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220 Collins Street, Melbourne (Manchester Unity Building) PUBLICITY OFFICER: Geoff Echberg, 1 Railway Parade, Highett, 3190. Tel. 555 5115

PRESIDENT'S MESSAGE:

I had the pleasure a few weeks back of listening to George Sonter of Sonter's Wholesale Nurseries, Springwood, N.S.W. speaking on his favourite subject. George was speaking at the Fourth Annual Summer School for Home Gardeners at the Melbourne University. His topic was 'A World Of Ferns'. I

managed to make a few notes.

George compared the structure of trees for example, to that of ferns. Briefly, in trees the water and nutrients travel up to the leaves through vessels at a fairly rapid rate, and the leaves consist of several layers of cells which are covered with a protective layer to cut down on transpiration and protect the leaf, whereas with ferns the stems are made up of bundles of tubes stacked one on top of the other. Moisture is relayed up the stem from tube to tube. Each tube soaks up moisture and passes it on to the next, taking approximately four hours to reach the upper foliage from the roots, and the tissues of the leaflets can be only one or two cells thick, demonstrating just how much ferns need protection from exposure, and how they should not be allowed to dry out.

Another point of interest to me was his cave theory. George explained that if you had a cave with an entrance of 6' x 6', for example, with ferns growing in it, the ferns at the entrance would be normal size and as you progressed further into the cave, so the ferns wold get progressively smaller. So if the entrance was 6' x 6' you could only expect to grow ferns back for approximately 6' into the cave. If it was a cave with a narrow entrance the distance would be even He used this example t less. demonstrate where to place ferns in a room by using the window size.

I was also surprised to learn that many ferns, particularly Nephrolepis Cultivars give off a gas called Ethylene; this gas causes a premature ageing and eventually rotting of the fronds, particularly in very dense specimens such as cultivars Suzi-Wong and Smithii, etc. So it is essential to give Boston Ferns plenty of air movement, but not necessarily fresh air. The air we breathe normally contains approximately 20% carbon dioxide, but ferns require only 2 1/4% carbon dioxide.

PRESIDENT'S MESSAGE (Cont'd.)

If you are using fluorescent lights to grow your plants under, they are of no use if they are situated more than 2' away from the plants. George does not recommend the use of the following in the preparation of our potting soil:

- A. Mushroom Compost
- B. Fresh pine Bark
- C. Sawdust (whether it be fresh or old)

Mushroom compost is far too alkaline. However, it can be added to a compost heap in moderation. Fresh pine bark contains toxic resins and must be well aged or composted before it can be used. Sawdust can be used but it contains substances such as Lysols and <u>Phenols</u> which are extremely acid and toxic to the plant. It can be used if a fertilizer is added which is very high in nitrogen content such as <u>Urea Formaldahyde</u> as well as ground limestone at the rate of 2 pounds per cubic yard.

A final point of interest was one of the reasons that ferns dry out much quicker during the summer months even if they are in plastic pots. Plastic pots expand and contract depending on the temperature, so during the hot weather there is an air gap down the sides of the container. This has the advantage of supplying the root system with air, but also dries out the roots.



The Fern Society of South Australia have finalised their arrangements for their tour to south-east Queensland. The tour will leave Adelaide on Saturday, 17th July for one week, returning on Saturday, 24th July. The tour will be to Binna-Burra Lamington National Park, and they have extended a welcome to any Victorians who wish to join them on the tour. There are three types of accommodation ranging from \$210.00 per person plus airfare, to \$329.00 per person plus airfare. I will be able to give full details at the March meeting.

The list of ferns suggested by members to be used for our competition has run out, so I have selected one myself for this month,

A Maiden Hair Fern, (Adiantum)

David Jones, the author of "Australian Ferns and Fern Allies" and "Exotic Ferns in Australia" will be our special guest at our March meeting, his subject will be 'Australian Tropical Ferns'. We are expecting a large crowd so it might pay to be early and get a good seat.

Don't forget the excursion to my place on Sunday, 21st March, 1982 at 1.30 p.m. - see Melway Map No. 222 or the back page of our March 1980 Newsletter, Volume 2, No. 2. Please bring a plate and we will provide afternoon tea.

