



THE
FERN SOCIETY

OF
VICTORIA

Inc.

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NEWSLETTER

VOLUME 10, NUMBER 10, NOVEMBER, 1988

FERN SOCIETY OF VICTORIA INC.

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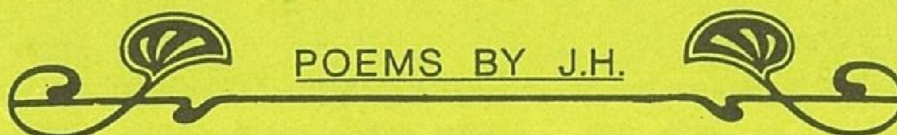
SUBSCRIPTIONS: Single - \$13.00 (Pensioner/Student - \$9.00);
 Family - \$16.00 (Pensioners - \$11.00);
 Overseas - A\$25.00 (by Airmail).

PRESIDENT'S MESSAGE:

Many thanks to Bill Taylor and his dedicated band of helpers for representing the Society at the Stringybark Festival on 15-16th October, and congratulations on the quality of the display, particularly as it was erected under extremely boisterous weather conditions. Overall the Festival, with its varied displays and activities, was a credit to its organizers. Unfortunately we had to cancel our participation in the Bicentennial Display at Nunawading, because of difficulties in organizing sufficient ferns for the display and sales tables.

As the Wangaratta Garden Club plant show will be over by the time this Newsletter reaches you, the next event on our show calendar will be our own major Fern Show at the Nunawading Horticultural Centre on 8-9th April 1989. Planning for the show has begun and we will soon be announcing our proposals for the Show's theme. In the meantime, please keep these dates in mind. and give some thought to joining in the Show's activities. We would particularly like to encourage participation of newer members and recommend it as an enjoyable way to get to know your fellow members better, whilst learning more about ferns.

Bob Lee



Filmy fronds
 Everlasting pleasure
 Rewarding
 Neatly put together

It is airy and light,
 And such a delight,
 Who could not care,
 For the lovely maidenhair?

NEXT MEETING

SLIDE AND DISCUSSION NIGHT
with various speakers
on THURSDAY, 10TH NOVEMBER, 1988
at the
WELSH PRESBYTERIAN CHURCH HALL
320 LATROBE STREET, MELBOURNE

• PROGRAMME:

- 7.30 p.m. Fern and Book Sales
Spore Bank, Library Loans
Special Effort Ticket Sales
- 8.00 p.m. November General Meeting
- 8.30 p.m. Slide and discussion night
Various speakers
- 9.30 p.m. Fern Pathology and Identification Table.
Special Effort.
- 9.45 p.m. Supper.
- 10.00 p.m. Close



DECEMBER XMAS MEETING AT RIPPONLEA



Members and families are invited to our Christmas meeting to be held on Sunday, 11th December at Ripponlea, starting at 2.00 p.m. This short meeting will be followed by a tour of Ripponlea's magnificent fernery. At about 3.30 p.m. we will have our Xmas party (as is customary, its a "bring a plate" function). Donations for the Xmas hamper would be appreciated.

There is no admission charge to Ripponlea that day for Fern Society members and families, provided you bring along some identification (e.g. your Society badge).



SPEAKER REPORT - October Meeting.

Speaker - Ross Hall

Topic - "Soils and Growing Media".



Ross Hall is senior Lecturer in the Nursery Dept. at the Victorian College of Agriculture and Horticulture, Burnley. He specializes in plant propagation and soil science.

Until about 30 years ago there was a considerable mystique about the formulation of potting mixes and nurserymen would rarely reveal details of the mixes they had developed. Since the late 1950's, the formulation of these mixes has been put on a much more scientific basis. A driving force for this was the commercial need to reduce variations in nursery stocks. A mix, which was reproducible between batches, was an obvious step in achieving this.

