

**THE
FERN SOCIETY
OF
VICTORIA**

Inc.

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NEWSLETTER

VOLUME 15, Number 11, December 1993

FERN SOCIETY OF VICTORIA Inc.

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Subscriptions fall due on 1st July each year.

PRESIDENT'S MESSAGE:

First of all I just wish to thank the Society and the many individual members for the flowers and expressions of sympathy on the occasion of the death of my wife. Your thoughts and words were most appreciated.

My stay in Papua New Guinea proved to be most interesting and enjoyable, and on the weekends I was able to get into some good fern areas. It is a fascinating place to visit, still relatively unspoilt, but undergoing rapid but uneven change as the local people endeavour to haul themselves from the stone age to the computer age in two generations. I will tell you a little about it and also a little about some of the ferns at the meeting next March.

My congratulations go to Sarah Keel for a most interesting talk last month. It was the type of talk which epitomises what our Society should be about - expanding the knowledge of Victorian ferns.

The speaker this month will be Ron Robbins who is president of the Fern Society of South Australia. Ron will give an illustrated talk on photographing ferns down the microscope and will show some of the fascinating detailed structure of ferns.

The fern competition category this month is a *Dryopteris* fern. The *Dryopteris* ferns should be looking good by now, so let us have a maximum display for our Christmas meeting.

We will, of course, be having our usual Christmas supper; please bring along a plate. There will be special raffles for Christmas but we are moving away from the hampers of previous years and therefore we are not, emphasise not, seeking contributions towards the hampers, just bring along that plate with some tasty goodies on it.

In February we will be kicking off the year with a talk by Chris Goudey on fern allies. It is a topic which has never been covered at
(continued opposite)

NEXT MEETING

DATE: Thursday, 16th December, 1993

TIME: From 7.30 p.m.

VENUE: The National Herbarium, Royal Botanic Gardens,
Birdwood Avenue, South Yarra.
(Melway Directory Ref. 2L A1)

TOPIC: PHOTOGRAPHING FERNS THROUGH THE MICROSCOPE

SPEAKER: Ron Robbins, President of Fern Society of South
Australia Inc.

MEETING TIMETABLE

7.30 p.m. Pre-Meeting Activities:- Sales of Ferns, Spore, Books
and Special Effort Tickets ; Library Loans.

8.00 p.m. December General Meeting

8.20 p.m. Topic of the Evening

9.30 p.m. Fern Competition Judging
Fern Identification and Pathology
Special Effort Draw

9.45 p.m. Supper

10.15 p.m. Close.

Note: Please bring along a small plate of party fare for supper.

FERN COMPETITION: The category for this month is a *Dryopteris*.
The category for February, 1994 will be a Fern Ally.

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PRESIDENT'S MESSAGE: (continued)

our meetings and encompasses quite a range of unusual and interesting plants. It should be a good start to the year. The fern competition category will be a fern ally and Chris has put in a request for members to bring along as many fern allies as possible to illustrate his talk, particularly if you have any unusual ones - it does not matter if they are not in good show condition, we want as wide a range as possible.

The Committee has decided to hold an Autumn fern show next year. We already have a number of names of members willing to assist and the support of many members will be essential for the show to be a success. We will need members to provide ferns for the display; start picking some out now and give them special treatment. And plenty of volunteers in the preparation and manning of the show.

I take this opportunity to wish all members the best of Christmas blessings and trust that the New Year will be kind to us all.

Barry White

SPEAKER REPORT - GENERAL MEETING - 18TH NOVEMBER, 1993

Speaker: Sarah Keel, B.Sc.(Hons, LaTrobe)

Topic: CYATHEAS OF VICTORIA

(Sarah has kindly provided the following report on her talk, written in the style of our usual speaker reports and supplied on computer disk - an editor's dream! Sarah presented her talk in a very competent manner with a nice leavening of humour.)

