

**THE  
FERN SOCIETY  
OF  
VICTORIA**

**Inc.**

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# **NEWSLETTER**

VOLUME 14 Number 4, May 1992



# FERN SOCIETY OF VICTORIA Inc.

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PRESIDENT'S MESSAGE:

Elsewhere in this Newsletter Bob Lee gives a report on our 1992 Fern Show at Nunawading. I would simply like to add my sincere thanks to all the people who assisted, many for the full weekend, and particularly to Bob Lee for his excellent work as Chairman of the Fern Show Committee. Although the number of people attending was down on previous years the Show still serves a very important function in publicising the Society.

The raffle for the plant stand which was on display in the foyer during the Show was won by our treasurer Marilyn Wood (despite my efforts to arrange for my ticket to be drawn). The stand was generously donated by Russell Millar of Albury, who came to Melbourne for the Show. I thank Russell of behalf of the Society and congratulate Marilyn on her success.

As mentioned a few times already, the fern display and sale on Saturday, 30th May at Wangaratta will replace the normal monthly meeting. Mary Frost's enthusiastic organising will, I believe, result in an event well worthwhile attending. I hope as many members as possible will be there to enjoy the display and the other activities planned for the weekend. Full details of the weekend are given later in this Newsletter.

Barry White.



## MAY ACTIVITY

### WANGARATTA WEEKEND

The Mary Frost Show is on in Wangaratta on Saturday, 30th May.

Mary has arranged for a floral artist to do a complete stage display with tubs of ferns and floral art using all fern foliage, and she assures us it will be quite spectacular. Mary has also received strong support from fern sellers and suppliers of materials for the fernery, so there will be good opportunities to add to your collection.

The Mayor/Mayoress of Wangaratta will be officially opening the display at 12 noon, although the display will be open to the public from 11.30 a.m. until 4.30 p.m. It would be splendid to have a large number of Society members present for the official opening. The display has been well advertised in Wangaratta and the surrounding areas and a (reduced) copy of the advertising leaflet is reproduced below for interest.

To find the display at Emmanuel Hall in Rowan Street, turn left from the main street of Wangaratta at the Commonwealth Bank into Reid Street, which changes its name to Rowan Street after passing the roundabout. The church and hall are on the right hand side, with ample car parking at the back of the church.

Accommodation and transport for the weekend will be by private arrangement. As mentioned previously, if you would like a lift to Wangaratta please ring me on 337 9793 and I will try to organise it.

A Sunday program has been arranged. We will get together at the Merriwa Park Gardens at 9.30 am. The Gardens are on the right hand side of the main street (going north). The entrance leads down to a fern area which will be the assembly point. After an opportunity to look around the gardens the first stop will be at Mary and Garnet Frost's home for an inspection of their fernery and perhaps a chance to purchase some of their honey. From there the group will go to Beechworth for lunch, and then on to Mount Stanley where the Frosts will lead the group into local fern areas; then return via Myrtleford and Milawa, with an optional delay at Brown Brothers winery, to the Hume Highway and home.

For those with some spare time on their hands on Saturday or who wish to make the trip into a long weekend, some places worth visiting are Bailey's Bundarra vineyard located 7 km north of Glenrowan, the collection of wineries around Rutherglen, the Airworld Museum on the Milawa road holding the world's largest collection of flying antique civil aircraft as well as a large collection of antique bikes, cars and trucks, and the Ned Kelly memorabilia at Glenrowan. The Visitors Centre on the Hume Highway at South Wangaratta will be able to supply many other areas of interest (e.g. the local cemetery where the headless body of the bushranger 'Mad Dog' Morgan was buried may appeal).

Barry White

(See leaflet next page.)

FERN SOCIETY OF VICTORIA INC.

FERN DISPLAY

Emmanuel Hall Rowan St.  
Wangaratta

30th May 1992

11.30 am - 4.30 pm

Display of exotic, tropical and common ferns.

