

OFFICE-BEARERS

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PRESIDENT'S MESSAGE:

Bob Bone, of Bones, Wholesale Nurserymen, gave a most interesting talk on the cultivation of ferns at his Berwick nursery, at our last meeting.

We still have a large quantity of books on hand from the first two orders, which arrived last month.

Very few books were picked up at our last meeting, so we have decided to notify by mail all those whose books have arrived.

We still have quite a few Catalogues of Hardy Ferns left (mentioned in my message in last month's Newsletter).

Only two entries were received for our competition last month. First prize went to Mrs. M. Bryant, and second prize to Mr. G. Rowe.

The fern for our December competition is a Tree Fern in a container.

We are planning a break-up for our December meeting, with a special Christmas Hamper, and a social get-together. Ladies are asked to please bring a plate.

There are still vacant seats for the New Zealand Fern Tour. If you would like a copy of the itinerary, together with details of costs, etc., please either write, or ring me at home -A.H. (052) 82 2154.

Please note that there will be no General Meeting held in January.

Our first meeting for the new year will be held on Thursday, 12th February, 1981.

Lorraine and I would like to wish -all members a merry Christmas, and a happy New Year.

> CHRIS GOUDEY President

SECRETARY'S REPORT:

One of our members, Mrs. Margaret Lindsay of 25 Norwood Avenue, Brighton, Victoria, who attends our meetings regularly, has lost her 'chauffeur', and at present cannot drive into Burnley, although she could travel a short distance to save someone coming out of their way. If you can help with a lift, please ring Mrs. Lindsay on 592 6497, or I will pass on a message. I know it would be greatly appreciated.

I would like to thank those members who gave up their time to assist at the display of ferns which we put on at Mt. Dandenong. Barry & Gay Stagoll, Rod & Lynn Hill, Harold & Rita Olney, Kath Brown and Bill Taylor (not forgetting his daughter, who made a charming extra member!) - all came and helped 'sprend the gospel' and pass on information about the Society and ferns in general.

I was particularly grateful, as their presence made it possible for me to get to hospital to see Ted, who had hurt his back whilst arranging the display.

I have been asked to draw your attention to a couple of field trips arranged for next year.

- To Norma's Fernery, at Carboor (near Wangaratta) on Sunday, February 22nd, 1981. Names and deposits please, on or before the December meeting.
- To Tarra Valley & Bulga Park fern gullies. This trip was postponed from November, and is now arranged for 11th April, 1981.
 Names of those interested by the March meeting, please.

We have also arranged a fern display at the Herbarium, on the weekend of 21st March. More news on this important fixture in the next Newsletter, but PLEASE KEEP THIS WEEKEND FREE.

For those interested in spore propagation, Rod Hill has now compiled a most interesting and informative leaflet, which is for sale at 10¢ plus S.A.E.

As the December meeting will also be our Christmas break-up, we thought it would be a good idea to have supper to round off the evening. To help with the catering, could we ask the ladies (and, to show that we believe in equal opportunity) the gentlemen to 'bring a plate'?

To all our members, Christmas greetings, and best wishes for a very happy New Year.

IRENE BOLSTER Secretary

SUMMARY OF TALK GIVEN BY MR. BOB BONE AT OUR NOVEMBER MEETING

Bob Bone gave a most interesting talk at our November meeting. Bob is a well-known fern grower, whose father and grandfather were also growers. In fact, Bob's grandfather possessed a book on ferns, dated 1884.

In the early days of Bob's career, he told us, the Maiden Hair Fern -Adiantum elegans - was the only one in which people were interested, and plants such as Aspidistras went out of fashion and were carted away to the tip. Now, of course, people show interest in all types of ferns, both indoor and outdoor, and Bob brought along quite a variety of his ferns to show us.

These included Maiden Hair ferns - Adiantum fritz luthii (a vigorous grower), Adiantum gracillimum, Adiantum elegans and Adiantum lathomii. Then the Pteris varieties, which included Pteris major (Ribbon Fern), Pteris kowerii, Pteris cretica albo-lineata (variegated Table Fern), Pteris argyraea (Silver Brake Fern), and Pteris tremula (the Australian Brake Fern).

