

**THE
FERN SOCIETY
OF
VICTORIA
Inc.**

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NEWSLETTER

VOLUME 16, Number 6, July 1994

FERN SOCIETY OF VICTORIA Inc.

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Subscriptions fall due on 1st July each year.

PRESIDENT'S MESSAGE:

I hope our recent cold snap has not been too hard on your ferns. Mine appear to have survived without more than a few dead fronds, but I am keeping an anxious eye on a *Davallia fejeensis* cv. Plumosa purchased at the last show.

I would like to give another reminder about the Annual General Meeting next month and a further invitation to members to give consideration to becoming a Committee member. We do have a number of members retiring and will need new blood.

Thank you to those members who have contacted me about the article in the June Newsletter on the wet storage of fern spore. I will be following this up and hope it will give us a more effective storage system.

July Meeting: Our topic this month is the growing of ferns from spore. This is a fascinating aspect of fern growing which most members attempt and do have success, although to varying degrees. Probably no two members use an identical system; most people develop their own particular method which works for them and suits their needs and situation. We will have four of our members talking about their individual methods, the advantages and disadvantages, and any special little variations which they have adopted. It should be an interesting evening.

The fern competition category is an *Asplenium*. If you have any of the less common *Aspleniums* it would be interesting to see them along.

August Meeting: Most members will have a copy of Gillian Dunk's book on ferns. It is an excellent book for anyone starting off on ferns. A new version of the book has just been released. The text of the book remains the same but it is now in hard cover. Gillean will be the

(continued opposite)

NEXT MEETING

DATE: Thursday, 21st July, 1994

TIME: From 7.30 p.m.

VENUE: The National Herbarium, Royal Botanic Gardens,
Birdwood Avenue, South Yarra.
(Melway Directory Ref. 2L A1)

TOPIC: GROWING FERNS FROM SPORE - DIFFERENT TECHNIQUES

SPEAKERS: Fran Harrison, Joel Machar, Eddie Pittaway and
Terry Turney.

MEETING TIMETABLE

7.30 p.m.	Pre-Meeting Activities:- Sales of Ferns, Spore, Books and Special Effort Tickets; Library Loans.
8.00 p.m.	July General Meeting
8.20 p.m.	Topic of the Evening
9.30 p.m.	Fern Competition Judging Fern Identification and Pathology Special Effort Draw
9.45 p.m.	Supper
10.00 p.m.	Close.

FERN COMPETITION: The category for this month is an *Asplenium*.
The category for August will be "A Fern and Container" (see
President's Message for details).

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DON'T FORGET YOUR MEMBERSHIP RENEWAL

PRESIDENT'S MESSAGE: (continued)

speaker at our August meeting and her topic will be "Growing Ferns in Containers" with some additional comments on the history of ferns, a topic in which Gillean has a special interest.

The fern competition category for August will be a "Fern and Container", with the appearance of the container, and its appropriateness to the fern, being considered in the judging.

Regards,
Barry White

SPEAKER REPORT - GENERAL MEETING - 16th JUNE, 1994Speakers: Chris Goudey and Terry TurneyTopic: PLATYCERIUMS and PYRROSIAS*(The following report was written by Sarah Keel.)*

Terry and Chris presented the Society with a very interesting and well-rounded discussion of the evening's topic: the *Platynerium* and *Pyrrosia* genera. Not only did members attending have an opportunity to see several lovely live specimens that were brought in for a fine display, but Terry also provided three microscopes for detailed examinations of tissues and Chris had a comprehensive selection of slides to share with us.

PLATYCERIUMS:

It should be noted that although *Platyneriums* are relatively quite large, and *Pyrrosias* are in turn quite small, they share some very similar physical features. Terry began with a clear run down on these closely related members of the Family Polypodiaceae, starting with the genus *Platynerium*. The name *Platynerium* itself translates from the Greek as 'platys' = flat and 'kerion' = honeycomb; the flat honeycomb relates to the venation and the similarities could be seen under the microscopes. The veins appeared as hexagonal honeycombs and flat.

