

**THE
FERN SOCIETY
OF
VICTORIA**

Inc.

PRINT POST APPROVED PP334633/0002

NEWSLETTER

VOLUME 20, Number 3

May / June, 1998

FERN SOCIETY OF VICTORIA Inc.

POSTAL ADDRESS: P.O. Box 45, Heidelberg West, Victoria, 3081

OFFICE BEARERS:

President:	Chris Goudey	Phone	(03) 5282 3084
Imm. Past President	Barry White	"	9337 9793
Vice-President	George Start	"	(03) 5962 5059
Secretary	Barry White	"	9337 9793
Treasurer	Don Fuller	"	9306 5570
Membership Secretary	John Oliver	"	9879 1976
Spore Bank Manager	Barry White	"	9337 9793
Editor	Lyn Gresham	"	(03) 5796 2466
	(20 Murchison Road, Avenel, Vic., 3664)		
Book Sales	Ivan Traverso	"	9836 4658
	(19 Alta Street, Canterbury, Vic., 3126)		

COMMITTEE MEMBERS: Jean Boucher 9707 1592, Lyn Gresham, (03) 5796 2466, Simon Hardin 9481 3896, Ray Harrison 9337 7573, Lexie Hesketh 9499 3974, Cheryl Shelton (03) 5629 2998.

SUBSCRIPTIONS: Single - \$13.00 Pensioner/student \$10.00
Family - \$15.00 Pensioner Family \$12.00
Overseas - A\$20.00 (Magazine by airmail)

Subscriptions fall due on 1st July each year.

Meetings are held on the third Thursday of each month except January at Victoria Bowling Club, 217 Grattan Street, Carlton. Melways 2B D8.

OUR SOCIETY'S OBJECTIVES.

The objectives of the Society are;

- *to bring together persons interested in ferns and allied plants
- *to promote the gathering and dissemination of information about ferns
- *to stimulate public interest in ferns and
- *to promote the conservation of ferns and their habitats.

PRESIDENT'S MESSAGE

Well, the fern show is over for another year, and I must congratulate everyone who took part in it, including all the participants of the Australian Rhododendron Society. The display was excellent and so was the new venue.

The show was well attended on the Saturday, but unfortunately not so well on the Sunday. Many thanks to Mary Frost for judging the competitive exhibits, of which were many nice specimens of *Aspleniums* and *Adiantums*. Ian Broughton's display just gets larger every year. The demonstrations were all very informative and I found it very interesting, listening to the vireya members passing on knowledge of their passion.

At our next meeting Barry White will be speaking on Ferns in Fiji and the competition will be a fern ally. Cathy Goodall and Keith Hutchinson will be speaking at the June meeting on their recent trip to New Zealand and I understand they were both very busy with their video cameras, so we may see some video footage. The competition will of course be a New Zealand fern.

In July Lisa Haines will speak on organic potting media and Max Moore will be speaking on *Hostas*, as well as displaying fern and gardening books for sale. The competition will be an *Asplenium*. For August we will have Jane Edmanson speaking on the photography of plants, who I am sure will draw a large crowd. The competition being a fern with a simple frond ie., *Asplenium australasicum*, *A. simplicifrons*, *A. attenuatum* etc. More examples will be given as we get closer to August. In September Ian Broughton will be our guest speaker, the topic and the competition have yet to be decided.

The committee are in the early stages of planning a two day excursion in September to the Den of Nargon and Fairy Dell at Bruthen, Eastern Victoria, of which Barry White wrote in the last newsletter. Last but not least, some more good news; our membership fees will remain the same for the coming year.

Chris Goudey.

1998 MEETINGS & EVENTS

May General Meeting Thursday 21st at 8.00 p.m.

Ferns in Fiji

presented by **Barry White**

*Competition: "A Fern Ally" Please note the change.

June General Meeting Thursday 18th June at 8.00 p.m.

I Love to Go A-Wandering...

The New Zealand visit

with **Kathy Goodall and Keith Hutchison**

Competition: "Any New Zealand fern"

July General Meeting Thursday 16th July at 8.00 p.m.

Hostas in Your Fernery

with **Max Moore, Tiverton Enterprises (Horticultural books)**

and

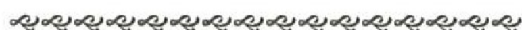
Pamper Your Ferns With Seasol

Lisa Haines from Rezitech P/L.

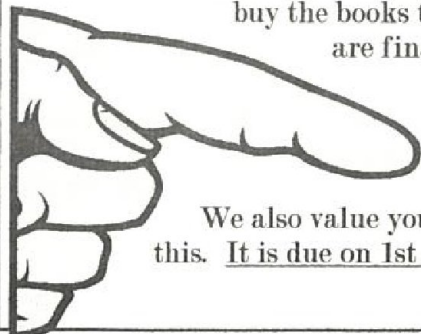
Competition: "Asplenium".

GENERAL MEETING TIMETABLE:

7.30	Pre-meeting activities - Sale of ferns, spore, books, merchandise and Special Effort tickets. Also library loans.
8.00	General Meeting.
8.15	Workshops and demonstrations.
9.15	Fern identification and pathology, Special Effort draw.
9.45	Supper.
10.00	Close.



We value your membership and hope you take advantage of the services and benefits that come with it. For those who can't get to the meetings, we are arranging a new service - you will be able to buy the books that are offered at monthly meetings by mail. More details as things are finalised. Thanks to Ivan Traverso for offering to do this.



It's subscription time again!!

We also value your annual subscription and would appreciate your prompt attention to this. It is due on 1st July. There is a form enclosed in this magazine for your convenience.

FERN TRIP TO GLEN NAYOOK

29th March 1998

by roving reporter Mary Frost

In North-East Victoria it has been the driest and hottest summer ever. With temperatures over 45 degrees at times and NIL HUMIDITY it has been a long, hard road to keep ferns alive. I've tried all the tested cures, advice, everything but with nil humidity especially *Leptopteris superba* needing at least 90 degrees (humidity). We felt like a break away from watering, feeding cattle and watching waterlevels in dams so at 9.30 p.m. 28th March a quick phone call to Dorothy and we decided to go on the fern trip.

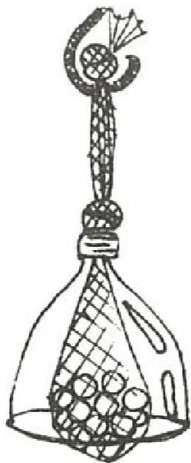
From here (Wangaratta) to Toolangi the country is dry, bare, then from Toolangi onwards to Dorothy and Ian's it is green.

