# THE FERN SOCIETY OF VICTORIA Inc.

PRINT POST APPROVED PP334633/0002

# NEWSLETTER

VOLUME 18, Number 3

May / June, 1996

# FERN SOCIETY OF VICTORIA Inc.

#### POSTAL ADDRESS:

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

#### **OFFICE BEARERS:**

President:	Chris Goudey	Phone (052) -82 3084	
Imm. Past President:	Barry White	" <u>9337 9793</u>	
Vice-President:	George Start	" (059) 62 5059	
Secretary:	Lexie Hesketh	" 9499 3974	
Treasurer:	Don Fuller	" <u>9306 5570</u>	
Membership Secretary:	John Oliver	" 9879 1976	
Spore Bank Manager:	Barry White	" 9337 9793	
Editor:	Lyn Gresham	" (057) 96 2466	
Book Sales:	Ivan Traverso	" <u>9836 4658</u>	
	(19 Alta Street, Canterbury, VIC, 3126)		

**COMMITTEE MEMBERS:** 

SU

Jean Boucher, Simon Hardin, John Hodges, Norma Hodges, Ruth Illingworth, Joan Rowlands, Cheryl Shelton

IRSCRIPTIONS.	Single -	\$15.00	(Pensioner/Student - \$11.00)
boenn nono.	Family -	\$18.00	(Pensioners - \$13.00)
	Overseas -	A\$30.00	(by Airmail)
	Subscriptions fall due on 1st July each year.		

# **PRESIDENT'S MESSAGE:**

Please accept my apologies for not attending the last General Meeting, as Lorraine and I were working day and night on our stand at the International Flower and Garden Show in Melbourne. We also missed the Committee Meeting, so I am not in a position to pass on any of the business that was discussed at the meeting.

At our March General Meeting, I had much pleasure in presenting Bernadette Thompson with a beautiful hand-made wooden clock for her outstanding service to the Society over many years.

Special thanks must go to Don Fuller for the very high standard of our Fern Show this year. The venue was larger that what we have been accustomed to at the Herbarium. It was a shame that our attendance was down on previous years.

Thanks also to Mary Frost for judging the competitive side of the show. Mary was awarded a hand-made wooden clock in appreciation.

George Start hand-crafted the beautiful clocks that were presented to Bernadette and Mary.

At our May meeting lan Rogers, the Superintendent of Parks and Gardens for the City of Geelong, will be speaking on the giant fernery which was once the pride and joy of the Geelong Botanical Gardens. The title of his talk will be, 'The Rise and Fall of Geelong Botanical Gardens'.

The June meeting will be a problem night. At the editor's request we will call it, 'Oops! the Wheels Fell Off My Fern'. In July, Ray Edwards from Cool Waters Fern Nursery will be speaking to us, but as yet, we have no title.

Don't forget our new venue at the Victoria Bowling Club for our next meeting; full details, including a map, are included in this newsletter.

Chris Goudey.

#### FORTHCOMING MEETINGS

#### (1) THURSDAY 16th MAY, 1996

Topic: The Rise and Fall of Geelong Botanical Gardens Fernery.

Speaker: lan Rogers.

#### 2 (2) THURSDAY 27th JUNE, 1996

#### Topic: 0ops! The Wheels Fell Off My Fern! (Problem night - bring yours).

Leader:

VENUE: Victoria Bowling Club, 217 Grattan Street, Carlton. (Refer below for full directions and map.)

#### MEETING TIMETABLE:

- 7.30 p.m. Pre-meeting activities -Sales of Ferns, Spore, Books, Merchandise and Special Effort Tickets Library Loans
- 8.00 p.m. General Meeting
- 8.30 p.m. Topic of the Evening
- 9.30 p.m. Fern Competition Judging Fern Identification and Pathology Special Effort Draw.
- 9.45 p.m. Supper
- 10.00 p.m. Close
- FERN COMPETITIONS:
  - May An Asplenium.
  - June A Fern with Creeping Rhizome.

July - A Selaginella.



#### DIRECTIONS TO NEW MEETING PLACE.

Our new venue (see address above), being right in the city, should prove to be quite central for the greatest percentage of our members. It can be found on Melways map 2B, ref. C/D-8. There is ample off-street parking so enter from Grattan Street. There will be a 'sandwich board' sign on the footpath against the street with FERNS $\rightarrow$ , directly outside and opposite the drive for this meeting, so watch for that. Other good landmarks are Gate 6 of Melbourne Uni (opposite) and a set of pedestrian traffic lights right at the entrance.



# NOTICE OF ANNUAL GENERAL MEETING

The seventeenth Annual General Meeting of the Fern Society of Victoria Inc. will be held at 8.00 p.m. on Thursday, 15th August 1996 at the Victoria Bowling Club, 217 Grattan Street, Carlton.

Business to be transacted will be:

- 1. Receive and deal with the President's Report on behalf of the Committee of Management.
- 2. Receive and deal with the Treasurer's report.
- 3. Election of Office Bearers and Committee Members of the Committee of Management for 1996-97.
- 4. General Business.

#### Nominations for Committee of Management

Nominations are now called for the positions of Office Bearers and Committee Members for the year July, 1996 to June, 1997. Nominations should be in writing, be signed by the proposer and seconder, and include the written consent of the nominee. They must be received by the Secretary not less than seven days prior to the Annual General Meeting. Nominations may be called at the Annual General Meeting only if insufficient have been received previously to fill all vacancies.

# **General Business**

Items to be discussed and voted on under General Business at the Annual General Meeting must be notified to the Secretary in writing not less than 21 days prior to the Meeting.

# Lexie Hesketh Hon. Secretary

# MEMBERSHIP SUBSCRIPTION RENEWAL

Membership subscriptions for 1996/97 fall due on 1st July. Rates will be the same as those shown inside the front cover for the current year.

An application form for renewal of membership is included with this Newsletter. Prompt payment of your subscription is requested as late renewals cause extra administrative work.

