

PRINT POST APPROVED PP334633/0002

# NEWSLETTER

VOLUME 20, Number 1 January / February, 1998

## FERN SOCIETY OF VICTORIA Inc.

P.O. Box 45, Heidelberg West, Victoria, 3081

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SUBSCRIPTIONS:

Single - \$13.00 Pensioner/student \$10.00 Family - \$15.00 Pensioner Family \$12.00

Overseas - A\$20.00 (Magazine by airmail)

#### Subscriptions fall due on 1st July each year.

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

### OUR SOCIETY'S OBJECTIVES.

The objectives of the Society are;

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

## PRESIDENT'S REPORT

Hopefully, you have all had a most enjoyable festive season and Lorraine and I would like to wish you all a very happy and propsperous new year.

The 1997 Christmas Break-up was held at Lara and a very enjoyable afternoon was had by all. As always, everyone was hoping to win Mavis Potter's decorated Christmas cake, that she so kindly donates every year.

Those members who were unable to attend the November general meeting are advised that the proposed changes to the Objectives and Rules of the Fern Society of Victoria were presented, voted on and passed. Our thanks go to Ray Harrison for reviewing and bringing the Constitution up-to-date.

Our Guest Speaker for the February general meeting will be Geoff Beilby, a former National Park Ranger and an authority on the ferns of the Otway Ranges, which will be the topic of his talk. The competition category will be a fern which grows in the Otway Ranges region.

Early in February Martin Rickard, the president of the British Pteridological Society will be visiting and staying with us for approximately five days and had kindly offered to give us a talk on the ferns cultivated in Britain but unfortunately the dates do not suit. We will be visiting the Ripponlea Fernery on Sunday 8th February 1998 at 1.00pm so those of you who would like to meet and talk to Martin are most welcome to come along.

Neil Shirley, a member of the South Australian Fern Society will be our speaker at the March general meeting. Neil will be giving a talk on tree ferns and the competition category will be a tree fern. Neil is a long time member of the S.A.F.S. and an expert on ferns and their cultivation. Those of you who accompanied us on our excursion to Lord Howe Island several years ago will remember Neil.

It is with much regret that I have to inform you of the sad loss of one of our members, Dr. Julian Basser, who passed away early in December. Julian joined the Society in the early 1980's, was a keen fern grower and regularly attended our meetings and fern shows until ill health prevented him coming. Our sincere sympathy is extended to his wife, Adrienne and the family.

Chris Goudey.

## 1998 MEETINGS & EVENTS



EXCURSION - SUNDAY 8th FEBRUARY at 1.00 p.m.

### MEET MARTIN RICKARD AT RIPPON LEA

Martin is the President of The British Pteridological Society and will be visiting Chris and Lorraine Goudey for just a few days in February. His travel plans have not been finalised at this time (early December) so please contact the Goudeys for final arrangements.

Rippon Lea Historic Mansion is in the care of the National Trust. It is in Hotham Street, Caulfield (Melways 67-F2) and is worth a visit, with or without an international fern legend.

GENERAL MEETING - 19th FEBRUARY at 8 p.m.

## THE FERNS OF THE OTWAYS

### with Geoff Beilby

Geoff is / was a Ranger in the Otways National Park and has a comprehensive knowledge of Australian native flora, particularly of the Otways region. He was known in the Forest Dept. and later as it became the Dept. of Natural Resources and Environment as "Professor of Everything". He and his wonderful store of information are still greatly missed in the Department there. He is a member of the Colac Orchid Society and the Australian Native Society.



### PROMOTION - SAT. 28th FEBRUARY & SUN. 1st MARCH

## FERN DISPLAY AT STATE DAHLIA SHOW

Help promote our Society and the upcoming Show, enjoy the spectacle of over a thousand dahlias and have a preview of our Show venue - free! Workers' passes will be available at February's meeting. See article on page 5.

GENERAL MEETING - 19th MARCH at 8 p.m.

## THE WORLD OF TREE FERNS

### with Neil Shirley

We are pleased to be bringing Neil over from South Australia to speak to us. Tree ferns are his greatest horticultural passion and he has much to share with us. We look forward greatly to hearing him.



EXCURSION - SUNDAY 29th MARCH AT 11.30 a.m.

## GARFIELD NORTH AND GLEN NAYOOK

Meet at Dorothy and Ian Forte's farm at beautiful Garfield North (Vicroads Country Directory 96 C/D3), enjoy BYO lunch there and then proceed to Glen Nayook. More details next Newsletter.

SHOW - APRIL 18th - 19th

## **OUR ANNUAL FERN SHOW**

New venue - new features - new partner...and ferns, ferns, ferns! This year's Show has all the ingredients for success. Don't miss out on being part of this great weekend. We'd love to meet our out-of-town members. Access by rail, bus or car. See page 4.

#### GENERAL MEETING TIMETABLE:

Pre-meeting activities - Sale of ferns, spore, books, merchandise and Special Effort tickets. Also library loans.

General Meeting. 8.00

Workshops and demonstrations. 8.15

Fern identification and pathology, Special Effort draw. 9.15

9.45 Supper.

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## MONTHLY COMPETITIONS:

10.00

**FEBRUARY** 

A fern or ferns in a hanging basket or container.

Close.

MARCH

A Tree Fern.

APRIL

An interesting fern.

## FERN SHOW 1998.

experience being at a new (for us) and much larger venue. It will ums, especially the more uncommon ones. also be held in conjunction with the Australian Rhododendron The Show is an excellent opportunity to display your favourite and separate sales areas for ferns and vireyas.

Crescent Mount Waverley (cnr. Miller Cres., and Stephenson identification to ensure safe return, Rd - opposite Mt. Waverley Railway Station.) Melway Ref. 3. Show Activities. sion \$2.