In Australia, development work was driven by a shortage of good quality local peat and by the high cost of imported material. Traditional potting mixes used mixtures of soil, washed river sand and peat moss. Suitably treated pine bark was found to be an effective substitute for peat, but it did not combine well with the soil. With high quality soil also being in short supply, the logical trend was towards soilless potting mixes, which predominate today. For environmental reasons it was also desirable to find replacements for river sand, fern fibre etc. Most modern potting mixes are based on materials which are potentially waste, such as pine bark and sawdust. For these reasons, Australian nurserymen and research organizations have been in the forefront of developing soilless potting mixes. A recent overseas trip convinced Ross that the quality of plant production, using these mixes, was equal to the best elsewhere in the world.

Ross stressed that the requirements for growing media are quite different from those of soils, where plants are grown in the ground. In a pot there is only a limited volume of media available, and the artificial barrier imposed by the pot changes the drainage characteristics, when compared with soil in the ground.

Physical Characteristics of Potting Media.

The main requirements in a potting medium are moisture holding capacity, coupled with good drainage to prevent water logging and sufficient porosity to allow good aeration. Much more porosity is needed in a potting mix than soil in a garden, where there is generally good movement of air and water through the continuous mass of soil.

Leading on from the main requirement for good drainage, Ross argued strongly against the use of crocking in pots, irrespective of size. Tests have shown that the bottom 20-30 mm of mix in a pot remain saturated with water after the pot has drained off excess; in this zone little root growth occurs. Because the voids in the crocking are much larger than in the mix, there is no capillary action from the mix into the crocking. The result is to move the water saturation zone upwards by the height of the crocking, decreasing the volume of the pot available for root growth. Similarly, it is not a good idea to place coarse gravel around soil drainage pipes in the garden as there is no movement of water from the soil to the gravel until the soil is saturated. Terra-cotta pots are also inferior in drainage to good modern plastic pots.

Other requirements for a good commercial mix are that it should be light in weight and dark in colour - people prefer potting media to look like soil! Fortunately, pine bark, scoria, brown coal and peat moss give a colour like soil. The medium should not shrink on drying out (sawdust shrinks badly on drying and is very difficult to re-wet) and should be free of weed seeds and disease organisms. The last two can be major problems in soil-based mixes and sterilizing may be necessary. Sterilization can be done in a domestic oven (conventional or microwave) or by watering with dilute household bleach (at about 0.2% chlorine level - bleach is sold at about 4% chlorine concentration).

Chemical Characteristics of Potting Media

Chief requirements here include:

i) an appropriate level of acidity. This is generally expressed on a pH scale, where a pH of 7.0 is neutral and an increase of one pH unit represents a ten-fold decrease in acidity. With soils, a pH around 6.0-7.0 (i.e. slightly acid) suits many plants. Particular plants, such as most ferns, rhododendrons and azaleas, require either a lower pH (more acid) or others, such as many Aust. natives, a higher pH (more alkaline). A soilless mix needs to be slightly more acidic than a soil. It is found that the level at which most nutrients are readily available is about pH of 5.5.

ii) the ability to hold nutrients and release them to the plant. This is related to the "ion-exchange capacity" of the medium. Soilless mixes are usually inferior to soils in nutrient holding ability, and normal fertilizers leach out too quickly, leaving little available for the plant. Initially, this problem caused a lot of resistance from nurserymen to the use of soilless potting media. However, it is no longer a problem with the advent of slow-release fertilizers, such as Osmocote. The components of soilless mixes vary in their ability to hold nutrients: peat moss and brown coal are very good, pine bark and scoria less so, sand is poor and sawdust is worse.

iii) not too high a concentration of dissolved salts. The initial level of salts in a medium should be reasonably low or it will become too high when fertilizers are added. Plants will be damaged in the same way as when they are over-fertilized. Problems with over-fertilizing tend to be more prevalent in Spring, when cold spells after the fertilizer is added tend to decrease the frequency of watering, but the Osmocote continues to release. Too high a concentration of nutrients can build up. Soils have a greater ability to buffer the effects of over-fertilization than soilless mixes.

