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NEWSLETTER

VOLUME 17, Number 8

November/December, 1995

FERN SOCIETY OF VICTORIA Inc.

POSTAL ADDRESS: P.O. Box 45, Heidelberg West, Victoria, 3081

OFFICE BEARERS:

President:	Chris Goudey	Phone (052) 82 3084
Imm. Past President:	Barry White	" 9337 9793
Vice-President:	George Start	" (059) 62 5059
Secretary:	Lexie Hesketh	" 9449 3974
Treasurer:	Don Fuller	" 9306 5570
Membership Secretary:	John Oliver	" 9879 1976
Spore Bank Manager:	Barry White	" 9337 9793
Editor:	Robert Lee	" 9836 1528
Book Sales:	Ivan Traverso	" 9836 4658

(19 Alta Street, Canterbury, VIC, 3126)

COMMITTEE MEMBERS: Jean Boucher, Simon Hardin, John Hodges, Norma Hodges, Ruth Illingworth, Joan Rowlands, Cheryl Shelton

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Subscriptions fall due on 1st July each year.

PRESIDENT'S MESSAGE:

On behalf of all the members of the Fern Society of Victoria Inc., I would like to thank Barry White for the excellent job he did as President, for his term and for standing in for an extra year when the position could not be filled. I would also like to welcome in the new Committee of Management.

FERN WEEKENDS AT GARDENWORLD

On the weekends of the 25th & 26th November and the 2nd & 3rd December, 1995, "Gardenworld", Springvale Road, Keysborough will be setting up a large fern display in the main building, and the Society has been invited to participate. It is an excellent opportunity to promote our Society and seek more new members.

We will also be selling starter-kits, which we have made up for growing ferns from spore. These consists of a sterile container, sterilised

soil medium, a packet of spore, a stick-on label for planting details, together with an information sheet on spore-raising .

FERN SHOW

The Fern Show Committee recently met to discuss next year's Fern Show and we are pleased to announce that it will be at a new venue, the Holmesglen College of TAFE. Don Fuller will be giving further details.

SOUTH AUSTRALIAN FERN SHOW

The Fern Society of South Australia have invited Lorraine and myself to Adelaide to open their annual fern show on the 4th & 5th November, 1995. We are both looking forward to the weekend with much enthusiasm.

Chris Goudey
President

FORTHCOMING MEETINGS

(1) THURSDAY - ~~20th JULY, 1995~~ 16th November

Topic: ADIANTUMS
Speaker: Chris Goudey
VENUE: The National Herbarium, Royal Botanic Gardens
 Birdwood Avenue, South Yarra. (Melway Ref. 2L A1)

MEETING TIMETABLE:

7.30 p.m. Pre-meeting Activities:- Sales of Ferns, Spore, Books and Special Effort
 Tickets. Library Loans.
 8.00 p.m. General Meeting
 8.30 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

(2) SUNDAY - 10th DECEMBER, 1995

The Society's final function for 1995 will be a **Barbeque**
 to be held at **Fernworld**
572 Heatherton Road, Springvale South
 starting at **12.00 noon**

The afternoon is intended to be an informal social occasion. Assemble from 12 noon, lunch at your leisure and inspect the ferns afterwards. Please note that the BBQ is of the bring-your-own-everything type.

FERN COMPETITIONS

- (1) **November -** An *Adiantum*
 (2) **February -** A *Nephrolepis*

NEW MEETING VENUE

Because of increased hire charges for the Herbarium hall, coupled with a limitation of three months on advance bookings, it has been necessary to find a new venue for our monthly meetings.

Beginning with our first meeting for 1996 (15th February) all monthly meetings will be held in the Theatrette in Inglesby Road, Camberwell at the rear of the City Library. The Theatrette has good facilities for our meetings and easy access by car and tram. There is a large Council car park opposite and a tram stop in Camberwell Road in front of the Library. Full directions will be given in the next Newsletter.

SHIELD FERNS

Speakers: Terry Turney & Barry White

(The following report was written by Ray Harrison.)

It was interesting to have two speakers treating the same subject without prior consultation. They took completely different approaches to the classification of 'shield ferns'. The name 'shield fern' was commonly applied to ferns having shield-like indusia protecting their sporangia. It came to be applied to a number of genera, mainly *Polystichum*, *Lastreopsis* and *Dryopteris*, and was loosely applied to the family called Aspidiaceae in the classification used by Andrews (1990), Duncan & Isaac (1986) and many others.

Barry followed the concept that the name 'shield fern' is a popular name applied to a number of species. His superb slides of sori, indusia, plant forms, etc. beautifully illustrated Terry's earlier talk. Other slides, taken in Victorian bushland and his own backyard, illustrated the growth habits of a number of species.

The most obvious characteristic of 'shield ferns' is a round sorus, for the most part protected by an indusium which is either round and peltately attached (i.e. by a stalk attached to its lower surface) or kidney-shaped and attached at a sinus (Figure 1).

Terry approached the subject in much the same way as Duncan & Isaac did by considering 'shield ferns' as a common name for a family. In his case, however, he chose to follow the recent revisions of Kramer et al. (1990). In this classification all the genera we know as 'shield ferns' are included in the Dryopteridaceae family, in the sub-family Dryopteridoideae. (The former name Aspidiaceae is apparently no longer considered to be legitimate because it is derived from the genus name *Aspidium* which is no longer used.)

It is interesting that Kramer's new classification should bring all the 'shield ferns', including *Rumohra* (see below), into one family and more or less legitimise the 'popular' grouping which has been widely used for a very long time.

The rest of this report will deal with the family Dryopteridaceae in some detail.

DRYOPTERIDACEAE

The classification in this report follows Kramer et al. (1990). In it, all the ferns we usually think of as 'shield ferns' are placed in the new family Dryopteridaceae in the subfamily Dryopteridoideae. The related former family Athyriaceae are placed in the same family but in the subfamily Athyrioideae. (These latter are not included in this report because it is arguable that they are not truly 'shield ferns'). Only genera and species occurring in Australia are described, relying heavily on Andrews (1990). There are 7 genera out of a total of about 30 worldwide and there are about 35 Australian species (mostly from Queensland) out of some 800 or so worldwide.

