



THE
FERN SOCIETY

OF
VICTORIA

Inc.

REGISTERED BY AUSTRALIA POST: PUBLICATION No. VBH3411

NEWSLETTER

VOLUME 13, Number 4, May 1991

FERN SOCIETY OF VICTORIA Inc.

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SUBSCRIPTIONS: Single - \$13.00 (Pensioner/Student - \$9.00):
Family - \$16.00 (Pensioners - \$11.00):
Overseas - A\$30.00 (by Airmail):
(Subscriptions fall due on 1st July each year).

PRESIDENT'S MESSAGE:

The reason the Herbarium hall was not available for our May meeting is that a major exhibition with the theme "Our Botanical Heritage" is being staged there during the period 4th - 26th May. The accent of the exhibition is on the history of botanical discovery in this country and reports indicate that it makes fascinating viewing. Exhibits range from specimens collected by Banks and Solander in 1770 through to more recent discoveries by Dr Jim Willis and the late Norman Wakefield, names very familiar to members of this Society. The entrance fee of \$4 includes a comprehensive 32-page catalogue.

I mentioned in the March edition of the Newsletter that Barry White would like some help in operating the Spore Bank. He has not yet heard from anybody, so I should like to re-issue the invitation for a Member (or Members) interested in growing from spore to become involved in the functioning of this vital area of the Society's activities. Please contact Barry at the next meeting or by telephone at the number above if you would like to volunteer or obtain more information on the scope of the work involved.

Our 1991 Fern Show is now over and a report on it appears later in this Newsletter. I trust that all Members who took part in the activities enjoyed themselves and thank them for their efforts. Special thanks go to the members of the Fern Show Committee for their work in organising and running the event.

Best regards,
Bob Lee

SPEAKER REPORT - APRIL GENERAL MEETINGHandling Newly Purchased Ferns

A protracted computer breakdown at the crucial time has prevented publication of the report on the discussion at the April General Meeting. It will be included in the next Newsletter.

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LIGHT REQUIREMENTS FOR FERN GROWTH

One of the subjects raised at question time following Chris Goudey's talk at the February General Meeting on the cultivation of ferns from spore was the optimum amount of light needed for fern growth and how the actual light could be checked.

Chris referred to a method of light measurement using a photographic exposure meter which he had published previously in his book titled "Maidenhair Ferns in Cultivation" and also in the Society Newsletter.

The item from the June, 1981 Newsletter is reproduced below:

Most ferns grow best in shade or filtered light, which would be between 200 and 600 foot-candles. This would be equivalent to the optimum light from the sun on an overcast day. Foot-candles are units of measuring light intensity.

You can determine the correct lighting for your ferns by using an exposure meter, either an independent meter or the meter on your camera, if you have a semi-automatic camera. The light intensity is generally measured at the top of the plant.

1. Set the film speed indicator on A.S.A. 100.
2. Point the photo electric cell window towards the light source.
3. Set the meter to obtain a reading of 1/25th of a second, and note the 'f' value at this speed.
4. Determine the illumination from the following table.

Foot-Candle Conversion Table

Setting	Illumination	Setting	Illumination
F1	16 foot-candles	F8	500 foot-candles
F2	32 foot-candles	F11	1000 foot-candles
F2.8	64 foot-candles	F16	2000 foot-candles
F4	128 foot-candles	F22	4000 foot-candles
F5.6	250 foot-candles		

HOW TO IDENTIFY A FERN

(Originally presented by Barbara Joe Hoshizaki to
The Los Angeles International Fern Society in 1986.)

Fern growers recognise many of their ferns by sight, simply from handling them and knowing which ferns they have. Boston ferns are recognised by almost everyone. Staghorn ferns and Maidenhairs are two groups that most plant growers easily set apart.

Some ferns are so easy to recognise that you can't miss. Once you have seen the plant, you are sure to be able to name it. For example, *Marsilea* species look like clover leaves. At night it folds its leaflets in similar fashion to *Oxalis*. All the species of *Marsilea* look alike. There are only slight differences in the lobes of the different species, so once you have the name associated with the plant you recognise it.

