

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

## *Newsletter Number 150*

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### **No Fern Study Group Fees from June, 2025**

Our leader, Steve Lamont, has decided that we should no longer have fees for the Fern Study Group. Because some members had already paid up to June, 2025, the abolition of fees will apply from that date.

### **Program for Sydney Region**

*Peter Hind*

**Saturday, 19 March 2022.** Meet from about 10:30 am for 11am start at the Lamont's residence 158 Deepwater Road, Castle Cove. Take Castle Cove Drive (to the East) off Eastern Valley Way – it's 3 mins off Eastern Valley Way. Study to be advised or perhaps decide on the day. **To register your attendance or lost and need further directions or info phone Steve on (mobile) 0409 955 224.**

**Saturday, 9 April 2022.** NOTE this is the second Saturday as Easter Falls on the third one. Meet from about 10:30 am for 11am start of The Circular Walk (Waterfall Walk) at Waterfall Creek Picnic area, Mt Wilson. Drive through Mt Wilson settlement to the T junction; turn right into the dead-end road to the picnic area on your left. The relatively easy track does have steps into and out of the rainforest and is usually well maintained. Bring picnic lunch and thermos of hot drink and perhaps water as the tanks attached to the picnic sheds are not always reliable. There are pit toilets. **Phone Peter Hind on 9625 8705 to register for the walk or email petehin@bigpond.com**

**Saturday, 14 May, 2022.** NOTE this is the second Saturday to avoid clashing with an ANPSA quarterly gathering. Adelina & other waterfalls. Meet near the Soldiers Memorial at Lawson by 10am just off the Great Western Highway, near the old shopping centre. Turn left at the new shopping centre. (Toilets are at the new shopping Centre.) 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 register ring Peter on 9625 8705**

**Saturday, 18 June, 2022.** Meet from about 10:30 am at the home of Gayle and George Hardy at 19 Aranda Drive, Davidson (an apparently invisible house?) As usual, bring a plate for morning or afternoon tea. Study to be decided.

**Saturday, 16 July, 2022.** Meet from about 10:00 am for 10:30 am start at Mountain Lagoon for a walk to the Green Scrub. Park before the start of the Mtn Lagoon Fire Trail before the junction of Sams Way which forms a loop road around the Lagoon. **Register with Peter Hind on 9625 8705**

To help us comply with COVID19 restrictions phone the host of a house visit or leader, if a walk, before the event. Restrictions are subject to change by the NSW Govt.

Expressions of interest, several days before any of the bushwalks should be given to whoever is leading the walk, by phone, email etc. If no positive indications are received, at least two days, where possible, before the event by the walk leader, the event will be cancelled.

Of course, if the weather is bad or there is any possibility of danger, such as bushfire please do not turn up. If personal events change your plans, please let the leader know or send apologies via someone who is planning to go, so that we don't wait for you.

**All outings are subject to weather conditions being favourable.**

## **Program for South-east Queensland Region** *Helen Jeremy, Dan Johnston*

**Sunday 6 March – Wendy and Dan Johnston's garden, Buderim.** Meet at 9 Ryhope St, Buderim at 9.30 am. We recommend parking in our driveway. We have a large garden, nursery, and shade house with an extensive range of ferns. If members are keen, we could also visit our nature refuge nearby to see the natural ferns there, particularly along a creek line.

**Sunday 10 April – Track from Bilborough Court, Springbrook NP.** Meet at 9.30 am at the end of Bilborough Court in the cul-de-sac. The walk is a 3 km circuit, the first third being a gentle slope uphill on a bush track through disturbed land. Then the track gets a little steeper and passes through highland rainforest with rare and threatened plants. Once we reach the communication towers at the summit, we go downhill on a bitumen track in good quality cool rainforest. A creek at the bottom has many fern species, including three *Diplazium* spp. The last 300 m of this bitumen track back to the carpark is steep. We'll drive to the Goomoolahra Picnic Area at the end of Springbrook Road for our BYO lunch. There are no facilities at the walk site; toilets are at Tallanbana and Goomoolahra picnic areas.

**Monday 1 May – Zoom meeting commencing 7.00 pm.** The topic for discussion will be *Cheilanthes*, a fascinating group of ferns able to withstand dry conditions. We'll also share photos of interesting finds from recent excursions.

**Sunday 5 June – Thylogale Track, D'Aguilar NP, from Jollys Lookout to Boombana (plus easier option available).** Meet at 9.30 am at the off-road parking area at the start of the track, which is below the access road to Jollys Lookout. We'll transfer car(s) to Boombana for transfers back to Jollys at the end of the walk. The 4 km Grade 3 track passes through rainforest and wet sclerophyll forest and we hope to find 25–30 species. A highlight of past visits has been different variations of *Adiantum hispidulum*.