Australian Dryopteridoideae.

Kramer's classification includes the genus *Rumohra*, which is included in the Davalliaceae by Andrews (1990). See Terry's article on hare's-foot ferns in FSV Newsletter Vol.17, No.6/7.

The following list of Australian genera shows the number of species worldwide (W), in Australia (A) and in Victoria (V).

- ◆ *Dryopteris* - 225W, 1A
- ◆ *Arachniodes* - 50-70W, 2A
- ◆ *Lastreopsis* - 40W, 14A, 4V
- ◆ *Clyrtomium* - The only species occurring in Australia, *C. falcatum*, is an introduced species, and in this classification considered to belong to the *Polystichum* genus.
- ◆ *Polystichum* - 200W, 4A, 2V
- ◆ *Tectaria* - 150W, 4A
- ◆ *Conveniella* - 1W, 1A
- ◆ *Rumohra* - 1W, 1A

Characteristics of Shield Ferns

- They may have an erect or a creeping rhizome.
- Scales and hairs are a prominent feature. Usually the scales are attached at their bases.
- The fronds are usually pinnate to 4-pinnate.

They may be oblong or triangular. They are not dimorphic (except for some species of *Tectaria*).

- Some species are proliferous, that is they produce new plants from buds or bulbils.
- A prominent feature is the grooved rachises of most genera, which may be continuous in varying degrees in different species and which may be hairy to a varying degree. These are helpful in identification.
- The stipes and rachises have two or more vascular bundles making up their dictyosteles, and these are arranged symmetrically relative to the groove of the rachis.
- The veins can be free, forked or anastomosing.
- Chromosome number, $n=40,41$.

Australian Genera & Species.

(1) *Dryopteris*

- * Indusium - kidney-shaped.
- * Frond - papery texture - triangular, oblong or lanceolate.
- * Pinnules often asymmetric.
- * Main rachis groove open to secondary rachis groove. Ridges on either side of rachis grooves do not connect with pinnule margins.
- * Rachis grooves have hairs.
- * Rarely proliferous.
- * Australian species - 1 only:
 - *D. sparsa* - Mt Bartle Frere, Q. Easily grown in Victoria, frost hardy.

(2) *Arachniodes*

- * Indusium - kidney-shaped or absent
- * Frond - leathery, glossy texture, distinctly anadromous .
- * Main rachis groove open to secondary rachis groove. Ridges on either side of rachis grooves do not connect with pinnule margins.
- * Rachis grooves lack hairs.
- * Rhizome nearly always creeping.
- * 2 Australian species -Q & NSW. Both easily grown:
 - *A. aristata* (indusium present)
 - *A. hasseltii* (indusium absent).

(3) *Lastreopsis* (Shield Ferns)

- * Indusium - round to kidney-shaped or occasionally absent.
- * Frond - leathery. glossy texture, distinctly anadromous.
- * Main rachis groove (Fig. 3C) open to secondary rachis groove. Ridges on either side of rachis

grooves continuous with pinnule margins.

- * Rachis grooves covered with hairs.
- * Rhizome usually creeping.
- * 14 Australian species:
 - *L. acuminata* (Shiny shield fern). (E. Aust.) Kidney-shaped indusium.
 - *L. decomposita* (Trim shield fern). (E. Aust.) Round to kidney-shaped indusium.
 - *L. hispida* (Bristly shield fern). (Vic., Tas., NSW) Round to kidney-shaped indusium.
 - *L. grayi* (NE Q.) No indusium.
 - *L. marginans* (Glossy shield fern). (SE Q.& N. NSW.) Round indusium.
 - *L. microsora* (Creeping shield fern). (E.Q., NSW, Vic.) Round to kidney-shaped indusium.
 - *L. munita*. (E. Q. , NE NSW) No indusium.
 - *L. rufescens*. (NE. Q.). No indusium
 - *L. silvestris*. SE. Q., N. NSW) Round to kidney-shaped indusium,
 - *L. smithiana*. (Q. , NSW) Round to kidney-shaped indusium.
 - *L. tenera*. (Broad shield fern) (N. Q.) Small, round to kidney-shaped indusium.
 - *L. tinarooensis*. (Q. - Atherton & Mt. Lewis) No indusium.
 - *L. walleri*. (NE Q.) Round to kidney-shaped indusium.
 - *L. wurunuran*. (NE Q.) No indusium.

(4) *Polystichum*

- * Indusium nearly always round.
- * Frond - leathery, glossy texture, distinctly anadromous .
- * Main rachis groove not continuous with secondary rachis groove.
- * No hairs in rachis grooves.
- * Rhizome usually erect.
- * 4 Australian species:
 - *P. australiense* (NSW only, rare).
 - *P. fallax*. (Q., NSW).
 - *P. formosum*. (Broad shield fern) . (E Aust. mainland)
 - *P. proliferum*. (Mother shield fern). (E. Aust. mainland).

Note 1:- The genus *Cyrtomium*, which is simply pinnate, can be included, according to Kramer et al., in the *Polystichum* genus. *C. falcatum* is the only species of this genus growing in Australia. It is regarded as an escapee from cultivation which has become naturalised.

Note 2:- *Polystichum* and *Dryopteris* are closely related genera and will hybridise.

(5) Tectaria

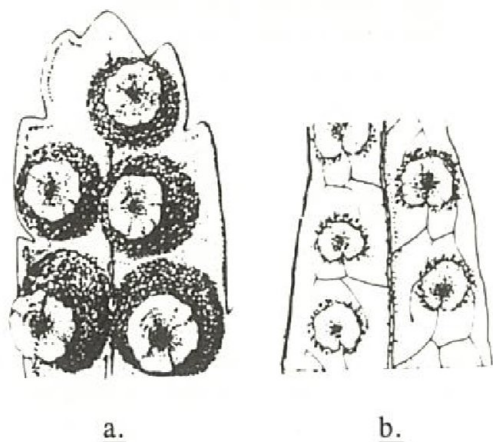
- * The indusium may be round or kidney-shaped except in *T. siifolia* in which it is absent.
- * Fronds - thin texture, triangular with margins simple, broadly lobed or crenate
- * Veins usually anastomosing.
- * Rachis grooves having short hairs.
- * 4 Australian species - all Qld :-
 - *T. brachiata*. Kidney-shaped indusium.
 - *T. devexa*. Round to kidney-shaped indusium.
 - *T. muelleri*. Large round to kidney-shaped indusium.
 - *T. siifolia*. No indusium.