When ferns are very similar in appearance even professional botanists and seasoned growers have difficulties with identification. Some *Pyrrosias* and *Polypodiums* look a lot alike. This is the time to get out a hand lens. Close scrutiny of the blade surface is all that it takes. The *Pyrrosias* have stellate (star-shaped) hairs which make it very easy to separate them from other ferns; no stellate hairs, no *Pyrrosia* species.

Dryopteris, *Polystichum* and *Thelypteris* are among the most difficult to separate. Botanists may not agree on these. The differences are very important though small. The fertile parts are the most consistent features to observe, but in order to distinguish the fern it may be necessary to examine the whole frond, including the scales and rhizome.

Sometimes it is sufficient to note whether the rhizomes support fronds very close together or very far apart. The latter do not make pretty clumps. The common bracken, *Pteridium aquilinum*, *Hypolepis tenuifolia* and the *Dennstaedtia*s creep on long rhizomes and tend to run all over the garden in an abandoned manner.

One axiom to keep in mind: in Biology there are always exceptions to the rules. Fronds of *Adiantums* are usually divided at least once, but there is an exception: *A. reniforme* has a simple kidney-shaped frond. No matter how clever and consistent the scheme, there will appear exceptions that do not fit into the scheme. So ferns are grouped and named according to the best fit observable at the time. If a person learns one or two characteristics of a fern, in time other important differences become apparent.

When learning to recognise ferns, there are some important characteristics to look for and some questions to consider. These will lead you in the right direction to search for more information.

SORUS

There are some ferns that are so alike that a firm identification is not possible without the fertile parts. The fertile part of the frond is the sorus (plural = sori), a cluster of spore cases or sporangia.

Its shape is an important factor. Also to be considered are its location, size and colour. Is the sorus on the edge of the blade or on the back? Along the veins or in between? Is it rounded or elongated?

INDUSIUM

The indusium (plural = indusia) is a protective tissue for the developing sorus. Again, placement and shape are significant. Is the indusium rounded or oblong? Is it sunken into a groove? Is it peltate, like a tiny umbrella? Is it absent or false?

Some typical observations and genera of ferns that exhibit these are:

-Sori are rounded clusters with no covering (indusium) on the back of the leaf blade: Polypodium.

-The sori are round and dorsal (on the back of the leaf blade). The fleshy indusium is umbrella-like and stalked (peltate): Polystichum.

-The sori are round and dorsal, and the indusium is kidney-shaped and attached by an infold of its surface: Dryopteris.

-The sori lie along the margin near the edge of the blade and are covered by a hood-shaped indusium that opens towards the margin: Microlepia.

-The sori lie along the margin of the blade and the indusium is a long flaring tube that opens near the margin (resembles a goblet): Davallia.

-The sorus is oblong or linear, dorsal and along a vein with the indusium of the same shape opening along the vein: Asplenium.

-The sori are oblong, and a pair are covered by back to back indusia attached along a vein: Diplazium.

-The sori are elongate and along a vein, the indusia tend to hook or curve across the vein in a sort of J-shape, especially at the base of the pinnae: Athyrium.

-Sori lie along the margin of the pinnae and are covered by the edge of the blade which rolls over the spore cases. (Since it is not a separate structure this condition is called a false indusium): Adiantum and Pteris.

From some of the examples you can see that the placement of the sorus with relation to the leaf veins is significant. The indusium is attached predictably to the leaf blade.

The sorus and indusium taken together are often enough to determine the genus of the fern. When they are not, other aspects of the fern plant must be considered.

RHIZOME

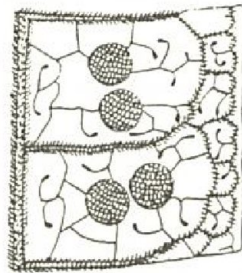
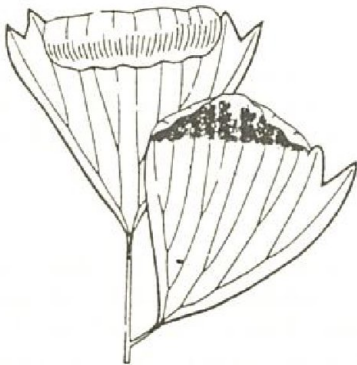
The rhizome is a specialised portion of the stem that lies on or under the soil surface. It has roots and gives rise to the fronds. Is the

rhizome stout or slender, straight or branching, erect or creeping? Are the fronds attached far apart or very closely? Persons who are not good at describing the rhizome can note actual measurements to assist themselves.

