

Fern Society of Victoria Inc.

NEWSLETTER



ABN 85 086 216 704

Vol. 24, Number 6
November/December 2002

FERN SOCIETY OF VICTORIA Inc.

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

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.

OFFICE BEARERS:

President:	Ian Broughton	Phone	(03) 5964 6402
Imm. Past President	Chris Goudey	"	5282 3084
Vice-President	George Start	"	5962 5059
Secretary	Barry White	"	9337 9793
Treasurer	Don Fuller	"	9306 5570
Membership Secretary	Rex Gresham	"	5796 2466
Spore Bank Manager	Barry White	"	9337 9793
Librarian	David Radford	"	9598 8398
Book Sales	Ivan Traverso	"	9836 4658
Editor	Lyn Gresham	Ph/Fax	5796 2466


"Kilpara", Selectors Road, Mangalore, Vic, 3663. E-mail <lynrex@mcmedia.com.au>.

COMMITTEE MEMBERS: Jean Boucher 9707 1592, Jack Barrett 9375 3670,
 Gay Stagoll 9844 1558, Norma Hodges 9878 9584. Brenda Girdlestone 9390 7073
 Mirini Lang 9886 6109

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. Sent by Airmail.

MEETING VENUES: The Kevin Heinze Garden Centre is at 39 Wetherby Road, Doncaster (Melway 47; H1).
 Others at members' gardens or as advertised on the following page.

Subscriptions fall due on 1st July each year. Have you renewed yours??

 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.

THE BUSH HOUSE NURSERY **WHOLESALE AND RETAIL**



Visitors welcome

Lorraine Deppeler
 Phone (03) 5565 1665
 18 Hermitage Drive,
 Allansford 3277

AUSTRAL FERNS **Wholesale Propagators.**

Phone (03) 5282 3084.

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



2002 CALENDAR OF MONTHLY EVENTS

Thursday 21st November

8.00pm at Kevin Heinze Garden Centre

Dahlias and how to grow them.

Rex Gresham

*Discover something new about these brilliant garden flowers from an expert
And take home a tuber or two to grow in your garden.*

TIMETABLE for EVENING GENERAL MEETINGS:

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

Sunday 1st December

11.30 for Noon at the Kevin Heinze Garden Centre

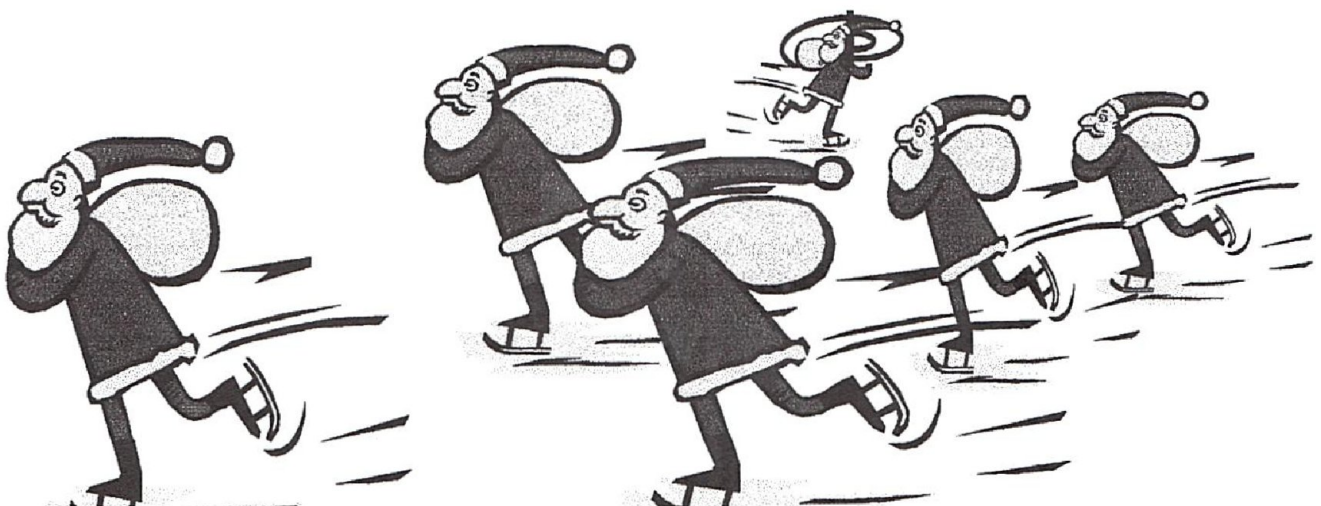
Our End-of-Year Function

A Catered Patio Party.

All members and their (fairly) immediate families are invited to round off the year's activities in fine fashion at our favourite venue. This year we're spoiling you - all food is provided by the Society (see The President's Bit). However, you do need to bring;

- Yourself, family and/or Significant Other
- Cutlery and crockery for the main course and a dessert
- Lots of things you're donating to the auction
- Lots of money so you can take home the things other people have brought
-• A warm glow because as well as having a great time you'll be helping others.
- Cool drinks if you wish (alcoholic or not).

Please let Norma Hodges know that you're coming to this event
for catering purposes. She needs to know final numbers very soon.



THE PRESIDENT'S BIT

Greetings from soggy Launching Place - and am I glad to be able to say that at last!!! I was doing my deliveries around Melbourne today (23rd Oct) and got wet a few times, and had to wait under cover twice. It was sheer bliss to get wet while I was working. We've had 27 mm since the rain started about 22 hours ago. Long may it continue!