Last of all, if anyone found a Butterfly brooch at our last meeting, could they please pass it on to me at the next meeting and I can return it to its anxious owner; it has a sentimental value.

CHRIS COUDEY

RESUME OF TALK BY RUSS HALL, GIVEN AT OUR FEBRUARY MEETING

Russ Hall, from Burnley College, headed the 1982 guest speaker list at the Fern Society's February meeting.

He spoke about tissue culture to over 130 members and through demonstration of easy-to-make apparatus took away the "black magic which often surrounds plant tissue culture".

Tissue culture is a general term covering the culture of protoplasts, cells, tissues, organs and whole plants. In all cases, the culture is done "in vitro" (under artificial conditions) for example in a test tube. A "must" for successful tissue culture is sterile conditions, the meeting was told.

Mr. Hall said that potentially all species of plants could be grown by micro-propagation techniques once their nutritional, hormonal and cultural conditions are known.

There are several uses for tissue culture. The most applied use is for mass propagation of plants. Other applications are the establishment of stock, the eradication of disease (particularly fungal, bacterial and viral pathogens from plant material), and the marketing of plants overseas.

It would cost about \$10,000 for equipment alone to establish a commercial laboratory to conduct tissue culture. Added to this would be the cost of an innoculation room, incubation room and ancillary facilities such as a greenhouse, misting units, shadehouse and hot beds to name a few.

"However, fern growers interested in tissue culture can establish a simple home laboratory," Mr. Hall said. "All that is needed is a pressure cooker (to act as an autoclave), simple implements and glassware, a greenhouse or igloo and sterilizing chemicals such as alcohol, calcium or sodium hypochlorite". Mr. Hall added that a glass top working area is necessary and he showed the meeting a simple box construction which adeequately served the purpose.

Media used in the tissue culture should be carefully selected. A premixed culture medium may be purchased but if the medium is not known, a broad spectrum experiment can be employed to determine the most suitable medium. Mr. Hall suggesed that the media should contain a variety of minerals with iron being ususally essential. Other components are sugar, as an energy source, vitamins and growth regulators.

Methods employed in the aseptic culture of fern spore are:-

- 1. Collection of spore
- Surface sterilization of spore (a quick wash in alcohol or immersion in a 2% solution of calcium hypochlorite for 3 to 4 minutes).
- 3. Use of an eye dropper to transfer spores onto the agar-based medium (this provides additional humidity for germination).

During his talk to the meeting, Mr. Hall also discussed clonal propagation of ferns.

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NORTH BALWYN FERNERY

91 DONCASTER ROAD, NORTH BALWYN

Ring Greg - 859 9330 9.00 a.m. - 5.30 p.m. Monday - Saturday

- * LARGE RANGE OF NATIVE AND EXOTIC SPECIES
- * ADVICE ON GROWING AND LANDSCAPING FERNERIES

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Members may now take advantage of an extensive lending library which will operate at each monthly meeting. First lendings took place at the February Meeting.

Charges for books are 20 cents per loan for one month. Late returns of books will incur a 50 cent fine. Damages to books will attract a minimum of \$1.00.

Ann Bryant, who is running the library has said that extension of time for book borrowings can be made by simply producing the book for restamping and payment of a further 20 cents.

At the February meeting of the Fern Committee, concern was expressed at the practice of some members and nurserymen lifting interesting but difficult-to-grow ferns including:-

> Antrophyum reticulatum, or ox-tongue fern, and Grammitis billardieri, or finger fern,

from the bush and selling them to unsuspecting members and the general public, within a day or so of potting when they still look attractive.

Our top-grower and fern expert, President Chris Goudey, spoke on the difficulty that even he has with his glasshouse and ferneries to grow these particular ferns.

We warn all readers to be wary of buying these ferns, unless they have ideal conditions in which to grow them.

We would also like to hear from any members who have success with these ferns, together with a note on their methods of growing.

GEOFF ECKBERG

REPORT ON TRIP TO GLEN NAYOOK

While Melbourne sizzled on Saturday, February 13th, a small band of devoted members joined my family and I in experiencing the natural air-conditioning from the underground vents of Glen Nayook, the icy waters of the Toorongo River and the refreshing spray of Tooronga Falls.