Is it hairy or scaly? This is important in the correct identification. The species of *Microlepia* have hairs and of *Polypodiums* have flat scales.

The trunk of a tree fern is considered a stem. Aerial roots cover the erect stem. This is quite different from the stems of other groups of ferns.

(To be continued.)



MORE ON PHOTOGRAPHING FERNS

Keith Hutchinson had an unexpected addition to the information on this subject that he imparted in his talk to the March General Meeting when he was mistakenly sold a roll of Fujicolor print film instead of slide film for use at the recent Fern Show.

From the results obtained he is now of the opinion that Kodacolor Gold gives the best greens when photographing ferns for prints. There is no change in his preference for Fujicolor for slides.

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FORTHCOMING EXCURSIONS

Preliminary planning is in progress for two excursions later in the year.

The first is a day trip to the Healsville area in late September, when we hope to visit some areas not normally accessible to the public. The actual date and further details will be advised as soon as possible.

A weekend excursion to the Otways has been tentatively scheduled for 9th and 10th November and a preliminary booking for accomodation on the Saturday night made at Kangaroo Lodge near Princetown. A call for formal expressions of interest to assess the viability of the trip will be made soon; in the meantime, you may like to note the dates in your diaries.

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1991 FERN SHOW REPORT

The cooperative efforts of a group of willing workers (coupled with a touch of artistic flair) during setup operations on Friday, 12th April left us ready at opening time on Saturday morning with an attractive display of quality ferns in the main hall and the benches in the fern sales area filled to capacity.

A garden arch with some paving below was the focus of the floor display in the centre of the hall this year. A few flowering plants were incorporated to enhance the garden-setting effect and provide added interest from a touch of colour. The elongated pergola was employed again along the wall opposite the door to hold hanging specimens, Adiantums were displayed on a long bench and there was a large floor display in the remaining corner.

Demonstrations of fern cultivation techniques were held at intervals on both days and attracted much audience interest, as evidenced by the fact that several went well past their scheduled time. The Spore Bank also received plenty of attention and the Book Sales table traded steadily through the weekend.

The number of visitors to the Show was markedly lower than in the past and door takings were only 65% of those last year. However, it is good to be able to report that some of the visitors came from far afield. This group included our own members Barry Hubbard and Greg Guise from Parkes in New South Wales (Barry has also been at previous Shows), Arthur and Gwenda Brady from the Fern Society of South Australia and two ladies from the Western Australian Fern Society. The positive side of the lower patronage by the public was that Members working at the Show had more time to inspect the ferns in the display and socialise with one another, which is surely one of the more important functions of the weekend.

Those people who did visit the Show proved to be enthusiastic fern buyers and the value of ferns sold was over 90% of last year's figure - perhaps less crowding in the area made it easier for visitors to linger and be tempted! Members in the sales area were kept busy answering queries and finding ferns sought by buyers.

It has not been possible yet to work out the net profit from the Show as accounts for some expenses have not been received. However, it will clearly be a good deal lower than in previous years in view of reduced takings during the weekend and significant increases in such cost items as rental for the Horticultural Centre.

The refreshment service operated throughout the weekend and, as well as providing a service to the public, served as a popular gathering point for members to enjoy a "cuppa" and a chat when in need of a well-earned rest.

The Show Committee thanks everyone who was involved in the preparation and running of the Show for their time and effort and congratulates exhibitors on the quality of the ferns contributed for the display.