Sarah has recently completed her Bachelor of Science degree at LaTrobe University, majoring in Botany. Her honours project "Study of the taxonomic status of *Cyathea marcescens* Wakef." was supervised by Dr Trevor Whiffen, and formed the basis of this talk. Next year, Sarah will continue her studies with a Masters project examining the taxonomy of the *Cyathea* species of Australia.

TAXONOMY OF THE CYATHEACEAE

Sarah introduced the Cyatheaceae taxonomically to begin her talk. The representatives of this family found in Australia belong to one of three genera, depending on whom you listen to and agree with. The general consensus is to use the classification system of the late Prof. R. Holttum (Kew Gardens, UK), which places the *Cyathea* species of Australia all in one large genus, *Cyathea* Smith. The (primarily American) supporters of Prof. Tryon from Harvard University, however, split the Australian Cyatheaceae into two distinct genera: *Sphaeropteris* and *Alsophila*.

The division into two genera seems to be appropriate only for the American and Paleotropical members of the family and has led to much dissent (all very polite and proper, of course). There are arguments in the literature over the appropriate characters to base classification on, the amount of differences between species and subgenera divisions, and even the spelling of names. Eventually, the arguments boil down to the two schools of thought which differ according to the specimens available.

Holttum's classification system comprises one genus (*Cyathea* Smith) with two subgenera, *Cyathea* and *Sphaeropteris*, compared to Tryon's system which has eight genera. These include *Alsophila* (*Cyathea*) and *Sphaeropteris* which are effectively Tryon's subgenera, only elevated to genus level. Tryon's system is inappropriate for the Australian Cyatheaceae for a number of taxonomic reasons, as well as purely aesthetic reasons, including the use of the same specific name for two different species, i.e., *C. australis* and *C. leichhardtiana* become *Alsophila australis* and *Sphaeropteris australis*, respectively.

This year, for her honours project, Sarah studied the taxonomic differences between the native tree-ferns found in Victoria. Specifically, she compared some of the various characters used to distinguish between tree-fern species, in order to relate any differences back to the taxonomic status of *Cyathea marcescens*, a presumed hybrid.

Cyathea marcescens was first described by Wakefield in 1942, from a specimen found on the slopes of Mt Drummer within Alfred National Park in East Gippsland (notice the "precise" description of location! No mention is made as to which slope or the elevation). Ever since then it has been presumed to be a hybrid between two of Victoria's other tree-fern species, *C. australis* (Rough Tree-fern) and *C. cunninghamii* (Slender Tree-fern). A photo published by Wakefield in 1953 illustrated the "skirt" of dead fronds hanging down around the caudex of the tree-fern, which gave it its common name, the Skirted Tree-fern. In the field, however, this was not a definitive character: *C. australis* often had a skirt of dead fronds as did the odd plant in *C. cunninghamii*, whilst specimens of *C. marcescens* were found without a skirt.

Cyathea marcescens has been presumed to be an hybrid for a couple of reasons:

- it has generally been found growing with both *C. australis* and *C. cunninghamii*.
- it has a superficial resemblance to both putative parents, with an intermediate height and caudex width and, according to Jones & Clemesha, intermediate scale characteristics.
- it is very scarce, with its distribution mirroring that of *C. cunninghamii* in Australia.

DISTRIBUTIONS AND SAMPLING

The Victorian Department of Conservation and Natural Resources lists *C. marcescens*, *C. cunninghamii* and *C. leichhardtiana* (Prickly Tree-fern) as "rare" in this state, based upon reported sightings since 1950, especially when compared to *C. australis*. *C. cunninghamii* is also found in Tasmania (rarely), Lamington National Park, Queensland, and commonly throughout New Zealand. *C. leichhardtiana* is found in isolated pockets in far East Gippsland and into NSW and Queensland. *C. australis* has been referred to as Australia's most common tree-fern and it is certainly the most widespread species of *Cyathea* in Victoria. It is found from south-eastern Queensland, all the way down through to southern Victoria, as well as in Tasmania. It is not found in New Zealand. *C. marcescens*' distribution is very similar to that of *C. cunninghamii*, although it is less often reported as multiple stands within these areas and it is not found in New Zealand. It was thought to be endemic to Victoria, but specimens have been found on King Island and just over the border in NSW.

