

**THE  
FERN SOCIETY  
OF  
VICTORIA**

**Inc.**

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**NEWSLETTER**

VOLUME 16, Number 1, February 1994



# FERN SOCIETY OF VICTORIA Inc.

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                          Family    -    \$18.00    (Pensioners - \$13.00)  
                          Overseas -    A\$30.00    (by Airmail)  
                          Subscriptions fall due on 1st July each year.

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PRESIDENT'S MESSAGE:

Welcome to '94, may it be a fortunate one for the Society and its members.

We usually aim to start off the year with our best foot forward and this year should be no exception. For our first meeting we will have Chris Goudey speaking on "Fern Allies". This is a major topic covering many interesting and unusual species. Chris has asked for assistance from members in providing examples of fern allies as he has only a relatively limited selection himself. A "Fern Ally" has been selected as the fern competition category this month, so please do what you can to bring along at least one specimen to the meeting.

I would like to give my thanks to Ron Robbins for his excellent presentation of slides and overheads at the December meeting. Ron's slides showed some of the microscopic details of ferns and in particular the sori and sporangia. The slides opened up a new world for many of the members. Besides the fascinating details, the slides also demonstrated that ferns, unlike many of us, look beautiful even on close inspection. Ron is the President of the Fern Society of South Australia Inc. and the shots were taken by Ron and other members of the South Australian Society using equipment purchased by the Society.

Ron also showed a range of fern fronds on the overhead projector. The fronds were mounted and permanently preserved by lamination between two sheets of film. It proved an interesting exercise with members of the audience trying to identify the fern from the silhouette of the frond, a much more difficult exercise than it sounds. The laminating machine is another piece of equipment which has been purchased by the S.A. Society, which is obviously quite an energetic Society. Ron very kindly donated the 23 overheads which he showed to our Society. It is an excellent way of preserving a sample of a frond and will be very useful both within our Society, and for talks to outside organisations. The donation from Ron could be the start of a

(continued opposite)

## NEXT MEETING

DATE: Thursday, 17th February, 1994

TIME: From 7.30 p.m.

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

TOPIC: FERN ALLIES

SPEAKER: Chris Goudey

### MEETING TIMETABLE

7.30 p.m.	Pre-Meeting Activities:- Sales of Ferns, Spore, Books and Special Effort Tickets ; Library Loans.
8.00 p.m.	February 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 a Fern Ally. The category for March will be a *Polypodium*.

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### PRESIDENT'S MESSAGE: (continued)

representative collection of our own. We have already been offered possible use of a laminator by one of our members and this should be followed up.

It was also very pleasing to see Ron win one of the raffle prizes. As Ron's talk consisted mainly of showing slides and overheads it is not possible to present the customary Newsletter report of his talk.

At the March meeting the talk will be by myself on my visit to Papua New Guinea in the latter part of '93. The fern competition category for March will be a "Polypodium".

Wanted:- A supply of tree ferns. Most members will be familiar with the fern area in the Wangaratta gardens. Unfortunately, in the floods last year many of the tree ferns were covered by the flood waters for about eight days causing the crowns to rot out. Mary Frost is assisting in the restoration of the area and is seeking a cheap source of 50 to 100 *Dicksonia antarctica* trunks. If any member is aware of a possible source could they please let me know.

Regards,  
Barry White



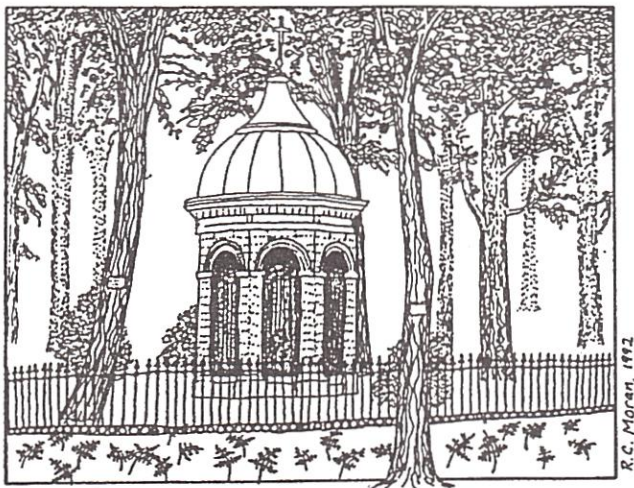
(The following article is reproduced, with thanks, from "Fiddlehead Forum", the Bulletin of the American Fern Society, Vol. 20, No.3, 1993.)

