Fern Society of Victoria Inc.

NEWSLETTER

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November/December 2001

FERN SOCIETY OF VICTORIA Inc.

POSTAL ADDRESS: P.O. Box 45, Heidelberg West, Victoria, 3081
NEW E-mail: http://gardenbed.com/clubs/clubs_vicferns.cfm

OFFICE BEARERS:

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Vice-President	George Start	"	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
Librarian	David Radford	"	9598 8398
Editor	Lyn Gresham	"	5796 2466
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Book Sales	Ivan Traverso	"	9836 4658

COMMITTEE MEMBERS: Jean Boucher 9707 1592, Lyn Gresham 5796 2466, Brian Nicholls 9836 6507, Jack Barrett 9375 3670, Gay Stagoll 9844 1558, Norma Hodges 9878 9584.

SUBSCRIPTIONS:

Single -	$14.00	Pensioner/student $11.00
Family -	$16.00	Pensioner Family $13.00
Organisation	$16.00	
Overseas -	$21.00 - Payment by international bank cheque in $A please. Overseas sent by Airmail.	

Subscriptions fall due on 1st July each year.

Meetings are held on the third Thursday of each month except December and January
at the Kevin Heinze Garden Centre, 39 Weatherby Road, Doncaster (Melway 47; H1).

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.***

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.

CALENDAR OF EVENTS IN 2001

15th November

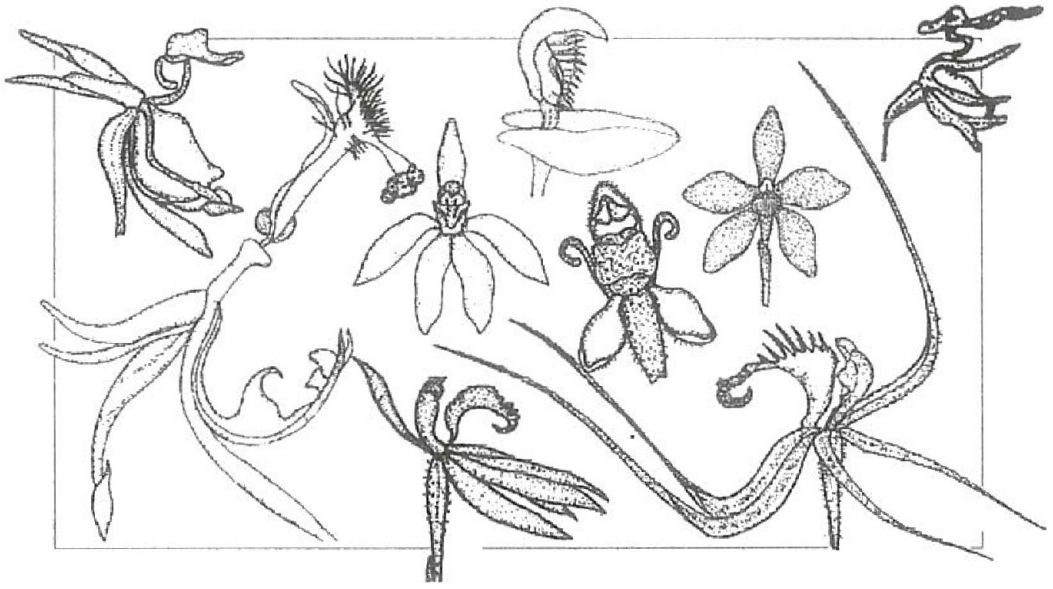
Gary Backhouse

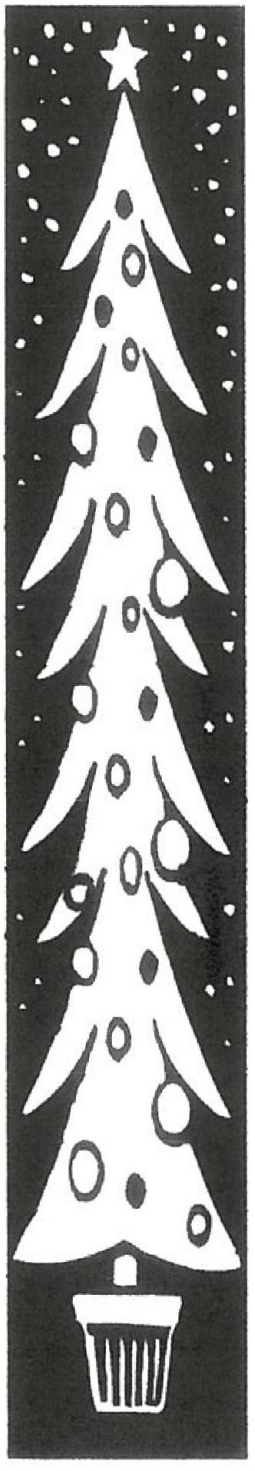
co-author of 'The Orchids of Victoria'

Victorian orchids

especially our terrestrials

Competition category: Epiphytic PLANTS (not necessarily ferns).





