ASSOCIATION of

# S.G.A.P. Fern Study Group

## Newsletter Number 65

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LEADER: Peter Hind, 41 Miller Street, Mount Druitt, 2770

SECRETARY: Moreen Woollett, 3 Currawang Place, Como West, 2226

TREASURER: Joan Moore, 2 Gannet Street, Gladesville, 2111

SPORE BANK: Dulcie Buddee, 4 Leigh Street, Merrylands, 2160

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### FERNS FOR SALE

Last year Sydney members bought several trays of fern sporelings, potted them up, tendered them for six months and in September, sold them at the North Rocks Great Garden Show. Stocks not sold that day were subsequently sold as job lots to SGAP-Central Coast and SGAP-Blue Mountains District Groups. The Groups in turn, retailed the ferns at Spring Exhibitions in their areas.

It is hoped to repeat the 1993 successful venture in 1995. Meanwhile, Central Coast Group has asked whether we can support their participation in the Annual Spring Festival at Kariong from 8 to 11 September 1994. It has been decided that we cannot undertake to stage a fern exhibit at the Festival. However, given the interest that the Central Coast Group has expressed in promoting fern sales, it has been decided to ask individual local members of our Group to make ferns available for sale. Several members present at the meeting offered to donate ferns to our Group so that they could be sold by the Central Coast Group. Further donations are needed. It would help with planning, preparation of labels, etc., if you advised Moreen (02) 528 4881 or Ted Newman (02) 651 2765 of particulars of the ferns that you are able to supply. Ted and Pat have agreed to allow us to use their property as the dispatch point of ferns that members have available for sale. Arrangements need to be made to deliver the ferns to their property at 1057 Old Northern Road, Dural, during the period from 1st to 5th September 1994. Again, if you have some difficulty with delivery, please discuss the matter with Moreen or Ted.

### MICROSORUM SPECIES - M.superficiale & M. punctatum

In the March 1994 Newsletter, our South Eastern Queensland Group sought a comment from the Leader regarding a proposal that Microsorum punctatum and M. superficiale be grouped under the one species. Peter has commented as follows:

In the wild, even though these two species do overlap in their distribution, each has a separate habitat preference. He has not observed any hybrids. M. superficiale seems to have an altitudinal tolerance, while M. punctatum prefers coastal regions and may even be found growing on sand dunes and rocks.

In "Australian Ferns & Fern Allies" by Jones & Clemesha, it is mentioned that M. superficiale is distinct from overseas populations. Its distribution is given as "Northern Queensland, confined to tropical areas and extending to the ranges and tablelands, at least to 1200 m altitude. In respect to M. punctatum, its distribution is stated as "North-eastern Queensland, commonest on the coast but extending to the ranges and tablelands."

Still calling on information contained in "Australian Ferns & Fern Allies", M. punctatum is said to have leathery, pale fronds with rounded or blunt apices" and M. superficiale is described as having "thin textured (bright green) fronds with pointed apices". The difference in the appearance of the two ferns as recognised by Jones & Clemesha, is illustrated in the drawings shown below - these have been copied from "Australian Ferns & Fern Allies".

In cultivation both ferns are easy to grow in a coarse mixture in a basket or large pot or in the ground. When grown out of doors, be reminded that good drainage is important. It does best on rocks or logs partly submerged in the ground. Both are said to grow as far south as Melbourne, certainly a number of Sydney members have them in their collections. From remarks heard, it seems that both species tolerate a lot of light and M. punctatum is not averse to being in quite sunny positions provided moisture is maintained.