## BRACKEN, THE POISONER

Robbin C. Moran

Missouri Botanical Garden

To get to work each morning, most people fight traffic on highways or jostle fellow commuters on buses and trains. I, however, stroll across the beautiful grounds of the Missouri Botanical Garden. My path crosses a rose garden enlivened in spring and summer by thousands of white, yellow, orange, pink, and red roses. It then winds through a woodland garden with unusual plants such as franklinia (*Franklinia altamaha*), a tree now extinct in the wild. Along the route I can hear fountains splashing, mourning doves cooing, and squirrels rustling in the leaves beneath the azaleas. I regularly see ferns with attractive foliage, such as the maidenhair fern (*Adiantum pedatum*), with its blue-green blades and ebony rachises, or the lady fern (*Athyrium filix-femina* forma *rubellum*), with its red petioles and rachises and finely cut leaves. But one fern along the route catches my attention for its weediness rather than its beauty. That fern is bracken (*Pteridium aquilinum* var. *latiusculum*). (In the past, bracken has been classified as a single species containing twelve varieties. Nowadays, most fern taxonomists, including myself, believe that some of these varieties should be ranked as species. Nevertheless, for the purposes of this article, bracken is treated broadly as a single species.)



The mausoleum of Henry Shaw

A colony of bracken grows on the Garden grounds near the mausoleum of Henry Shaw, the man who founded the Garden in 1859. The mausoleum is nestled in a grove of oaks and sassafras beneath which grow groundcovers such as liriopse (*Liriopse muscari*), ground ivy (*Hedera helix*), and creeping euonymus (*Euonymus*

*fortunei*). The bracken colony was started on the west side of the grove, just within a black cast-iron fence, from a single rhizome planted in 1910 by horticulturist George Pring. The colony now occupies about 30 square meters.

Over my six-year tenure at the Garden, I have watched the bracken colony spread at its edges like a malignant cancer. As it spreads, the colony's wide, overlapping leaves deprive the groundcover plants of sunlight. These sun-starved plants eventually weaken, thin-out, and die. This year, the Garden's horticulturists had to cut back the bracken to allow the groundcover plants some sunlight to recuperate.

In nature, bracken's aggressiveness is checked by enemies that devour it. Insects are the most destructive. Bracken is chewed, sucked, mined, bored, and galled by over 100 insect species worldwide. Although some of these insects eat other plants, most feed only on bracken.

Bracken is also eaten by animals. Cattle, horses, and sheep readily graze it. Even people find it delicious. The young fiddleheads are especially popular in Japan where they are cooked as a spring vegetable. In 1969, demand for bracken fiddleheads in Japan was so high that they had to be imported from Siberia. With so many insects and animals eating it, why is there so much bracken in the world? The answer, in large part, is that bracken fights back with poisons. Its living tissues are like a toxic waste dump filled with dangerous chemicals that kill or deter organisms that eat it.

The most diabolical of bracken's poisons are called "ecdysones," a class of hormones that promote molting (or ecdysis) in insects. Bracken is loaded with ecdysones and has more kinds than any other species of plant—even its gametophytes have them. When ingested, ecdysones devastate insects by overstimulating their normal development. The insect soon finds itself in the throes of uncontrolled molting. It will either die or live in utter misery with little chance for survival. In effect, the insect has eaten its Last Supper.