(6) Conveniella

- * There is only one species in Australia, occurring in NE Q. :
 - *C. poecilophlebia*, having
 - ◇ Lamina l-pinnate, shiny, narrowly ovate.
 - ◇ Veins branching from the midrib, numerous and bold .
 - ◇ Stipes bearing scales at the base and with very short hairs for a few centimetres above the base and then pale and shiny.
 - ◇ Indusium absent .

(7) Rumohra**GLOSSARY**

- dictyostele = a cylindrical arrangement of vascular tissue in a stem consisting of a number of separate strands; in transverse section these strands appear as a ring of separate bundles.
- anadromous = the first secondary pinna points towards the frond apex.
- anastomosing = forming a network.

**Fig.1** Indusia of 'shield ferns'(a) *Rumohra adiantiformis* (b) *Tectaria devexa*.

- * There is only one species in Australia, occurring in Q., NSW and Vic. :
 - *R. adiantiformis* (Leathery shield fern).
 - ◇ Large, round indusium.
 - ◇ Fronds leathery, shiny, semi-erect, triangular
 - ◇ Veins free, indusia terminal on the veins.
 - ◇ Main rachis grooves scaly, secondary grooves not linked to the main one.

References:

- Andrews, S.B. (1990), 'Ferns of Queensland' [Qld Dept. Prim. Ind., Brisbane].
- Duncan, B. D. & Isaac, G. (1986) , 'Ferns & Allied Plants of Victoria, Tasmania & South Australia' [M. U. P. , Melbourne].
- Kramer, K.U. et al. (1990), 'Dryopteridaceae' in 'The Families & Genera of Vascular Plants', Ed. Kubitzki, K. [Springer-Verlag, Berlin].
- Jones, D. L. & Clemesha, S. C. (1989), 'Australian Ferns and Fern Allies' [Reed, Frenchs Forest NSW].
- Turney, T. (1995), 'A New Look at Hare's-Foot Ferns. Recent Revisions of the Family Davalliaceae', FSV Newsletter, 17, Nos.6/7, Sept./Oct., 1995.

**Fig.2** Stipe: Transverse Section - showing arrangement of vascular bundles forming the dictyostele.



Fig.3 Scales

Polystichum proliferum (left), *P. formosum* (right)
from the stipe (s) and the rachis (r).

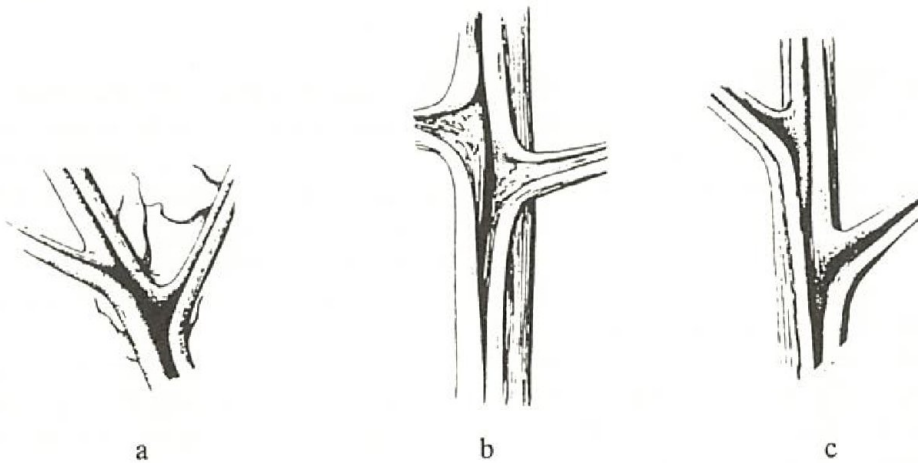


Fig. 4 Junctions of main and secondary rachises.

(a) *Arachniodes aristata*, (b) *A. Hasseltii*, (c) *Dryopteris sparsa*.

Figures 1 & 4 are from Andrews (1990)
Figures 2 & 3 are from Duncan & Isaac (1986).

OCTOBER MEETING

Terry Smyth, a botanist on the staff of the Melbourne Royal Botanic Gardens, gave us an account of her visit to the Yunnan Province of China in 1994 on a plant collecting expedition with other scientists from several countries.

Yunnan Province is in the south west of China and at 680,000 square kilometres in area it has about 4% of the total land mass of the country. In this area are found about half of the 30,000 vascular plant species native to China. About 25% of the species are endangered and some 6,000 are of

commercial importance.

The terrain has some lowlands but is mainly very mountainous and the climate varies from warm monsoonal to very cold. There are three major rivers in the country as well as many small ones.

Terry used a large collection of excellent slides as the basis of an informative and entertaining talk. The expedition reached some of the very high areas and Terry's slides included some superb mountain vistas.

The following article is taken, with thanks, from the March, 1995 edition of "The Fern World", the newsletter of the San Diego Fern Society. The first three paragraphs may well make you think that the article is going to be about one of our own Maidenhair experts!

The Case of the Abused Adiantum (Or is it?)

The audience gasps! That man is abusing the poor maidenhair. First, he drops the plant fronds down. Then he does it again. And, again.

Now what's he doing? He knocks the fern out of the pot (not gently either) and then picks up a scissors. Whoa. There go ALL the fronds, right down to the pot.

Now he grabs a butcher knife and cuts off the bottom half of the roots and throws them away. Now he cuts what's left into teeny-tiny little pieces. You'd think that fern personally did something to aggravate him.

