

**THE
FERN SOCIETY
OF
VICTORIA**

Inc.

PRINT POST APPROVED PP334633/0002

NEWSLETTER

VOLUME 18, Number 5

September / October, 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	" 9337 9793
Vice-President:	George Start	" (059) 62 5059
Secretary:	Lexie Hesketh	" 9499 3974
Treasurer:	Don Fuller	" 9306 5570
Membership Secretary:	John Oliver	" 9879 1976
Spore Bank Manager:	Barry White	" 9337 9793
Editor:	Lyn Gresham	" (057) 96 2466
Book Sales:	Ivan Traverso	" 9836 4658

(19 Alta Street, Canterbury, VIC, 3126)

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

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

PRESIDENT'S MESSAGE:

Our guest speaker at our August meeting drew a large crowd, probably one of the largest attendances we have had this year. Michael Garrett had us all spell-bound for almost an hour with his illustrated talk on the 'Ferns of Tasmania'. He concentrated mostly on the endemic and less common species. His photography was excellent with slides of the habitat as well as the species.

The display of pressed fronds for the competition was of a very high standard and proved to be very popular. I am glad I didn't have to judge the entries.

AS you are all probably aware, our Annual General Meeting was postponed to allow plenty of time for our guest speaker to present his talk. The Annual General Meeting will take place at our September meeting. It is a very important meeting, so please try to attend.

Nomination forms are inserted in this newsletter for your use. If you wish to nominate anyone, please use the form and send to the Secretary, Lexie Hesketh, 16 Lowther Street, ALPHINGTON, Vic, 3078. You can nominate more than one person, if you wish.

After the voting has taken place, the group of members that went on the excursion to Carnarvon Gorge and Fraser Island will be giving us an account of their trip.

The competition category for next month will be Lastreopsis.

Do not forget the excursion to our place at Lara on Saturday 5th October at 1.00 p.m.. Members of the South Australian Fern Society will also be visiting us, and will be looking forward to meeting up with our own members. We expect them to arrive in the early afternoon.

The next excursion will be on Sunday 17th November to Badger Creek at Healesville starting at 10 00am. Again, bring your own lunch. George Start will be leading the group, so if you need any further details, give George a ring.

Our Christmas meeting will be held at the Geelong Botanical Gardens on Sunday, 8th December at midday, please bring your own lunch. We will take Ian Rogers, our guest speaker in May, up on his offer of a tour of the Geelong Botanical Gardens including the site of the old fernery and the new fern gardens.

On closing, did you know that we exchange membership with at least four Australian and five international fern societies and associated groups? Many of them send their newsletters and publications and these are available by prior request from our library. See David Radford our librarian.

Chris Goudey.

FORTHCOMING MEETINGS

(1) THURSDAY 19th SEPTEMBER, 1996

(a) 17th ANNUAL GENERAL MEETING

- Agenda: 1. Minutes of 1995 A.G.M.
2. President's Report.
3. Treasurer's Report.
4. General Business.

(b) GENERAL MEETING

Topic: CARNARVON GORGE TRIP

Speakers: DON FULLER & BARRY WHITE will show and discuss their slides and NORMA HODGES will report on the social scene.

(2) THURSDAY 17th OCTOBER, 1996

Topic: ADIANTUM SLIDES

Speaker: CHRIS GOUDEY

VENUE: Victoria Bowling Club,
217 Grattan Street, Carlton.

GENERAL MEETING TIMETABLE:

7.30	Pre-meeting activities - Sales of Ferns, Spore, Books, Merchandise and Special Effort Tickets Library Loans
8.00	General Meeting
8.30	Topic of the Evening
9.30	Fern Competition Judging Fern Identification and Pathology Special Effort Draw
9.45	Supper
10.00	Close

FERN COMPETITIONS:

- September - A Lastreopsis.
October - Fern with a colour as well as green.
November - An Athyrium.



Grammitis billardieri

FORTHCOMING FERN SOCIETY EXCURSIONS AND OUTINGS.

AUSTRAL FERNS

Saturday 5th October; 1.00 p.m.
25 Cozens Road, Lara (Melway ref. Map 222 H9)

BADGER CREEK, HEALESVILLE

Sunday 17th November; 10.00 a.m.
MMBW Badger Weir Reserve, out Badger Weir Rd (Melway ref. Map 248 off H12)

CHRISTMAS FUNCTION:

Sunday 8th December; 12.00 midday.
Geelong Botanical Gardens, Eastern Park, Geelong (Melway ref. Map 228B Q5)

Please note information carefully.
Further details of these functions on page 75 of this issue.

A NEW SPECIES OF ASPLENIUM.

Our President has had a species of Bird's-nest Fern named after him. Chris Goudey recognised the distinctiveness of this fern, *Asplenium goudeyi* after cultivating it for some time, for which he has been duly honoured. There will be a full report in our November issue. You have our congratulations and admiration for pteridological excellence, Chris !!

Speaker Report - Meeting of 18th July, 1996.

SPORE RAISING - MY WAY

Ray Edwards.

Ray runs Cool Waters fern nursery. He has been a guest speaker before so it was a case of 'second time around' for some but we newer members are glad we had the chance to hear him and see his slides.

Cool Waters has a rather unique fern propagation setup in - yes, IN - a hill !! Read on to find out more. . . .

Ray began his talk by saying that he is still learning the art of growing ferns, still glad to pick up knowledge from other growers and still finding that every environment is different. And just when he thinks he's got it sorted out, he's still getting nasty shocks from his ferns when some new problem crops up. (Sound familiar?!)

IN THE BEGINNING...

In 1980-81, at the end of a Bible college course and wondering what his next move should be, Ray met someone who wanted to grow our native ferns from spore. This caught his interest and he went home to the family farm at Beech Forest, near Colac in Victoria's Western District and, not knowing much at all about what he was doing, he began to grow them. He believes that that is the best way to go about it - trial and error - as you are forced to find the best way for your particular situation. They have made a lot of mistakes, but have had a lot of successes also.

THE FERNERY.

