ASSOCIATION of

S.G.A.P. Fern Study Group

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When Do Ferns Spore

Particulars of our project collecting data about the period of the year when the spore of our native ferns is mature, were published in our March 1990 Newsletter. That issue of the Newsletter included a form provided by Anne Long, so that members could be aware of the required information. Some members have reported having difficulty in completing all the data specified on the form and it seems that we may have been too demanding in what we required. Essentially we need to know the following details for each species:

1) Botanical name of fern
2) Date (month) in which ripe spore was observed
3) How cultivated, i.e., is fern growing in (a) pot / basket, (b) in ground in garden or parkland, (c) in natural bush area.
4) Location, i.e., name of city, suburb, town or district.

Betty Rymer has drawn attention to another potential problem. Betty has written as follows:

"I don't think trying to see if spores are released is as easy as one might think. With a hand lens it is very easy to see if the sporangia are all empty. Most of those with an indusium or an inrolled leaf margin - it seems it is always pale greenish, at least on my ferns, then it opens sufficiently for the sporangia to be exposed and goes brown. However, I still find it difficult to be certain if spores are being released. Can one assume if the indusium is lifted up or edge of leaf open that spores are being released? The only way that I could be sure was to put a piece of a leaf in an envelope and see whether any dust (spores) collected.

Perhaps we need some guidelines about doing this. For example, Doodia aspera. The indusia (greenish) were raised and with a X10 lens you can see brown unopened sporangia - do you call this releasing spores? Otherwise the indusium goes brownish, the sporangia are open and no spores. So the only certain way was to put a part of the leaf in an envelope and look for spores.

Do we know whether once you see unopened sporangia how long it is before spores are released? What does it depend on? Is it only weather conditions or is there in fact a time limit? Is it the same for all ferns?

I for one would like more information. You can see I am muddled as to what to record and what terminology to use. Help! I'm probably being stupid, but I feel like people who send you the separators from Banksia cones for the seed."

Betty subsequently raised this problem at our meeting at Stony Range. Peter explained that putting a piece of the fertile frond in an envelope to see whether it shed spore, as suggested by Betty, was not an accurate indicator of the date when the spore was ripe. Taking a piece of the frond created an artificial condition which would cause the piece of fern to dry and shed spore earlier than normal. Peter pointed out that generally colour is a good means of determining spore maturity. Usually the spores change from green and whitish immature stages, then dark brown or black when ripe, then light brown when fully discharged. This doesn't apply to ferns in the Osmundaceae Family, such as Todea barbara, which release spore when coloured green.

The extract below was taken from "Encyclopaedia of Ferns" by David L. Jones, published by Lothian.

"Many people experience difficulty in judging when the sporangia are ripe and the fronds are suitable for cutting for spore collection. Collection of viable spores is one of the major requisites for successful fern propagation. Experience is the best guide but a few notes may avoid some pitfalls.

Sori which are immature to mature have a granular appearance like grains of sugar, whereas those which have shed most of their spores have a fluffy appearance. Immature sori are usually pale green or brown and the sporangia are small and tightly clustered. Mature sori are much darker, are often shiny and the sporangia are swollen and beginning to spread apart from each other.

A close examination of the sporangia under a hand lens will tell whether the spores are being shed or if the sporangia are immature or overmature. Split or cracked sporangia will have dispersed their spores, whereas fat, whole sporangia are mature and ready to shed. The ideal stage for collection is when just a few of the sporangia have split to release their spores."

As mentioned by David Jones, experience is the best teacher, but if you are still unsure of the spore release stage after closely observing fertile fronds as shown in the preceding article, you should seek help from a more knowledgeable member, for some of us an ounce of showing is better than a ton of reading!

Once you are confident of being able to pick the spore release stage, please provide details (under the four headings as listed earlier in this article) for any ferns that you have been able to observe. The information should be sent to the Secretary at 3 Currawang Place, Como West, 2226.

SHOULD WE CONSERVE BRACKEN?

by CALDER CHAFFEY.

In this article I shall be dealing with the true or Common Bracken, Genus **Pteridium**, Family **Dennstaedtiaceae** and specifically Species **esculentum** which occurs in this area of the Far North Coast of N.S.W.

