

NEWSLETTER

VOLUME 14 Number 5, June 1992

FERN SOCIETY OF VICTORIA Inc.

POSTAL ADDRESS: P.O. Box 45, Heidelberg West, Victoria, 3081.

OFFICE BEARERS:

337 9793 President: Barry White Phone Robert Lee 836 1528 Imm. Past President: Vice President: Terry Turney 807 4886 Bernadette Thomson 399 1587 Secretary: Treasurer: Marilyn Wood 434 3978 Membership Secretary: John Oliver 879 1976 Spore Bank Manager: 337 9793 Barry White Robert Lee 836 1528 Editor: Derek Griffiths 336 3157 Book Sales: (8 Susan Court, East Keilor, Vic., 3033)

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:

I trust that all who went to Wangaratta had a very enjoyable weekend; a full report of the weekend will be given in next month's Newsletter.

Meanwhile, the end of the financial year approaches and with that the need to renew membership and the Annual General Meeting. With regard to membership renewal keep in mind the offer of free renewal if you recruit two new members. Additional membership application forms may be obtained from the Secretary, or use a copy of the enclosed membership renewal form if more convenient. It is vital that we keep the membership numbers at least at about the current level.

The Annual General Meeting is not till August, but I ask members to start to consider how they may help the Society either by coming on to the Committee, or by taking a non-Committee position such as the Book Sales Officer which Derek Griffiths has indicated he will be vacating after several years good work. The Committee meets monthly, the work flows relatively smoothly, and individual members are not saddled with a great work load. Please give thought to it and let me know if you think you can assist.

In June our guest speaker will be Kevin Handreck who will be speaking on potting mixes. Kevin, a research worker with the CSIRO in South Australia, is an expert on this topic. Ferns tend to be grown in pots rather than in the ground, and therefore this topic is very relevant to fern growers. The talk will be an unequalled opportunity not only to get the good oil on potting mixes but also to get answers to all those odd questions about aspects of growing in pots which may have puzzled you from time to time.

Finally, a look forward to Spring. This year the Society will be participating in the Spring Garden Festival to be held on the 4th, 5th and 6th of September at the Waverley Campus of the Holmesglen College (continued opposite)

NEXT MEETING

DATE: Thursday, 18th June, 1992.

TIME: Commencing at 7.30 p.m.

VENUE: The National Herbarium, Royal Botanic Gardens,

Birdwood Avenue, South Yarra. (Melway Directory Ref. 2L A1)

TOPIC: Potting Mixes and Ferns.

GUEST SPEAKER: Kevin Handreck, CSIRO Division of Soils, Adelaide.

MEETING TIMETABLE

7.30 p.m. Pre-Meeting Activities: - Sales of Ferns, Spore, Books

and Special Effort Tickets; Library Loans.

8.00 p.m. June General Meeting.

8.30 p.m. Topic of the Evening.

9.40 p.m. Special Effort Competition.

9.45 p.m. Supper.

10.00 p.m. Close.

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President's Message: (cont'd)

of TAFE (formerly the Victorian Schools Nursery), located at 585 Waverley Road, Glen Waverley. The Festival is being co-sponsored by the Royal Horticultural Society of Victoria, and the organisers are expecting at least 50 exhibitors and crowds of 15,000 upwards. It should be an excellent opportunity to promote interest in ferns and in the Society. We will need good support from members in mounting and in manning the display in order to make the most of the opportunity.

Barry White

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MEMBERSHIP SUBSCRIPTION RENEWAL

Membership Subscriptions for 1992/93 fall due on 1st July. Rates remain the same as for the current year. An application form for renewal of membership is included with this Newsletter.

The form this year includes a specific section requesting the date you joined the Society, information we are now required by law to include on our Register of Members. Would you please give us your best estimate of your date of joining (month and year), even if somewhat uncertain about it. Some members responded to our separate request to add this information to the form last year (thank you), but we still have a fair number of blanks and doubtful figures in our records. It would be nice to have this area properly tidied up this year!