Sunday 2nd December

End-Of-Year BBQ, Social and Monster Auction

It'll be huuuuuge!

At the Kevin Heinze Garden Centre

21st February 2002

First meeting in 2002

April 27 & 28, 2002

Fern Show 2002

Note the date and start preparing!

Meeting programme

7.00	*Sale of merchandise and Special Effort tickets. Library is open! And lots of conversation.*
8.00	*General Meeting.*
8.15	*Workshops and demonstrations.*
9.15	*5 Minute Fern talk, Fern identification and pathology, Special Effort draw, Competition judging and results, Winner's tips.*
9.45	*Supper and another good yarn.*
10.00	*Close.*

THE PRESIDENT'S POSITION

I seem to be constantly commenting on the weather in my reports - of course, in Melbourne, we have a lot to comment on with the weather. After a satisfyingly wet August, we had an almost disastrously dry September but October has already been our wettest month for 12 months. A friend in Yarra Junction (just 5 or 6 Km from us) has had 200mm of rain in about 12 days while we have had 133mm in the first 21 days of October. I hope the warmer weather of Spring is helping you to shake off the ailments of Winter and that you are able to make the most of the sun (when we get it!).

Much has happened since my last article. The major item is that my wife, Meryl, and I have decided to put our nursery on the market to sell either as a going concern or as a nursery site. Failing that, we intend to close in about 12 months - we would probably continue to grow a limited range and quantity of stock to keep the tax advantages. If we sell, it's likely that we'll move to Albany on the south coast of Western Australia. Most of Meryl's family lives in Perth and, having lived here near my family for 24 years, we have an opportunity to move before our children start their senior high school years or tertiary studies. I lived in Perth during my teens and found the climate to be just too hot for too long. Albany, however, has a much more mild climate than Melbourne with cooler summers and warmer winters. It has a population of about 20,000 and there are presently 7 vacancies for general practitioners, so Meryl shouldn't have any trouble getting the part-time work she would need.

The next exciting item of news is that **Barry and Judy White were married** recently – our heartfelt congratulations to you both and we hope you enjoy many happy years together.

The excursion to Kinglake was a most enjoyable and successful day. There was far too much to do in the area to fit into one day so we may need to plan to re-visit the area in the future. Many thanks to Brian Nicholls for organizing the day, and also to Eddie and Robyn Sabljak of Fern Acres Nursery for providing morning tea.

We now have facilities to keep our **library** at our meeting venue. If anyone has a lockable cupboard they could offer us as a donation, or for a reasonable price, please let us know.

You will find an updated **spore list** in this issue of the newsletter. It's a great time of year to sow spore and to enjoy the miracle of fern germination and growth. You also have the opportunity to share the pleasures of fern growing with family and friends as you share the fruits (ferns!) of your labours.

Don't forget to start planning, and preparing your ferns, for **our show**, which is to be held on **April 27 & 28**. The show committee has discussed the practicalities of running the show if we have sold our nursery before then, and they have decided to go ahead with it. If we have moved, there will be a much greater need for other members to provide display and sales plants. Keep that in mind over the coming months and remember that the show is a vital part of our program and public profile each year.

Thanks to Chris Goudey and Ron Robbins for their talks on pressing ferns and, Platyceriums & Drynarias, respectively. In November, we will have Gary Backhouse (a co-author of 'The Orchids of Victoria') speak on Victorian orchids – especially the terrestrials. The competition category will be epiphytic plants – not just ferns. John Hodges will be giving the 5-minute fern talk. At this meeting, I intend to sell off as many of **my collection of terrestrial orchids** as I can. I expect to price them at around $22.50 for 20cm terracotta bowls, of which the Society will receive 15% – the catch is that most of them will have died off for the summer months though I will have a copy of 'The Orchids of Victoria' available so you can get some idea of what you are buying. I will also try to have cultural notes available to help you provide the right growing conditions.

Our Christmas meeting on Sunday 2 December, from 11.00 on, will be our usual barbecue – BYO meat and drinks other than tea and coffee, and bring a plate (of food) to share for afternoon tea. We will be having an auction of anything you would like to donate – it may be of any value and can be plants or anything else you wish to donate. If it is of significant value and you would like to set a reserve, you may. Half of the proceeds will be donated to the Kevin Heinze Garden Centre to assist them in their work with handicapped people, the other half will be used for some purpose to benefit the members of the society.