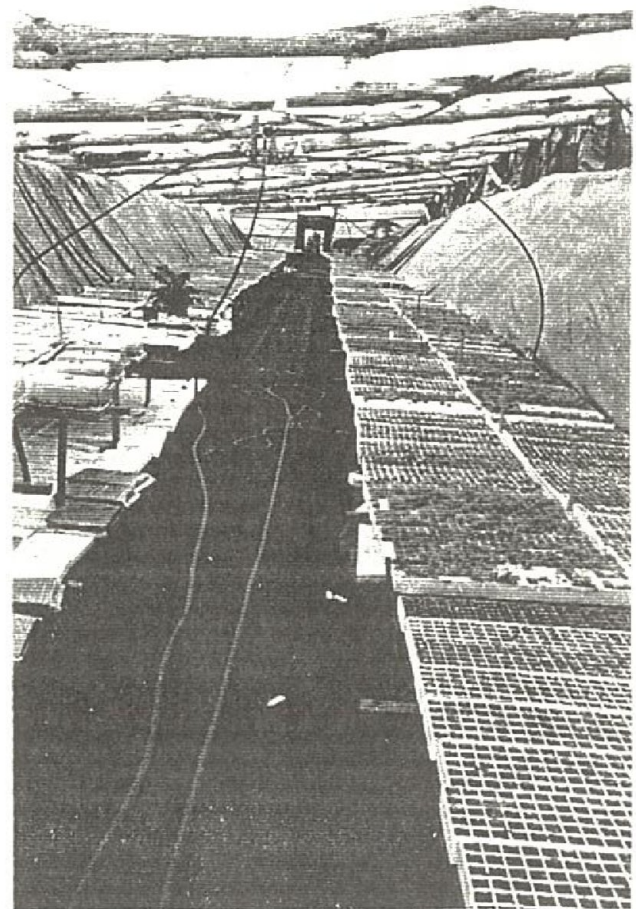
Ray lives on a very windy bank about 8 miles (14Km) inland from Bass Strait, so using a bit of lateral logic, they decided that to protect it from the wind, they would build it into the hill. They got a 'dozer to go straight into the hill, grading a very slightly sloping floor 100m long and 8 metres wide with sloping banks each side. The floor is dirt though Ray would put down concrete if he was doing it again to eradicate or at least help control liverworts, mosses and other weeds. At present he treats the floor with copper sulphate to kill, and inhibit the return of, these weeds. There is a central walkway of scoria.

The banks, which form walls 10 ft (3 metres) at the deepest point, have been covered with black plastic, behind which rabbits, snakes, bluetongue lizards and various other forms of wildlife wriggle and slither.

The opal fibreglass roof is supported by pine log beams harvested from trees planted on the property about 30 years ago. He 'whitewashes' this roof every summer with white household flat plastic paint, which gives plants some protection from the sun, seems to have also protected the fibreglass (Which is now 10 years old) and wears off by winter so the winter sun has access. White Marex (50% shade cloth, which insulates) is attached to the beams and forms a ceiling. This gives added protection from the sun but is not durable; it rips and gets very brittle so as it deteriorates it will be replaced, probably by white Solarweave. Temperatures range from about 4deg. to 40deg. C and though the surrounding hill absorbs a lot of heat, the direct Summer sun would burn unprotected ferns.

The trays are suspended on strained fencing wire. The top section of the walls, above the excavation, has quite large, sliding vents and also overhead fans have been installed, both of which help regulate the temperature in hot weather.

Ray thinks the most expensive item was the styrafoam trays!



WATER SUPPLY.

Untreated rainwater stored in tanks is used in the fernery. Ray did try dam water but it was very high in iron and sent everything red, and also dam water often carries moss, nematodes and other bugs.

GROWING MEDIUM.

The biggest problem Ray has encountered is in getting the right medium. Some have looked just right and been proving to be good, when for no obvious reason the spore stop germinating successfully. He's still working on this one.

CHOOSES LOCAL SPECIES.

Ray collects spore from the ferns which are growing naturally in his area. Early problems he encountered were knowing just when the spore were ripe - and working out how to harvest it. *Cyathea cunninghamii* (Slender Tree Fern), for example, doesn't seem to spore until it is a mature plant and the best time is March. Now the Slender Tree Fern prefers the coolest (and least accessible, I bet) gullies and can be very tall (over 15 m, with fronds up to 3m long) by that time so Ray has an obvious problem. Out comes the .22 shotgun and harvesting begins! He goes hunting every March and we even saw a slide of him returning with the 'bag' - one huge, fertile frond about as tall as he is!

Ray has collected local information on when to harvest spore for each of the fern species he wants to grow and made up a timetable. To simplify life and save time and effort he can now quickly refer to this chart.

SOWING THE SPORE.

Some people shake the spore onto the medium, some blow it on, but Ray decided to try spraying it on. He uses a normal household or garden spray bottle into which 200 ml water is put and just the right amount of spore added. He didn't elaborate on this; I guess it would vary between fern species.

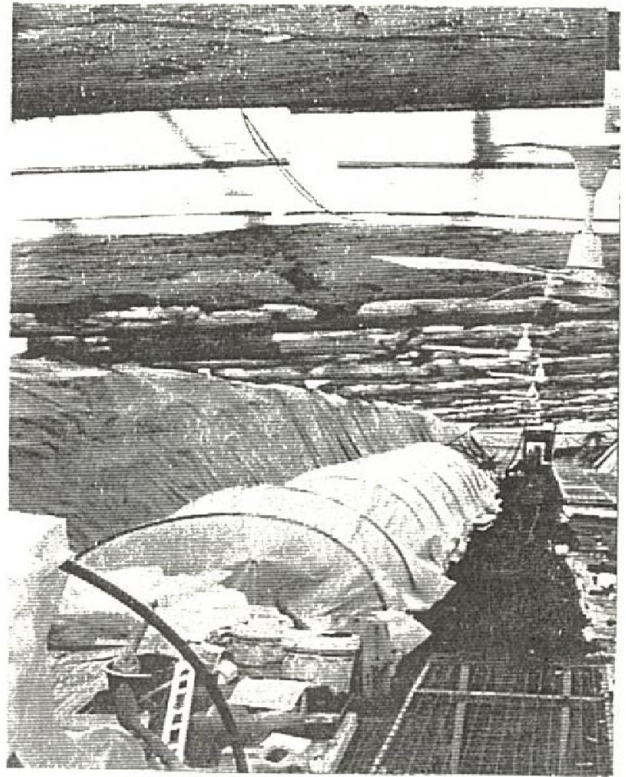
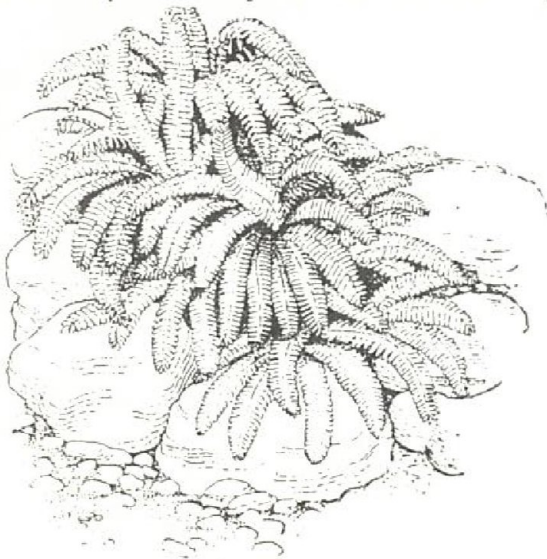
Optimum sowing times are Spring (September/October) and Autumn (March/April). Ray is planning to try sowing more in winter using the hotbeds and this time, under lights. He believes they need longer light periods than we get in Winter.

SPORE RAISING.

At first he tried straight Smith's Kiwipeat peatmoss, and was having great success. But then something happened and the ferns were just not germinating on it. So he tried almost every peat he could find (I didn't know there were so many!), still with some successes but not with any consistency. The latest tried is coprapeat, and again he's finding the result is very mixed.

The next, which he's trying now, is cocopeat with which he plans to mix up his own brew. He always sterilises both the media and the water used in the sprays for propagating.