Components in Soilless Potting Media

Peat moss has many desirable features - it holds water well, provides good aeration, has good nutrient exchange capacity and is slightly acid.

Composted pine bark has quite good water holding capacity. It does not shrink in the pot when it dries out, but does break down after a time. Both pine bark and sawdust must be composted before use, to break down toxic phenols and prevent ammonia toxicity, which develops when fresh materials are used, and composting takes place in the pot. To compost, add approx. 1 kg of urea per cubic metre of material, hose it in, turn the heap over a few times and leave it for 6-8 weeks. The pile gets hot enough to burn the skin, so be careful if testing its activity.

Brown coal is sometimes used to improve the water holding capacity of a mix, but its main virtue is in its capacity to hold nutrients and release them slowly. Its much better than pine bark in this regard and even superior to peat.

Other nutrients used regularly in potting media include: scoria, vermiculite, perlite, polystyrene, peanut shells, sunflower husks, old mushroom compost, coffee grounds and even shredded rubber. Most contribute little to the physical and chemical properties of the media.

Plant Nutrition:

The elements required for plant growth can be divided into three groups:

i) Carbon(C), hydrogen(H) and oxygen(O) are obtained from the air and water.

ii) The main nutritional elements, nitrogen(N), phosphorus(P), sulphur(S), calcium(Ca) and magnesium(Mg), which have to be supplied by the grower. N, P and K as a fertilizer, Ca and Mg can be got from dolomitic lime used to adjust the pH.

iii) The trace elements iron(Fe), manganese(Mn), zinc(Zn), copper(Cu), boron(B), molybdenum(Mo), chlorine(Cl), cobalt(Co) and nickel(Ni), which are generally present in sufficient quantities in the mix. Sometimes Fe, Mn and Zn do need to be supplied.

After an active question period, Ross showed some slides taken on his recent overseas trip. At the conclusion of his presentation, Albert Ward moved a vote of thanks to Ross, which was passed with enthusiastic acclamation by all.



Key To Symptoms of Nutritional Deficiencies.

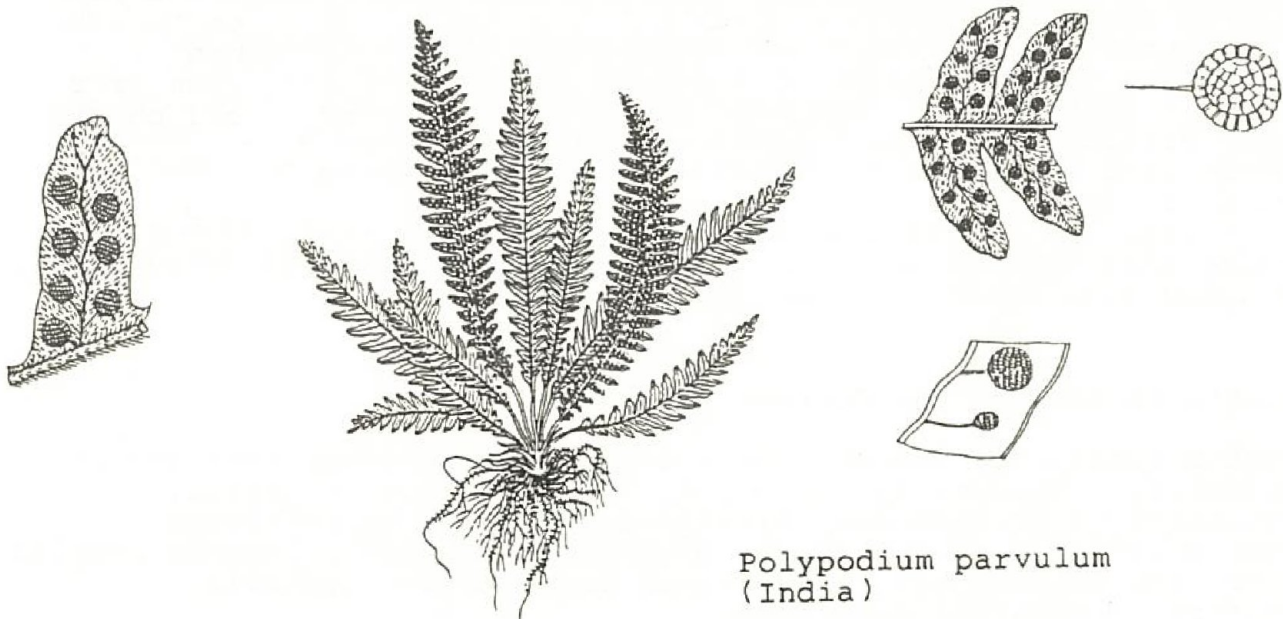
The following key outlines a method used for determining nutritional element deficiencies in seed-bearing plants. It is not known whether ferns generally show corresponding symptoms, so this key should be used with some caution. We would like to hear from any member who has information relating specifically to ferns.