There is much argument about this genus, some treating it as one with a single species with numerous sub-species. Others regard it as having 6 or 7 separate species. The genus is wide spread around the world occurring in all countries except Antarctica. Here I follow the general trend of considering the Australian taxa to have 3 separate species with the one I am discussing - Pteridium esculentum occurring in all states.

The rhizome is long- creeping, covered with simple hairs and much branched. Fronds are erect and up to 2.5 m . in height but occasionally can be found to 3+ m. in a crowded and shady situation. The stipe is stiff and erect with a dorsal groove and about equal in length to the lamina. The lamina is 3 or 4- pinnate, usually triangular with sickle- shaped ultimate segments, leathery, glossy above and dull beneath due to appressed fine hairs. Pinnae margins are entire, recurved and the base decurrent with a small lobe proximally at each stalk junction. Sori are linear, submarginal with the reflexed laminal margin forming a false indusium.

In this area I have found ripe spores in March to May east of the Great Dividing Range and in April to June in the New England Area north to the Queensland border. It is not very common to find spores on this fern. It seems to prefer to spread by way of its creeping rhizome. A single plant will spread outwards in a widening circle like a fairy ring of mushrooms. Over a period of time this spread will encompas many acres and though the central part may be dead the one plant may have been spreading for hundreds of years. Some people have said this bracken is one of the longest living entities. Even so it is particularly difficult to transplant and cultivate. The spores are also difficult to germinate. It has been found that there is an occasional genetic change when is spreads by rhizomes giving the same effect as a spread by spores.

Pteridium esculentum thrives in well drained and sandy soil but grows well in almost any drained situation and soil. Because of this the early settlers used it as an indicator of good growing land for crop cultivation.

It is a pioneer plant and is one of the first to appear after clearing or bush fires. This makes it a problem for farmers who want to grow crops or grass for animal culture. To the conservationist it is a valuable asset. As a first arrival on cleared or devastated land it prevents the germination of weeds but allows bushes and trees to grow up through it. Later as a canopy forms it tends to die out.

Bracken is of use for dyeing cloth. The young shoots give greenish and yellow dye. A particularly good yellow/green dye is produced if alum is used as a mordant. The use of other mordants give other colours such as tan with chrome, grey with iron and yellow/tan with tin.

Those of us who grow ferns and orchids know it is particularly good to make potting mix and mulch due to its long life as such. The other advantage for mulch is its ready availability and quick regenerating properties.

The brackens contain several poisons and probably more will be found. A cyanogenic glycoside effects blood oxygenation and can be particularly dangerous. Also thiaminase an enzyme which destroys thiamine leads to a severe vitamin B1 deficiency. Other identified substances are a bone marrow toxin, a brightness factor and shikimic acid. This is another reason why the fern is not liked by farmers. Older cattle will not eat it except in times of drought and short feed. However some calves will eat the young shoots in large quantities. While it is not immediately effective it can act as a cumulative poison.

Two parts of the plant can be used as a food. The rhizomes are a sourse of starch and the fiddle sticks can be used as a green. Fortunatly the toxins are heat labile and can be destroyed by heating to 115 C. So if the parts of the plant to be eaten are baked they are safe. It must be noted however that boiling is not satisfactory as the critical temperature will not be reached to destroy the toxins.

So farmers will not agree with me due to smothering their grass, poisoning their stock and harbouring rabbits and other vermin. But the rest of us could give some thought to preserving what can be a valuable asset. It is a natural inhabitant of our land and in the "bush" situation does a lot of good work. I conserve mine with good results.

BRACKEN

Luke Davall

There was a patch of bracken on the hillside next to the garden which we felt was spoiling the grazing value of that pasture so it was mowed every six weeks till Christmas, by which time it was getting a bit tired of trying. Research into methods of getting rid of bracken then led to a change of tactics. Farmers, we were told, usually rip it with a plough. Our hillside was too small and too steep for this, however if the bracken rhizomes are broken it seems they get infected by a fungus and die, therefore pulling up the fronds instead of cutting them off not only deprives the plant of its chlorophyll-made food supply but also allows infection to penetrate the rhizomes and kill them.

Regular weekly efforts went to pulling up young fronds, and a good heap of them built up. But if a weed is removed something must grow in its place or it is bound to return. To encourage the pasture the hillside had a dressing of lime (especially along the boundary fence to discourage invasion from the neighbouring bracken patch), and fertiliser as well as some judicious grazing by sheep. Later the whole paddock was dressed with seaweed meal.