When Joy Horman passed away some time ago, what was left of her fern collection was donated to the Fern Society and was sold. From the proceeds, we have recently purchased, and added to our library, copies of each of; "Fern Grower's Manual" by Barbara Joe Hoshizaki and Robbin Moran and "Plant Finder's Guide to Garden Ferns" by Martin Rickard. Be sure to have a look at both of these quality books at our next meeting.

DON'T FORGET - if you haven't yet renewed your membership, subscriptions were due in July. Please forward them as soon as you can, to reduce our paperwork.

In the garden - I can't stress enough the importance of mulching your ferns. With summer approaching relentlessly, and the likelihood of water restrictions (Rain rain come today, again some way, again some day [Charles Schutz]) a heavy layer of organic mulch, applied a couple of times over the warmer months, is going to be vital - especially for tree ferns.

At our AGM in September, Brian and Lyn stood down from our committee - thank you both very much for your contribution. We were delighted to be able to welcome two new members to the committee - Brenda Girdlestone and Mirini Lang. We look forward to your sharing in the leadership of the society over the coming months and years. I am especially grateful, as I am no longer the youngest member of the committee - which used to worry me a little. Thanks too to Barry White who gave us a presentation on the ferns of Norfolk Island.

Thirty-five members and guests attended our October meeting, a trip up to our nursery in Launching Place. My

family and I certainly enjoyed the day, and we received a number of positive comments. Thanks to all who came (and especially for buying ferns!). We have now sold about half of our collection. While it is sad to see it happening, I hope the plants will bring as much pleasure to others as they have to me. We still have a large quantity of 4" terracotta pots, 8" and 12" terracotta bowls, plastic hanging baskets and oodles of plastic pots (nearly all used) to sell cheaply, if anyone is interested. We also have a quantity of igloo (tunnel house) frames in 14' and 16' widths. Ring me on 5964 6402 or fax on 5961 5831 - mention the Fern Society and I will give them a donation from the sale of these items.

In November, Rex Gresham will be sharing his expertise in growing Dahlias. He produces some stunning flowers, so come along and find out how the experts do it. The competition will be Blechnums.

In December, we will be holding our Christmas break-up on Sunday 1st Dec, meeting from 11.00am on. Lunch and afternoon tea will be provided. Bring any drinks you want other than tea or coffee and crockery and cutlery. We will be holding an auction again this year with the proceeds to be shared between the society and the Kevin Heinze Garden Centre. This means that we need you to bring items to donate for the auction. They don't have to be plant related - food items such as jam, fruit and cakes are very well received - especially by Barry White! It is also imperative that you bring lots of money to buy the items that others have brought. We also hope to show a video, produced by the British Pteridological Society, on British ferns. This will be a fun day, so come along and enjoy yourself and give the rest of us the pleasure of your company.

I hope your ferns are bursting with spring growth and I look forward to seeing you soon.

Regards

Ian Broughton

Did you know that certain Pteridophytes (ferns) produce two types of spore? They are the very small microspores, from which the male gametophytes eventually develop, and the macrospores that give rise to female plants. Pteridophytes of this kind are said to be heterosporous.



Season's Greetings



Warm and sincere wishes to
families for a safe and
and a marvellous year with

all our members and your
cheery festive season
your ferns in 2003.

And don't forget the reason for the season.

We hope to catch up with many of you at the End-of-year Gathering - renewing acquaintances and updating your news as well as meeting as many of our new members as possible. It will be nice to put faces and personalities with names!

We are meeting at the Kevin Heinze Centre at 11.30 for a CATERED lunch (see Ian's page) followed by an auction of donated goods (almost anything - not confined to ferns, or even plants and try to think of something we can have a bit of fun with as well as 'serious' items) and services, and various other planned activities. There will be plenty of time for chatting between all this action, too.

So you only need to bring your own crockery (mug, dinner plate and dessert bowl) and cutlery, auction items and money. Funds raised by the auction will be divided equally between the Society and the Kevin Heinze Garden Centre, a charitable organization which caters to the social and physical needs of many hundreds (thousands?) of elderly, lonely and/or disabled people each year.

The spot we meet is outside but shady and pleasant with tables and chairs provided. Taking a walk around the gardens is a good idea, too. SEE YOU THERE!!!

Davallia Fejeensis

Arthur Greene.

Commonly known as Hares Foot Fern, the genus *Davallia* contains about 40 species, with a distribution from South West Europe, through tropical Asia and well into the Pacific region. They are all epiphytic ferns with exposed, scaly, long creeping rhizomes (or 'feet').

Davallia is a highly evolved genus of ferns and is so well adapted to its epiphytic conditions that it can stand much more exposure than most other epiphytes. The genus is named after the Swiss botanist, Edmund Davall.

Davallia fejeensis is native to Fiji, where it grows on rocks and trees from sea level to at least 1000 metres. Its fronds are even more attractive than the commonly grown Hares Foot Ferns in that they are very finely divided; so fine in fact, that a single indusium may cover the complete width of the ultimate segment. These fronds may grow to over a metre in length.

There are several cultivated forms of *D. fejeensis*. 'Dwarf Ripple' has a frond blade to only about 15cm

long with the tips of the pinnae turned downwards. The ultimate segments are slightly longer than normal and seem even larger on the small frond, giving the surface a ripply texture. These characteristics create a very distinct appearance and it is reportedly a very desirable fern for any collection. 'Major' is much more commonly grown, being a large robust form with more finely divided pinnules. Not as finely divided however as the very beautiful 'Plumosa' where the fronds also have a graceful pendulous habit. Just to make life more difficult, there is also 'False Plumosa' which is smaller, more erect and more sparsely foliaged.