But, no. This is Milton Piedra, nationally known expert on maidenairs, showing the San Diego Fern Society proper care of maidenairs. Milton dropped the maidenhair to show that they are tougher than you think. He made the point (by cutting off the fronds) that you should concentrate the growth during transplanting on the roots, not the fronds.

Milton's next point, punctuated by cutting off half the roots, was that maidenairs should be grown in very shallow containers. Milton recommends that plants be grown in shallow pots (often called pans) where the pot is wider than it is deep.

Milton presented a strong case for not using tall pots. To do this, Milton thoroughly wetted a tall sponge and showed how it held a lot of water at the bottom. He made the point that potting soil in a tall pot was like that sponge, holding a lot of water. Maidenairs like to be moist, not wet. Milton added that, if you must use big pots, you can avoid having soggy soil by filling up the bottom with styrofoam.

Next, Milton talked about how Maidenairs grow.

Maidenairs are usually creeping in habit, with a very lateral growth pattern. They have small root hairs on the rhizome. The stalks arise from the rhizome. Stalks come in two basic varieties, smooth and rough. Generally, the smooth stalks are black or purple. The rough stalks are generally more brown.

The foliage on the stalk comes in many colours:

- all shades of green

- many shades of red (*A. raddianum* cv. Red Gem remains red)
- blue-green (for example, *A. raddianum* cv. Blue Moon)
- white (*A. raddianum* cv. White Fritz Luth)
- many variegated forms (*A. raddianum* cv. Contortum is red, blue, green, white, and yellow)

The spores appear on the back of the frond, following the edge. On large-leaf maidenairs (e.g., *A. trapeziforme* or *A. peruvianum*), the spores appear on the top and sides, but the bottom of the frond has no spores. Very small forms like *A. raddianum* cv. Micropinnulum or *A. raddianum* cv. Gracillimum have only two sporangia per pinna.

Adiantums grown in terrariums with very high humidity can have vegetative growth of spores on the frond. Milton noted "All maidenairs can be 'mother' ferns."

Milton had a series of important care tips.

1. Light - Most important is intense light. In the tropics Adiantums grow in high light in open forest or along the roadways. "If you go five feet into heavy forest you won't find maidenairs."

Milton noted that, in San Diego during the winter, "I'd grow maidenairs in the middle of the street". He wants them to have that much light!

2. Humidity and Water - Milton strongly recommended that the humidity for any maidenhair never get below 50%. A mature plant should be able to get along on one cup of water per day during the summer and one cup every three days during the winter.

3. Soil - It is also important to have a very light soil. Water should drain right through. Milton gave the ingredients (although not the proportions) of his mix:

- styrofoam beads
- compost hardwood bark
- coarse Canadian peat
- Nicaraguan pumice
- Lake Wales sand (like silica sand)

- freeze-dried extracted kelp
- powdered bacteria

If a fern keeps drying out, put the small pot into a larger pot and fill the space between with wetted sphagnum moss. Keep the moss wet.

4. Fertilizer - Milton fertilizes a little (liquid fertilizer) every time he waters. He also extolled a timed-release product called Bio Booster that is new to the market. He recommends that people not use granular fertilizers on ferns as, under certain conditions, they can seriously burn your plants.

5. Pests - Milton noted that Adiantums don't have many pests, then gave tips for controlling a half-dozen different critters. For mealy bugs, scale and aphids Milton recommended that you control the ants. "You control the ants, you control the pests."

For brown worms (cut worms) and green worms, Milton recommends either Thumbdex (squeeze between your thumb and index fingers) or wettable Sevin powder at 50% or wettable Orthene powder.

To control snails and slugs, keep things dry. You'll notice they only live where it stays wet.

6. Grooming - Milton takes an aggressive position. He cuts all his established maidenhairs back to the pot four times a year! That includes all the big forms like *A. macrophyllum*, *A. Formosum* and *A. Anceps*.

(Note: This article is being published now even though Chris Goudey will be giving a talk on Adiantums to our November meeting (he may propose a less drastic approach in some areas!). Chris's talk cannot be published before February and the information in this article could be of interest for the growing season ahead. Please note that Milton Piedra lives in Florida where the climate is predominantly hot and humid - Ed.)

DISCOUNT SUPPLIES TO MEMBERS

As a service to members, the Fern Society has purchased in bulk the following items for sale at prices considerably lower than retail prices:

- Plant labels 90mm - 3 1/2"
 135mm - 5 1/2"
- Labelling pens - black - ultra fine and normal
- Maxicrop Plant & Soil Nutrient (please bring along your own container)
- Spiral wire hanging baskets and liners - also a few half baskets.

Members unable to attend our regular monthly meetings may contact Don Fuller on (03) 9306 5570.

Milton defined an established plant as one that was at least 4-5 years old. For younger large-form ferns, Milton recommended that you cut off old fronds only as new ones come in.

New fronds should come up in two weeks. After a butch cut, the concentration of energy in the roots may result in the first new fronds looking a little different (larger) than normal.

7. Weather - Maidenhairs love cool nights and warm sunny days. Cool doesn't mean freezing or really even shivery. Milton specified 38°F (3.5°C) as about the minimum temperature .

Maidenhairs don't like it when it gets too hot, either. Protect your ferns.

8. Miscellaneous - Milton added these tips:

- Water damage browns a frond from the edges in. Cold damage browns along the veins.
- If you use fish emulsion fertilizer, cut it off in winter because of the oil base. In general, avoid the use of oil-based fertilizers and insecticides .
- If a frond wilts even though you're watering, the problem can be a lack of humidity. Raise the humidity.
- Many maidenhairs can change their looks from young to mature, from tropic to temperate climate, even from one part of the greenhouse to another.
- Don't water the fronds. Maidenhairs only need humidity on their fronds, not water.

Barry White wrote an article in the October, 1984 edition of the Newsletter speculating on the possible contribution of the native aquatic fern Nardoo to the deaths of the explorers Burke and Wills. His theory has been supported by some recently-published research by two Australian scientists and the subject has subsequently been covered in articles in both the National Geographic magazine (March, 1995) and in the British Pteridological Society publication "The Pteridologist". The following article is taken, with thanks, from "The Pteridologist", 2 (6) : 255-6 (1995).

