ASSOCIATION OF

S.G.A.P. Fern Study Group

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This our first Newsletter for 1989 is notable, firstly, because we have changed paper size from foolscap to what is called A4. It seems that the world has decided that A4 size should be the standard for commercial purposes. We are not sure why A4 was adopted as the standard, perhaps members who have been associated with the printing industry, someone such as our very knowledgeable Ray Best, would understand the rationale for the change. Anyway most organizations in Australia changed to A4 paper about 10 years ago and "progress" has now overtaken our Group. The effect of the change to A4 is that foolscap paper is becoming relatively more expensive and less available The change will our Printer and also make set-up for copying easier.

The second and more noteworthy item is that we have been able to include an article by Ross Scott of Kenilworth of Queensland. Ross has captured in the article a lot of interesting information in a lively and entertaining way. Our sincere thanks Ross, for sharing your experiences with us. In the article Ross refers to Asplenium harmanii which has just recently been described by David Jones. Coincidentally in this Newsletter we have included part of the David Jones description of A.harmanii. Our thanks to Gwen Harden of the Royal Botanic Gardens for drawing attention to the David Jones article.

Now we share with members part of Ross Scott's letter:
"I have always believed that members should support the Newsletter by sending in articles and the reminders in the last two issues have brought action from me, and I hope, others as well.
Asplenium harmanii has been written up in non-technical language as I think the majority of our members would prefer it that way. Also I am quoting from memory and the simpler the description, the less likely it is for errors to creep in.
In writing about the Antrophyum I have used an idea that just came to mind out of the blue. I imagine that a lot of our members, because of age, distance or family ties, will never tread the many fascinating tracks of our National Parks. So I wrote in a way that would let them catch the spirit of adventure and imagine themselves taking part in the walk that discovered something new. I do not know if the title is a little ambiguous, but a fern that is 1200km away from its nearest relative, could, I think, be regarded as having strayed from its own backyard!

THE FERN THAT STRAYED Contributed by Ross Scott

The Lamington National Park which covers some of the highest portions of the ranges on the Queensland -New South Wales border, must always be on the visiting list of any enthusiastic member of the fern fraternity. David Attenborough described the rainforest of the area as the most 'visible' of any that he had seen. He went on to say that as the area does not have quite the lush growth nor the vast number of species of the Malaysian jungle, it is possible to see more during a walk in the forest.

A striking botanical change occurs at the 1100m point on the Main Border Track, where within a distance of about 50m the vegetation changes from sub-tropical to cool temperate rainforest. There does not seem to be any visible reason why a section of warm temperate rainforest is missing. The change is quite dramatic.

The area has produced a number of species of shrubs, orchids and ferns that grow nowhere else. Nearly 80 species of ferns have been catalogued so far and the latest new species takes its place alongside Asplenium nidus and A.australasicum. The existence of a different "birds nesr" fern in this area has been known for at least 10 years but any invitation to the exper's to come up and look at it, aroused no enthusiasm at all.

Now , thanks to David Jones, Asplenium harmanii has been described and put in its rightful place. It is a lithophyte, ignoring tree trunks and fallen logs, has great adaptability, growing in rainforest, wet or dry sclerophyll and bare, but shaded cliff faces. The growth pattern set it apart from A.australasicum, having most of the fronds in an upright position, with those approaching the horizontal falling in a sweeping curve.

The fronds can be up to 1.5m long and are usually half the width of A. australasicum, with the rachis differing in one important respect. Underneath it has the common sharp V-shaped rachis but the top 2/3rds ending at the apex is not only flat, it is flush with the surface of the frond. Variation in leaf width is often noted and the general rule seems to be the higher the rainfall, the wider the leaf. This observation seemed quite accurate until four sporelings of much the same age were checked. They grew underneath a large specimen, presumably their parent, in the 2500mm rainfall zone. Their fronds were 25cm long and their widths-all different-varied from 4cm to 1cm. Fronds of the same age were compared.

This species occasionally produces offsets.

Interesting as A. harmanii is, the most fascinating fern of all is found, not on the mountain top in the mist zone, but down in the valley where the creek decorates the cascades and waterfalls. There no wind penetrates and the humidity nourishes the Tmesipteris, Pteris comans, Lycopodium myrtifolium, Dicksonia youngiae and other interesting species.