Sarah collected samples from *C. marcescens*, *C. cunninghamii* and *C. australis* from within the National Parks in which the rarer species had been recorded (collection permits were required for this) and from sites suggested by private landowners and members of the Fern Society of Victoria. Collections were made from across the state:

- Otway Ranges N.P. and surrounding areas
- Dandenong Ranges N.P. and Corenderrk Reserve (by permission of Melbourne Water)
- Wilsons Promontory N.P.
- Errinundra N.P.
- Lind N.P. and Alfred N.P.
- Croajingalong N.P.

Fronds and stipes were collected from a limited number of specimen tree-ferns and the characteristics of the specimens, the material taken and the general aspects of the surrounding area recorded.

COMPARISONS AND RESULTS

(a) Caudex and Frond Characteristics

General morphological characters, such as caudex diameter and height and frond characteristics were used to compare amongst the three species and to verify previous work. The use of fronds has been widespread in previous work, with length, colour, venation, presence of indusia when sporing, pinnae orientation, scales and hairs all being characters useful for comparison. Stipes too have been useful for morphological comparison, especially the scales and hairs found at the base of attachment to the caudex, as well as stipe colour and diameter.

Sarah found on analysing the results that there was a lot of regional variation in the morphological characteristics displayed between members of the same species, which made the results complex and difficult to interpret. It was possible to distinguish between *C. australis* and *C. cunninghamii* to a limited degree overall, and it was found that, depending on the characters analysed, *C. marcescens* was either similar to one or the other of the putative parents, intermediate in its characters, or distinct from both of them. Tree height measurements showed *C. cunninghamii* to be the tallest, *C. australis* the shortest and *C. marcescens* in between.

Interestingly, Sarah found that orientation of the pinnae along the primary rachis was important in distinguishing between *C. cunninghamii* and the other two species. *C. cunninghamii* frequently had opposing pinnae, while *C. australis* and *C. marcescens* had pinnae arranged alternately. This, together with the smaller frond attributes of *C. cunninghamii* (they are shorter and narrower) may account for the characteristic "feathery" canopy of the Slender Tree-fern when looking up through the canopy. Pinnae length and width measurements showed *C. marcescens* to be similar to *C. cunninghamii*, whilst in length of stipe scales, the Skirted Tree-fern was different from both putative parents. Frond colour was considerably variable within all three species and hence could not be used to distinguish between them.

(b) Spore

Spore characteristics are also used taxonomically to classify species. *Cyathea* species spore are tetrahedral in shape when viewed under a scanning electron microscope and the outer perine layer is ornamented when the spore is mature. This ornamentation can be used to distinguish between otherwise very similar species. In the case of *C. marcescens*, an absence of mature spore could indicate two things: it may be an hybrid, or they were taken before they had time to mature. Sarah found, however, that *C. marcescens* spore had thick outer perine layers with similar amounts of ornamentation to *C. australis* and *C. cunninghamii*. Unfortunately, it was not possible to distinguish between the three species using this method. Spore colour, another characteristic which can be definitive, was also of no use.

Spore propagation trials are also useful taxonomically. *C. marcescens* has been presumed to be a sterile hybrid, but this may not necessarily be so. Although the spore appeared viable, germination trials failed to produce *C. marcescens* prothalli, apart from one trial which was accidentally aborted.