Members not wishing to walk the full Thylogale Track could enjoy a good number of ferns on the first few hundred metres of the Thylogale and/or drive to Boombana and explore the ferns on the 1.1 km Pitta Circuit and meet the main group when they arrive at Boombana. We can have our BYO lunch at either Jollys or Boombana depending on people's preferences. Please make sure you RSVP for this excursion so we can plan transfers and lunch venue.

**Please RSVP for all SEQ meetings to Helen Jeremy at [heljeremy@gmail.com](mailto:heljeremy@gmail.com)**

**Reminder: Port Macquarie Gathering Deferred to November,  
2022.**

*Fern Study Group Port Macquarie Fern Gathering*

*When:* 4 days – Early November 2022

## Vale Kyrill Taylor 1928-2021

*Margaret Olde*

Sadly, Kyrill Bruce Taylor, our friend and Fern Study Group member, passed away on 15 December, 2021 aged 93 years.

Kyrill was born in Grafton NSW on August 8, 1928, the youngest of 5 children. He was known in the family as Bruce – to all others he was Kyrill. The family moved to Sydney when Kyrill was 8, where he attended Burwood Public School, then Homebush Boys' High.

Kyrill's first job was working in a hatchery with chickens and incubators. His next job was with Liverpool Cables in Clarence Street where he first worked on the counter; then it was decided he should walk the city streets with a heavy briefcase visiting clients; then eventually he was given a car so that he could travel further afield. It was around this time that he met Dorothy who was visiting Sydney. They became engaged in 1954 and were married at Grafton Baptist Church on November 19, 1955. Kyrill had bought a house in Yagoona and he spent every night painting and preparing it to move into after the wedding. They have lived in this same house during 66 years of marriage.



Kyrill was father to 3 sons -Stephen, David, and Simon, had 7 grandchildren, and 1 great-granddaughter. Kyrill had a keen interest in tennis and encouraged the boys to play. He was President of the P&C Association whilst the boys attended school.

Kyrill loved Henry Lawson's poems on the bush and he and Dorothy enjoyed monthly folk concerts at Leichardt. Kyrill had a wide taste in music, enjoying Bert Kaempfert, Acker Bilk, The Beatles and Richard Tauber, of whom he had quite a collection of 78' LP vinyl records.

For many years Kyrill had a vegetable garden covering most of the back yard. Then he became interested in ferns and native plants. The vegetables disappeared and a bushland was created!

Kyrill's interest in native plants led him to join The Society for Growing Australian Plants (SGAP, which later became the Australian Plant Society) and he was President of the East Hills Group for a number of years, as well as being a member of the Board of the APS. He later became interested in Eremophilas and regularly attended the Eremophila Study Group activities. Kyrill was awarded Life Membership in 2009, the highest accolade that APS NSW can bestow on a member, in recognition of his contribution and support for the objectives of the Society.

Kyrill loved his ferns and enjoyed going on walks to see them growing in the wild. He joined the Fern Study Group in 1979, attending the monthly meetings and activities and was its Spore Bank Curator from 1996. When his knowledge increased, he gave talks, and would take some of his own ferns along with him as he believed it was better for people to see and touch them rather than looking at pictures.

Kyrill will be sadly missed by his many friends in the Fern Study Group, the Eremophila Study Group, and the Australian Plant Society. We extend our condolences to Dorothy and his family.

## November 2021 Meeting – Ian Cox’s place at Kenthurst

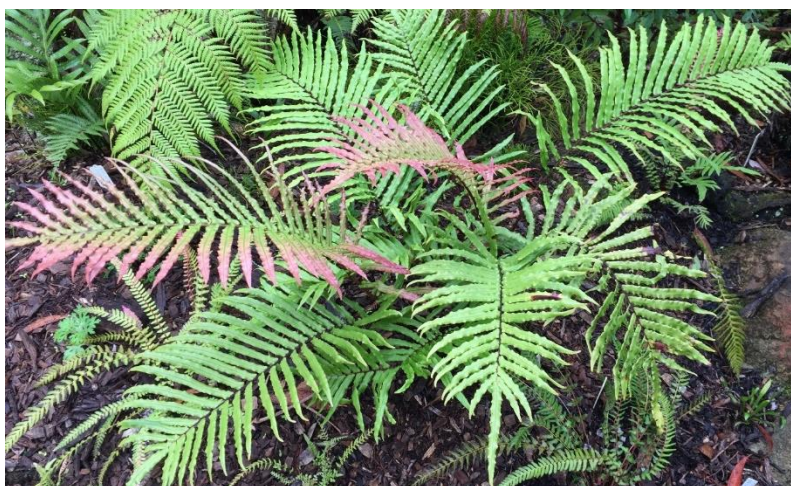
Ian is the *Blechnum* King. His *Blechnum brasiliense* are enormous and numerous; his *B. wurunuran* are the same (the biggest I’ve seen); he has a number of very healthy Fawcett’s Feathers; and his *B. camfieldii*, *B. watsii* and *B. penna-marina* are all very happy and healthy.