This spring and summer there has been some regrowth but only at long intervals has it been necessary to pull up a few fronds.

Bracken is not all bad news. On a further hillside it was decided not to press on with eradicating it before getting a cover of bushes established to control the slow but continuing gully erosion. The rhizomes of bracken undoubtedly play a part in holding the land together.

Crushed dried bracken fronds made a useful mulch on some newly planted lawn grass when a heatwave came and threatened to dry up the young grass plants. Also bracken fronds are used regularly in the garden to provide shade for all newly planted young plants, and sometimes for plants that turn out to have a greater need for shade than originally expected.

Many native plants grow in scrub where they enjoy the dappled shade cast by gum trees or mallee and a loose but deep mulch of twigs, plant stems and fallen gum leaves. Two or three dried bracken fronds tied round the base of such plants give the sort of protection their roots require.

The Much Maligned Pteridium esculentum Rises Again

Our thanks to Calder Chaffey for his informative article expressing a fresh view about this not much admired plant and providing details of its chemistry and some of its possible uses.
The second article, the one above by Luke Davall, was taken from SGAP-South Australia's Journal, May 1991.

Are Your Fees Overdue?

The annual subscription to the Fern Study Group of $4 is payable at the beginning of each calendar year and therefore is now overdue for 1991. You will know that our records show you as being financial unless a red cross appears here ..... If X is shown at the end of the preceding line, our records indicate that your subscription has not been received. Please contact or pay fee to the Treasurer if you wish to continue to receive the Newsletter.

The Cultivation of Ferns by Spore - Report of Talk by Chris Goudey (Reprinted from Victorian Fern Society's Newsletter)

Chris commenced by explaining the many important aspects of collecting spore. Be sure the spore is ripe and has not already been shed; a hand lens will ensure this. Most spore is black or brown but some are yellow and a few are green when ripe. The species with green spore such as the Filmy Ferns, Osmunda, Todea and Leptopteris must be sown within 2 months as their viability is short lived. The indusium of Adiantums and Notholaena will often close again after shedding their spore; only experience will help with this.

By collecting spore continually Chris ensures a high percentage of success. He always takes a supply of envelopes with him on trips and folds the corners to prevent leakage. A sheet of clean paper folded into a leakproof package will also suffice. Be sure to write the name of the fern on your package immediately.

The container for sowing your spore must allow maximum light to enter, retain humidity and be thoroughly cleaned. A scrub with hot soapy water and then a dip in bleach or formalin is best. Many different mediums have proven successful; some excellent ones are chopped sphagnum moss, peat moss, tree fern fibre (dicksonia only), grey sand and african violet mix produced by Idaho Nursery.

Sterilizing can be done in a microwave oven, 160° for 30 minutes will suffice. Another method is to pour boiling water over the medium through a collander. Chris stressed that is is far better to oversterilize your medium than to expect the sporelings to compete with algae and fungus. Any spare medium can be stored in a clean polythene bag in a low light area.

Once you are ready for sowing, select a hygenic place, Chris likes the kitchen table, far from any potting sheds or glasshouses where contamination may occur, keeping your containers covered except while actually sowing. A 70 micron sieve can be used to separate the spore from the husks but a simple method is to place your spore on a sheet of blotting paper, hold it on a slight angle and tap it gently. The husks will slide off leaving the pure spore. To sow a small plastic container 12 cm. in diameter, Chris uses enough spore to cover a matchhead with an end result of usually 300 to 400 ferns. Immediately after sowing a spray with previcure will give added protection against fungus. By sowing every six weeks you will always have some sporelings coming on and even with a few failures you will be gaining experience.

Chris had on display several containers of sporelings which were in excellent condition. They were placed in a large polystyrene box with a hinged perspex lid. As the small plugs of prothalli were pricked off with a blunt knife into tubes, they were placed back into the box until they became re-established, then gradually the lid would be lifted back for short periods to harden them off.

It is most important to choose a cool day for pricking off, water in with maxicrop and keep under maximum humidity. Never prick off late autumn or winter as those done in spring will quickly catch up to earlier plantings. It takes about two years from sowing to establish a 12 cm potted fern.

Chris concluded by saying "keep on sowing and you will keep on learning".