The Fern Show is an important activity for our society and we selves known. need the strong support of our members to make it a success. This year we have the space and facilities to do more things such Show:

- 1. Publicise the Show.
- 2. Contribute to the display and enter the fern competition
- 3. Attend the Show and assist with Show activities.

#### 1. Publicity.

Publicity has been, or will be, arranged in garden magazines, newspapers and radio and contact made with a large number of Garden Clubs/Societies. However what is also required is for members to publicise the Show by word of mouth to your friends and acquaintances interested in plants and to distribute our advertising pamphlets. These will be available at our next Offers of help can be made to any member of the Show meeting and several will be included with the March/April Committee. They are: newsletter.

#### 2. Fern Competition and Display

There will be 9 categories in our Fern Competition this year plus Bernadette Thompson, Barry White. "Best Fern in Competition". Categories are as follows:

- 1. Adiantum
- 2. Asplenium Bird's Nest varieties
- 3. Asplenium all other
- 4. Blechnum
- 5. Davallia
- 6. Dryopteris / Polystichum
- 7. Fern in Hanging Container
- 8. Pteris
- 9. Other than above.

Our feature fern display this year will be the genus

The Fern Show for 1998 promises to be a new and different ASPLENIUM so we will be seeking a wide variety of Aspleni-

Society and will be a combined Fern and Vireya Rhododendron ferns so please start selecting and grooming them now. We urge Show. There will be a combined display in the main auditorium as many members as possible to enter the competition and contribute to the display, not all exhibits have to be potential The Show will be held from Saturday April 18th to Sunday April prize winners. As usual it is important that they are clearly 19th at the Mount Waverley Community Centre, 47 Miller labelled with their botanical names and some form of personal

70-E1. The Show will be open between 10.00 a.m. and 5.00 The Show Committee hope that as many members as possible p.m. on both days and the admission charge - Adults \$3 Conces- attend the Show and extend a special invitation to those unable to attend the monthly meetings. Come along and make your-

There are several ways you can contribute to the success of the as carrying out demonstrations and providing light refreshments. However this will require more people to help and we will need people willing to be:

- 1. Demonstrators
- 2. Door attendants (entry and security)
- 3. Stewards in display area
- 4. People to assist in the sales area
- 5. People to organise and help provide light refreshments
- 6. People with skills in setting up displays and publicity
- 7. People to assist in setting up and cleaning up afterwards (details in next newsletter).

Jack Barrett, Ian Broughton, Don Fuller (chairperson), Chris and Lorraine Goudey, John and Norma Hodges,

#### Fern Sales

Members who enter the Fern Competition and contribute to the display have the opportunity to bring in ferns for sale. They must be clearly labelled with their botanical names and growing requirements and be free of pests and diseases. There is no limit on the number for sale but it should be in proportion to your contribution to the competition or display. Those wishing to sell ferns can arrange to obtain the required "Book in" form by contacting Bernadette Thompson (03 9399 1587).

## FERN COMPETITION RESULTS

### NOVEMBER GENERAL MEETING COMPETITION CATEGORY:

#### A Fern from Lord Howe Island

Leptopteris moorei 1.

Christopher Goudey

Polystichum whitelegii 2.

Dorothy Forte Dorothy Forte.

Arthropteris tenella

Barry White.

EXHIBITORS' DRAW: SPECIAL EFFORT:

Don Fuller, Bob Lee, Fran Harrison, Dave White.

## DECEMBER (CHRISTMAS) FUNCTION

SPECIAL DRAWS:

Angela Milligan, Mr. Fuller Snr., Don Fuller, Margaret Radley, Dorothy Forte, Jean Boucher,







## DAHLIA SHOW.





The National Dahlia Society of Victoria is holding a show at the Mount Waverley Community Centre on February 28th - March 1st 1998. The Fern Society have been offered the opportunity to have a stand to promote the Society. As this is a well patronised show some 7 weeks before our Fern / Vireya Show in April at the same venue, we wish to avail ourselves of this opportunity.

Our plan is to stage a small display of ferns, answer questions on ferns, provide information on our Society, offer an opportunity for people to become members and distribute pamphlets promoting our Show. To do this we will require the services of several people on each of the two days. If you are able to assist in providing ferns for the display, setting it up and staffing the display please contact Don Fuller (9306 5570).

## EXCURSION TO NEW ZEALAND'S NORTH WEST COAST.

With Keith Hutchinson

### NOW MARCH 20TH - MARCH 27TH, 1998. COST \$1132 PER PERSON.

This area is a mecca for fern lovers, now classified by UNESCO a World Heritage Area alongside the Grand Canyon, Great Barrier Reef and Mount Everest.

A wide range of ferns grow to perfection including the Prince of Wales Plume Fern, *Leptoperis surpurba* which is classed by many as the most beautiful fern in the world.

aving travelled to many places to view ferns this is the one area to which I said I shall return!

The motels are Golden Chain and the travelling at an easy pace.

A passport is needed but not a visa.

This is a tour specifically designed for up to six fern lovers. Travel is by plane and car or minibus. An itinerary is available by phoning me on 9457 2997 or writing to 17 Grandview Gve Rosanna 3084. I am greatly looking forward to this experience and would enjoy sharing it with you.



Keith.

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## FERNS OF LORD HOWE ISLAND

### Barry White

Barry has kindly written this article for us so it is published instead of the write-up which usually follows a meeting. He spoke in November 1997 about his recent visit to Lord Howe Island.

Lord Howe Island is a pearl of the Pacific. Located 900 kilome- southerly coral reef in the world. tres N.E. of Sydney it was included on the World Heritage List in 1982. It is the remnant of a large shield volcano, and part of a Discovered in 1788 by Henry Lidgbird Ball and first settled submerged mountain range running north from New Zealand.