MARSILEA POISONING IN 19TH CENTURY AUSTRALIA

Michael Grant

A recent report in Nature (368:683-684) by J.W. Earl and B.V. McCleary has shed a pteridological light on the gruesome fate of the Burke and Wills expedition to traverse the then unknown interior of Australia. Setting out from Melbourne in 1860 with the aim of documenting flora and fauna and taking geophysical measurements, the expedition turned into a race to cross the continent before another team led by John Stewart.

On arriving at Cooper's Creek Burke, a police inspector, split the group taking one scientist, Wills and two others, King and Gray. This four man team reached the Gulf of Carpentaria on the north coast successfully, but their return was delayed by monsoons and the remainder of the expedition was found to have deserted the Creek.

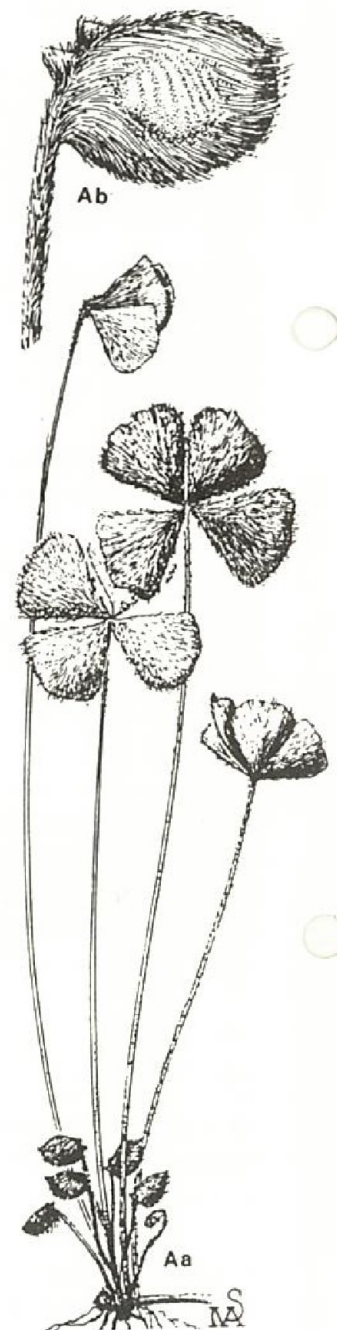
The four were by now running low on grain flour and began to eat the Aboriginal flour made from the ground sporocarps of *Marsilea drummondii*, the nardoo fern. The specialised preparation of this flour had been demonstrated to them by Aborigines but this advice was forsaken in favour of grinding and cooking, their greatest mistake. The four began suffering from hypothermia, weakening of pulse and severe muscle wasting leading to an inability to move. Wills's detailed diary of their decline revealed the classic symptoms of beri-beri, now known to be caused by a deficiency of vitamin B1. He was aware that they were suffering from nutrient deficiencies, indeed he had recommended that they eat *Portulaca oleracea*, common purslane, to prevent scurvy. However, vitamins were unheard of until 50 years later when Funk put forward his theory of four separate 'vitamines' in 1912. Burke, Wills and Gray died at the Creek while King, with failing strength, continued to pound the sporocarps into flour. He was then cared for by Aborigines until eventually rescued, but remained crippled for the rest of his life.

It is now known that their beri-beri was severely exacerbated by the nardoo diet. The bean-like

sporocarps contain two or three times more thiaminase than bracken fronds. Thiaminase is an enzyme that breaks down vitamin B1 and causes staggers in horses and a similar disease in sheep that feed on nardoo. The clover-like fronds contain a hundred times more thiaminase than bracken!

The sporocarp of the nardoo fern is extremely resistant to heat: the spores will apparently germinate after fifteen minutes of boiling, and the thiaminase, unusually for an enzyme, will survive cooking. The Aborigines avoid its toxic effects by grinding it in plenty of water to dilute not only the enzyme but also co-substrates (adenine, proline and hydroxyproline) which the enzyme requires to break down vitamin B1. Contamination by amino acids from other organic sources is prevented by avoiding contact with bark or leaf utensils. The thin paste is spooned straight into the mouth with a mussel shell.

This is a good example of a traditional food processing practice rendering an otherwise poisonous plant palatable in a harsh



Marsilea drummondii

- Aa. Fronds with sporocarps x 2/3
Ab. Sporocarp x 4

environment. With our biochemical understanding we can only marvel at how the Aborigines developed their detoxification process.

* * * *

The diagram is copied from Andrews, S.B. (1990) 'Ferns of Queensland', as is the following description:

Rhizome long-creeping. Stipes ca 2-30 cm long, glabrous in aquatic forms to densely hairy in some terrestrial forms, arising in clusters at nodes along the rhizome. Leaflets broadly obovate to wedge-shaped, 1-3 cm or more long in aquatic forms, about half the size in terrestrial forms, the apex broadly rounded, entire or more frequently crenate, glabrous in aquatic forms to densely hairy in terrestrial forms. Stalks of the sporocarps unbranched, much longer

than the capsules, 1-5 cm or more long, glabrous to densely hairy; capsules ca 0.5-1 cm long, erect or obliquely ascending, ribbed, densely hairy, with a small, abrupt point or rounded at the apex, with 2 basal teeth, approx. equal or more usually the lower one well developed and rounded, the upper one smaller and more pointed.

Habitat: In shallow, fresh water with the leaflets floating but the plant rooted in the mud at the bottom, or growing out of water in mud or damp ground, often in and around clay-pans and temporary waterholes or in grassland adjacent to swamps.

Distribution: Inland Queensland and in all Australian mainland States and the Northern Territory.

FERN SHOW - 1996

Don Fuller

The Fern Show Committee has completed preliminary arrangements for a Fern Show in 1996. Due to circumstances, not the least being an approximate three times increase in hire cost for the Herbarium hall, it was necessary to find a new venue.