I look forward to seeing you at our meetings – do try to be involved. I would like to finish by wishing you **a very happy, meaningful and safe Christmas and New Year.**

Ian Broughton

You and your family are invited to the Society's

Christmas Barbecue And Auction

December 2nd from 11.30 a.m.

Kevin Heinze Garden Centre's shaded courtyard,
39 Weatherby Road, Doncaster (Melway 47: H1).

"When you're on a good thing, stick to it"
.....with a few variations.

Catering

The arrangements for the barbecue are the same as last year, which worked well. Bring enough meat, drinks, cutlery and crockery for your group (don't forget the sweets bowl) and a plate of afternoon tea. The Committee will provide hot drinks, salads and dessert.

Auction

For this year we have decided to dispense with the gift exchange and the quiz and have a bit of fun with an auction instead. For this, we are asking for donations of any auctionable goods or services - not just ferns, though of course they will be most acceptable.

The proceeds will be divided equally between the Kevin Heinze Garden Centre and our Society. The Centre is run by a big army of committed volunteers who make an even bigger difference in the lives of the many elderly, disabled and lonely clients who go there (they took our Society in when we were homeless!) so we believe it is well worthy of our support.

If you don't have something to put into the auction, still come to share the day with us.

I wouldn't miss it for quids. See you there!

The President and Committee of the Fern Society

Wish all our members and their loved ones

a happy, safe and refreshing

Christmas season

And a bright New Year

The Fern Society of Victoria Inc. Financial Report for 2000— 2001

Auditor's Report

I have examined the books of account and associated records of the Fern Society of Victoria Inc. for the year ended 30th June 2001 and have been provided with all the information and explanations required.

I consider the Statements of Receipts and Payments and Balance Sheet reflect a true and proper view of the financial operations of the Society for the year ended 30th June 2001. These reports have been compiled according to Australian Accounting Standards.
I wish to thank the officers of the Society for their co-operation and assistance.

R.T. Angwin FCPA

Balance Sheet as at 30th June 2001.

2000 $		2001 $	
	MEMBERS FUNDS		
18295.80	As/2000 Balance Sheet		18233.80
62.00	Surplus		450.80
$18233.80	**TOTAL MEMBERS FUNDS**		$18684.58
	REPRESENTED BY		
	CURRENT ASSETS		
-	Cash on hand— book sales	-	
100.00	Prepaid deposit— Fern Show Hall	100.00	
10.00	Prepaid GST	10.00	110.00
	CASH AT BANK		
1522.17	General Account		1831.15
	STOCK		
180.00	Books	135.00	
19.50	Glasses	-	
311.36	Mugs	202.11	337.11
	INVESTMENTS		
16103.77	Term Deposit		16597.32
18246.80	**TOTAL ASSETS**		18875.58
	CURRENT LIABILITIES		
13.00	Prepaid Fees		191.00
$18233.80	**TOTAL NET ASSETS**		$18684.58

STATEMENT OF INCOME AND EXPENDITURE FOR YEAR ENDED 30th JUNE 2001

SUMMARY

2000 $		2001 $	
2746.72	Income - General Account	3038.92	
3140.89	Less - Expenditure	2879.77	159.15
-394.17	Operating Surplus		159.15
	Add		
-312.80	21st Birthday Function Deficit		-
	Fern Show Surplus		291.63
	Book Sales		-
	Less		
644.97	Fern Show Surplus		
-$62.00	**TOTAL SURPLUS**		$450.78

The Fern Society of Victoria Inc.

STATEMENT OF INCOME AND EXPENDITURE FOR YEAR ENDED 30th JUNE 2001

GENERAL ACCOUNT

INCOME

2000 $			2001 $	
	SUBSCRIPTIONS			
1300.00	Renewals		1279.00	
126.00	New Members		146.50	1425.50
	SALES/COMMISSIONS			
-	Spore Bank/Fern Sales		270.00	
174.55	Commissions	268.70	91.39	
239.55	Misc. Sales	240.40		
201.40	Less - Cost of Sales	49.00	28.30	
595.00	Mugs	38.24		
453.81	Less - Cost of Sales	14.00	10.76	
60.00	Glasses	19.50		
48.77	Less - Cost of Sales	61.00	-5.50	
50.00	Books	45.00		
76.00	Less - Cost of Sales		16.00	410.95
	SPECIAL EFFORTS			
184.00	General		172.00	
-	Less - Expenses		-	172.00
	OTHER INCOME			
205.00	Advertising		181.00	
-	Sundry Income		-	181.00
2154.12	OPERATING INCOME			2189.45
	ADD NON-OPERATING INCOME			
	Bank Interest			
1.50	General Account		1.88	
	Term Deposit		847.59	849.47
$2746.72	TOTAL INCOME			$3038.92