In the past, some species of *Davallia* such as *D. mariesii* have been erroneously labelled and sold as *D. fejeensis*. *D. fejeensis*, unlike some others in the genus, is not cold hardy and in Tasmania requires glasshouse conditions. Because of its size, spreading habit and epiphytic nature, it is best grown in a hanging basket. Normally growing over trees or rock, it is not hard to imagine that it would require only a thin layer of soil to grow in.

When re-planting or splitting up, the rhizome should always remain exposed - the growing tips of the feet being the most critical parts. The soil mix should be extremely well drained, while being capable of holding some moisture between waterings. Too much water, usually arising from a poorly drained mix, will result in the rhizomes rotting and the plant dying. Generally, especially if the fern is to be grown in a fairly cool place over Winter, plenty of water should be given over the warmer months when the plant is actively growing, and kept drier over the colder months.

Plants are easily divided or new ones started from 5 or 6cm of the growing tip of the rhizome. In fact it is not a bad idea to regularly 'prune' back the growing tips to produce more side rhizomes and create a bushier plant.

Most *Davallia* species are very long lived and if given regular, small amounts of liquid fertilizer (while the fern is in active growth), and pruning, Hares Foot Fern will last in the same basket for years.

Tasmanian Fern Society issue 17, Dec. 1985
Thanks to John Hodges for passing on this article.

FERN COMPETITION RESULTS

September Ferns of Norfolk Island

First: Ian Broughton
Lastreopsis calantha

Second: Jack Barrett
Arachniodes aristata

Third Don Fuller
Microsorium pustulatum

Raffle for competition entrants: Ian Broughton.

Main raffle: Brenda Girdlestone, Bruce Blanchonette, Mavis Potter, Jack Barrett, Lauren Radley and Fran Harrison.

October

As we were at Ian's garden and nursery there was no fern competition held. However, Ian had devised a **diabolical** treasure hunt with clues spread right around his ferneries and garden. The winner, with almost a perfect score, was

Norma Hodges

Clever lady!!! Congratulations!!

I do think that Ian was a bit cunning in asking for 15 weeds from his ferneries!



Effective Thermal Weed Control

Is this the next step after our weeding wands have had their day? This article is geared more to farmers than gardeners, but the principle is intriguing..

Before brushcutters and herbicides, kerosene burns along fencelines and burnoffs of grassland were common practice in weed control. LPG powered thermal weed control is a more recent technology in Australia. Originally thermal weeding relied on a naked flame, a technique which has seasonal limitations here compared to Europe, where the technology was developed. Thermal weed control has proven to be the most useful of many alternative weeding technologies, including infrared heat, microwave and electrical current machines.

Thermal weeding usually works by applying enough heat for a very short period to expand and rupture plant cells or coagulated proteins, without totally burning the plant and destroying the organic matter. This is probably a minimum of 90 to 100 degrees celsius for one tenth of a second, with ideal results from temperatures of 130 to 140 degrees.

Monocotyledonous plants (which includes grasses) may have a slightly higher temperature tolerance than dicots; this permits some careful selective weeding. Shielded burners provide best control for both the flame and radiated heat. Successful flame weeding depends on good design of the burners, height of the burner above the weed, the angle of the flame, gas pressure and the forward speed of the tractor. A significant advantage of thermal weeding is that it can be used on soil that is too wet for mechanical cultivation.

For Australia's dry conditions hot water techniques are preferable to the earlier, naked flame burners. Steam weeding is now used by many councils for most weed control on roadsides and median strips. These councils report satisfactory weed control although it costs more than herbicide treatments.

Simply put, the system uses pressurised water pumped through a heating chamber and sprayed directly on the target weeds. It has several advantages over chemical control. With careful use there is no off target damage; it can be used in all weather; it meets occupational health and safety standards and it kills weeds immediately. Because of these advantages it can be used on sensitive areas such as around park benches, footpaths, waterway banks, road verges and parkland.

The technique has recently been improved by the addition of a foaming agent to reduce water use, achieve better coverage, insulate the heat and provide longer contact with target plants at a temperature designed to kill them.

Steam weeding however is limited by the need of a large water tank and involves downtime to refill the tanker. Superheated air has the potential to improve the efficiency of thermal weeding.

Indigenotes, Volume 12, number 3.

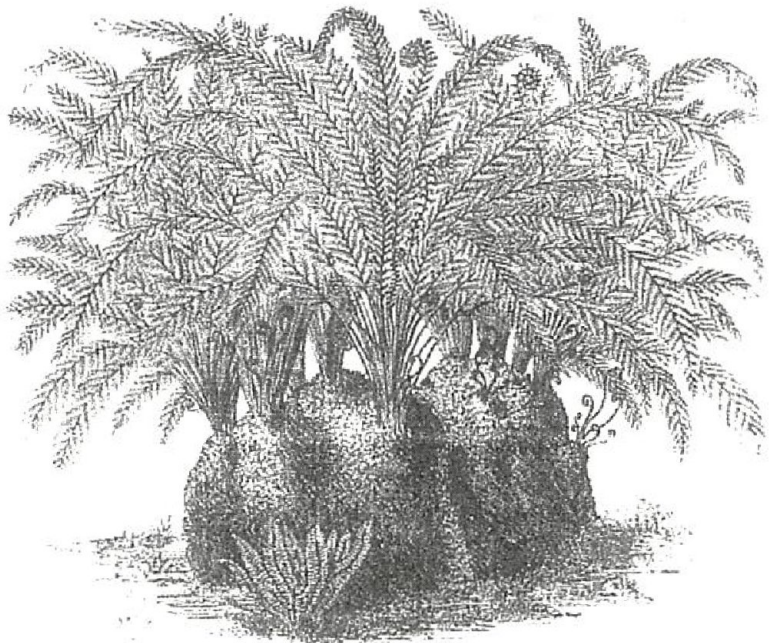


Osmunda (Todea) barbara.
Thunberg.