Lovely and cool cloudy day at Garfield and after lunch away to Glen Nayook. Ferns noted:-

1. *Polystichum proliferum*
2. *Cyathea australis* (Rough Treefern)
3. *Dicksonia antarctica* (Soft Treefern)
4. *Blechnum patersonii*
5. *B. watsii*
6. *B. cartilagineum*
7. *B. chambersii*
8. *Lastreopsis shepherdii*
9. *Asplenium bulbiferum*
10. *Grammitis billardieri*
11. *Rumohra adiantiformis*
12. *Microsorium diversifolium*
13. *Histiopteris incisa*
14. *Sticherus lobatus*
15. *Polyphlebium venosum*
16. *Hymenophyllum cupressiforme*
17. *H. australe*
18. *H. flabellatum*
19. *Diplazium australe*
20. *Todea barbara*
21. *Pteridium esculentum*
22. *Hypolepis australis* (Austral Ground-fern)



The highlight for the day was the discovery of a group of three (3) plants, many suggestions for their name but NO-ONE knew. They were definitely some relation to *Polystichum* because of the same hairy stems so we decided "*Polystichum* ×" was close enough. Above is the image of a part frond pressed.



TO REPEL INSECTS in the fernery, try putting some mothballs or naphthalene flakes in the toe of a stocking (check with the owner first!) and hang it at about head-height.

After a few tries you will know how many of these 'ornaments' you need in your shadehouse. It will depend on how big and how airy the fernery is.

If you have an overhead watering system, try making an 'umbrella' from the top of a Pet bottle. Cut the bottle below the neck and

discard the base. The stocking can be threaded up through the small opening and the lid replaced to make a watertight seal.

Check that the 'umbrella' comes down far enough to keep the mothballs dry, while still being open enough to spread its 'sweetness and light'.

(This idea was picked up from a photograph Geoff Beilby showed of his wife's fernery. Great idea, Mrs. B! The umbrella's mine.)

RESULTS OF OUR 1998 ANNUAL FERN SHOW COMPETITION

**1998 Fern Show
Champion Exhibit**
Jean Boucher's
Adiantum
"Brilliant Else"
Congratulations,
Jean!!

Section 1 Adiantum

1. Jean Boucher
Adiantum 'Brilliant Else'
2. John Hodges
Adiantum frostii

Section 2 Asplenium - Bird's Nest Type

1. Don Fuller
Asplenium australasicum (Crested)
2. Lyn Gresham
Asplenium australasicum (Crested)

Section 3 Asplenium - Other Types

1. Dorothy Forte
Asplenium flaccidum (New Caledonia)
2. Dick Kissane
Asplenium boltonii (Africa)

Section 4 Blechnum

1. Dorothy Forte
Blechnum cartilagineum
2. Lyn Gresham
Blechnum nudum 'Furcate'

Section 5 Davallia

1. Don Fuller
Davallia plumosa
2. Barry Stagoll
Davallia plumosa

Section 6 Dryopteris and Polystichum

1. Dorothy Forte
Polystichum sp.
2. Lyn Gresham
Dryopteris pyenopteroides

Section 7 Fern in a Hanging Basket

1. Don Fuller
Polypodium aureum 'Mandianum'
2. Don Fuller
Drynaria rigidula 'Whiteii'

Section 8 Pteris

1. Dick Kissane
Pteris fauerii
2. Don Fuller
Pteris hendersonii

Section 9 Fern Other Than Above.

1. Keith Hutchinson
Platynerium veitchii
2. Don Fuller
Platynerium veitchii

Well done, everyone!!

MONTHLY COMPETITION RESULTS

MARCH GENERAL MEETING

A TREE FERN

1. Dick Kissane's *Cyathea kermadecensis*
2. Keith Hutchinson's *Dicksonia antarctica*
3. Jack Barrett's *Dicksonia fibrosa*

Exhibitors' Draw: Don Fuller
Special Effort: Reg Kenealy, George Start,
Reg again and Gwen Barrett.

APRIL GENERAL MEETING

AN INTERESTING FERN

1. Dorothy Forte's *Davallia* from Borneo
2. Dorothy Forte's *Polystichum proliferum*
3. Don Fuller's *Pteris umbrosa*

Exhibitors' Draw: Dorothy Forte
Special Effort: Fran Harrison, Jean Boucher,
Mavis Potter, Don Fuller.

*In case you're wondering, Dorothy travels so far to the meetings and Don works so hard for the Society that no-one REALLY minds them hogging most of the prizes!! Besides, their ferns are superb and always beautifully groomed.

Speaker Report - 19th February 1998

FERNS OF THE OTWAY RANGES

Geoff Beilby

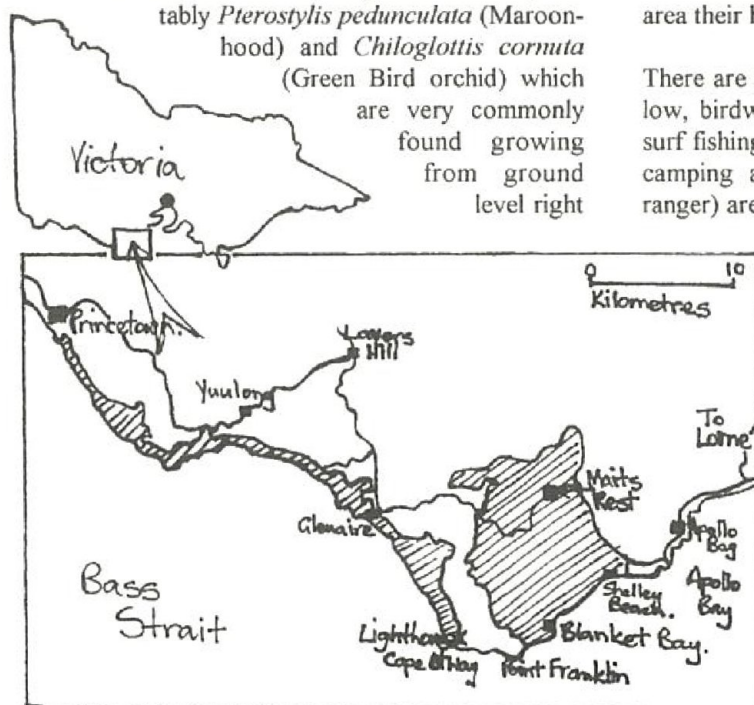
Before he retired, Geoff worked for the Department of Conservation in the Otway National Park and is renowned for his extensive knowledge of the area. His main interests are in the Society for Growing Australian Plants and in growing Australian native orchids, mostly epiphytic ones in a bark and gravel mixture.