# CONGRATULATIONS

Congratulations are due to Lorraine and Chris Goudey on their outstanding success at the recent Melbourne International Flower and Garden Show, held at the Exhibition Building and surrounding Carlton Gardens. Lorraine and Chris were awarded a Gold Medal for the excellent condition of their plants. I didn't get to the Show but from all reports every aspect of their display was very impressive.

# OSMOCOTE SALES SUSPENDED

Sale of slow-release plant food will resume after winter. There are still lined baskets, plant markers and pens, books etc. available at very competitive prices, at monthly meetings.



# FERN SHOW 1996 Don Fuller

Fern Show 1996 was held on the weekend of March 30th - 31st at the Waverley Campus of the Holmesglen College of TAFE. The display was located in the auditorium and fern sales in an adjoining classroom. The weather was very warm for setting up on Friday but fairly fine for the weekend.

Our display consisted of two excellent specialist displays, one on each side of the auditorium, and other members' ferns. In the centre of the auditorium was a pergola for hanging baskets and next to it a circular display featuring various species of tree ferns. Ferns entered in five of the competition categories were displayed on a low dais at the front and on one side, while the balance of competition entries were on the pergola. Board-mounted ferns were hung on a vertical wire mesh display 'board'.

Located just inside the entrance was an excellent and fascinating large display of fern memorabilia put together by Mary and Reg Kenealy of Marysville. It featured many fine old items of glassware and cloth with fern motifs, and old photographs and posters relating to the forest, with its lush fern areas around Marysville. Also displayed was the "Visitors Book of Keppels Australia Hotel, Marysville", kindly loaned by the Marysville and District Historical Society. This book contains entries of botanical significance made in 1877 by two noted botanists. In it they recorded the identity of ferns and other plants found in the Marysville area. A report on the contents of these entries was published in our newsletter Vol. 17 No. 3 in the May 1995 issue. Thanks to Mary and Reg for arranging this display.

This was the first year that ferns had to be specifically entered in the Fern Competition. The number of entries in most categories was reasonable but several were light on.

Despite the fact that the facilities at the venue were excellent and the number and standard of the exhibits were considered by many to be the best for several years, the attendance by the public was disappointing with the result that the show will not provide the financial benefit we had hoped for. Although not a financial success the Show proved to be a great social occasion for the Society members present.

The staging of the Show required a lot of effort by many people. Sincere thanks is extended to all those who entered the competition, contributed to the display, gave their time and effort to setting up and running the Show and helped clean up afterwards. Thanks also to our competition judge, Mary Frost and to Multicrop (Aust) Pty Ltd who provided the fine product samples and sponsored our fern competition.

#### \*\*\*\*\*\*\*

# FERN SHOW COMPETITION RESULTS

Adiantum Asplenium Blechnum Davallia Platycerium Polypodium Pteris Fern in Hanging Container Any Other Fern BEST FERN IN SHOW

Dorothy Forte Betty Allgood Chris Goudey Don Fuller Dorothy Forte Dick Kissane Don Fuller Betty Allgood Don Fuller Don Fuller Don Fuller **Dorothy Forte** Don Fuller Don Fuller Dorothy Forte Jack Barrett Chris Goudey lan Broughton Dorothy Forte

Adiantum 'Gold Else' capillus-veneris 'Banksianum' Asplenium scolopendrium polyodon Blechnum spicant 'Lobatum' patersonii Davallia plumosa pyxidata Platycerium veichii hillii Polypodiun aureum 'Mandianum' loriceum Pteris dentata fauriei Asplenium sp. (New Caledonia) aff. flaccidum Paesia scaberula Lygodium japonicum Adiantum 'Gold Else'.

### UNCLAIMED FERN FROM SHOW

\*

One magnificent Adiantum 'Triumph' which has enjoyed the holiday but wants to go home now. Contact Don Fuller to make a fern happy.

\*

# SPEAKER REPORTS From the Meeting on 18th April, 1996.

The Society was very fortunate to have four speakers in April; the three scheduled ones and as an bonus, Mr. Ron Robbins, visiting from South Australia. Ron spoke on Drynarias and also brought a number of Platycerium eppley which soon had new owners! Thank you to all the speakers for a very interesting evening.

"A couple of months ago S.A.F.S. had some beautiful specimens at their Drynaria night. Some of mine this year had up to 50 fronds, many being up to a metre long. Having a long, hot summer seems to have agreed with them. My mixture consists of mostly tree fern fibre, some very coarse charcoal and a small amount each of sphagnum moss, peanut shells and elk peat. Next time I'll add some oak leaves to give it a bit more nourishment. I grow under 70% shadecloth all year, not under fibreglass at all, and have had up to 40 or 50 shield fronds on common rigidula, though the others have been reluctant to set nest fronds. I fertilise with a teaspoon of dynamic lifter each side which I top up with Sea Gold. Sea Gold is reputed to control thrip and though I don't know how it works, I've had thrip on about two fronds this year, whereas I have usually had such an infestation that I haven't been able to control it and have had to cut off most of the fronds. Your growing conditions and ours vary greatly so of course my methods won't always work for you. In general though, I believe that early morning sunlight benefits all ferns, particularly Platyceria and Drynaria, and growing under 70% shadecloth is very good for air circulation. I have had the common problem of mealy bugs," said Ron.

# GROWING DRYNARIAS. Ron Robbins

We learned that he lives on the plains between Adelaide, and the sea, and has had about 5 frosts in the last 5 or 6 years. h



DRYNARIA RIGIDULA a) Section of fertile pinna b) Scale

"It is interesting to discover the different cultivation methods with which people have success. Beryl & Jim Geekie in Sydney have theirs in a partly glassed sunroom with a lot of air circulation and direct late afternoon sun, and use 40% sawdust, pine bark, trace elements and sand. For winter they move them into a less exposed position. In Queensland they are grown in pure bark very successfully." Ron gave us spore propagating recipes which he uses; 1 part elk peat (mulched dead elk fibre), and 2 parts coarse river sand. This has been particularly successful with *Platyceria*.