Plant, spore and basket sales.

\*\* Demonstrations \*\*  
\*\* Expert advice \*\*  
\*\* Competition \*\*

FLORAL ART

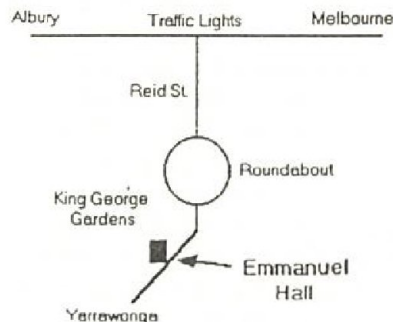
Foliage arrangements by Brian Payne

FEATURING FERN FOLIAGE

Admission \$2.00  
Free Tea / Coffee



Adiantum capillus veneris



Adiantum philippense

JUNE GENERAL MEETING

- Date: Thursday, 18th June.  
Time: Pre-meeting Activities commence 7.30 p.m.  
Venue: National Herbarium, South Yarra.  
Guest Speaker: Kevin Handreck, C.S.I.R.O. Division of Soils.  
Topic: Potting Mixes and Ferns.

Kevin will be our Interstate Guest Speaker for this year and his status as an expert on the subject of growing media ensures an outstanding evening.



1992 FERN SHOW REPORT

The efforts of teams of willing workers (less numerous than usual with some of our regulars absent through illness and other commitments) saw the setting up of the display hall and fern sales area successfully completed on Friday, 3rd April, and the Show opened on Saturday under rather hot, windy conditions.

This year the pergola with hanging specimens was located in the centre of the hall and was thus the dominant feature of the display. The *Adiantums* were arranged on the bench across one end of the hall and the rest of the space was devoted to various floor displays. One of these incorporated a waterfall which was kindly loaned by L. & N. Gedye Pty Ltd.

Demonstrations of fern cultivation techniques were held on both days, but under some difficulties on the Sunday when showers developed. The Spore Bank and Book Sales table both operated throughout the weekend, as did the refreshment service which was appreciated by both visitors and members.

Patronage of the Show by the public was disappointingly low with only 510 visitors (just over half the number last year) and activities in all areas were correspondingly affected. However, on the positive side those visitors who did come were able to view the display in comfort and members at the Show had more time to socialise. Five of the visitors joined the Society and we hope their time with us will prove both enjoyable and informative.

One visitor to the Show was member Russell Millar from Albury, who kindly donated a plant stand he had made as the prize for a raffle. Drawing of the raffle was deferred until the April monthly meeting to give members who were not at the Show a chance to participate.

A final figure for the net profit from the Show is not yet available. However, with the reduced attendance it will clearly be a lot less than for past events, even though admission charges were increased for the first time since 1986. I estimate something around \$900.

On behalf of the Show Committee I should like to thank all members who gave their time and effort to the preparation and running of the Show and congratulate exhibitors on the quality of the ferns contributed for the display.

The Show Committee will be meeting soon to discuss options for the future of the Fern Show. Any comments or suggestions from members will (as always) be much appreciated.

Bob Lee  
Chairman - Fern Show Committee

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NEW FERNS LISTED UNDER FLORA GUARANTEE ACT

In his address to our December meeting on the Flora and Fauna Guarantee Act, Mr Tim Harding said that the Scientific Advisory Committee had made a preliminary recommendation for listing of *Adiantum capillus-veneris* and *Cyathea cunninghamii* as threatened species under the Act. These ferns have now been officially listed.



SPEAKER REPORT - GENERAL MEETING - 16TH APRIL, 1992

Speakers: Terry Turney, Bill Taylor, Chris Goudey, Barry White, Keith Hutchinson.

Topic: FERN ESSENTIALS

Following our custom of having a programme designed for new members at the first monthly meeting after our Annual Fern Show, the presentation for the evening consisted of five short talks on the basic aspects of ferns in general and on some of the major fern groups.