Shallow plastic trays are used for sowing.



After the spore is sprayed on, it goes into a plastic bag for 3 or 4 months, depending on the time of year.

HOTBED.

Just recently Ray has purchased a hotbed constructed of heating elements laminated between sisalation which he's found very good. The trays are put directly onto it and he's built a little igloo to go over them. He hasn't got his first power bill yet, so doesn't know the running cost.

Not all his ferns are given the 'tropical treatment'; most of the cool growing ones need little or no heat to get started but the tropical ones and some others do. He told us that he propagates a lot of tropical ferns and sends them back to Queensland. They like them because the Victorian-grown ones really take off when they get into the hot climate!

AN INTERESTING SLANT.

He did not have any success for two years with Weeping Spleenwort (*Asplenium flaccidum*) until, after thinking about where it propagates itself naturally, he tipped the tray up on an angle of perhaps 30deg., in a position in which it is well drained. He does the same with Fan Ferns (*Sticherus*).

POSITION, POSITION, POSITION...

Coral Fern (*Gleichenia*) particularly, and many other ferns, were very happy growing in an old shearing shed where it was cool and a bit darker. Since Ray has changed to another area he has had all sorts of problems with the Coral Fern and he has concluded that ferns which are 'pumped on', grown as quickly as possible under heat and other aids, are not necessarily as hardy and healthy as those grown slowly and naturally.

PRICKING OUT.

He pricks out into trays of 110 cells, in Spring if possible and keeps them under cover for awhile just to keep the humidity up. At pricking out Previcure and growing hormone are applied also. These measures help them survive the initial shock of transplanting and get the best success rate. The medium in the cells is coprapeat, which he has been using for everything. Fertiliser is applied when necessary from this pricking-out stage onward.

PROFESSIONAL WHEELS FALL OFF, TOO...

Ray spoke of having problems with fungus in his ferns from time to time. He usually sends them to Burnley (Ag./Hort. College, now "Faculty of Agriculture, Forestry and Horticulture, Melbourne Uni.") where they are identified. The main ones have been botritis, damping off and rhizoctonia. Sprays he uses include Rovral+Benlate, Fongarid and Terrachlor for Rhizoctonia. He stressed that he is careful to only spray in the cool part of the day.

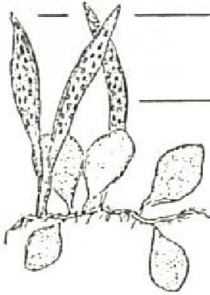
Before shipping ferns by truck he always soaks the trays in Terrachlor as a precaution. This was proved to be effective when two years ago a truck carrying 16 trays was held up for ten days on the Nullabor Plain due to floods. Only one tray was a write-off. Not bad!!

FACTS AND FIGURES.

Cool Waters grows about 60 species of fern. Ray thinks about 30 of these are in their catalogue for offer to wholesalers. Others he grows as specialist propagations for himself or others. Ray spent an interesting time showing and discussing some of them.

In response to a question Ray said that they plant up two lots of 1,600 trays a year. At 110 fernlets per tray, that works out to 352,000 plants!!! That's serious ferning!

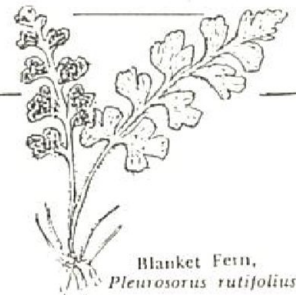
At Cool Waters the aim is for minimal use of chemicals. The cool climate is a clear advantage in producing strong and hardy ferns.

Rock Felt-fern, *Pyrrhosia rupestris*

SPEAKER REPORT – June Meeting, 1996.

**"OOPS! THE WHEELS FELL OFF MY FERN!"
FERN PROBLEM NIGHT.**

WITH CHRIS GOUDEY UMPIRING AND ADVISING.

Blanket Fern,
*Pleurosorus rufifolius***DECIDUOUS FERNS.**

Fronds of an *Athyrium filix-femina* (Lady Fern) varied from white through pale lemon to light brown and looked rather sad. Lady Ferns are deciduous and it was just dying down. If a fern looks sick, specially in autumn or early winter, check if it is deciduous before you panic! Incidentally, many deciduous ferns are evergreen when young, so the first year they drop their fronds can be a bit of a shock!

CULTIVATING BUTTON FERNS.

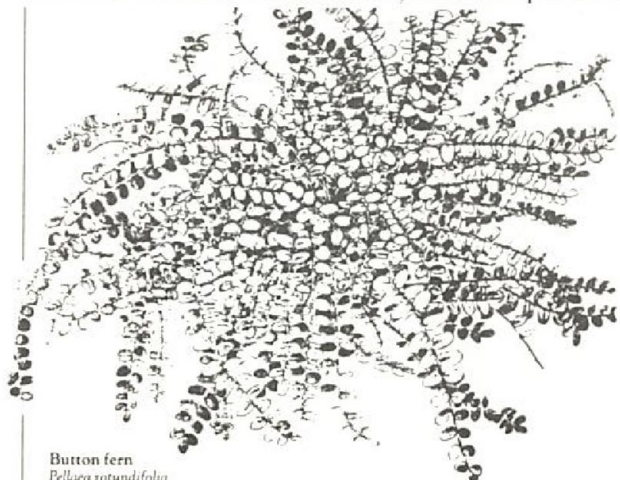
There was an animated discussion about the problems members have with cultivating, and particularly dividing, *Pellaea rotundifolia*. It was generally found that it was very hard to successfully divide, more than one person having lost all of the divided material, including the main plant. Chris has not tried - I presume he grows his from spore. He said that they have trouble with *Rhizoctonia* in Button Ferns. (Have you heard that they should not be grown in the ground, and shouldn't be watered from overhead? I hadn't when I planted mine, and it's doing famously. Maybe ignorance IS bliss!! Or maybe the sprinklers miss that spot.) The other possible cause of leaves blackening and falling Chris mentioned is the pH being too acid.

LEAF NEMATODES.

Leaf nematode damage is characterised by wedge-shaped black patches radiating outward from the damaged area on a frond. Nematodes

are spread in splashed water during watering, and they eat portions of material, usually affecting the area between the larger veins. They particularly love *Aspleniums* and *Blechnums*; *B. wattsii*, *minus*, *nudum* and *chambersii* are four mentioned. Positive identification is difficult as nematodes are too small to see and can only be achieved by close examination. Infected material is removed from the plant, cut up fine, soaked for some hours and examined under a microscope. If nematodes are present, you will see tiny, flicking worms.

Treatment is very difficult - again, prevention is better than cure. Keep fronds dry and ensure good air circulation. The treatment Chris recommends is called "Nemacure", but even this has had limited success, in his experience.

Button fern
Pellaea rotundifolia

THRIPS.

The fronds submitted for examination had a silvery look, particularly on the underside of the frond, though also visible on the upper surface. There were also some brown and black fine spots among the silver. The verdict - a severe thrip infestation.