EXPENDITURE

2000 $		2001 $	
	NEWSLETTERS		
1316.00	Printing	968.30	
354.66	Postage	279.33	1247.63
	ADMINISTRATION		
150.00	Honorariums	150.00	
63.00	Registrations and Subscriptions	48.00	
148.18	Administration/Secretarial	245.83	
40.00	Entertainment	36.24	
340.00	Hall Hire	365.00	
20.39	Guest Speaker Expenses	-	
320.00	Audit Fee	340.00	
33.36	Bank Charges	33.06	
50.00	Presentation	71.01	
48.95	P.O. Box Rental	49.50	
15.95	Sundries	-	
240.00	Insurance	178.00	
-	Library Books	49.50	
-	Repairs	66.00	1632.14
$3140.89	TOTAL EXPENDITURE		$2870.77

Fern and Vireya Rhododendron Show 2002

Members are advised that the combined Fern and Vireya Rhododendron Show next year will be held on the weekend of April 27th and 28th, 2002

Please note this date and keep it free to participate in this great event.

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The Miracle of Ferns

Do you remember reading about Norma Hodges' Black Stump, which won the 'Sickest Fern' competition in July? Well, Norma brought it to the October meeting, and it was looking splendid - far from dead - with a generous flush of beautiful new fronds!!

Just goes to prove that even extremely dead-looking ferns should be given a second chance.

Now I know why I neglect my fernery housework!

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Oxygen

Have you ever wondered where the name of the colourless, odourless and tasteless gas, which is so essential to all life on earth, comes from? The name *'oxygen'* was derived from the Greek *oxys* (sharp acid) and *genes* (born) and means 'acid former'.

Using photosynthesis, green plants assimilate carbon dioxide (CO_2) in the presence of sunlight to produce oxygen. Almost all free oxygen present in the atmosphere is the result of photosynthesis.

- FERNATIX*ZA April 2001

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Pigments

Plant leaves have these primary pigments: chlorophyll, carotenoids, phytochrome and flavonoids. During the autumn you have probably witnessed the changing colours of the tree leaves. Perhaps you have also wondered what is causing these colour changes. Using chemical investigation you could separate the pigments of tree leaves before and after a colour change, using solid-liquid chromatography. The information obtained may help answer this question. The pigments involved have numerous different biological functions in the plant. Chlorophyll and carotenoid pigments are involved in photosynthesis. Phytochrome pigments are responsible for regulating membrane and other metabolic activities in response to light signals. Flavonoids are found in the highest concentration in the flowers and fruit of plants. Their predominant function seems to be to act as an attractant for insects to distribute pollen and seeds. However, in leaves, flavonoids are thought to act as sunscreens, protecting the plant against damaging ultraviolet radiation."

-Dr. SAA Arduino, as reported in FERNATIX*ZA, The Fern Society of Southern Africa newsletter, April 2001.

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The Fern Society of Victoria Inc.

STATEMENT OF INCOME AND EXPENDITURE

FOR YEAR ENDED 30th JUNE 2001

FERN SHOW

(Held jointly with the Australian Rhododendron Society)

2000 $		2001 $	
	JOINT RECEIPTS/EXPENDITURE		
2058.80	Receipts	1538.05	
1633.65	Expenditure	1704.65	
425.15	JOINT DEFICIT		-166.6
$212.57	FERN SOCIETY SHARE 50%		-$83.30
	INCOME		
	Fern Sales	3719.00	
4467.50	Less - Cost of Sales	-3163.70	
-3808.05	Donation	555.30	
50.00		50.00	
	EXPENDITURE		
157.65	Display Expenses	23.32	
69.40	Administration Expenses	61.05	
50.00	Travel	146.00	
$432.40			$374.93
-	FERN SOCIETY - DEFICIT		-
432.40	- SURPLUS		374.93
212.57	PLUS - JOINT SHARE SURPLUS		-
-	LESS - JOINT SHARE DEFICIT		-83.30
$644.97	FERN SHOW SURPLUS		$291.63