It is not common to have trace element deficiencies in garden situations. "Chlorosis", mentioned in the key below, is the plant disease in which normally green tissue is pale, yellow or bleached entirely or partially. Apart from lack of essential elements, other causes of chlorosis can be viral or insect infections, stem or root rot, or injury from overuse of fertilizers, incorrect soil pH or cold temperatures.

1. Older or lower leaves most affected, either localized or generalized:
 2. effects generalized over whole plant; drying of lower leaves; plant light or dark green
 3. Plant light green; lower leaves yellow, drying to light brown colour, stalks short and slender if element deficient in later stages of growth.....NITROGEN

Key to Symptoms of Nutritional Deficiencies (cont)

- 3. Plant dark green, often developing red and purple colours; lower leaves sometimes yellow, drying to green-brown or black, stalks short or slender if deficient in later growth stages.....PHOSPHORUS
- 2. Effects mostly localized; mottling or chlorosis, with or without spots of dead tissue on lower leaves; little or no drying up of lower leaves.
 - 3. Mottled or chlorotic leaves; typically may redden; tips or margins turned up; stalks slender.....MAGNESIUM
 - 3. Mottled or chlorotic leaves with large or small spots of dead tissue.
 - 4. Spots of dead tissue small, usually at tips and between veins, more at margins; stalks slenderPOTASSIUM
 - 4. Spots generalized, rapidly enlarging, generally between vein and eventually between veins themselves; short stalks; leaves thick.....ZINC
- 1. Newer leaves or buds affected, symptoms localized.
 - 2. Terminal bud dies, following distortion at base or tips of young leaves.
 - 3. Young leaves of terminal bud at first typically hooked, dying back at tips and margins; terminal bud finally dies.....CALCIUM
 - 3. Young terminal leaves go light green at base, finally breaking down; later leaves twisted and stalk dies backBORON
 - 2. Terminal bud commonly alive, damage in younger leaves or bud.
 - 3. Young leaves permanently wilted, without marks; stem below seed head bent.....COPPER
 - 3. Young leaves not wilted; chlorosis with or without dead spots on leaf.
 - 4. Dead spots scattered ion leaf, small veins tend to remain green.....MANGANESE
 - 4. Dead spots not common; chlorosis may involve veins.
 - 5. Young leaves, veins and tissue between veins is light green.....SULPHUR
 - 5. Young leaves chlorotic, principal veins typically green; stalk short and slenderIRON



Polypodium parvulum
(India)

SOCIETY NEWS:

* Excursion to Wilson's Promontory:

The Society was unable to secure a booking for the lodges at Tidal River, in Wilson's Promontory National Park, during April 1989. We are re-applying for any weekend next May, in the hope we are more fortunate in the next ballot.

* Spore Bank:

This is a good time of year to collect spore from many of your ferns. The spore bank manager, Barry White (Ph: 337 9793) is in urgent need of fresh spore from all kinds of ferns, both common and rare. Please assist by bringing some spore donations to our next meeting.