Back ranges of Dandenong.
Weight, 4,576 lbs (2.08 tonnes)
Height, 5 feet 3 inches (157.5cm)
Length, 7 feet (210 cm)
Breadth, 4 feet (120 cm)
(Linear conversions are approximate)

From "*Victoria and its Metropolis*"
Published by McCarron, Bird & Co.,
Melbourne 1888.

Thanks to David Radford for this item of interest.



Liverwort Control

by Michelle Miller, Oregon Consultant

*Reprinted with permission from the Soil and Plant Laboratory archives
(<http://www.soilandplantlaboratory.com/articles4.html>)*

Liverworts are a notorious pest for most growers. Liverworts fall into a category of plants known as cryptogams, which also includes algae and moss. A cryptogam is a botanical term for plants that reproduce from spores instead of seeds. Liverworts are multicellular plants with simple leaves and a nonvascular stem. They do not have true roots but depend on small, threadlike rhizoids for water and nutrient absorption. Liverworts can reproduce by spores or by division. The common entrance into a nursery is by spores but once established small structures, known as gemmae, detach from the parent plant and act as vegetative propagules. The spores may be airborne in a nursery or found on used containers or growing surfaces.

Why Liverworts are a Problem

Liverworts need light, lots of water and fertilizer. Their preference is for low light and they do not like hot or dry conditions. Once established, they grow quickly and form a mat across the surface of the growing media. This mat prevents rapid entry of the water into the plant's root zone and can increase irrigation time to fully hydrate the soil. Liverworts use fertilizer intended for the plant and provide an ideal home for fungus gnats. Growers know the expense and time required to remove liverworts by hand. Customers do not appreciate dead liverworts in their plants so even dead ones need to be removed. Therefore, prevention is the best key.

Cultural Control

Cultural practices to control liverworts include modification of a grower's irrigation system. When practical, subirrigation may be employed to keep the surface of the soil dry. If overhead irrigation is used, the soil surface should be allowed to dry as much as possible between irrigations. Since liverworts will grow on fertilizer found on the surface, incorporation of slow release fertilizer will help reduce the populations of liverworts. The application of surface mulches that dry out rapidly will be useful. This may include rice hulls, pumice, hazelnut shells, oyster shells, and coarse quartz grit. Grit is commonly used in reforestation nurseries to prevent liverwort infestation on the small seedling containers.

Chemical Control

Dr. Sven Svenson, of the North Willamette Experiment Station in Aurora, Oregon has been studying the effects of existing treatments and new chemicals on liverwort

populations. He reports that reasonable control can be achieved with ferrous or cuprous sulfate, potassium bicarbonate, manganese sulfate, gas-injected chlorine, and quick lime. All of these products are beneficial where liverwort pressure is reasonably light and the grower wishes to prevent a full-blown infestation. Some pre-emergent herbicides, such as Ronstar, OH 11, and Snapshot are also helpful. Dr. Svenson reports that the pre-emergents work best if the grower does not overwater and the substrate is not overly wet. He has also observed that coconut fibre (coir) is just as susceptible to liverwort establishment as peat moss. Bromine-treated water, at 20 to 30 parts per million, assists in delaying liverwort establishment but does not prevent an infestation.

Dr. Svenson has trialled several products, including one currently registered in the United States and some used in other countries. The registered product is MycoTech's Cinnamite, which he recommends only for cool weather use. This product has variable phytotoxicity which increases with hot, sunny weather. Two international products show promise for future use. Mogeton (quinoclamine) is currently used in Europe and Japan, and labelling is being pursued by Wilbur Ellis. Mogeton is applied as an over-the-top spray and has low phytotoxicity. MossOff and Surrender are the other new products and both are benzylkonium chloride and copper sulfate blends. No information is yet available on potential labels. Vinegar-based products, such as EcoClear, are being used by some growers with success. ZeroTol (hydrogen dioxide) helps to slow down liverwort establishment.

Summary of Control Methods

Dr. Svenson's summary of liverwort control is to use reduced water where possible; incorporate slow release fertilizers instead of topdressing; use a surface mulch; apply ferrous sulfate for low populations; employ pre-emergent herbicides where possible; and treat new colonies immediately with vinegar or Cinnamite. I see relatively clean nurseries rapidly lose control of their liverwort problems and echo Dr. Svenson's admonitions to stay on top of the problem.

This article first appeared August 6, 1999 in the Pro-Gro Newsletter. Please contact Michelle at splabor@flash.net if you have any questions.



NEW ITEM AVAILABLE FOR PURCHASE BY MEMBERS

We are please to now offer
DEBCO GREEN JACKET® slow-release fertilizer
 Low phosphorus formula, suitable for ferns
 (equivalent to 12-14 month Osmocote)
 at the very low price of
\$6.00 Kg

Bulk lots - come in various sizes at corresponding prices.