There are 15 accepted species of Stag horns and Elkhorns, which are distinguished mainly by the shapes of their fronds, the ways their fertile fronds are forked and the positions of their sori. They all have short, flat rhizomes and stellate hairs. They occur mostly in the tropical regions of both the Old and New Worlds, and most of their numbers are found in Asia or Africa. There is only one species found in the Americas. The following list gives the accepted species and their region of indigenous growth:

<i>P. alcicornis</i> - Africa	<i>P. andinum</i> - Peru, Bolivia
<i>P. bifurcatum</i> - Indonesia, Papua New Guinea, Australia	
<i>P. coronarium</i> - Malaysia, Philippines	
<i>P. elephantotis</i> - Central Africa	<i>P. ellisii</i> - Madagascar
<i>P. grande</i> - Philippines	<i>P. holttumii</i> - S.E. Asia
<i>P. madagascariense</i> - Madagascar	<i>P. ridleyi</i> - Malaysia
<i>P. stemmaria</i> - Central Africa	<i>P. superbum</i> - E. Australia
<i>P. wallichii</i> - S. Asia	<i>P. wandae</i> - New Guinea.

Platyneriums live on rocks or trees. They prefer sunny places, and like other Polypodiaceae they have a growing rhizome from which the fronds grow. In *Platyneriums* the rhizome is very short because it is covered by the "nest leaves". *Platyneriums* are also strongly dimorphic; they have "nest leaves" which are entirely different from the fertile fronds below. All the *Platynerium* species are very similar.

Cultivation: *P. bifurcatum* and *P. superbum* are the most commonly cultivated species in Australia. In the wild they are found mainly growing on trees, but they may also be on rocks. The most commonly found Australian species on rock is *P. bifurcatum* var. *veitchii*. They prefer subtropical, wet areas, in sunny positions, or at most, partly shaded spots. Because of the size they grow to, they themselves create a suitable habitat for small insects such as ants, frogs and epiphytes

such as orchids or *Ophioglossum* (Ribbon-fern). There is quite a range of commonly known cultivars of these two species, probably due to their own popularity. For example, some of the *P. bifurcatum* cultivars are: 'Majus', 'Netherlands', 'Roberts', 'San Diego', 'Zeisenhenne', 'subrhomboideum', 'lanciferum', 'Bloomei', 'Drummond' and 'Pumilum'.

Adaptations: Both *Platynerium* and *Pyrrosia* live up in trees, so how do they obtain their nutrients and water? By developing special structures. For example, "nest leaves" collect humus for nutrients as well the necessary water reserves for hard times. They also have fairly leathery fronds or frond hairs, both of which help to reduce water loss from the plant.

Terry also highlighted the fact that most of the species of *Platynerium*, and *Pyrrosia*, were found and described by Westerners between 1800 and the early 1900's. This probably relates to the fact that they grow in the same regions that man generally chooses to inhabit. As Westerners explored new areas they found these species and subsequently recorded them.

Australian Species: There are two Australian species which are then represented by several cultivars. *P. superbum* represents Australia's staghorns, whilst *P. bifurcatum* represents the elkhorns. *P. bifurcatum* has three Australian derivatives: var. *bifurcatum* (Common Elkhorn), var. *hillii* (Northern Elkhorn), and ssp. *veitchii* (Silver Elkhorn). *P. willinckii* may be in Australia but this has not been verified as yet. It is well-known from Indonesia and Papua New Guinea, and a new species which has not been properly studied or described as yet may in fact turn out to be *P. willinckii*.

PYRROSIAS:

The members of the *Pyrrosia* genus are small-medium sized ferns. They are usually epiphytes or found growing on rock. Generally their fronds are leathery in texture. This is due to the thick cell-walls in the surface cells to reduce water loss. Their stomata are also sunken to assist in water conservation. Some species are capable of shrivelling up when water is scarce and then expanding again when water is plentiful. Others simply drop their fronds when water is scarce and leave their rhizomes to survive until water becomes available once more.