A curious testimony to the ruthlessness of ecdysones comes from an archeological site associated with Hadrian's Wall in England (built ca. 100 AD). Here, the Romans covered the floors of their buildings with litter composed of bracken and lesser amounts of straw, tree branches, and bryophytes. The floor of one stable, which



measured about 30 m<sup>2</sup>, was strewn with bracken litter containing about 250,000 puparia of the stable fly (*Stomoxys calcitrans*). When entomologists examined these puparia they found something abnormal: almost all showed arrested stages of development. The most likely explanation was that the insects had, as larvae, eaten the bracken in the litter on the stable floor. As a result, their development was discombobulated by the ecdysones present in the bracken litter. (Bracken is still used for bedding or litter and has several advantages over straw. It absorbs well, insulates well, and contains more nitrogen than traditional wheat or barley straw. When enriched with dung or urine, it decomposes rapidly—a great advantage if the litter is composted or spread on a field.)

Besides ecdysones, bracken produces a poison called "thiaminase" that breaks down thiamine, or vitamin B<sub>1</sub>. Grazing animals often suffer from vitamin B<sub>1</sub> deficiency after they have eaten too much bracken over extended periods. Such indulgence usually occurs in the spring when cold weather has delayed the growth of pasture grasses but not that of bracken. At that time, the young leaves of bracken stand tall and erect among the pasture grasses and act as a beacon for grazers. Unfortunately for the grazers, the concentration of thiaminase is highest in young leaves (it falls sharply after the leaves unfold). As a result, many grazers become stricken with severe thiamine deficiency.

In Britain, before the days of the automobile, bracken-induced thiamine deficiency was so common in horses that it received the name "bracken staggers." The name referred to the most obvious symptom of the poisoning: the sick horse would stagger sideways for two or three "steps" and finally stabilize itself by spreading its legs wide apart. Besides staggering, other symptoms included hemorrhaging, conjunctivitis, high temperatures, excessively strong heartbeat after mild exercise, and severe muscular tremors. If the debilitated animal continued to eat bracken, the coup de grâce was often a massive seizure.

Another poison in bracken's arsenal is hydrogen cyanide (prussic acid). Unlike ecdysones and thiaminase, which are always ready and waiting in the plant's tissues, hydrogen cyanide is produced on-the-spot in response to a munching insect. As the insect's mandibles tear into the plant, the damaged tissues release an enzyme that splits a molecule called "prunasin," also present in the plant's tissue. This chemical split yields hydrogen cyanide which kills or deters the attacking insect that inhales it.

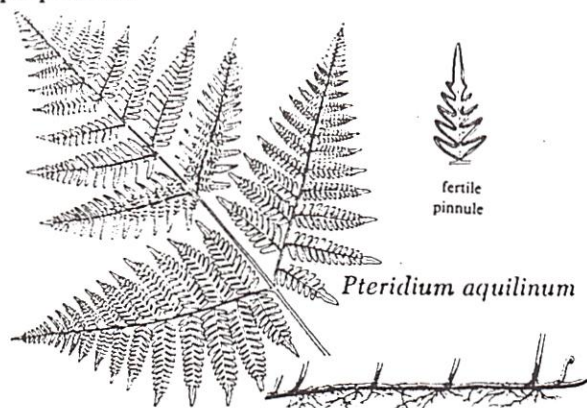
Plants that produce hydrogen cyanide are called "cyanogenic." Bracken is facultative in this characteristic; that is, it has the ability to turn on or off hydrogen cyanide production. This switching correlates with the

age of the plant and its environment: young leaves are more often cyanogenic than older ones, and plants growing in the shade are more often cyanogenic than ones in the sun. No one knows what role this switching plays in the fight against bracken-eating insects.

An example from entomology shows how effectively cyanogenic plants can kill insects. In the days before hydrogen cyanide could be bought from chemical supply companies, entomologists stuffed their killing jars with the crushed leaves of cherries. The leaves released hydrogen cyanide which accumulated in the jars to concentrations that dispatched insects in a matter of minutes. (Prunasin gets its name from *Prunus*, the genus of cherries. You can crush cherry leaves and smell the hydrogen cyanide for yourself. The odor resembles burnt almonds and reminds me of the Good Humor Toasted Almond ice cream bars I ate as a kid. Most species of cherries will give off this smell when their leaves are crushed.)