Sydney pine bark with their

basic mix of composted

A good general fern one is 1 part treefern fibre to 2 parts sand.

One from Judith Marley consists of a bucket of sand, three quarters of a bucket of peat, a teaspoon of sulphur, a teaspoon of trace elements, and a teaspoon of dolomite. Ron pricks out Platyceriums into hand rubbed sphagnum moss, elk peat and charcoal. From there they are potted out into elk fibre (cut up, not mulched and therefore coarser), pearlite and oak leaves. He had samples of these to show us. Jim Geekie uses equal parts sand and peat.

"You people will certainly have ideas that we can implement on growing ferns and likewise we can probable suggest things that will work for you. I bring the thought that if we share and share alike it will be to our mutual benefit. Surely this is what we should all be doing.



# INTERNET NEWS

Our Club Secretary has passed on to me two Internet addresses which will be of great interest to fernists who have access to this facility. They are;

San Diego Fern Society: http://inet1.inetworld.net/~sdfern American Fern Society: http://www.visuallink.com/fern

# POTTING MIXES - CUSTOM BUILD YOUR OWN. Bill Taylor

Bill related his disastrous experience with maidenhair ferns. He believes that sand which he bought had a high salt content which burnt off the root system of his Adiantums. He used to use fine pine bark, 13 ml. pine bark and mixed, shredded leaves of plane, oak and liquidambar trees. These leaves were set aside for 6-8 weeks before being incorporated into the mix, just long enough for them to begin to break down. After a year in use, some of these had broken down completely, supplying nutrients and holding water, while others remained quite fibrous, keeping the mix open, sweet and free draining.

The sand he used was good, coarse, washed river sand. Bill warns that fine sand is very water retentive and so can cause root problems. He recommends that sand be sieved to remove these fine particles.

Other ingredients you may want to use are compost, sandy loam, and any parts of Bracken or tree ferns (mulched). All are excellent. Useful additives include zeolite, a mineral mined in Queensland. Water drains through coarse



mixes rapidly, leaching out nutrients. Zeolite in the mix absorbs nutrients from it, and holds them until the plants need them. Vermiculite could be useful as a 'water saving granule' but care must be exercised because it is extremely water-absorbent. Bill does not recommend vermiculite in fern culture for any other use.

Lignipeat (granulated, not powdered, brown coal) is excellent in small amounts in a spore culture medium - if it is available. Incidentally, Bill only uses solid fertilisers so didn't give any advice regarding the liquid forms.

#### Recipe corner!!

From Jean Boucher; 3 parts compost, 1 part each of shredded tree fern fibre, shredded leaves, rice hulls, horse manure, sheep manure, macadamia nut shells, and a quarter part each of dynamic lifter and hoof & horn.

Harold Olney grew magnificent tropical Maidenhairs in pure shredded leaves. He used a lot of liquid fertiliser and may have used a bit of hoof & horn.

It was normal practice at one time to raise ferns from spore on pure sand.

Bill uses shredded leaves when mounting epyphitic ferns instead of sphagnum moss, and has much better results.

Bill urged us to try 'anything that looks organic' to which we have access in our mixes, plant a couple of fern varieties in it and see how it goes. Everyone can develop, improve and adjust their own mix according to what's available to them.

# FROM THE EDITOR

\*\*\*\*\*\*\*\*

Here I am, trying to put together my first Newsletter and wondering how on earth I talked myself into THIS one! You might be, too. Well, as a member who until recently couldn't get to meetings regularly, I know how much I valued my 'lifeline to the Society' and all it brought me - news of regular and special Society events (some of which I could attend and how I enjoyed that!) and lots of great information about my gardening passion -FERNS - through speaker reports and other articles. I couldn't NOT do something to keep the Newsletter going for the many other members who can't get to meetings.

I'm feeling extremely inadequate. Following two excellent 'acts' in Terry Turney and Bob Lee is certainly daunting. They are both talented editors and both very knowledgeable on many aspects of ferns and fern culture and I am grateful to them for much guidance in getting started and for offers of writing and editing articles in future.

As you probably gathered, we reproduce material from other Societies' newsletters reasonably regularly and, while we appreciate their generosity, and this is of great benefit to us, we really should be able to publish more of interest and significance from among our own members. If you can think of it as pooling information maybe it won't be quite as impossible for you to contribute something. Whether you submit 1,000-word essays or brief hints, tips, opinions, questions, news of what's been happening in your fernery or fascinating facts you come across (e.g., Did you know that 1,200 individual spore will fit on a pinhead? That's seriously small!!) it will be very welcome, believe me. Maybe we could have enough of these for a regular Members' Forum column. But even some to fill gaps here and there would be great. Thank you to the member who has already offered to 'have a go' for the first time.

Maybe members would be interested in hearing about places you have visited which are particularly beautiful, interesting, ferniferous (did I just invent a word??) or otherwise noteworthy. PLEASE give precise directions to get there. For me, six or more ferns constitute an interesting stop on a trip. You don't have to know much about ferns to be ahead of me, so let's hear from you soon.

Constructive criticism and suggestions for improving the Newsletter will also be received at least graciously. If I can come even close to the standard of newsletter you have become used to, I will consider that I'm doing well.

#### DIVIDING AN ELK FERN Keith Hutchinson

When my elk ferns become too large for the backboard I remove the outside sections and set them on new backs. I do this with a fine, narrow bladed pruning saw as this assures me of a plentiful amount of root system accompanying the shield frond of the removed plant.

The soft tree fern is my favourite material for backing. I choose a solid piece at least 5 cm thick with at least an 8 cm margin around the shield itself.

First I drill two holes at the top of the slab for the hanger, thread wire through and join it at the front. I prefer to use thick copper wire for this, as it is disappointing to see a magnificent fern crash to the ground because the hanger has rusted and broken.