* Norma's Fernery:

Unfortunately the proposed Fern Society bus excursion to Norma's Fernery at Carboor on 5th Nov. has had to be cancelled; the limited number of members booking had made the cost per person too high. A reminder to all members that she will continue trading until about Christmas, and is now selling many of her rare stock plants as well as her retail stock, which is discounted. It is well worth a visit there.

* Donation of Audio Tapes:

BASF Australia Ltd. has very kindly donated some blank audio tapes to the Fern society, for use in recording the guest speaker at each of our monthly meetings. Many thanks to a N.S.W. member, Barry Hubbard, for his approaching BASF, and to Mr K.Cooper, Retail Manager, Audio and Video Products, BASF.

* Fern Trips around Melbourne:

We mentioned in the October Newsletter that we hoped to organize some day trips to fern spots around Melbourne. These could be held on weekends and perhaps be combined with a picnic. Such outings have been popular in the past and some of the more successful ones would be worth repeating.

In conjunction with these excursions, the Committee is considering the production of a series of Fern Day Trip leaflets. Each will describe the locality, and include details of how to get there, difficulty of the terrain, plant populations etc. These can then be used in future by individual members wishing to visit a particular spot.

Please let any of the Committee know if you would like to see more of this type of activity in the future, and advise details of any localities which you feel may be suitable.

* Plants on Sale at the October Meeting.

Adiantum reniforme, *Arachnoides standishii*, *Asplenium aethiopicum*, *A.bulbiferum* (Stewart Is. form), *A. x hookerianum*, *A.lyalli*, *A.monanthes*, *A.pteridiodes*, *A.rutifolium*, *Blechnum filiforme*, *Drynaria rigidula* cv. *Whiteii*, *Dryopteris labordei*, *Osmunda regalis* (normal and crested cv), *Polystichum oncolobatum*, *Tectaria gemmifera*, *Woodwardia fimbriata*.

* Additions to the Library:

The following new arrivals to the library are now available for monthly loan at each meeting:

- * Fern Society of South Australia Newsletter, No.91, September 1988.
- * South Florida Fern Society Bulletin, 16(7), Sept 1988.
- * W. A. Fern Soc. Newsletter, Sept 1988.
- * Journal of Los Angeles Internat. Fern Soc., 15(6), Aug 1988.
- * Bull. Fern Soc. Gothenberg (Sweedeen). Nine one page issues from April 1984 to Dec. 1987.
- * Bull. Swiss Fern Soc. Farnblatt, 16 and 17 (1987), in German.


* Special Effort:

We neglected to mention last month that the ferns for the special effort at the September meeting donated by Kevin and Gloria Tinker of Fern Acres Nursery. This month's special effort ferns were kindly donated by Reg Siebel. Winners were:

1. Pam Phillips
2. Mavis Potter
3. Edna Fuhrmeister
4. Joy Hormon
5. Jean Rhode
6. Jean Trudgeon

Polypodium
parasiticum
(India)





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

4/375 Bayswater Rd., Bayswater. Vic. 3153.
P.O. BOX 302, Bayswater, Vic. 3153. Tel. Melb. (03) 720 2200

* Chris Goudey's New Book:

The October meeting saw the first release of Chris Goudey's new book, "A Handbook of Ferns for Australia and New Zealand", Lothian Publ. Co., ISBN 0 85091 282 2. It is now available for sale at each meeting at \$14.95 and by post for \$16.95 in Aust or for A\$20.00 overseas airmail.