He began the evening by apologising that we were seeing his next-to-best slides as his most precious ones are on loan to David Jones (since 1995!).

FERNS RULE - OK!

Geoff considers that the many Davallias which come up among the orchids he gets from up north are pests (off with his head!) and pulls them out. There are also local native ferns which come up freely; the Batswing fern (*Histiopteris incisa*) and some Blechnums head the list. Paul Barnett told him that one particular fern which is common in Geoff's poly-house (but whose name Geoff didn't know) must be removed because any orchid sharing a pot with it, dies. He believes there is an allopathic reaction between the two and the fern wins.

The other side of the picture is that ferns are hosts for some of our native ground orchids, notably *Pterostylis pedunculata* (Maroonhood) and *Chiloglottis cornuta* (Green Bird orchid) which are very commonly found growing from ground level right



up into the tops of fairly tall Dicksonias. They also grow on the base of some Eucalypts and on the bark of the Musk Daisy-bush.

OTWAY NATIONAL PARK

Due to the rugged nature of the coastline the park, named after its main feature, Cape Otway was for many years seen only from passing ships. The lighthouse was built in the late 1840s and soon after the area was logged for the magnificent Mountain Ash trees whose timber was in great demand. It is reported that at one time there were 29 sawmills working within 29 km of Beech Forest. Farmers also cleared land for grazing cattle and it was many years before the area was protected and preserved by its present national park status.

The 12,900 hectare Otway National Park stretches from just west of Apollo Bay along the coastline for 60 km to Princetown where it merges with the Port Campbell National Park. It is largely composed of coastal temperate rainforests and wet sclerophyll forests, containing the surviving giant Mountain Ash trees, waterfalls and lush, fern-filled gullies. Birdlife includes the satin bowerbird, king parrot and the albatross. Bats, platypuses, echidnas, possums and both red-necked and swamp wallabies also make the area their home (marsupial/monotreme mecca!).

There are many excellent bushwalking tracks to follow, birdwatching, surfing (if you're mad enough), surf fishing and river canoeing. Several picnic and camping areas (book camp sites ahead with the ranger) are provided and accommodation is available at the Lighthouse.

TRIPLET FALLS, OTWAY N.P.

Geoff decided to concentrate his talk on this one area. It is one of the best fern areas in the Otways. The latest developments were opened by the Minister for Conservation late last year. These include raised boardwalks which have greatly improved access while also protecting the environment from visitor impact. Drainage has been improved. A track has been opened up which runs from a very dense area of Dicksonias on

the western end of Triplet Falls right back north past an old sawmill to the top carpark. There is a viewing platform below the Falls, from which you can look down over the ferns.

This area is cool temperate rainforest consisting of Myrtle Beech trees. Higher up along the track you are in wet sclerophyll forest.

SOME FERNS ON THE TRACK.

From this track can be seen some magnificent Kangaroo ferns, Mother Shield ferns and Aspleniums, King ferns, Ground ferns and tree ferns. Tree ferns, Coral and Fan ferns sprawl down the middle of Triplet Falls.

We saw *Blechnum nudum* on Young Creek and *Dicksonia antarctica* which used to grow in a very swampy area. The reason this area was so swampy was a huge pile of sawdust at a disused mill just uphill, which soaks up rainwater and filters it out continually, waterlogging the land below. This has now been corrected and the area is returning to its natural state.

The only plants to grow in the old sawdust are *Blechnum watsii* (Hard water-fern), *Thelymitra* orchids and *Dianella revoluta* (Spreading Flax Lily).

Other sights were tree stumps covered by *Grammitis magellanica* subsp. *nothofagei*, *Polystichum proliferum* (Mother Shield fern) and Kangaroo fern 15 - 20 feet up Blackwood trees, Cyatheas growing very well on the wet side of the track and slender tree ferns among Myrtle Beech.

There are Dicksonias with *Rumohra adiantiformis* growing on them. The *Rumohra* is quite common here, varying from untidy heaps to lush, green plants, probably depending on the amount of light it receives -and how many possums land on it during the night!



Asplenium bulbiferum also grows like that.

We saw *Tmesipteris billardieri* (Broad fork-fern) and *T. elongata* which is only found in one other locality in Victoria (South Gippsland), Lance water-fern and much rarer here, Ray water-fern, Filmy ferns, *Polyphlebium venosum* as well as many more. *Ctenopteris heterophylla* (Gipsy fern) was growing among mosses and an orchid in the base of a Manna gum.

TWO RECOMMENDED TRACKS

Phillips Track (?) has some marvellous fern areas. Though it's a 'two-thermos-and-cut-lunch' hike since the tracks have been changed, it is still well worth the trouble.

Turton Track is a good drive.

HABITAT FERNS

Ferns Which Are Hosts to Orchids

You will probably be familiar with the way tree ferns often support other plants on their fibrous trunks. Quite a number of our native orchids grow on ferns in the Otways. The association is this; there is a fungus growing in the fibre of the fern which the orchid requires as a micorrhiza. This is fairly typical of orchids.

A fern which is proving to be an excellent, if accidental, orchid host is an *Asplenium* in Geoff's wife's fern house. The orchid plants wending their way among the fern fronds are by far the most vigorous, large and strong of any Geoff is growing. They are doing much better than those in the Orchid Society's mix. I'm sure most of us have found the same thing with self-sown ferns on occasion.

We were treated to many slides of orchids and other native plants, many of which are rare or threatened.

Next we went on a lightning tour of Carnarvon Gorge and points north, with native ferns quite foreign to our area (except in captivity) followed by a five minute circuit of Tasmania. Puff puff!!

Geoff's presentation illustrated for us his wide interest in, and knowledge of, native plants. He is one of those rare people who picks up and passes on lots of interesting, often quirky, details and anecdotes. It was altogether a pleasant and worthwhile evening.

