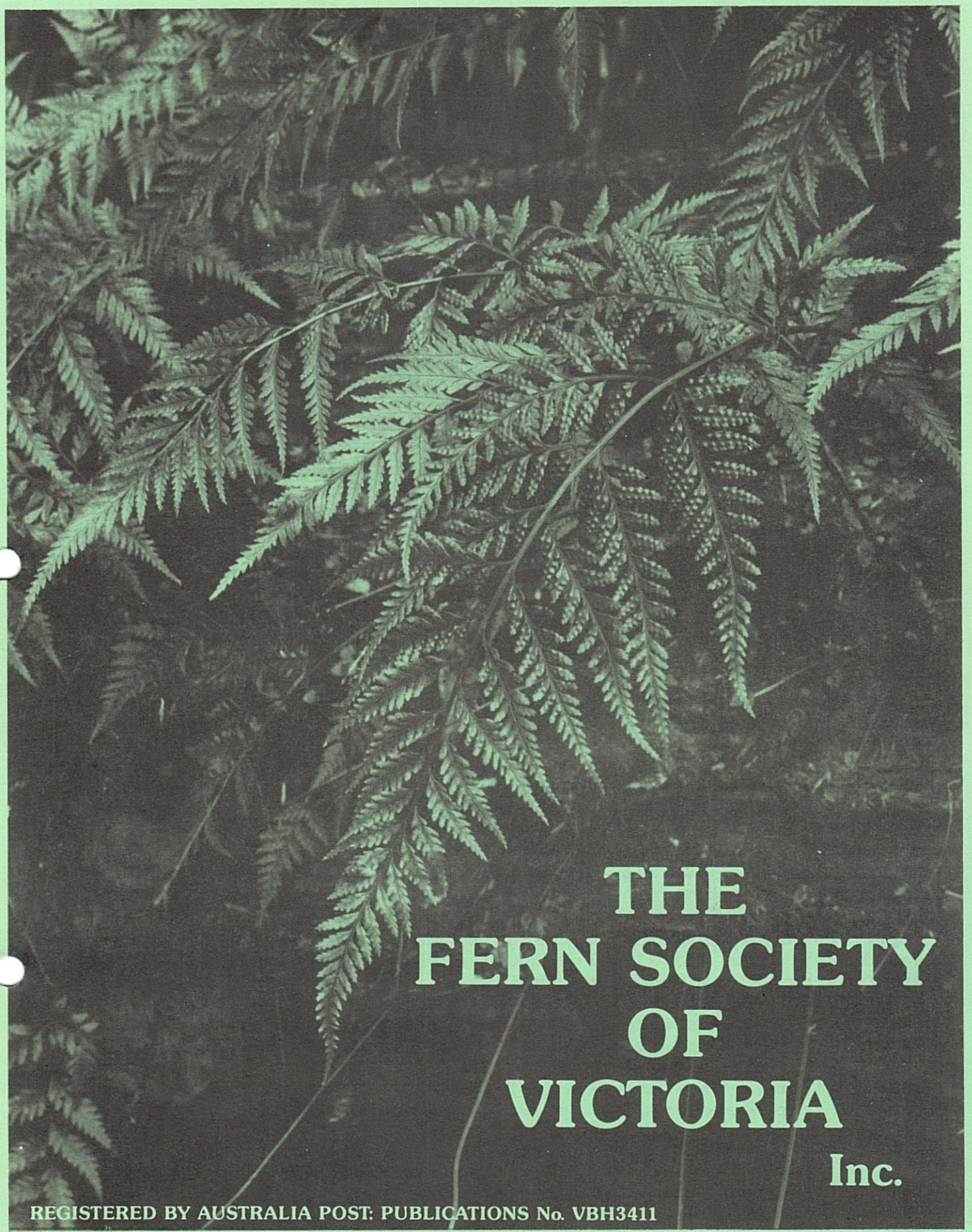

# THE FERN SOCIETY OF VICTORIA Inc.

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# NEWSLETTER

VOLUME 15, Number 7, August 1993

# FERN SOCIETY OF VICTORIA Inc.

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

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| | | |
|---|---|---|
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SUBSCRIPTIONS: Single - $15.00 (Pensioner/Student - $11.00)
Family - $18.00 (Pensioners - $13.00)
Overseas - A$30.00 (by Airmail)
**Subscriptions fall due on 1st July each year.**

