shackel

It was a very different Cania Gorge National Park from the previous visit in the middle of the drought. Everywhere was lush and green and there was grass in the car park.

Walking down to Three Moon Creek there was *Pteris tremula* and *Adiantum atroviride* on the creek bank. Crossing over the spur into the next creek, *Cheilanthes sieberi* poked out on the edge of the track from the thick grassy ground cover.

On entering the rainforest area the track was lined with dense stands of *Adiantum formosum*. In an opening in the canopy caused by the creek, *Christella dentata, Adiantum hispidulum* and *Hypolepis glandulifera* were seen. As the path began ascending, on the rocks were *Pyrrosia rupestris, P. confluens, Pellaea nana, Asplenium australasicum* and baby *Platycerium veitchii*. As the track climbed higher and the forest was wetter, *Asplenium attenuatum, Arthropteris tenella* and *Blechnum cartilagineum* were seen. *Drynaria rigidula* grew on the exposed rocks and *Calochlaena dubia* and *Pteridium esculentum* in the gaps between. Under the drips of Dripping Rock, *Sticherus flabellatus* and *Gleichenia dicarpa* grew in profusion. On the opposite side of the path, tree ferns *Cyathea cooperi*[1] grew and one had a small patch of the filmy fern *Abrodictyum caudatum*[1] on its trunk.

Following the track past Dripping Rock, small plants *Histiopteris incisa* and patches of *Doodia caudata* and *D. aspera* edged the track. On the rocks below the track young silver elks grew as well as one that looked more like *Platycerium bifurcatum.* Time did not permit further investigation along this track or the other tracks in the park.

Another park visited was Auburn River Gorge. The scenery was very spectacular with huge pink granite boulders, very different to the sandstone of Cania, but ferns were scarce. A small form of *Adiantum hispidulum, Cheilanthes sieberi*, a big leaflet *Pellaea* that was too small for *paradoxa* but with only a few leaflets, and *Platycerium veitchii*. That was the extent of the find.

Recent Fern Literature

Peter Bostock

Two papers dealing with Australian ferns have recently been published. The first, by McKeown, Sundue and Barrington (2012) studied morphology and chloroplast DNA within the Dryopteridaceae, to redefine the placement of the endemic Australian fern *Revwattsia fragilis*. Their studies indicated that this fern is a classic *Dryopteris*, with affinity to a suite of Asian species including *Dryopteris erythrosora, D. gymnosora* and *D. labordei*. As the name *Dryopteris fragilis* is unavailable, the authors named the Australian fern *Dryopteris wattsii*. Unfortunately, the authors also suggested (incorrectly) that *Rumohra adiantiformis* was common in Queensland's Wet Tropics (there is only one doubtful record, probably cultivated), and that *Dryopteris atrata* and *D. cycadina* of eastern Asia were native to Australia (based on cultivated records, I believe).

The second paper, by Yansura and Hoshizaki (2012), targets the tree fern sold for many years in Australia as 'Highland Lace' sometimes identified as *Cyathea tomentosissima*. Yansura and Hoshizaki have discovered that the DNA of this fern matches that of *Cyathea cooperi*, a fact supported by the morphology, particularly the distinctive scales, which in *Cyathea cooperi* and 'Highland Lace' consist of a mixture of large pale scales with orange spines along their borders together with very small narrow dark-red scales. In contrast, *C. tomentosissima* scales are brown, twisted, and have spines on the margin which are not different in colour. In addition, a dense mat of small woolly scales occur on the underside of rachises—such scales are absent in *Cyathea cooperi*.

McKeown, M., Sundue, M. & Barrington, D.S. 2012. Phylogenetic analyses place the Australian monotypic *Revwattsia* in *Dryopteris* (Dryopteridaceae). *Phytokeys* 14: 43–56.

Yansura, D.G. & Hoshizaki, B.J. 2012. The tree fern Highland Lace is a cultivar of Sphaeropteris [Cyathea] cooperi. *American Fern Journal* 102(1): 69–77.