The most abundant poisons in bracken's arsenal are the tannins, a group of compounds whose bitter taste discourages plant-eaters. Besides tasting bad, tannins are toxic if ingested in large quantities. They bind to cellular enzymes that govern the energy-yielding chemical reactions of life. Because these enzymes are the same in most living organisms, tannins defend against a wide variety of enemies.

Fortunately for humans, cooking removes most of the tannins (it also destroys thiaminase). Nevertheless, eating too much bracken can be dangerous for people. Research has documented that people living in areas where bracken fiddleheads are commonly eaten (i.e., Britain and Japan) develop stomach cancer more often than people who live elsewhere. Laboratory tests have confirmed that bracken is carcinogenic in animals. When fed a diet high in bracken, rats, cows, Japanese quail, guinea pigs, and sheep all developed cancer. These laboratory results prompted plant chemists to search for the active cancer-causing chemical. In 1986, Japanese researchers isolated what they believed to be the culprit: a molecule they named "ptaquiloside."



(continued page 11)



### A LETTER FROM RON ROBBINS

The following note has been received from Ron since the December meeting:

"To the Members of the Fern Society of Victoria.

As your guest speaker in December I would like to thank you for being such an appreciative audience. The manner in which you received me and the range of questions posed during and after the talk were refreshing and showed that there was a keen interest in the topic. In particular I wish to thank Terry Turney for his assistance during the evening, and Barry White for extending the original invitation.

I believe there is scope for wider co-operation between our two Societies, and I therefore welcomed the invitation to address your Society as an initial step in developing this relationship. I hope we can nurture the relationship so that it can grow and flourish to the benefit of both organisations.

Finally, I thank you for allowing me to participate in your meeting, to win one of the prizes in the raffle, and for a thoroughly enjoyable evening.

Ron Robbins,  
President of the Fern Society of South Australia Inc."

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### DECEMBER FERN COMPETITION

The category for the fern competition for the December meeting was a *Dryopteris*. Congratulations to the following winners:

First:	Diana Mayne	<i>Dryopteris affinis</i>	'Cristata'
Second:	Barry White	"	"
Third:	John Hodges	"	<i>sieboldii</i>

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### BEWARE THE DREADED TIP MOTH!

The January issue of the Newsletter of the Fern Society of South Australia gives a timely warning under this heading:

"About now and the next three months or so, your Elks (*Platycerium bifurcatum* in particular) are likely to be attacked by the Elkhorn Tip Moth - or, more precisely, by the larva or grub of the aforementioned beast. (*This pest is also known as the Elkhorn Spore Caterpillar.*)

As the spore develops on the tips of the Elks, the grubs hatch and burrow through the sori and into the frond tissue, causing the frond to die and thereby making the fern look decidedly tatty.

Regular spraying with systemic insecticides (Rogor, Folimat or Mavrik) gives effective control. The knock-down contact spray pyrethrum is also effective, but more frequent spraying is required. Carbaryl is also effective.

Spraying should commence now and continue into the autumn. Oh! Do be careful when using any of these sprays as they are quite potent."



(When Barbara Joe Hoshizaki addressed our October, 1992 general meeting, she spoke of her increasing concern about confusion in the names of many cultivated varieties of ferns, with new names being given to only slight variations. She referred to a then unpublished paper she had written on the subject, in which she had proposed the setting up of a fern registration authority to prevent name duplication. She suggested that fern societies throughout the world could assist in compiling the necessary information. A copy of this paper has now been received and will be published in the next few issues of the Newsletter.)

## NAMING FERNS OF HORTICULTURAL INTEREST

BARBARA JOE HOSHIZAKI

MILDRED MATHIAS BOTANICAL GARDEN, UNIVERSITY OF CALIFORNIA,  
LOS ANGELES, CA 90024

The rising interest in ferns has created a need to know more about how cultivated ferns are named. This information is scattered in publications that are often quite technical or not easily available to fern growers. In anticipation of continued activities in introducing new fern variations, and in response to questions from the trade and fern hobbyists, some basics on how ferns (and other plants) are named are discussed in this paper, with emphasis on the issues and problems most frequently encountered. For full directions on naming cultivated plants see the *International Code of Nomenclature for Cultivated Plants* obtainable from the American Horticultural Society, Mt. Vernon, Virginia 22121, USA. For a very readable concept of cultivars see Pringle (1973); for an in-depth coverage see Styles (1986) and Van Der Maesen (1986).