SPEAKER REPORT - GENERAL MEETING - 16TH APRIL, 1992 - (continued)

BLECHNUMS - by Barry White (cont'd)

Barry showed several more plants to illustrate the variety of species:

- Blechnum wattsii (Hard Water Fern) has rather thick coarse fronds but its new foliage has a beautiful bronze colour.
- B. fluviatile (Ray Water Fern) has its common name because the fronds spread out as rays. It likes plenty of water.
- B. cartilagineum (Gristle Fern) has rather harsh fronds and is the only Victorian Blechnum where the fertile and sterile fronds are the same shape; all others found in Victoria are dimorphic.
- B. patersonii (Strap Water Fern) differs from the norm in having simple strap-like fronds. These sometimes develop irregular lobes.
- B. indicum (Swamp Water Fern) from N.S.W. and Queensland has widespread pinnae.
- B. gibbum (Dwarf Tree-fern) from New Caledonia has finely divided fronds and develops a short trunk in old plants.
- B. brasiliense (Brazilian Tree-fern) has very attractive fronds and very old plants can develop a trunk taller than a man.

EPIPHYTES - by Keith Hutchinson

The name epiphyte is derived from the Greek words 'epi' = upon and 'phyton' = a growth or plant.

Epiphytes are distinct from parasites. Although they grow on other plants, they do not feed on them but collect their own nutrients in various ways. That they do this very efficiently is evidenced by the very large epiphytes often seen which only have small root systems. Many have large nest fronds or shield fronds to collect food; others have rhizomes with scales.

Epiphytes in trees collect leaves, twigs, pieces of bark, berries, dead insects and the droppings of birds and marsupials. The bird and animal manures provide nitrogen and aid the breakdown of the other materials. As birds lay eggs, they also have high calcium and phosphorus quantities in their systems. The rotting fruits and nuts provide potash. Dirt and sand blow in during the dry season and provide minerals and trace elements. Thus the plants have a well-balanced food supply provided for them at a fairly constant rate during the wet season when they make most of their growth. This minimises the size of root system needed. Terrestrial plants in contrast have to develop root systems large enough to seek out their food needs.

Epiphytic species occur in many genera, including Asplenium, Davallia, Polypodium, Pyrrosia, Platycerium, Drynaria, Aglaomorpha, Elaphoglossum, etc. Most grow on trees, while others also grow on rocks and some in the ground. A healthy Asplenium flaccidum which normally grows on rainforest trees was found in sandy soil near Rotorua in New Zealand.

Their method of growth ensures that epiphytes in nature are well drained. Hence in cultivation they are best grown in a hanging basket or a piece of tree-fern. They will generally not be in a suitable location to collect their own nutrients and should be fed with

material similar to what they get in the bush, such as a mixture of partly decomposed leaves rubbed through a sieve, compost, a little Dynamic Lifter and perhaps some slow-release fertiliser.

Some epiphytes grow best in summer, others in autumn and the cooler months. Staghorns do better in summer, Elkhorns in autumn and spring. Drynarias put out a flush of new foliage in spring and then cease. The best time to move these to a new container is in early December when the new fronds have hardened. The increase in container size should be no more than 25 mm.

Pests are not a major problem with most epiphytes in cultivation but one that is becoming more prevalent is the Elkhorn Spore Caterpillar. This lives in the spore pads of Stags and Elks and causes damage to the fronds behind. Keith's solution is to scrape off the spore with a blunt knife. A systemic spray is the other treatment suggested.

The audience showed its appreciation of the contributions of all the speakers to a very informative and entertaining evening by enthusiastic applause.

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NOTICE OF ANNUAL GENERAL MEETING

The thirteenth Annual General Meeting of the Fern Society of Victoria Inc. will be held at 8.00 p.m. on Thursday, 20th August, 1992 at The National Herbarium, Birdwood Avenue, South Yarra.