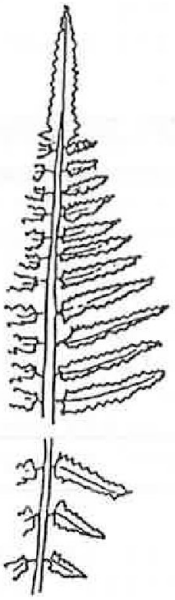
FERNS
OF THE RAIN FOREST

CALDER CHAFFEY

CHRISTELLA- BINUNG
Family - THELYPTEREDACEAE.

Two ferns which are indigenous to this area and are widespread in our local rain forests are the Binung. They are both beautiful ferns with graceful form.

a. Christella dentata.

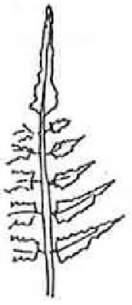


The rhizome is short-creeping with a dense covering of brown scales. The fronds spread on a tussock which develops into a short trunk in tropical areas. Fronds are dark green, bipinnatifid and grow up to 100 cm in height. The colour darkens as the fronds mature. Pinnae are thin with an auriculate base, lobed and sparsely hairy with some thick orange glandular hairs. The upper five pairs of pinnae are gradually lengthened while the lower ones are gradually reduced. One pair of basal veins unite with the excurrent vein. The sori are on either side of the mid-vein of the lobes and are covered by reniform indusia. Spores are black and bean shaped and easy to grow.

This fern is found on the margins of the rain forest and adjacent eucalypt forests usually growing along water courses or near by. It is easily grown, hardy and suitable for pots, rockeries, in the ground or amongst trees. It will tolerate a good deal of sun and frost. It is very fast growing. Distribution is along the whole east coast, S. Australia and New Zealand.

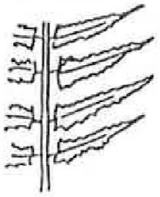
It was previously classified in the genus Cyclosorus and known as C nymphales and C dentatus.

b. Christella parasitica.



The rhizome is short-creeping with brown scales. Fronds form a tussock and grow up to 50 cm in height. They are pale green and bipinnatifid. Pinnae are thin and textured, deeply lobed and tapered throughout to end in a tail. The lower ones are not reduced as in C dentata. Sori are covered with a reniform indusia and covered with pointed hairs.

This fern is usually found in similar situations to C dentata. It is also easily grown and the remarks already made about growing C dentata apply here except that it is frost sensitive. Distribution is in Queensland and N.S.W.



Both ferns can be seen in many places in the "Big Scrub" usually where there is plenty of light and near creeks. They are also plentiful in many rain forest remnants around Lismore District.

There is a lot of variation in the two ferns and it is thought that this is due to hybridisation between the two species.

GLOSSARY
AURICULATE- ear-like appendages
EXCURRENT- a vein projecting beyond the margin
INDUSIUM- membrane covering the sorus
PINNA- primary segment of a divided leaf
PINNATIFID- once divided with the divisions extending to the rhachis
REINFORM- kidney shaped
RHACHIS- the main axis or mid rib of the frond
SORUS- a cluster of sporangia or spore bearing cases

(Article originally published in SGAP-Far North Coast Newsletter)

Report on Meeting at Collaroy Plateau, 24 March 1991

There were 29 at Jan and Johnny Fairley"s home and after the mandatory "cuppa", Jan showed us their superb garden. Ferns were a feature throughout with several Cyathea cooperi of various shapes and sizes and huge Platycerium superbum prominent features. There were many ground ferns and less obvious Pyrrosia rupestris and an array of orchids. Jan's large, neat hot house area was full of fern gems that could easily have occupied most of us for the whole day. There was ample evidence of Jan's ability as a propagator and grower of Lycopods and Psilotum nudum. Several of these were beautifully displayed in wire enclosed baskets filled with spagnum moss and potting mix. Other outstanding ferns that caught the eye included Adiantum philipense, Blechnum wattsii, Pteris pacifica and Arthropteris tenella.

Phil Lane, President of SGAP-Warringah Group and that mine of information, Alec Blombery, made us welcome, when after a short drive, we arrived at Stony Range Flora Reserve. After lunch Peter introduced the study topic, dealing first with the genus Psilotum. There are only two species in this monotypic group. Psilotum nudum, fine potted specimens had been brought to the meeting by Les Taylor and Peter, and P. complanatum.