(c) Flavonoids

Flavonoids are chemical compounds found in plant material and their presence or absence can also be used to distinguish between species. They are extracted from dried material into alcohol and identified by chromatography. Whilst flavonoid analysis is common for taxonomic studies of other Australian plants, e.g., *Eucalyptus* species, the use of flavonoids in pteridophytes is new to this country. A small amount of work has been done on ferns, mainly in America, but not much has been performed on tree-ferns. Some work has been done to the species level in *Adiantum* spp. and *Psilotum* spp. Sarah found that she could not distinguish between the three *Cyathea* species using this method. They all had a variable number of flavonoids with overlapping populations and no compound was unique to only one species. Again, as for the general morphology results, regional variation was evident and confused the results.

ECOLOGY

C. cunninghamii was found only in rainforest pockets at the bottom of wet sheltered gullies. It was often sheltered by established canopies of rainforest species such as *Acmena smithii* (Lilly-Pilly), *Nothofagus cunninghamii* (Myrtle Beech), *Pomaderris* species, and *Acacia melanoxylon* (Blackwood). *C. australis*, by comparison, grew sparsely along ridgetops, through transitional zones of sclerophyll Eucalypt forest and down into the rainforest gullies where it proliferates. *C. marcescens* could be found deep down in rainforest gullies or along the ridgetops. This is interesting if the species is an hybrid, because this does not coincide with spore dispersal habits. A recent study in New Zealand, using amongst other species *C. medullaris*, has shown that tree-fern spore almost always propagate less than 10 metres from the parent plant, downwind and downhill, but not up. Only 5% of spore was be traced further than 10 metres.

Another interesting ecological insight is the regeneration of tree-ferns following logging. Often, following environmental disruption (e.g. logging), ecological studies will be done and focus on the regrowth of trees and small species such as orchids and some small ferns, usually showing the rejuvenation of the area. A current study by the Department of Conservation and Natural Resources, however, has looked at tree-fern regeneration and shown that tree-ferns do not reappear in former logging coups for at least 75 years. It shows how often we can get caught up in looking for the small things and miss the big ones (like a tree-fern!).

CONCLUSION

Sarah concluded that *C. marcescens* displayed as much variation and individuality as the other *Cyathea* species, and should be referred to as a distinct species until more research is undertaken and provides more conclusive evidence.

President Barry White thanked Sarah on behalf of the Society for an excellent presentation and wished her well with her studies next year. He presented her with a set of glasses with the Society emblem and the members expressed their appreciation in the usual fashion.

(continued page 131)

GIPPSLAND EXCURSIONby Barry White

On Saturday the 20th November seventeen members of the Society embussed for a pteridological and gastronomic weekend excursion to Gippsland. Despite a weather forecast of showers, the weather in fact turned out to be ideal with two clear sunny days, a most unusual occurrence for Fern Society excursions.

A highlight of the morning's journey to Gippsland was an unscheduled tour around Traralgon where members were able to view the city highlights before enjoying a cuppa.

On the way from Traralgon to the Tarra-Bulga National Park the group stopped at the Mt. Tassie lookout which at 730 metres is the highest point in the Strzelecki Ranges. The clear day allowed an extensive view in all directions, and the strong wind provided an over supply of fresh air and ensured a short stay.

The Tarra-Bulga National Park is an area familiar to many members and is one of the premier ferns areas of Victoria. The first section of this area to be preserved was a 20 hectare pocket in 1903 and was given the name Bulga from the aboriginal name for a mountain. A further area was preserved six years later and named after Charlie Tarra an aborigine who guided the Polish born explorer Strzelecki through Gippsland in 1840. Strzelecki named the area after Sir George Gipps, governor of N.S.W. (he was also responsible for naming Mt Kosciusko after a Polish patriot).

In 1986 the two areas were joined and expanded and now cover 1,625 hectares. Since the occasion of the last Society visit to the area a new visitors centre has been opened and new walks established. Unfortunately part of the walk in the Bulga area was closed due to damage by the heavy winter rains. However the other walks still provided the group with the opportunity to observe 28 species of ferns and occupied all the afternoon. A feature of the area is the amount of filmy fern growing profusely on the many Dicksonia antarcticas.