At this stage I drill four holes through the slab as in *Fig.* 1, then place on it a circle, or donut, of sphagnum moss the size of the inside perimeter of the shield, with a good handful of coarse, open compost in the centre (*Fig.* 2).



Fig. 1

Now I lay the fern on the slab, place two lengths of .07 soft gauge galvanised wire over the shield horizontally and push it through the holes. Next I make a 'nest' out of sphagnum moss on my working area (to protect the fertile fronds), turn the fern over, place it gently onto the moss and tie the wires at the back with just enough tension to hold, but not cut into, the shield. Rather than cut the ends of the wire off short, and run the risk of it unravelling sometime, I bury them in the slab. Finally I gently push a small amount of moist sphagnum moss in around the sides to ensure that no air can get to the roots.





About four weeks later I wrap about one dessertspoon of dynamic lifter (or in warm weather, 3 month Osmocote) in a small bundle of sphagnum moss and push it down behind the top of the shield fronds. This not only feeds the fern but keeps the shield open to catch any rain.

Finally I dust the top; inside with some CarbaryI as slaters love hiding there and eating the roots.

I keep the fern semi shaded for a few weeks and water it lightly once a week in hot weather or once a month in cool weather.

The best time to reback an elk fern is early spring or late autumn and preferably whilst the nest fronds are in the mature stage.

# GROWING FERNS FROM SPORE Barry White

\*\*\*\*\*\*\*\*\*\*\*

Besides being beautiful to behold ferns also have a fascinating life cycle. Growing ferns from spore is an interesting challenge requiring little but patience and persistence.

Collecting spore is simple but it is necessary to get the timing right. Towards this end a hand lens (10x magnification) is very useful although with experience it is often not necessary. Difficulty may be due to immature spore whichmay not shed properly, or more commonly all the spore may have been already shed in which case only dust from the spore cases may be collected. Regular examination of a fertile frond over a period of time is useful education. Sometimes immature spore, ripe spore and empty cases may be found on the one frond.

To collect spore simply place the fertile frond on a sheet of paper. In most cases, if the spore are ripe they will be shed overnight, but leathery fronds may take longer to dry out. A small section of the frond may be used as a test to see if the spore are ready to be shed. Separation of the spore from the spore cases is not necessary if sending material in to the spore bank. Gentle tapping on sloping paper causes the spore cases to move down the

paper at a faster rate than the spore. The collected material should be identified with the name of the species and the collection date, and wrapped in paper in such a way that the spore will not escape. The folded paper packets as presently used by the spore bank is one way to achieve this. Ordinary envelopes may be used but the corners need to be turned over and taped, otherwise the spore tends to puff out through the corners. Green spore (e.g. Todea barbara) survives for only a few days and should be sown straight away. Spore from some other species (e.g. Blechnum) may not store well. However if stored in a cool, dry spot most spore will survive for a couple of years, and some much longer.

Preparing a Suitable Medium. Any fairly coarse, porous material seems to be suitable. Old shredded soft treefern fibre gives excellent results if available. Peatmoss, crushed terra-cotta pots, charcoal or elkhorn fibre (or a combination of these) have also been used successfully.

Pots 5 or 6 cm square are quite sufficient to grow a large number of ferns, enabling a few different species to be raised in a relatively small space. The pots may be filled with the chosen medium, or a 2-3 cm layer may be added on top of your normal potting mix. The mixture may be sterilised by carefully pouring hot water through the mix and then standing the pots in hot water, up to the rim, in a closed container for an hour. Alternatively the mix can be microwaved to give about ten minutes of steam treatment.

A simpler approach is to use the spore culture kit from the Society. This contains sterilised African violet mix with a suitable container and instructions.

Sowing the spore. Open the paper envelope containing the spore carefully. The envelope should contain enough spore to sow at least one container but may have enough for three or four. If the spore are sown too heavily the resultant prothalli may have to be pricked out early, to avoid overcrowding problems. To sow the spore, hold the open envelope about 6-7 cm above the pot and give it a gentle tap to allow the spore to float down onto the top of the mixture. This must be done in a perfectly still room, completely free from any draughts or breezes.

Conditions for Germination. Spore may be sown at any time of the year, but germination will be faster in the warmer months. For successful germination spore must be kept moist at all times. This is simply achieved by placing a sown pots in a closed container (e.g. plastic ice-cream container, food crisper, glass aquarium covered with a sheet of glass), or just in a plastic bag. Provided the container is reasonably well sealed the pot should remain moist almost indefinitely. If it becomes necessary to add water, stand the pot in cool boiled water. Watering from above may wash spores away. The pot should be placed in a well lit position but not in direct sunlight. In a warm, well lit position germination usually occurs in about 4-6 weeks and appears as

very small, green specks which gradually grow into flat, heart-shaped structures (prothalli) about .5 to 1 cm in diameter. The initial growth may be mistaken for moss. Germination may take several months if conditions are not good. Each of the prothalli, which are the intermediate stage of the life cycle of the fern, has a male and a female portion. The male portion releases sperm which swim across to fertilise the egg. The fertilised egg then starts to grow and produces the fern proper. The first appearance of fronds may vary from 2-3 months in very rapid species, to years. Most problems result from overcrowding of the prothalli (from too heavy sowing) or from contamination due to poor hygiene. Fungi, mosses, algae may overcrowd or damage the prothalli. Overcrowded prothalli may be pricked out into another container as soon as the problem is noticed. Fungi may be controlled by spraying with half strength Benlate provided the prothalli are a reasonable size. Mosses and algae are best avoided by careful hygiene - proper sterilisation of the mix and the use of only water that has been boiled. An open, loose mix helps to avoid algal growth.