Most *Pyrrosia* are dimorphic, with their fertile fronds being much smaller than their sterile fronds, although if conditions are optimal every frond may be fertile.

Pyrrosia have hydathodes which are white spots of lime on the surface of the fronds to control salt balance within the tissues. The pores exude salt solution, the water evaporates and salt then builds up on the surface until the spots are too big and heavy to be maintained; they then fall off. These hydathodes are present in most *Pyrrosia* species.

Distribution: Members of this genus are widely distributed throughout Asia and Africa, but are not found in the Americas. There are a few species in the Pacific Islands, Australia, and one species in New Zealand. Most of the species were listed in an overhead to give an indication of their distribution as follows:

<u>Species</u>	<u>Distribution</u>	<u>Species</u>	<u>Distribution</u>
<i>P. schimperiana</i>	trop. Africa	<i>P. sphaerosticha</i>	Phillipines
<i>P. africana</i>	Natal coast	<i>P. abbreviata</i>	Indonesia
		<i>P. christii</i>	Borneo
<i>P. princeps</i>	New Guinea	<i>P. lingua</i>	cont. Asia
<i>P. splendens</i>	Phillipines	<i>P. petilosa</i>	cont. Asia
<i>P. platyphylla</i>	Borneo		
<i>P. stigmosa</i>	WIDESPREAD	<i>P. novo-guineae</i>	New Guinea
<i>P. costata</i>	cont. Asia	<i>P. samarensis</i>	Philippines
		<i>P. angustata</i>	Malaysia
<i>P. hastata</i>	Japan	<i>P. asterosora</i>	Sumatra
<i>P. polydactyla</i>	Taiwan	<i>P. distichocarpa</i>	Sumatra
<i>P. sheareri</i>	cont. China		
		<i>P. pilloselloides</i>	WIDESPREAD
<i>P. elagnifolia</i>	New Zealand	<i>P. niphoboloides</i>	Madagascar
<i>P. rupestris</i>	Australia	<i>P. heterophylla</i>	S.India, Ceylon

It seems that there may have been seven primitive origins to *Pyrrosia* from which they have radiated to produce the 51 known species of the present, as there are similarities between various species - as indicated by the layout of the above table.

Habitat and Cultivation: Commonly cultivated species of *Pyrrosia* are: *P. lingua*, *P. confluens*, *P. hastata*, *P. polydactyla*, and *P. rupestris*. Generally they are found growing in trees, but not in mountain regions. Those found growing on rocks have thicker rhizomes. Some *Pyrrosia* growing high in the canopies of trees may be so small that their hosts are twigs, and they are actually living as parasites, not epiphytes. That is, these species obtain their nutrients from their host species. Many other *Pyrrosia* species are adapted to drought conditions. Notably, there are many cultivars of *P. lingua* in Japan which have been developed over hundreds or thousands of years; many of these are worth a great deal of money today.

Australian Species: In Australia there are five species, if you count Norfolk Island. These are: *P. lanceolata* (Nth Qld), *P. longifolia* (N.E. Qld), *P. rupestris* (Qld, NSW, Vic.), *P. serpens* (Norfolk Is.) and *P. confluens*, which has two varieties - var. *confluens* (Qld, NSW, Norfolk Is., Lord Howe Is.) and var. *dielsii* (S.E. Cape York).

Chris then took us through a slide show of these two genera. His slide collection included

Pyrrosia rupestris from East Gippsland; *P. confluens*; *P. dielsii* from Lord Howe Island; *P. lanceolata*, which used to be *P. adnascens*, from Nth Qld; *P. polydactylis* from Taiwan; *P. longifolia* from the main street in Cairns where it grows by the tonne in the treetops; *P. lanuginosa* from Malaysia; *P. nummularifolia*; *P. linearifolia* cv. *Cristata*, which is one of the Japanese cultivars; and an unknown species from Borneo.