The evening accommodation was at the Chester Hill Farmhouse and Restaurant at Won Wron. The hosts were Jim and Margaret Martin who provided old fashioned hospitality and food which will be remembered as much as the ferns on the trip. The strawberries with cream and ice-cream were indeed memorable, and the enormous breakfast next morning and an equally generous cut lunch were enough to satisfy even the best of appetites.

On Sunday morning the first area visited was Agnes Falls which are near Welshpool and at 59 metres high are the highest in Gippsland. There was a good flow of water over the falls, some Adiantum aethiopicum and Blechnum minus were present, and tree ferns were evident on the other side of the valley.

From Foster the group travelled along Turtons Creek Road to Mirboo North. This road passes through some hilly fertile farmland and then follows for a number of miles the fern encrusted Turtons Creek. The group debussed for an exploration of the creek. No new ferns were observed but there was still a good variety and some lush filmy ferns.

After a lunch time stop at Turtons Falls the group travelled to Dorothy Forte's place at Garfield North. Dorothy's place is always worth a visit as she has one of the best fern collections in Victoria both in range and quality.

The thanks of the group go to Terry Thomson for his careful driving, his patience in waiting for the fernies to return to the bus, and for his skill in reversing.

Below is a list of all ferns in the Tarra-Bulga National Park.

<i>Asplenium bulbiferum</i>	<i>Hymenophyllum cupressiforme</i>
<i>Asplenium flabellifolium</i>	<i>Hymenophyllum flabellatum</i>
<i>Asplenium flaccidum</i>	<i>Hymenophyllum rarum</i>
<i>Blechnum chambersii</i>	<i>Hypolepis glandulifera</i>
<i>Blechnum fluviatile</i>	<i>Hypolepis rugosula</i>
<i>Blechnum minus</i>	<i>Lastreopsis acuminata</i>
<i>Blechnum nudum</i>	<i>Microsorium diversifolium</i>
<i>Blechnum patersonii</i>	<i>Microsorium scandens</i>
<i>Blechnum wattsii</i>	<i>Pellaea falcata</i>
<i>Ctenopteris heterophylla</i>	<i>Polyphlebium venosum</i>
<i>Cyathea australis</i>	<i>Polystichum proliferum</i>
<i>Cyathea cunninghamii</i>	<i>Pteridium esculentum</i>
<i>Cyathea marcescens</i>	<i>Pteris tremula</i>
<i>Dicksonia antarctica</i>	<i>Rumohra adiantiformis</i>
<i>Diplazium australe</i>	<i>Sticherus lobatus</i>
<i>Gleichenia microphylla</i>	<i>Sticherus tener</i>
<i>Grammitis billardieri</i>	<i>Tmesipteris billardieri</i>
<i>Histiopteris incisa</i>	<i>Todea barbara</i>
<i>Hymenophyllum australe</i>	

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"FOCUS ON THE FERNERY" at 'RIPPON LEA'

by Don Fuller

On the weekend of October 23rd and 24th, the Fern Society assisted with the "Focus on the Fernery" promotion at 'Rippon Lea'.

We provided guides for tours of the fernery, a small display of members' ferns (approx. 25), examples of fern growing from spore and promotional material for the Fern Society.

The weather on Saturday was excellent for the reasonable number of people who attended 'Rippon Lea'. On Sunday the weather was warm and very windy. A large number of people attended; however, the variety of organised activities affected the level of interest in the fernery.

The fernery was in good condition with most ferns showing new growth. The colour of this on *Dryopteris labordii*, *Doodia aspera* and *Doodia maxima* was eye-catching. The large collection of tree ferns also attracted considerable attention with the new growth of the Black Tree-fern (*Cyathea medullaris*) and also *Cyathea robusta* creating greatest interest.

Members who assisted over the weekend were Jack Barrett, Terry Turney, David Radford, Simon Hardin and Don Fuller.