Bob also had a Phyllitis scolopendrium, or Harts Tongue Fern, and a Polypodium - Bear's Foot Fern. Another interesting fern was the Asplenium bulbiferum - the Mother Fern or Hen-and-Chickens Fern, which gives birth to miniature reproductions of itself, when small round buds appear on the mature fronds and form new ferns in an almost continuous process. These fernlets can be detached and planted out.

The Rib Fern, Blechnum gibbum, was another of Bob's plants - this fern develops a 'trunk' with age, like a treefern; and lastly, a fern which strongly resembled holly was shown - Cyrtomium falcatum, or Holly Fern.

Bob's 5" pots were the result of two years' growth, whilst his 7" pots of ferns had been growing for three years. A most important factor when growing ferns was to have a watchful eye. He illustrated this point by showing three Pteris ferns which were sown from the same spore, but had come up in three different variations.

Bob stressed that, when setting up a hothouse, it should be kept in mind that not all ferns like hothouse conditions. His philosophy was "think where you find the fern in nature" - whether in a gully, out in the open, or in a semi-shaded area. His opinion was that a fernery was a much better proposition.

On soil mixes, it was suggested that we should keep our soil at a neutral level, perhaps with a little lime, and that the use of a blood and bone based fertiliser was a good idea. Pteris argyraea and the Polypodiums were the only varieties needing an acid soil.

Bob complimented the Society on its Spore Bank, and the information which was available from Rod Hill.

He then went on to outline some of the methods of soil preparation he used.

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SUMMARY OF BOB BONE'S TALK (Cont'd)

When preparing his soil for spore, the mixture was steamed. An alternative method is baking it in the oven for about half an hour, at 200°. It is important not to 'overcook' the soil, as you will lose all the goodness. Soil should be rather wet when sowing, and only fresh spore should be sown.

Bob cut off mature fronds, placed them in paper bags, then hung them up until the spore dried and fell to the bottom of the bags.

His observation was that spore sown between October and April had less chance of surviving than if it was sown in the other months of the year. A spore tray was displayed for observation by members. Bob stressed that you must have patience when attempting to grow spore. Don't give up. If sporing is not for you - then try growing a plantlet of Asplenium bulbiferum, break up a Davallia, or divide a Maidenhair or Polypodium.

A number of questions were then asked, and Bob had some very interesting answers for us on soil mix, acidity in soil, fungicide deterrents, density of light in a hothouse, mealy bug control, and the proper watering of ferns.

Chris Goudey then moved a vote of thanks to Bob for his most informative and rewarding talk. The fact that it had been much appreciated was very evident by the number of people who were taking notes.

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NOTE FROM THE EDITOR:

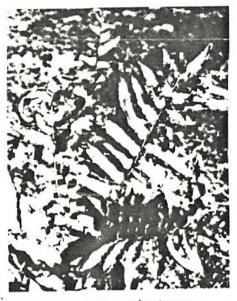
I'm sure that all members of the Fern Society will be pleased to know that Ted Bolster is now on his feet again.

We all hope that you are soon completely well, Ted, and a sincere 'thank you' to both you and Irene for the sterling effort at the Mt. Dandenong Horticultural Society Show.

A vote of thanks is also due to Albert Jenkins and Chris Goudey, for their efforts at the Garden State Festival.

SOME HARDIER FERNS

We are indebted to Mr. David L. Jones for his permission to use portions of one of his articles on ferns.



Blechnum minus — tolerates sun.

Some hardy species of fern are easy to grow and tolerate varying degrees of sun, wind and dryness.

It should be emphasised that while these ferns are hardy, they cannot be considered for a position that is fully exposed to the blazing summer sun and scorching northerlies. Rather, they are suitable for a position in semi-shade which gets some protection from the elements.

Morning sun is easily tolerated, but exposure to midday and westerly summer sun should not exceed a couple of hours.

Filtered sun during this hot part of the day is preferable to direct exposure. If the area is naturally wet, then the plants will be able to endure harsh conditions better.

Finally, although they are classed as hardy ferns, they still need watering and mulching

to survive the summer. Frequency of watering depends on weather, soil type, and other aspects of the chosen site. Remember that ferns rarely die of waterlogging in the summer.