Ferns which seem to be particularly susceptible to thrip attack include Woodwardia (Chain Ferns), Lastreopsis (Shield Ferns), Dryopteris (Oak Ferns) and Pseudodrynaria.

One spray recipe which is recommended as giving good results is; Carbaryl at the recommended strength (mixed to a paste with water) and Rogor at half the recommended strength. Another suggestion is white oil (but not on Adiantums).

All affected material should be carefully collected and burnt. Care must be taken to not shake the thrips off any more than can be helped as they will apparently live in the leaf litter through even the coldest of winters and reappear to become active again in the warmer weather. This suggests that the soil and leaf litter under affected plants should also be sprayed.

Both these measures should be carried out as soon as the problem is first noticed.

CATERPILLAR or CUTWORM.

The next problem was a *Dennstaedtia davallioides* (Lacy Ground Fern) frond which was completely denuded. The stipe, rachis and subrachis were all that remained. Caterpillar or cutworm was the diagnosis. In the absence of caterpillars, for which the owner of the frond had looked, cutworms won. These charming little beasties come out at night, and are similar to caterpillars in appearance except that they are smooth and shiny. Their colour varies from green through brown to black. They curl up into a tight coil when disturbed and are not easy to squish with fingers.

Suggested treatments were with the above mixture, Carbaryl (which is good for eradicating all chewing insects) alone, or Cabbage Dust. Squishing was not deemed a practical option as our lowered vision at night and their generally dark colour and hiding ability make efficient eradication difficult, if not impossible.

RHIZOCTONIA.

A *Polystichum setiferum* (Soft Shield-fern) had blackened or browned, shrivelled fronds or parts of fronds which had a vile odour. Rhizoctonia is a soil borne fungus disease which typically occurs in either ferns with dense foliage or any ferns growing in wet, stale conditions where the plants are constantly wet. It either strikes very quickly or is not noticed until a lot of damage is done. A plant can look perfectly healthy but collapse when moved because the base of the fronds or the plant itself is like jelly. The decaying parts will have fine, brownish threads which can be seen

under a hand lens.

Chemical control is difficult - prevention through good 'housekeeping' is the way to go. Make sure that your growing medium is well drained, and ensure good air circulation by spacing plants well apart. Also keep the foliage as dry as you can at all times. Discard infected material; fronds or whole plants as necessary.

BROWN FERN SCALE.

A *Nephrolepis*, probably *cordifolia*, had this insect pest on it.

The larval stage is motile (can move around) for about two months after emerging from the mother scale, which is fixed as its waxy dome (the scale we notice) develops. This larval stage is when scale spreads through our ferns. The larvae are almost invisible to the naked eye. Scales secrete honeydew which attracts ants so their presence can be an indicator.

Treatments are the Carbaryl and Rogor mixture (see 'Thrips') or White Oil, though White Oil is not recommended for tender ferns e.g., Maidenhairs. Carbaryl and Rogor are all right.

FROST DAMAGE.

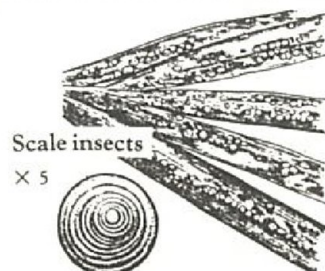
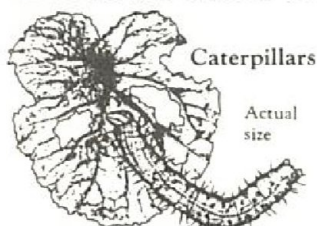
Frost is a seasonal problem in our temperate climate (it doesn't feel too temperate at my place on most winter mornings!!) and damage comes in stages, depending on the frequency and/or severity of frosts. Stage 1 is darkened or reddish lamina, stage 2 is a 'watery', transparent appearance and stage 3 ranges from brown to black, shrivelled material. There is no cure. Treatment must be preventive. I have not solved this problem in my (inland) shadehouse fernery. Chris suggested I line the shadecloth roof with polythene, running it on wires 6 - 8" (15 - 20 cm) below the roof in such a way that it can be pulled back during wet weather to catch the rain, and during summer or it would be like a glasshouse.

MOSS.

A pot had a fine, green coating on the soil which was identified as a very fine form of moss. It occurs in winter, in heavy, compacted, soils and also when the soil has a high Nitrogen content. The layer of moss on the soil surface can become very thick and can be just lifted off, taking the topmost layer of soil with it. It is not a major problem unless it is present at any stage of propagating, when ferns like the media to be very open.

IT'S IN ITS GENES!

Some individual ferns have genetic defects which present as twisted, stunted or otherwise deformed fronds. This abnormality is constant throughout the life of the fern and is distinct from malformations due to crozier attack by sucking or chewing insects, which only affect one or a few fronds which are forming at the time of the attack. Genetic deformity is not infectious so if you don't mind the look of it, keep it in your garden.



There seems to be a surprising lack of current knowledge in our Society, about the legality (or not) of removing ferns and fern material from variously classified public and private land in Victoria. The Objectives of our Society include "to promote the conservation of ferns and their habitat" so to this end the following information is offered. "In May 1990 the Dept. of Conservation and Environment produced the publication "Rare or Threatened Plants in Victoria". The list included 43 species of ferns of which six are on the endangered list, the remainder are in the rare or vulnerable category." I trust you will find it interesting and informative.

(* and ** are quotes from Vol. 16, No. 8, U.F.S. Newsletter, September 1994.)

Department of Conservation & Natural Resources

Your Ref:
Our Ref: 89-96-(1)/85-378-(1)
Date: 1 August, 1996

NORTH EAST AREA
57 Bridge Street West
(PO Box 124)
Benalla Vic 3672

Ph: 057 611 611
Fax: 057 611 628

Ms Lyn Gresham
20 Murchison Road
AVENEL VIC 3664



Dear Ms Gresham,

Further to your telephone inquiry regarding collection of plant material I provide the following advice:

Protected Flora

A under the Flora and Fauna Guarantee Act (1988) a permit is required to take:

- flora of a taxon or community that has been FFG listed (that is, included on Schedule 2 of the FFG Act); or
- flora that has been declared to be protected by the Governor in Council (under Section 46 of the FFG Act)

Take is defined under the Flora and Fauna Guarantee Act (1988) as to kill, injure, disturb or collect.

All ferns are protected flora. Therefore, on all public land a permit is required to take ferns unless the taking is part of a Forest Produce harvesting operation which is covered by Forest Management Area plan or a Wood Utilisation Plan, and has been licensed under the Forest Act. On private land, the harvesting of any part of plants belonging to the taxa *Dicksonia antarctica*, *Todea barbara* and *Cyathea* spp requires a permit.

Whole living tree-ferns require FFG Act tags to be fixed at the harvesting site. Fronds and dead trunks do not normally need a tag attached.

Table 1 (attached) summarises requirements for taking flora from land of various status.

If you have any further questions please contact me.

Yours sincerely,

Trevor Dess .