We also have MAXICROP® liquid fertilizer (\$7.50 litre), HANGING BASKETS with fibre liners (\$6.50 - \$9), spare LINERS, waterproof labelling PENS (\$3) and plastic LABELS (2 sizes, \$1 for 15 or 25).

These items are available for purchase by members at our monthly meetings.

FIRST AID FOR YOUR FERNS.

Common mistakes in care

(From *Success with Indoor Ferns* by Susanne Amberger-Ochsenbaumer, Merehurst. This item comes from the Fern Society of Southern Africa newsletter, Fernatix*za and is used with

Withering fronds may signal a whole range of problems but are usually caused by too little or too much watering. Fading young fronds, as a rule, indicate lack of water. Once you notice this, you should water immediately. The best thing to do in such cases is to immerse the whole plant in water.

On the other hand, if you give too much water this will result in water-logging and the entire plant will wither. If all the air spaces in the compost around the roots are filled with water, no oxygen will be available to the roots, which they need in order to absorb water and nutrients. In spite of a plentiful supply of water, the plant will die of thirst. A fern that is withering because of persistent water-logging cannot be saved. The only thing left to try is to take the plant out of its potholder so that excess water can run away. Do not water again until the compost is slightly dry and then water sparingly in the future.

Dried up fronds are an indication that the rootstock of the fern has dried out. As long as this state of affairs is fairly recent, you can try to encourage the plant to produce new shoots by immersing the rootstock in water.

Pale green fronds: The adult fronds of some fern species do not actually wither but will lose

their fresh green colour and turn pale green. Finally, the feathery divisions of the frond fall off. These symptoms may indicate too much or too little water as well as a position that is too dark or too cool, particularly in the case of sword ferns (*Nephrolepis*). Check the rootstock with your finger to make sure the moisture content is correct and choose a position with enough warmth and light but out of direct sunlight.

Veins that turn brown and show up like lots of little lines on the feathery leaves of maidenhair fern (*Adiantum*) point to a position that is too cool and has high humidity. Place the maidenhair fern in a warmer position.

Brown edges to leaves are usually the result of humidity that is too low. In the case of *Asplenium* they may also be the result of a position that is too cool. Raise the humidity level and move the plant to a position that is sufficiently warm.

Dark brown, decaying parts of the leaves occur in *Platyserium* and *Blechnum* if they are misted and do not then dry off in a short space of time. These species do better if they are not misted all over but are supplied with indirect humidity.



The Fern Society of Victoria Inc.

STATEMENT OF INCOME & EXPENDITURE FOR YEAR ENDED 30th JUNE 2002

AUDITORS REPORT

I have examined the books of account and associated records of the Fern Society of Victoria Inc. for the year ended 30th June 2002 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 2002. 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 2002

	2001	2002
MEMBERS FUND		
As/2001 Balance Sheet	\$ 18233.80	\$ 18684.58
Deficit	450.78	-61.39
TOTAL MEMBERS FUNDS	\$18684.58	\$18623.19

REPRESENTED BY

CURRENT ASSETS

Prepaid Deposit - Fern Show Hall	100.00
Prepaid GST	10.00

CASH AT BANK

General Account	1831.15	1807.06
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STOCK

Books	135.00
<u>Books</u>	135.00

INVESTMENTS

Term Deposit	16597.32	16603.64
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TOTAL ASSETS

	18875.58	18693.19
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CURRENT LIABILITIES

Prepaid Fees	191.00	70.00
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TOTAL NET ASSETS

	\$18684.58	\$18623.19
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SUMMARY

	2001	2002
Income - General Account	\$ 3038.92	\$ 2674.15
Less - Expenditure	2879.77	3120.04
		-445.89
Operating Surplus	159.15	
Operating Deficit		-445.89
Add		
Fern Show Surplus	291.63	
Less		
Fern Show Surplus		384.50
TOTAL SURPLUS/DEFICIT	\$450.78	-\$61.39

GENERAL ACCOUNT

INCOME

	2001	2002
SUBSCRIPTIONS		
Renewals	1279.00	1078.00
New Members	146.50	155.00
SALES / COMMISSIONS		
Spore Bank/Fern Sales	270.00	122.00
Commissions	91.39	166.00
Misc. Sales	268.70	250.80
Less - Cost of Sales	240.40	189.00
Mugs	49.00	36.00
Less - Cost of Sales	38.24	27.31
Glasses	14.00	-
Less - Cost of Sales	19.50	-
Books	61.00	-
Less - Cost of Sales	45.00	-
SPECIAL EFFORTS		
General (Net)	172.00	358.49
		177.00

Continued

OTHER INCOME

Advertising
Auction Receipts

144.00
264.75 408.75

OPERATING INCOME

2189.45

ADD NON - OPER'G INCOME

Bank Interest
General Account
Term Deposit

0.27
496.64 496.91

TOTAL INCOME

\$2674.15

GENERAL ACCOUNTEXPENDITURE

2001
\$

NEWSLETTERS
Printing
Postage

968.30
279.33

2002
\$

956.50
322.46 1278.96

ADMINISTRATION

Honorariums
Regist'ns/Subs'ns
Admin/Sect'l
Entertainment
Hall hire

150.00
48.49
120.05
89.46
400.00

Guest Speaker Exp.
Audit fee

200.00
400.00

Bank Charges
Presentation
P.O.Box Rental
Donation

42.57
27.31
52.00
133.00

Insurance
Library Books
Repairs

178.20
-
- 1841.08

TOTAL EXPENDITURE

\$3120.04

FERN SHOW

(Held jointly with the Australian Rhododendron Society)