Bob Lee
Chairman - Fern Show Committee

THE PLATYCERIUMS OF NORTH QUEENSLAND IN THE WILD AND IN CULTIVATIONby Ralph H. Hughes

(Concluded)

Nomenclature

The confusion associated with morphological forms within the P. bifurcatum group awaits further study, this to include taxonomic definitions of infraspecific categories. Problems involve genetic isolation between taxa when shifted from the wild. Definitive characteristics are possibly more stable in cultivation. Factors of light, humidity, and temperature may be manipulated seasonally to form selective characteristics more precisely and consistently than is the case in nature.

In some situations, adaptation may result in the demise of the wild form. For example, when grown from spores, commercially or in the home garden, var. veitchii closely resembles var. hillii. However, plants harvested from the wild or self-propagated in high light, persist as var. veitchii. Conversely, var. veitchii in low light (and high humidity) reverts to var. hillii.

Detailed investigation is needed to distinguish the myriad of dissections varying from taxonomic categories in nature to sun and shade forms in cultivation. Typical forms of varieties veitchii and hillii are not generally known to occur together in nature. There is no direct evidence that light and/or humidity alone or in combination limit distribution. Experiments designed to test these hypotheses would be interesting.

Conclusion

None of the imported Platyceriums proved difficult to grow in southwest Florida. Three were easy: var. bifurcatum, var. hillii, and ssp. willinckii. Three were intermediate: (1) P. superbum because of its year-round need of a well drained and well aerated substratum capable of retaining only minimal moisture, (2) var. veitchii, which reverts to var. hillii unless grown in high light and low humidity, and (3) var. venosum, which requires extended high humidity for full development of base fronds. Also, this staghorn needs frequent fungicidal sprays to protect the new growth against leaf spot disease. In temperate climates, its habitat in the wild and growth calendar in cultivation suggest the need for relatively cool and highly humid conditions for optimum growth, cultural requirements best provided by a climate-controlled greenhouse.

In Cairns, var. bifurcatum, var. hillii, and P. superbum self-propagate and grow with minimal care in the home garden. The var. veitchii is intermediate because only harvested plants are available and these require high light and low humidity. Responses of ssp. willinckii and var. venosum are awaited. Nearest known sources are Indonesia for var. willinckii and the Mt. Lewis habitat for var. venosum.

Locally, the species mentioned in this paper including vari. venosum, are found occasionally in specialty nurseries at least in the Miami area, this despite a cyclical demand presently at a low ebb. Jerry Horne ships worldwide and accepts orders around the year. Most are stock plants or divisions of stock plants harvested from native habitats. Commercial production by spores and greenhouse culture is routine for P.superbum, an industry largely concentrated in the Netherlands near Aalsmeer. Transplants are grown to larger sizes in Puerto Rico or domestically and marketed in the U.S.

Acknowledgements

Thanks are extended to Geoffrey Stocker and Curtis Butterfield for habitat information and live plants of Platycteriums native to North Queensland, and to Ernest Todd and Loran Whitelock for individual specimens growing in the wild. Sporelings and photos of var. venosum four years from planting were furnished by Betty Weaver and Neil Baillie.

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Editor's Note: This article, which has been published in stages over the last six issues, is one of several by Ralph Hughes on the subject of Platycteriums that have appeared in our Newsletter. Ralph and his wife are Overseas Members of the Society of long standing.

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FORTHCOMING GENERAL MEETINGSJUNE MEETING:

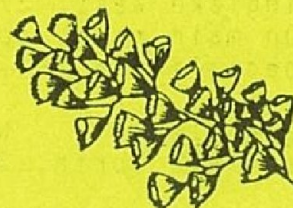
Date: Thursday, 20th June.
Time: Commencing at 7.30 p.m.
Venue: The National Herbarium, South Yarra.
Guest Speaker: Dr Tim Entwisle, Botanist at the National Herbarium.
Topic: "Victorian Native Ferns" - with special reference to rare and endangered species.

JULY MEETING:

Date: Thursday, 18th July
Time & Venue: As For June.
Guest Speaker: Barry White, Vice President and Spore Bank Manager of Fern Society.
Topic: The Genus Dryopteris.



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SPECIAL EFFORT WINNERSApril General Meeting

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 Don Fuller
 Barry White
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