Trevor Dess
Coordinator Flora, Fauna and Fisheries
Benalla

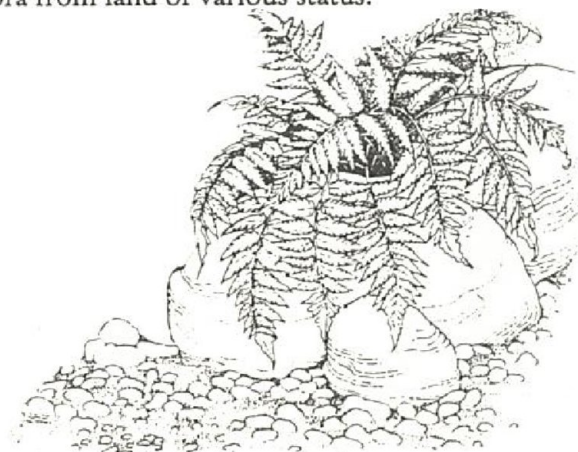


Table 1: Summary of permits/permission required to take flora (including seed)

Land Status	Protected Flora	Other Native Flora
National Park	Permit required National Parks Service	Approval in writing from National Parks Service required - generally approval would only be given to holders of an approved research permit
Land Reserved under Schedules 2 and 3 of the National Park Act 1975	as above	as above
State and Regional Park	as above	Approval in writing from National Parks Service required - In considering an application the Department will consider the purpose for which the flora is to be used.
Land Reserved under the Crown Land Reserves Act 1978 and Land Act 1958	FFG Permit	Written Departmental approval required - In considering an application the Department will consider: the purpose and environmental condition of the reserve and purpose for which the flora is to be used.
Land reserved under the Forests Act 1958.	FFG Permit required unless part of Forest Produce harvesting operation which is covered by an FMA Plan or WUP and has been licensed under the Forests Act 1958. Note that FFG permit is always required for Critical Habitat.	Written Departmental approval required generally in the form of a Forest Produce licence.
Other Public Land	FFG Permit unless covered by arrangements made to tie FFG in with Mineral Resources Development Act and Extractive Industries Development Act. Generally only Critical Habitat, listed species, listed communities and other significant sites would require separate FFG permits.	Departmental approval required - In considering an application the Department will consider: the purpose and environmental condition of the reserve and purpose for which the flora is to be used. Note that as well as deliberate picking or harvesting, "indirect taking" (where the flora is taken as a result of some other activity) also requires authorisation.
Roads	FFG Permit and technically a permit is required under the Municipal Planning Scheme to remove, destroy or lop native vegetation.	Technically a permit is required under the Municipal Planning Scheme to remove, destroy or lop native vegetation - clarification should be sought from the relevant Municipality to determine requirements in specific instances.
Private Land	FFG Permit only required where Tree-ferns or grasstrees are being taken for sale; or protected flora are being taken for any purpose from their declared critical habitat, or flora are being legally taken under some other Act but without the landholder's consent.	Landowner approval required. There are a few cases where landholder objection can be overridden under some other Act, in which case the FFG protected flora controls apply.

(This article is copied, with thanks, from the Newsletter of the Western Australian Fern Society Inc., Dec. 1994)

ATHYRIUMS

Helen Moorehead



An attractive group of ferns which contains some very decorative species of delicate appearance. The Lady Fern (*Athyrium filix-femina*) has been responsible for hundreds of cultivars. The genus consists of about 600 species, widely distributed around the world with about seven species extending to Australia.

Habitat:

Ferns of this group are invariably ground growers and mostly shade lovers. A few hardy types grow in sunny positions, but usually where there is an abundance of soil moisture or at high altitudes. Some species have very brittle fronds which are easily damaged by wind or rough handling.

Soil Types:

Most *Athyriums* prefer a well-drained, organically rich loam containing plenty of humus. They also appreciate regular applications of organic mulch to the soil surface. A few *Athyriums* such as *Lunathyrium japonicum* appreciate the addition of lime. Potted *Athyriums* prefer an open mix based on well structured loam which has been fortified with peat moss or milled pine bark. Many ferns in the group have a very strong root system and quickly outgrow their container. Such species are best planted in the ground, otherwise their appearance suffers because of the confined root system.

Watering:

Athyriums generally like moist conditions and appreciate plenty of water, especially during periods of hot dry weather. They also respond to water sprayed onto their foliage during such weather. Their fronds quickly become tattered if the plants dry out at the roots or are exposed to dry, buffeting winds.

Fertilising:

As a group, these ferns are strong growers and respond to the use of fertilisers and manures. Blood and bone, well rotted animal manures and compost are particularly beneficial and should be applied

during the spring and summer. Slow release fertilisers can be added to the potting mix or plants can be supplemented with applications of liquid fertiliser.



Pests:

Slugs and snails eagerly attack the young fronds. Grubs may be a problem on those with finely divided fronds and aphids may congregate on croziers and uncurling fronds.

Athyrium filix-femina (Lady Fern):

One of the commonest ferns widely distributed throughout the British Isles, India, China, Japan, North Africa, Canada, North America, Mexico and Peru. Plants are dormant in winter and in cold regions they may be completely deciduous. A vigorous flush of new growth in spring is very decorative. In all, over 300 cultivars of this fern have been named. As a plant of this species gets older, the crown tends to grow out of the ground on a short trunk so that the young roots have further to grow to reach the soil. This can slow the whole plant down and make the growth a little sparse. Replanting (possibly at the same time as dividing the crowns if they are becoming too crowded) so that the crowns are just level with the soil, followed by regular mulches of leaf mould, will result in renewed vigour.

- **Cultivars :** *Athyrium filix-femina* 'Congestum', 'Cristatum', 'Congestum Cristatum', 'Congestum Grandiceps', 'Victoriae', 'Frizelliae'.

Athyrium japonicum (*Lunathyrium japonicum*):

This *Athyrium* is native to Australia and is a weedy type that naturalises readily in any favourable situation. Plants are variable from one population to another, especially in the thickness and lobing of the leaves. It grows in colonies on damp rock faces, stream banks, etc, and sometimes in quite exposed situations.

Other *Athyriums* native to Australia are : *A. accedens*, *A. assimile*, *A. austral* and *A. dilatatum*.

Athyrium niponicum var *pictum* (Japanese Painted Fern):

This *Athyrium* is prized for its delicately coloured new fronds which are of a soft metallic grey colour, but frequently contain reddish or bluish tints. The colour is maintained in old fronds; however, the

young fronds contrast pleasantly with the mature ones. Plants are cold-hardy, withstanding quite heavy frosts. They can also be grown in subtropical regions. A shady location in humus-rich loam is suitable, although plants in good light develop the best colour. Deciduous in Australia.

DETAILS OF THREE EXCITING EXCURSIONS.

Join us for these enjoyable and informative outings if you can. You will be made most welcome.

AUSTRAL FERNS

Saturday 5th October;
1.00 p.m.
25 Cozens Road, Lara
Melway Map 222 H9

Lorraine & Chris Goudey's ferneries, garden and nursery. Meet visiting South Aust. Fern Society, renew friendships and help make our sister society welcome.