PRESIDENT'S MESSAGE:

Many thanks to Peter Bostock for his talk at last month's meeting on the ferns of N.E. Australia. Most of the ferns covered in Peter's talk were ones not usually encountered in cultivation, and included some quite intriguing ones. The Society is also indebted to Peter for his generous contribution of a book to the Society's library.

**Annual General Meeting**: The A.G.M. occurs this month. As I mentioned last month there is need for new blood on the Committee. We are looking for ordinary Committee Members. Please give the matter some thought; if the Society is to continue to function satisfactorily it must have new members on the Committee. It is not onerous work, and can be quite rewarding.

**Gippsland Excursion**: The excursion to Gippsland scheduled for Saturday and Sunday, 20th and 21st November, will depart by bus early Saturday, visit Tarra Valley and Bulga National Park on the Saturday, stay overnight at Chester Hill Country Retreat at Won Wron, visit some other fern spots on the Sunday and return Sunday evening. The approximate cost for bus, accommodation Saturday night, Saturday evening meal, breakfast and cut lunch on Sunday will be $85 per head. Applications may be made to myself. There will be a limit on the numbers so please get your application in early.

**Library Books**: After a period in which there has been little addition to our library a number of books have been recently purchased. Details of these books will be provided in future copies of the Newsletter.

**"Rippon Lea"**: The Society will be co-operating with the National Trust in a "Focus on the Fernery" weekend on Saturday and Sunday, 23rd and 24th of October. The Society will be mounting a display and conducting guided tours of the fernery. An open air concert will be held in the grounds on Sunday afternoon. We will trust the weather will be fine.

(continued opposite)

# NEXT MEETING

DATE: Thursday, 19th August, 1993.

TIME: Commencing at 7.30 p.m.

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

BUSINESS: (a) 14TH ANNUAL GENERAL MEETING
(b) August General Meeting

TOPIC: Video of **DEMONSTRATIONS AT 1987 FERN SHOW**

MEETING TIMETABLE

| | |
|---|---|
| 7.30 p.m. | Pre-Meeting Activities:- Sales of Ferns, Spore, Books and Special Effort Tickets ; Library Loans. |
| 8.00 p.m. | ANNUAL GENERAL MEETING<br>Agenda: (i) Minutes of 1992 A.G.M.<br>(ii) President's Report<br>(iii) Treasurer's Report<br>(iv) General Business |
| 8.30 p.m. | August General Meeting |
| 8.45 p.m. | Video Presentation |
| 9.45 p.m. | Competition Judging<br>Fern Identification and Pathology<br>Special Effort Competition |
| 10.00 p.m. | Supper |
| 10.15 p.m. | Close. |

FERN COMPETITION: The category for this month is a ***Nephrolepis***.

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## MEMBERSHIP SUBSCRIPTION RENEWALS

Membership subscriptions became due for renewal on 1st July. If you intend to continue your membership and have not already paid your subscription, please make sure to do so by the end of August, as payments made after this lead to considerable extra administrative work. Delivery of Newsletters will cease for memberships not renewed by the end of August.

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**PRESIDENT'S MESSAGE**: (continued)

**August Meeting**: The August meeting will feature video clips of activities and excursions by the Society. The fern competition category for this month is a *Nephrolepis* fern.

Regards, Barry White

## SPEAKER REPORT - GENERAL MEETING - 17TH JUNE, 1993

Speaker: Simon Branson of Debco Pty Ltd

Subject: **POTTING MIXES**

Simon gave a preliminary talk on some aspects of Debco and its products and then showed a Debco informational video.