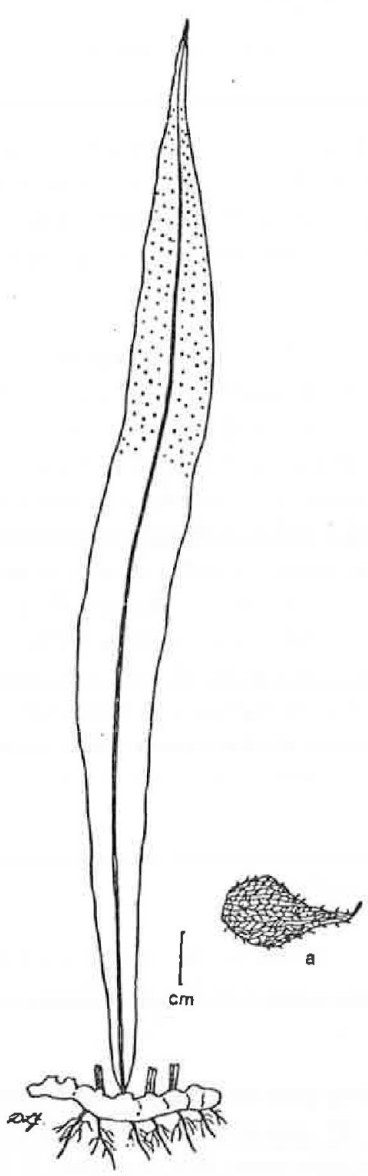


Fig 230 MICROSORUM SUPERFICIALE VAR AUSTRALIENSE X⅔ a) Scale x10

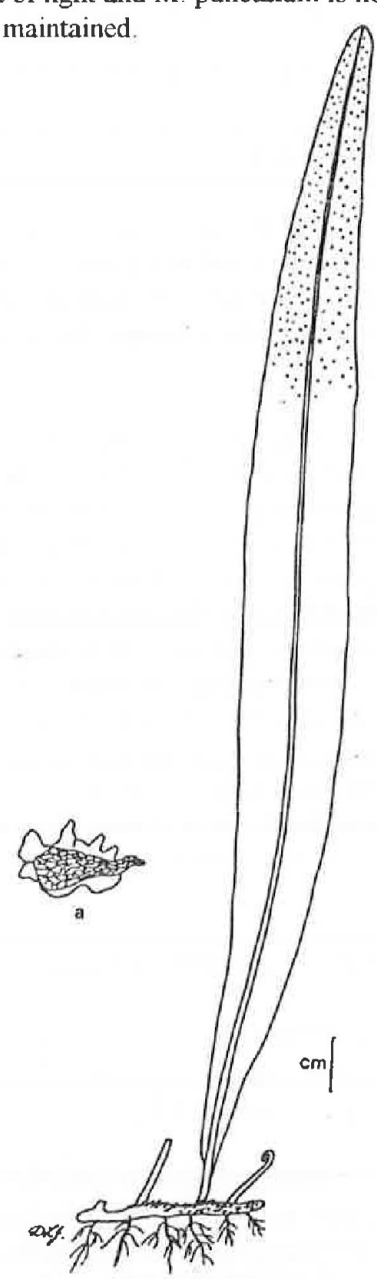


Fig 227 MICROSORUM PUNCTATUM X⅔ a) Scale x7

## THE BASICS OF FERN NUTRITION

This article is based on one of the chapters in "Encyclopaedia of Ferns" by David L. Jones published by Lothian. The "Encyclopaedia"should be essential reading for all growers of ferns.

Ferns like all other plants must extract nutrients from the soil so that they can grow and reproduce. These nutrients or elements are present in the soil in various chemical forms and are taken up through the roots of the fern. They are essential for normal growth and development and though some are needed in large quantities (the major elements) others are only required in small amounts (the minor or trace elements).

As well as nutrients, ferns also need carbon dioxide, water and oxygen. Carbon dioxide is taken in from the air through the small pores in the fronds called stomata. Inside the frond it is converted by the process of photosynthesis into sugars, using the energy of the sun. Water and oxygen, which are vital for fern growth, are taken in through the roots.

Carbon Dioxide Enhancement: Carbon dioxide is present in the atmosphere as about 0.033% of air. This is adequate for normal plant growth outside, but carbon dioxide can sometimes be deficient in greenhouses where ventilation is inadequate, or when cold weather necessitates them being closed. The enrichment of the atmosphere of a greenhouse to about 0.1% can actually promote growth. This enrichment is carried out by injecting carbon dioxide gas directly into the atmosphere or by burning materials which release carbon dioxide, e.g., natural gas.