Natural variation in *Polystichum proliferum* in Victoria

Rod Hill

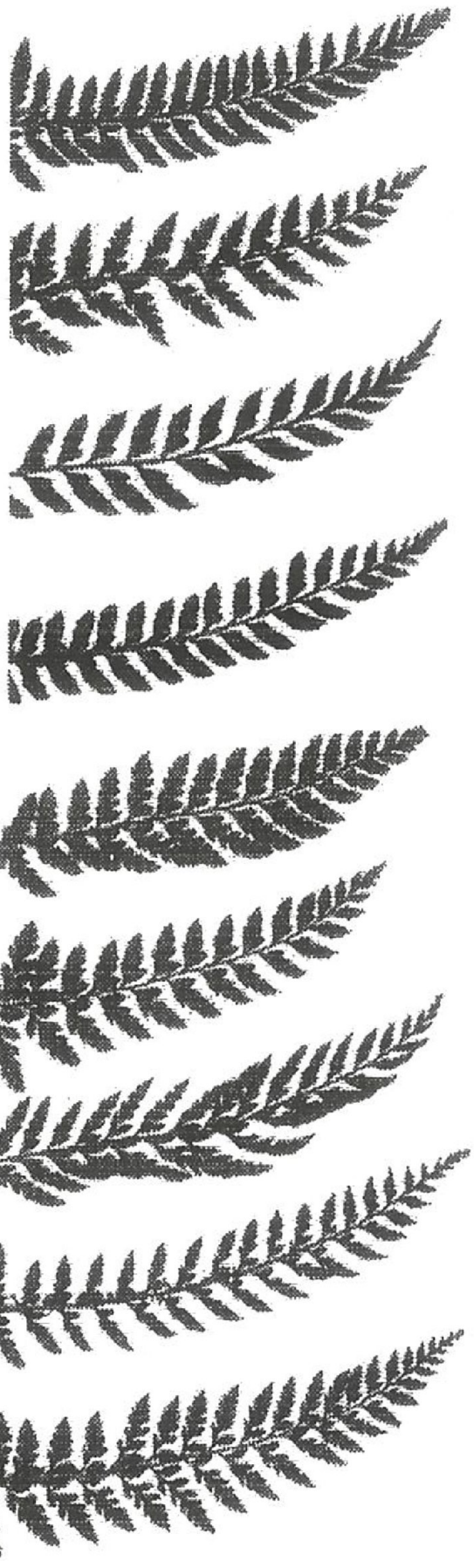
Motivated by the thought of 173 distinct forms of the British *Polystichum setiferum* (recognised by Druery in 1902), I take every opportunity to collect and compare pinnae of our own native *Polystichum proliferum*, whenever I encounter it in the wild.

Although this fern has been widely cultivated in Victoria for many years, there has been little consideration of the variability of this species. However, examination of pinnae of plants from numerous locations around Victoria has shown that they differ considerably. While I have as yet propagated only a limited number of these from buibils, those that I have grown have retained their distinctive characteristics and I now have several quite different forms growing side by side in my Fernery.

My study of *Polystichum proliferum* has revealed that variation is not only apparent from widely separate locations, but that quite often the plants occurring at a single location will exhibit quite remarkable differences. The pinnae illustrated for example were all collected along a short section of a walking track (at most 200 metres long) in the mountains to the North-East or Mansfield. It is immediately apparent that even in a very small colony of these ferns there is a tremendous diversity of forms. Other locations where I have similarly noted a great deal of variation in this fern include Mt Cole, Ferntree Gully National Park and Glenaladale National Park.

While the overall effect of many of the forms of *Polystichum proliferum* is not especially striking, there are however some very attractive varieties which would make worthwhile subjects for cultivation especially when highlighted by growing contrasting varieties in close proximity.

Rod Hill.



If you think nobody cares that you are alive
Try missing a couple of car payments.

5 MINUTE FERN TALK – GAY STAGOLL – JUNE 2001

THE GENUS MARSILEA

GENUS *Marsilea* (MAR-SILL-EE) **Nardoo**
FAMILY Marsiliaceae

REF Calder Chaffey, Jones and Clemesha, Helen Aston - Plants ofAust.

Aquatic or sub-aquatic ferns. Rhizomes are long-creeping and much branched. Stipes are long, slender and spaced along the rhizomes at nodes which also give rise to roots. Laminae are sterile, and are borne on the upper ends of stipes. They consist of two pairs of opposite leaves forming a circular blade, each leaf widely or narrowly wedge-shaped, the shape of a four-leaved clover.

Found growing in mud with erect leaves or growing submerged with floating leaves.

The spores are borne in sori in a case formed by modified leaves and termed a conceptacle. This is attached to the rhizome by a pedicel. The length of the pedicel is an important taxonomic feature. The pedicel and the conceptacle are together known as the sporocarp. Sporocarps are mainly produced by plants on drying mud; rarely by those in water. Dried sporocarps when saturated with water, open and begin development within an hour. Those of *Marsilea vestita*, a non-Australian species, if stored unopened are known to retain viable spores for 20 to 30 years.