As we travel down the slope through the rainforest, it is quite interesting to observe the relationship between altitude and some ferns. The six common Lastreopsis species grow below 1000m. Above that is the home of Lastreopsis sylvestris, with its blue-green fronds and ginger hairs on the stipe and veins. The first Staghorn (Platycerium superbum) is seen at the 900m mark while its close relative the Elkhorn (P. bifercatum) grows on the Hoop Pines at a slightly higher altitude in great profusion.

At one point where a small soak tinkles down the rock face,is a tree with a crows nest fern (A. australasicum) 7m up the trunk. Should we be passing here in July or August, the tail of an Albert Lyre Bird will be seen hanging out through the fronds. This mother has a strongly developed

survival instinct- no dingo is going to breakfast on her chick!

We are about 500 metres down when a scattering of Polystichums appear. Their glossy fronds are always a bright spot in the rain forest. A quick check of the stipe reveals two different types of scale. It is a pleasure to make the acquaintance of P.fallax. It is regarded as a fairly rare fern but where it grows in this area it would be called "locally common".

The creek is not very far down the slope and we go round a rock and past a tree with two crows nest ferns just above the buttresses at the base of the tree. Between the buttresses are four baby " crows nest" ferns, most likely grown from spores from the plants above. These are of no interest and our attention moves on, but some instinct makes the eyes focus again on those four small plants - their fronds are about 7 cm long, each plant having five fronds.

They are dull grey-green in colour not glossy bright green. The fronds are growing in a fan shape group not in a rosette. They grow from a short creepng rhizome which has close packed knobs on it where old stipes have dropped off. It is clear that these are not Aspleniums . The back of the frond is examined for sori. These appear to follow the veins which grow almost parallel to the mid rib. The sori are a series of undulating lines, a bit like a child's attempt to draw a straight line freehand. It is these that finally decide the identity of the ferns. It is quite a shock to realise that we are looking at a family group of Antrophyum, probably a new species.

Members of the genus Antrophyum or Ox Tongue Fern are known as a purely tropical species and the finding of these southern specimens gives us food for much speculation. They bear close similarity to Antrophyum subfalcatum but the nearest members of that species are 1200 km away in North Queensland. No other specimens have been found in the vicinity of these rarities, but when we look at the 19,000 hectares of rain forest in Lamington National Park, mostly untrodden, there could be more.

These fascinating specimens give further proof to the old maxim - "There is always something new in the bush".

REPORT FROM SOUTH EASTERN QUEENSLAND.

Activities for 1989 commenced with a get-together of members at the home of Irene and Russell Cullen at Rochedale in a back to basics day, discussion centred on potting mixes. Cliff Ritchie related having almost lost much of his wonderful collection, through it is believed, having used fowl manure as an extra to his potting mix. It seems that the problem arose not directly from the fowl manure, but from borers secreted in the wood shavings which were picked up with the manure. Cliff's potting mix now is based on coarse clinkers froma powerhouse. The clinkers are washed and put through a 1/8" sieve. The mixture is as follows (use a 10 litre plastic bucket) 3 buckets of coarse clinkers, 2 buckets of leaf mould and 1 cup of blood and bone. According to reports from the meeting, the Ritchie potting mixture produces outstanding ferns, especially noteworthy being several epiphytic Aspleniums and Davallias. Incidentally Cliff uses the fine washed ash from the clinkers to raise sporelings.

ANOTHER NEW FERN

The following extract taken from "Austrobaileyiana" probably means that in future we will have to look more closely at the Birds Nest ferns.

The newly described fern Asplenium harmanii has been written up by David Jones in a paper titled "New Ferns From Northern Australia". David has written that the fern is so far only known from above 1,000m altitude in the McPherson Range but that it is probably more wide spread. The article said that it is common in parts of Lamington National Park and extends into New South Wales as the author has seen living material in the Border Ranges National Park. Its habitat is on basalt rocks, boulders and cliff faces close to or on escarpments in rainforests.