**Allopathic reaction - having an aversion to each other.*

TREE FERNS

FERNS FOR JURASSIC PARK

(A talk on tree ferns given by Neil Shirley to FSV on 19 March 1998).

Tree ferns are so old that they were certainly around in the time of the dinosaurs. I have a private theory that dinosaurs died out because God didn't like them going around stomping on all the tree ferns.

Morphology.

Most of us are familiar enough with tree ferns to know what they look like. They are large ferns, they are arborescent and they have a trunk essentially, although this is not always the case. We would expect the fronds to be tripinate, lacy, open and lush looking, but this is not always the case. We would expect them to be large plants and this is usually so. Sometimes they have evil wicked spines on them.

Botanists have examined all the tree ferns living on the planet, and have divided them up into basically two groups. The first one is the Dicksoniaceae including the familiar *Dicksonia antarctica*. Other ferns in that family are the Cibotiums, which are available in Australia, though rarely, also *Thyrsopteris* and *Lophosoria*. This is a small section of about 30 species. The other, major section is the Cyatheaceae, which consists of a very large number of species, estimated at about 700 to 800, depending on the classification system used.

What does this mean to us? Well it does help us to distinguish between the ferns of the two groups. The ferns from the Dicksonia group have hairs on their stipes and trunks, only hairs. The Cyatheaceae have both hairs and scales. This is a fairly easy way to distinguish between the two groups.

Evolution.

The Dicksonias are far more primitive than the Cyatheaceae and this is shown up well by one major feature - the Dicksonias have their indusiums with their sori at the ends of veins on the pinnule margins, with the edge of the frond

simply curled over to enclose it. This is typical of most primitive ferns. (They are still more advanced than the green spore species like *Osunda* and *Todea*, which do not have a good mechanism for spore dispersal, and also *Angiopteris*).

The Cyatheaceae are very old. They were certainly around in the Jurassic period some 180 million years ago, as *Cyathea*-like plants have been found as fossils from this period, when they were probably used as dinosaur food. They were present in the super-continent Gondwana which subsequently broke up into Australia, New Zealand, PNG, Fiji and other Pacific islands, South America and Antarctica.

They were slow to evolve (only 30 species) and were possibly almost an evolutionary dead end. What some people call a dead end, others call perfection! However you look at it, they are still very beautiful tree ferns.

Cyatheas today form the bulk of the tree fern species. The paleo-botanists (who study plant fossils) have a very difficult task identifying species because most of the fossils are of woody trunks but not of fronds. So the botanists have based their classifications on the structure of the trunks alone and to this extent they may be somewhat uncertain. Cyatheas have a more complicated vascular structure. They are more organised in their trunks. They can probably grow taller in less optimal environments because they can conduct water better. They are also more advanced in the organisation of their spore. The sporangia are no longer at the edges of the pinnules but more or less central. The distribution of Cyatheas is basically south of the Tropic of Cancer in China and Mexico, south to southern New Zealand, South America and South Africa. (There are a few species in S. America and also S. Africa). They have been quick to speciate and there are now over 700 species.

What does this mean to us? Does this help us to grow our plants? Hopefully it does. Dicksonias, with the exception of *D. antarctica*, are very delicate ferns. Their optimal habitat is high montane forest in tropical areas. The height above sea level is 1000 m, perhaps 2000 m up to 3000 m. Along creek sides, right in the middle of rain forests is where you will see the Dicksonias. They require a very protected habitat. This applies too to *D. antarctica*. Though it can cope in a somewhat more exposed position, it won't look so good or grow so well.

The Cyatheas are a little different. They have had time to evolve into different types of ferns requiring different conditions. The general habitat for Cyatheas is much the same, but we can divide the Cyatheas which we get access to to grow into two groups. If we see odd tree ferns in Australia, they are most likely to come from New Guinea, New Zealand or SE Asia. We don't see many tree ferns from America. Because of that, the rules that the botanists make to divide up tree ferns help us to grow them. They have split Cyatheas into two groups: Alsophila and Sphaeropteris.

The classic Alsophila tree fern would perhaps be *C. woollsiana*. It is a thin trunked tree fern that grows in the north of Queensland and has the general characteristics of the group Alsophila. They have woody stock, dark brown or black woody stipes and thin, delicate fronds. These plants are more delicate to heat and light and they need a lot of fussing. I have called this group of plants "the sooks". They are real ferny style ferns.

The other group is the Sphaeropteris. The classic one we would all be familiar with is *C. cooperi*. The differences are quite obvious. The fronds themselves are more succulent though the stipes are much more robust and starchy. They are succulent and green. The plants are much more sun tolerant than the Alsophilas; these are the "toughies". These species are also easier to grow from spore.

Centre of Diversity.

The centre of diversity of tree ferns (where the most number of tree ferns grow in the smallest area) is in PNG. They have about 600 of the

world's 880. This is the real centre, the world's hot spot for tree ferns. Why is this so? Perhaps there are two explanations.

Firstly Cyatheas as a group tend to want to speciate, to produce new species. The mechanism for this is as follows; if the habitat for a particular plant can be formed in a space somewhere in the world and a species of tree fern occupies this space, and if that space is broken, the two sections get isolated from one another. It is most likely that the species in the two locations will diverge, becoming less and less alike and so will have a predilection to make new species - they will speciate.

This is also added to by the physical conditions of New Guinea. It is a mountainous, tropical, high island. The tallest mountain in New Guinea is Mt. Wilhelm, at 4500 m. It is just below the level of permanent snow. Whenever you have tall mountains like this you have lots of different habitats at different altitudes on the mountain and tree fern habitats are defined by their heights above sea level.

If a tree fern grows at a level of 120 m above sea level but over long periods of time the sea level rises and falls (which it has done), the physical position of the tree fern habitat moves up and down the mountain with it. So the ferns must adapt by either moving or evolving.

If a species lies in a position between two mountains and the sea level rises, then the species no longer moves up one mountain but two. The species is now separated into two groups. Under these conditions it is most likely that the two groups will evolve differently. This is one example of the mechanism which helps tree ferns to produce more and more species.

Lord Howe Island is an interesting case in point. It is a tiny island about 400 km east of Port Macquarie, in the Pacific Ocean. There are two massive mountains at one end and the rest is fairly level and low. Four tree fern species are found on that island. Three of them have obvious relationships with other Pacific (and our Australian) tree ferns and these occur at different levels up the mountain but all at low altitudes. The fourth one, which has no affinity with the Australian group of ferns, is right on the top, and that one appears to have most affinity

with New Guinea ferns.