Nutrients in the Soil: Healthy ferns need a balanced supply of all of the major and minor elements. If only one is in short supply, growth will be reduced or malformed, despite an abundance of all the others. Most soils provide these elements in sufficient quantity for normal growth. Sometimes, however, they become short and we have to boost the levels present by the addition of manures or fertilizers. Sometimes an imbalance exists between different elements which disrupts growth and this is much more difficult to correct. Strangely, although an element may be present in abundance in the soil, it may not be in a form available for plant growth. This is usually related to the acidity or alkalinity of the soil. Water logging can also change the availability of elements to plants.

A rich soil promotes good growth because it has an abundance of elements present in forms which can readily be taken up by fern roots. This is particularly true of nitrogen which is required in good quantities for all plant growth. Soil reserves may be depleted by cropping, by the strong growth of grasses or weeds or by leaching following heavy rains. When soil reserves of nutrient are reduced, plant growth suffers. Normal growth resumes following the application of sufficient quantities of fertilizers or manures. Balanced applications are necessary since all plants grow better if a balance of nutrients is available to them, rather than if there is an excess of one particular element.

Acidity or Alkalinity: The acidity or alkalinity of a soil is extremely important since it critically affects the growth of ferns for the following reasons:

1. Ferns have acidity or alkalinity preferences. Many ferns prefer to grow in acid soils, but there are a large number of species which will not tolerate such soils and will linger and die in them.
2. Extremes of acidity or alkalinity can influence the availability of some of the nutrients. Thus in very alkaline soils, iron and zinc may be unavailable to ferns for growth, resulting in deficiency symptoms, and in very acid soils, manganese and aluminium may reach levels which are very toxic.

## BOOK REVIEW

"A World of Ferns" by Camus, Jermy and Thomas

Contributed by Peter Hind

This is indeed a fitting publication for the Centenary of the British Pteridological Society. It shows the wealth and variation in ferns and their habitats photographically and is accompanied by a well informed accurate text written in a way that is easy to read and understand.

Chapters deal with Natural History with many illustrations of fossils, some of which are of species still alive today. Further chapters are arranged in climatic and ecological zones, e.g., Temperate Zone, Wetlands. Unfortunate wording on page 32 in the Tropical Forests chapter gives the impression that Australia has cleared all its lowland forests. This is not completely true yet and we hope it never will be.

There are even ferns to be found in the arid zone, e.g., Cheilanthes and Marsilea. A chapter on Myths and Modern Uses of Ferns is followed be the final chapter dealing with Ferns in Home and Garden.

In all an excellent book. The only thing I don't like about it, and my wife agrees with this, is the cover illustration, it is cold and frosty, or is it just a faded slide.

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Ed:
The book may be obtained from Intercept Ltd, P.O. Box 716, Andover, Hants, SP10 1YG, England for 17.45 pounds which includes postage, or try your local book store - The Royal Botanic Gardens Book Shop, Mrs Macquaries Road, Sydney, 2000, has stocks at $34.95 each.

## NOTES FROM MID NORTH COAST, N.S.W.

Report on Outing to Washpool National Park

Contributed by Steve Clemesha

On the 11- 13 March 1994 our Group camped at Washpool National Park. This park abuts Gibraltar Range National Park and the camping areas of both are less than 20 km from each other.

Washpool has been nominated for the world cultural & Natural Heritage List and on visiting it one does not wonder why .

An outstanding feature of the park is the undisturbed quality of the rainforests and the beautiful crystal clear water in the creeks whether you visit the area in a dry or rainy time. The water tastes as good as it looks.

Near the creeks large plants of Todea barbara grow. We saw 2 colonies of Tmesipteris truncata. One grew on a Todea and the other was several patches on the base of a tree with a few trunks. Epiphytic ferns were plentiful. We saw A. Asplenium australasicum, A.polyodon, A.flaccidum, Platycerium bifurcatum, Dictymia brownii, Microsorum scandens, Arthropteris tenella, A. beckleri, Pyrrosia rupestris and P. confluens grew in a fair few places as did Davallia pyxidata.