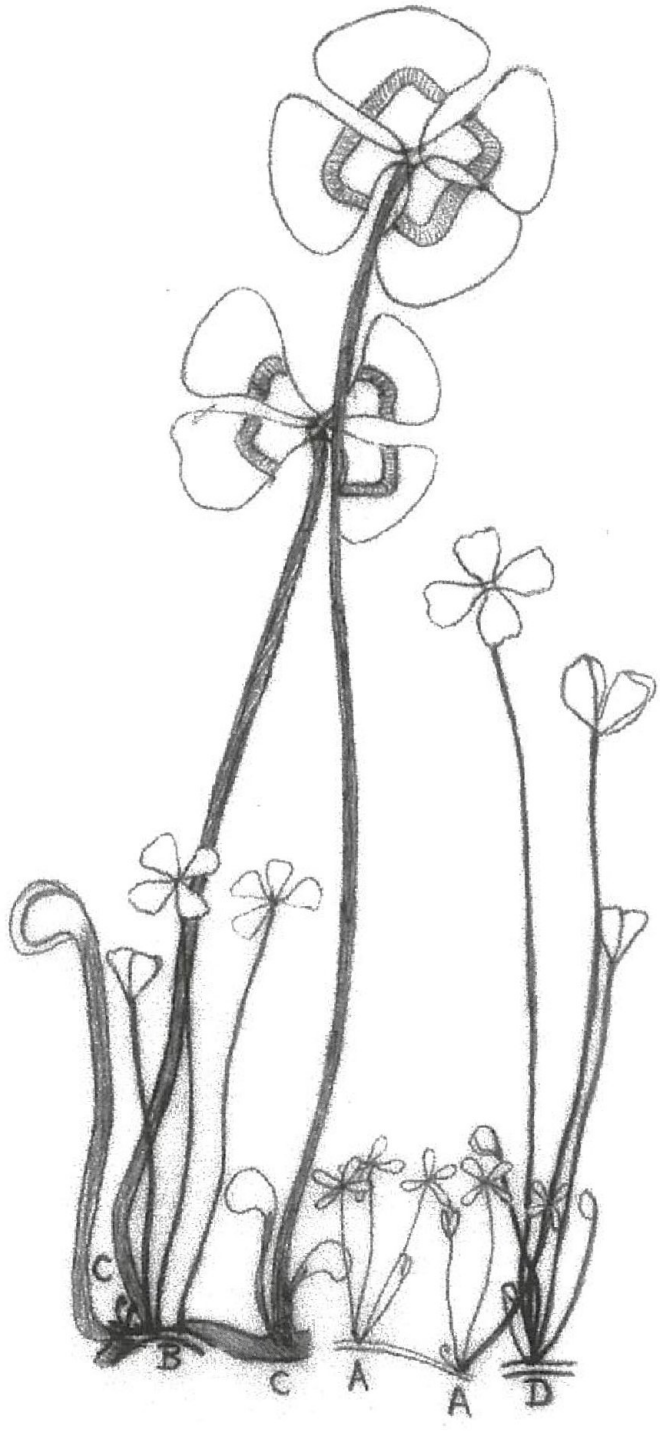
The sorus produces both megaspores, that germinate into prothalli bearing mainly archegonia, and microspores, that germinate into prothalli bearing antheridia.

These are the only true ferns to produce separate male and female prothalli. It is this degree of specialisation that makes the genus the most advanced of living ferns.

The genus consists of about 65 species of which six are found in Australia, usually in areas subject to temporary flooding.

Australian Marsilea

- M. angustifolia - Narrow-leaf nardoo. A low, creeping species that forms mats in mud.
- M.drummondii - Common nardoo. A large, silvery leafed species.
- M. hirsuta - very closely related to M. drummondii. The distinguishing feature is leaves widely spaced along the rhizome.
- M. mutica - leaflets broad, rounded at the apex, of two different greens, separated by a brown band.
- M. crenata - found in the tropical north.
- M. exarata - from Central Australia and inland areas of Australia.



Four of our Marsileas: A) *M. angustifolia*; B) *M. hirsuta*; C) *M. mutica*; and D) *M. drummondii* shown at approximately their full size and in comparison to each other.

(Continued

COMPETITION WINNERS

September meeting
Platyceriums and Drynarias

Competition		
1st	Platycerium veitchii	John Hodges
2nd	Drynaria whiteii	Keith Hutchinson
3rd	Platycerium veitchii	Dick Kissane.
Exhibitors' Draw	Brenda Girdlestone.	
Special Effort	Rex Gresham, Norma Hodges, Fran Harrison, Ron Robbins, Brenda Girdlestone, Gwen Barrett.	