Blechnum cartilagineum

(Gristle Fern) One of the hardiest of all ferns that will grow quite happily in shade or full sun. It is very drought resistant and prefers a welldrained situation. The fronds have a pleasant arching effect and grow to about 1.2 metres. New fronds have attractive yellowish or pinkish suffusions.

Blechnum minus

(Soft Water Fern) Not as drought resistant as the former, but tolerates fairly long periods of sun. It is an ideal species for planting in wet clay areas and along wet banks. The fronds grow to about one metre high and the plants build themselves into a clump by suckering from the base.



 Asplenium bulbiferum — very adaptable.



 Doodia media (Rasp Fern) a tough one for your rockeries.

Doodia aspera and D. media (Rasp Ferns) Two extremely tough little ferns that thrive in sunny rockeries. The fronds have a number of protruberances on the surface which gives them a rough feeling, hence the common name.

They form compact clumps which spread by means of underground rhizomes. The fronds are up to 30 cm. tall and, when young, are attractive shades of red and pink.

Polystichum proliferum

(Mother Shield Fern) A tall, arching fern that is very sun and drought tolerant. The fronds are an attractive light green shade when new and grow 1 metre to 1.2 metres tall.

Small plants are produced on the fronds and these can be used to increase numbers.

time

Cheilanthes tenuifolia

(Rock Fern) A compact, very attractive species that is a delightful acquisition for any rockery.

It forms a neat clump to about 30 cm. high and 15 cm. to 20 cm. across. The fronds are a very attractive dark green and contrast nicely with rocks.

It is a very drought resistant plant and may die down completely over summer and renew growth with autumn rains.

Todea barbara

(King Fern) One of Australia's most attractive and versatile ferns since it will grow in full shade or sun, and in a wet position or a dry one.

Large, old plants build up a fibrous trunk that is composed of the root systems of many crowns. The fronds are held stiffly erect and grow to about 1.5 metres.

FOR SALE FOR SALE FOR SALE FOR SALE FOR SALE

At our next meeting, we will have the following items on sale, at excellent prices.

NEW PLASTIC POTS :	4" - 9 cents each 5" - 12 cents each 6" - 18 cents each
SOIL TEST KITS :	\$2.00 (normal price \$2.80)
TOP QUALITY SPAGHNUM MOSS: (VERY FRESH)	\$1.00
MINIMUM/MAXIMUM THERMOMETERS	(Price still being negotiated at of going to press)

Please let us know if there are any other needs we may be able to supply at very reasonable prices.

SPORE LIST: DECEMBER, 1980 Acrostichum speciosum (10.80) Adiantum caudatum (6.80) concinnum (10.79) formosum (5.80) gracillimum (7.80) hispidulum (3.80) peruvianum (6.80) raddianum 'Bridal Veil' (10.80) 'Elegans' (8.80) ... 'Fragrantissimum' (8.80) ... 'Mist' (8.80) ... 'Multiceps' (8.80) .. 'Pacific Lady' (8.80) ... 'Triumph' (8.80) sylvaticum (8.80) tenerum 'Fergussonii' (8.80) sp. (S.E.Qld.) (4.80) Aglaomorpha meyeniana (12.79) Angiopteris palmiformis (12.79) Anogramma leptophylla (11.80) Arachniodes aristata (8.80) aristata varigata ((2-80) Asplenium flabellifolium (2.80) nidus (10.80) scleroprium (7.80) trichomanes (6.80) Athyrium australe (3.80) dilatatum (5.80) japonicum (4.80) Blechnum ambiguum (1.80) articulatum (11.80) brasiliense (12.79) camfieldii (7.80) cartilagineum (12.79) chambersii (3.80) discolor (12.79) fluviatile (3.80) gibbum (4.80) minus (8.80) nudum (7.80) occidentale (5.80) orientale (12.79) patersonii (7.80) penna-marina (1.80) vulcanicum (3.80) - wattsii (4.80) whelani (7.80) sp. (King Is.) (12.79) Campyloneuron phyllitidis (5.80) Cheilanthes californica (6.80) distans (4.80) tenuifolia (11.79) Christella dentata (2.80) parasitica (5.80) Christiopteris variens (4.80) - Cibotium schiedei (12.78) Colysis ampla (1.80)

