PEBN' SOULT

NEWSLEDNER

DATE MAR '80 VOLUME 2

OFFICE BEARERS:

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PRESIDENT'S MESSAGE:

A good crowd attended our first meeting for the New Year, in spite of heatwave conditions.

Geoff Echburg gave a short talk on a selection of ferns, and I spoke on Adiantums (Maidenhair ferns).

Rod Hill is to be congratulated for his efficiency in starting off the Spore Bank; he had an extensive list of available spore, together with good supplies of fresh spore on hand. Seventy-eight capsules of spore were sold at the meeting. Rod will be giving a short talk at our next meeting, on the propagating of fern spores without the aid of a glasshouse.

The plant sales table will be open before the meetings start in future, instead of at interval. Please don't bring plants to sell if you are not a member.

Last month's competition proved very successful, with many entries: the results were as follows:

Novice Section 1st - Mrs. Dawn Wilson 2nd - Mr. Ted Bolster 3rd - Mr. Irwin

Open Section 1st - Mrs. Bryant 2nd - Miss Y. Goudey 3rd - Mr. George Lee Kim

The fern chosen for the March competition is The Most Colourful Fern. Examples would be - ferns showing red or bronze new growth, variegated ferns, golden ferns or selaginellas, blue selaginellas.

On Saturday 15th March, there will be an excursion to Lara and then to Grovedale (near Geelong). We will meet at my place at 1.30 p.m. (see map on back page).

After looking through my ferneries we will all move on to Alden Lodge at Grovedale, where we can enjoy several acres of beautiful gardens, a large fernery and glasshouse, together with one of the largest collections of shells in Victoria.

The date has been finalised for our excursion to the Otways to meet up with the Fern Society of South Australia. A bus will leave early on the 3rd May, and we expect to meet up with the Fern Society of South Australia at a pre-determined location in the Otway Ranges.

Please have a deposit ready for the March meeting, so that we can be sure of getting a bus. We expect the cost per person to be approximately \$8.00.

Would the following people please pick up their books at the March meeting -

Maree Taylor, Nancy Cookson, Colin Clayton, Alan Stewart, Terry James, Ron Perry, N. Baillie.

Books not picked up nex: meeting will be used to fill later orders or sold at the April meeting.

Would anyone knowing the whereabouts of the treefern vase from New Zealand which was handed around at the last meeting please let me know, as it was a memento of our trip to New Zealand.

> CHRIS GOUDEY President

SECRETARY'S REPORT:

As some members already know, our badges arrived as promised, and we have already sold quite a few.

We do hope that you will buy one and wear it; you will find that they raise quite a deal of interest, and so will help to spread word of our society.

We have been reading the suggestions left in the box, and are endeavouring to implement them where possible. This is one way in which you can make your wishes known, so if you have any ideas, please pass them on.

Elsewhere in this edition you will find a report on the talk given by George Sonter at the Royal Horticultural Society of Victoria's Summer School. George is a well-known nurseryman in the Blue Mountains area of N.S.W. and is a leading grower of ferns by tissue culture.

I was fortunate enough to be invited to attend and others of our members who were there will agree that his talk was not only most informative, but most enjoyable as well.

Everyone who participated in the School felt that it was a most rewarding three days, both educationally and socially.

I do urge all who can to keep in mind the Summer School for 1981, and leave free those few days in February.

We would also like to thank those ladies who volunteered to help with the supper at meetings. Their help is most welcome, as I am sure that I am not alone in appreciating a 'cuppa' at the end of the evening.

IRENE BOLSTER Secretary

TREASURER'S REPORT:

Our expenses for the month - covering printing of letterheads, rent of hall to date, President's expenses, 'phone, postage, etc, setting up of the spore bank, and the Newsletter - amounted to \$352.30.

Income, including subscriptions, plant sales, special effort and supper donations amounted to \$87.25, leaving a working balance of \$730.84.

ALBERT N. JENKINS Treasurer

ADIANTUMS

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REPORT ON TALK GIVEN BY CHRIS GOUDEY AT FEB. MEETING

The scientific name Adiantum is taken from the Greek work 'Adiantos', which means 'unwetted', so called because of the property the leaves have of repelling water.

They repel water even after being completely immersed in water. Maidenhair ferns do not like their foliage wet; it causes rotting. From my observations, they seem to be a fern of open forest lands rather than deep rain forest.