Another bizarre fact about tree ferns is that they can have weird relationships all over the world. A guy in the US has calculated that a specimen of *Cyathea arborea*, a tropical fern from the Caribbean, produces 1250 thousand million spore throughout its life. Each tree fern is pumping out massive amounts of potential new plants. They are certainly not all going to grow but the spores are all being carried by the wind, some of them obviously incredible distances. Perhaps that is the mechanism whereby ferns growing at 4000 m in PNG ended up on the top of Mt. Gower on Lord Howe Is. in the middle of the Pacific, having travelled all the way across North Queensland.

Another interesting example of this is *Cyathea capensis* which grows on the Cape of Good Hope. An identical species of this ancient fern has been found in Brazil. South Africa has such a unique flora that I cannot think of any plant species except this ancient fern which grows in both places. That is a really weird thing.

Habitats.

A little on the different habitats Cyatheas have managed to colonize. There is a group of tree ferns in Cyatheaceae which have somehow evolved to grow rapidly in breaks in the canopy of the rain forest. They are called pioneer species. We have one in particular in Australia, *C. robertsiana*. As soon as there is a bit of light they appear and proceed to grow rapidly. They are short lived. Because they require high levels of light, as soon as the canopy closes over, they die.

C. robertsiana is fairly difficult for us to grow down here. Not only does it require high light levels but it also requires the cool temperature and high humidity that are provided in a tropical rain forest. These are conditions which are very difficult to replicate in a temperate climate. If anyone is growing it well, congratulations to them!

Cyathea howeana, growing on Lord Hows Is. is somewhat less of a pioneer species. It is definitely related to *C. robertsiana* but is much more growable. It seems to have lost some of its

pioneer attributes.

A last, quick look at one of the most bizarre environments that tree ferns grow in; a New Guinea tree fern savannah. It occurs above 3000 m. It is cold and it is hot at the same time! When the sun comes out it is very hot. It is under the intense tropical sun, with high UV levels all day. At night, because there is no canopy, the heat goes straight out and it becomes intensely cold. It is a very windy place which has extreme variations of climate. There is only grass, which frequently gets burnt leaving hugh tree ferns dotted all over the savannah with no cover whatsoever.

These tree ferns have evolved special mechanisms to cope with their environment. One of the species is *C. gleichinioides*. Instead of having broad, lacy fronds, its fronds are hard, narrow and very hairy or bristly. Not much surface area is exposed and so this avoids wind desiccation.

Uses.

We humans have a propensity to pick up things and use them wherever we can. We have certainly used tree ferns!

In Polynesia, Fiji and especially New Zealand you would be aware that people use them as building materials, as posts and hut supports. They are strong and do not rot very quickly.

They are also a good food source, I am told. Cyatheas are boiled up as you would cook spinach. In the highland markets in Goroke you can buy, for a few kena, a bunch of cyathea fronds to take home and have with your casowary at night. The starchy pith of the crowns are sometimes eaten.

In Borneo the indigenous people cut up old trunks for beehives.

In Austrtalia some of the indigenous and non-indigenous people cut them up and put plants in them.

In Java some of the old trunks, which are pretty hard, are filled with explosive carbide gas and used as fire crackers in New Year celebrations.

Propagation.

Propagation is almost exclusively by spore. Some tree fern species which we would be familiar with do produce offsets. I have never found propagating from these to be very satisfactory. The one we would be most familiar with would be *D. squarrosa* and perhaps *D. youngiae*. You can remove the little pups from the side but the losses are quite high. It really is not satisfactory. A lot of the pups grow half way up the trunk but they are very difficult to get to grow because they basically have no roots. So you really have to propagate from spore and I have found this very frustrating.

The Sphaeropteris group of tree ferns, which includes *C. cooperi*, are quite a lot easier. *C. cooperi* can even be a weed in spore pots.

On the other hand the Alsophila spp. are terrible. They are slow to grow, weak, resentful of transplantation and sensitive to fungus. You may wait years before they produce sporophytes. In fact, some never do because your conditions are seldom quite right for the prothallus to produce them. Alsophilas are real sooks.

Cibotiums are also slow but Dicksonias don't seem to be so bad in this regard. I think it is better to let someone else grow them!

Culture.

Most of the species we have available to us are relatively easy to grow once they are large plants. I would plead with people to plant them in the ground because that is where they want to be. People have a lot of trouble with growing them in Adelaide, and possibly here in Melbourne too, in pots in the summer. That is perhaps partly due to the type of mix available in the shops. It is excellent for a lot of other plants but not tree ferns because they grow too quickly and it has no buffering capacity for the salts that may or may not be in the water.

If you do have any trouble with burning, I suggest you include some loam in the mix, say up to about a quarter and that will slow down the drainage. They don't mind a little bit of extra moisture and it may stop them burning. It's worth a try. Some people in Adelaide have had

success with this. Of course, they have more trouble with Adelaide's poor water. Salty, limey or chlorinated water is always a problem for plants in pots.

Of course you all know that when Dicksonias get too tall they can be cut off above ground level and be moved about at will. They can be replanted with 1/3 to 1/4 of trunk in the ground. You should cut off some of the oldest fronds and water heavily. Plants should stabilise and then thrive again.

You cannot do this of course with Cyathea species. As with any other fern, you must take as much of the root ball as is practical. I heard tonight of a new method, which consists of putting a hessian bag around the trunk of a Cyathea to induce the roots to grow at whatever height you wish. When the roots are grown you can essentially treat it like a Dicksonia.

Certainly 6 ft Sphaeropteris tree ferns are transplantable. If you wish to do this, take as much of the root ball as is practical (wide rather than deep, because they are surface rooting). It is certainly worth doing and can be done with a reasonable chance of success. *C. cooperi* grow so quickly that they often outgrow their site.

If you want to grow *C. cooperi*, try it in the sun. You do see them growing like this in Sydney, hanging over the harbour at sea level in full sun. In Adelaide we have had some *C. cooperi* 'Coolgardie Gold', claimed to be very sun tolerant. I suggest you try any *C. cooperi*.

C. brownii are perhaps less sun tolerant but I have had reasonable success in Adelaide. But certainly do not put *D. antarctica* in the sun. In the wild, they grow right in the middle of trees.

Slides.