Arrangements have now been made to hold the show in the auditorium and surrounding area of the Holmesglen College of TAFE - Waverley Campus. This is at 585 Waverley Road, Glen Waverley, next to the Victorian Schools Nursery. **The dates will be Saturday 30th and Sunday 31st March, 1996.**

We will again conduct a fern competition in conjunction with the display and competition

categories will be advised in the next Newsletter.

A successful Fern Show requires strong support from local members, so please note these dates and come along. We also hope every member can contribute to the display, so please start selecting and grooming your best ferns. *(Mary Frost will cover the preparation and presentation of ferns for show in her talk to the February meeting.)*

Apart from help on the days of the Show, we also have a need for additional members to serve on the Show Committee. If you are willing to do this, please call Don Fuller on (03) 9306 5570.

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(From the Brisbane "Courier Mail", 17th July, 1995)

Daniel Hathaway has a rotten sense of humour. Mr Hathaway was in Australia from Hawaii, where he is a waste management expert, to address the Catalyst 95 environment conference which finished in Canberra yesterday.

He says: "Mulch is possible if you keep your sense of humus".

**THE FERN SOCIETY OF VICTORIA INC.
STATEMENT OF INCOME & EXPENDITURE
FOR YEAR ENDED 30th JUNE 1995
GENERAL ACCOUNT**

**THE FERN SOCIETY OF VICTORIA INC.
BALANCE SHEET AS AT 30th JUNE 1995**

1994		1995	
\$		\$	
	MEMBERS FUNDS		
19659 71	As/1994 Balance Sheet	18015 55	
(1644 16)	Surplus (Deficit)	<u>442 86</u>	
<u>18015 55</u>		<u>18458 41</u>	
	REPRESENTED BY		
	Current Assets		
45 70	Cash on Hand - Book Sales	57 75	
		<u>30 00</u>	87 75
	CASH AT BANK		
3638 08	General Account	3361 18	
584 77	Book Sales	-	3361 18
508 00	STOCK - BOOKS		344 70
13000 00	INVESTMENTS - TERM DEPOSITS		15241 78
	FIXED ASSETS		
92 00	Library - Less deprn	71 00	
<u>236 00</u>	Plant & Equip - Less deprn.	<u>142 00</u>	<u>213 00</u>
18104 55			19248 41
	CURRENT LIABILITIES		
89 00	Prepaid Fees		
-	Creditors	<u>790 00</u>	<u>790 00</u>
<u>18015 55</u>		<u>18458 41</u>	

**THE FERN SOCIETY OF VICTORIA INC.
STATEMENT OF INCOME & EXPENDITURE
FOR YEAR ENDED 30th JUNE 1995**

SUMMARY

1994		1995	
\$		\$	
4139 75	Income - General Account	4037 37	
<u>6491 95</u>	Less - Expenditure	<u>4787 84</u>	
(2352 20)	OPERATING DEFICIT	(750 47)	
	LESS SURPLUS		
102 74	Book Sales	48 07	
<u>605 30</u>	Fern Show	<u>1145 26</u>	<u>1193 33</u>
(1644 16)	Surplus (Deficit)	<u>442 86</u>	

AUDITOR'S REPORT

I have examined the books of account and associated records of the Fern Society of Victoria Inc. for the year ended 30th June 1995 and have been provided with all the information and explanations required

I consider the Statements of Receipts and Payments and Balance Sheet reflect a true and proper view of the financial operations of the Society for the year and the state of affairs at 30th June 1995

I wish to thank the officers of the Society for their co-operation and assistance.


R.T. Angwin, FCPA

R. T. Angwin
6 Tenterden Street
SPOTSWOOD 3015
10 August 1995

1994		1995	
\$		\$	
	INCOME		
	SUBSCRIPTIONS		
2169 79	Renewals	2046 60	
365 67	New Members	<u>274 00</u>	2320 60
	SALES/COMMISSIONS		
83 00	S'pore Bank	48 20	
252 25	Commissions	145 95	
292 20	Miscellaneous Sales	642 65	
(218 55)	Less Cost of Sales	<u>490 32</u>	<u>152 33</u>
	SPECIAL EFFORT		
233 80	General	226 90	
(74 90)	Less - Expenses	<u>42 15</u>	184 75
	OTHER INCOME		
312 00	Advertising	312 00	
6 00	Sundry Income	25 00	
<u>0 60</u>	Excursion (Surplus)	-	<u>337 00</u>
3425 86			3188 83
	ADD NON-OPERATING INCOME		
	BANK INTEREST		
26 04	General Account	103 69	
157 15	Cash Management	-	
<u>534 70</u>	Term Deposit	<u>744 85</u>	<u>848 54</u>
4139 75			4037 37
	EXPENDITURE		
	Newsletters		
2241 50	Printing	1598 00	
764 66	Postage	<u>584 00</u>	2282 00
	ADMINISTRATION		
300 00	Honorariums	300 00	
134 74	Registrations/Subscriptions	87 72	
179 42	Administration/Secretarial	302 50	
199 20	Advertising	104 40	
130 00	Entertainment	50 00	
615 00	Hall hire	935 00	
520 77	Guest speaker expenses	50 00	
250 00	Audit fee	260 00	
54 17	Bank charges	45 22	
184 00	Depreciation	115 00	
112 60	Sundries	90 00	
612 39	Library books	-	
-	Award Cards	146 00	
137 50	Insurance	-	
<u>56 00</u>	Donation	<u>20 00</u>	<u>2505 84</u>
5871 43			4787 84
	FERN SHOW		
	INCOME		
574 25	Door receipts		1034 00
	Fern sales	6279 90	
	Less - Cost of sales	<u>5319 37</u>	<u>960 53</u>
<u>593 90</u>			1994 53
1168 15			
	EXPENDITURE		
110 00	Insurance	110 00	
72 00	Parking permit	72 00	
115 85	Administration expenses	327 27	
<u>265 00</u>	Hire of venue	<u>340 00</u>	<u>849 27</u>
562 85			
<u>605 30</u>	SURPLUS		<u>1145 26</u>
	BOOK SALES		
	OPERATING INCOME		
264 50	Net Sales	234 48	
(189 58)	Less - Cost of Sales	<u>164 30</u>	70 18
<u>122 50</u>	Postage	-	-
197 42			70 18
	ADD NON-OPERATING INCOME		
12 78	Bank Interest	20 91	
210 20			91 09
	LESS EXPENSES		
49 86	Bank Charges	43 02	
<u>57 60</u>	Postage	-	<u>43 02</u>
107 46			48 07
<u>102 74</u>	SURPLUS		<u>48 07</u>