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There are approximately 200 species of maidenhair ferns, very few of which are cultivated. In Australia, there would be no more than 25 species (in the U.S.A. 17 species) in cultivation, eight of which are native.

The majority are horticultural cultivars. These cultivars come mostly from three species - Adiantum radianum, which is responsible for at last 50 cultivars, Adiantum tenorum, which has approximately 15 cultivars and Adiantum capillus venerus, which has about 10 cultivars.

Maidenhair ferns mostly come from the tropics to sub-tropics, with the majority coming from South America, i.e. A. raddianum, A. tenerum, A. traporiforma, A. peruvianum, anceps, etc., etc.

All species are terrestrial. They enjoy light shade or filtered light, ample humidity, and a site free from winds and drying draughts.

They have varied uses. One species, Adiantum formosum is used extensively in dried arrangements, a few of the finer cultivars are used in corsages, etc. A point of interest - the fronds of Adiantum capillus venerus were collected, dried and used for a special brew of tea that was popular in the U.K. last century. In olden days, it was believed that the dried fronds of Adiantum capillus venerus had medicinal properties.

Maidenhair ferns belong to the genus Adiantaceae, which was named by the famous botanist Linneaus who was, as I mentioned in my first talk, responsible for the bi-nomial system of naming plants.

Other ferns which belong to this family are Pteris (the Brake ferns) Cheilanthes (the Rock ferns), Pityrogramma (Gold and silver ferns), Vittana (Ribbon ferns) and many more. The spores of all maidenhair ferns are situated along the margin of the pinnules under a flap or false indusium. When the spores are ripe the <u>indusium</u> curls back, releasing the spore.

Historically, the greatest interest in ferns occurred in Europe between 1870 and 1900; in those times, there were between 100 and 150 different cultivars of maidenhair ferns. Unfortunately many of them were lost to Horticulture.

Today, almost 100 years later, there is a new interest and as a result of extensive cultivation, many new cultivars have appeared, and some old horticultural cultivars have re-appeared.

It is unlikely that there will ever be as many cultivars as there were last century. Many collectors, particularly in Queensland, claim to have collections of well over 100 different maidenhair ferns. I myself used to boast of having about 120 different species and cultivars, until I started sending pressed specimens to the University of California (to Barbara Jo Hoshizaki).

I found that ferns such as Adiantum noaksii, Adiantum edwinii, Adiantum upright noaksii, and another one locally called "Joan's lacy one" were all in fact Adiantum concinnum, which is a species of central America.

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I also found that Adiantum scintilla and Adiantium scintilla rubra (of trade) and several other skeletonised and tall forms of A. scintilla (of trade) were in fact Adiantum excisum, a species from Chile & Bolivia.

Many other cultivars are not registered and possibly not even worthy of a cultivar name; these include the ones we know as A. fantasy, A. compactum, A. Banksiana, A. multiceps, A. variegated venus, A. charlottae A. cluster gem, A. pubescens, A. pointonii, and many more.

Most adiantums prefer a slightly alkaline medium, although there are a few exceptions. The species and all the cultivars of A. raddianum, A. tenerum and A. capillus venerus all need lime in their soil mix. Some ferns such as A. reniforma could not survive without it.

Most of our native species do equally as well in an acid medium as they do in an alkaline mix. The potting mix you use is entirely up to you, but be sure to incorporate plenty of humus (such as peat moss, old rotted manure, old rotted leaves or treefern fibre, or better still, a combination of them all, and add a little lime.

Don't use fine sand or any soil that is likely to set hard. An open mix is essential.

Note from Irene Bolster: Chris followed up his talk with slides of various ferns - some in his collection, and some in their natural surroundings.

Members showed their appreciation by a warm round of applause.

AN EXPLANATION OF FERN NOMENCLATURE

by R. MacPHERSON

Ferns have undergone many changes in the history of nomenclature, and what one author may consider to be a species of the one genus may, in fact, be several genera to another author. A brief history of the nomenclature and classification of ferns is needed here.

Linneaus started the ball rolling with his first paper which based ferns on the method of reproduction, e.g. shape, position of sori. There was a lot of opposition to this theory. Two of his major critics, Adonson and de Gessiu, preferred to group ferns by appearance rather than spore characteristics.