1. *Dicksonia antarctica* in the speaker's garden.
2. **Tree fern gully** at Mt. Lofty Botanical Gardens with a large variety of tree ferns.
3. **Dicksonia** fronds showing spore pattern - the edges of the fronds simply turned over to form an indusium.
4. **Cibotium** frond showing spore pattern - an

even simpler arrangement showing little bumps where the edge of the frond turns over to protect the sorus.

5. *Cyathea australis* spore pattern - the sori are in from the margin.

6. **Coin-spot tree fern.** When *Sphaeropteris* species grown in low humidity they show a distinct coin-spot pattern. Grown in high humidity conditions, massive roots cover the pattern, growing down from the crown and up from the bottom, allowing other plants to grow on the trunk.

7. *D. antarctica* showing flora growing on the trunk.

Slides of Tree fern species.

8. *Cibotium schiedei*. Relatively soft in looks but tough in its growing habit. A good one for the fernery if available.

9. *Cibotium regale*. Very, very lovely but needs a hot house.

10. *Dicksonia herbertii*. Not easy to grow. A bit of a 'sook'.

11. A frond of a Mexican *Cyathea*, *Sphaeropteris horrida*. The scales are quite golden. It is very attractive indeed.

12. *Cyathea capensis*. Shows the pinules at the base of the fronds which are much reduced and form a wig like the more familiar *C. baileyana*, known to us as the wig tree fern. Basically it is just that the lower pinnae haven't got much chlorophyll between the veins. This occurs in some tree ferns but not others. Perhaps the reason for them is to protect the emerging fronds by keeping the humidity around them high. Incidentally this is the tree fern that has the weird distribution in S. Africa and S. America.

13. Trunk of *Cyathea horrida*, covered with wicked spines.

14. *Cyathea atrox*, from New Guinea highlands with a very good defense mechanism against - something. It certainly works against humans!

15. *Cyathea atrox* again, but a different sub-

species. The actual pinnules are very much reduced, after the manner of *C. tomentossisima*. The pinnules are also very hairy and the underside of this one is as felty and tan as you would ever wish to see. It is very attractive and lacks the terrible spines of the other species of *C. atrox*.

16. *Cyathea contaminans* which has a combination of the 'fur' and the wicked spines. It is supposed to be the most ubiquitous tree fern in the world, growing in the tropics, not in Australia but to our north, right over SE Asia, in New Guinea and right up to Burma. Very tropical in its requirements and not really user friendly in our temperate regions.

17. **New Guinea tree fern, savanna species.** A number of years ago I was able to go to New Guinea to see some of these things for myself. In a swamp, up to my knees in mud, at about 2500 m, I saw tree ferns growing in the weirdest places. This one is wide open to the sun. There is one growing now in the Botanical Gardens in Adelaide and doing fairly well. So it is growable. As soon as it becomes fertile I will see if I can get some spore over to your spore officer and you might be able to grow it here.

18. *Cyathea procera* at Goroka at about 2000 m. The crown of this tree fern is like some horrendous, hairy spider. I collected spore of it but it did not germinate, so you are not able to see it here, yet.

19. *Cyathea rebecca* growing 1 m above sea level in the swamps around the Daintree River. An extremely tropical tree fern, it does grow up on the Tableland at Atherton, but is a bit too tropical to be grown here.

20. *Cyathea robertsiana*. This one is about as thick as a walking stick and perhaps 20 ft high. They call it the walking stick tree fern. This is one of the pioneer species. They grow like blazes into the light, so tall and so flimsy that the first cyclone blows them over - along with a whole mess of other trees, of course.

21. *Cyathea robusta*, growing in the forests of Lord Hows Is.

22. *Cyathea howeana*, another Lord Howe Is.

22. *Cyathea howeana*, another Lord Howe Is. species. It is related to *C. robertsiana* but is less of a pioneer species. It is really attractive and growable in Melbourne. One of the attractive features about it is that, as the new fronds emerge, they are covered with large clear scales, looking very much as if they were wrapped in glad wrap. It is very attractive as is the whole plant in all its parts. It is fairly forgiving of less than ideal conditions.

23. *Cyathea marcescens*, the famous Victorian tree fern. This is a particular clone that produces tufts all up and down the trunk.

24. *Cyathea smithii*. A NZ tree fern very similar to *C. cunninghamii*, and indeed may be identical. It would be interesting to think that we had

a tree fern growing in both Australia and NZ. It grows in the same conditions as *C. cunninghamii*, which grows right in the middle of the creeks in the rain forest. It may be a little bit more robust but not much more so.

25. *Cyathea colensoi*. This is one of the tree ferns that never developed a trunk. It is from the highlands of NZ.

26. *Cytha medullaris*. NZ has a black tree fern and a white tree fern. This one has the blackest of black trunks (and is quite sun tolerant) but when they are young the scales are quite white.

27. A *Dicksonia* growing in full sun in Adelaide and looking rather unhappy. Shows how not to grow Dicksonias. PLEASE don't grow them in the sun. Treat them kindly.