Pricking Out and Potting On. The thickness of the growth of the prothalli will often determine when to prick out. It should be done at this stage if the surface of the medium is heavily covered with prothalli, pricking out small clumps of prothalli into a mix prepared and sterilised as for the original sowing. Usually the pricking out is done when the sporeling has one or two fronds, although it may be done at any stage. The young ferns may be transplanted into standard potting mix or into a mixture of about 2 parts peat moss, 2 parts washed river sand and 1 part mountain soil.

It should be possible to lift the little fern off the pot with its prothallus still attached. At this stage true roots will usually not be well developed, and the prothallus can be gently pushed down onto the surface of the new pot or tray to support the tiny fern plant. This should be done fairly quickly and in a cool, draught-free location as the delicate young ferns will not survive for too long out of the humid atmosphere they are used to. As soon as possible, transplanted sporelings should be very gently watered and placed under glass again. Treatment with a product suchas "Maxicrop" or "Plant Starter" will assist establishment of the new plant.

If the sporelings are allowed to grow too large and crowded before they are pricked out, they may be scooped out in clumps with a spoon, placed in a saucer of water and from there gently separated and planted into tubes or trays. Again they should be replaced under glass without delay.

The newly transplanted sporelings should be allowed to develop under glass until their fronds are about 5-10 cm high. At this stage they may be very gradually acclimatised by slowly raising the glass cover, a few millimetres at a time, over a period of about two weeks.

Using the techniques outlined above, it is not unusual to grow one or two hundred ferms from each 5-6 cm pot sown with spore.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*

The following article was originally published as a series of three by the British Pteridological Society in "Pteridologist" 2, 2-5 (1990-94). They were combined in "Fern World" XIX, 11/12 (Nov./Dec. 1995), the newsletter of the San Diego Fern Society, from which the following version is taken, with thanks. The author is from the Royal Botanic Garden, Edinburgh.

# PHOTOGRAPHING FERNS

C.N. Page



#### A Personal View

I am an amateur at photography So this is not one of those articles that says everything technical about photography, but does not, in the end, seem to apply much to the subjects that you are particularly keen to photograph. Such photographic skills and tips that I have accumulated, and want to try to pass on, are ones which have been acquired from using a camera as a means of recording ferns and their habitats, endeavouring always to achieve the best result possible, and to build upon the experience so-gained.

I have been photographing, or attempting to photograph, ferns and fern allies for more than a quarter of a century and most of my techniques and equipment probably reflect this. Nevertheless, having started as a rank beginner, I have gradually improved and refined these techniques, and in the process have accumulated a library of both slides and black and white negatives covering most of the myriad of ferns which I have found in both temperate and tropical parts of the world. It has been my practice to photograph ferns, in preference to collecting them, unless there was some good reason for pressing a frond. I have always approached ferns in this way, long before conservation was a byword. When I first began, I found that photographing ferns was not easy Indeed, "who said it was" was what I kept saying to myself when, in less than ideal photographic situations, I found myself hanging by one hand from a tree trying to align a camera on to a particularly attractive tropical epiphyte, while mosquitoes nibbled at my ankles and leeches dropped on me from the branches above. Now, so many years later, I still think that ferns are some of the most difficult of subjects for photography, but don't be put off. In my case, the stimulus to succeed was a combination of necessity and blind persistence. Later, the appearance of the book by Rasbach, Rasbach & Wilmanns (Die Farnpflanzen Zentraleuropas, Fischer, Stuttgart 1976) showed so well that successful photographs of ferns can be taken and reproduced with great effect and technical accuracy So it was possible to succeed, and Kurt & Helga Rasbach's excellent photographs have consequently remained a stimulus to me. Earlier, however, it was my tutor, Dr T.G. Walker, who

undertook the hard work of initiating me into the mystique of the rites and rituals of photographic film exposure and developing, fern frond silhouetting and darkroom printing, and his patient tuition has certainly stood me in good stead as a baseline from which to develop this branch of pteridology ever since. The sequence of headings used below begins with the plant and its environment rather than with a long check list of equipment. What then follows is distinctly a botanist's approach to photography, rather than a photographer's approach to botany!

Where are we heading and what are we after? A photograph of a fern is to me not just a straightforward image of a plant, although if it is correctly exposed, sharp, and annotated with species, place and date, it is an important enough achievement.

But our aim can be more than that. Photographs of ferns can also say much about the form, seasonal phase and sequencing, habit and texture of a plant, as well as its colour, if taken on colour film.

Further, if taken in the plant's wild habitat (and most of the ones I have shot are) then a photographer can also show the plant in its wild setting and, possibly, give some indication, be it even only a marginal glimpse, of where that setting is.

Additionally, it may be possible to include in the photograph some indication of the conditions under which the fern was growing, perhaps during a shower of rain or after, perhaps in mist, or fresh with dew

A fern photograph can thus convey not only the form and setting of the plant with which we are dealing, but can also capture something of the atmosphere of the setting and climate of that plant too. Thus approached, such a photograph can technically, I think, say much more than does either a herbarium specimen or perhaps a thousand words.

#### Taking and choosing your time

My first piece of advice is: be patient and avoid hasty and ill-considered shots. Unlike animals, ferns will not run away. So, with such a captive subject, you can afford to choose your moment with care.

You can also carefully choose your plant or plants Decide, for any particular species, what you want to show: a single plant? a trio? a group? (pairs, alone, seldom give a satisfactory result). Or you may wish to show a whole habitat and to supplement this with a more distant view

Look for plants in a suitable setting - preferably one characteristic for the species at the particular site, as well as ones which are photogenically attractive. No fern will look at its best in a poor setting, and some situations might be more appropriate to colour than black-and-white work (the latter always requiring a background colour which, when converted to shades of grey, will not "lose" the fern in question).

Quite often, such settings "choose" themselves. The trick is in seeing them - another reason for not hurrying I find that there is a special, little-stated law of pteridology that invariably comes into play here. It states that the most photogenic fern is always to be found ten minutes after you have run out of film, so be prepared for this major part of the enjoyment.