Over a period of one hundred years, the Linneaus idea gained gradual acceptance, until it became an accepted method of classification. It then became a task to group plants according to other characteristics and these ranged from chromosome numbers to shape of pinnules. The problems which face us today are: 1. Taxonomists who group all species into a small number of genera, and 2. Taxonomists who group species into a large number of genera. Why do they do it? Because new discoveries upset the old descriptions.

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GENUS A Square with two diagonal lines GENUS B Square with dots GENUS C Circle with diagonal lines and dots





As you can see, the above genera are all quite distinct, but what if one is discovered like the one below?

New discovery:

Square with diagonal lines and dots



This poses great problems, and hopefully you can see that by placing it in any of the first three genera the description would be upset and therefore the whole genus would need revision - and this is where the name changes happen. It doesn't need to be a discovery: someone might think that a genus is very untidy or confusing, and they can go around and re-organise it into a fashion that might suit everyone better than the last classification.

But no-one is compelled to agree. Other botanists and taxonomists do it in their own time, and if they feel the change is better, they will begin to use the new names.

I will leave you with one example of name changing, just to show you how it works.

Between 1938 and 1947, Copeland revised the Hymenophyllums. Originally they were grouped into Hymenophyllum and Trichomanes, and were large groups. Copeland divided them into 34 different genera. Holttum remarked to Stone that he spread them out too far, and he wouldn't agree with its principles. Professor Chambers feels that, although it doesn't work for Victoria, it does work well in the Philippines and similar places. Copeland's classification was accepted, however, by Wakefield, 1955 (Ferns of Victoria and Tasmania) and by Willis 1962 (Victorian Plants) and partly by Tindale (N.S.W. 1963). In order not to confuse, I. G. Stone used Copeland in her articles. Now, even though the Melbourne herbarium still uses Copeland as is written in Willis's book, Dr. Willis himself feels that other taxonomists did not pick up Copeland's theory, and therefore has reversed to the original method. This has now started a trend of reverting to the original idea. Recently another Hymenophyllum revision was done, and I feel that this one might halt the reversal and gain popular acceptance.

So, as you can see, there is no hard and fast rule; you take each name change as it comes and decide for yourself whether you feel the change is justified. If you haven't the time to check out the reasons for the change, trust in someone's judgment and ask them their opinion. Just don't fight a change because you are tired of them. They are for a reason. They will benefit us all in the end.

Hymenophyllaceae in Victoria Prior Copeland = Hymenophyllum + Trichomanes Hymenophyllacaea after Copeland = Hymenophyllum + Mecodium + Polyphlebium + Macroglena

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Nephrolepsis bisornata	3	qm		Balbitis rhizophylle	1
Platycerium holtumii	7	qm		Araiostegia hymenophylloides	1
Microsorium alternifolium	4	gm		Diplazium dolichosorum	1
Platycerium coronarium	19	gm		Dryopteris sparsa	1
Aglaomorpha meyeriana	9	gm		Crypsinus albidosquamatus	1
Marattia pellucida	5	qm		Sphenomeris chinensis	1
Arachnoides amabilis	3	gm		Diptoris conjugata	1
Sphaerostephanos hirsutus	2	gm		Marattia pellvada	1
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Tectaria sp.	3	qm	•	Schellolepis peroicifolia	1
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TEXT OF A TALK GIVEN BY GEORGE SONTER, AT THE R.H.S.V.'S SUMMER SCHOOL

To begin with - a few don'ts :-

- A. Do not carry plants around in the full sun without some protection.
- B. Do not disturb the roots more than can be helped.
- C. Do not leave plants submerged in water.
- D. Do not put indoor plants outside in the rain to freshen.

Some ways in which conditions of modern living are not compatible with the natural habitat of ferns:

- 1. Flooding of valleys for dams and also large scale sewerage works have despoiled the natural countryside.
- 2. Imported weeds and grasses choke out many ferns.
- Ferns are vulnerable to plant diseases; Blechnums particularly are susceptible to Black Spot disease.

Propagation by tissue culture is becoming more widespread and this massproduction of young plants could provide the opportunity for many more people to see a wide variety of ferns.

(In his nursery at present, George Sonter has over 3½ million ferns, a sizeable proportion of which were grown by tissue culture.)