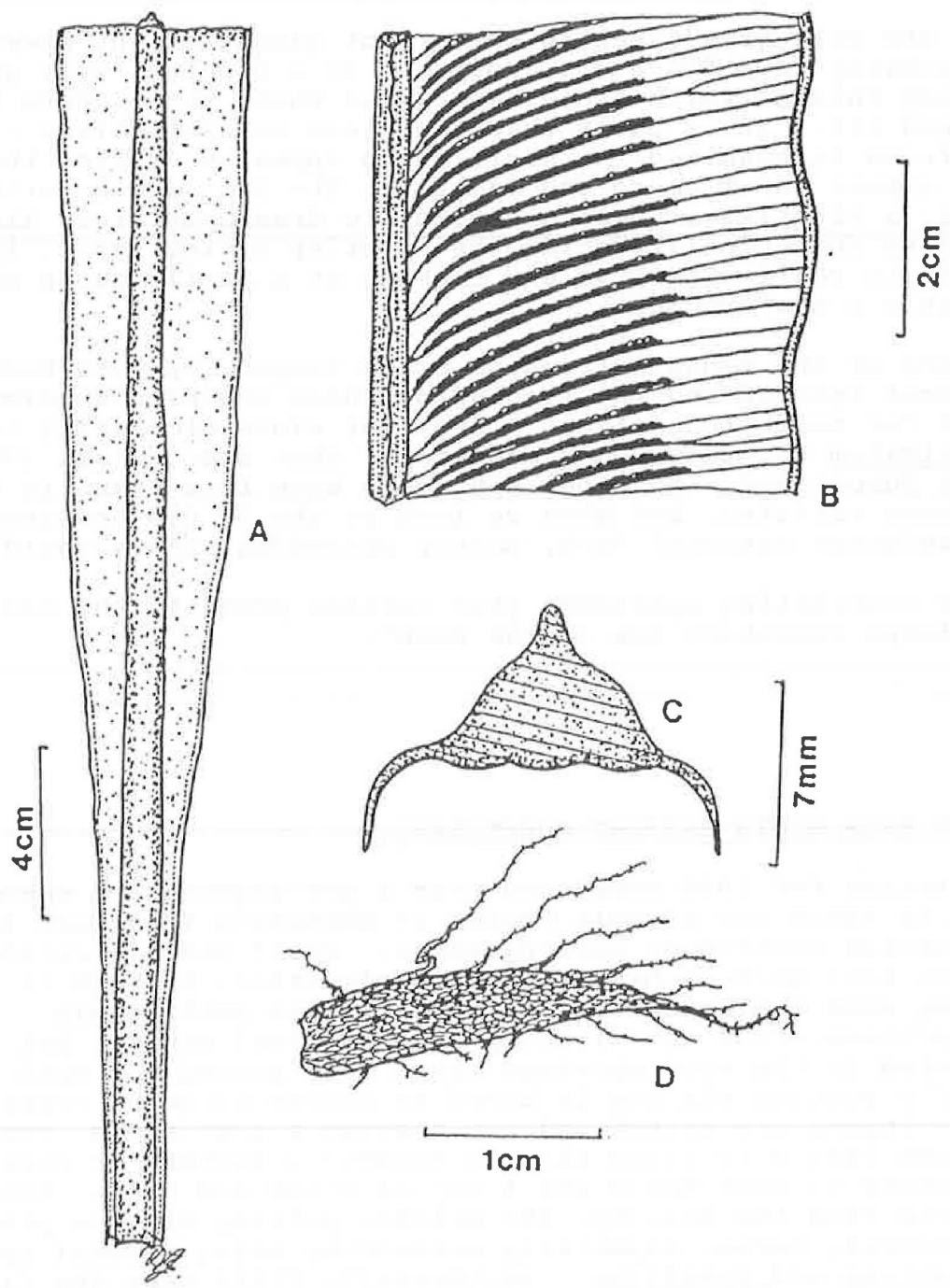


Fig. 4. *Asplenium harmanii*: A. base of frond showing tapered margins. B. section of fertile frond. C. T.S. through frond near base. D. rhizome scale. A,B,C,D Jones 2481 & Harman.