The Island is 11 kilometres long and 21/2 wide. In the south are about 240 species of native plants with 105 endemic species. the two peaks of Mt. Lidgbird (777m) ad Mt Gower (875m), the This includes 60 species of ferns of which 25 are endemic. plateau of the latter being frequently covered in cloud, and a magic spot for ferns and mosses. The area also includes the most The island is also noted for its bird life. 168 species have been

about 1830, the island is noted for its plant and bird life. Most of the island is dominated by rainforests and palm forests. There are

recorded at the island, some of these rare and endangered. The accidental introduction of rats in 1918 led to the extinction of 5 species. The island woodhen, a flightless bird, also faced extinction but a captive breeding programme has seen the number rise from about 20 to 220. It is now a relatively common sight on the island. Feral pigs and goats have also caused serious problems with the vegetation. The former have now been eliminated but not

The ferns of Lord Howe Island are listed below by family, with some notes from my visit in September 97.

ADMIRALTY ISLANDS C Floure 34 LORD HOWE ISLAND (contour interval 150m) Mi Etica 147m Old the latter. 31'31 Steven's Point Middle Beach

#### Adiantiaceae

#### Adiantum aethiopicum

Also occurs in Australia, N.Z. and South Africa. Large area observed on North Head.

#### Adiantum pubescens

Pubescent - covered with short white soft hairs. Occurs also in N.Z, Norfolk and Kermadec Islands. Very similar to hispidulum and may be reduced to a variety of hispidulum. Lamina undersurface has numerous long pale flexuous hairs. Common on L.H.I.

#### Adiantum hispidulum

Hispid - stiff bristly hairs. Similar to pubescens except that stipes are consistently rough, the fronds are not strictly pedate, and the lamina below has short ± rigid hairs less than 0.5 mm long. Observed on Malabar track.

#### Adiantum capillus veneris

Observed on the roadside not far from a house. Obviously a garden escapee but very likely to become naturalised.

#### Cheilanthes sieberi

Named after Franz Sieber, a Bohemian botanist who collected in N.S.W. Also occurs in Australia, N.Z. and New Caledonia, Observed on Malabar track,

Transit Hill Blackburn Island (Rabbit Island) Windy Poin Mutton Bird Isla Blinkle Beach Prince William Henry Bay Mutton Bird Point ediate Hill Lovers Bay ocky Run King SOUTH PACIFIC OCEAN Salmo Mt Lidabira Erskine Valle 150 Little Slope Big Slope

#### Cheilanthes distans

Distinguished from sieberi by the presence of ± dense scales on about 60 cm long, common on the top of Mt Gower. stipe and rachis. Also occurs in Australia, N.Z. and New Caledonia. Observed on North Head.

#### Pellaea falcata

Also occurs in Australia, N.Z., Kermadec Island and New (Small Rasp Fern) Occurs in rocky pockets. Caledonia. Observed along Malabar track.

#### Pellaea paradoxa

Not observed, has only been reported once on Malabar.

#### Aspleniaceae

#### Asplenium australasicum

Common, mostly seems to occur as a ground fern in contrast to Cyathea howeana the epiphytic habit on the mainland.

#### Asplenium goudevi

An endemic and a recently named fern honouring the current Cyathea robusta president of our Society, Chris Goudey. It is similar to A. australasicum but differs in that it has tougher, glaucous and whitish scales. Less common but widespread in lower to medium more obtuse fronds, and a more erect habit. It is a hardy fern, elevations. often growing in very exposed and rocky situations.

#### Asplenium milnei

lower regions.

#### Asplenium surrogatum

In the past mistakenly named as A. pteridioides because the original drawing of the latter included A. surrogatum in greater prominence. The species name denotes this history as the false or surrogate A. pteridioides. An endemic ground fern, it occurs at higher altitudes and has attractive fronds with deeply divided pinnae.

#### Asplenium pterioides

Endemic ground fern with small roundish pinnules. Rare, occuring on southern mountains. Not observed on this trip.

#### Asplenium polyodon

(Sickle Spleenwort or Mare's Tail Fern) Scattered occurrence noted at Boat Harbour, Goat House, and Smoking Ridge.

#### Athyriaceae

#### Diplazium melanochlamys

The species name means a black coat and refers to the black dusia. Endemic ground fern with fleshy fronds up to 11/2 metres long. Relatively common on southern mountains.

#### Blechnaceae

#### Blechnum patersonia

(Strap Water Fern) Rare, occurs on upper aspect of Mt. Gower. The fronds only occur in the simple form in contrast to the lobed fronds in specimens on the mainland.

#### Blechnum geniculatum

The species name refers to the sharp knee-like bend in the frond at the base of the lamina. Rare endemic ground fern occurring on tops of Mts. Gower and Lidgbird. Not seen on this trip.

#### Blechnum contiguum

The species name refers to the contiguous lobes of the fronds. Climbing epiphytic fern, with thick rhizome. Frequent on summits of Mts. Gower and Lidgbird. Also occurs on New Caledo-

#### Blechnum howeanum

Endemic ground fern with fronds over one metre long, it is relatively common on southern mountains.

#### Blechnum fullagarii

Named after James Fullagar who collected on L.H.I. for the

Botanic Gardens, Melbourne. Endemic ground fern, fronds up to

#### Doodia media

(Common Rasp Fern) Common in lower forest areas.

#### Doadia caudata

#### Cyathaceae

#### Cyathea macarthurii

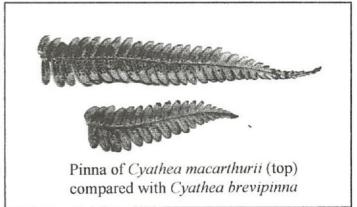
Is named after Sir William Macarthur, an early N.S.W. botanist. Endemic, trunk up to 4 metres tall, dark persistent frond bases. Common on southern part of L.H.I.