WHAT IS A FERN ? - by Terry Turney

Terry began by displaying a *Chrysanthemum* in flower, a *Campyloneurum* and some Sphagnum Moss. We all knew that the *Campyloneurum* was the fern, but why? What characteristics made it a fern?

Ferns differ from the higher plants in that they do not produce flowers or seeds, and they share with mosses the characteristic of reproducing from spores. Ferns and higher plants have conductive vascular tissue which brings water and nutrients up from the soil. Mosses have no vascular tissue and this is why mosses never grow tall. So ferns are in many ways intermediate between mosses and the higher seed-bearing plants.

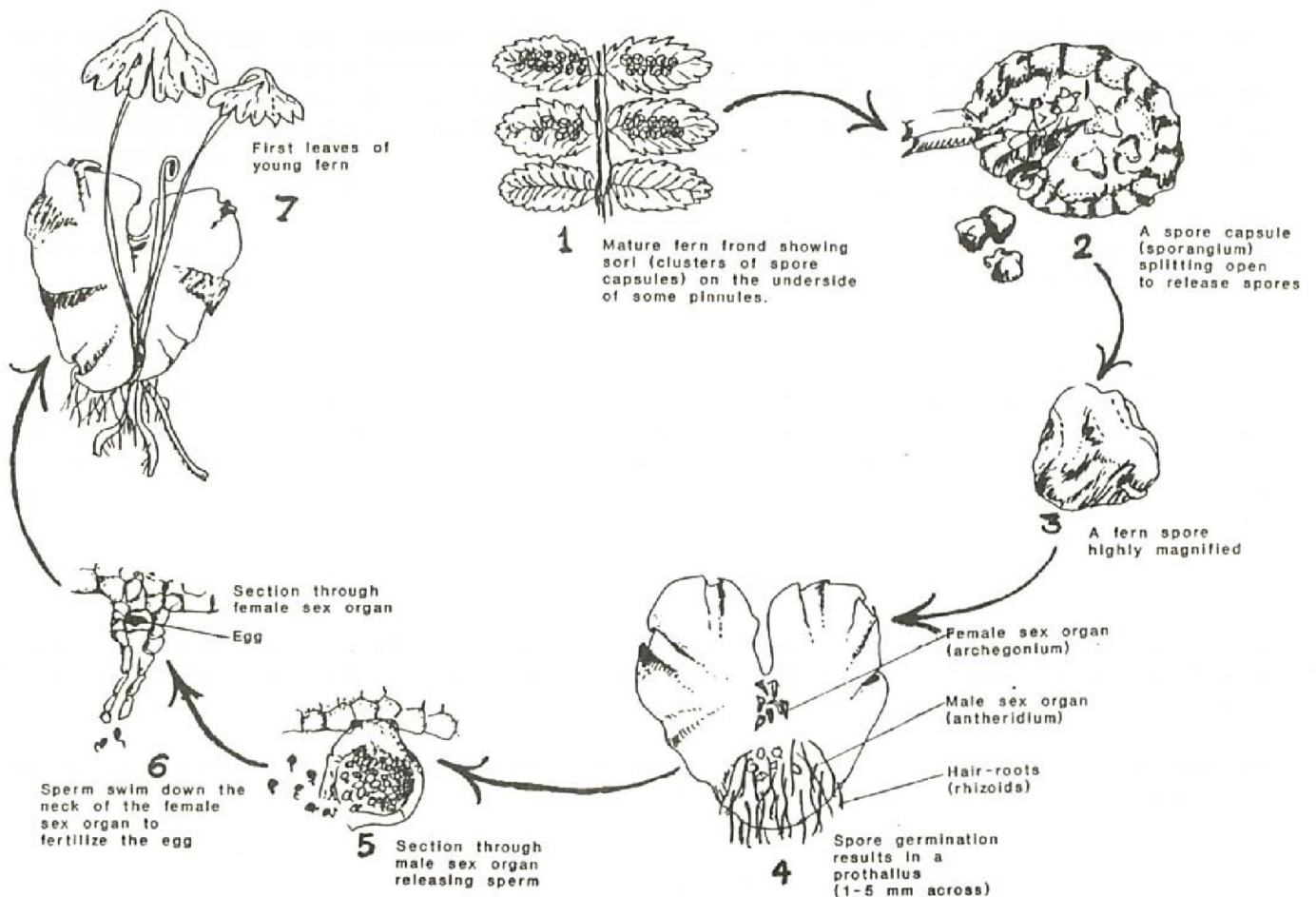
The characteristic that is peculiar to ferns is their reproductive cycle, which has a particular pattern of alternation of the generations wherein the generations are quite independent.