#### CAPTURING YOUR QUARRY

#### Lenses: Something to look through

Modern through-the-lens metering cameras usually accept a variety of interchangeable lenses. For picture quality and clarity, I find that several (mine mostly ancient) interchangeable lenses can give far better quality results than a single modern zoom (I presume because there are fewer elements involved).

They are also less likely to be damaged through strenuous field use. I find that a useful selection is, in addition to the standard 50 or 55 mm lens, at least a wide angle and a macro.

The standard lens "sees" about the same angle as does the human eye (say about 45 degrees), and so pictures taken with such a lens most closely resembles that seen by the human eye. The wide angle, by contrast, "sees" a much wider angle (say perhaps up to 75 degrees) and hence larger area, and compresses this into the same frame area and hence into the same sized ultimate slide or print. I find that a 35 mm lens is the most generally useful wide angle to carry, usually used more often for habitats than for plants, and that a 28 mm is especially useful for woodland or ravine habitats, where the alternative of standing further back from the subject is impractical or gets a clutter of other trees in the way For example, most of the habitat shots in my New Naturalist book were taken with my 28 mm Soligor lens, now 25 years old!

For individual fern portraits, however, I find the standard and macro lenses are the most useful. The latter is especially adaptable for the smaller species (such as many Asplenium in Britain) or for close-up details of larger ones (such as details of pinnae of a Polystichum or Dryopteris). This adaptability of the macro is achieved through its close-focusing ability, which can be only be similarly achieved with a standard lens by the addition of several close-up rings, and with the resulting loss of stops. Further, a macro lens construction is optimised for such closeup distances, rather than for operation at infinity, and so is inherently better at good close-up definition. If you are using a single-lens reflex camera, which most modern cameras are, then whatever the lens you attach, the picture that the film "sees" and records is the same as that which you see through the viewfinder. The construction of such cameras allows lenses to be removed and changed while a film is still in the camera, though I still prefer to do this with the camera in my own shadow Such interchangeability also allows opportunity to carry more than one body, especially on expeditions. This means that different films can be exposed (such as colour and black-andwhite), and has the added advantage of a reserve body should one fail under sudden heavy use (it is surprising how often this can happen in the field).

## Films and things

Undoubtedly the most important thing about film is to remember to bring one. The second is remembering to actually put it into the camera (and, if changing between films of different emulsion speeds, setting the appropriate camera film speedrating scale to match). After this, the rest of the decisions about films are very much downhill.

Forgetting to load a film can be surprisingly easy to do, especially when the excitement of the chase of actually finding a rare *Ophioglossum*, *Pilularia* or strange hybrid horsetail, or a mountain-top *Dipteris* or *Stromatopteris* in the tropics, completely dislodges mundane thoughts about loading a film from the fore of one's mind! If in doubt about whether you did load one the previous evening (I frequently am), try ensuring that the take-up spool wheel also turns round when you wind the film on - that proves there is some physical connection internally between the two spools of the camera, and with a bit of luck, it could be the film you couldn't find that morning. Such careful observation while winding on, is something I regularly remember to do as a matter of habit - usually at least half a second after I should have actually noted it! If, at the end of the day, however, you have taken a whole series of particularly attractive shots on a film that turns out to be still in your rucksack, or even worse, still in the fridge amongst the lettuce back home, I recommend carrying a hip flask containing something worthwhile for the odd such inevitable occasion. It doesn't repair the damage, but you feel a lot better about it!

Having mastered the art of loading the film, you can then get down to the finer philosophical points of considering just which film you should be actually using. Somewhat inevitably, this becomes a question like how long is a piece of string, combined with all sorts of unfounded preferences and prejudices. It all depends, of course, what you are doing and why you are doing it, and for those of us who may not yet have found an answer to this fundamental Life, the Universe and Everything type of question, the subsequent choice of film can be equally enigmatic.

However, a sufficient array of film types and speeds is certainly generally available justifiably to baffle totally the faint-hearted. Most books will tell you that for the finest quality images and the best colour resolution, choose the slowest speed film compatible with what you are doing. Film speeds are rated in ASA numbers, printed on both the box and the cassette (ASA numbers are equal to and also called ISO numbers in recent years, just to add to the confusion). As a general rule, films in the 50-100 ASA range are usually to be recommended for most general purposes, but for the dark places where ferns usually grow, I find these too slow, and have regularly come to use 100 ASA colour and 400 ASA black-and-white. It is all a matter of compromise between gaining the best quality image and what is practical and really works well in the circumstances of your sort of photography

In terms of brands of film, it is a further matter of horses-for-courses, and individual likes and dislikes.

With colour the choice is more critical than with black-and-white (for there are more differences to affect personal preference). For colour, my personal impression is that Kodachrome is excellent for red and yellow subjects, while I find the old Agfachrome and newer Fujichrome both better generally for subjects which are predominantly brown and green (but, for good fern greens, I recommend not to go higher than 100 ASA in Fujichrome). As ferns are mostly brown and especially green, I tend use the latter. Some people find these greens too rich, however, and for them, perhaps Ektachrome colours might be a good compromise. The only way forward is to try them yourself, as see which you prefer on your sorts of subjects.

Lastly, as general rule: don't chop and change. Having found a speed and make of film that you like, stick to it, especially on expeditions. If you have to change, then experiment at a time and with subjects that are easily repeatable, such as in your own back garden. If it does not work out right first time, you can repeat with something else and compare the results. It's a big mistake to go off to some distant end of the earth, where you will never be again, and to use a film that you have never tried before, no matter what recommendations it came with or from whom!

#### Lining Up Your Fern

Picture composition is undoubtedly the aspect of photography which requires more of the eye of an artist rather than to follow strict scientific principles, and this is the single most important factor in achieving a picture which is pleasing to the eye, as well as technically correct. Ferns can pose their own scale of problems in this respect, and resolving a truly wild scene into a good permanent picture is certainly the major personal contribution which the photographer makes to his/her photographs. There are thus few rules to go by, other than trying to achieve what is and what is not most pleasing to you, personally, as well as scientifically accurate.