Notes: *A. harmanii* has obvious close affinities with *A. australasicum* but can be distinguished immediately by the long-tapered, narrow, wing-like base to the fronds (the margins are parallel and suddenly incurved in *A. australasicum*), the adaxial surface of the midrib being more acute and with a green, sinuous, wing-like keel and the stiffly erect, dark green fronds which form an untidy rosette in contrast to the neat, radiating, yellow-green rosette of *A. australasicum*. Holttum (1974) has drawn attention to the importance of growth habit in this group of ferns. With its erect fronds arising at various points in the clump, *A. harmanii* is much less efficient at trapping falling debris than is the radiating rosette of *A. australasicum*, the fronds of which are produced almost in a circle. The presence of more than one growth apex on the rhizomes of *A. harmanii* is a significant habit absent from *A. australasicum* in which the rhizome never branches and the fronds arise in a single spiral from the outside of the growing apex. Lateral branching is only obvious on old plants of *A. harmanii* and observations suggest that

Fern Allies and Oddities

The following material relating to Isoetaceae was extracted from information obtained from Meadowbank Technical College. This is the third part in a series on fern allies which is being included in our Newsletter.

ISOETACEAE

Example: Isoetes drummondii

*This fern ally looks more like a reed than a fern, with small quill-like leaves.

* It is semi-aquatic, found growing in swamps.

* The sporangia are embedded in the base of the leaves.