He also has good examples of *Blechnum ambiguum*, *B. camfieldii*, *B. cartilagineum*, *B. minus*, *B. moorei* (the one called this in the trade), *B. nudum*, *B. nudum* Flinders Island (this looks like Fawcett’s Feather but is even a bit more toothy), *B. penna-marina* (crested), and *B. watsii*. There’s also one of the *Blechnum nudum* x *Doodia aspera* hybrids.

We sat around Ian’s lovely pond surrounded by the *Blechnums* and other ferns and ate lots of cake. It was a great day and very nice to see everyone before Christmas.



How’s the serenity?



*Blechnum wurunuran*

P.S. It turns out that it wasn’t serene for all of us. While the rest of us were all having cake and *Blechnum*-envy, Margaret Olde (of world’s biggest *Drynaria rigidula* fame – see May meeting notes) was in and out of hospital emergency with cardiac arrhythmia and then (as a result of the first treatment) pulmonary effusion.

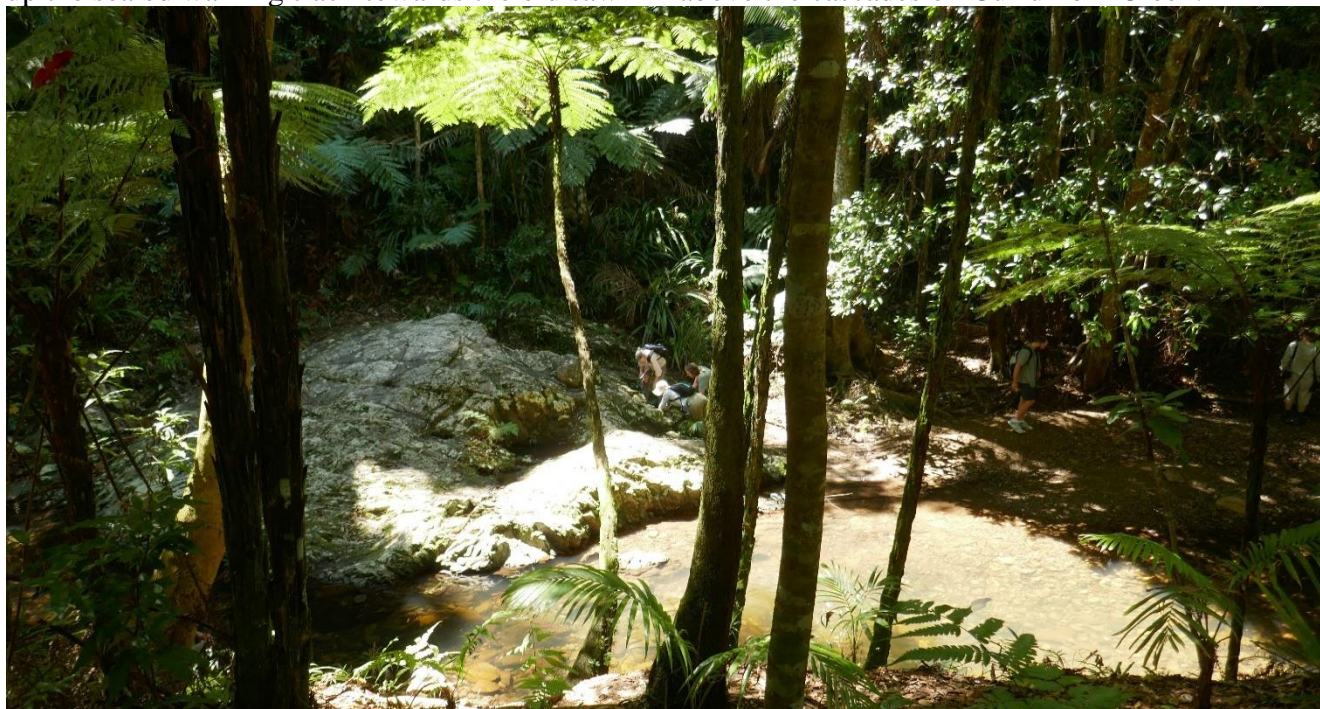
We’re all very sorry to hear about Marg’s difficulties and very relieved to hear later that she was feeling much better. We all hope she recovers fully very quickly.