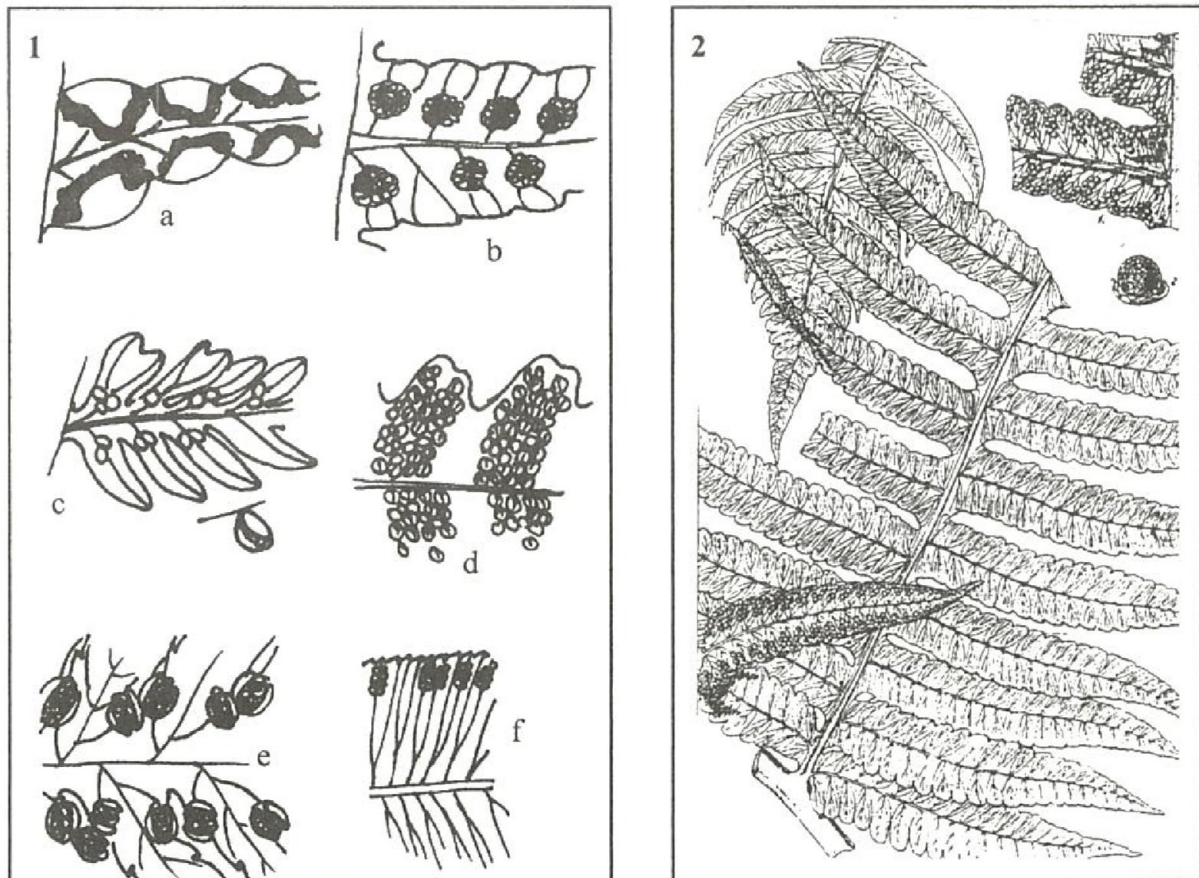


Fig. 1 TREE FERN SPORE PATTERNS. a; *Dicksonia antarctica* b; *Cyathea australis* c; *Leptopteris fraseri* (Osmundaceae) d; *Todea barbara* e; *Cibotum barometz* f; *Angiopteris evecta*.

Fig. 2 *Cyathea horrida*. 1. Portion of fertile segments. 2. Sorus. From "Species Filicum" by William Hooker, 1846.

*Many thanks to Ray Harrison for the time and effort he put into this most comprehensive Speaker Report and for stepping in when I could not be at the meeting.

LAWSON FALLS FERN TRIP

Monday 30th March 1998

Dorothy, Ian (Forte), my husband Garnet and I went to Bunyip State Park to the Lawson Falls Nature Walk. There had been 25 points of rain overnight at Fortes' and it was still cloudy and incline to shower so the track was a little slippery but very easy to walk.

Ferns noted:-

1. Rough Treeferns - many 15 feet (a bit under 5 metres) or more high
2. Soft Treefern
3. *Pteridium esculentum*
4. *Culcita dubia*
5. *Blechnum nudum*
6. *B. wattsii*
7. *B. cartilagineum*
8. *Histiopteris incisa*
9. *Polystichum proliferum*
10. *Todea barbara*

11. *Hymenophyllum cupressiforme*
12. *Sticherus lobatus*
13. *Gleichenia dicarpa*.

The coral and fan ferns were by the acre - absolutely lovely. We guessed the size of one of the fan fern fronds and when we measured it, it was 32 inches (90cm) across - really superb.

Also here is the *Grevillea barklyana* which is only found here. We found one in bloom with its pink, one-sided racemes. The *Banksia spinulosa* was also forming new flowers, lime green in colour. Also here is the black shelled labertouche snail. Ian turned over a rotting log and found one to show us.

The falls were running very strongly, cascading down 40-50 feet (13-16 metres).



Diagram from "Ferns and Allied Plants" by B.Duncan and G.Isaac

Sticherus lobatus - Spreading Fan-fern.
(a) first forks and (b) pinnules on ultimate branches.



COLOUR IN THE FERN KINGDOM

Some time ago I heard a non-fermatic say that ferns are boring because they do not bloom and are all just dull green. Anyone who has eyes can see that this is a total misconception.

Just think of the different colours green; the grey-green of *Pellaea calomelanos* or a *Platycerium*, the soft, fresh green of an *Adiantum* or a Bird's-nest fern *Asplenium nidus*, the dark green of a Spider Fern *Pteris multifida* or the yellowish green of a Boston fern *Nephrolepis exaltata* 'Bostoniensis'.

There are also the 'variegated' ones; Ribbon fern *Pteris cretica* 'Albo-lineata' and *Pteris biaurita* 'Argyrea'.

The scales and caudexes of Tree ferns provide a lovely colour variation; the Silver tree fern *Cyathea dealbata* with its

silver fronds, *Cyathea cinnamomea* with its curry red scales and the Spiny tree fern *Cyathea manniana* with its blue-black caudex are but a few examples.

The underside of the fronds of the American Goldback fern *Pityrogramma argentia* are a golden colour.

Often young fronds add a lot of colour to the fernery; the Rasp fern *Doodia*, *Blechnum punctatum* and the Rosy Maiden-hair *Adiantum hispidulum* have red young fronds.

There are still a number of colourful examples that prove that ferns are definitely **NOT** "just dull green"!

-This is an abbreviated version of an article in one of our first issues of the Newsletter of the Fern Society of South Africa, with whom we are now exchanging publications. It has been abbreviated to fit. My apologies, thanks, & a warm welcome to FSSA! -Lyn(Ed.)

SPORE LIST

ORDERING The following spore is free to those members who donate spore. Otherwise members 20 cents per sample, non-members 50 cents, plus \$1.00 to cover postage and handling. Available at meetings or by mail from Barry White, 24 Ruby St. West Essendon Vic. 3040, Ph. (03) 9337 9793. There is no charge for overseas members however to cover postage two international coupons would be appreciated.