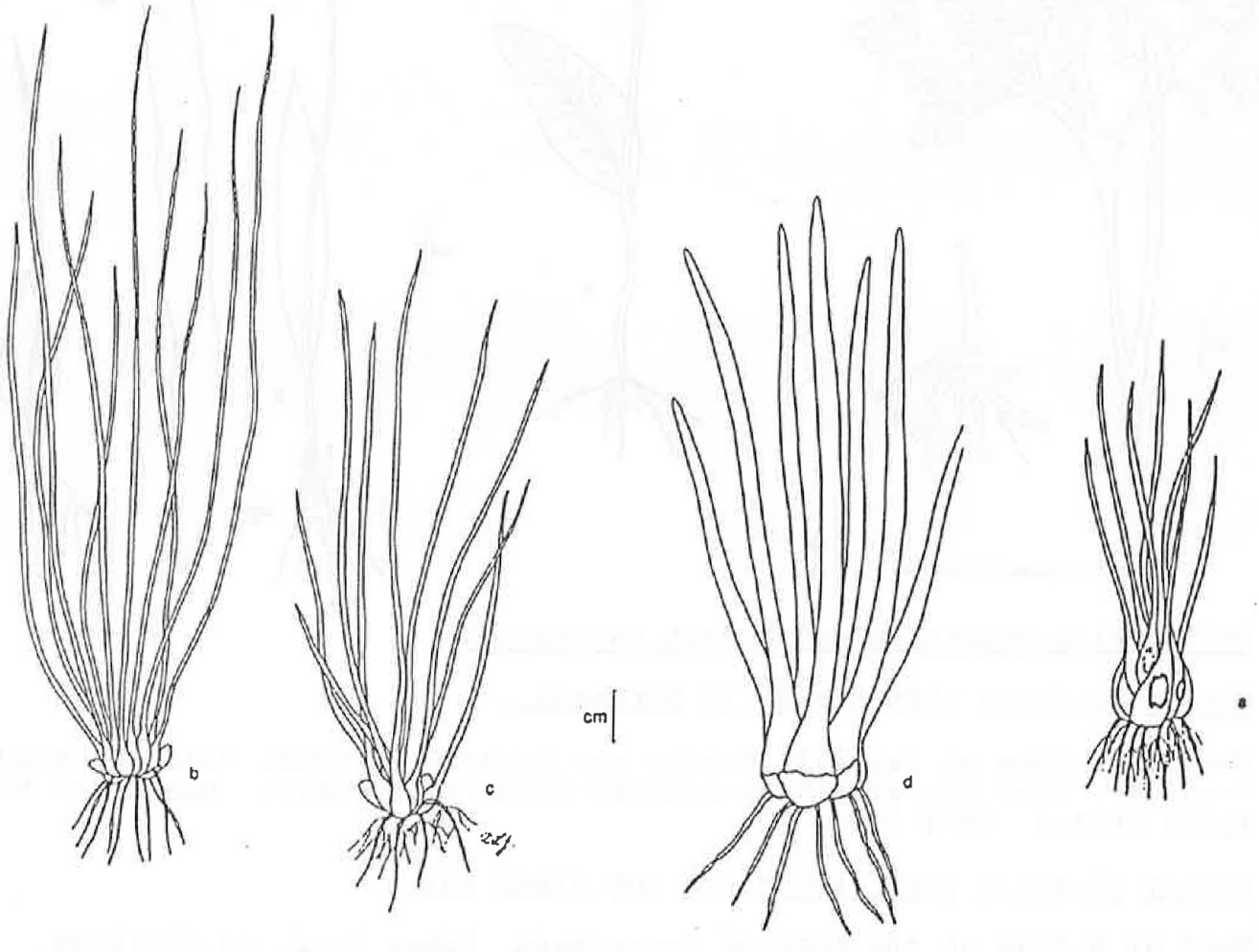


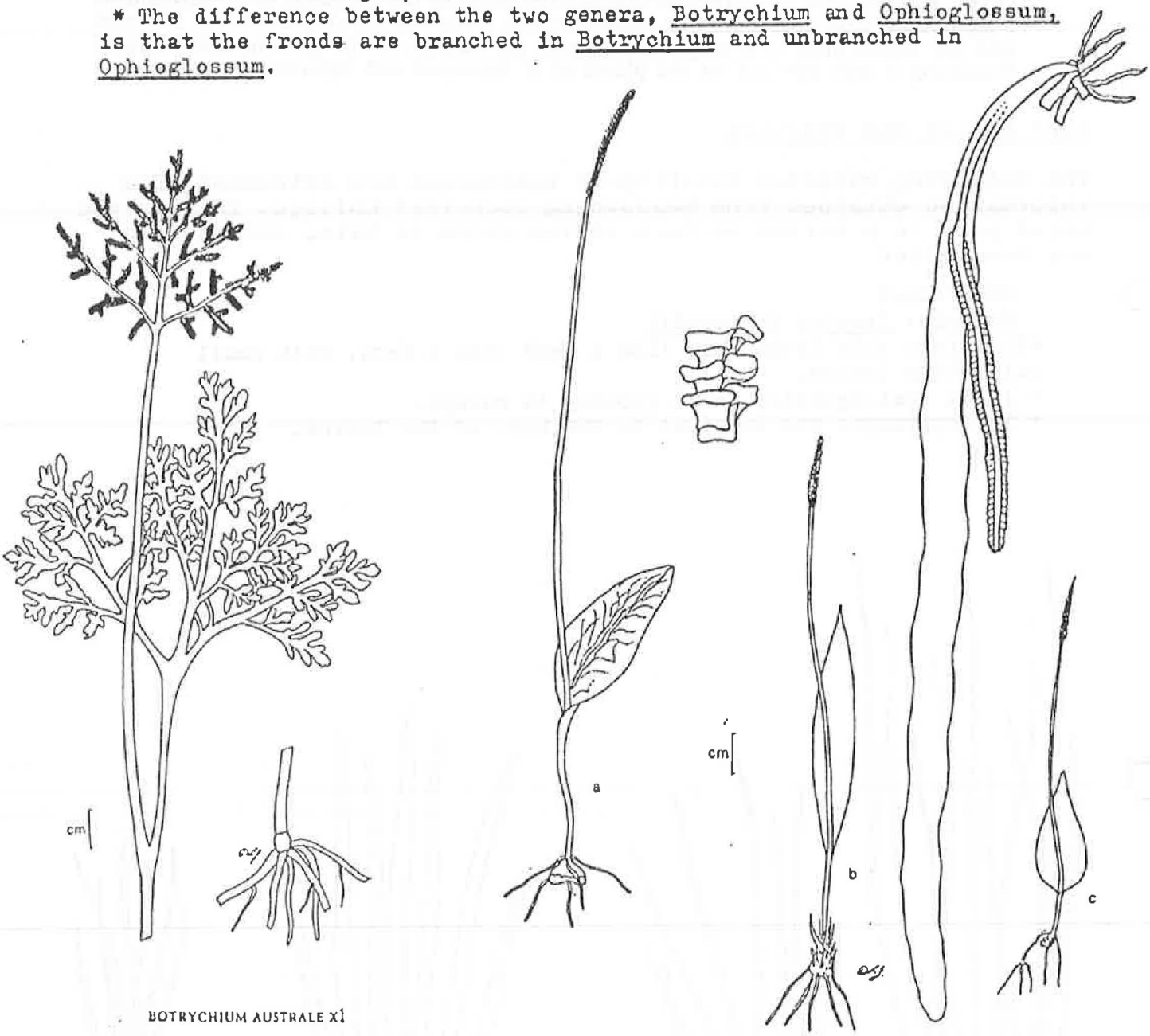
Fig 4 ISOETES SPECIES

a) *I. drummondii* x1 b) *I. elatior* x¼ c) *I. humilior* x⅔ d) *I. gunnii* x1

OPHIOGLOSSACEAE

Examples: Botrychium australe and Ophioglossum pendulum

* These are rare and unusual ferns in which the fertile branch (with spores) arises on the upper surface of the leaf.
* These ferns do not have coiled croziers like other ferns, but the fronds is straight, even before unfolding - straight vernation.
* The difference between the two genera, Botrychium and Ophioglossum, is that the fronds are branched in Botrychium and unbranched in Ophioglossum.