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Fern Spot

Fern Spot

Three "water ferns"

by: Keith Vagg

- Blechnum cartilagineum* Gristle Fern
- Blechnum minus* Soft Water Fern
- Blechnum nudum* Fishbone Water Fern

Ferns belonging to the genus *Blechnum* are easily recognised. They have pinnate fronds, which means that each frond is divided into lobes (often called pinnae) on each side of the main stem (called the rachis). These lobes are usually long and broad in mature plants.

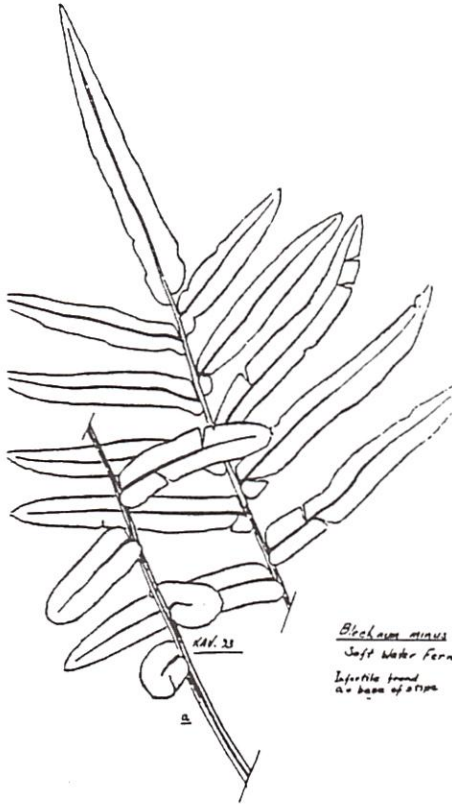
There are about 18 species in Australia and the above three occur naturally in Warrandyte, although only in isolated patches, probably due to bushfires, gold-mining and competition with garden weeds. In other locations in the state these ferns, particularly the Soft Water Fern, can form large, almost impenetrable colonies.

All three ferns prefer damp situations such as shaded gullies and creek banks, where there is a permanent supply of moisture to the roots. The Gristle Fern and the Fishbone Water Fern, however, are more hardy and will tolerate full sun and periods with little moisture. These ferns all have similar light green colouring and, at first glance, may be confused with each other. Fronds of healthy mature plants grow to about 1.2 metres (the Gristle fern can grow to 1.5 metres).

Gristle Fern - young fronds often have an attractive bronze colouring, becoming broad and light green as they mature. The fronds are pinnate, which means they are divided into lobes on either side of the rachis. The lobes on mature fronds have a rippled margin. Fertile fronds are similar to infertile ones and bear spore on the underside in long continuous lines of sporangia, either side of the midvein. This plant thrives in moist, open gullies or hillsides, and propagates by spore or from secondary crowns that grow near the base of the mature plant.

Soft Water Fern - the young fronds of this fern sometimes have an attractive pinkish tinge. The lobes, or pinnae, are attached by stalks towards the base of the rachis. The fertile fronds are distinctly different from the sterile ones and bear long, narrow pinnae with rolled margins to protect the rows of sporangia on the underside. This fern readily propagates from spore or by forming offshoots, and may form large colonies in cool, moist conditions.