A booklet on spore collection and sowing is available for 40 cents or free to spore donors

- | | |
|-----------------------------------|--|
| Adiantum concinnum 6/97 | Cyrtomium macrophyllum 5/97 |
| Anemia mexicana 5/97 | Dennstaedtia davallioides 2/98 N |
| Asplenium aethiopicum 5/97 N | Dryopteris seiboldii |
| Asplenium australasicum 5/97 N | Histiopteris incisa 5/97 N B |
| Asplenium scolopendrium 5/97 | Hypolepis elegans 9/97 N B |
| Athyrium niponicum 'Pictum' 4/98 | Hypolepis rufobarbarata 4/98 |
| Blechnum camfieldii 10/97 N | Lastreopsis acuminata 5/97 N B |
| Blechnum chambersii 5/97 N B | Lastreopsis glabella 4/98 B |
| Blechnum colensoi 4/98 | Lastreopsis hispida 4/98 B |
| Blechnum discolor 4/98 B | Lastreopsis nephrodioides 9/97 N B |
| Blechnum filiforme 4/98 B | Leptolepia novae-zealandia 4/98 B |
| Blechnum fluviatile 4/98 B | Microsorium scolopendria 12/97 |
| Blechnum howeanum 9/97 N B | Microsorium pustulatum ssp howensis 9/97 N B |
| Blechnum minus 5/97 N B | Pellaea calomelanos 5/97 |
| Blechnum penna-marina 4/98 B | Pellaea falcata 5/97 N |
| Blechnum procerum 4/98 B | Pellaea viridis macrophylla 5/97 |
| Blechnum sp. Kiokio(N.Z.) 4/98 B | Pellaea viridis 5/97 |
| Blechnum vulcanicum 4/98 B | Platynerium superbum 5/97 N |
| Blechnum watsii 5/97 N B | Pneumatopteris pennigera 4/98 B |
| Calochlaena dubia 5/97 N B | Polystichum australiense 5/97 N |
| Cyathea australis 5/97 N B | Polystichum formosum 5/97 N |
| Cyathea brownii 12/97 | Polystichum munitum 8/97 |
| Cyathea cooperi 'Cinnamon' 1/98 N | Polystichum tsus-simense 5/97 |
| Cyathea cooperi 12/97 N | Psilotum nudum 9/97 N B |
| Cyathea dealbata 2/98 | Pteris biaurita 5/97 |
| Cyathea howeana 9/97 N B | Pteris cretica 'Parkeri' 5/97 |
| Cyathea leichhardtiana 2/98 N | Pteris macilentia 4/98 B |
| Cyathea loheri 1/98 | Pteris umbrosa 9/97 N |
| Cyathea macarthurii 9/97 N B | Rumohra adiantiformis (Cape Form) 5/97 |
| Cyathea robusta 2/98 N | Rumohra adiantiformis (S.Africa) 3/98 |
| Cyathea smithii 4/98 B | Rumohra adiantiformis 5/97 N B |
| Cyathea woollsiana 3/97 N | Sticherus cunninghamii 4/98 B |
| Cyrtomium caryotideum 5/97 | Sticherus tener 5/97 N B |

□

Thanks to spore donors Dorothy Forte, Ray Chivers, Shane Barry, Rose Bach Don Fuller John Hodges, and Lorraine Deppeler.

N.B. The letter 'N' after a fern indicates a native, and the letter 'B' one collected in the bush. The area of collection is available on request.

Opinions expressed in this Newsletter are the personal views of the authors and are not necessarily endorsed by the Society, nor does mention of a product constitute its endorsement.

BUYERS' GUIDE TO NURSERIES.

VICTORIA:

Andrew's Fern Nursery / Castle Creek Orchids - Retail. Phone (03)5826 7285.

Goulburn Valley Highway, Arcadia 3813 (20 km south of Shepparton).

Large range of ferns and orchids for beginners and collectors. Open daily 10am - 5pm except Christmas Day.

Austral Ferns - Wholesale Propagators. Phone (03)5282 3084.

Specialising in supplying retail nurseries with a wide range of hardy ferns; no tubes.

Coach Road Ferns - Wholesale. Phone (03) 9758 6878. Monbulk 3793.

Retail each Saturday and Sunday at Upper Ferntree Gully Market (railway station car park) Melway Ref, 74 F5.

Wide selection of native and other ferns. Fern potting mix also for sale.

Fern Acres Nursery - Retail phone (03)5786 5031. 1052 Whittlesea-Kinglake Road, Kinglake West 3757.

On main road, opposite Kinglake Primary School. Specialising in Stags, Elks and Bird's-nest Ferns.

Fern Glen - Wholesale and Retail Phone (03)5629 2375,

D & I, Forte, Garfield North 3814. Visitors welcome.

Kawarren Fernery - Wholesale and Retail. Phone (03)5235 8444.

Situated on the Colac-Gellibrand Road, Kawarren (20 km south of Colac).

The Bush-House Nursery - Wholesale and Retail. Phone (03)5566 2331.

Cobden Road, Naringal (35 km east of Warnambool), Ferns - trays to advanced. Visitors welcome.

NEW SOUTH WALES:

Kanerley Fern Exhibition and Nursery - Wholesale and Retail. Phone (049) 872 781.

204 Hinton Road, Osterley, via Raymond Terrace, 2324. By appointment.

Marley's Ferns - Wholesale. Phone (02) 9457 9188. 5 Seaview Street, Mt. Kuring-Gai, 2081.

All Fern Society members welcome. By appointment.

QUEENSLAND:

Moran's Highway Nursery -

Wholesale and Retail.

Phone (07) 442 1613.

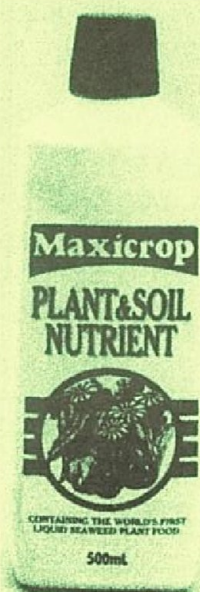
Bruce Hwy, Woombye (1 km north of Big Pineapple; turn right into Kiel Mountain Road).

P.O. Box 47, Woombye, 4559.

If you love your garden
It'll love you back when you use

Maxicrop

- ✓ Increases root development
- ✓ Increases resistance to frost or drought
- ✓ Increases resistance to insect and fungal attack
- ✓ Strong healthy growth for all plants



MULTICROP (AUST.) PTY. LTD.

Telephone 03 9720 2200

926 Mountain Hwy Bayswater Vic 3153

Please support the Society members and Maxicrop who greatly assist the magazine by placing their advertisements here.