BOTRYCHIUM AUSTRALE X1

Forthcoming Events in South East Queensland.

Sunday 12 March 1989 Visits to Nurserys.

Meet at 9.30am at Fairhill Plants and Botanic Gardens, Fairhill Road, Yandina. Then 1pm at Morans Highway Nursery, Woombye. Enquiries to Irene Cullen (07) 3414272.

Sunday 16 April 1989 Excursion and Study Day.

Meet at 9.30am at the home of Joyce Ward, Fahey Road, Mt.Glorious. The genus Lastreopsis is to be included in the study section. Enquiries to Irene Cullen (07) 3412272.

NEWS FROM THE WEST

The following extracts are taken from the Western Australian Fern Society Newsletter. Many members would remember Sylvia Garlick as our Group's Spore Bank Curator until she moved to Perth in 1987.

SEPTEMBER MEETING

We are very fortunate to have Sylvia Garlick in our Society. In June Sylvia gave us an excellent account of the life cycle of the fern, "Where it all begins". This month we had the privilege of hearing the follow up "WATCH THEM GROW". Unfortunately some of the spore sown by Sylvia at that meeting came to some grief, compliments of tiny visitors with little fingers; But Claude Gouldthorp kindly brought along some sporelings, thus enabling Sylvia to carry out her demonstration. Being super organized, Sylvia had everything prepared for the pricking out and potting on of the young ferns, but she explained the procedure for everyones benefit.

Firstly pots should be clean, and if not new, washed in a dettol solution. Secondly, a suitable friable mix is necessary for baby ferns, and if using small pots, sifting this medium is recommended. This should also be moistened prior to potting and pots filled to three quarters.

Thirdly, have labels prepared and include the date.

Sylvia then carefully pricked out the sporelings using a knife to ease them away from each other. Then gently pressed them into the depression already made in the soil. The soil mix was gently firmed around the young fern and watered immediately.

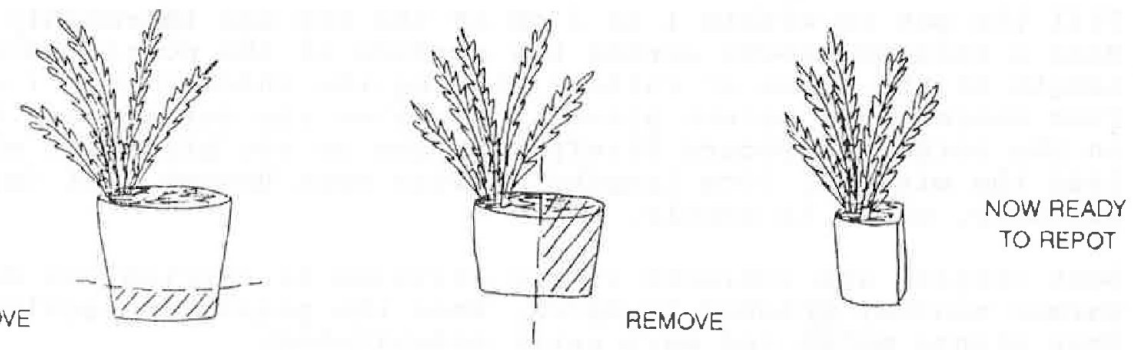
Thanks again Sylvia for a most enjoyable demonstration.

OCTOBER MEETING

Vic Salvemini, another hard working member of our Society once again made himself available as our main speaker for this meeting. He gave us a demonstration on the splitting up and repotting of an adiantum which he then kindly donated to the monthly raffle pool.

He also showed with consummate skill how to re-centre a very large specimen of ASPLENIUM BULBIFERUM, (Mother of Millions).