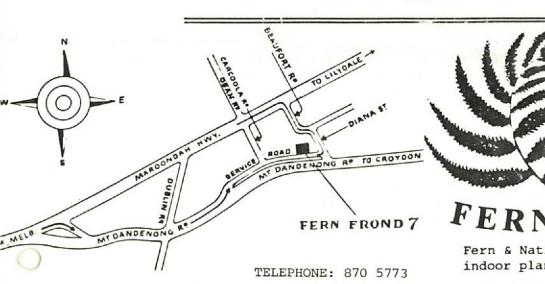
Culcita dubia (3.80) Cyathea australia (10.80) baileyana (3.80) brownii (2.80) callosa (12.79) celebica (7.80) contaminans (12.79) cooperi (10.80) cunninghamii (2.80) dealbata (7.80) leichhardtiana (8.80) medullaris (5.80) medullaris & smithii (6.70) rebeccae (8.79) woollsiana (8-79) sp. (Borneo)(?) Cyclosorus truncatus (12.79) sp. (4.80) Cystopteris fragilis (10.80) Dicksonia antartica (10.80) squarrosa (1.80) youngiae (5.80) sp. (Qld.) (5.80) Doryopteris concolor (8.80) Dryopteris aemula (?) crassirhizoma (8.77) goldiana (?) sp. (Japan) (4.80) Gleichenia microphylla (10.80) Lastreopsis decomposita (7.80) hispida (4.80) marginans (12.79) munita (8.80) nephrodioides (7.80) shepherdii (12.79) smithiana (7.80) Leptopteris fraseri (1.80) Lygodium flexuosum (8.80) Macrothelypteris polypodioides (11.79) Matteuccia orientalis (?) struthiopteris (12.79) Microlepia speluncae (8.80) Microsorium pappei (7.80) Nephrolepis biserrata (12.79) Pellaea falcata (11.80) ... nana (11.80) paradoxa (11.80) Platycerium coronarium (12.79) holttumii (12.79) superbum (8.80) veitchii (8.80) wandae ('80) Polypodium vulgare (10.78) Polystichum aculeatum (2.80) australiense (2.80) braunii (8.78) formosum (7.80)

SPORE LIST: DECEMBER, 1980 (Cont'd.)

Polystichum lentum (3.79) munitum (11.79) proliferum (2.80) setiferum 'Falcatum Dyce'(?) standishii (8.80) tsuse-simense (7.80) vestitium (10.80) Pteris blumeana (12.79) comans (1.80) tremula (9.80) tripartita (12.79) Pyrrosia longifolia (7.80) Rumohra adiantiformis (5.79) Sphaerostephanas taiwanensis (8.79) Sticherus lobatus (2.80) Tectaria Muelleri (7.80) Todea barbara (10.80) Treeferns (mixed Cyatheas) Woodwardia radicans (7.80)

THIS IS A COMPLETE LIST OF SPORE AVAILABLE, AND SUPERSEDES ALL PREVIOUS LISTS.

Spore samples may be purchased at monthly meetings, or by sending a list of your requirements, with a stamped, self-addressed envelope, <u>plus</u> a 20¢ stamp for each species requested, to Mr. R. Hill, 41 Kareela Road, Frankston, Victoria, 3199.





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POTTING MIXTURES

By DAVID BEARDSELL & DAVID NICHOLS Horticultural Research Institute, Knoxfield

A potting mixture, if it is going to allow good plant growth, must have the following properties:

- 1. It must have adequate aeration and drainage.
- It must be able to hold sufficient water to satisfy the plant's needs between irrigations.
- 3. It must be able to hold essential nutrients in an available form.
- It must be able to provide suitable support and anchorage for the plant.

Aeration:

Plant roots require oxygen for respiration, and this is provided from the air spaces in a potting mixture. Only potting mixtures which contain large pores drain adequately enough to provide sufficient air space. Potting mixtures made of fine materials such as sandy loam contain only small pores, which do not drain well, and this can lead to waterlogging. Coarse materials such as washed river sand drain rapidly, and as a consequence have adequate air space. Organic materials like peat moss, pine bark and sawdust, because they are porous, also have good aeration.