Debco began operations about 25 years ago at Hastings as a fertiliser company. It moved to its present location in Tyabb about seven years ago and now produces mainly potting mixes in bulk and packaged forms. They have some 160 different formulae on file for bulk mixes, ranging from seed-raising mix through to ones for large advanced trees and landscaping. Packaged products range from seed-raising mix to ones for large containers, orchid growing media, etc. In all potting mixes the aim is to maximise drainage, air space and moisture retention.

The major component of all mixes is pine bark from plantation-grown pine trees. No soil is used as its physical properties are generally not good for container growing, it can be contaminated with weeds, insecticides, etc. and the environmental damage from quarrying is not acceptable. Debco pride themselves on their commitment to using renewable resources for their products wherever possible. They are also proud of their strict quality control procedures and the fact that all their mixes conform to or exceed the relevant Australian standards.

Another application of a renewable resource is the use of Coprapeat (also known as coir or palm peat) as a replacement for peat moss. Coprapeat is made by composting coconut pith and has the advantage over peat moss of re-wetting easily; peat moss is very hard to re-wet after it dries out and is in limited supply.

A relatively new material used in potting mixes is Zeolite, which is a processed mineral sourced from Mt. Gipps in southern Queensland. Zeolite has a high cationic exchange capacity and is able to absorb ammonium ions, which are then released for use by plants after they are broken down to nitrates by chemical reactions.

The video shown first gave a brief glimpse of the Debco manufacturing operations and covered the information in paragraphs 2-4 above. It then dealt with Debco's new soil-wetting product "Saturaid".

Some naturally occurring soils, particularly sandy ones with a high content of finely-divided organic material, are very hard to re-wet when they dry out, and much of the water applied runs to waste without reaching the root zone of the plants. The same problem occurs with potting media with a high organic content. The use of a soil-wetting agent to assist with this problem is now an established technique.

"Saturaid" is essentially the same chemical as the well-known "Wetta Soil" and "Aquasoil Wetter" liquids but it comes in a granular form which gives it two advantages:

- it can be distributed conveniently by hand to the soil around plants and is easily applied to large areas such as lawns.
- it stays effective longer than the liquid forms. The latter begin to be leached from the soil as soon as watering begins, whereas the active chemical in "Saturaid" is released progressively with successive waterings.

(continued page 82)

# FERTILIZERS

by Bob Halley

*(The following article is copied, with thanks, from the April, 1993 issue of "The Fern World", the newsletter of the San Diego Fern Society.)*

For the San Diego Fern Society February meeting, Don Delano presented a talk on "fertilizer". Don currently works for the L.A. Fair Board and previously spent many years on the faculty and as Curator of the Horticultural Garden at Cal. Poly., Pomona.

Don first divided the contents of fertilizers into two groups, the major ingredients and the trace elements. The major elements are nitrogen, phosphorus and potassium. These are listed in that order as a percent by weight on a fertilizer package. Nitrogen is what plants use to build foliage. It causes the cells in the foliage to expand and make the plant lush. A leaf with plenty of nitrogen may be twice as large as one which has too little. Too much nitrogen causes weak, floppy stems and sensitivity to temperature change. Phosphorus is well known as a help in the development of blooms but it also helps the development of roots and stems. In ferns it helps spore production. Tree ferns are in particular need of phosphorus. Potassium encourages cold tolerance, makes foliage more resilient and makes a stronger stouter trunk. It works in the cell itself to strengthen the cell walls and also aids in chlorophyll function. It is very important to ferns. If any one of the three is deficient it leads to a poorly developed fern, especially in container growing since the surface of the potting medium is usually kept clean and natural fertilizers do not accumulate.

The trace elements of importance to ferns are copper, iron, sulfur, manganese, molybdenum, boron, silicon, zinc and chlorine. Because most US water is chlorinated, very seldom will a fern grown here show a chlorine deficiency. If a house plant is watered only with distilled or reverse osmosis water, it may, after a couple of years, become necrotic (with spots of dead tissue)and lose root structure. Chlorine is the basis of DNA development, so without it the molecules don't develop right. Chlorine is a good example of what is meant by 'trace elements' since one watering with tap water every couple of years is enough to prevent chlorine deficiency.