Ferns follow the basic reproductive cycle shown opposite; there are minor variations for some classes of ferns. The cycle starts with the fern plant as we know it, which is called the sporophyte stage. At this stage it has at least two sets of chromosomes in the nuclei of its cells (called a diploid state) and may have more. When the plant is mature it produces spores, which are single cells containing half the number of chromosomes of the sporophyte cells; this is called a haploid state. The tiny spores are held in small capsules called sporangia which are grouped into sori, the spots visible on the back of the fern frond. Opening of the sporangia when ripe releases the spores which are dispersed by winds, etc.

When a spore encounters the correct moisture, light and temperature conditions it germinates to produce a small flat structure called a prothallus, which is the gametophyte generation of the fern. This is completely independent of the parent plant and may live in this state of development for long periods (up to years in some cases). The gametophyte is the sexual stage of the fern and the prothallus eventually develops both male and female sex cells. These produce eggs and sperm which combine to restore the diploid state. A new sporophyte now begins to grow from the prothallus and eventually becomes the familiar fern plant. The prothallus shrivels away.

In the case of the higher plants, fertilisation of the egg by the pollen occurs within the flower and when the seeds develop each contains the next generation of the plant (the equivalent of the fern sporophyte) in embryo form still within the flower; there is no





### Reproductive Cycle of a Fern

independent generation equivalent to the prothallus stage of the fern. The spores of mosses also produce gametophytes on germination and as with ferns these develop sex organs. A sporophyte grows from the gametophyte and eventually produces more spores to continue the cycle. However, the sporophyte is only a minor structure, often just a small spike, and it is the gametophyte that we normally recognise as the moss plant.

There is a group of plants called the Fern Allies which have close relationships to ferns (including vascular tissue, so they are able to grow tall) but with important structural differences. They have a range of reproductive strategies slightly different from that of the true ferns but still including the independent gametophyte stage. The members of this group are

- Clubmosses	<i>Selaginella</i>	9 Australian species / 600 world-wide
	<i>Phylloglossum</i>	1 / 1
- Tassel Ferns	<i>Lycopodium</i>	7 / 400
- Horsetails	<i>Equisetum</i>	0 / 29
- Fork Ferns	<i>Psilotum</i>	2 / 3
	<i>Tmesipteris</i>	5 / 8
- Quillworts	<i>Isoetes</i>	4 / 60+

For the true ferns (Pteropsida) there are about 400 species in Australia and about 12,000 world-wide. Note that the Clubmosses are not true mosses but vascular plants like ferns.



Ferns are found everywhere around the globe except for Antarctica and in the oceans. They occur in the ground as terrestrials, on trees as epiphytes, on rocks as lithophytes, in fresh water as floating ferns and in deserts as xerophytes. Some of the last group have a similar adaptation to the cacti with hairy coats or a cuticle to reduce water loss, while others can shrivel up when dry and re-hydrate rapidly when water becomes available (the 'resurrection' ferns). The only fern which lives in a sea-like environment is *Acrostichum speciosum*, the Mangrove Fern.