BADGER CREEK, HEALESVILLE

Sunday 17th November;
10.00 a.m.
MMBW Badger Weir Reserve,
out Badger Weir Rd
Melway Map 248 off H12

Meet in the top carpark at 10.00 a.m. ready to set off at 10.30. Comfortable walking. BYO lunch, BBQ and hot water available. (No access problems before midday).
George Start (059) 625 059.

CHRISTMAS FUNCTION GEELONG BOTANIC GARDENS

Sunday 8th December,
1996; 12.00 noon.
Botanic Drive, off Eastern
Park Circuit, Eastern Park,
Geelong.
Melway Map 228B Q5.

Parking available in Botanic Drive or 3 areas within 300m in the park.

Speaker Report - Supplementary Presentation on 27th June 1996.

BYADUK CAVES.

Barry White.

The Byaduk Caves are in the Western District of Victoria, south of the Grampians and just near the little township of Macarthur. Mount Napier, an old volcano, is nearby. The Caves are a result of the lava flow from this volcano, which solidified into a hollow, horizontal tube as it cooled. Over time, the 'roof' has collapsed in places, forming a series of holes in the ground. Barry and Chris Goudey agree that they have found about six or seven of these 'holes' on their visits.

The road to the caves has a gate and warning sign to bar access by vehicle, with good cause; it (and you) could very suddenly descend 20 or 30 feet into a hole!

The region generally is open basalt plain, but within this flat area are the caves, offering some beautiful, protected spots in which a variety of ferns are growing. Some have quite large trees growing in them, and tree ferns.

The first cave is about 100 metres in from the gate. The distance between caves varies from fifty to a hundred metres though some are divided by just a thin bridge through which you can go from one to the other. They can be quite difficult to find because the surface is just flat and they are not marked for your convenience.

There are no signs of recent collapse and they are considered to be quite stable.

Some of the caves are easily accessible via gentle slopes, while others present quite a challenge. A long rope ladder would be a great asset in some places! One cave is about seven metres from the nearest anchor point (a tree) so you would need at least 14 metres of rope. A friend 'up top' for safety reasons would also be a good idea. Barry thought it prudent to not enter some caves because he was alone.

Unfortunately the tape ended here so we don't have Barry's complete presentation but maybe it is enough to excite your interest. I hope you will take the opportunity to explore this fascinating part of our State for yourself, sometime.

My "Blair's Travel Guide to Victoria" says that "there are twelve caves, which look like railway tunnels. Church Cave has a chamber 50 metres long and walls seven metres high. Bent-wing Bats live in these caves." It's not much of a guide though - doesn't even mention the ferns!

I would like to have included a list of ferns Barry found in the Byaduk Caves but he has flown off to points north to escape Winter. As he said, "It's a tough job but someone has to do it." Poor Barry!!

(Lyn Gresham).

THE FERN SOCIETY OF VICTORIA INC.
STATEMENT OF INCOME & EXPENDITURE
FOR YEAR ENDED 30TH JUNE 1996

GENERAL ACCOUNT**INCOME**

1995 \$			1996 \$
	SUBSCRIPTIONS		
2046.60	Renewals	1618.00	
274.00	New Members	<u>231.00</u>	1849.00
	SALES/COMMISSIONS		
48.20	Spore Bank	284.85	
145.95	Commissions	-	
642.65	Miscellaneous Sales	438.30	
(490.32)	Less Cost of Sales	<u>339.01</u>	<u>92.29</u>
	SPECIAL EFFORT		
226.90	General	231.50	
(42.15)	Less Expenses	<u>48.00</u>	183.50
	OTHER INCOME		
312.00	Advertising	262.00	
25.00	Sundry Income	<u>50.00</u>	<u>312.00</u>
3183.83			2728.64
	ADD NON-OPERATING BANK INTEREST		
103.69	General Account	116.82	
744.85	Term Deposit	<u>1008.92</u>	<u>1125.74</u>
4037.37			3854.38

EXPENDITURE

1995 \$			1996 \$
	NEWSLETTERS		
1698.00	Printing	1346.00	
584.00	Postage	<u>385.47</u>	1731.47
	ADMINISTRATION		
300.00	Honorariums	200.00	
87.72	Registrations Subscriptions	72.00	
302.50	Administration Secretarial	203.09	
104.40	Advertising	27.30	
50.00	Entertainment	30.00	
935.00	Hall Hire	610.00	
50.00	Guest Speakers	-	
260.00	Audit Fee	275.00	
45.22	Bank Charges	38.89	
115.00	Depreciation	73.95	
90.00	Sundries	84.94	
146.00	Award Cards	-	
-	Insurance	121.00	
20.00	Donation	-	
4787.84			1756.17
			3487.64

BOOK SALES

1995 \$			1996 \$
234.48	Net Sales	175.95	
(164.30)	Less - Cost of Sales	<u>113.45</u>	<u>62.60</u>
70.18			62.60

OPERATING INCOME

1995 \$			1996 \$
234.48	Net Sales	175.95	
(164.30)	Less - Cost of Sales	<u>113.45</u>	<u>62.60</u>
70.18			62.60

ADD NON-OPERATING INCOME

1995 \$			1996 \$
20.21	Bank interest	-	
91.09			<u>62.60</u>

LESS EXPENSES

1995 \$			1996 \$
43.02	Bank Charges	-	
48.07			<u>62.60</u>

SURPLUS

1995 \$			1996 \$
70.18			62.60
			62.60

FERN SHOW

1995 \$			1996 \$
	INCOME		
1034.00	Door Receipts		343.00
6279.90	Fern Sales	3931.00	
(5319.37)	Less - Cost of Sales	<u>3363.59</u>	<u>567.41</u>
-	Donation	<u>50.00</u>	<u>617.41</u>
1994.53			960.41

EXPENDITURE

1995 \$			1996 \$
	Advertising	27.30	
110.00	Insurance	110.00	
72.00	Parking Permit	-	
327.27	Administration Expenses	133.90	
340.00	Hire of Venue	560.00	
-	Travel	50.00	
-	Awards	<u>47.70</u>	
849.27			923.90

SURPLUS

1995 \$			1996 \$
1145.26			36.51

STATEMENT OF INCOME & EXPENDITURE FOR YEAR ENDED 30TH JUNE 1996**SUMMARY**

1995 \$		1996 \$
4037.37	Income - General Account	3854.38
4287.84	Less - Expenditure	<u>3487.64</u>
(750.47)	OPERATING PROFIT (DEFICIT)	366.74
	LESS SURPLUS	
48.07	Book Sales	
1145.26	Fern Show	
	PLUS SURPLUS	
	Book Sales	62.60
442.86	Fern Show	<u>26.51</u>
	Surplus	<u>99.11</u>
		466.85

BALANCE SHEET AS AT 30TH JUNE 1996


1995 \$		1996 \$
	MEMBERS FUNDS	
	As 1995 Balance Sheet	18458.41
	Surplus	<u>466.85</u>
		18925.26
	REPRESENTED BY CURRENT ASSETS	
	Cash on Hand - Book Sales	128.16
	- General	-
		128.16
	CASH AT BANK	
	General Account	3456.91
	STOCK	
	Books	273.00
	Glasses	<u>184.50</u>
		457.50
	INVESTMENTS	
	Term Deposits	14735.70
	FIXED ASSETS	
	Library - Less Depn	124.00
	Plant & Equip - Less Depn	<u>85.00</u>
		209.00
		18988.26
	CURRENT LIABILITIES	
	Prepaid Fees	63.00
	Creditors	<u>63.00</u>
		126.00
		18925.26

AUDITORS REPORT

I have examined the books of account and associated records of the Fern Society of Victoria Inc. for the year ended 30th June 1996 and have been provided with all the information and explanations required.