It is good to use a fertilizer which has trace elements, but if they are used more frequently than indicated by the manufacturer they may cause damage. For instance, if you use a 12-month time release fertilizer with trace elements and apply it twice a year you may hurt your plants. Trace elements are very important on staghorns.

Returning to nitrogen - it comes in several different forms and they must be processed differently in the soil to be of value to the plant. 'Schultz Instant' Liquid Plant Food, for instance, is listed as containing ammoniacal nitrogen, nitrate nitrogen and urea. Try to stay away from urea because it has breakdown products that are toxic to ferns. It's OK to use urea occasionally but not as a steady diet. You may get browning of the tips and necrotic spots.

The only form in which plants can make direct use of nitrogen is as a nitrate ion. The simplest, although one of the more expensive, ways to get this ion may be in the form of calcium nitrate. This material breaks down into ions as soon as it dissolves in water and all of the nitrate is immediately available. You should get instant growth and

instant greening. One of the reasons that Peters fertilizers are so well thought of is that they include calcium nitrate in their mix.

Another common form is ammonium nitrate. This provides some nitrate ions immediately for rapid effect and then provides more after the bacteria have processed the ammonium ions into more nitrate ions. Thus, you get both a rapid and a prolonged effect. Ammonium sulphate is another available source of nitrogen. It will often have some ammonium nitrate in it to provide a quick action but most of the nitrogen will come from the slow breakdown of the ammonium ion. Another advantage to this material lies in the action of the sulphate ion to reduce the pH of the soil. With our highly alkaline water this can be a major advantage. The primary attraction, however, is in the cost. It is one of the cheapest ways there is to buy relatively fast acting plant nitrogen.

Finally we have the urea products. Urea has more complex molecules than those previously mentioned. They contain carbon and oxygen and a pair of amino ions. There is lots of nitrogen. but it is all locked up in the amino ion which itself is not immediately available to the plants. It must first be broken down by bacteria to free the amino ion and then by some other bacteria to convert it to a nitrate. This makes it very slow acting. It is best used to stretch out the action of a compound fertilizer.

As far as the nitrogen goes, then, the Schultz fertilizer is good for about a month. The nitrate pert goes to work immediately, the ammoniacal part breaks down in a few days and the urea portion spreads out over two to three weeks to last until the next feeding.

All organic fertilizers are based on urea, so they are slow acting and, as a result, are unlikely to burn your plants. You should not expect immediate results from them, but after two or three weeks your garden will start greening up.

When you grow ferns in pots or otherwise keep the top of the soil very clean, you will not get much benefit from a urea-based fertilizer because there is not much bacterial action to break down the urea. Also, if you grow your plants on sterile bases such as pumice or rock wool, there is very little bacterial action and the fertilizers wash through very quickly, so you need a quick release form like the calcium nitrate and you need to feed often.

A balanced fertilizer, 20-20-20 or 14-14-14, is a lazy man's plant food. You provide all three of the primary needs and let the plant pick out what it wants. A more effective method is to change your fertilizer as the plant's needs change. Let us illustrate with a bedding plant example. It used to be thought that you put down a seedling and did not feed it at all, but that is wrong. If you don't feed immediately, you will notice a big difference by the time the plant is ready to bloom. If you really want to do it right, you should immediately feed the seedling a fertilizer which is high in phosphorus, 5-15-10 or 10-30-10. This encourages a good root development. Use about a quarter strength and gradually increase to full strength as the plant grows. After the plant is transplanted into the ground or into a larger pot, continue with a high phosphorus fertilizer for about a week. After that week, switch to a high nitrogen fertilizer like a 30-10-10. When the plant is about an inch from the edge of the pot, switch back to the high phosphorus fertilizer to encourage rapid blooming. Following this kind of regimen, a nurseryman can get a 4-inch pot of pansies to bloom in

about 7 weeks. Using a balanced 20-20-20 fertilizer once a week, the process takes about 26 weeks.