The slides of *Platyserium* included:

P. stemmaria from Central Africa; *P. superbum* from Nth Qld; *P. veitchii* from the Carnarvon Gorge in Qld which grows in full sun; *P. willinckii* from Indonesia; *P. wallichii*; *P. andinum* from the Andes mountains; *P. holttumii* from Thailand; *P. coronarium* from Malaysia; a few slides of *P. bifurcatum*, as well as several cultivars of *P. bifurcatum*: cv. *Bloomei*, cv. *Panamar*, cv. *Magnificent*, cv. *European Hybrid* and cv. *Eppley*.

To finish with Chris had a slide of a past bus tour by the Society to the Otway Ranges, which included the late Albert Jenkins.

President Barry White thanked the speakers on behalf of the members present and complimented them on the quality of their presentations. The members endorsed his remarks by acclamation.

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MORE ON DRYNARIAS

The following letter has been received from Jim and Beryl Geekie, members from Thornleigh, NSW:

"We understand there has been enough written on Drynarias in recent editions (**see below) but would like Keith to see our views regarding their propagation.

There seems to be a need for more study on these beautiful ferns when you consider that we have fifteen cultivars, all different, yet there are only three cultivars officially named.

Our propagation method is to cut off a young rhizome with a good root system before the new fronds have developed, treating the cut with tree wound dressing, and plant in a mixture of 40% of our normal soil-less potting mix, 60% of fine pine chips plus blood and bone and slow-release fertiliser for ferns.

We are able to divide our Drynarias earlier than in Victoria. We start in mid-September and complete by mid-October. We do not offer any for sale until late January or early February, by which time the new fronds are quite strong and the plants are growing well.

We place our pots containing the new rhizomes in an area which has a solid roof. This allows us to control the water intake. All pots get either morning or afternoon sun. Over watering a new rhizome will produce weak growth and can rot the rhizome.

We understood the nest fronds were a defence mechanism to collect nourishment and protect the roots from sun, although it seems strange that the new nest fronds appear at the end of summer.

We have large baskets on the terrace (solid roof) and they never get the base fronds. The baskets in the fernery with fibreglass roof and strong light develop the base fronds.

We cut back watering in winter and the fronds hold through to the next year's growth.

Drynarias are beautiful ferns, hardy and easy to grow."

*** (There can rarely be too much member contribution on a subject if it advances the cause of understanding and growing ferns. Contributions from members giving their personal views and experiences are the very best sort of copy for a horticultural society magazine. Let's have more - on a variety of subjects! - Ed.)*

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MORE ON GOUDEY

by Bob Halley

(This addendum to the article in last month's Newsletter was mailed to Barry White by Bob Halley of the San Diego Fern Society.)

Since the biographical article on Chris Goudey appeared ("Fern World", March 1994), I have had the pleasure of spending several hours with Chris and his wife, Lorraine, at their home/nursery near Melbourne, Australia. I have seldom encountered hosts as gracious as they. I was met at the plane in Melbourne by Barry White, President of the Fern Society of Victoria, who drove me the 35 miles or so out into the country to the nursery.

The first thing I learned is that, contrary to a statement in the article, Goudey rhymes with "rowdy". After a welcome cup of coffee and roll we set off to look over the 'spread'. We started in a small forest of tree ferns where I encountered many beautiful ferns I didn't know existed, all growing side by side in an area of about a fourth of an acre. We then went through a seemingly endless series of shade houses. Chris admits that he turned his hobby into a business and it was evident that much of the hobbyist remains. Several of these houses were packed with beautiful plants which unfortunately have little commercial value. The beauty, the numbers and the variety of these ferns overwhelmed the viewer. I think that for the first time I was really struck with the endless variety of the fern community. There were more different fern types than I ever imagined existed, mostly tropical and sub-tropical varieties. Chris makes no real attempt to grow the 'temperate' or hardy ferns. We also got to see his two prize hybrids of *Asplenium bulbiferum* which were mentioned in the article and which have given him great success in the trade. The nursery really wasn't all for fun: several of the houses were filled with young plants and those waiting for delivery to the retail nurseries.