I consider the Statements of Receipts and Payments and Balance Sheet reflect a true and proper view of the financial operations of the Society for the year and the state of affairs at 30th June 1996.

I wish to thank the officers of the Society for their co-operation and assistance.


 R. J. Angwin I.C.T.A.

R. J. Angwin
 6 Fenterden Street
 SPOTSWOOD, 3015.

2 August 1996

Speaker Report - Supplementary Presentation on 27th June, 1996.

BIRD RIVER, TASMANIA.

Bob Rowlands.

The Bird River is in the south-west of Tasmania, entering Kelly Basin at the southern end of Macquarie Harbour. It is grouped with the Gordon and Franklin as one of the three wild rivers of the south-west. The Mount Lyell Mining Company commenced operations at Mount Lyell in 1892, and the town of Queenstown was formed as its headquarters. To get supplies in and ore out, they built a railway from Queenstown to the lower King River, completed in 1896. This was extended to Regatta Point near Strahan on Macquarie Harbour in 1900.

Another mining company, the North Mount Lyell Copper Company, began operations also near Mount Lyell in 1898 and built their own railway to Macquarie Harbour. This was slightly longer but through more favourable terrain and was completed in 1900. It connected their mine with a smelter at Crotty, later named Pillenger, near the mouth of the Bird River. The Mount Lyell Company took over its rival in 1903, operating both mines until 1929, when the Pillenger line was closed. The Strahan line continued to be used until 1963. A book, "The ABT Railway and Railways of the Lyell Region", by Lou Rae, covers the history of the area.

The Kelly Basin Track which we explored follows the route of the Pillenger line. There are now quite large trees growing along the old line and well over fifty fern species have been identified on the track by National Parks and others.

To get to the track, you drive south from Queenstown, initially on bitumen, then on good gravel. The Kelly Basin track leaves this road along the route of the old railway, and the first four kilometres or so is negotiable to four-wheel-drive vehicles only. Even in March, which is the best time of year, this track was extremely wet. The railway crossed the Bird River, but the bridge is now derelict and the four-wheel-drive track comes to an end. The remainder of the distance to Macquarie Harbour is an absolutely fabulous walking track. A travel company in Queenstown takes day trips as far as the bridge, but their clients would have little time for walking. We camped at the bridge for three days and so were able to explore the whole track. It took us a full

day to walk from the bridge to Pillenger and return.

Joan and I went there hoping to investigate the ferns of the area but we discovered the most magnificent collection of fungi we have ever seen. So on our fern excursion we photographed more fungi than ferns and have since joined the Fungi Group of the Field Naturalists to learn more about fungi. The track from the Bird River bridge to Pillenger follows the river the whole way and as an old railway it is most easy walking. A few of the cuttings have been blocked by landslips which we had to scramble around. Apart from a multitude of ferns in the rainforest, ferns have also colonised the sides of the railway cuttings. The Bird River itself is a relatively small river - a really delightful stream - with an abundance of ferns, mosses and fungi throughout the forest.

Another worthwhile visit in the Strahan area is to Teepookana, on the other railway route. This is accessible by car from Strahan, following the railway which is now a good but very narrow road beside the King River. The "iron bridge" over the King River at Teepookana is closed to public traffic but a delightful walk continues beyond the bridge along the old railway line as far as the next major bridge. This bridge is called the Quarter Mile" because of its length but much of it has been washed away. Like the Kelly Basin track, many ferns can be seen along this old railway track. We were fortunate enough to be taken across the "iron bridge" and up onto the Teepookana Plateau, a delightful and extensive area of rainforest with stands of Huon and King Billy pines, Leatherwoods and other trees and many interesting ferns and mosses.

We certainly saw the majority of the fern species in both areas. Joan has pressed many of them, although they are not yet all mounted.

Many thanks to Bob and Joan for the time and effort they must have put into writing this. I gave them the Speaker Report which I had prepared, for them to check over and received this very comprehensive article in reply. (No, I won't expect all our speakers to do this!)

Lyn Gresham.



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.



RESURRECTION OF ASPLENUM BULBIFERUM (HEN AND CHICKEN FERN) BY COINCIDENCE.

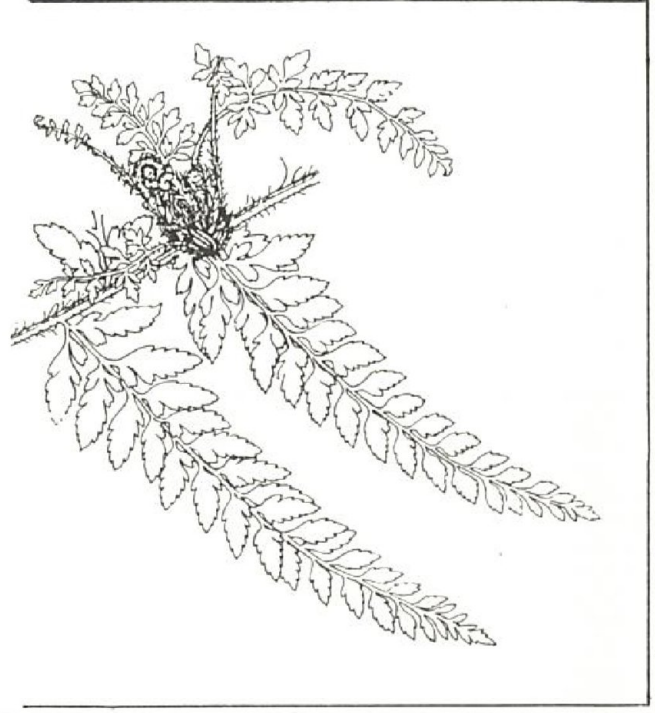
Kathy Goodall.

Working in our fernery, I was pruning untidy and decaying leaves from an *Asplenium bulbiferum* so I took off the small plantlets, thinking I would get time to pot them up. Well, I didn't find the time as I had hoped, so I threw them on the dirt in the fernery. The days passed. Then the weeks! Three weeks later I found that the wild birds had scratched my *Asplenium bulbiferum* plantlets onto the cement path.

They were SO shrivelled up. Oh, no! In despair, I found a bucket of water which was nearby - so in they went.

Two days later I had a close inspection. To my surprise I found that they had rejuvenated extremely well, as good as if the plantlets had come off the plant the same day! So in my mind this is a VERY hardy fern, one that I would gladly have in my fernery.

Today as you read this letter I still haven't found the time to pot these tough little ferns up. "Ah well, someday".