Business to be transacted will be:

- 1. Receive and deal with the President's Report on behalf of the Committee of Management.
- 2. Receive and deal with the Treasurer's report.
- 3. Election of the Committee of Management for 1992-93.
- 4. General Business.

Nominations for Committee of Management.

Nominations are now called for the positions of Office Bearers and Committee Members for the year July, 1992 to June, 1993. Nominations should be in writing, signed by the proposer and seconder, and include the written consent of the nominee. They must be received by the Secretary not less than seven days prior to the Annual General Meeting. Nominations may be called at the Annual General Meeting only if insufficient have been received previously to fill all vacancies.

General Business.

Items to be discussed and voted on under General Business at the A.G.M. must be notified to the Secretary in writing not less than 21 days prior to the Meeting, so that details may be included in the August Newsletter, which will be posted to all Members seven days before the Meeting in accordance with the rules of the Society.

Bernadette Thomson Secretary

THE GENUS ANTROPHYUM

by Ray Best

Reading some time ago about an Australian species of Antrophyum, I realised that over the years I had overlooked this genus, so I decided to find as much about its members as I could. After obtaining spores and growing several species to maturity I decided to illustrate and describe the successful types.

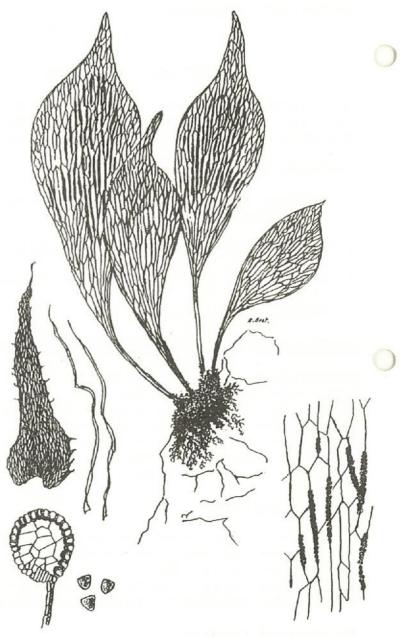
The genus Antrophyum belongs to the family Vittariaceae and has about forty species world-wide, including three found in Australia. Most species come from tropical habitats and are difficult to cultivate in temperate zones without completely controlled atmospheres.

The name Antrophyum is derived from 'antron' = a cave or hollow and 'phyto' = I grow, referring presumably to the arrangement of the sori. There has been much variation over the years in the classification of the members of this genus.

Before proceeding with descriptions of some of the species of Antrophyum, I thought it might be interesting to recount some of the difficulties experienced in tracing these unusual ferns.

In the first (1976) edition of "Australian Ferns and Fern Allies" by Jones and Clemesha I found mention of only one species, Antrophyum reticulatum, with a statement grouping this species with Antrophyum callifolium until further research clarified the situation. Then referring to "Ferns of Queensland" by Bruce Andrews, which was begun in 1973 but delayed in publication until 1990, I found descriptions and illustrations of three Queensland species, viz., A. plantagineum, A. reticulatum and A. subfalcatum. (These three species were listed in the 1981 revised edition of Jones and Clemesha, together with the comment that A. callifolium had been deleted from the Australian flora because no definite specimens had been found. - Ed.)

I obtained further information on this genus from the five fascicles by Ren-Chang Ching published as "Icones Filicum Sinicarum", to which I was led



ANTROPHYUM PETIOLATUM BAKER

after growing some spores sent to me by Judith Jones, an American friend and fellow member of the Los Angeles International Fern Society. The spores produced an unusual fern about which I could not obtain any information. Correspondence with Judith produced a photocopy in English of details from one of Ching's works and I then managed after much effort and difficulty to get an English translation of his five fascicles. Among the many rare Chinese ferns described and illustrated were a number of Antrophyums. So I have eventually acquired a reasonable understanding of these ferns.