When we returned to the house I discovered that Lorraine has a hobby of her own, which Chris has only recently joined in. This is the collection of shells, mostly from the South Pacific islands. Here again one sees the endless variety of natural forms, all beautifully laid out in shallow drawers built for the purpose. The Goudeys certainly lead a busy life and I thank them for the opportunity to share the results of these two hobbies with them.

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JUNE FERN COMPETITION

The specimens of *Platycerium* and *Pyrrosia* were judged separately. Congratulations to the following winners:

1. Platycerium:-

First:	Eddie Pittaway	<i>Platycerium superbum</i>
Second:	John Hooper	" <i>veitchii</i>
Third:	John Hooper	" <i>hillii</i>

2. Pyrrosia:-

First:	David Radford	<i>Pyrrosia lingua</i> , variegated
Second:	Dot Miniken	" <i>lingua 'Obi'</i>
Third:	Dorothy Forte	" <i>polydactyla</i>

The draw for the exhibitors' prize was won by Dot Miniken.

(The following item, nicely timed for our June meeting topic, appeared in the June, 1994 issue of the Newsletter of the Fern Society of South Australia Inc.)

PLATYCERIUMS AND THEIR CARE

by Betty Weaver

Recently I had a sad experience with a half-grown *Platynerium*. I usually keep a watchful eye for ants but I must have overlooked a rare cultivar *Platynerium* "Mauna Loa". Ants on the fertile fronds caught my eye and on lifting it down, found no sign of scale or mealy bug on the fertile fronds, but on closer inspection I found the bud was heavily infected. I couldn't believe how thick they were, just massed. After treating it with Rogor and leaving it for three or four days, I went to clear off the dead scale and alas, it was too late. The scale had completely sucked the life out of the bud and killed this lovely specimen.

The lesson to be learned is watch for ants on your *Platy*'s before it's too late.

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NEW LIBRARY BOOK

"FLORA OF CHIAPAS" - PART 2, PTERIDOPHYTES

By Alan Smith and published by the California Academy of Science, 1981, 370 pages.

The author starts off the book with a quote from Kurt Sprengel in 1804: "You have frequently expressed surprise at my great predilection for ferns.... 'How can a man' you used to exclaim, 'take so lively an interest in a family of plants so deficient in variety, and whose exterior has so little to recommend them.!' ". The author reasons that the comment was based on ignorance.

Chiapas is a state of Mexico and lies at the southernmost end next to Guatemala. It has drier areas, tropical rainforests and mountainous terrain, containing 563 species of fern and 46 fern allies. The author estimates that about 95% of the ferns of the area have been collected.

The author does not provide a key to families but instead has one overall key covering all genera. The uncertainty as to what genera are included within the various families is the reason for this approach. The genera are listed alphabetically throughout the book with keys provided to the individual species.

Excellent line illustrations are given for 106 species, the author giving preference to those not previously illustrated.

A description is given of each species plus a brief comment on the habitat and notes on the occurrence elsewhere in Mexico.

Overall the book contains much useful information, e.g. there are 28 species of *Adiantum* described, but the book is more for the person seeking special information rather than the general reader.

Reviewed by Barry White.

The table below was prepared by Terry Turney to accompany the report on Chris Goudey's talk to the February meeting about Fern Allies. Unfortunately, as already explained, it has not yet been possible to prepare this report. The table is being published now for general interest.