# South-East Queensland Meeting Reports

## Cougal Cascades, Currumbin Creek, October, 2021

Graham McDonald

On Sunday 3 October 2021, the group met at the carpark and picnic area of the Cougal Cascades Section of Springbrook National Park. After a brief morning tea, 16 participants began the easy walk up the sealed walking track towards the old sawmill above the cascades on Currumbin Creek.



Most of the rocks and subsequent soils for the entire track walk are Silurian-Devonian, Neranleigh-Fernvale metasediments, chiefly greywacke, a hard, partly metamorphosed, impure sandstone. Soils are yellow-red clay loams of low nutrient status except for gully areas where organic matter enriches the soil. The gravel beds of Currumbin Creek are enriched by Tertiary basalts forming caprocks higher up which are carried down the slope by water and rockfalls.

One of the aims was to enlarge the fern list for the previous excursion in 2018. Ferns encountered on the track sides and two side gullies flowing into Currumbin Creek are listed below. Those in bold were added to the previous list and the only fern not found this year was the *Pneumatopteris sogerensis* (Giant Creek Fern) which looked as though it was destroyed by severe flooding in March 2021 when over 600 mm fell in three days. Further searches failed to reveal others in the area of the side gully adjacent to the sawmill.

FERNS *Abrodictyum caudatum*

*Adiantum diaphanum*

*Adiantum hispidulum* var. *hispidulum*

*Adiantum silvaticum*

*Arachniodes aristata*

*Arthropteris beckleri*

*Arthropteris tenella*

*Asplenium australasicum*

***Asplenium polyodon***

*Blechnum cartilagineum*

*Blechnum neohollandicum* (*Doodia aspera*)

*Blechnum patersonii* subsp. *patersonii*

*Blechnum rupestre* (*Doodia caudata*)

*Calochlaena dubia*

*Christella dentata*

*Christella parasitica*

*Dendroconche scandens* (*Microsorium scandens*)

*Diplazium dilatatum*

***Dicksonia youngiae***

*Hypolepis muelleri*

Jungle Brake Fern

Filmy Maidenhair

Rough Maidenhair

Forest Maidenhair Fern

Prickly Shield Fern

Small Clumping Fishbone Fern

Climbing Fishbone Fern

Bird's Nest Fern

**Mare's Tail Fern**

Gristle Fern

Prickly Rasp Fern

Strap Water Fern

Small Rasp Fern

Soft Bracken

Binung

Soft Binung

Fragrant Fern

Large Lady Fern

**Bristly Tree Fern**

Harsh Ground Fern

*Lastreopsis marginans*  
*Lindsaea brachypoda*  
***Pellaea nana***  
*Platycerium bifurcatum*  
*Platycerium superbum*  
***Pteris tremula***  
*Pyrrhosia rupestris*  
*Sphaeropteris australis* (*Cyathea leichhardtiana*)  
*Sphaeropteris cooperi* (*Cyathea cooperi*)  
*Sticherus flabellatus*

Glossy Shield Fern  
Short-footed Screw Fern  
**Sickle Fern**  
**Elkhorn**  
Staghorn  
**Tender Brake**  
Rock Felt Fern  
Prickly Tree Fern  
Scaly Tree Fern  
Umbrella Fern

#### FERN ALLIES

#### ***Palhinhaea cernua* (*Lycopodiella cernua*) Coral 'Fern'**

The ferns which were added to the previous list were generally single specimens, uncommon in the area. Two *Dicksonia youngiae* were found on the opposite side of the creek to the sawmill. The single *Pellaea nana* was on a rock outcrop with some *Arthropteris beckleri*, while the *Asplenium polyodon* was spotted growing in a bird's nest fern in a tree. The walk concluded with lunch and further discussion around 1:00pm.



*Dicksonia youngiae*

### **Booloumba Creek 13-14 November, 2021** *Graham McDonald, Helen Jeremy, Dan Johnston*

*Photos by Wendy Johnston – hence not in group photo*

Eight members met at Charlie Moreland Camping Ground, Imbil State Forest, on the Saturday afternoon to do four walks over the weekend. Our intention was to explore the Little Yabba Creek walks emanating from the camping ground on the Saturday afternoon, and then on Sunday reprise three successful walks from our 2013 excursion: the Figtree Circuit, and then the Booloumba Falls and Peters Creek walks in Conondale National Park. However, an unexpected road closure on our way to the latter two made us change plans and we walked part of the Gold Mine Track instead, which proved to be a worthy alternative which we really enjoyed.