Endemic, trunk to 3 metres tall, stipe bases not persistent, stipe with few brown scales. Common on Mts. Gower and Lidgbird.

Endemic, trunk to 5 metres tall, stipe bases ± glaucous with

#### Cyathea brevipinna

Endemic, trunk 11/2-3 metres tall. Stipes with dense reddish Named after botanist William Milne who collected on L.H.I. A brown scales, occurs on higher parts, may spread by stolons. andsome endemic ground fern, common on calcareous soils in Pinnae are short with 14 pairs of pinnules compared with about 18 on C. macarthurii. (See illustration below)



#### Davalliaceae

### Nephrolepis cordifolia

(Fishbone Fern) Common, appears to differ from the mainland form by the absence of tubers.

#### Arthropreris tenella

The generic name refers to the jointed base of the pinnae. A common fern, climbing on trees or scrambling over rocks. Also occurs in Australia, N.Z. and Norfolk island.

#### Dennstaedtiaceae

#### Histiopteris incisa

Occasional patches.

#### Hypolepis elegans

The name refers to the elegant nature of the fronds. Common, also occuring on mainland and Pacific Islands.

#### Dryopterididaceae

#### Cyrtomium (Phanerophlebium) falcatum

(Holly Fern). A native of Japan, now naturalised on L.H.I. Scattered occurrence in the region of the settlement.

#### Polystichum whiteleggei

Named after Thomas Whitelegge of the Australian Museum. Endemic ground fern, somewhat leathery frond with a dense covering of scales. Relatively common on southern mountains.

#### Polystichum moorei

Rare endemic ground fern in rocky habitats near base of south- Huperzia varia ern mountains. Not seen on this trip.

#### Arachniodes aristata

(Prickly Shield Fan) Has been reported on the east side of Intermediate Hill. Not seen on this trip.

#### Lastreopsis nephrodioides

Endemic ground fern, scattered occurrence. As the sori mature Large ground fern, fronds up to 4 metres long. Rare endemic, the pinnules bend back so that the sori appear to be on the upper five plants noted in upper reaches of Erskine Valley. surface of the frond.

### Gleicheniaceae

#### Sticherus lobatus

Apparently only occurs on one spot at the southern end of the summit of Mt. Gower. Not seen on this trip.

#### Grammitidaceae

#### Grammitis diminuta

Endemic epiphyte. Fronds glabrous, 3-15 cm. long

#### Grammitis nudicarpa

Endemic epiphyte. Small finger fern, frond 2-8 cm. long, with dark bristly hairs.

#### Grammitis wattsii

Endemic epiphyte. Larger finger fern, fronds 6-25 cm. long, densely hairy. All three Grammitis species occur on the upper section of Mts. Gower and Lidgbird.

## Hymenophyllum howense

Fronds 5-12 cm long, 1/2-1 mm wide. Slender creeping rhizome. Endemic, observed on Mts. Lidgbird and Gower.

#### Hymenophyllum moorei

Frond 2-6 cm long and 1.5-2 mm wide. Slender creeping rhizome. Observed on Mt. Gower.



#### Cephalomanes bauerianum

(Large filmy fern). Named after Austrian botanical artist Ferdinand Bauer who sailed with Matthew Flinders, and who collected on Norfolk Island. Occurs on L.H.I. and Norfolk Island. Erect rhizome, fronds 15-50 cm long. Observed on Mts. Lidgbird and Gower.

#### Cephalomanes atrovirens

Ater (Latin) black, virens (Latin) green referring to the dark colour of the fronds. Erect rhizome, fronds 7-20 cm long. Rare, not observed. Also occurs in Australia and Pacific Islands.

#### Lycopodiaceae

Quite rare, occurs on upper aspect of Mt. Gower. Not seen on

#### Marattiacea Named after Italian botanist Giovanni Marratti. Marattia howeana

#### Ophioglossaceae

Two genera occur on L.H.I. In this family the sporangia are borne in a simple or branched spike which arises on the stipe of the lamina. Its name comes from Ophis Greek for snake, and glossa a tongue.

#### Ophioglossum petiolatum

(Adder's Tongue Fern) Terrestrial fern 10-20 cm tall, conspicuously petiolate leaves. Rare on L.H.I., observed on North Beach area. Dies down in summer.

#### Ophioglossum coriaceum

Similar to O. petiolatum, scattered occurrence, not seen.

#### Ophioglossum reticulatum

Also similar to O. petiolatum, rare, not seen.

#### Ophioglossum pendulum

Named in allusion to its pendulous fronds. Very dfferent appearance to the other Ophiglossums. Epiphytic fern, strap shape sterile lamina, 30-100 cm long, 1-3 cm wide. Rare on L.H.I., Hymen ophyllaceae Hymen - thin membrane, phyllum - a leaf. found growing on Platycerium bifurcatum. Observed near Boat

#### Botrychium australe

Small ground fern, 15-30 cm tall. Rare a L.H.I., not seen on this

#### Osmundacece

#### Leptopteris moorei

Named after Charles Moore director of Sydney Botanic Gardens who collected it in 1869. Delicate ground fern, fronds to one metre. Endemic, observed on Mt Gower.

#### Polypodiaceae

#### Platycerium bifurcatum

Very common, often found growing on rocks or continuing to grow after falling to the ground in contrast to the epiphytic habit on the mainland.

#### Pyrrosia confluens

Not common, observed growing on rocks on Malabar ridge. It has been reported to be slightly different to the form on the Australian mainland.

#### Phymatosorus (Microsorum) pustulatus subsp. howensis.

Differs from Microsorum pustulatus in that the sori are submarginal and deeply sunken, with the lamina almost pinnate. Endemic ground fern, fronds to about 70 cm, common.