Thus ferns are very versatile and live in a wide variety of habitats, but a disturbing fact is that about 25% of reported ferns are now probably extinct because of destruction of their environments through deforestation. At the present rate of deforestation, particularly in S.E. Asia and South America, another 25% is likely to become extinct within the next 10 years.

#### ADIANTUMS - by Bill Taylor.

The main factors in the successful growing of *Adiantums* (Maidenhairs) are having an appropriate potting mix and controlling watering to suit the needs of individual plants.

Maidenhairs require a friable, open mix with plenty of humus and good drainage. Bill's own mix contains

Shredded Leaves	50%
Pine Bark (13mm + fines)	20%
Washed Coarse River Sand	15%
Sandy Loam	10%
Mountain Soil	5%

The shredded leaves are a mixture of equal parts of Liquidambar, Oak and Plane, these varieties being preferred because they do not break right down in the pot to form sludge in the mix. The leaves are preferably collected when moist after rain, as decomposition then begins more quickly, and are stored in plastic bags for a few months. They are then shredded and combined with the other ingredients and the mixture is left in bags for a further couple of months before use.

The watering needs of the various varieties should be established by observing their behaviour. In general they do not like to be over watered.

Plants of *Adiantum capillus-veneris* and its cultivars, such as 'Banksianum', 'Fimbriatum' and 'Imbricatum', have rhizomes which travel around the pot and generally do not produce a deep root system. They seem to like a lot of water. In nature, *A. capillus-veneris* often grows on very wet rock faces with water actually running down them.

*Adiantum raddianum* 'Fragrans' tolerates both dry and wet conditions, which probably helps to explain its popularity in the nursery trade. Ferns in the *A. raddianum* group generally stay in a clump form at the base.

When ferns are re-potted it is often appropriate to remove a mass of deteriorated roots from the bottom, which leaves only a shallow root system. In this case it is important to remember to water more frequently until the roots are re-established.



Ferns with dense foliage like the *A. raddianum* cultivars 'Pacottii', 'Crested Pacottii' and 'Weigandii' are very susceptible to rotting in humid situations, particularly if they are in contact with other plants. They should be kept isolated with plenty of air movement around them. Even then occasional cutting back may be needed. 'Fritz Luth' with its beautifully symmetrical foliage is easy to grow with adequate water and light, but it also will rot if congested.

Maidenhairs show a wide variation in pinnule shape, e.g., tear-drop in 'Double Leaflet', scintillated (shredded) in 'Scintilla', 'Dissected Leaflet' and 'Joyce', like an oak leaf in 'Splendens' and trapeziform for many of the tropical varieties. They also vary in pinnule size from the larger-leafed varieties 'Pacific Maid' and 'Lady Geneva' to the tiny 'Micropinnulum'. Some of the varieties with crested ends are ideal subjects for hanging baskets as they tend to cascade, but keeping the growing medium wet can be a problem.

Bill concluded by restating the need for a good friable, open potting medium with plenty of drainage and the avoidance of over-watering. Plants should be allowed to dry out reasonably well between waterings. If a plant dries a little too much so that its fronds shrivel, the dead fronds can be cut off and the plant will re-grow. If it drowns from over-watering there is no recovery. The aim should be 'damp-dry' rather than 'damp-wet'.

#### ASPLENIUMS - by Chris Goudey

The genus *Asplenium* is probably the largest of all, occurring world-wide and having some 650 - 700 species, both terrestrial and epiphytic. The predominant epiphytes in rainforests are *Aspleniums*, especially in tropical rainforests where they grow huge. The Bird's-nest Fern (*Asplenium australasicum*) can grow fronds up to 200 cm long.

At the other end of the size scale are the tiny *A. ruta-muraria* (Wall Spleenwort) from cold climates in Europe and North America with fronds no more than 12 cm long and *A. septentrionale* (Forked Spleenwort) of similar size, which has leathery, grass-like fronds.