P. nudum has a widespread distribution, it is not just sub tropical and can be found south of Sydney to as far north as Spain! P. complanatum has been recorded from North East N.S.W. but not recently. It is mostly tropical and is found all around the world. P. complanatum has flattened branches and is often located growing in clumps of Drynaria or Platycerium. The branch stems on P. nudum are multi angled. There appears to be two forms, but it is not clear whether the more pendulous, softer form from the rainforests retains its distinctiveness when grown under more open situations. P. Nudum can be seen around Sydney on southward facing cliffs, including near the Opera House. It often appears as a volunteer plant in pots of aged, well compacted mixture among Peter's collection. Jan has struck many pieces, using as "cuttings" 2 to 5 cm long fairly thick pieces of rhizome bearing some roots (actually rhizoids). Other tips for growing, P. nudum resents disturbance and don't let it dry out, keep it humid. Jan applies a dressing of dolomite once a year.

Of the genus Ophioglossum, the epiphytic O. pendulum is the only one that is likely to be commonly found in collections. It has broad flat sterile fronds up to 1 m long (although no one present had seen one that long), from which the the fertile segment branches off about half way up. It grows in Queensland down to about Wingham and also in New Guinea to Japan and the Hawaiian Islands. In nature it is often found growing from a clump of Platycerium bifurcatum and in cultivation is frequently grown in staghorn peat fibre. O. pendulum looks its best in a basket. It needs protection from frosts, the fronds are quite fragile and can be easily damaged when being moved.

There are 7 other Ophioglossum spp in Australia (more that 50 world wide) and Peter described their identification as a nightmare. All 7 grow in Queensland and are described in "Ferns of Queensland" by Andrews; all are difficult to keep going in cultivation. Of the three that grow in N.S.W., O. polyphyllum, O. reticulatum and O. lusitanicum subsp coriaceum, only the last named is relatively widespread. Roy and Bea Duncan brought one along to the meeting.

Report on Outing to Waratah Park, 20 April 1991

After a rendezvous at Bilpin, on a perfect autumn day, 12 members proceeded in car convoy to Waratah Park. A short walk through bush dominated by tall Turpentines, brought us into the cooler and even in the midst of his dry season, moist gully area.

Ferns listed on the way included Pteridium esculentum, peripatetic, but a shy bearer of spore, Culcita dubia, Lindsaea microphylla, Cyathea australis, Blechnum cartilagineum and Gleichenia dicarpa. Our Leader drew attention to the rock face where there was a patch of ferns we called Grammitis meridionalis, but many botanists lump this in with G. billardieri, which it certainly resembles except for its usually smaller size and fewer pairs of sori. There were several clumps of Asplenium flabellifolium also on this rock face but all looked parched and shrivelled.

Ferns abounded along the lower part of the steep rock escarpment. Lycopodium laterale, Todea barbara, Blechnum wattsii growing in loamy soil, and B. ambiguum in the rock clefts. But what species were the Blechnums in between those two areas? Superficially the two ferns are very similar. B. ambiguum is said to have pale green, sterile fronds to only 60 cm and fertile fronds 3 to 10 mm wide, whereas B. wattsii has dark green sterile fronds to 1 m and fertile fronds only 2 to 3 mm wide. Observations in the field suggest these measurements are not a reliable guide and there seems to be a good deal of variation in the colours. Apparently the real clincher is the difference in the respective scales on the rhizomes, on B. ambiguum they are fawn and quite sparse, while on B. wattsii the scales are dark brown to black with pale margins and finely denticulate. In the bush, it is hardly feasible to check these rhizome characteristics.

Gleichenia microphylla and G. rupestris grew nearby, also Sticherus lobatus and S. flabellatus. There were many Leptopteris fraseri with soft membraneous fronds that are always admired. Patches of Pyrrosia rupestris were seen on the tree trunks and Tmisipteris truncata growing on the trunks of Todea barbara. Alongside were mats of Shizaea rupestris.

We had almost reached the waterfall area although on this occasion the creek was not flowing, before we encountered Blechnum nudum, then B. patersoni and Hymenophyllum cupressiforme. We knew the less common H. australe was also in the waterfall area and while we searched for it and Joan took advantage of the stoppage to tell all to her amazingly tiny dictaphone, Moreen and Dulcie explored new territory in the other direction. They were rewarded by not only sighting extensive patches of H. australe, but also Pellaea falcata nana, Asplenium flaccidum, Lastreopsis acuminata and Grammitis billardieri.