CLASSIFICATION OF FERNS

CLASS	FAMILY	GENUS	COMMON NAME	NUMBER (Aust./World)
Psilotatae	Psilotaceae	Psilotum	Fork Ferns	2/3
		Tmespteris		5/10
Lycopodiatae	Lycopodiales	Huperzia + Lycopodium + Lycopodiella	Tassel Ferns	17/300
		Phylloglossum	Pigmy Clubmoss	1/1
	Selaginellaceae	Selaginella	Clubmosses	9/750 +
	Isoetaceae	Isoetes	Quillworts	4/60 +
Equisetatae	Equisetaceae	Equisetum	Horsetails	0/29
Filicatae	About 33 Families	Hundreds	True Ferns	400/12,000

Source: "The Families and Genera of Vascular Plants", Ed. K.U. Kramer and P.S. Green; Springer Verlag, Berlin, 1992.

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Terry Turney will be acting as Editor for the next two issues while I am on holidays. Please try to make his task easier by providing some contributions for the Newsletter. He is already a very busy person with his professional workload. My thanks to those members who have provided items for the Newsletter in recent issues.

Bob Lee

GROWING FROM SPORE

The following appeared in the June, 1994 edition of the Bulletin of the South Florida Fern Society Inc.:

"DID YOU KNOW that when sowing spore, if you sow them real thick, they will be mostly 'male', and that if you sow them sparsely, they will be mostly 'female'. Thus by sowing spore from one fern heavily at one end of a container, and sowing another fern's spore sparsely at the other end, and by giving sufficient water when it is time for the sperm to be released, a fern hybrid can be made. (This tip is courtesy of the Southwestern Fern Society and Casa Flora.)"

(Another nice piece of timing! This item has not been referred for comment to any of our spore growing specialists as it seems a good question for discussion at our July meeting. Do any of our members who will not be at the July meeting have any views on the suggestion? - Ed.)

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I had to move my plants away from the telephone - they kept making obscene fern calls.

(Taken from "The Fern World", the newsletter of the San Diego Fern Society.)

DON'T FORGET YOUR MEMBERSHIP RENEWAL

SPECIAL EFFORT WINNERS

June General Meeting

Norma Hodges


Ray Harrison

Ann Watson

George Start

Ann Bryant

* * * * *



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Opinions expressed in articles in this Newsletter are the personal views of the author and are not necessarily endorsed by the Society, nor does mention of a product constitute its endorsement.

BUYERS' GUIDE TO NURSERIES

VICTORIA:

Andrew's Fern Nursery / Castle Creek Orchids - Retail.
Goulburn Valley Highway, Arcadia, 3613. (20 km south of Shepparton).
Large range of ferns and orchids for beginners and collectors.
Open daily 10 am - 5 pm except Christmas Day. Ph: (058) 26 7285.

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

Coach Road Ferns - Wholesale. Monbulk. Ph: 756 6676.
Retail each Saturday and Sunday at the Upper Ferntree Gully Market
(railway station car park), Melway Ref. 74 F5. Wide selection of
native and other ferns. Fern potting mix also for sale.

Fern Acres Nursery - Retail. Kinglake West, 3757. (On main road,
opposite Kinglake West Primary School). Ph: (057) 86 5481.
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.

Kawarren Fernery - Wholesale and Retail.
Situated on the Colac - Gellibrand Road, Kawarren (20 km south of
Colac). Ph: (052) 35 8444.

The Bush-House Nursery - Wholesale and Retail.
Cobden Road, Naringal (35 km east of Warrnambool). Ph: (055) 66 2331
Ferns - trays to advanced. Visitors welcome.

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 - Wholesale.
5 Seaview Street, Mt. Kuring-Gai, 2080. Ph: (02) 457 9168.
All Fern Society members welcome. By appointment.

QUEENSLAND:

Moran's Highway Nursery - Wholesale and Retail.
Bruce Highway, Woombye (1 km north of Big Pineapple; turn right into
Keil Mountain Road). P.O. Box 47, Woombye, 4559. Ph: (074) 42 1613.