The species of Antrophyum which I have traced are:

Antrophyum alatum Antrophyum latifolium callifolium obovatum cavennsis parvulum citrifolium discoideum petiolatum (now Polytaenium urbanii) reticulatum ensiforme feei smithii (now Polytaenium feei) subfalcatum subsessile quayanense lanceolatum

I have prepared the following descriptions and illustrations:

(a) Antrophyum reticulatum (Forst.f.) Kaulfuss

Rhizome shortly creeping, forming a crown with numerous scales and dark brown roots with spreading ginger hairs. Scales narrowly triangular with hair-like apices and toothed margins. Fronds 15-45 cm long with stipes very short, to 6 cm wide, broadest above the middle with a pointed apex and tapering slowly to a narrow base, with a slight indication of a short costa. Veins forming long narrow areoles without free included veinlets (giving rise to the title 'reticulated' even though this is a common feature of all Antrophyums). Midrib only obvious in the lower quarter of the lamina. Sori are sunk in grooves sometimes anastomosing or slightly branched, without indusia but with copious reddish hair-like paraphyses (see illustration) protecting the sporangia.

Generally grows as a lithophyte on damp rocks in



tropical rainforest situations. From north-east Queensland, Polynesia to India and Madagascar. Somewhat difficult in cultivation and, being tropical, requires a moist tropical atmosphere.

(b) Antrophyum subfalcatum Brackenridge

Rhizome forming a crown covered with brown scales, some narrow and others with broad bases, and reddish root hairs. Veins forming long narrow areoles without free included veinlets. Sori sunk in grooves, the lower portion of the lamina devoid of sori, indusium absent, sori protected by copious branched paraphyses with club-shaped terminal cells (see illustration). From north-east Queensland, Fiji and New Guinea. Similar in cultivation to the previous species.

(c) Antrophyum plantagineum (Cav.) Kaulfuss

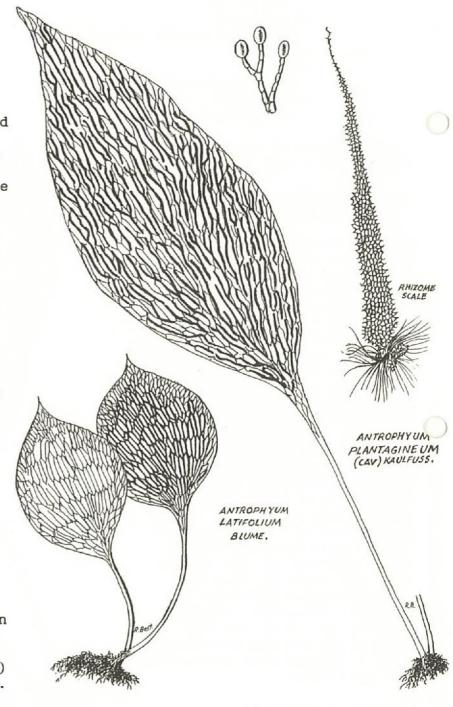
Rhizome short creeping, forming a crown with massed roots and spreading ginger hairs, and latticed scales narrowly triangular with hair-like apices and toothed margins (see illustration). Fronds tufted and simple, thick in texture, broad and somewhat oblong, 10-18 cm long by 4-8 cm wide, tapering to the stipe. Stipes 5-10 cm long. Veins forming long areoles without free veins or venules. Sori in grooves spreading in broken lines along the veins, protected by many paraphyses with branches with club-shaped terminal cells (see illustration).

Usually found on damp rocks in tropical rainforest from north-east Queensland, Polynesia, New Guinea, Indonesia, etc.

(d) Antrophyum latifolium Blume

Rhizome forming a crown, stipes to 18 cm long. Fronds large and round or broadly ovate to 12 cm wide with a pointed apex. Sori immersed in rows following the vein system. Cultivation as for other species.

From India (Sikim to Bhotan) at 600 metres, also in Java.