As usual the return journey was much quicker than the outward one, the only additional fern added to the list being Dicksonia antarctica. A late lunch in a delightful setting, rounded of a relaxed outing to an easily accessible, excellent ferny area.

Report on Meeting at Merrylands, 25 May 1991

A happy day despite the election, 21 members gathered at Dulcie Buddee's home. Early arrivals admired Dulcie's garden many attractive ferns but also orchids, orchids and more beautiful orchids. We were most impressed by Dulcie's shade house, a neat, commodious and very functional structure, built around the trunk and beneath a large Grevillea robusta - it would be hard to find a better siteing.

Peter led the study session concerning two primitive genera. Firstly, Angiopteris which has huge fronds without any hard tissues being supported entirely by the pressure of the sap in their cells. Therefore they require a lot of water and their soft fronds must be sheltered from hot, drying wind. If growing in a pot, sit it in a saucer of water. World wide there are around 100 species although some authors prefer to regard all as one species, in Australia there is only A. evecta. S.B. Andrews in "Ferns of Queensland" mentions A. elongata described from plants collected in Brisbane, but says that further study is needed before it can be established to represent a separate species. A.evecta has been recorded from subtropical rainforest in the Tweed Valley, but is now very, very rare in N.S.W. in its natural habitat, Peter said that he knows of only one plant. Of course there are many in cultivation grown in protected frost free situations, Jan had brought a fine specimen to the meeting in a large pot. A number of those present at the meeting have it growing out of doors including at Mt Druitt, but as Peter said, to keep it alive, one has to be dedicated and not take holidays. In Queensland it grows in wet places or soaks, along the east coast and in the Carnarvon Range. Fronds commonly grow to 2 m, Peter has seen them up to 4 m.

The other genus studied Marattia has similarly arranged quite separate sporangia which are joined laterally in a single, oblong marginal row. However, in Angiopteris the sporangia is in a double row on either side of a vein. There are about 60 species of Marattia two of which are Australian but one, M. oreades, has an uncertain status. M. salicina occurs in north eastern Queensland often on banks of fast flowing creeks in cooler areas. It is also a native of New Zealand. Using pieces of the frond stipes supplied by our Leader, members tried to prove whether damaged parts did stain purple. Peter had brought M. salicina var. howeana to the meeting in a pot, it has finely divided and more compact fronds than the type specimen. M. salicina is easily grown in shady, well sheltered positions given plenty of moisture. In the Royal Botanic Gardens there is an old valuable plant growing without particular care.

Both Angiopteris and Marattia are regarded as almost impossible to propagate from spore but will grow from the auricles, fleshy ear like lobes, taken from the base of the fronds. There are a pair of dormant buds in the notches where each "ear" joins the auricle. When damaged in this region sometimes new plantlets form. At the meeting, Peter with the aid of a sharp knife demonstrated how to remove one such tiny plantlet. Peter warned that the damaged tissue attracted snails and slugs.

Report on South Eastern Queensland Excursion to Springbrook

(Contributed by Jan Glazebrook)

A perfect autumn day set the scene for our outing to the elevated area of Springbrook in the Gold Coast Hinterland. After morning tea at Purlingbrook Falls Park, we proceeded to Warrie National Park for a walk to Twin Falls. As we entered the rainforest the dominant ground fern was Blechnum wattsii, interspersed with B. cartilagineum, and in the moister areas a more robust Blechnum thought to be B. camfieldii. Cyathea australis and C.leichhardtiana were dotted throughout the area, the latter distinguished by the smaller trunk and prickles on the frond stem. Adiantum silvaticum was fairly common and in areas of good light Sticherus flabellatus formed large clumps.

After viewing the Falls we followed the creek upstream for a short distance. We were rewarded by finding Grammitis sp in the rough bark of an Austromyrtus. A small Bulbophyllum formed a beautiful mat of tiny fairy flowers on the same tree. Retracing our steps we followed the cliff line from the Falls to Canyon Lookout. Along this track we saw Gleichenia rupestris with its glaucous fronds. The fine lacy fronds of Lindsaea microphylla was much admired and growing on the cliff face at the Lookout was Pteris vittata. It was surprising to see it thriving in this apparent harsh environment.