Conspicuous by their absence were the lowland ferns such as Platycerium superbum and Ophioglossum pendulum.

Asplenium flaccidum was a more plentiful than we have seen it in other areas. Some large plants were seen on trees near or overhanging the creeks. The only places we see this fern are in the mountains. It is not present on the coast or lower ranges.

We saw no plants of Microsorum diversifolium or Rumohra adiantiformis. The forests of the Washpool have a subtropical element and are not the cool Beech forests where the opposites grow.

Another fern we did not see at Washpool was Blechnum minus. It grows beside creeks in grass and low shrubland and in light shaded Eucalypt forests at Gibraltar Range but avoids the shaded rainforest environment of Washpool.

Blechnum nudum is plentiful at Gibraltar Range with B. minus. It also is plentiful at Washpool near creeks with Todea and sometimes Sticherus flabellatus. B.wattsii is common in rainforest of both areas.

Lastreopsis microsora and L. decomposita grew in rainforest or watered Eucalypt forest. In rainforest also were Arachniodes aristata and L. munita, L.acuminata grew in wet places near creeks.

The find of the day was a colony of Doodia aspera that has the ends of all fronds tasselled. We found a similar clone at Way Way Forest south of Macksville about 3 years ago. It continues to produce tasselled ends in cultivation.

I was given a plant of Doodia aspera that has lobed pinnae and looks bipinnate. This plant originally is from a South Queensland collection and I have not seen this form in the wild. Abnormal clones such as these occur very rarely.

In all we found 51 species at Washpool (see List). It had rained for part of each day for the previous 10 days before our visit. This was good for the ferns and forest generally and also encouraged a few leeches.

As we sat around our camp, tame little birds came right up to us. Bird experts camping there told us they are white browed scrub wrens.

## NOTES FROM SOUTH EASTERN QUEENSLAND

### Report on excursion to Palm Grove National Park Mt Tambourine, 17 April 1994

Contributed by Jan Glazebrook

Eleven members met at the Palm Grove Picnic Area. After morning tea we entered the rainforest area. At first this was dominated by large black bean trees and huge Sloanea woollsii. Further along we entered a near pure stand of bangalow palms from which the Park takes its name.

The denseness of the canopy meant that there were few plants on the forest floor. However, where some light reached the ground Doodea aspera, Adiantum formosum, Lastreopsis marginans and L. microsora were found. The prickly tree fern Cyathea leichhardtiana was in fair numbers but C.cooperii was not.

Some damp banks along the track were covered in Adiantum diaphanum and many young ferns. Microsorum scandens and Arthropteris tenella were seen climbing the trunks of the rainforest trees. Several large trees carried many epiphytic ferns and orchids. Among these were Platycerium bifurcatum aff. superbum, Asplenium australasicum, A. polyodon, Pyrrosia confluens and Davallia pyxidata.

Other ground ferns encountered along the track were Diplazium australe, Lastreopsis munita , Arachniodes aristata and Pteris tremula.

Near the lookout the canopy was much reduced and ferns requiring more sunlight began to appear. These were Blechnum cartilagineum, Pellaea falcata var nana, P.paradoxa, Doodia caudata, Lastreopsis decomposita, Adiantum hispidulum and Christella dentata.

We had a brief rest on a suitably long seat with a view over the coast. Around this open area we found Chielanthes sieberi, C.distans, Pteridium esculentum, Hypolepis punctata, Dryanaria rigidula and Culcita dubia (now Calochlaena dubia).

In all thirty three ferns were encountered on this very enjoyable walk.

Report on outing to Cunningham's Gap on Sunday 13 March, 1994.

Contributed by Merle Goadby

Twelve members and guests gathered for an outing at Cunningham's Gap in the Main Range to the South West of Brisbane. It was a beautiful day and we walked two short graded tracks. Firstly, we followed the Rainforest Circuit through rain forest on the northern side of the gap. We then followed the Box Forest track which follows West Gap Creek gradually downhill to the west and links the Crest car park with the picnic area.