#### **Little Yabba Creek Circuit and Piccabeen Circuit at Charlie Moreland Camping Ground**

A reconnaissance of the Piccabeen Circuit was completed by Graham and Beth McDonald on Saturday morning as they had arrived earlier than the other six people and there was not enough time in the afternoon to completely walk the two areas at 'fern' pace. In the afternoon, eight members did all the Little Yabba Creek Circuit and about 200 metres of the Piccabeen Circuit. The total distance for both circuits is 3.5 km with riparian rainforest (R.E. 12.3.1) near Little Yabba Creek. Dry rainforest (R.E. 12.11.1) on metamorphics is found on the slopes of the Piccabeen Circuit, with *Archontophoenix cunninghamii* in the moister protected gullies (R.E. 12.11.1). The section of palm forest on the Piccabeen Circuit is moist and protected with a well-developed subtropical rainforest along the gully lines about half way around the circuit.



Fern bank on Little Yabba Creek Circuit

Notable ferns on these circuits were *Pellaea falcata* which is very uncommon in the area. The specimen which was recorded occurred about 200 metres up the hill on the first section of the Piccabeen Circuit. *Adiantum silvaticum* was discovered in just one area about half way around the circuit where the rainforest was protected and developed. *Calochlaena dubia* was also very restricted to a section of creek bank on the Little Yabba Creek. Surprisingly, no *Blechnum cartilagineum* or *Platycerium bifurcatum* were seen. There were no ferns growing in the gully channels as torrents of water flow through the hillside gullies during downpours.

A total of 31 fern species were recorded on the two circuits.

## Figtree Circuit – 14 November 2021

The Figtree Circuit is in a small patch of remnant rainforest at the junction of Little Yabba Creek and the Mary River and is accessed from the day-use area on the Kenilworth-Maleny Road. It's an easy Grade 1 walk with sections of boardwalk, making it a popular spot for a very pleasant rainforest stroll and admiring the 150-year-old Moreton Bay figs. We last explored this walk in July 2013, when we identified 18 species of ferns. This time, we found 21, finding five additional ferns but missing two previously seen.



After we crossed the bridge over Little Yabba Creek, we turned onto the high boardwalk and spotted several of the usual suspects on the banks below: *Adiantum formosum*, *A. hispidulum* var. *hispidulum*, *Christella dentata*, and *Pellaea paradoxa*. There were also several obvious patches of *A. atroviride*, a fern which was not recorded in 2013.

Once we entered the rainforest canopy, *Lastreopsis marginans* and *Blechnum neohollandicum* were the dominant ground ferns. When we reached the circuit proper, travelling the circuit in a clockwise direction, *Parapolystichum microsorum* and *P. munitum* appeared, with *Diplazium assimile* and *Adiantum diaphanum* in the moister areas.

Midway along the circuit, a few members ventured off to closely inspect the creek banks and found species not recorded in 2013: *Blechnum medium*, *B. rupestre* and *Asplenium attenuatum*. We wondered whether we had found a *B. doodianum*, but the plant was quite damaged and we couldn't make a definitive identification. We also found *Hypolepis glandulifera* as we were returning on the circuit, which seems to have popped up at the side of the track since 2013.

Of the ferns recorded in 2013, we didn't find any specimens of *Diplazium australe* and *Pyrrosia rupestris*, the apparent absence of the latter surprising us.

The circuit was a satisfying start to our day of fern hunting. Buoyed by a cuppa and tasty fruit cake, we headed off to tackle the more energetic walk at Peters Creek. We travelled up the Sunday Creek Road towards Jimna but found the road to Booloumba Creek closed at that end. We retreated to Charlie Moreland campground for lunch, and decided with limited time available to try the Gold Mine Track from Booloumba Creek Campground, rather than try the more distant walks, which perhaps might not be accessible from the other end either. There is a picnic area and 3 very pleasant camping areas on Booloumba Creek in Conondale National Park, accessed from the Maleny-Kenilworth Road by Booloumba Creek Road. Soon after entering the National Park, there were two pools on the road, perhaps half a metre deep to be negotiated. (There was no apparent flow in these, which no doubt had been developed by the traffic going into the campgrounds. My memory is that last time we were here we only went through one, which was about 2cm deep.) There is a 4 day circuit walk, Conondale Great Walk, starting from the picnic area, for the more adventurous. The Gold Mine Walk starts from the end of the second campground. However, one couple from our party towing their caravan could not find any suitable parking so headed directly home.