After removing the plant with a gentle tap of the pot, he proceeded by way of a hand saw to slice away a good quarter of the soil and root mix from the base. Of the remaining soil-root mixture up to a third was removed by vertical slicing, (as illustrated) to achieve a more balanced root ball.



BUYERS PLEASE REPORT

The December 1988 Newsletter carried a plea for reports from members who purchased ferns bought in for the September 1988 Wildflower Exhibition. Information was requested in time for summarising and publication in our June 1989 Newsletter (deadline for receipt of reports early May 1989).

One of our members has already prepared a report. We probably would have preferred knowing about the condition of the ferns when they were a little older. Nevertheless the information supplied is interesting and hopefully publication now may prompt others who purchased ferns at the Exhibition, to now report their experiences.

Ferns Purchased September 1988

Potted On: Bolbitis quoyana,Cyathea rebeccae,Lastreopsis grayii and Lastreopsis tenera.
Grown in Basket: Oleandra neriformis,Pyrrosia lanceolata.
Planted in Ground: Pteris tripartita
I have not repotted Antrphyum reticulatum, Belvisia mucronata, Ophioglossum pendulum, Asplenium attenuatum var.schneiderei. They have been indoors on the verandah, permanently shaded because I am frightened to touch them! I shall pluck up courage soon.
Lycopodium phlegmaria, Lycopodium squarrosum are hanging in the shadehouse in their original pots. So was Vittaria elongata until it began looking dried out. I put it on the ground in the sarlon pagoda in much darker conditions and more humid atmosphere . It is better now. All other ferns are doing well except Pteris tripartita, which had its fronds all chewed off by something. As the rhachises are still green I have hopes.

PROPAGATION BY DIVISION.

Elsewhere in the Newsletter there is a description of the splitting up and repotting of an Adiantum. Ferns with creeping rhizomes are very easily and quickly increased by carefully dividing and repotting pieces of the rhizome. The simplest to propagate are ferns with long creeping surface rhizomes, such as Davallias and Microsorum spp. These can be cut into lengths which have 2 or 3 healthy young fronds. Use a sharp knife or razor blade to prevent unnecessary bruising.

Pot the pieces of rhizome in a well drained mixture which preferably contains a good deal of peat moss or into sphagnum moss. If the pieces of rhizome are too long to fit into a small pot, use a tray or two litre plastic ice cream container with holes for drainage, or alternatively, use a larger pot the bottom half of which can be filled with coarse sand, rocks or both - this makes more economical use of the sphagnum moss or peat moss mixture.

Fill the pot to within 1 or 2 cm of the top and thoroughly moisten. Make a shallow groove across the surface of the potting mix for the length of the piece of rhizome placing the thicker end, i.e., the part from nearest the parent plant, just below the surface and the other end on the surface. Secure firmly with one or two pieces of wire pushed into the mixture, 10cm lengths of wire coat hanger bent into U shape are suitable, water in gently.

Best results are achieved if the division is carried out during the warmer months, October to March, when the plants are actively growing. Keep plants moist and warm until established.

REPORT ON TRIP TO WATAGANS 19 NOVEMBER 1988

Great rejoicing, we welcomed back Phyll our former Leader, now Phyll Dawes of Smiths Lakes, looking terrific and still spot on with her fern identification. In all fifteen, including locals Bea and Roy Duncan participated in this visit to the mountains west of Newcastle. The Duncan's property served as resource centre for cuppas and barbecues and thanks to their large fern collection, the source of information and inspiration.

Two walks were undertaken through temperate rainforest. THe first to Gap Creek yielded a list of 31 different species of ferns plus a further 3 species noticed adjacent to our lunch spot at the beginning of the walk. Notableferns included Adiantum formosum, A. hispidulum and A. silvaticum, Pellaea paradoxa this fern was very numerous, Pyrrosa confluens, Arachniodes aristata, Asplenium attenuatum, Arthropteris tenella and A. beckleri and a fern said to be a hybrid between these two. Filmy ferns found by Margaret included Hymenophyllum cupressiforme and H. australe.

More than two dozen different species were noticed before seeing our first Blechnum, B. cartilaginum. Later B. patersoni was found clinging to rocks near the filmy ferns, Dictymea brownii is rarely seen south of the Watagans and it was a delight to find numerous well developed specimens growing from the side of rock faces in open forest at the end of this walk.