### CODES GOVERNING THE NAMING OF FERNS

The naming of plants is governed by two codes that the vast majority of botanists and horticulturists abide by voluntarily. The *International Code of Botanical Nomenclature* (ICBN or Botanical Code), concerns itself with naming both cultivated plants and wild plants, and the *International Code of Nomenclature for Cultivated Plants* (ICNCP or Cultivated Code) is for cultivated plants, particularly cultivars, or cultivated plants below the rank of species. The Cultivated Code supplements the Botanical Code by dealing with special situations applying only to cultivated plants and carries on for horticultural, agricultural, and silvicultural plants where the Botanical Code stops. The two Codes are separate in that names published in one Code are subject only to the provisions of that Code and have no standing in the other Code. Therefore, name priorities and other such problems are dealt with according to the Code in which the name was published. Both Codes are periodically revised.

Since taxonomy and nomenclature are two different processes, both must be used to properly name a plant. Taxonomy is the discipline in which the describer decides what needs a name. Nomenclature is the method of naming a plant based on rules in the Codes. It is difficult for nonbotanists to understand that there are no rules or restrictions on deciding which plants should be named; this is up to the training and judgment of the botanist. However, the actual formation of the name, where and how it is published, etc., must follow the rules

in the Codes. Disagreements on the judgment of the botanist may occur. His peers may discuss any differences and offer their criticisms or corrections, usually through the literature. One of the most common errors is to name a plant that already has been named, perhaps in some obscure journal many years ago. When this is discovered, the oldest name has priority and becomes the legitimate name while the later name becomes a synonym.

Fern hobbyists and growers who are interested in the naming of fern variants will find the Cultivated Code particularly helpful in elucidating the naming procedures for new variants. The objectives of the Cultivated Code are to encourage uniformity, accuracy, and stability in the naming of the many variants (cultivars) of cultivated plants. To assist in interpretations of the Codes, a glossary of the more difficult terms used was published (McVaugh et al., 1968).

### RANKS USED TO CLASSIFY CULTIVATED FERNS

How does one decide if a variation of a species should be classified as a subspecies, variety, form, or cultivar? Or more basically, what are the differences in these ranks or categories? If it is of consolation to the bewildered gardener, botanists themselves have not completely agreed upon the use of these ranks except for their hierarchy. The glossary at the end gives nomenclatural definitions of the commonly used ranks, followed by a brief taxonomic explanation of how most botanists use the ranks. This will help in distinguishing differences between ranks and assist in determining why a variant is placed in a particular rank. Figure 1 relates cultivars to other ranks.

One of the most confusing terms to gardeners is the application of the term "variety". In common usage it may denote a botanical variety, a garden or cultivated variety (cultivar), or any plant variation. As used in this paper and technical botanical publications, "variety" specifically means the rank of botanical variety (*varietas*).

The ranks of subspecies, variety, and form are ordinarily applied to plants occurring in the wild, and the naming of plants using these ranks is governed by the Botanical Code. Among other requirements, the Botanical Code specifies that the name and a brief description or diagnosis be in Latin to be considered validly published.



The naming of cultivated varieties (cultivars) is governed by the rules in the Cultivated Code. Among other requirements, the cultivar names and the accompanying description must be in modern language (not Latin). Many authors are unaware of the distinction between the naming of a fern variant as a botanical variety (*varietas*) versus a cultivated variety (cultivar). This confusion is understandable since the term variety has been so loosely used in the past. To avoid having a new name later declared invalid, it is important that editors and others be aware of this distinction.