He went on to explain that the "Law" governing the cultivation of ferns is made up as follows:

LIGHT AIR WATER

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A. LIGHT: It is important that the light is right - 85% shade is ideal. Natural light is best - filtered if possible. In rooms with fluorescent or Grolux tubes, if the light is more than 2' from the plants, the lights are useless. 8" - 13" is the optimum distance. Watch for direct sunlight, as this can burn the fronds.

If plants are to be planted outside, consider the path of the sun, so that plants are not in full sun. There are some exceptions which may live, but they will not be good looking ferns. Even if it is raining, plants can absorb the ultra-violet rays.

If a plant is looking sick, consider its condition and move it towards or away from the light according to the following list of indications:

Indications of too much light:

- 1. Fronds stunted and compact
- 2. Fronds yellowy-brown in colour
- 3. Fronds burnt on the edges
- 4. Fronds are stiff and erect
- Dead fronds are brown, not yellowy colour
- 6. The plant does not look fresh

Indications of too little light:

- 1. Fronds are long and lanky
- 2. Fronds are lemony-green in colour
- 3. Fronds are weak, untidy or sick-looking

B. AIR: Air movement

- 1. Ferns cannot tolerate strong winds
- 2. The cells in the stalks of ferns are placed one on top of another and therefore raising of water from roots to fronds is a long process. If winds dry out plant, it is a lengthy time before watering can freshen fronds, e.g., it takes ten hours for water to rise to the top of a 6' tree fern.

The ferns in the gullies have survived over the years because they are not troubled with strong currents of air and the ground always stays moist.

Therefore, indoor ferns do not do well if exposed to either air from outside the house, or having a fan blowing on them indoors. The best situation for them is sheltered from all winds and draughts and preferably in a window.

Indications of too strong or too much winds and draughts:

- 1. Fronds are brown or burnt on the edges
- 2. Tips of young fronds wilt and burn
- 3. Ferns become yellowish brown and/or stunted

Indications of too little air movement:

Plants go mouldy

 (N.B. If packs of ferns are received, for example, from interstate, open up to the air as soon as possible.)

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C. <u>WATER</u>: Ferns need water but at the same time the roots also need air. Therefore, if a fern appears to be growing in water, most likely it is growing on a tussock or a rock or quite often plants are not actually in water, but in moss. If no air gets to roots, they can be drowned.

Some points to watch for:

- Soil must never dry out. A rubber plant, for example, will revive but most ferns will not.
- 2. Do not drown plants.
- Plants may sit in tray of water, but change the water periodically so that there is no build-up of unwanted chemicals.
- 4. Where possible, soak the plants well and leave to drain.
- 5. If possible water from top of soil not over fronds.
- With hanging baskets, soak in 4" 6" of water in sink for approximately 2 hours. Then leave to drain overnight if possible. This way toxins are washed out and there are no drips on the carpet.

Mr. Sonter then showed a veriety of Australian Native Ferns - all excellent examples of their type.

Davallia solida - quite rare and quite prolific in its growth of fronds Davallia pyxidata Drynaria rigidula Pteris ensiformis - variegated Stenochlaena palustris Polypodium membranosum Pteris pacifica Pellea falcata Hypolepis hirsuta Rumohra adiantiformis Goriophlebium subauriculatum. C.V. Knightsiae

SOIL MIXES: When speaking of suitable growing mediums, Mr. Sonter stressed that the mix should be light and well aerated. The mix can contain:

Compost, leaf mould, <u>old</u> cow manure, <u>old</u> horse manure, <u>old</u> seaweed, coke ashes, other ashes (not fine ash), charcoal, perlite, styrofoam chips, all types of peat, sawdust (with caution, as this can make mix too heavy), medium to fine pine bark chips, sand (no more than 20%), and light potting mix.

N.B. Do not use compost which includes mushroom spore or coffee grounds. Orchid mix can be used, but include extra cow manure.

FERTILIZERS: The following fertilizers can be used:

All fertilizer pills, e.g. Osmocote, fish emulsion, seaweed emulsion, all slow release fertilizers, liquid fertilizers, <u>old</u> horse manure, <u>old</u> cow manure, <u>old</u> poultry manure (with care), blood and bone mix, bone meal, and hoof and horn mix.

N.B. No solid artificial fertilizers.

A small amount of Epsom Salts may be added, but water well in.