#### Phymatosorus (Microsorum) scandens

Occurs on the southern mountains.

#### Psilotaceae

#### Psilotum nudum

(Skeleton Forkfern) Common, especially along boat harbour track often on rocks or in association with Platycerium bifurcatum. Also occurs on the mainland and New Zealand.



#### Tmesipteris truncata

Occurs as an epiphyte on tree fern trunks on southern mountains; Also occurs in NSW and Queensland.

#### Pteridaceae

#### Pteris microptera

The species name refers to the narrow wing on the rachis. Ground fern, fronds to 200 cm. Endemic to L.H.I., common.

#### Pteris tremula

Scattered occurrence on L.H.I.

#### Thelypteridaceae Christella dentata

Scattered occurrence.

-Barry White.

(At left) Leptopteris moorei



## INDEX FOR VOLUME 19 - 1997

Adiantums	8	Iridescent Ferns (Moran)	22
Annual General Meeting, notice of	53	Japan, Ferns of	58
Badger Weir Park, visit to	4	Kissane, Dick	26
Best, Ray	59	Knobloch, Dr. Irving W.	41
Blechnum nudum	84	Learning Your Way Around Ferns	31, 47, 60, 79, 95
Border Ranges N.P.	88	Lime Fern	68
Broughton, Ian	69, 88	Maidenhairs	62
Cheilanthoids	10	Mesozoic, hangers-on from	73
Christmas Function	83	Moran, Robbin C.	22, 73
Classification & Genealogy of Ferns	92	Motion, notice of	78
To Coil or Not To Coil	41	Mounting Platyceriums	90
Collecting and Mounting Ferns	26	My Favourite Fern	56
Ferns Don't Like It Acid	28	New Fern Books	21
Fern Show 1997	9, 20, 39	Photography, Mainly Ferns	37
Fern Show 1998	50, 90	Platyceriums, mounting	90
Fern World (S.D.F.S.)	92	Pneumatopteris pennigera	68
Fiddlehead Forum	22	Propagation by Rhizome Cuttings	69
Financial Ststement 1996-97	76	Pteridologist, The	28
Flora and Fauna Act, changes to	72	Rhizome Cuttings, propagation by	69
Fraser Island and its Ferns	52	San Diego County, Ferns of (Halley)	5
Frost Cloth	94	San Diego County, Ferns of (Witham	) 14
Fuller, Don	52	San Diego Fern Society	92
Garrett, Michael	21	Smith, Dr. Alan R.	92
Goodall, Kathy	90, 94	South Florida Fern Society	41
Goudey, Chris and Lorraine	7	Subscription change	34
Goudey, Christopher	8	Subscription Renewal Notice	53
Gresham, Lyn	31, 47, 60, 79, 95	Tasmania, Ferns of (Garrett)	21
Hainsworth, Peter	28	Todea barbara	89
Halley, Robin	5, 10	Tree Ferns, secret life of	13
Hangers-On Fron the Mesozoic	73	Turney, Terry	31, 47, 60, 79, 84, 95
Hutchinson, Keith	37	What's In A Name?	84
Identifying Ferns	42	What To Do About Ferns (Thomas)	29
Indigenotes	13,	White, Barry	42, 58, 62, 68,
Inter-Society Day at Lara	7	Witham, Helen	14

### SPEAKER REPORT - MEETING of OCTOBER 1997.

## PROBLEMS WE HAVE ENCOUNTERED AND SOLUTIONS WE HAVE DISCOVERED.

Many members were involved.

#### BENLATE FUNGICIDE

#### Where do I get Benlate?

In the last newsletter, it was reported that when dividing ferns, in particular the Clubfoot Fern (Polypodium formosanum cv. Cristatum) the freshly cut or broken end can be covered with potbound. Benlate to prevent rotting.

cide, the good news is that you should relax. The bad news is contain leaf mould, propagating sand, 6mm pine bark, cow that it appears to be no longer available, at least retail.

Ian Broughton says it smells a lot like sulphur so we think sulphur powder or a similar fungicide may do the same job. gested.

#### FUSSY FISHBONE FERN

Nephrolepis do not seem to like being cut back. How can we 'smarten up' tired plants?

Before the days of tissue culture, Chris and Lorraine Goudey grew lots of Fishbone Ferns including the fine, frilly etc. varieties and found that it was best to keep the young ferns that grew around the edge of the pot and discard the old ones in the middle, thus renewing the plants continually. Many people have Let's talk about Elks. found the same thing.

ing high light and warm, moving air. They stay nicer, longer.

#### POTTING UP

When I buy ferns that are rootbound to the point where the roots are matted around the edge of the pot and pot them up 'to the next size' (say 4 to 5), by the time they start to grow they're already potbound again. On the other hand, I think I've lost some ferns because I went to the opposite extreme.

Regardless of the common belief that it is best to pot up one size, many members agree with the above statement for all potting on. About two sizes, more in the bigger sizes, up is not a bad rule of thumb. (From size 4 to 5 is in inches. That's from 100 to 125 mm., giving only 1/2" or 12 mm growing room all around before the roots again reach the edge.) If you're potting up at the right time of year (not winter) and the medium is open enough, that should be fine.

I still can't seem to get my potting mix right. I bought the Debco tub one with water-saving pellets, potted most of my ferns into it (they're under shadecloth or fibreglass with plenty of ventilation) and don't think I've ever lost so many as I have this year. Maybe I underestimated the water saving properties in this medium and assumed that they needed a drink when the top was dry and this was not the case. I've almost come to the conclusion that I should leave them in the original pot for a season to acclimatise to my conditions. Any suggestions?

The water-saving products can be a bit tricky to use at first. The 'normal' rules don't necessarily apply so we have to go very

carefully for awhile until we get used to how they 'work' in our individual situations.