My main tips with ferns are consequently few. Mainly they are to choose views in which the subject in question, whether it be a single fern or a whole habitat, makes a strong and unequivocal statement to the eye as to what the particular photo is all about, and what its message is. For a photo without a message is of little value. Choose plants that look good. Select angles on them that make the fern stand out well against its background (often even more difficult in black-and-white than in colour). Try looking for a way of naturally framing a subject, and decide whether a horizontal or vertical pose is the more pleasing and easier on the eye. Put the subject clearly and wholly in the frame, although everything exactly in the centre of each shot can look dull, repetitive and boring. If going for an off-centre pose, then balance the components and appearance of each view as one would an off-centre see-saw. If a plant leans one way or the other, it can look good. Capitalise on this, but make sure that your plant leans into the frame and not out of it.

For reasons I don't understand, a subject leaning left to right often looks better to me than one leaning right to left - so some field orientation of the viewpoint might be involved. Further, a fern leaning totally out of a frame looks dissatisfying, and can appear to be trying to escape !

Develop an eye for shades of intensity as well as colour harmony, and on harmony, avoid clutter and distracting detail and clumps of plants in discordant numbers (I don't know why, but to me one plant usually looks OK, three look OK, but two or four individuals look respectively awful and confusing perhaps because there is then not one in the middle). If there are other plants of other species around, try to either include them or exclude them completely (depending on the purpose of your photograph) - a small portion showing is usually acceptable, but don't cut a plant in half on the edge of the frame - this is merely irritating to the viewer. And don't have anything in the foreground which is out of focus, unless it is for special artistic effect.

Lastly on angles, not too many ferns are at their best purely in profile or in plan view. Most gain naturalness in effect, and many a considerable delicacy of grace, when viewed in a three quarters direction. So choose your viewpoint carefully, and do this also in relation to the angle of incident light (being aware of the possibility of lens flare at certain angles and shading where necessary) - try a few differing directions until you are happy with one. If there is flare, add a lens hood or shade with your hand (I have a very adaptable field lens hood that doubles as a hat!).

#### Filtering the Light

Photography is, to me, all about capturing an ephemeral image made of light. So an eye for the best light to begin with can be a useful part of the whole process. Nature can be hard with light, especially where strong sunshine shafts contrast with dense, dark shadows, and methods of softening the light to a range with which the film can cope were touchedupon in a previous part of this account. But to summarise: choose your day carefully, and avoid hard, contrasty light. I find that bright, soft, still mornings are often best.

Filters provide another way of modifying the light, and are used to give a film's emulsion an image that it can better cope with, or to gain a particular effect. Most do so by altering the spectral content of the light, some its plane of polarisation. Thus UV filters can be used to correct an overall blue cast in sky shots or distance haze, while yellow ones in blackand-white photography will deepen the contrast of a blue sky and make lighter foliage stand out more prominently.

For ferns, however, I find that the single most useful filter to have (and which, personally, I constantly use) is a polarising one. The main role of this is to remove irritating bright surface reflections from glossy frond surfaces, such as those of Polystichum aculeatum or Asplenium scolopendrium. Such a filter also softens potentially hard reflections off other adjacent glossy surfaces within the field of view. This can be especially valuable in black-and-white work. In colour photography, such a filter can also enhance colour saturation of the image. Of course, the filter has to be rotated to find the angle of maximum reflective occlusion for each individual shot, usually transversely to the direction of incident light at the time, and there is about 2 stops exposure loss when this is achieved. This loss can be a problem in its own right in dark places, and tripods in such circumstances, are essential.

#### **Exposing Your Fern**

One of the great photographic problems with most ferns is that they can be large and usually present a rosette of fronds spreading in all directions. They thus require a considerable depth of field if all parts of the plant are to appear acceptably sharp. This, of course, requires the lens to be stopped down as far as practical, which is a diametrically opposite requirement to the need to gather as much light as possible often in gloomy surroundings. If my recommendation to use a polarising filter as well is also adopted, this compounds the darkness problem still further. Unless you are using flash (I never do, because this flattens the subject and can look very un-natural), this all adds up to an essential requirement for long exposure of often a minute or more (sometimes much longer).

Such periods of exposure, of course, require both your camera and your subject to remain absolutely rock still. The camera you can clamp to a tripod, the fern you cannot. And, of course, it is always in the darkest of places, such as along deep rocky ravines of cascading stream-gorges, that the largest, often dramatically three-dimensional and most luxuriant ferns typically grow, with glossy, highlight-reflecting wet surfaces that need to be softened down! Meanwhile you are probably standing up to the tops of your wellies in fast-moving, deep, cold water, perched precariously astride two slippery green boulders, watching a fern whose fronds are constantly quivering at the tips in the updraughts of cascading water, and the constant dribbling of a myriad of droplets from dripping cliff faces above!

To make a good fern photo, it is certainly these combinations of opposing requirement of poor light, great depth of subject with exacting detail, and fronds which are twitching at the tips (not to mention the tired photographer), that makes fern photography, that seems like such a good idea at the time, so exacting and challenging in the actual achievement. A good photograph of brittle bladder fern (*Cystopteris fragilis*) in such circumstances can certainly be held high as an achievement in photographic patience! But don't be too daunted. It can be done. Good luck! Keep at it, and keep your affection for ferns. Photography is one good (and often infectious) way of passing this on to others, to the benefit of the survival of an ancient and visually especially attractive group of plants.



\*\*\*\*\*\*\*\*\*\*\*\*

# FROM THE RETIRING EDITOR

Looking back at my five years as Editor I was struck by how little space the result of my efforts occupies on the bookshelf! The period itself was a very interesting and instructive one and in the main pleasurable - but with trauma often intruding in large measure as deadlines approached!