October Meeting
the family Blechnaceae

Competition		
1st	Blechnum contiguum	Ian Broughton
2nd	Blechnum brasiliense	Don Fuller
3rd	Doodia aspera	Don Fuller
Exhibitors' Draw	Don Fuller.	
Special Effort	Pat Nicholls, Fran Harrison, Brenda Girdlestone, Keith Hutchinson, Olive Busby.	

GLOSSARY

SPOROCARP - a stalked fruit case, formed from modified sporophylls, that contain sporangia or spores.
PEDICEL - the stalk supporting a sporangium or conceptacle in a sporocarp.
SPOROPHYLL - a specialised leaf for bearing spores.
CONCEPTACLE - the fruit case of a sporocarp.
MICROSPORE - the spore that produces male gametes, as in Marsilea.
MEGASPORE - the spore that produces female gametes, as in Marsilea (girls reign - OK!).
ARCHEGONIA - the structure which produces the female egg.
PROTHALLUS - a flat growth resulting from the germination of a spore and bearing archegonia and antherida.
GLABROUS - without hairs, smooth.
STIPE - the leaf stalk from the rhizome to the lamina.
LAMINA - the expanded part of the leaf.

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FASCINATING FERNS

A FERN THAT HYPER-ACCUMULATES ARSENIC

A hardy versatile, fast-growing plant helps to remove arsenic from contaminated soils.

Contamination of soils with arsenic, which is both toxic and carcinogenic, is widespread. We have discovered that the fern *Pteris vittata* (brake fern) is extremely efficient in extracting arsenic from soils and translocating it into its aboveground biomass. This plant - which, to our knowledge, is the first known arsenic hyper-accumulator as well as the first fern found to function as a hyper-accumulator - has many attributes that recommend it for use in the remediation of arsenic-contaminated soils.

We found brake fern growing on a site in Central Florida contaminated with chromated copper arsenate. We analysed the fronds of plants growing at the site for total arsenic by graphite furnace atomic absorption spectroscopy. Of 14 plant species studied, only brake fern contained large amounts of arsenic (As; 3280 — 4980 p.p.m). We collected additional samples of the plant and soil from the contaminated site (18.8 -1603 p.p.m. As) and from an uncontaminated site (0.47—7.56 p.p. m. As). Brake fern extracted arsenic efficiently from these soils into its fronds. Plants growing in the contaminated site contained 1442 - 7526 p.p.m. arsenic and those from the uncontaminated site contained 11.8—64.0 p.p.m. These values are much higher than those typical for plants growing in normal soil, which contain less than 3.6 p.p.m of arsenic.

As well as being tolerant of soils containing as much as 1500 p.p.m. arsenic, brake fern can take up large amounts of arsenic into its fronds in a short time. Arsenic concentration in fern fronds growing in soil spiked with 1500 p.p.m. arsenic increased from 29.4 to 15861 p.p.m. in two weeks. Furthermore, in the same period, ferns growing in soil containing just 6 p.p.m. arsenic accumulated 755 p.p.m of arsenic in their fronds, a 126-fold enrichment. Arsenic concentrations in brake fern roots were less than 303 p.p.m., whereas those in the fronds reached 7234 p.p.m. Addition of 100 p.p.m. arsenic significantly stimulated fern growth, resulting in a 40% increase in biomass compared with the control.

After 20 weeks of growth, the plant was extracted using a solution of 1:1 methanol:water to speciate arsenic with high-performance liquid chromatography - inductively coupled plasma mass spectrometry. Almost all arsenic was present as relatively toxic inorganic forms, with little detectable organoarsenic species. The concentration of As(iii) ms greater in the fronds (47 - 80%) than in the roots (8.3%), indicating that As(v) was converted to As(iii) during translocation from roots to fronds.

As well as removing arsenic from soils containing different concentrations of arsenic, brake fern also removed arsenic from soils containing different arsenic species. Again, up to 93% of the arsenic was concentrated in the fronds. Although both $FeAsO_4$ and $AlAsO_4$ are relatively insoluble in soils, brake fern hyperaccumulated arsenic derived from these compounds into its fronds (136—315 p.p.m.) At levels 3 - 6 times greater than soil arsenic.

Brake fern is mesophytic and is widely cultivated and naturalised in many areas with a mild climate. In the United States, it grows in the southeast and in southern California. The fern is versatile and hardy, and prefers sunny (unusual for a fern) and alkaline environments (where arsenic is more available). it has considerable biomass, and is fast growing, easy to propagate, and perennial.

We believe this is the first report or significant arsenic hyperaccumulation hy an unmanipulated plant. Brake fern has great potential to remediate arsenic-contaminated soils cheaply and could also aid studies of arsenic: uptake, translocation, speciation, distribution and detoxification in plants.