Water-holding capacity:

The water-holding capacity of a potting material is the amount of water held after drainage has taken place. Not all of this water is available to plants, some being held so strongly that plants cannot extract it from the medium.

Brown coal, for instance, holds a third of its water in a form that is unavailable to plants, while peat moss and coarse sand have very little unavailable water. The difference between the amount of water held at the wilting point and the amount held at saturation is the actual amount of water that is available to plants. The best way to assess this is to measure the time it takes for plants to wilt in the medium. Pinebark has an excellent water-holding capacity, while that of coarse sand is poor. Brown coal and mountain soil are intermediate.

Water Penetration and Rewettability:

Water should penetrate rapidly and easily throughout a potting mixture. Organic materials such as peat moss and pinebark actually repel water when they are dry. In order to improve water penetration, they should be combined with easy-to-wet materials such as coarse sand or scoria.

POTTING MIXTURES (Cont'd)

Other physical properties:

A potting material should mix and bind well with other ingredients of the mixture. It should not break down too easily or become compacted. Other factors which affect the quality of a potting material are abrasiveness and dirtiness.

Nutrient-holding capacity:

Nutrients are held in potting mixes in two forms: (1) as salts dissolved in the water and (2) as ions attached to the solid particles. Nutrients dissolved in the eater are readily leached from the pot, and thus the nutrients held onto the solid particles of the medium are very important to plants. A proportion of nutrients are held in a potting mix in a form that is unavailable to plants.

It is important for a potting mixture to have a high available nutrient-holding capacity. Brown coal and some soils such as mountain loam are excellent in this regard.

pH:

The pH (relative acidity or alkalinity) of a potting mixture for most plants should be between 5.5 and 6.5. However, some plants prefer a pH outside of this range, e.g., Azaleas prefer an acid potting mix (pH5 or less).

Toxicity:

A potting mixture should not contain substances which are toxic to plants, e.g. excess salt or plant toxins such as the phenols found in fresh pinebark.

Preparation of potting mixtures:

If a potting mixture is to satisfy the above requirements, it must be made up of several ingredients. Firstly, a coarse material to allow drainage and aeration, secondly, a material which has a good water-holding capacity and thirdly, a material which can hold nutrients available to the plant.

Since peat moss has become too expensive and mountain loam has generally deteriorated in quality, the ornamental research group at Knoxfield has developed several soil-less potting mixes based on pinebark, brown coal and coarse sand, which satisfy most of the requirements of a good potting mixture. The following basic potting mix has been used to produce excellent growth on a range of plant species including indoor plants: 2-4 parts pinebark* (depending on grade): 1 part brown coal: 1 part coarse sand.

The following substitutions can be made:

- 1. Good quality mountain loam or sandy loam for brown coal.
- 2. Scoria for coarse sand.
- 3. Fully composted sawdust for pinebark (this is, however, not recommended because of the variability in composted sawdusts).
- Note: If pots are likely to dry out and re-wetting is a problem, then add more coarse sand.

POTTING MIXTURES (Cont'd.)

All of these potting mixtures can be fertilised by standard treatments such as liquid feeding, controlled release fertilizers (e.g. Osmocote or Nutricote), organic fertilizers (blood and bone, hoof and horn) or inorganic quick release fertilizers.

* Hammermilled, screened (to less than 6 mm size) and aged moist for eight weeks.

MORE NOTES FROM THE EDITOR:

June:

We are looking forward to seeing as many members as possible at our December break-up and meeting, on December 11th.

Albert Jenkins will be speaking to us on the subject of creating a mini rainforest.

I would like to take this opportunity to wish each member a very merry Christmas, a very safe holiday period, and a very happy New Year.

The Fern Society has many plans to make 1981 a very interesting year. Just to whet your appetite, here are some of the speakers lined up for the first six months.

February:	Doug Thomas	Ferns & other interesting features of Outback Queensland
March:	Harold Olney	Adiantums
April:	Rod Hill	Propagation of ferns from spores
May:	Kevin Heinze	Ferns in the garden

Various types of growing media

David Beardsell

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