The same sort of thing can be done with ferns. You can take small sporelings and feed them a high phosphorus fertilizer to get them well started with a good rhizome and root system. Then, to get them ready for exhibition you want to get them as big and lush as you can, so you switch to a high nitrogen food. When the ferns are about three-fourths of full size, you switch back to a high phosphorus, high potassium food to make the fronds strong and upright instead of weak and droopy. Following a system like this, the growers can take a little, tissue-cultured Boston fern to maturity in about 16 weeks where it used to take them 30 weeks.

If you use a balanced fertilizer, the plant is still going to grow and be healthy, but plant growth will be slower and it might make the difference between an honourable mention and a blue ribbon at the show. However, it takes time and it takes patience to use different fertilizers in sequence, so very few amateurs do it.

The really easy method of doing things is to use a time-release fertilizer. As long as you mark your calendar, the plants do quite well. Osmocote, for instance, is a fertilizer made up of little spheres coated with an aldehyde-based plastic. The name Osmocote comes from "osmosis", which is the ability of a fluid to go through a membrane. This means that as time goes on, the water pushes into the little sphere and the fertilizer pushes out. Osmocote is available in different formulations to make it last 3 months, 6 months, 9 months or 12 months. It comes in different strengths as 14-14-14 or 20-20-20, and also with iron and with trace elements. It is susceptible to soil conditions and temperature change and is much less effective in winter than in summer.

There is also a product called Nutricote, which is coated with a resin and operates on a different basis. There is a chemical release agent in the resin that determines the time period for release. It is much more stable and less susceptible to conditions mentioned above. It is made in similar formulations including a 14-14-14 and a 20-7-10. There is also a 18-6-8 and a 13-13-13 with trace elements. All come in the various time release periods. One problem with the time-release fertilizers is that there are none now available with a high phosphorus content. You have to use liquid fertilizers to get that. Another problem with a time-release fertilizer is with plants in a really loose mix, like orchids in redwood bark. The little spheres can actually rest against the roots, which may be burned by them. You need to be careful with the footed ferns to keep the spheres away from the rhizomes and it is a good idea to keep them it away from the stem of a plant.

Recent research has shown that feeding with a high potassium fertilizer, say 10-10-30, in the fall will enable the plants to stay green and robust longer into the winter, and in some cases will protect the ferns from frost damage. The reason for frost damage is that the cells rupture. The potassium in the fertilizer builds up the strength of the cell walls and helps prevent rupturing. If you are in a marginal frost area this may enable you to grow ferns that you otherwise could not.

One item from the question and answer period that followed was:

(continued page 82)

# EVERY FOURLEAF ISNT CLOVER.

By Calder Chaffey.

If you are travelling around the country don't ignore what at first sight you may think is clover. Especially if it is in a wet or swampy place or even in a river. It may be Nardoo, a fern superficially resembling clover- a fourleaf clover. Nardoo belongs to the genus Marsilea. There are seven species occuring in Australia and about sixty world wide. Most of the species are not rare but are often overlooked because of their resemblance to clover. The commonest occurrence is in areas of temporary flooding in the warmer parts of the continent. Hence Marsilea species can be found in inland parts of Australia when rain causes temporary filling of water holes. Other common sites are along flooded rivers, billabongs and amongst soggy grass.

This summer was a particularly good time to search for the fern "out back". There was particularly good rain in areas of the central west of NSW extending to Adelaide and causing much flooding. On two trips to Adelaide, in November and February I found water lying in many places beside the Barrier Highway. Marsilea was not scarce and in places could be observed in massive patches in the water while driving past at 100 K/H. Thick patches were present in many places from 40 Klm past Cobar to 43 Klm west of Wilcannia.