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My Favourite Ferns #7

Cheilanthes myriophylla

Keith Hutchinson

One of a genus of 180, this fern is xerophytic (one that tolerates dry situations). It is native to central America, from California down to Brazil. It is often called the Resurrection Fern as after becoming dehydrated it quickly revives when watered. The dainty fronds grow to about 20 cm with minute pinnules, almost bead-like which are silver above, furry below.

The silver colour of the upper surface reflects the sun, enabling it to tolerate the warmer situations.

I find it a very nice fern for growing in a pot or in the foreground of my fern garden where it is unshaded until early afternoon. It prefers a soil mix of equal parts coarse sand, leaf mould and loam.

I feel that this fern is suited to Victoria and would enhance any fern collection.

☼☼☼

Some Myths About Ferns

In early times people believed in many fern myths ....

- The bracken fern (*Pteridium aquilinum*): a cross section of the stem of one of these plants shows a curious arrangement of the plant's ducts' tissues, which looks like the letter 'C'. Superstitious folk thought that, because the root bore Christ's initial, the plant protected them from witches and goblins. Some Scots, however, saw in these tissues the mark of the devil's hoof.

- Other legends tell about seed ferns. They were reputed to have had dainty blue flowers that bloomed only one night a year. Just at the stroke of midnight on Midsummer's Eve, these blossoms ripened and their shining 'seed' dropped to the ground. If one could catch some of this 'seed' on a white cloth, he would henceforth possess magical powers. If a pinch were put on the shoes, their wearer was supposed to be invisible and to travel anywhere without being seen. It was also thought that fern 'seed' gave 'second sight' to look into the past and future, find lost things, and know where to hunt for buried treasure.

- The moonwort (*Botrichium Lunarium*) was known as Blasting Root. People thought that the strongest locks would give way if brought into contact with it and that it could even unshoe horses. The shape of its leaves showed it to be 'under the influence of the moon', and so it was believed that if the plant were gathered by the light of the moon, it would cure lunacy.

- The maidenhair fern was supposed to stop the loss of hair and make new hair grow on a bald head.

These are just a few of the myths that surround the mystique of ferns, excerpted from an article by Ann errington of the Southwestern Fern Society. (ref. The How and Why Wonder Book of Mushrooms, Ferns And Mosses, by Amy Elizabeth Jensen.)

CULTIVATING TREE FERNS

Jolanda Nel

People often ask me what species of tree fern would be suitable to cultivate in a specific area. Some of these areas have quite harsh conditions. We own about twenty different species of tree ferns, which enjoy more or less the same conditions. These species seem to be very adaptable to conditions as long as they get some water and love. The multitude of questions urged me to do some serious reading on cultivating tree ferns.

I came to the following conclusion:

- In general they appreciate acid soils, rich in organic materials.
- Good drainage is a necessity for all.
- Tree ferns require an abundance of water, especially in the warm growing months.
- Manure is a good fertilizer.

The potting mix we use consists of one part horse manure, one part river sand and one part garden compost. With such a loose mixture we have to water once a day in summer and every third day in winter. Our tree ferns seem to do very well

I compiled a table indicating some of the requirements and likes of a number of tree fern species in cultivation. I hope that this will help our members to choose tree ferns suitable for their particular areas.

Species	Outdoor container	Drought hardy	Moisture	Cold hardy	Frost hardy	Cold sensitive	Full sun	Shade D = Deep L = Light
Cibotium glaucum	X		X			X		X
C. regale			X			X		X
C. scheidei			X			X		X
Cyathea arborea			X			X	X	
C. australis	X		X	X	X		X	L
C.brownii	X			X			X	L
C. capensis	X		X			X		D
C. colensoi	X		X		X			L
C. cooperi	X		X	X			X	L
C. dealbata	X		X	X				X
C. dregei	X		X			X	X	
C. lunulata			X			X	X	
C. medullaris	X		X	X				L
C. smithii			X	X	X		X	
C. tomentossissima	X		X	X			X	L
C. woollsiana	X	X		X			X	
Dicksonia antarctica	X		X	X			X	L
D. fibrosa	X		X	X			X	X
D. squarrosa	X		X	X			X	L

*The above article comes from Fernatix*Za, Fern Society of Southern Africa's magazine and is used with thanks.*

University of California Herbarium Fern Types Available On-line

Type holdings of ferns and fern allies found in the University of California Herbarium. Berkley, are now available for viewing online at http://ucjeps.herb.berkley.edu/fern_type This archive may be searched using key words, e.g. basionym, "accepted" name, country, collector, etc. UC has cataloged 1,591 identified type specimens reflecting the work of curators E. B. Copeland (1928-1932, 1935-1958) and Alan R. Smith (1969 to present).

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