(e) Antrophyum petiolatum Baker

Rhizome forming a crown with dark brown to black linear scales and numerous elongated root hairs. Fronds close together, 7-14 cm long and pointed both top and bottom, broadest above the centre. Stipes naked, generally green Frond texture thick, green with distinct veins. Sori slightly immersed in shallow grooves linear on veins and often jointed, spores trilete

From Kweichow to Kwangai in China, usually growing on wet, dripping and shaded rocks.

(f) Antrophyum citrifolium (L) Fee

Typical characteristics of this species are rhizome scales long and narrow, fronds simple long to oblanceolate, 10-40 cm long, 2-7 cm wide. Costa indicated on the upper side, confused by veins on the underside. Sori massed on the veins on the underside; sporangia with an incomplete annulus of approximately 20 cells (see illustration).

From Tobago, Trinidad, Jamaica, Mexico, Guatemala to Brazil. Grows generally on mossy tree trunks in shade in very moist rain forests.



Glossary of Terms:

anastomosing = running together to form loops or a network.

areole = a space between veins in a network.

costa = the midrib of a simple blade or pinna.

lanceolate = lance-shaped; several times longer than wide and

tapering towards both ends with the widest part towards

the base.

oblanceolate = as for 'lancoelate' but with widest part above middle.

paraphysis = a sterile hair-like organ occurring among the

sporangia in the sori of some ferns.

trilete = having a three-armed scar. venule = a veinlet or small vein.

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) 337 9793. There is no charge to 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.

ADIANTUM concinnum 3/92 ADIANTUM formosum 7/91 ADIANTUM fournieri 3/91 ADIANTUM raddianum 'Blue Moon' 4/91 ADIANTUM raddianum 'Crested Pacottii' 1/91 ADIANTUM raddianum 'Gracillimum' 1/91 ADIANTUM raddianum 'Grandiceps' ADIANTUM raddianum 'Legrand Morgan' ADIANTUM raddianum 'Micropinnulum' 3/92 ADIANTUM raddianum 'Pacific Lady' 1/91 ADIANTUM raddianum 'Pacific Maid' 1/91 ADIANTUM raddianum 'Variegate Tesselate' 1/91 ADIANTUM raddianum 'Victoria's Elegans' 1/91 ADIANTUM raddianum 'Weigandii' 3/92 ADIANTUM whitei 3/92 AGLAOMORPHA meyeniana 2/91 ALSOPHILA capensis 4/91 ANEMIA mexicana 7/91 ANEMIA phyllitidis 7/91 ASPLENIUM milnei 4/92 ATHYRIUM filix femina 1/92 ATHYRIUM niponicum pictum 3/92 ATHYRIUM nipponicum pictum crested ATHYRIUM nipponicum pictum, large form /91 BLECHNUM camfieldii 6/91 BLECHNUM cartilagineum 1/92 BLECHNUM chambersii 11/91 BLECHNUM discolor 1/92 BLECHNUM fluviatile 10/91 BLECHNUM gibbum 1/92 BLECHNUM minus x watsii 7/91 BLECHNUM nudum 10/91 BLECHNUM orientale 7/91 BLECHNUM sp. (Philippines) 1/92 BLECHNUM wattsii 4/92 CONIOGRAMME intermedia 1/92 CTENITIS languinosa 4/91 CYATHEA australis 4/92 CYATHEA brownii 3/92 CYATHEA cooperi 3/92 CYATHEA dealbata 2/92 CYATHEA howeana 3/92 CYATHEA medullaris 5/91 CYATHEA princeps 7/91 CYATHEA robertsiana 3/92 /91 CYATHEA smithii CYATHEA tomentosissima 5/92 CYATHEA woolsiana 3/91 CYRTOMIUM caryotideum 3/91 CYRTOMIUM falcatum 3/92