## Gold Mine Track – 14 November, 2021

The remaining members started the walk which goes parallel to and a short distance from Booloumba Creek, crossing 2 small ridges on a well-made graded track before crossing the creek, joining the Great Walk, and heading further upstream before going up a side gully to the old mine. As usual in this type of environment, quite slow progress was made because of the many ferns present, and we ran out of time before crossing the creek, with a couple of members exploring briefly beyond it. We recorded 26 species of ferns in the moist forest. One notable feature was *Asplenium attenuatum* covering considerable areas above the track.



*Adiantum atroviride* among  
*Asplenium attenuatum*

BOTANICAL NAME	2021			2013	
	L. YABBA CK	FIG TREE	GOLD MINE	PETER'S CK	BOO. FALLS
<i>Adiantum atroviride</i>	x	x	x		*
<i>Adiantum diaphanum</i>	x	x *	x		
<i>Adiantum formosum</i>	x	x *	x		*
<i>Adiantum hispidulum</i> var. <i>hispidulum</i>	x	x *	x	*	*
<i>Adiantum silvaticum</i>	x			*	
<i>Arachniodes aristata</i>	x		x	*	*
<i>Arthropteris tenella</i>	x	x *	x		
<i>Asplenium attenuatum</i>	P x	x	x		
<i>Asplenium australasicum</i>	P	x *	x	*	
<i>Blechnum cartilagineum</i>			x	*	*
<i>Blechnum medium</i>		x	x		
<i>Blechnum neohollandicum</i>	x	x *	x	*	*
<i>Blechnum nudum</i>				*	*
<i>Blechnum patersonii</i>				*	
<i>Blechnum rupestre</i>	x	x	x		
<i>Blechnum watsii</i>				*	
<i>Calochlaena dubia</i>	x		x	*	*
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>	x				*
<i>Christella dentata</i>	x	x *	x	*	*
<i>Christella parasitica</i>	x				
<i>Davallia pyxidata</i>	P	x *		*	*
<i>Dendroconche scandens</i>				*	*
<i>Diplazium assimile</i>	x	x *	x		
<i>Diplazium australe</i>		*			
<i>Drynaria rigidula</i>				*	*
<i>Hypolepis glandulifera</i>	x	x			
<i>Lastreopsis decompositum</i>	P x		x		
<i>Lastreopsis marginans</i>	x	x *	x	*	*
<i>Macrothelypteris torresiana</i>					*
<i>Nephrolepis cordifolia</i>	x	x *	x		
<i>Parapolystichum microsorum</i>	P	x *	x		
<i>Parapolystichum munitum</i>	x	x *	x		
<i>Pellaea falcata</i>	P		x		
<i>Pellaea nana</i>	P x		x	*	
<i>Pellaea paradoxa</i>	x	x *	x	*	
<i>Platycterium bifurcatum</i>			x	*	*
<i>Platycterium superbum</i>	x	x *	x	*	
<i>Pteridium esculentum</i>				*	*
<i>Pteris tremula</i>	x				
<i>Pteris umbrosa</i>	x				
<i>Pyrrosia confluens</i> var. <i>confluens</i>	x	x *	x	*	*
<i>Pyrrosia rupestris</i>	x	*		*	
<i>Sphaeropteris australis</i>				*	
<i>Sphaeropteris cooperi</i>					*
<i>Sticherus flabellatus</i> var. <i>flabellatus</i>				*	
<b>Total seen 2021/2013</b>	<b>31 / -</b>	<b>21 / 18</b>	<b>26 / -</b>	<b>- /24</b>	<b>- /19</b>

x = Seen 2021 \* = Seen 2013 P = Present Piccabeen Circuit not walked by all members



## Zoom Meeting 6<sup>th</sup> February – Pellaea Study

Peter Bostock's notes

**Common traits** – core species (excl. *P. muelleri* & *P. reynoldsii*, both previously in *Paraceterach*)

- Terrestrial;
- Rhizomes creeping, scaly;
- Fronds simply pinnate in native species;
- Pinnae jointed to rachis, (often) deciduous, stiffly herbaceous to leathery;
- Stipes persistent;
- Veins obscure;
- Sori marginal, continuous, partly to wholly covered by a slightly to clearly modified marginal indusium.