Then a short drive and stops to view the surrounding area from Monkey Face - said to be named after a bullock, but who ever heard of a bullock with a three syllable name! At the lookout Cheilanthes tenuifolia (probably) and Lindsea microphylla were added to ferns so far listed on the day.

The short easy walk at Boarding House Dam proved to be a fernies delight with the path for a good part of the way abutting a 3m high rock wall covered in mosses, small ferns and other plant life of damp shady places. Here 20 species of ferns were noted of which 7 had not been recorded by us earlier that day. Particular interest was shown in Vittaria elongata, a species with thin strappy fronds growing from the rock walls. This is another fern approaching its southern most limit.

The few in the party who stayed in the area overnight spent the morning admiring and studying the Duncan's fern collection. Just a mention of a few of their outstanding ferns - Platycerium spp we lost count of how many were there, two large Angiopteris evecta under shade cloth but threatening to grow through it, Drynaria rigidula several fine baskets showing great vigour which Roy told us was the result of the fronds having been cut off some months earlier, and many tree ferns including a fine Cyathea cunninghamiana.

Our thanks to Bea and Roy for their warm hospitality and to Roy for leading the walks in the absence of our Leader.

SUBSCRIPTIONS DUE

If you have not already paid your subscription for the 1989 calendar year, please remit $3 to the Treasurer, Miss J.Moore, 2 Gannet Street, Gladesville, N.S.W., 2111.

REPORT ON MEETING AT ILLAWONG,11 DECEMBER 1988

Our end of year get - together was held at the home of Margaret and Peter Olde. In all 18 attended on a day of intermittent rain. There was no study but much pre-Christmas cheer.

Later in the afternoon Margaret's attractive fern house won many admiring tributes. Notable were several North Queensland tropical ferns planted in the ground and growing robustly. One Blechnum whelani especially was most impressive. Adjacent to the fern house there were a number of other northern ferns spreading over leaf litter on rocks in natural looking settings. In this area particularly noteworthy was Dryanaria rigidula.

Our thanks to the Oldes for the warmth of their hospitality on the day.

FORTHCOMING EVENTS IN THE SYDNEY REGION.

* Saturday 18 March 1989,Meeting at 76 Grange Crescent,Cambridge Gardens.

Arrive from 12 noon for our first study day of 1989, formalities to commence at 1pm sharp at the home of Max Forth. The study session is on the local Lycopods and Selaginella and members are invited to bring any samples of these plants to the meeting. Remember though Peter's warning against bringing favourite potted specimens as these are often upset by disturbance. Bring lunch and afternoon tea if required. Enquiries to Moreen 528 4881.

* Saturday 15 April 1989, Outing to Newnes.

A visit to the Glow Worm Tunnel at Newnes. Note that because of traffic concerns, the date has been changed to Saturday. Travelling from Sydney along the Bells Line of Road at Clarence take the second turn to the right on an unsealed road and stop at the Clarence Terminus on the Zig Zag Railway. Meet at Clarence at 9.30am, we plan to leave there by car convoy no later than 10am. After the drive in convoy it will be necessary to leave our cars and walk about 1km to the entrance of the tunnel. Wear comfortable strong shoes and each person will need a torch. Also remember it can be cold in the mountains. Carry lunch and water. Any enquiries to Peter phone 625 8705.

* Saturday 13 May 1989, Meeting at Jannali

Meet from 12 noon ready for business session to commence sharp at 1pm at the home of Elaine And Ken Arnold, 19 Shortland Avenue, Jannali. On this occasion the study session will take the form of discussion on cultivation, each member being asked to speak concerning experiences with the fern that has grown best and the one that has been least successful. Bring afternoon tea. any enquiries regarding directions contact Elaine phone 518 8805.

* Sunday 18 June 1989, Outing to Royal National Park

Our plan is to walk the Forest Island Track through some of the best rainforest in the Sydney area and open forest on a loop trail of approximately 5km. Easy walking on well made tracks with ferns most of the way. Meet at 9.30am in Bertrand Stevens Drive opposite entrance to Lady Carrington Drive. Parking available in disused quarry. Prompt start at 10 o'clock essential to avoid having to carry lunches. After the walk possibly lunch could be eaten at the picnic area at Upper Causeway only about 1km drive from parking area. Any enquiries to Moreen, 528 4881.