I should like to thank all Society members who contributed to the production of the Newsletter during this time. These include Terry Turney who 'showed me the ropes' when I was thrown into the job of Editor rather abruptly and acted for me on several occasions when I was absent, the several members who helped by writing up speaker reports over the last two years when I had to give up doing them myself, and those members who provided articles for publication (with Barry White the most prolific by far in a rather small group). And at the end of the production chain, we are all indebted to Margaret Radley who organises the despatch of the printed Newsletters and John Oliver, our long-serving Membership Secretary, who provides the necessary address labels.

I wish Lyn Gresham well for her time in the editorial chair; if her initial zeal is any indication she will do a great job for us. I do hope members will make her task easier and more satisfying by providing plenty of items for publication, thus avoiding the need to fill the greater part of many issues with articles reproduced from other publications, as I had to do far too often in recent years. While some information from outside sources is essential in the Newsletter to widen our knowledge, the paucity of original articles written by Society members must reduce our standing as a specialist society. We know there is a wealth of useful and interesting knowledge in the minds of our members - so let's make an effort to get some of it on to paper in <u>our</u> Newsletter.

\*\*\*\*\*\*\*

Best regards to all Bob Lee 46

# SPORE LIST

<u>Ordering</u>: The following spore isnow available - free to those who donate spore, otherwise 20 cents each sample for members and 50 cents for non-members, plus \$1.00 to cover packing and postage. Available at meetings or by mail from Barry White, 24 Ruby St., West Essendon, VIC. 3040 - Phone (03) 337 9793. There is no charge for overseas members, but to cover postage two International Reply Coupons would be appreciated.

A booklet on spore collection and cultivation is available for 40 cents (free to spore donors).

Actinopteris semiflabella 9/95 Adjantum concinnum 1/96 Adiantum hispidulum 4/95 Adiantum polyphyllum 5/95 Adiantum tenerum 'Fergusonii' 10/95 Adiantum trapeziforme 10/95 Anemia mexicana 7/94 Anemia phyllitidis 08/94 Anemia tomentosa 10/95 Arachniodes simplicior 05/94 Asplenium scolopendrium 1/96 Asplenium varians 11/95 Athyrium filix-femina 4/95 Blechnum ambiguum 5/95 Blechnum chambersii 5/95 Blechnum fluviatile 5/95 Blechnum glandulosum 9/95 Blechnum minus 5/95 Blechnum occidentale 4/95 Blechnum patersonii 5/95 Blechnum wattsii 5/95 Calochlaena dubia 5/95 Cheilanthes austrotenuifolia 4/95 Cheilanthes distans 5/95 Cheilanthes multifida 1/96 Christella parasitica 1/94 Cibotium glaucum 11/95 Cibotium scheidii 09/94 Cibotium splendens /94 Coniogramme fraxinea 1/96 Coniogramme intermedia 5/95 Cyathea brownii 4/95 Cyathea cooperi (Blue form) 11/94 Cyathea cooperi 4/95 Cyathea felina 11/94 Cyathea leichhardtiana 2/96 Cyathea medullaris 1/95 Cyathea robertsiana 11/94 Cyclosorus interruptus 4/95 Dicksonia antarctica 11/95 Diplazium assimile 5/95 Diplazium australe 5/95 Doodia aspera 4/95 Doodia caudata 4/95 Doodia media 2/95 Doryopteris pedata 10/95 Dryopteris affinis 'cristata' 1/94 Dryopteris athamantica 4/96

Dryopteris atrata 4/96 Dryopteris carthusiana 11/95 Dryopteris crassirhizoma 4/96 Dryopteris dilatata 10/94 Dryopteris erythrosora 4/95 Dryopteris sieboldii 4/95 Gleichenia dicarpa 5/95 Gleichenia microphylla 5/95 Hypolepis rugosula 5/95 Lastreopsis acuminata 4/96 Lastreopsis glabella 4/96 Lastreopsis microsora 09/94 Lastreopsis velutina 2/95 Lindsaea microphylla 5/95 Llavea cordifolia 4/94 Lygodium japonicum 11/94 Mixed spore ex N.Z. 2/95 Pellaea falcata nana 4/95 Pellaea falcata 11/95 Pellaea intramarginalis 4/95 Pellaea quadripinnata 4/95 Pityrogramma austroamericana 3/95 Platycerium bifurcatum 4/95 Platycerium superbum 12/94 Pneumatopteris pennigera' 1/95 Polystichum australiense 4/95 Polystichum formosum 4/96 Polystichum lentum 4/95 Polystichum proliferum 11/95 Polystichum richardii 2/95 Polystichum setiferum rotundatum 4/96 Polystichum tsus-simense 11/95 Polystichum vestitum 2/95 Pteris argyraea 8/94 Pteris comans 2/95 Pteris cretica 'Albo-lineata Alexandrae' 6/95 Pteris quadriaurita 1/95 Pteris sp. (Nepal) 1/96 Pteris tremula 2/95 Pteris umbrosa 11/95 Pyrrosia angustata 05/94 Pyrrosia rupestris 5/95 Rumohra adiantiformis (Cape form) 4/96 Rumohra adiantiformis 4/95 Tectaria decurrens 6/95 Tectaria heracleifolia 9/95 Thelypteris navarrensis 4/96

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 (058) 26 7285. Goulburn Valley Highway, Arcadia 3613 (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 (052) 82 3084. Specialising in supplying retail nurseries with a wide range of hardy ferns; no tubes.

**Coach Road Ferns** - Wholesale. Phone (03) 9756 6676. 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 (057) 86 5481. Kinglake West 3757. On main road, opposite Kinglake West Primary School. Specialising in Stags, Elks and Bird's-nest Ferns.

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

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

**The Bush-House Nursery** - Wholesale and Retail. Phone (055) 66 2331. Cobden Road, Naringal (35 km east of Warrnambool). Ferns - trays to advanced. Visitors welcome.

#### NEW SOUTH WALES:

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

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

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

#### **QUEENSLAND**:

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