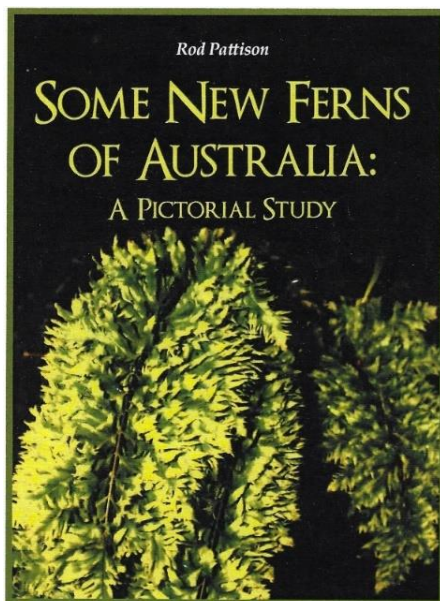
### Key (after Brownsey 2020)

- 1 Rachis scales spreading, persistent, mid-brown to dark brown; stalks of basal pinnae less than 1.5 mm..... 2  
Rachis scales appressed, often deciduous, whitish to pale brown; stalks of basal pinnae greater than 1.5 mm long ..... 3
- 2 Rachis scales mostly 1–2.5 mm long; pinnae 5–25 mm long, 2.5–7 mm wide (Australia) ..... *nana*  
Rachis scales mostly 3–4 mm long; pinnae 6–56 mm long, 4–16 mm wide.....*falcata*
- 3 Fertile pinnae asymmetric, the basiscopic side broader, 20–75 mm long, 7–26 mm wide; all lateral pinnae ± same size (Australia) .....*paradoxa*  
Fertile pinnae symmetric around the midrib, 8–40 mm long, 4–17 mm wide; lateral pinnae progressively reducing in length and breadth towards apex (Australia & New Zealand) .....*calidirupium*

PJ Brownsey (& six others) (2020) A review of the fern genus *Pellaea* (Pteridaceae) in Australasia. *Australian Systematic Botany* 33: 446–457.

## New Book from Rod Pattison

review by Tony Clarke



This book is not a scientific publication and is meant to be a pictorial record of the Australian fern cultivars that Rod has collected. I have found most of the content to be very interesting, even surprising at times. The sheer number and forms of the *Drynaria rigidula* cultivars alone are amazing, considering that most were all found in the bush within a day's drive from Brisbane. I emphasise that all the cultivars in this book were found in the east coast bush or gardens, from Newcastle to the Cairns/Atherton Tablelands and were not created in a laboratory. As such they are a part of our natural heritage, and it is important that they be recorded in some manner.

I thought that I would not want to buy another book on ferns until I saw this book, and it certainly has rekindled my interest in our native ferns. I recommend this publication to all that find beauty in our Australian flora. It is unique and a testimony to Rod Pattison's dedication and love of our native ferns.

This book features 413 pages of photographs of a large number of newly discovered Native Ferns in the Australian Bush and occasional garden by the author and his friends.

**The purchase price is \$99 plus postage and can be ordered from:  
In House Group  
Ph: (07) 3208 7576  
Email: [publishing@inhouseprint.com.au](mailto:publishing@inhouseprint.com.au)**

## Ferns and Bushfires

Kevin Mills, Jamberoo, NSW

Ferns are generally thought of as delicate plants susceptible to desiccation and destruction by bushfire. However, those species that grow on the highly fire-prone sandstone country of the Sydney Basin and elsewhere have evolved mechanisms that allow them to resprout after a bushfire, even the most severe bushfire. The extensive and intensive bushfires of 2019-20 have provided the opportunity to observe these ferns and how they return after a fire. While some species have rhizomes/roots that allow them to survive fire and readily resprout after the fire, others have thick trunks that protect the growing shoots within. Some examples of fern species emerging after the 2019-20 fire on the NSW south coast are shown below; all photographs were taken within a few months of the fire.



Gristle Fern *Blechnum cartilagineum*



Rough Tree Fern *Cyathea australis*



Forked Comb Fern *Schizaea bifida*



King Fern *Todea barbara*



Screw Fern *Lindsaea linearis*



Pouched Coral Fern *Gleichenia dicarpa*

While some extremely high temperatures are experienced in a hot fire, the heat only impacts upon the first few centimetres of soil, the temperature and depth affected depending upon the character of the organic fuel and soil moisture. Thus, the rhizomes/roots of ferns and other plants can survive even the severest of fires, protected below the soil surface. Measurements of three small ferns emerging in a burnt area found that the rhizomes of Screw Fern *Lindsaea linearis*, Lacy Wedge Fern *Lindsaea microphylla* and Forked Comb Fern *Schizaea bifida* were 3 to 5 cm below ground level.

The thick, fibrous trunks of species such as Rough Tree Fern *Cyathea australis* and King Fern *Todea barbara* protect the growing shoots deep within the trunk, the plants thus surviving a fire to reshoot, even following very hot fires.