#### WHAT IS A CULTIVAR?

The latest Cultivated Code (1980, Article 10) defines cultivars as follows: "The international term cultivar denotes an assemblage of cultivated plants which is clearly distinguished by any characters (morphological, physiological, cytological, chemical or other), and which, when reproduced (sexually or asexually), retains its distinguishing characters." Cultivars may arise either in nature or in cultivation. Although this is not specifically mentioned in the current Cultivated Code, it is mentioned in the Botanical Code (1983, 1988 Article 28.2, Note 1). The confusion on this matter may be traced to an earlier Cultivated Code (1953, Article C.3 iii), which had specified that the term "cultivar" be applied to those special forms which have originated or are maintained only in cultivation. Determining what plant meets the definition of a cultivar is left to the describer; anyone is free to make this decision. Once a choice is made, the next step is the forming of the name and its publication according to the rules of the Cultivated Code. Commercial interests and fern hobbyists have coined many names that have the format of a cultivar name and some may indeed meet the definition of a cultivar (Article 10), but have not met the publication requirements of the Cultivated Code. These names have no standing in either Code, are less stable and are essentially common names. There may be several common names for the same plant; they may also vary from area to area, from language to language, and may be produced, altered or discarded by anyone at will. Such names for *Platyserium* and *Nephrolepis* variants are particularly numerous and confused in the United States.

#### THE COEXTENSIVE RULE: TWO NAMES FOR THE SAME PLANT

A little-discussed but important change in the latest Cultivated Code is that a cultivar may have two legitimate names: the cultivar name and the botanical name. An example would be the names for peppermint; *Mentha* cv. Pfeffer-Minze, the cultivar name, and *M. Xpiperita*, the coextensive botanical name. The coextensive rule reads: "Usually a cultivar will comprise a part only of the species, botanical variety or other botanical category under which it is classified. A cultivar may

however be coextensive with any of these." (Cultivated Code 1980, Article 10, Note 5).

My initial reaction is that two legitimate names for the same variant would be very confusing, especially with ferns where the literature is strewn with variety and form names of uncertain identity and hierarchy, and the names of ferns in gardens and the trade are equally confused. Fortunately, except for complex plant groups such as *Dryopteris*, or special situations, botanists have little reason to make up new botanical names for plants already having cultivar names. Also, it does not follow that all the *varietas* or *forma* names given to ferns in the past will automatically become legitimate botanical names. For example, the name *Athyrium filix-femina* var. *glomeratum* should not serve as the coextensive botanical name for both nomenclatural and taxonomic reasons. First, the *varietas* name was not described according to the rules in the Botanical Code, and second, the plant originated in cultivation, not in the wild and therefore would not fall under today's taxonomic meaning of a botanical variety. It best fits as a cultivar, and should not have a name under the Botanical Code. When a plant named as a variety or form is subsequently considered to be a cultivar, the Botanical Code (1988, Article 28.2, Note 2) and the Cultivated Code (1980, Article 27) specify that names published before 1, January 1959 be maintained but changed to a cultivar rank. Thus *Athyrium filix-femina* var. *glomeratum*, which originated in a spore sowing, is changed to *A. filix-femina* cv. *Glomeratum*. The vast majority of ferns listed under the rank of variety in the literature before 1959 are not botanical varieties but cultivars, or less frequently, forms by today's concepts. After 1959 a new cultivated variety must be named as a cultivar in a non-Latin form (the so called "fancy name" of the Cultivated Code).

Where coextensive names exist, one or the other may be used where appropriate at the discretion of the user. The coextensive rule technically allows commercial interests to introduce new cultivar names and use them instead of existing botanical names. This may become very confusing for advanced fern hobbyists and a serious problem for present and future fern taxonomists, especially if the cultivar names are as poorly documented as they are today. There are, of course, advantages to the coextensive rule that are not discussed here since they have less impact on fern horticulture.

(to be continued)



## SPORE LIST

**Ordering:** The following spore is free to those who donate spore. Otherwise, members 20 cents each sample, non-members 50 cents, plus \$1.00 to cover p. and p.. Available at meetings or by mail from Barry White, 24 Ruby St, West Essendon, Vic. 3040. - Ph. (03) 337 9793. There is no charge to overseas members, but to cover postage two International Reply Coupons would be appreciated.

A booklet on spore collection and cultivation is available for 40 cents or free to spore donors.