<u>PESTS</u>: There are very few problems, but some of the most common are: Scale - wipe off with damp cloth, or spray with white oil at half strength, or white oil and Malathion at half strength.

Mealy Bug - wipe off with damp cloth, or spray with Rogor.

Thrips, Aphids - Spray with Rogor.

Caterpillars - Spray with Dipel, or physically remove them. Spot Moulds - Spray with Zineb.

N.B. Remove heavily infested fronds if they are old; they are not worth saving.

SPORE LIST - MARCH, 1980

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

Species marked with a single asterisk are suitable for beginners.

Adiantum concinnum (10-79)
Aglaomorpha meyeriana (12-79)
Arachniodes aristata varigata (2-80)
Asplenium flabellifolium (2-80)
Blechnum ambiguum (1-80)
B. articulatum (11-79)
B. brasiliense (12-79)
B. cartilagineum (12-79)
B. discolor (12-79)
B. fluviatile (2-80)
B. orientale (12-79)
B. penna-marina (1-80)
B. sp. (King Is.) (12-79)
Cheilanthes distans (2-80)
C. tenuifolia (11-79)
Christella dentata (2-80)
Cibotium schiedei (12-78)
Colysis ampla (1-80)
Cyathea australis (2-80)
C. brownii (2-80)
C. callosa (12-79)
C. contaminans (12-79)
C. cooperi (12-79)
C. cunninghamii (2-80)
C. dealbata (2-80)
C. intergra (12.78)
(C. medullaris (7-79)
(C. smithii (6-79)

- C. rebeccae (8-79)
- C. woollsiana (8-79)

C. sp. (Borneo) Cyclosorus truncatus (12-79) Cystopteris filix-fragilis (2-80) * Dicksonia antarctica (11-79) D. squarrosa (10-78) Lastreopsis shepherdii (12-79) L. marginans (12-79) L. sp.A (tinarooensis) (1-80) Leptopteris fraseri (1-80) Llavea cordifolia (11-79) Matteuccia struthiopteris (12-79) Osmunda regalis (contorted) (12-79) Pellaea falcata nana (12-79) Platycerium coronarium (12-79) P. holttumii (12-79) Polypodium aureum glauca (1-80) Polystichum aculeatum (2-80) P. australiense (2-80) P. formosum (12-79) P. proliferum (2-80) P. lentum (3-79) P. mumitum (11-79) Pteris blumeana (12-79) P. comans (1-80) * P. tremula (12-79) P. tripartita (12-79) Rumohra adiantiformis (5-79) Sticherus lobatus (2-80) * Todea barbara (2-80)

Treeferns (mixed Cyatheas subgen. Sphaeropteris)

NOTE FROM THE EDITOR:

I would be delighted to receive some more contributions from members - articles, queries, comments, photographs, suggestions or criticisms.

Your continued support and interest will enable the Fern Society of Victoria to continue to grow.

KEITH HUTCHINSON Editor

THE WAYWARD FERN

by IAN BUCKMASTER

Ferns are no exception when it comes to survival and adaptation.

From the Azola species of the watery ponds to the Nardoos of the marshes, from the Epiphytes of the trees and rocks to the ground-growing Dennstaedtaceae family, from the salty headlands to the plans and desert fringe, from the tropics to the frozen edges of the icy wastelands, we find a kind of fern surviving as if it were its last bastion for existence.

How does the fern move from one environment to another?

Usually, it is by wind-borne spore. However, it may be water-borne, or carried by insect, bird, or animal. It doesn't always successfully adapt to its new surroundings - usually it dies. Its survival value may be found in its genetic change through the sperm of one prothallus fertilizing the egg of another. However, this must be very rare for natural circumstances.

Nature works slowly, and changes are slow. How can we benefit from this?

We can make a study of our special fern (the one we like best), and slowly provide others with that information, to bring about better conditions for ourselves and those who follow.

	DIARY DATES
MARCH 13	TH, 1980 - Albert Jenkins, on
"Con	posting in relation to ferns"
	8 p.m.
Burnley	Horticultural School Hall, Burnley
APRIL:	Ian Buckmaster -
	"FERNS IN CONTRAST"
	-
MAY:	DEMONSTRATION NIGHT
	(Various speakers)
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	-
JUNE:	Neil Laird -
	UN OBLEGETON OF UNCOMMON DEDNICH

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