Also observed were two species of fern that were stimulated by fire to produce fertile fronds. While fertile fronds of Gristle Fern *Blechnum cartilagineum* and Common Bracken *Pteridium esculentum* are seldom seen; following a fire many plants will produce fertile fronds. An observation in the Blue Mountains following the catastrophic fires in that area found that Gristle Ferns growing in rainforest well away from burnt areas produced fertile fronds. It is surmised that it was the smoke that caused these ferns to produce fertile fronds, even though they were not in any way burnt.

## First record of the rare fern *Lindsaea trichomanoides* at Mount Wilson, Blue Mountains, NSW

Kevin Mills, Jamberoo, NSW

The Waterfall Rainforest Walk at Mount Wilson is well known for its abundant ferns. Among the 31 species recorded during a visit on 13 February 2022, a population of the rarely seen fern *Lindsaea trichomanoides* (Lindsaeaceae) was located. There are apparently no previous records or specimens from the higher Blue Mountains (BioNet and Australasian Virtual Herbarium), although there is a collection from the lower Blue Mountains (Kurrajong ?) made by W. Woolls in 1886. The ferns were located on an earth bank very close to the creek. These were the only plants found along about one kilometre of creek valley searched. A specimen was gathered for the National Herbarium of NSW.

This fern mainly occurs in the wetter, western parts of New Zealand and Tasmania; it is far less common on the Australian continent. In Victoria, the species is considered endangered, while in Tasmania the fern is regarded as “a rare rainforest fern”. Based on known occurrences, the Illawarra appears to be the stronghold for this fern in Australia, outside Tasmania. The habitat of the species, based on the author’s 12 recent observations from the Illawarra, is either on the banks of small creeks or on moist slopes, always with a rather sparse ground cover. The vegetation is invariably high altitude warm temperate rainforest; this is the habitat at Mount Wilson. Due to its national rarity, *Lindsaea trichomanoides* is listed as a rare or threatened Australian plant (ROTAP, Briggs & Leigh 1996).



Peter Hind standing in Waterfall Creek inspecting *Lindsaea trichomanoides* on the bank at right.



Oval Wedge Fern *Lindsaea trichomanoides* at Mount Wilson



Closeup of *D. rigidula* pinna showing nectary



*Drynaria rigidula* nectaries arrowed  
(Photo: Michael Hassler)

Nectar secretion is not usually associated with ferns, but 11 or so genera have some species which possess nectaries. The majority of these are in the families Cyatheaceae and Polypodiaceae. I'm going to concentrate on *Drynaria* (Polypodiaceae) in this note, as the nectaries probably help to protect developing fronds from insect predation, due their ability to attract ants, as well as being useful to us by helping to confirm identification.

The Australian species *D. rigidula* and *D. sparsisora* both possess nectaries, as does their hybrid, *D. × dumicola*. In the latter two, with their pinnatifid i.e. lobed fronds (rather than 'stalked' separate pinnae), nectaries are apparent as yellowish translucent 'dots' in the frond, usually, but not always, located in the axils where each pinna lobe joins the rachis of the frond. Axillary nectaries in *D. sparsisora* seem to be confined to the upper axil, but as with the photo here, those of *D. × dumicola* may be in the upper, lower or neither 'leaf' axils, probably as a result of inheritance from both parents.



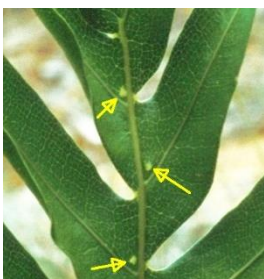
*Drynaria × dumicola* nectaries

In *D. rigidula*, nectaries are small 0.5–1 mm long depressions in the underside of the frond at the very base of pinnae, present only on their lower side, just above the junction with the frond rachis. They have a raised edge and usually are defined by a slight widening of the leaf margin at that point. As a result of this, the nectaries in this species can be fairly prominent, at

least under magnification. It is worth noting here that *Drynaria* species in general have deciduous pinnae, usually shed just before the next crop of fronds are produced. Pinnae of *D. rigidula* are also not truly stalked – they have a thin strip of lamina that extends all the way

down to the base, culminating in a nearly imperceptible thickened pad which acts as a zone of separation to allow the pinnae to be shed.

I have observed black ants huddled over nectaries at times (see photo here of *D. × dumicola*), generally on young unrolling fronds, and they often resist disturbance, returning to a nectary fairly quickly if startled.



*Drynaria sparsisora* nectaries

Photos by PDB except where stated.



Black ant at *D. × dumicola* nectary