As for leaving them in the original pot for a season; well, this might be a good idea unless the fern is, or becomes,

Doug Thomas' mixes as published in "What to do about To those who have been desperately seeking Benlate fungi- Ferns" (available from our Society) are recommended. They manure, peat moss and a little charcoal. The epiphytic mix has tree fern fibre added. Quantities are listed in the booklet.

Dynamic lifter or a slow-release 'bead' fertiliser and Satu-Mancozeb, a broad spectrum fungicide, was one that was sug- raid granules can be mixed through a good quality, 'plain' commercial potting mix with good results.

> If adding blood and bone when potting a plant, it is a good idea to mix it with the last half inch of potting mix. If it is mixed in with all the medium it can get locked up (become unavailable to the plant). If spread on the surface it can form a crust when it gets wet which prevents water and air from entering the medium.

#### ELKHORN FERNS

Platycerium bifurcatum and P. veitchii

Keith Hutchinson; Quite often when I lift them down I find that One person said that Nephrolepis are happiest when receiv- in the gap between the backing board and the wall small elks have grown. They need removing but are too small to mount on a board. However, I have had some success with putting them in a pot of epiphytic mix. After about three months they are big enough to mount successfully, potting mix and all.

This is an excellent time of year to feed Elks and Stags. I place 1/2 teaspoon of Osmocote in the centre of a ball of sphagnum moss, tighten the ball so the fertiliser is not going to be touching the fern and push it right down between the topmost nest frond and the backing board. I get tremendous growth from doing this. I tried it with dynamic lifter and didn't get half the result, which I find strange because that would be closer to the way the Elks would be fertilised in the forest.

I also check that the fern is firmly held to the board as any air getting to the root system is deadly in hot weather. Sphagnum moss can be tucked in around the edges if necessary.

Now is the time of year to get rid of any Staghorn Beetle because they will be coming out to breed soon. To do this, I cut the affected fronds off and put them in a plastic bag which then goes in the rubbish bin. He certainly wouldn't put them in the compost bin / heap and now that we're not allowed to burn anything this is the best we can do.

The Silver Elk is quite a hardy plant. It tolerates frost (but not as much as I get in inland Vic, as I proved last winter...ouch! - Ed.), is quite happy in direct morning sun and Keiths only get a fortnightly watering in summer. In winter they may not need any. It also seems to resist the Staghorn Beetle better than the other species. Chris reminded us that on Lord Howe Island the Silver Elk thrives on extremely exposed rocks, forming massive colonies in places. More of that in Barry's talk.

#### FIRST AID?

\*\*Quoted from a magazine, "If you have a sick fern, give it ify soil. a dose of caster oil mixed with detergent". What do mem-

We decided not to endorse this one!! Someone said that it'd clean it out, at least!

\*\*Epsom Salts is good for many sick plants - it is magnesium sulphate heptahydrate (Well, that's what my dictionary says).

\*\*Black hands. When Chris had finished spreading ferrous sulphide around, his hands were BLACK. Lorraine suggested fine until last year when we had no end of trouble. I did a pH that he rub them with a cut lemon. After about 1/4 hour they were test on that and it was up to about 9! I dug in a whole heap of clean.

#### LOW PHOSPHORUS FERNS.

Don; Ian, I've heard you talk about ferns that don't like phosphorus from time to time. Would you like to elaborate produces lime, sometimes in toxic amounts. I find the black on that?

Gleichenia (Coral Ferns). When I was making my own mix with portance of potash for plant cell division. When you're growing mountain soil in it I grew fantastic Coral Ferns but when I fruit trees, particularly, you can see the importance of potash in moved to Debco mix with no soil in it I grew fantastic compost. the fruit - you'll get bigger fruit with potash. However they What I didn't compost at tube size I threw out from either 5" or overdid it and it took about ten years to leach it out of the soil. 7" pots. I sold a few but almost all of them expired, it was just a matter of when. Eventually I felt it was phosphorus so tried the low phosphorus Osmocote (the one for Australian natives) and 64% is waste matter but if you look at superphosphate, 11% is superphosphate in the potting mix. Once again I could grow available. I think sulphate of ammonia is about 16% available, fantastic Coral Ferns - but by then Ray couldn't propagate them urea is about 26%, something like that, and nitrate of potash is for me any more so that was the end of Coral Ferns for me.

Chris; I've found the same thing with lots of ferns, particu- Another important point, I never use muriate of potash larly some of the Lastreopsis from Norfolk and Lord Howe (potassium chloride) as its residue can cause salinity. I prefer Islands etc. I could grow them really well in the old compost mix sulphate of potash or if using in liquid form, nitrate of potash as but in the commercial mixes with ordinary Osmocote I had all this supplies both nitrogen and potash in which small amounts the trouble in the world.

(which is why we had Nauru dug up and shipped over) so it's 2.6% with 18.6% urea which must have bacterial action in the reasonable that our ferns may have a tendency to not like too soil before it can be available so cannot be absorbed through much.

#### POTTING MIXES

There was a lively, general "what's wrong with commercial potting mixes" discussion and the gist was that we had found a lack of uniformity within the one brand (not only in the cheap ones), a lack of healthy, organic material, some toxic mixes and a few 'I know what my local bloke puts in his and it's not going into MY pots' stories.

The point was made that some organic material is needed in potting mix to get bacterial action back, so that the plants can absorb plant food.

#### LOWERING THE pH

Chris told the story of the Maidenhairs he bought sick and subsequently nearly killed with the treatment he chose. The pH of the mix was 7.8, too high to allow the plants to take up nitrogen. The quickest way he knew to lower the pH is with ferrous sulphate (sulphate of iron) so he sprinkled the powder dry in the pots and watered it in. They all went green - then brown.