MY FAVOURITE FERNS

Keith Hutchinson

No. 4 - *TODEA BARBARA* (Austral King Fern)

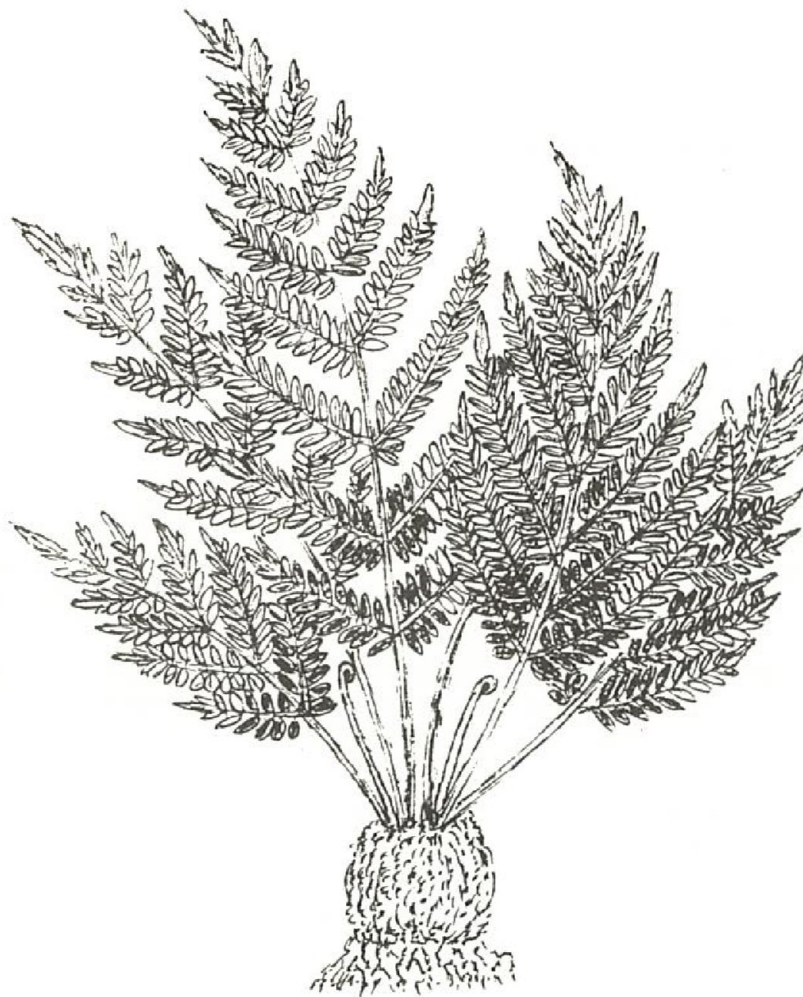
During a Society excursion to Paradise Falls near Wangaratta in 1986, while walking down into the fern gully, I saw a magnificent specimen of *Todea barbara*. It stood supreme about two metres across and seemed to say "Have you ever seen such a grand sight?". On returning home, I decided I must find a prime position in my garden to plant one, and now it is one of my most prized ferns.

As the *Todea* often forms quite a large fibrous butt, it is sometimes mistaken for a short tree-fern but it is a true member of the Osmundaceae family. It can be transplanted quite readily, but is not easy to grow from spore as the spores remain green when ripe and

their viability is rather short lived.

I find it will grow in most soils but responds best if given good drainage and a mulch in summer to keep its roots moist. It will also grow well in a large tub but is slow to mature this way.

The *Todea* can be found in South Africa, New Zealand, Queensland, New South Wales, Victoria, South Australia and Tasmania, but I feel it would be difficult to find a more beautiful specimen than the one at Paradise Falls near Wangaratta in Victoria. It will live in my memory always.



Todea barbara

(Please note that all the drawings in this series have been done by Keith himself. - Ed.)

Our Book Sales Officer, Ivan Traverso, has provided the following details of books currently available on the subject of ferns. They are arranged broadly in date order, with the more recent first. The list is fairly extensive (five pages) and will be published in sections in the Newsletter as space is available. Please note that considerable editing was required to reduce the list even to its present length, and for many books other editions from different sources were originally included. Ivan will advise the most appropriate for purchase where alternatives exist.

FERN BOOKS IN PRINT

Ivan Traverso

The following is a list of books in print on the subject of ferns. The list is current as of April/May, 1995 and is compiled by Global Books in Print. Prices are quoted in \$US except where otherwise specified. Most of the titles would have to be imported direct from overseas and the exact cost is subject to exchange rates and freight costs. As a rough guide a book at \$US 25.00 would end up costing approximately \$A 40.00 - 50.00. A period of six to ten weeks before delivery is common for such titles. We are currently investigating other methods which may reduce delivery times to two weeks. New books will be announced in the Newsletter as they become available.

Any members wishing further information on these books or any other title may contact me at the address inside the front cover or during business hours on Phone (03) 9650 9755 or Fax (03) 9650 9373.