DICKSONIA antarctica 3/92

DICKSONIA sellowiana 3/92 DIPLAZIUM dilatatum 2/91 DOODIA aspera 1/92 DRYOPTERIS affinis 'Polydactyla' /91 DRYOPTERIS atrata 1/92 DRYOPTERIS erythrosora 1/92 DRYOPTERIS guanchica DRYOPTERIS hondoensis 1/92 DRYOPTERIS inaequalis 4/91 DRYOPTERIS purpurella 7/89 DRYOPTERIS sieboldii 12/91 HYPOLEPIS punctata 1/92 LASTREOPSIS hispida 3/92 LASTREOPSIS tinerooensis 2/91 MACROTHELYPTERIS torresiana 1/92 MICROSORUM parksii 8/91 OSMUNDA schraderi cv contorta 3/92 PELLAEA hastata 2/92 PELLAEA quadripinnata 4/91 PELLAEA viridis v. macrophylla 2/92 PLATYCERIUM alcicorne 4/91 PLATYCERIUM elephantotis 10/91 PLATYCERIUM stemmaria 5/91 PLATYCERIUM superbum 7/91 PLATYCERIUM wallichii 4/91 PNEUMATOPTERIS penniger 3/92 POLYPODIUM formosum 8/91 POLYSTICHUM acrostichoides 4/92 POLYSTICHUM braunii POLYSTICHUM fallax 7/91 POLYSTICHUM formosum 3/92 POLYSTICHUM munitum POLYSTICHUM onocolobatum 7/91 POLYSTICHUM proliferum 1/92 POLYSTICHUM setiferum 'Divisilobum' /91 POLYSTICHUM setiferum cv. 3/91 POLYSTICHUM tsus-simense 3/92 POLYSTICHUM vestitum /91 POLYSTICHUM whitelegii 12/91 PTERIS cretica 'Parkeri' PTERIS ensiformis 'Victoriae' 3/91 PTERIS hendersonii 1/92 PTERIS quadriaurita 'Argyraea' 11/91 PTERIS semipinnata 3/91 PTERIS umbrosa 7/91 RUMOHRA adiantiformis (native) 4/92 RUMOHRA adiantiformis (S.Africa) 3/92 SADLERIA cyatheoides 7/91 SADLERIA pallida 7/91

STENOCHLAENA tenuifolia /90

Spore Bank Donations

Donations to the Spore Bank have been received from Bill Taylor, Dorothy Forte, John Hooper, Don Fuller and Margaret Nimmo-Smith. Thank you to these contributors.

Please keep those donations coming in so that the bank may contain a good variety of fresh spore.

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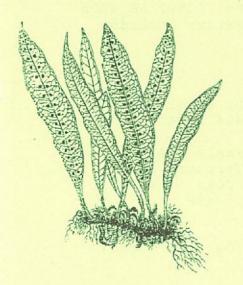
HEATING PANELS FOR PROPAGATION

At a recent monthly meeting Chris Goudey showed us a sample of a new heating panel for applying bottom heat to propagating beds. The panels are a plain flat design made of fibreglass reinforced with special heat-dispersing synthetic resins. The heating elements are cast into the panels thus making them safe under wet conditions. Each unit comes equipped with two metres of cable and a three-pin plug.

They are sold in a variety of sizes, ranging from 350mm x 200mm with a power consumption of 18 watts to 2,000mm x 500mm at 90 watts. Retail prices for these two sizes are \$59 and \$199, respectively. Special sizes can be manufactured to order. It is claimed that the wattage is balanced to the size of the panel so as to give a constant surface temperature of 30° Celsius, which is ideal for plant propagation. Lower soil temperatures can be achieved by the use of appropriate spacing materials or by a controller operating from a soil probe. A built-in thermostat prevents overheating.

The panels are distributed by JowiTherm Heating Elements (Australia) Pty Ltd, 10 Manning Street, Newtown, Victoria 3220. Telephone number is (052) 21 7119 and the contact is Ms Charlotte Wilson.

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Pleopeltis tridactyla



Maxicrop

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

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.

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

<u>Dingley Fern Market</u> - 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. Weeaproinah, 3237. Ph: (052) 35 9383. Specialising in Otway native ferns.

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

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.