Some 26 species of *Asplenium* occur in Australia and more may have been discovered in recent years.

The main feature characteristic of *Aspleniums* is the arrangement of their sori. These are elongate to very long and are "boat-shaped". The indusium flaps always open on the one side - towards the vein.

Chris has a particular fondness for *Aspleniums*, some of the reasons being the hardiness of the ground ferns that grow in cool temperate regions around the world and their tendency to hybridise freely. If sufficient time is spent in bush areas where two or more species, grow hybrids will always be found, especially in areas of high rainfall.

A systematic approach helps in recognising hybrids. First learn to recognise one species at all stages of its development and then do the same for the other species. Then start looking for plants that are different. When a hybrid is found it will be clearly recognised as intermediate between the parents.

Chris has spent a lot of time looking for hybrids in New Zealand. One of the nicest found was a cross between the giant *Asplenium obtusatum*



from Stewart Island and *A. bulbiferum*. Because this fern comes from so far south it is almost impossible to prevent drooping and burning of the tips of new growth on very hot days; there is no permanent damage.

A beautiful hybrid from Lord Howe Island is one between *A. bulbiferum* and *A. surrogatum*, which has been recently marketed by Chris under the name "Island Beauty". The latter parent grows on the summits of Mt Gower and Mt Lidgbird, where it is relatively common. It is a large fern but extremely slow growing; the hybrid is much faster.

Another appealing characteristic of *Aspleniums* is that some of them are bulbiferous, producing on their fronds bulbils from which new plants can be propagated. Two which produce bulbils on the tips of the fronds are *A. prolongatum* from Japan and our native *A. flabellifolium* (Necklace Fern). *A. bulbiferum* (Hen and Chicken Fern) and all its hybrids produce bulbils on the top surface of the fronds.

Two interesting ferns from Zimbabwe were *A. hypomelas*, which grows as an epiphyte only on the trunks of *Cyathea manniana*, and the beautiful *A. friesiorum* which looks like a more finely dissected form of our Mare's-tail (*A. polyodon*). This grows on mounds in the ground under the trees in pine forests.

There are five or six sub-genera of *Asplenium*; the one which occurs in Australia is *Pleurosorus*. In recent times *Camptosorus*, *Ceterach* and *Phyllitis* (the Hart's-tongues) have been included under the *Asplenium* grouping.

One of the main disadvantages of *Aspleniums* is their appeal to slugs and snails, which cause massive damage. Another pest common on these ferns is the leaf nematode which causes black patches on the fronds. The nematode is a tiny worm which can be transferred between plants by water splashes. Removal of damaged fronds and care in watering are the best preventatives; the chemical controls available are extremely toxic.

#### BLECHNUMS - by Barry White

The genus name *Blechnum* comes from the Greek 'blechnon' = a fern.

Most members of the group have attractively coloured new foliage with shades of bright red, pink and pink with soft green. *Blechnum articulatum* (Rosy Water Fern) from northern Queensland has a particularly bright red shade to its new fronds.

*Blechnums* do not exhibit a great variety of forms. Most have fronds that are of simple pinnate or pinnatifid shape but there are still many interesting variations in size and patterns in the pinnae. Some varieties develop a substantial trunk as they age to give a tree-fern appearance.

There are about 200 different species of *Blechnum* world-wide, mostly in the southern hemisphere with only a few in the northern hemisphere. There is only one of the 200 that does not occur in the southern hemisphere and this is the only one that occurs in Britain - *Blechnum spicant*, the Ladder Fern (similar to but larger than our Alpine Water Fern, *B. penna marina*). There are about 18 species in Australia, including 9 or 10 in Victoria. The latter uncertainty is caused by the



fern that occurs in the Otways and on King Island referred to only as *Blechnum* sp. as it has not yet been decided whether it is a separate species or a form of *B. wattsi*.