2001
\$

2002
\$

JOINT RECEIPTS/EXPENDITURE

1538.05 Receipts
1704.65 Expenditure

1707.00
1667.66

-166.60 JOINT DEFICIT

JOINT SURPLUS

39.34
\$19.67

-\$83.30 FERN SOCIETY SHARE 50%

INCOME

3719.00 Fern Sales
-3808.05 Less - Cost of Sales
50.00 Donation

4384.50
-3712.46 672.04
50.00 722.04

EXPENDITURE

23.32 Display Expenses
61.05 Admin'n Expenses
146.00 Travel

20.00
197.21
140.00

\$374.93

357.21
\$364.83

FERN SOCIETY - DEFICIT

-SURPLUS

-
364.83

PLUS - JOINT SHARE SURPLUS

LESS - JOINT SHARE DEFICIT

19.67
-

FERN SHOW SURPLUS

\$384.50

91.

FERNS AND THEIR ALLIES OF THE OTWAY RANGES, VICTORIA.

Extract from "The Otway Ranges" by Trevor Pescott

If one group of plants, more than any other, seems to typify the Otway Range it is the ferns and their allies. At least 64 species, among them 11 that are considered rare or threatened, have been recorded here.

The largest are the tree-ferns, which form a canopy with their umbrella fronds above the many water-courses that spread a complex network throughout the range. Beneath them, and on their trunks, more delicate ferns thrive in an environment screened from desiccating sun and wind, and protected from driving rain, hail and the occasional snowfall. They are essential for the survival of the riparian flora of these high rainfall areas.

Of the four species found here, the Soft Tree-fern *Dicksonia antarctica* is the one most typical of the fern gullies, and it is the plant most often removed for replanting in domestic gardens. Unlike the Rough Tree-fern, *Cyathea australis*, of which the basal section of the fronds are as abrasive as the coarsest carpenter's wood-rasp, the trunk and fronds have a velvety touch to them. Rough Tree-ferns grow on drier ground too, and they are often found on the rising land well above the fern gullies.

Two other species of *Cyathea* grow in the Otways - the Slender Tree-fern *C. cunninghamii* which may reach 20 metres tall and the Skirted Tree-fern, *C. x marcescens*. Both of these are classed as rare in the conservation context, and both are interesting plants.

Although the Slender Tree-fern has a narrow trunk (up to 10cm in diameter), it grows twice as high as the Soft Tree-fern, which has a huge trunk (recorded to two metres across). In the fern gullies which the two share, the Slender Tree-fern stands clearly above the other understorey plants. According to some botanists, it does not produce fertile fronds until it is about seven metres high, and by then it may be 80 years of age. Its survival depends largely on the lack of fire in this rainforest landscape.

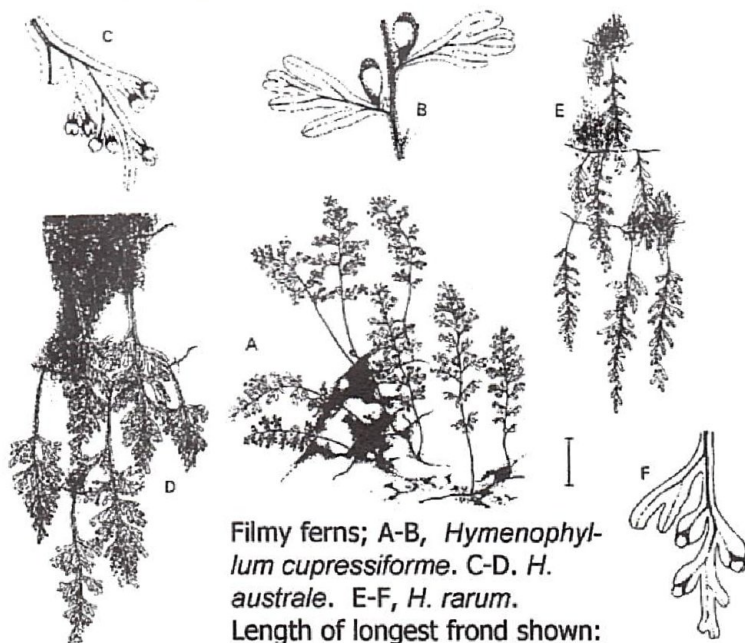
The Skirted Tree-fern is still something of a mystery. It was first described by Mel-

bourne naturalist Norman Wakefield in 1942 from a specimen collected in Eastern Victoria two years before. Later a small piece of tree-fern, identified as this species but collected in the Otway Ranges in 1880, was found preserved among the National Herbarium of Victoria collections, and in 1944 a living plant was located a short distance east of Horden Vale.

It is classed as a sterile hybrid between the Soft and Slender Tree-ferns but retains its individual identity because of the consistency that exists among the plants. It is scattered through the Otways where these two grow.

One other giant fern occurs in the Otways - the Austral King-fern, *Todea barbara*. Although growing to less than two metres high, it has a huge barrel-shaped trunk almost as wide as it is tall on which are produced several crowns of fronds.

Many of the ferns of the ranges are small and delicate, easily destroyed if the elements, particularly sun and wind, are allowed to penetrate their habitat. Perhaps the most fragile in this regard are the filmy-ferns of which five species are found here. The name of the plant family to which they belong, **Hymenophylloceae**,



Filmy ferns; A-B, *Hymenophyllum cupressiforme*. C-D, *H. australe*. E-F, *H. rarum*.
Length of longest frond shown:

A 45mm, D 55mm, E 40mm. Length of sporocarp: B 3mm, F <1mm, 1.5mm. Sizes approximate but close. From 'Flora of Australia' Vol. 48 ©Commonwealth of Australia 1998.

literally means membrane-leaf because the fronds in most species are only one cell in thickness.