The rain forest in the vicinity of the Gap is rich with epiphytes. These included Arthropteris tenella , Asplenium australasicum, A. polyodon, Davallia pyxidata, Dictymia brownii, Microsorum scandens, Platycerium bifurcatum, P. superbum, Pyrrosia confluens and P.rupertris also Asplenium attenuatum.

We were lucky that our trip occurred soon after good rains, whereas only a few weeks before the ferns were stressed and showing affects of drought conditions. As we strolled downhill, the ground layer was bright with red new fronds of Blechnum cartilagineum, Doodia aspera and Adiantum hispidulum, a very colourful sight indeed.

There was also a profusion of Adiantum formosum, Calochlaena dubia, Diaplazium assimile , Lastreopsis decomposita, L. marginans, L. microsora, L. munita and Pellaea falcata. Adiantum aethopicum appeared closer to the picnic area.

Arachniodes aristata and Doodia caudata and new fronds of Pteris tremula and Adiantum diaphanum were also present. In sheltered gullies a few species seemed to have small new fronds just emerging after the return of good conditions. These included a specimen of Asplenium flabellifolium, Doodia caudata var. laminosa and Polystichum fallax in the open forest. Peter found Microtrichomanes vitiense within the buttresses of a carabeen (Sloanea woollsii) and one creek gully contained some nice Pteris umbrosa. We were surprised to see in the eucalypt forest some specimens of Dictymia brownii apparently thriving at the base of trees possibly having fallen from upper limbs . Thirty two fern species were found.

## NOTES FROM THE SYDNEY AREA

### Report on Meeting at Mt Druitt, 20 March 1994

The genus Colysis was focus of attention, Peter telling us that there were 30 species world-wide, two in Australia, North East Queensland ferns C.sayeri and C.ampla. These ferns are not likely to be confused with any others except Microsorum species which are easily separated because of their round sori - the sori in Colysis species are elongated along the veins. Peter had both Colysis species in his collection but the sori on each was sparse. Without the evidence of sori we readily agreed that C. sayeri and Microsorum scandens looked remarkably similar despite alleged differences in venation. Fortunately, as Peter explained, the distributions of these two ferns do not overlap in nature.
Both Colysis species need to be grown in a coarse mixture (Peter uses a lot of pine bark), and require shady, moist conditions. C. sayeri is the easier to grow in Sydney; Peter said that he keeps his C. ampla in the glass house in order to provide the necessary humidity for its large fronds.

Roy Duncan presented "A Members Fern", actually two ferns, telling us of Psilotum nudum and P. complanatum and illustrating his talk by reference to two fine specimens of these which he had brought to the meeting. P.complanatum was growing out of a large basket of Drynaria rigidula. Roy said he bought this in a 4" pot at a SGAP Exhibition at Castle Hill about 6 years ago. When purchased, Roy said the Psilotum was growing out of the top of the pot. Last year, when P. complanatum emerged from the bottom of the pot, Roy said that he drilled more holes in the pot and this year the Psilotum with its flat, pendulous fronds, obliged by growing out from most of these holes in the base of the pot. Although there had been quite a lot of spore no sporelings have ever come up in the Duncan garden.

Psilotum nudum, Roy told us, is more prevalent than the other species. Roy mentioned seeing P. nudum on Lord Howe Island growing variously out of the ground, on rocks and trees. His ferns take frost although the older fronds turn yellow. New fronds last about three years. Sporelings have often volunteered in pots with other plants. Last year 6 or 7 emerged both in the top and out of the bottom of pots that have Hoyas growing in them. Strangely, none of these new sporelings appeared in pots adjacent to the parent plant, all were several metres away. The plants have been hardy in cultivation and have withstood dry conditions. Fertiliser consists of 6 monthly applications of fish emulsion and just, occasionally, slow release fertiliser.

The day concluded with a giant raffle thanks to the generous donation of ferns by Bea and Roy Duncan, Rose Bach and Peter. Our thanks are also extended to our hosts for the day, Peter and Margaret.

NB. Roy reports having a mishap with his Psilotum nudum on the return journey home, because of this Roy had to repot, so divided it in to six pots (It's an ill wind .....) , He then decided to repot his Hoyas to separate the Psilotum nudum. Lucky person 6 more pots! We wish you every success Roy and we look forward to seeing them look as great as the original.