*Blechnums* are usually ground ferns and are generally found near water, giving rise to the common name Water Ferns. A few have a climbing habit. Of these, *B. contiguum* from Lord Howe Island has a thick, hairy rhizome which climbs the trunks of tree-ferns. The fronds of this fern are dark green on top and paler below and the pinnae have a very distinctive vein pattern. *B. filiforme* from New Zealand climbs trees vigorously as well as being a ground cover.

The most typical feature of *Blechnums* is the spore pattern. The spores are arranged in lines right along the midribs of the pinnae. There is a major division of species between those where the fertile fronds are the same shape as the non-fertile and those where they are distinctly different, i.e. the ferns are dimorphic. *B. cartilagineum* and *B. wattsi*, respectively, are examples of the two types.

*Blechnums* tend to be quite hardy ferns in cultivation, especially if ones from temperate climates are selected and adequate water is supplied. The potting mix is not critical. A common problem is blackening of parts of the fronds by leaf nematodes, microscopic round worms of which there are numerous varieties. This intermittent blackening also occurs on plants in the bush. Sometimes whole fronds turn uniformly black. It is thought that this may be caused by poor ventilation and sweating; it is different from the nematode problem.

*Blechnums* are common in the bush in Victoria, often in wet places. Some species which spread by underground stolons often form large clumps.

(To be concluded next issue.)

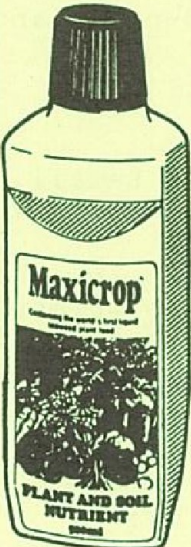
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#### SPECIAL EFFORT WINNERS

#### April General Meeting

Jean Boucher  
Don Fuller  
Lexie Hesketh  
Allison Whytecross  
Ray Harrison  
Norma Hodges

\* \* \* \* \*



## Maxicrop

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Opinions expressed in articles in this Newsletter are the personal views of the author and are not necessarily endorsed by the Society.



## BUYERS' GUIDE TO NURSERIES

### VICTORIA:

Andrew's Fern Nursery - Wholesale and Retail.  
Melbourne Road, Arcadia, 3613. Ph: (058) 26 7285.  
Large range of ferns for beginners and collectors.  
Open daily 10 am - 5 pm except Christmas Day.

Austral Ferns - Wholesale Propagators. Ph: (052) 82 3084.  
Specialising in supplying retail nurseries with a wide range of hardy ferns; no tubes.

Dingley Fern Market - Wholesale and Retail. Ph: (03) 551 1868.  
233 Centre Dandenong Road, Dingley, 3172.  
Specialising in Ferns, Palms, Indoor Plants, Orchids and Carnivorous Plants. Open daily except Christmas Day.

Fern Acres Nursery - Retail.  
Kinglake West, 3757. Ph: (057) 86 5481.  
(On main road, opposite Kinglake West Primary School).  
Specialising in Stags, Elks and Bird's-nest Ferns.

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

R. & M. Fletcher's Fern Nursery - Retail.  
62 Walker Road, Seville, 3139. Ph: (059) 64 4680.  
(Look for sign on Warburton Highway, 300m east of Seville shopping centre). Closed Tuesday, except on public holidays.

Ridge Road Fernery - Wholesale and Retail.  
Weeaprounah, 3237. Ph: (052) 35 9383.  
Specialising in Otway native ferns.

Viewhaven Nursery - Wholesale and Retail.  
Avon Road, Avonsleigh (near Emerald), 3782. Ph: (059) 68 4282  
Specialists in Stags, Elks, Bird's-nests and Native Orchids.

### NEW SOUTH WALES:

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

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

Marley's Ferns - Retail.  
5 Seaview Street, Mt. Kuring-gai, 2080. Ph: (02) 457 9168.

### QUEENSLAND:

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