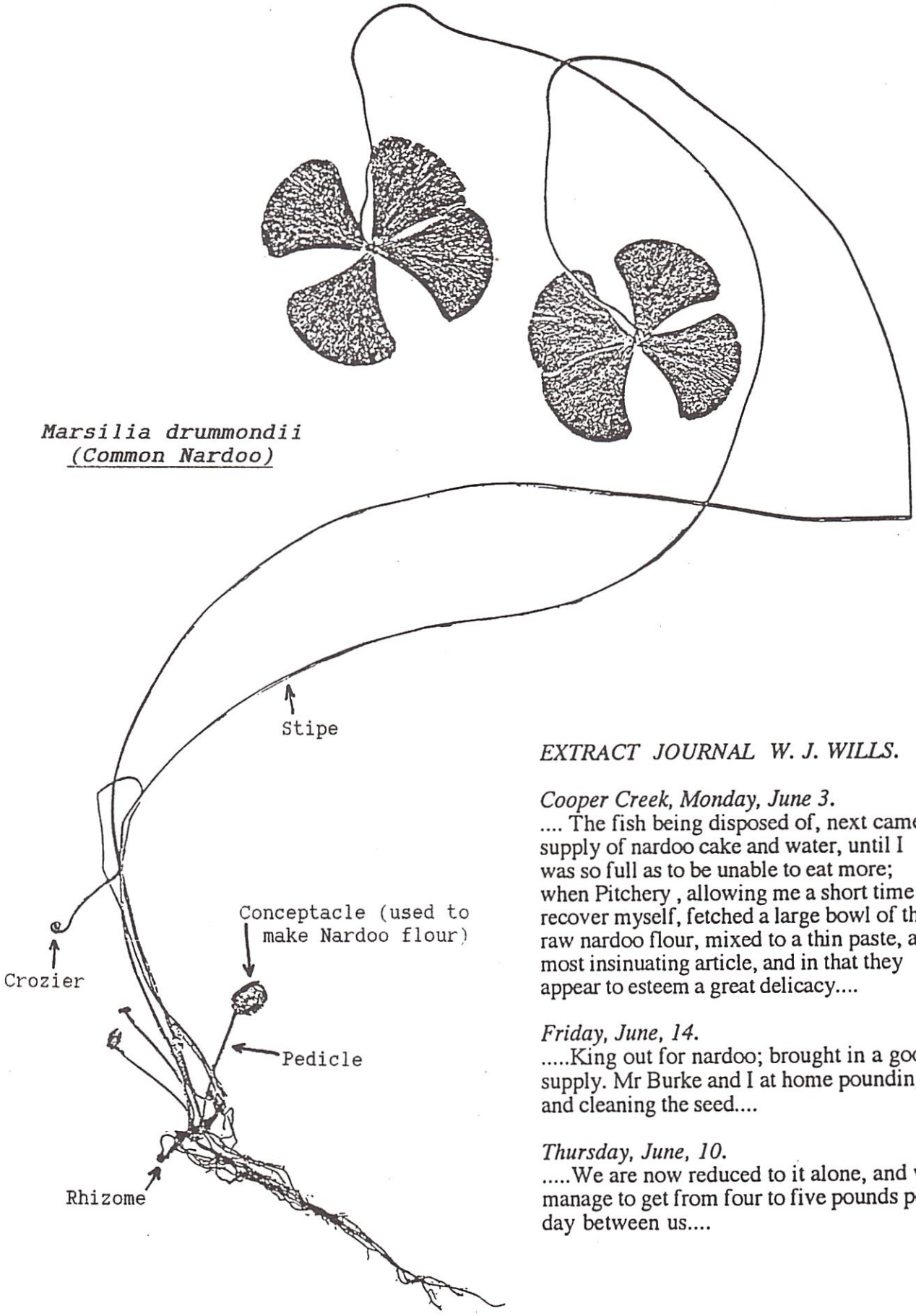
Marsilea belongs to an interesting family- Marsileaceae. The only other Genus of this family occurring in Australia is Pilularia. All members of the family root in mud or wet soil. Marsilea can grow in up to a metre of water when the leaflets float on the surface. If shallow the fronds stand rigid and hold the leaflets above the water.