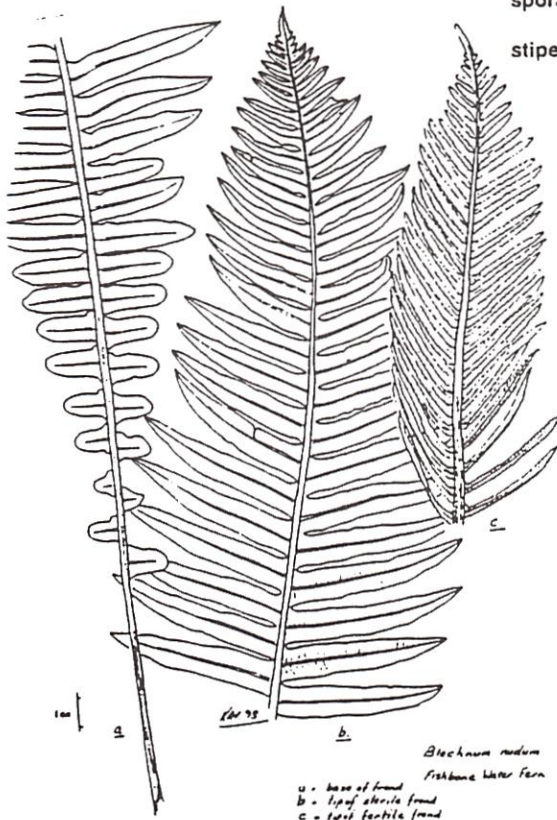
Fishbone Water Fern - fronds are broad, light green and pinnatifid, and taper at the base and the tip. Fertile fronds rise from the centre of the fern in autumn, and are markedly different from sterile ones. The lobes of the fertile frond appear rounded because the margins are rolled over to protect the long rows of sporangia. This fern will form large colonies in sheltered gullies and creeks, and spreads readily by spore or by forming secondary plants. It may form a trunk to about 1 metre high.



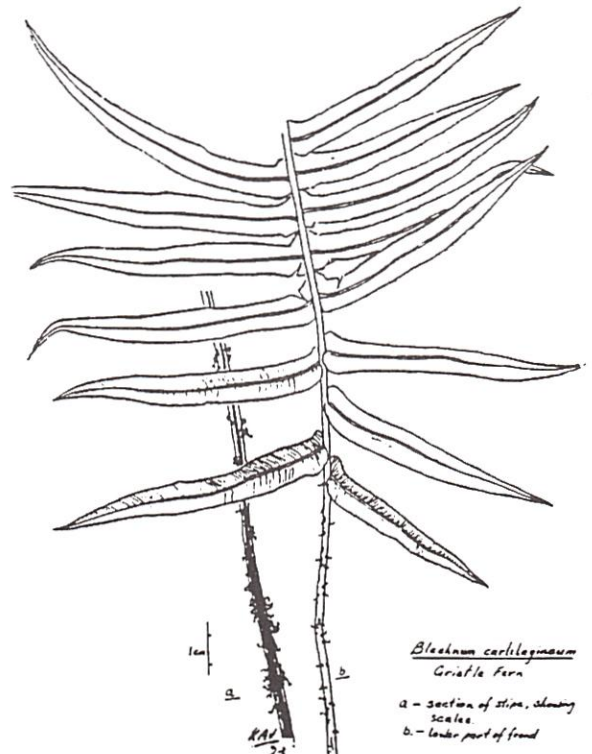
Blechnum minus
Soft Water Fern
Infertile frond
a - base of stipe

Some Fern Terms

- frond** the leafy structure of a fern.
- pinnae** the lobes or leaflets into which a frond is divided.
- pinnate** fronds are divided into lobes on either side of the rachis. Each lobe forms a discreet leaflet.
- pinnatifid** fronds are divided into lobes on either side of the rachis. The divisions do not extend fully to the rachis.
- rachis** part of the stem of a frond extending from where the stem first divides, to the tip.
- spore** a reproductive cell by which a fern can propagate.
- sporangia** small enclosures, usually in clusters or rows, on the underside of a fertile frond. These become brittle when mature and burst, releasing spore.
- stipe** the part of the stem of a frond below where it first divides.



Blechnum nudum
Fishbone Water Fern
a - base of frond
b - tip of sterile frond
c - tip of fertile frond



Blechnum cartilagineum
Gristle Fern
a - section of stipe, showing scales
b - lower part of frond

(The article on the opposite page is one of a series written for the Friends of Warrandyte State Park newsletter. It was given to Chris Goudey by the author.)