Filmy-ferns may grow as terrestrial plants or lithophytes (growing on rock surfaces) but they are most conspicuous when massed on the trunks of standing or fallen tree-ferns. The most widespread is *Hymenophyllum cupressiforme*, the Common Filmy-fern, but the Shiny *H. flabel-latum*, Narrow *H. rarum* and Austral *H. australe*, as well as the Veined Bristle-fern *Polyphlebium venosum*, are Otway plants.

Because of the single-cell thickness of their fronds, the ferns can absorb moisture from the air, but equally they suffer if the air becomes too dry. The Common Filmy-fern can withstand short spells of desiccation by rolling the fronds along the central vein, and they will open again once adequately moistened, but the other species are

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less able to survive dry conditions.

A few species of ferns are well adapted to exposure to wind and sun - the Austral Bracken, *Pteridium esculentum*, not only thrives in cleared land, but it is cursed by farmers who find new pasture invaded by the plant. It must be one of the few plants for which a special tool has been developed to control it. The fern-hook, a small sickle attached to a long handle, is one means of cutting it down. Curiously enough, it is rare indeed to find fertile fronds on the Austral Bracken, for among the thousands of fronds seen, few produce spore-sacs.

Although relatively small pieces will regenerate in a ploughed paddock particularly after fire, bracken is extremely difficult to propagate, although it would seem few people would wish to do so. The plant develops a rhizomous root-system from which the fronds grow, but this will rarely survive if it is transplanted.

Apart from its invasive growth pattern, bracken has some other unusual characteristics. It is poisonous to stock if eaten in great quantity, due to an enzyme contained in the fronds which destroys thiamine and causes a deficiency in the vitamin B1, yet in Japan and some other places the young fronds of bracken, known as fiddle-heads, are cut for human consumption.

The fleshy, young fronds of bracken have another use well-known to bushmen - the sap will help reduce the effects of insect bites or the sting of a bull-ant if applied quickly.

While the Koori did not appear to favour the young fronds as they did some other ferns (notably the tree-ferns) they did cook and eat the rhizomes of bracken.

There are several other ferns that are bracken-like in appearance, and belong to the same botanical family known as **Dennstaedtiaceae** which is derived from the name of German botanist A.W. Dennstedt (1776-1826), but they are in several different genera.

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Known generally as ground-ferns, they include the Bats-wing *Histiopteris incisa* whose common name comes from the pale-green, broad fronds which are paired, one on each side of the stem, resembling in a rather fanciful way the wings of a bat. Finger-ferns belong to the genus *Grammitis*, and three species occur in the Otway forests. They are small plants usually growing as a group of fronds from a single tufted rhizome. The fronds are simple in form, flat, quite narrow and up to 15cm long - the common name comes from their finger size and shape.

Of the three, *G. billardieri*, the Common Finger-fern, is widespread and abundant along the various water-courses where it grows on the ground, on rocky surfaces or as an epiphyte on tree-ferns and other plants.

The Beech Finger-fern, *G. magellanica* subsp. *nothofageti*, is apparently confined to a few small areas of forest near the Little Aire Falls where it grows on rocks or on the trunks of trees particularly the Musk Daisy-bush. It is classed as a rare species in Victoria where it also occurs on Wilsons Promontory, growing there on granite boulders, and perhaps in East Gippsland. It is found in Tasmania and New Zealand too.

The third species is more of a puzzle. *G. meridionalis*, the Elusive Fingerfern, has been recorded from the Otways but its occurrence here is questioned in some recent publications on Victorian flora. So, too, is its true identity for it fits closely between the two previous species, and until recently it was classed as a form of the Common Finger-fern. In accepting it in full species status, it must be classed as a rare plant.

Blechnum is the name given to the genus containing the water-ferns. While the eight species that occur in the Otways are found mainly in wet areas, along streams as well as in boggy places, they are hardy plants that will colonize shaded road embankments and other exposed places, just so long as the ground is damp.

The King Island Water-fern is by far the rarest of the eight, occurring in only a few places. So far, uncertainty exists over its true identity and it remains simply *Blechnum* sp. (King Is.), or a form of the Hard Water-fern *B. wattsi*, depending on which reference is consulted. It is known to occur on King Island, at Collins Gully in South Australia, and in parts of the Otway Range, but its full distribution and precise identity remain clouded because of its similarity to the Hard Water-fern.

One feature that separates the two is the color of the young fronds; bronzy-pink in the Hard Water-fern but a darker brownish-red in

the King Island species. Also the tiny scales that exist on the rhizomes and stems of the former are dark compared with the pale-colored, papery scales on the latter.

Some concern exists about the damage done in some parts of the Otways to the Hard Water-fern by a parasitic nematode, but whether or not this poses a long-term threat to the species is still not known.

The Lime Fern, *Pneumatopteris pennigera*, has a limited range in Victoria. Common on the limestone soils of the Lower Glenelg River and Moleside Creek, it was first found in Victoria in 1943 when plants were discovered beside the Sherbrooke River near Port Campbell. As its name implies, it grows only on limestone or in calcareous soils.

More recently, the Lime Fern has been found along the old Camperdown-Timboon railway line and on the banks of Limestone Creek, a branch of Curdie's River. The water in the creek is crystal clear, having leached through the huge limestone deposit that is extensively quarried for agricultural fertiliser, and the broad, long fronds of the fern span the stream.