Terms Used:

Trade Cloth or Text	Hardcover books, generally more expensive
Trade Paper	Large format paperback
Library Binding	Hardback with roughly cut page edges

TITLES:

Ferns. Gillean Dunk. 06/1994 Harper Collins Publishers Incorporated
Trade Cloth ISBN 0-207-17971-9 A\$ 39.95

Ferns for American Gardens. John T. Mickel. 04/1994 Macmillan Publishing Company Inc.
Cloth Text ISBN 0-02-584491-1 416p. \$ 60.00

Garden Flowers: Portraits of Favorite Garden Flowers & Ornamental Grasses & Ferns with Instructions for Their Care, with Design Ideas for Large & Small Gardens. Bernd Hertle, Peter Kiermeier, Marion Nickig. 03/1994 Barron's Educational Series Inc. Trade Cloth ISBN 0-8120-6386-4 240p. \$ 20.00

Atlas of the Vascular Flora of Louisiana, Vol. I: Ferns & Ferns Allies, Conifers & Monocotyledons. R. Dale Thomas, Charles M. Allen. 12/1993 Louisiana Department of Wildlife & Fisheries
Trade Paper ISBN 0-9638600-0-3 218p. \$ 10.00

Ferns to Know & Grow. Gordon Foster. 07/1993 Timber Press Incorporated
Trade Paper ISBN 0-88192-234-X 244p. \$ 22.95

The Cultivation of Ferns. Andrew McHugh. 08/1992 Trafalgar Square
Trade Cloth ISBN 0-7134-6492-5 168p. \$ 55.00

Ferns. Theresa Greenway. 01/1992 Raintree Steck-Vaughn Publishers (Green World Ser.)
Library Binding ISBN 0-8114-2735-8 48p. \$ 21.34

New Jersey Ferns & Fern-Allies. James D. Montgomery, David E. Fairbrothers. Illustrated by Kethleen L. John-Alder. 11/1992 Rutgers University Press. Cloth Text ISBN 0-8135-1817-2 300p. \$ 45.00

Ferns & Fern-Allies of Meghalaya. A. J. Baishya and R. R. Rao. 1991 State Mutual Book & Periodical Service Limited. Cloth Text ISBN 81-85046-07-7 (Scientific Publishers (II)) \$ 50.00

An Illustrated Field Guide to Ferns & Allied Plants of the British Isles. Clive Jermy and Josephine Camus. 1991 International Specialized Book Services
Trade Paper ISBN 0-565-01172-3 British Museum (Natural History) 208p. UK pounds 8.95

A World of Ferns. Josephine Camus, A. C. Jermy and B. Thomas. 1991 International Specialized Book Services. Trade Paper ISBN 0-565-01120-0 112p. (no price given)

Growing Ferns. John Mason. 1990 Seven Hills Book Distributors.
Trade Paper ISBN 0-86417-281-8 Kangaroo Press A\$ 14.95

Developmental Biology of Fern Gametophytes. V. Raghaven. 11/1989 Cambridge University Press
Trade Cloth ISBN 0-521-33022-X 250p. \$ 85.00

Ferns of Puerto Rico & the Virgin Islands. George R. Proctor. Illustrated by Pedro Acevedo and Robin Jess. 12/1989 New York Botanical Garden. Cloth Text ISBN 0-89327-341-4 389p. \$ 79.50

Ferns of the Coastal Plain: Their Lore, Legend & Uses. Lin Dunbar. 03/1989 University of South Carolina Press. Cloth Text ISBN 0-87249-594-9 179p. \$ 24.95

Henry Potter's Guide to Hybrid Ferns of the Northeast. Frank Thorne, Libby Thorne. Illustrated by Carol Wood. 07/1989 Vermont Institute of Natural Sciences.
Trade Paper ISBN 0-317-93441-4 75p. \$ 14.95

(to be continued)

COMPETITION RESULTS

The results for the Fern Competitions and the Special Effort draws for the September and October meetings were as follows. Congratulations to the various winners.

FERN COMPETITION:

September: Category: A Shield-fern. Judge: Barry White

First:	Jack Barrett	<i>Polystichum retroso-paleaceum</i>
Second:	Don Fuller	<i>Cyrtomium falcatum</i>
Third:	Don Fuller	<i>Polystichum polyblepharum</i>

October: Category: *Pyrrosia* Judge: Barry White

First:	Chris Goudey	<i>Pyrrosia lingua</i> 'OBA'
Second:	Chris Goudey	<i>Pyrrosia lingua</i> 'Serrata'
Third:	Dorothy Forte	<i>Pyrrosia polydactylis</i>

SPECIAL EFFORT:

September: Margaret Radley, Anne Bryant, Jean Boucher (2), Simon Hardin.

October: Bernadette Thomson, Keith Hutchinson, Cheryl Shelton, Joy Horman.

Opinions expressed in articles in this Newsletter are the personal views of the authors 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. Phone (058) 26 7285.
Goulburn Valley Highway, Arcadia 3613 (20 km south of Shepparton).
Large range of ferns and orchids for beginners and collectors. Open daily 10am - 5pm except Christmas Day.

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

Coach Road Ferns - Wholesale. Phone (03) 9756 6676. Monbulk 3793.
Retail each Saturday and Sunday at 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. Phone (057) 86 5481. Kinglake West 3757.
On main road, opposite Kinglake West Primary School. Specialising in Stags, Elks and Bird's-nest Ferns.

Fern Glen - Wholesale and Retail. Phone (056) 29 2375.
D. & I. Forte, Garfield North 3814. Visitors welcome.

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

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

NEW SOUTH WALES:

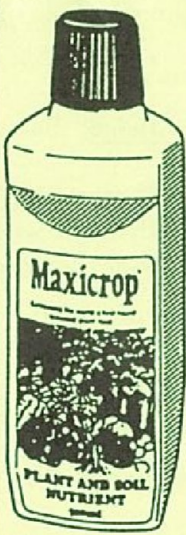
Jim & Beryl Geekie Fern Nursery - Retail. Phone (02) 484 2684.
6 Nelson Street, Thornleigh 2120. By appointment.

Kanerley Fern Exhibition and Nursery - Wholesale and Retail. Phone (049) 87 2781.
204 Hinton Road, Osterley, via Raymond Terrace 2324.
Closed Thursdays and Saturdays. Groups of more than 10 must book in advance, please.

Marley's Ferns - Wholesale.
Phone (02) 457 9168.
5 Seaview Street, Mt. Kuring-Gai 2080.
All Fern Society members welcome. By appointment.

QUEENSLAND:

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



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