### Report on Outing to Fox Ground, 16 April 1994

Ann & Geoff Long indulged us by allowing this visit to their recently acquired property, a hectare of choice temperate rainforest complete with its own little stream, situated just to the leeward side of Mount Saddleback, and containing a brilliantly designed cabin nestled into the edge of the block and almost indistinguishable from its leafy surroundings. On the short walk along the route of the path that Geoff intends to make!! The following 25 different fern species were identified: Adiantum diaphanum, A. hispidulum, Arthropteris beckleri, A. tenella, Asplenium australasicum, A. flabellifolium, Blechnum cartilagineum, B. nudum, B. patersonii, Calochlaena dubia, Cyathea australis, C. leichhardtiana, Davallia pyxidata, Diplazium australe, Doodia aspera, Hypolepis glandulifera, H. muelleri,

Lastreopsis decomposita, Microsorum scandens, Pteris umbrosa, Pteridium esculentum, Pyrrosia rupestris, Sticherus tener, Todea barbara.

Report on Meeting at Epping, 21 May 1994

Fourteen members attended on this cool but fine day. In the absence of our Leader, a back to basics sessions was led by our day's host, Rose Bach, who told us how to identify all the Blechnum species which are local to the Sydney region. Rose illustrated the talk by reference to ferns from her very impressive collection. Points to emerge included a claim heard by Rose that Blechnum nudum grown in a shallow pot, is likely to form a trunk with young ferns emerging and growing from the trunk base. Blechnum nudum spores sporadically, March, August. Crickets often cause damage to ferns, sometimes virtually severing fronds - remedy suggested by Pat, use a cricket bat! Apart from the tough, gristly feel of its fronds and the fact that both sterile and fertile fronds are similar, another distinguishing feature of Blechnum cartilagineum, is that its basal pair of pinnules are often turned down towards the ground at an angle of about 45 degrees to its stipe. Rose reported that she had seen excellent plants of Blechnun gregsonii, B. wattsii and B. ambiguum growing close together at Centennial Glen, Blackheath. Blechnum minus is fairly distinctive because of its widely spaced pinnules which are greatly reduced in size towards the base of the frond.

Perhaps the highlight of the day was seeing the success that Rose has achieved growing Leptopteris fraseri from spore - many small plants are apparently thriving behind glass in a cool part of one of Rose's several shade houses.

A VISITOR FROM SOUTH AFRICA

Following a phone call, Moreen agreed to send a small quantity of spore to South Africa. This was achieved thanks to the help of Dulcie and Spore Bank. Subsequently, the cost of postage arrived together with a letter, part of which is printed below.

"I am visiting the Royal Prince Alfred Hospital to study "Sleep". Back home I am a Medical Technologist testing and helping people with pulmonary disease. I am also a member of the Botanical Society of South Africa. In Bloemfontein it is very cold in winter or very dry, so we are using hothouses to grow most of the plants from other areas. The three main types I grow are orchids, cycads and ferns, N.B., only natural forms. Australian plants are very hard to get in South Africa and those we have, we treat like gold. My visit to the Sydney Botanical Gardens was also very pleasant - I was very impressed by some ferns and on a closer look the note reads "common in that or that area". Well, for me they are still very beautiful!

I am not sure how good the Australian spore of ferns will do in our laboratory, But I hope it will do well, I will keep you informed. If any of you ever visit South Africa, you should go to Kirstenbosch Botanical Garden in Capetown.

(signed) Ernst Vermaak."

SPORE BANK

Thank you to those who have donated spore to our Spore Bank recently, we need more regular donors, in order to maintain a good supply of fresh spore. Donations of fern spore are always greatly appreciated and remember there is usually sufficient spore on one ripe fertile pinnule to grow hundreds of sporelings. If you wish to obtain spore, contact Dulcie Buddee at 4 Leigh Street, Merrylands. Simply send a list of the fern spore that you are seeking, together with a couple of second preferences in case the species that you are requesting is not held at the time, plus a stamped self addressed envelope.