Rhizomes grow through the mud and occasionally on the surface. They are branched and at the nodes send adventitious roots into the mud. Stipes are arranged in two rows on the upper surface of the rhizomes and are sometimes clustered. At the top of the fronds are the four sterile leaflets arranged in two pairs and giving the appearance of a fourleaf-clover. A clue to these being ferns is seen in the unfolding of the new fronds. Careful examination shows the young leaves to be coiled and these unfurl like a typical fern crozier or fiddle-stick.

Leaflets are generally covered with fine hairs. These are more abundant in specimens growing out of water. The hairs resist drying in the atmosphere and probably assist flotation. Leaflet size varies greatly tending to be bigger growing in water. They also cluster more when growing out of water. Leaflets growing out of water also exhibit "sleep movement". This interesting phenomenon is the furling of leaflets when the intensity of light becomes low. Hence they tend to "close up" in the evening and on very dull days.

However perhaps the most interesting thing is that these ferns of the family Marsileaceae grouped with family Azollaceae are all aquatic and both families produce sporocarps.This structure contains microspores which produce sperms and megaspores which produce egg cells. David Jones states "These are the only true ferns to produce separate male and female prothalli. It is this degree of specialisation that makes the genus the most advanced of living ferns". Here David Jones refers to Marsilea specifically. The sporocarp is a modified pinnate leaf and represents the fertile leaf of the plant. Sporocarps arise at the base of the leaves and have short pedicles. They are single or in groups. It is infolded and fused containing pinnately arranged sori. Each sori is composed of rows of sporangia. The hard and woody conceptacle with the pedicle is called the sproocarp. Sporocarp formation chiefly takes place as the ponds dry up and rarely occurs in wet conditions. Maturation is slow and takes up to three years. This mechanism ensures that the spores can resist desiccation and is particularly suitable in the inland areas of the continent and in areas of uncertain rain. The advent of rain commences an interesting series of events. The sporocarp contains cells packed with starchy material which absorbs water and swells into a gelatinous material. This is the useful part of the sporocarp for food. On swelling it forces the sporocarp open and extrudes carrying the sori. The sperm and egg cells develop and fertilisation takes place. The new plant becomes obvious with the development of a root and leaf within a week.

Marsilea has a wide occurrence in Australia and most species are found in all states except Tasmania. The formation and resistance of the sporocarp to desiccation and its abundance in good years has made it a good aboriginal food. There are many notes on the use of this food by aborigines in the journals of the early explorers of Australia. But perhaps the most graphic and famous are the notes recorded by Wills towards the end of the fatal Burke and Wills Exploring Expedition of 1860. They were fed nardoo by the aborigines and collected their own to try to overcome starvation. I reproducethree extracts from the journal of W. J. Wills found after his death on Cooper Creek.




*EXTRACT JOURNAL W. J. WILLS.*

*Cooper Creek, Monday, June 3.*
.... The fish being disposed of, next came a supply of nardoo cake and water, until I was so full as to be unable to eat more; when Pitchery , allowing me a short time to recover myself, fetched a large bowl of the raw nardoo flour, mixed to a thin paste, a most insinuating article, and in that they appear to esteem a great delicacy....

*Friday, June, 14.*
.....King out for nardoo; brought in a good supply. Mr Burke and I at home pounding and cleaning the seed....

*Thursday, June, 10.*
.....We are now reduced to it alone, and we manage to get from four to five pounds per day between us....

*(The preceding article is reproduced, with thanks, from the June, 1993 issue of the Newsletter of the S.G.A.P. Fern Study Group.)*

## JUNE SPEAKER REPORT - (cont'd from p.76)

"Saturaid acts in two ways:
- it lowers the surface tension of water so that it penetrates soils and potting media.
- once the water has penetrated the soil surface "Saturaid" helps to retain it in the root zone.