Kathy Goodall.
Wodonga.

HINTS AND TIPS....EUCALYPTUS OIL.

Joan Rowlands says that Eucalyptus Oil is better than Baby Oil for cleaning up your pots, and also for removing price etc., stickers and painted prices from pots.
Thanks for the tip, Joan.

COMPETITION RESULTS

Congratulations to the following winners of the Fern Competitions and the Special Effort draws.

JULY COMPETITION: (Category - A Selaginella)

First	Dorothy Forte	Selaginella 'Pumillo'
Second	Dorothy Forte	Selaginella 'Bronze Feathers'
Third	Cheryl Shelton	Selaginella martensii cv. Variegata

JULY SPECIAL EFFORT:

Exhibitor; Don Fuller
Nancy Perry, Bernadette Thompson, Angela Milligan, Dave White & Fran Harrison.

AUGUST COMPETITION: (Category - Three pressed fronds)

First	Dick Kissane	Cyathea dealbata, Blechnum patersonii & a Lastreopsis mounted separately with detailed information.
Second	Ruth Illingworth	Three fronds attractively arranged on a mount.
Third	Lyn Gresham	Three Adiantums, mounted separately.

AUGUST SPECIAL EFFORT:

Exhibitor; Ruth Illingworth
Fran Harrison, George Start, Eric Perry & Joy Horman.

SPORE LIST

Ordering: The following spore is free to those who donate spore. Otherwise members 20 cents each sample, non-members 50 cents, plus \$1.00 to cover p. and p.. 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 but to cover postage two International Reply Coupons would be appreciated.

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

- | | |
|---------------------------------------|--|
| Actinopteris semiflabella 9/95 | Dryopteris erythrosora 4/95 |
| Adiantum concinnum 1/96 | Dryopteris sieboldii 4/95 |
| Adiantum hispidulum 4/95 | Gleichenia dicarpa 5/95 |
| Adiantum polyphyllum 5/95 | Gleichenia microphylla 5/95 |
| Adiantum radd. 'Legrand Morgan' 12/95 | Histiopteris incisa 4/96 |
| Adiantum tenerum 'Fergusonii' 10/95 | Hypolepis glandulifera 5/96 |
| Adiantum trapeziforme 10/95 | Hypolepis rugosula 4/96 |
| Anemia mexicana 4/96 | Lastreopsis acuminata 4/96 |
| Anemia tomentosa 10/95 | Lastreopsis glabella 4/96 |
| Asplenium oblongifolium 4/96 | Lastreopsis velutina 2/95 |
| Asplenium scolopendrium 1/96 | Lindsaea microphylla 5/95 |
| Asplenium varians 11/95 | Mixed spore ex N.Z. 2/95 |
| Athyrium filix-femina 4/95 | Pellaea falcata nana 4/95 |
| Blechnum ambiguum 5/95 | Pellaea falcata 4/96 |
| Blechnum cartilagineum 5/96 | Pellaea intramarginalis 4/95 |
| Blechnum chambersii 4/96 | Pellaea quadripinnata 4/95 |
| Blechnum fluviatile 4/96 | Pityrogramma austroamericana 3/95 |
| Blechnum minus 4/96 | Pityrogramma calomelanos 5/96 |
| Blechnum occidentale 4/95 | Platyterium bifurcatum 4/95 |
| Blechnum patersonii 5/95 | Pneumatopteris pennigera 1/95 |
| Blechnum sp. (New Cal.) 4/96 | Polystichum australiense 1/96 |
| Blechnum watsii 4/96 | Polystichum braunii 4/96 |
| Calochlaena dubia 4/96 | Polystichum formosum 4/96 |
| Cheilanthes austrotenuifolia 4/95 | Polystichum lentum 4/95 |
| Cheilanthes multifida 4/96 | Polystichum proliferum 5/96 |
| Cibotium glaucum 11/95 | Polystichum richardii 2/95 |
| Coniogramme fraxinea 1/96 | Polystichum setiferum 'Rotundatum' 4/96 |
| Coniogramme intermedia 5/95 | Polystichum tsus-simense 11/95 |
| Cyathea australis 4/96 | Polystichum vestitum 2/95 |
| Cyathea brownii 4/95 | Pteris argyrea 5/96 |
| Cyathea cooperi 4/95 | Pteris biaurita 4/96 |
| Cyathea leichhardtiana 2/96 | Pteris comans 2/95 |
| Cyathea medullaris 1/95 | Pteriscretica 'Albo-lineata Alexandrae' 6/95 |
| Cyclosorus interruptus 4/95 | Pteris quadriaurita 1/95 |
| Dicksonia antarctica 11/95 | Pteris sp. (Nepal) 1/96 |
| Diplazium assimile 5/95 | Pteris tremula 2/95 |
| Diplazium australe 5/95 | Pteris umbrosa 11/95 |
| Doodia aspera 4/95 | Pyrrosia rupestris 5/95 |
| Doodia caudata 4/95 | Rumohra adiantiformis (Cape form) 4/96 |
| Doodia media 2/95 | Rumohra adiantiformis native 4/96 |
| Doryopteris pedata 10/95 | Sticherus lobatus 4/96 |
| Dryopteris athamantica 4/96 | Tectaria decurrens 6/95 |
| Dryopteris atrata 4/96 | Tectaria heracleifolia 9/95 |
| Dryopteris carthusiana 11/95 | Thelypteris navarrensis 4/96 |
| Dryopteris crassirhizoma 4/96 | |

Thank you to the following members for donations of spore: Don Fuller, George Start, Ray and Sylvia Chivers. Donations of fresh spore are always welcome.

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 5431.
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 (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) 9484 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. By appointment.

Marley's Ferns - Wholesale.
Phone (02) 9457 9168.
5 Seaview Street, Mt. Kuring-Gai 2080.
All Fern Society members welcome. By
appointment.

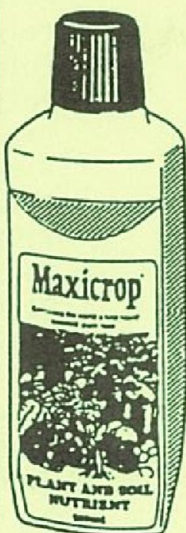
QUEENSLAND:

Moran's Highway Nursery -
Wholesale and Retail.
Phone (07) 542 1613.
Bruce Hwy, Woombye (1 km north
of Big Pineapple: turn right into
Kiel Mountain Road).
P.O. Box 47, Woombye 4559.

READERS AND ADVERTISERS

PLEASE NOTE:

Austel phone number changes are
being made in this listing as
appropriate. There will be many
changes in the November issue of
the newsletter.



Maxicrop

"Goodness from the sea"

- * Contains over 60 elements and minerals
- * Safe and easy to use.
- * Made from fresh growing seaweed.
- * Ideally suited for ferns
- * Maxicrop is available from nurseries and other places where garden products are sold.

Maxicrop

926 Mountain Highway, Bayswater, Vic. 3153
P.O. Box 302, Bayswater, Vic. 3153. Telephone (03) 9720 2200