## FORTHCOMING EVENTS

### IN THE MID NORTH COAST N.S.W.

For details about forthcoming events contact Charlie Charters, phone (065) 85 6296

### IN SOUTH EASTERN QUEENSLAND

Sunday 24 July 1994, Outing to Mt Nebo.
For further particulars concerning this excursion phone Irene Cullen (07) 273 1055.

### IN THE SYDNEY REGION

Sunday 19 June 1994, Outing to Wattagans
We plan to meet at the home of Bea and Roy Duncan at 167 Freemans Road, Morisset, at 9.45 am (or as early as you like, according to Roy) ready to head for the Mountains at 10 o'clock sharp. From Hornsby it takes just one hour to reach the Morisset turn off the Freeway, drive towards Morisset, turn left at the roundabout into Freemans Road, past the two caravan parks, cross the bridge and Number 167 is the second driveway on the left. Roy's plan is that we complete the Waterfall Creek Walk first, then after lunch at the cars, drive to the Moss Wall where the Vittaria elongata is said to be looking good. Enquires to the Duncans (049) 771 482.

Saturday 16 July 1994, Meeting at Dural
Meet from 12 noon at the home of Pat Kenyon and Ted Newman, 1057 Old Northern Road, Dural. Enter from private road 2 km from Dural Post Office (the last street passed on the left is Wyoming Road). Please bring a plate for afternoon tea. "A Members Fern" will be given by Dulcie Buddee, while the Study Session will be on Doodia's that are local to the Sydney area. Enquiries to Pat 651 2765.

Sunday 21 August 1994, Outing to Mt Wilson.
Meet at 9.30 at Park opposite the Cathedral of Ferns ready for 10 am short drive to beginning of walk to Happy Valley along Rose's track. Lunch at cars. Enquiries to Rose 869 1692.

Saturday 17 September 1994, Meeting at Blacktown
Meet from 12 noon at the home of Tess and Les Taylor, 4 Prospect Street, Blacktown.. During the Study Session commencing at I o'clock, Peter will conclude his discourse on the genus Doodia.

## SUBSCRIPTIONS OVERDUE

The annual subscription for the 1994 calendar year was due in January. An "X" appearing in the space opposite means that our records show that your subscription has not been received. We value your membership but this will be the last Newsletter we send to you pending payment.

## DEADLINE FOR COPY

Articles and information for our Newsletter are always needed and much appreciated. Items for the September issue should be received by the Secretary by no later than 15 August 1994.

# A.S.G.A.P. FERN STUDY GROUP

## Statement of Receipts & Payments for the Year 1993 ($)

| Receipts | | 1992 |
|---|---|---|
| Membership Subscriptions | 561 | 598 |
| Donations | 133 | 172 |
| Donation to Burrendong Arboretum | - | 50 |
| Interest Received | 45 | 74 |
| Sydney Members Raffles - Net Proceeds | 66 | 36 |
| Sale of Ferns - North Rocks - Net Proceeds | 543 | - |
| Recoup 1992 Purchases of Fern Sporelings | 200 | - |
| Total Receipts | 1548 | 930 |

| Payments | | |
|---|---|---|
| Postage of Newsletters | 296 | 314 |
| Purchase of Fernlings for Re-sale | - | 200 |
| Paper & Printing for Newletters | 66 | 139 |
| Donation to Burrendong Arboretum | 500 | 50 |
| Donation to North East Forest Alliance | 50 | - |
| Stationery | 63 | 44 |
| Postage of Correspondence | 33 | 26 |
| Bank Charges & Money Orders | 14 | 13 |
| Expenses of Book - to be published | 20 | |
| Total Payments | 1042 | 786 |
| Surplus for Year | 506 | 144 |

### SUMMARY

| | |
|---|---|
| Cash at Bank 1.12. 92 | $1956.38 |
| Add Surplus for year | 506.12 |
| Balance at 30.11.93 | $2,462.50 |

The above financial statement was prepared by the Treasurer Joan Moore. Thank you Joan for looking after our funds so capably.

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3 JUN 1994
FORTITUDE VALLEY