The Kangaroo Fern *Microsorium pustulatum* may grow in relatively exposed situations, but it is also found in the densest rainforests where its creeping rhizome will follow the trunks and branches of blackwood and beech. The name comes from the shape of at least some of the fronds that resemble the footprint of a kangaroo, but in many cases, the frond is undivided or has eight or more lobes.

The term fern allies applies to a group of plants which contain clubmosses, quillworts, tassel-ferns, selaginellas, and fork-ferns, while azolla, nardoo and comb-ferns fit somewhere between them and the true ferns. They form an interesting assemblage of plants, and in the Otway forests and hinterlands, some 15 species occur. Among them are three that are considered rare or vulnerable - the Elongate Fork-fern, *Tmesiptera elongata*, which is an epiphyte grown usually on the trunks of Soft Tree-ferns, the Bog Clubmoss *Lycopodiella serpentina*, a plant of wet, peaty heathlands, and the Long Clubmoss *Huperzia varia*.

Formerly, all of the clubmosses belonged to the genus *Lycopodium*, literally wolf-foot referring to the claw-like nature of the leaves in some species. They are a primitive group of plants with over 100 species found throughout the world, which had their origins in the Carboniferous era some 350 millions of years ago. At that time, there were many giant species

From *Fern World* Number 9 September 2000. Used with thanks.

Maintaining a Terrarium

Robin Halley

Maintaining a terrarium includes making sure that the inside maintains the proper moisture level, that the inside stays clean and free of contaminants, and that the plants are properly fed and groomed. The guideline for the proper moisture level in a container is that one doesn't get water condensation except when the terrarium is heating up or cooling down. Of course, some plants may thrive in moister conditions...

Check the moisture level occasionally. Your container might not be water tight. If it isn't, add water as necessary. If the inside is too moist, get a little water out. My favourite technique is to use a clean sponge (don't introduce impurities) to wipe water off the sides. Repeat daily until the moisture level is correct. Some people suggest leaving the top partially open, but this introduces the opportunity for one to forget that it's open. I've dried up a couple of plants using that technique.

It's important to periodically check for mould, moss, weeds, and bugs in your terrarium. If your plant or plants are in pots, you can take out the pot(s), clean the pots, re-pot the plants if they are outgrowing the pot or the soil mix has become contaminated, and completely replace the reservoir and charcoal layers. One terrarium expert uses a toothbrush to clean off terrarium pots.

For plants growing without pots, you should weed and clean on a regular basis. Every once in a while you'll probably have to take everything out, clean the container, replace the soil and replant the plants. You can use freezer bags as a temporary home for particularly tender plants while you're cleaning. You may even want to wash the old soil off the roots of the plants to make sure you're not reintroducing contaminants when you replant.

When (if) you fertilize, use very dilute food to keep the plant healthy. Don't add as much food or feed as often as you would for plants growing outside a terrarium. Normally, you don't want the plant to outgrow the container.

Don't forget to trim, groom, and clean your terrarium ferns, just like any of your plants.

Choosing Terrarium Plants

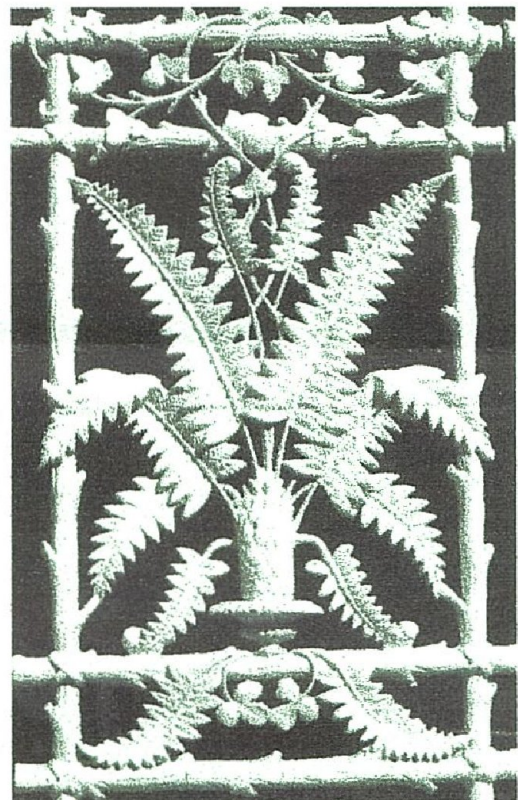
Usually you want plant material that stays small and grows fairly slowly. There are lots of *Pyrrisia*, *Polypodium*, and *Davallia* species that fall into that category. Also, you may want to use a terrarium to

give a protective home to larger, very tender plants. If you choose a larger plant, try to start with a container which gives it growing room ... like a clear plastic tub, a large aquarium, or something you build yourself.

Aquariums are sometimes a problem with larger plants as aquariums tend to be long and narrow and plants tend to be wide in all directions. If you're growing more than one plant in your terrarium, don't forget that you can add companion plants like little orchids, begonias, etc., to make your terrarium more interesting.

Finding Plants

The first secret for finding terrarium plants is to find people who grow plants in terrariums and see if they have any extra plants or can tell you where they got their plants. Next, try mail order. There are a lot of nurseries which sell alpine plants, which can include small ferns. Third, try your local fern sales. In Southern California, there are often terrarium plants available at the San Diego Fern Society and LAIFS sales.



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