A series of tests was shown to illustrate the effectiveness of the product. In two of these -

(1) A quantity of 250 ml of water was poured into each of two 15cm pots of dry potting mix, one of which had been treated with "Saturaid". The untreated mix allowed 178 ml to pass through; the treated one retained all but 10 ml.
(2) Plants in treated and untreated media were grown with identical watering procedures for a period. Then all were thoroughly soaked by immersion and allowed to stand. The plants in the untreated media began to wilt after four days while those with "Saturaid" remained healthy and firm.

"Saturaid" can be applied as a top dressing or by mixing with the medium, when its effect is more rapid. Application rate when mixed into the medium is 1.5 grams per litre and it stays effective for approximately eight months, depending on frequency of watering. As a top dressing it is applied at 30-40 grams per square metre.

Although the soil wetting agent increases the uptake of water by the medium in a pot it actually increases its air-filled porosity. This is because the lowered surface tension of the water allows the quantity that is normally held in a saturated layer at the bottom of the pot to drain away freely, thus increasing the volume of the mix available to the plant.

Simon gave a copy of this and another video to the Society; they will be available through the Library in due course. The second will be reviewed in the next issue of the Newsletter.

President Barry White commented that potting mixes and aids to their use are of vital interest to fern growers and thanked Simon for his presentation. Members present endorsed his remarks with acclamation.

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## FERTILIZERS - (cont'd from p.79)

Q. How about foliar feeding, particularly staghorns?

A. You have to be careful with foliar feeding to be sure that the nutrients are in a form that is immediately available to the plant. A lot of the foliage fertilizers use urea which is almost totally unavailable in the short term that it is resident on the foliage. Be sure to use light feedings to avoid burning. One of the problems with trace elements is that the pH of our soil and water is too high for the plants to make use of the trace elements in the fertilizer. Some of the foliar sprays avoid this problem by putting trace elements into the spray in a chelated form to be immediately available to the plants. If you have plants that are yellow instead of green, spraying with foliar fertilizer with chelated iron in it may correct the problem.

## NEW LIBRARY BOOK

The following book has been added to the Society's library:

"Flora of Victoria", Volume 1, edited by D.B.Foreman and N.G.Walsh, 320 pages, published by Inkata Press.

This is the first of four volumes and is an introduction to the subsequent volumes which will cover the 4,000 plus individual species of vascular plants in Victoria. The ferns will be covered in Volume 2.

Volume 1 draws together the work of specialists in many different fields. It gives an overview of the diverse plant communities in Victoria and the key environmental factors such as climate, geology, soils, fire and exotic plants that influence plant growth and distribution. Other chapters provide details of prehistoric flora, botanical exploration of the State, use of plants by Koories, and rare and threatened plants. It is an excellent reference work for anyone seeking background information on the flora of Victoria.

Library books may be borrowed at the monthly meetings and returned at the next meeting. The borrowing fee is 20 cents per book.

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## JULY FERN COMPETITION

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

| | | |
|---|---|---|
| First: | John Hodges | *Blechnum fluviatile* |
| Second: | Barry White | " *moorei* |
| Third: | Jack Barrett | " *spicant* |

The draw for the exhibitors' fern prize was won by John Hodges.

## SPECIAL EFFORT WINNERS

### July General Meeting

Lexie Hesketh

John Hodges

Jean Trudgeon (2)

Margaret Radley

Fran Harrison

Peter Bostock

* * * * *



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

# BUYERS' GUIDE TO NURSERIES

## VICTORIA:

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

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

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

Fern Acres Nursery - Retail. Kinglake West, 3757. (On main road, opposite Kinglake West Primary School). Ph: (057) 86 5481.
Specialising in Stags, Elks and Bird's-nest Ferns.

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

R. & M. Fletcher's Fern Nursery - Retail.
62 Walker Road, Seville, 3139. Ph: (059) 64 4680.
(Look for sign on Warburton Highway, 300m east of Seville shopping centre). Closed Tuesday, except on public holidays.

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

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 - Retail.
5 Seaview Street, Mt. Kuring-gai, 2080. Ph: (02) 457 9168.

## 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.