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ARACHNOIDES miqueliana 6/93	DIPLAZIUM australe 5/93
ARTHROPTERIS tenella 5/93	DOODIA aspera 1/94
ASPLENIUM australasicum 8/93	DOODIA maxima 1/94
ASPLENIUM milnei 7/93	DRYOPTERIS affinis 'cristata' 1/94
ASPLENIUM oblongifolium 1/94	DRYOPTERIS atrata 1/94
ASPLENIUM scleroprium 1/94	DRYOPTERIS erythrosora 1/94
ASPLENIUM scolopendrium 1/94	DRYOPTERIS sieboldii 1/94
ATHYRIUM felix femina 3/93	DRYOPTERIS wallichiana 1/94
ATHYRIUM niponicum v. pictum 3/93	ELAPHOGLOSSUM alatum
BELVISIA mucronata 4/93	ELAPHOGLOSSUM muelleri 7/93
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CYATHEA dealbata 10/93	POLYSTICHUM lentum 1/94
CYATHEA intermedia (New Caledonia) 6/93	POLYSTICHUM tsus-simnense 11/93
CYATHEA medullaris 11/93	PTERIS argyraea 1/94
CYATHEA princeps 9/93	PTERIS biauaria 6/93
CYATHEA sp. (P.N.G.) 6/93	PTERIS dentata 11/93
CYATHEA woolsiana 6/93	PTERIS hendersonii 3/93
DICKSONIA antarctica 3/93	PTERIS sp. (Nepal) 1/94
DICKSONIA berteriana	RUMOHRA adiantiformis 7/93
DICKSONIA fibrosa 10/93	SELLIGUEA feei 8/93

## SPORE DONATIONS

Thank you to the following who have contributed spore: Don Fuller, Bob Halley, John Hodges, Dorothy Forte, John Hooper, Robert Quirk and P. Michael.

## MORE DONATIONS WANTED

The spore list this month is shorter than usual. This is due to the deletion of older spore from the list. Your assistance in providing spore to build up the list again would be much appreciated.

Barry White



## NEW LIBRARY ACQUISITION

### "FERNS OF BURMA"

This publication consists of two papers by Frederick G. Dickason from the Dept. of Botany, Ohio State University, reprinted from the "Ohio Journal of Science", May 1946.

The first paper "A Phylogenetic Study of the Ferns of Burma" (36 pages) looks at the classification of the ferns of Burma. Although the paper was written some time ago it still contains interesting and useful information. The paper concentrates on the principles of classification and is technical in parts. It looks at the importance of various characteristics of ferns and their usefulness in determining the relationships between ferns. It contains good illustrations with line drawings of 20 different vein patterns of the pinnae (although Figs. 4, 5 and 6 appear to have the labels transposed). The paper, although based on some of the ferns of Burma, is not a useful source of information about individual ferns.

The second paper "The Ferns of Burma" (33 pages) contains a key to the fern genera of Burma, and a listing of all ferns of Burma and their distribution. No identifying information is given on any of the individual species and the paper would be of limited value to most members.

*Reviewed by Barry White*

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### SPECIAL EFFORT WINNERS

#### December General Meeting

Bernadette Thomson

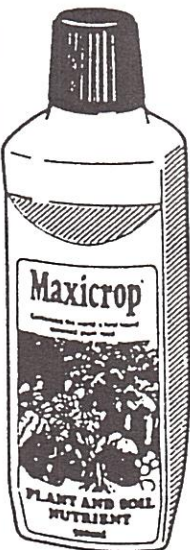
Margaret Radley (2)

John Hodges

Ron Robbins

Keith Hutchinson

\* \* \* \* \*



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## BRACKEN, THE POISONER

(continued from page 5)

Passing the bracken colony on my way to work, I find it difficult to evoke images of ruthless poisoning going on there. The Garden seems so peaceful. But bracken's success there and elsewhere is no accident. The plant has survived and thrived by becoming a highly skilled poisoner.

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## 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.

Viewhaven Nursery - Wholesale and Retail.  
Avon Road, Avonsleigh (near Emerald), 3782. Ph: (059) 68 4282  
Specialists in Stags, Elks, Bird's-nests and Native Orchids.

### 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.