[1] Queensland Herbarium collections indicate that *Cyathea australis* occurs in Cania Gorge, but not *C. cooperi*, so this may represent a new record. *Abrodictyum caudatum* (previously called *Cephalomanes caudatum* or *Macroglena caudata*) commonly grows on tree fern trunks and has not previously been recorded in Cania Gorge.

Spore List - July 2012

Barry White

Acrostichum speciosum 4/09
Adiantum formosum 1/12
Adiantum hispidulum 6/12
Amphineuron opulentum 7/11
Angiopteris evecta 11/09
Arachniodes aristata 4/12
Asplenium aethiopicum 4/12
Asplenium athertonense 7/11
Asplenium milnei 10/10
Asplenium nidus 5/08
Asplenium nidus cv.5/08
Asplenium pellucidum 3/11
Blechnum ambiguum 1/08
Blechnum chambersii 4/12
Blechnum fluviatile 9/11
Blechnum minus 3/12
Blechnum patersonii 4/11
Blechnum wattsii 9/11
Blechnum wurunuran 7/11
Chingia australis 8/11
Christella dentata 3/12
Christella hispidula /09
Christella parasitica 5/11
Christella subpubescens12/08
Cyathea australis 1/12
Cyathea baileyana 3/11
Cyathea cooperi 1/09
Cyathea cooperi (Blue Stipe) 1/11
Cyathea cooperi 'Brentwood' 3/08
Cyathea cooperi 'Cinnamon' 4/11
Cyathea exilis 7/11
Cyathea felina 10/08
Cyathea howeana 10/10
Cyathea macarthurii 10/10
Cyathea robusta9/10
Cyathea rebeccae (crested) 9/10
Dicksonia antarctica 9/10
Diplazium australe 1/12
Diplazium assimile 6/09
Diplazium dilatatum 12/10
Diplazium dilatatum × *Deparia petersenii* var. *congrua 3/11*
Doodia australis 2/12
Dryopteris sparsa 5/11
Histiopteris incisa 12/11
Hypolepis glandulifera 1/12
Hypolepis muelleri 3/12
Lastreopsis acuminata 4/11
Lastreopsis decomposita 1/12
Lastreopsis marginans 3/12
Lastreopsis microsora 6/10
Lastreopsis nephrodioides 4/12
Lastreopsis rufescens 3/11
Lastreopsis tenera 3/11
Lastreopsis tinarooensis 7/11
Macrothelypteris torresiana 6/10
Microsorum australiense
Microsorum punctatum 1/09
Oenotrichia pinnata 7/11
Ophioglossum pendulum 7/08
Pellaea falcata 1/11
Platycerium bifurcatum 4/11
Platycerium bifurcatum 'Venosum' Mt Lewis 10/07
Platycerium superbum 4/08
Plesioneuron tuberculatum 1/11
Pneumatopteris sogerensis 7/11
Pneumatopteris costata 6/11
Polystichum australiense 4/12
Polystichum formosum 4/12
Polystichum proliferum 12/10
Polystichum whiteleggei 10/10
Pronephrium asperum 1/11
Pteris pacifica 6/10
Pteris tremula 11/10
Pteris umbrosa 1/12
Revwattsia fragile 3/11
Rumohra adiantiformis 4/12
Sphaerostephanos heterocarpus 7/11
Teratophyllum brightiae 8/11

Thank you to the following spore donors: Nada Sankowsky, Kylie Stocks, Neville Crawford, Wendy Johnston, Claire Shackel, Dot Camp, and Crosby Chase.

Fern Study Group Financial Statement, July 1, 2011 to June 30, 2012

Dan Johnston, treasurer

ANPSA Fern Study Group Fees for 2012-2013

Dan Johnston, treasurer

The annual subscription to the Fern Study Group is $5 for a single person or more than one person receiving a single copy of the Fern Group Newsletter.

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  Dan Johnston,

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