Don; I routinely add a bit of lime (which raises the pH) to my potting medium when mixing it in the understanding that ferns generally prefer a slightly alkaline soil. Is that wrong?

Keith; The quality of your ferns, Don, seems to prove a small addition of lime is advantageous.

Did you try sulphur, Chris? It is slower but much safer to acid-

Regarding pH, the reading is logarithmic; if you've got 5, then 6 is ten times higher, not one, 7 is a hundred times higher, and 8 is...well...VERY high. Above 5.6 Iron is not available to a plant. The Iron might acidify the soil but the plants still can't absorb it.

Chris; Every year we have a lot of branches etc to dispose of from our garden. We burn them and consequently end up with a huge pile of ashes. I often use this when making a new garden, digging it into the soil and mixing it all up. That was ferrous sulphate and got it what we thought was pretty right, but we've lost a lot of plants in that garden. Kevin Heinze says you've got real problems if you use too much ash. What is it?

Keith; When wood is burnt it produces potash but also wood ash (like charcoal) OK but the greyish powder seems to Ian; The ones I had a lot of trouble with years ago were the be the toxic part. Back in the '30s the Germans realised the im-

Chris; So you can have too much potash?

Keith; You can. Sulphate of potash is 46% available so higher again.

are absorbed by the foliage giving very quick results. Phostro-Keith; Australian soils generally are low in phosphate gen has high nitrate of potash content 8.2%. Aquasol has only foliage.

> (My thanks to Keith Hutchinson for rewriting sections headed "Elkhorn Ferns" and "Lowering the pH" to clarify some points.)

## Snippets

## Roundup Kills Frogs?

A recently published report by the Western Australia Department of Environment Protection showed that "Roundup 360" weed spray was capable of killing frogs and their tadpoles. Liberal MP Richard Evans has called on the Federal Government to urgently commission studies into the chemical and its use. Source: Parkwatch December 1995

Taken from "Indigenotes", newsletter of the Indigenous Flors and Fauna Association Inc. -February 1996. A recent follow-up article appears on page 12.

## The round up on 'Round Up'.

#### By Russell Irving

Environmental weeds are a major threat facing our coastal environment, and commonly available glyphosate-based herbicides such as Round Up and Zero have become invaluable weapons in our fight against these invasive plant species. In the light of a special National Registration Authority for Agricultural and Veterinary Chemicals (NRA) review, the use of glyphosate based products in and around aquatic environments will be restricted from 30 June this year. Groups currently using such products need to be aware of the concerns about the environmental effects of glyphosate based formulations and how changes in the current regulations effect their use in and near aquatic environments.

Roundup is one of the most extensively used herbicides for agricultural and environmental weed management. It is described as a non-selective, non-residual, post-emergent herbicide - i.e. it kills all sorts of leafy plants, leaves no active toxins in the soil and works on the fully-leafed plant, rather than on the seed or root. The glyphosate is absorbed by leaves and green stems and by roots to a much smaller extent. A wetting agent (also called a surfactant) is used in commercial glyphosate formulations to assist absorption into the plant.

Roundup is broken down in the soil through bacteria and microbial activity and has an average half life of 60 days (i.e. the time for half of it to break down). This does vary significantly depending on the level of microbial activity and soil structure and is considerably longer in dry, sandy soils or in water.

Glyphosate itself is regarded as being relatively non-toxic to animals compared to other herbicides, however the wetting agent with which it is generally combined has been found to be extremely harmful to frogs and tadpoles. In 1995 the WA Department of Environmental Protection released a report prepared by researchers from Curtin University of Technology. The report entitled the "Acute Toxicity of a Herbicide to Selected Frog Species" found that the glyphosate/surfactant formulations were ten times more toxic to tadpoles than technical grade glyphosate, probably due to the surfactant.

Given the widespread use of these chemicals the NRA decided to re-evaluate existing data. They investigated the aquatic use of 84 glyphosphate products sold in Australia. Companies with products that contain glyphosate submitted data but no additional tests were done. According to the review "there is no evidence in the scientific literature to link the use of glyphosate products with toxic impacts on aquatic fauna in the field" however anecdotal reports continue to be received so it was decided to improve the margin of safety by changing the regulations.

"We concluded that the aquatic toxicity of currently registered products containing glyphosphate is undesirably high - not due to the glyphosphate - but to the spreading agents used in the formulations." said Professor Ben Selinger, NRA Chairman. "Aquatic use of currently registered glyphosphate products will be phased out by 30 June 1997".

With the banning of Roundup for use near aquatic areas from July 1997, Monsanto released a new product, 'Roundup-Bioactive' which they claim is less toxic to tadpoles, frogs and fish. It has passed the new NRA standards and has been registered for use in or near these aquatic areas.

Frog expert Professor Michael Tyler from the University of Adelaide still recommends that the new product be used with "considerable caution" in areas such as fresh water estuaries in the absence of further toxicological data. In addition to this warning, the following general points should be noted when using Roundup or Roundup-Biactive:-

- always follow the manufacturers warnings and safety precautions and only use the recommended rates for application (excessive rates are not only potentially environmentally damaging but also reduce the effectiveness of the herbicide as the plant is killed before it is transported to all parts of the plant).
- " use with particular caution in coastal environments where the breakdown rate is slow due to the high sand content in the soil and low microbial activity.
- apply herbicides when the plant is actively growing to increase its effectiveness
- don't apply when rain has been forecast to minimized runoff and impact on non-target species.
- apply using ropewick application, painting onto cut stems, injection into stems or shielded sprayers to minimize non-target plant injury.