A FERN TRIP TO FAIRY DELL - GIPPSLAND LAKES

On a beautiful mild sunny morning on the 11th September, 1988, Ian and Dorothy Forte together with Garnet and Mary Frost travelled to Fairy Dell, just off the Bairnsdale-Bruthen road. Mary Frost relates the the scene:-

"The country was was very dry; even the creek through the Fairy Dell had stopped flowing, which made the ferns at the foot of the gully look slightly backward with few new croziers showing. Deeper into the gully, where they were more protected by the overhead canopy of lilyilly trees (*Acmena smithii*), the ferns looked more lush. The most prolific we found was *Microsorium diversifolium* (kangaroo fern), growing on the ground, over treeferns and every fallen log. Other fern we discovered included *Pteridium esculentum* (common bracken), *Blechnum cartilagenum* (gristle fern), *Blechnum nudum* (water fishbone), *Culcita dubia* (rainbow fern), *Adiantum aethiopicum* (common maidenhair), *Dicksonia antarctica* (soft treefern), *Cyathea australis* (rough treefern), *Lastreopsis sheppardii* (shining shield fern), *Blechnum patersonii* (strap fern) with beautiful forked fronds, *Polystichum proliferum* (mother shield fern), *Microsorium scandens*, *Histiopteris incisa* (bat's-wing fern), *Pellaea falcata* (sickle fern), *Pyrossia rupestris* (rock fern), *Rumohra adiantiformis* (leather shield), *Athyrium australe* (lady fern), *Pteris tremula* (tender brake), *Pteris umbrosa* (jungle brake), with really superb plants in communal groups rather than scattered around, *Asplenium flabellifolium* (necklace fern) and *Asplenium bulbiferum* (hen-and-chicken fern) - we found only six really lonely specimens, with no bulbils on them.

Finally after much discussion, we decided that some of the treeferns we had found were not *Cyathea marcescens* nor *C. cunninghamii*, but rather *C. leichhardtiana* (prickly treefern) [ed. Fairy Dell has Victoria's most westerly occurrence of this species].

Perhaps other members have visited Fairy Dell and found ferns we did not see, but if you have never been there we really think it worth a visit.

Dorothy has reported to me that over 50 mm of rain has since fallen, so the ferns will be flourishing again."

Mary Frost

[Other areas containing warm-temperate rainforest in the Gippsland Lakes region, apart from Fairy Dell (90 ha), include, Mt. Moornapa (65 ha) near Culloden, The Glen (10 ha) east of Bruthen, Palm Gully and Murrindale (550 ha) north of Buchan and Glenaldale (183 ha)].

SPORE BANK:

Ordering: The following spore is free to those who donate spore. Otherwise, members - 20 cents each, non-members - 50 cents. Available at meetings or by mail from Barry White, 24 Ruby Street, West Essendon, Victoria, 3040 (Ph: 337 9793). Please add \$1.00 for p. & p. There is no charge for overseas members, but to cover postage 2 International reply Coupons would be appreciated.