In all, 28 fern species (plus one fern ally) were observed, including the rare Lastreopsis hispida, and some members were treated to a close-up view of a magnificent male lyre-bird.

My thanks to those who helped make this outing so enjoyable.

SPORE BANK REPORT

Spore samples may be purchased at monthly meetings, or by sending a list of your requirments with 20 cents for each species requested, plus40 cents for packaging and postage to:

Mr. R. Hill, 41 Kareela Road, FRANKSTON 3199

Payment for orders may be made by postage stamps (24 cent stamps preferred where possible) <u>or</u> by cheque (payable to "Fern Society of Victoria").

Many species are still available from the list published in the December newsletter, but if ordering from this list, please include a supplementary list in case some species run out.

In preparing spore for "Beginner's Kits" for the coming fern show, I am trying to obtain reasonable quantities of fresh spore of Adiantum gracillimum, A. hispidulum and Blechmum nudum. If anyone can supply me with any of these at the March meeting (or can bring plants in with fertile fronds if you are unsure of collecting spore yourself), I will be most grateful.

Thanks to a most generous donor, the spore bank no longer has to purchase gelatine capsules for packaging spore. However, as donated capsules are not transparent, I suggest spore be carefully emptied on to a small clean square of white paper before sowing. This way you can ensure that you sow a sufficiently small quantity, as capsules usually contain far in excess of that required for a single sowing.



In last month's issue, we commenced printing some extracts from an article on Fern Society members, Dorothy and Ian Forte. Here is a further reprint from the same article.

Dorothy and Ian are foundation members of the Victorian Fern Club, formed 2 1/2 years ago. They travel to Burnley every second Thursday each month to meetings and find the common interest shared with other members heightens their enthusiasm.

Through the club, Dorothy has obtained spore of ferns from all over the world. She swaps and trades plants with friends and proudly claims that \$12 is the most she has paid for a fern.

In June, the Forte's travelled to New Zealand on a fern study tour with the club. The group obtained special permission to bring back spore from New Zealand ferns and plants were also allowed in providing they were quarantined at Burnley for three months.

The club has outings and Dorothy particularly likes visiting the homes of other members to see how they grow their ferns.

Ian runs sheep and beef cattle on the farm and as this keeps him busy, he is not as actively involved with the ferns as his wife, but the interest is there.

Dorothy says her fern growing has gained her many friends and acquaintances. Local ladies' clubs and guilds arrange outings to 'Fern Glen' and Dorothy has staged displays and special functions in neighbourhood townships. She has a comprehensive collection of books on growing ferns and recommends "Ferns for Modern Living" as a practical publication for the beginner.

A new book "Exotic Ferns in Australia" by Jones and Goudey is excellent for people wanting more detailed information about fern growing and identification of ferns.

Dorothy repots her ferns every year and regards this as "a must" to keep them healthy and vigorous.

To make up a potting mixture, she uses a base of good composty soil from the bush and adds well rotted cow manure, well rotted pine bark chips, sand and charcoal. She also mixes in a little lime as her soil is acidic and the lime meutralises it.

She rarely feeds her plants as she believes all the mutrients they require are in the soil.

She says not to feed them at all in winter, but if they look as if they require feeding over the summer months, she uses Maxicrop at half strength.

Dorothy says it is very important to identify a fern and find out its natural requirements.

She has given up trying to grow tropicals without a hot house to provide the necessary humidity.

She says that swamp ferns need wet feet and Epiphytes (plant that grow on trees) need very dry conditions.

Stags and elks come under this category, and should be grown under the eaves of a house, not on an open wall where they have to contend with soaking rain and hail in winter.

Dorothy has installed heating in the small first greenhouse built on the property to house some varieties that cannot survive the cold Gippsland winter nights.

She has covered her new greenhouse with 75 per cent shade cloth to break the wind and give a diffused light for ferns that like cool conditions.

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	JUNE 11TH				THE FAMILY POLYPODIUM by Chris Goudey				

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