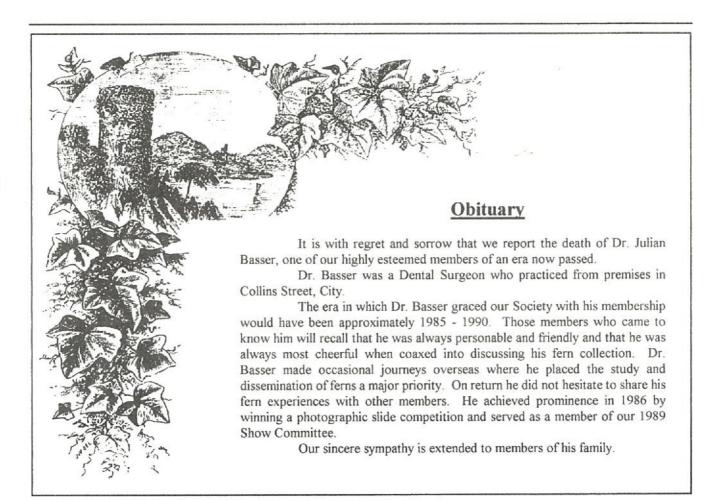
The NRA review report and fact sheet are available from Catherine Harrison, NRA Chemical Review Section on (06) 272 3213.

This article is reproduced in full from "Indigenotes" newsletter and used with thanks. **From** time to time the Committee hears that a member hasn't renewed their subscription because of having lost the renewal form. As long as you enclose your name and address with your cheque and state the type of membership it is, it will be renewed. However, those who still haven't paid their 1997-98 subs may prefer to use the copy below. If you don't want to cut it out, a photocopy will be fine. Please note; **your 1998-99 membership is not due for renewal until 1st July 1998.** You will be receiving the usual notice and form with May-June's magazine. This is just a spare.

Of course, you can also use this form to sign up a new member. Please do!

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# LEARNING YOUR WAY AROUND FERNS 6. PINNULE TIPS.

## Lyn Gresham

acerose Narrow with a sharp, stiff point.

acicular Needle-shaped. acrophore Apical stalk.

acroscopic Directed towards the frond apex.

acumen The point.

acuminate Tapering to a long, drawn out point with the sides more or less concave.

acutate Slightly sharpened.

acute Sharply pointed; evenly narrowed into a point at an angle of less than 90°.

antrorse Directed toward the apex.

apex Tip or summit of an organ.

apical At or towards the tip of an organ.

apiculate Ending abruptly with a short, sharp point.

arista A stiff bristle terminating a frond.

aristate Having an arista.

attenuate Tapering slenderly to a point.

bifid Divided into two parts in fishtail fashion.

capitate Shaped like a head. Having an enlarged head, as a pin. Having an enlarged apex.

Tip of frond crested eg., Athyrium filix-femina.

caudate Tailed excessively acuminate so that the tip is long and weak.

corymbiferous Tip of frond broadly bunch crested, tasselled.

corymbose See corymbiferous.

cristate Crested. With an irregular or toothed ridge or flap at frond / pinna apex.

cuspidate With the apex abruptly narrowed to a sharp, firm point.

distal Towards the free or developing end of an organ.

draining-point The acuminate apex of a frond or pinna from which water drips or drains.

drip-point See draining-point.
elongate Drawn out in length.
emarginate Notched at the extremity.
hamata Hooked at the tip.

involute Rolled inwards or towards the adaxial (upper) side.

mucronate Produced into a short, sharp tip.

multiceps Many headed.

muticous Blunt. Lacking a distinct process.

obtuse Evenly narrowed into a blunt or rounded point, at an angle of 90° or more.

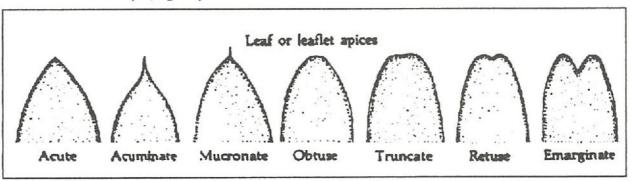
pungent Ending in a rigid or sharp point (Also means acrid to taste).

retuse Having the apex rounded with a small notch.
revolute Rolled downwards or to the abaxial (lower) side.

truncate With the (base or) apex flattened abruptly as though cut off.

ultimate At the tip. The most distant.

vertex Apex, highest point.



The above diagram is taken from the Encyclopaedia of Ferns (D.L.Jones) with thanks.

Apart from Terry Turney's input, the information in this series is gleaned from glossaries found in many fern books. I am probably learning more than you are whilst compiling it.

## SPORE LIST

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

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

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Thank you to the following spore donors: Ray Chivers and Lorraine Deppeler

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

## BORDER BO

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

## BUYERS' GUIDE TO NURSERIES.

#### VICTORIA:

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

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

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

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

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

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

Retail each Saturday and Sunday at Upper Ferntree Gully Market (railway station car park) Melway Ref, 74 F5. Wide selection of native and other ferns. Fern potting mix also for sale.

Fern Acres Nursery - Retail phone (03)5786 5031. 1052 Whittlesea-Kinglake Road, Kinglake West 3757. On main road, opposite Kinglake Primary School. Specialising in Stags, Elks and Bird's-nest Ferns.

**Fern Glen -** Wholesale and Retail Phone (03)5629 2375, D & I, Forte, Garfield North 3814. Visitors welcome.

Kawarren Fernery - Wholesale and Retail. Phone (03)5235 8444. Situated on the Colac-Gellibrand Road, Kawarren (20 km south of Colac),

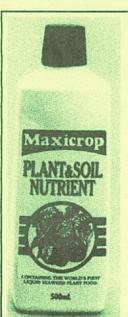
The Bush-House Nursery - Wholesale and Retail. Phone (03)5566 2331.

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

#### **NEW SOUTH WALES:**

Kanerley Fern Exhibition and Nursery - Wholesale and Retail. Phone (049) 872 781. 204 Hinton Road, Osterley, via Raymond Terrace, 2324. By appointment.

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