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NOVEMBER SPEAKER REPORT (cont'd from p. 127)

In response to requests from various members on the evening of the last meeting, Sarah has included her spore germination potting mix:

10 litres Sand
7.5 litres Perlite
2.5 litres Peat Moss
1 litre Terracotta (finely crushed)

Dampen the ingredients before mixing together thoroughly, and sterilising both the mixture and the pots.

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NOVEMBER FERN COMPETITION

The category for the fern competition for the November meeting was a deciduous fern. Congratulations to the following winners:

First:	Dorothy Forte	<i>Athyrium niponicum</i> var. <i>pictum</i>
Second:	Anne Bryant	<i>Davallia plumosa</i>
Third:	Barry White	<i>Onoclea sensibilis</i>

The draw for the exhibitors' prize was won by Don Fuller.

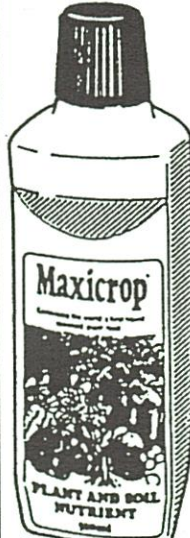
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SPECIAL EFFORT WINNERS

November General Meeting

John Hodges (2)
Fran Harrison
Miodrag Stankovic
Shane Alexander

* * * * *



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BUYERS' GUIDE TO NURSERIES

VICTORIA:

Andrew's Fern Nursery / Castle Creek Orchids - Retail.
Goulburn Valley Highway, Arcadia, 3613. (20 km south of Shepparton).
Large range of ferns and orchids for beginners and collectors.
Open daily 10 am - 5 pm except Christmas Day. Ph: (058) 26 7285.

Austral Ferns - Wholesale Propagators. Ph: (052) 82 3084.
Specialising in supplying retail nurseries with a wide range of hardy ferns; no tubes.

Coach Road Ferns - Wholesale. Monbulk. Ph: 756 6676.
Retail each Saturday and Sunday at the 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. Kinglake West, 3757. (On main road,
opposite Kinglake West Primary School). Ph: (057) 86 5481.
Specialising in Stags, Elks and Bird's-nest Ferns.

Fern Glen - Wholesale and Retail. Visitors welcome.
D. & I. Forte, Garfield North, 3814. Ph: (056) 29 2375.

R. & M. Fletcher's Fern Nursery - Retail.
62 Walker Road, Seville, 3139. Ph: (059) 64 4680.
(Look for sign on Warburton Highway, 300m east of Seville shopping
centre). Closed Tuesday, except on public holidays.

Kawarren Fernery - Wholesale and Retail.
Situated on the Colac - Gellibrand Road, Kawarren (20 km south of
Colac). Ph: (052) 35 8444.

Viewhaven Nursery - Wholesale and Retail.
Avon Road, Avonsleigh (near Emerald), 3782. Ph: (059) 68 4282
Specialists in Stags, Elks, Bird's-nests and Native Orchids.

NEW SOUTH WALES:

Jim & Beryl Geekie Fern Nursery - Retail. By appointment.
6 Nelson Street, Thornleigh, 2120. Ph: (02) 484 2684.

Kanerley Fern Exhibition and Nursery - Wholesale and Retail.
204 Hinton Road, Nelsons Plains, via Raymond Terrace, 2324.
Ph: (049) 87 2781. Closed Thursdays and Saturdays.
Groups of more than 10 must book in advance, please.

Marley's Ferns - Wholesale.
5 Seaview Street, Mt. Kuring-Gai, 2080. Ph: (02) 457 9168.
All Fern Society members welcome. By appointment.

QUEENSLAND:

Moran's Highway Nursery - Wholesale and Retail.
Bruce Highway, Woombye (1 km north of Big Pineapple; turn right into
Keil Mountain Road). P.O. Box 47, Woombye, 4559. Ph: (074) 42 1613.