Adiantum caudatum	3/87	Dryopteris pedata	2/87
Adiantum peruvianum	6/86	Dryanaria rigidula	4/86
A.radd. 'crested majus'	3/87	Dryopteris affinis	
A.raddianum 'gracillimum'	3/87	'polydactyla'	/87
A.raddianum 'grandiceps'	3/87	D. carthusiana (crested)	3/86
A.raddianum 'grossum'	3/87	D. dilatata 'lepidota'	2/87
A.raddianum 'pacific maid'	3/86	Dryopteris erythrosora	3/87
Aglaomorpha heraclea	6/87	D. filix-mas 'cristata'	3/86
Anaemia phyllitidis	6/86	D. filix-mas 'grandiceps'	3/86
Asplenium adiantum-nigrum	6/86	Dryopteris inequalis	4/87
Asplenium australasicum	8/86	Dryopteris sp.	
A. bulbiferum (native)	1/87	(korean crwn fern)	3/86
Asplenium sp.		Hypolepis rugosula	3/87
(nidus ? - W. Irian)	/87	Lastreopsis calantha	3/86
Asplenium trichomanes	1/86	Lunathyrium japonicum	4/87
A. trichomanes 'incisum'	6/86	Microlepis speluncae	3/86
Athyrium filix-femina		Microlepis strigosa	2/87
'cristata'	/86	Onoclea sensibilis	6/86
Athyrium schimperii	3/87	Paesia scaberula	7/86
Belvisia mucronata	3/86	Pellaea rotundifolia	2/87
Belvisia platyrynches	6/87	Pellaea viridis	/86
Blechnum capense	/86	Phyllitis scolopendrium	
Blechnum discolor	8/88	(small)	/87
Blechnum fluviatile	3/87	Pityrogramma chrysophylla	3/86
Blechnum giganteum	3/86	Platycterium sp. (Timor)	/87
Blechnum minus	3/86	P. willinkii 'payton'	/87
Blechnum tabulare	4/87	Platycterium bifurcatum	3/87
Cibotium glaucum	8/86	Platycterium hillii	4/86
Cibotium schiedei	11/86	Polypodium formosanum	9/86
Culcita dubia	4/86	Polypodium vulgare	4/86
Cyathea brownii	2/86	Polystichum echinatum	2/87
Cyathea cooperi	3/87	Polystichum formosum	3/87
C. cooperi (black scales)	2/86	P. retrosopaleaceum	3/86
Cyathea cooperi (glaucous)	/86	Pteris biaurita	3/86
Cyathea dealbata	3/87	Pteris cretica 'parkerii'	3/87
Cyathea medullaris	3/87	P. quadriaurita 'argyrea'	3/87
Cyathea sp. (New guinea)	2/86	Pteris tremula	3/87
Cyrtomium falcatum	3/87	Pteris tricolor	3/87
C. falcatum x caryotideum	/86	Pteris vittata	3/87
Cystopteris dickieana	7/86	Rumohra adiantiformis	
Dicksonia antarctica	2/87	(Cape form)	3/87
Dicksonia fibrosa	3/86	Thelypteris patens	
Dicksonia lanata	/86	'lepidata'	8/87
Dicksonia squarrosa	3/86	Unknown sp. (China)	/87
Diplazium australe	3/87	Woodwardia fimbriata	/86



BUYER'S GUIDE TO FERN NURSERIES:

Victoria

- * Allans Flat Plant Farm - Retail.
Tomkins Lane, Allans Flat, 3691, Ph:(060) 27 1375.
(25Km south of Wodonga on the Yackandandah Road)
Specializing in ferns and indoor plants. Open daily, except
Wednesdays, and all public holidays.
- * Austral Ferns - Wholesale Propagators. Ph:(052) 82 3084.
Specializing in supplying retail nurseries with a wide range of
hardy ferns - no tubes.
- * Beasley's Nursery - Retail.
195 Warrandyte Road, Doncaster East, 3109.
Ph:(03) 844 3355.
- * Cool Waters Fern Nursery - Wholesale Fern Propagators.
Beech Forest, 3237, Ph:(052) 37 3283.
Specializing in cool climate native ferns.
- * Fern Acres Nursery - Retail.
Kinglake West, 3757, Ph:(057) 86 5481.
(On main road, opposite Kinglake West Primary School).
Specializing in stags, elks and birdsnest ferns.
- * "Fern Glen" - Wholesale and Retail. Visitors welcome.
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 Tues. except on public holidays).
- * Mt Evelyn Fern Centre - Retail.
63 York Road, Mt. Evelyn, 3796, Ph:(03) 736 1729.
Mail orders welcome.
- * Ridge Road Fernery - Wholesale and Retail.
Weeaprounah, 3237, Ph:(052) 35 9383.
Specializing in Otway native ferns.

New South Wales

- * Jim & Beryl Geekie Fern Nursery - Retail.
6 Nelson Street, Thornleigh, 2120, Ph:(02) 484 2684.
By appointment.
- * Marley's Ferns - Retail.
5 Seaview Street, Mt. Kuring-gai, 2080, Ph:(02) 457 9168.

Queensland

- * Moran's Highway Nursery - Wholesale and Retail.
P.O. Box 467, Woombye, 4559, Ph:(071) 42 1613.
(1Km north of Big Pineapple. Turn right into Kell Road).