After lunch in the park we gathered at the Best of All Lookouts at the Repeater Station on the very south east end of Springbrook. This Lookout gives a panoramic view into N.S.W. It was evident upon entering the canopy that this area receives a higher rainfall than the previously described area, as we found an entirely different array of ferns. Blechnum patersonii and B. cartilagineum were common ground ferns while Arthropteris tenella and A. beckleri and Microsorum scandens adorned the rocks and trunks of trees. Diplazium australe, Lastreopsis microsorum and L. acuminata appeared here and there as did the epiphytic Asplenium australasicum and Davallia pyxidata. The less common (in Queensland) Microsorum diversifolium was first noticed on the limbs of the ancient antarctic beech trees but was later seen near the entrance to the walk.

A non fern which attracted everyone's attention with its hanging cream bells was Fieldia australis. But the highlight of the day was the discovery of Lastreopsis silvestris, a rare fern only found in these elevated wet areas, on the Queensland / N.S.W. border. This is a beautiful glossy bright green tufted plant about 40 cm tall. It was not abundant.

By this time we were all a little weary so the group divided and went their separate ways all agreeing it had been a most enjoyable day.

Deadline for Next Newsletter

Contributions to the Newsletter are always welcome - in fact, the more contributions the better and more interesting it is for all readers. Please can you help with an article? Deadline for the next issue is 15 August 1991.

Report on Mid North Coast's Outing 3 March 1991

On Sunday 3 March, six members of the Mid North Coast Fern Study Group went to the Way Way State Forest. The members travelled to Warrell Creek on the Pacific Highway approximately 8 Km south of Macksville, where we turned off the Highway onto the Way Way Forest Road - firstly passing an area of Blackbutt. The rain-forest also has many species of shrubs and trees, in particular the Bangalow Palm with ferns and orchids growing high up in trees.

We all met at the Pines Picnic area which is situated in a small clearing bounded by rainforest and plantations of Hoop Pine (planted in 1938), Flooded Gum and White Beech.

On our short walk along the creek we were delighted to find 32 species of ferns Adiantum silvaticum being the dominant variety. Our most exciting find of the day being a small clump of crested Doodia aspera.

We were pleased to welcome a new member to our Group - Steve Clemesha from Coffs Harbour, who we believe has been a past president of the SGAP Fern Study Group.

The Group has decided at this stage to hold meetings every second month, with the next meeting being planned for Sunday 5 May, with a visit to Beech Plateau in the Werrikimbi National Park.

The ferns found at the Way Way State Forest were Asplenium australasicum, A.polyodon, A.attenuatum, Adiantum silvaticum, Arthropteris tenella, Blechnum cartilagineum, B.wattsii, Christella dentata, Cyathea australis, C.leichhardtiana, Davallia pyxidata, Doodia aspera, D.aspera (crested), D.caudata, Hypolepis muelleri, Lastreopsis decomposita, L.microsora, L.munita, Ophioglossum pendulum, Pellaea paradoxa, Platycerium bifurcatum, Sticherus flabellatus.

FORTHCOMING EVENTS

In South Eastern Queensland

When"Fernies" in South Eastern Queensland meet now, the only topic is, "Rain - the lack of it!" So far this year we have received approximately 300 ml. In the corresponding time last year 1,000 ml was recorded. In fact, since June 1990 to now we have recorded a total of 500 ml. No climate for ferns - field excursions must be cancelled. Fortunately for us Springbrook was still O.K. when we visited there in April. Kerry Rathie says we can expect to see some fairly dehydrated ferns when we visit him in June.

Sunday 2 June 1991, Meeting at Greenbank
Meet 9.30 am at Kerry Rathie's home, 5 Salaton Road, Greenbank.
Peter Bostock will give an account of his trip to Ungella area.

Sunday 4 August 1991, Viewing Ferns at Herbarium
Meet at 9.30 am sharp at Gate 1, D.P.I. Complex, Meiers Road, Indooroopilly. Members arriving after 9.30 unfortunately cannot be admitted.

Friday 13 September 1991, Set Up Fern Display
SGAP Flower Show, Redeemer College, Rochedale Road, Rochedale.

FORTHCOMING EVENTS (Continued)

In the Mid North Coast of N.S.W.

Sunday 7 July 1991, Outing Coffs Harbour District
Members in the Mid North Coast are planning to visit ferny areas in the vicinity of Coffs Harbour. For details of meeting place and time, contact Phyl Brown (065) 544 158, or Charlie Charters (Wauchope) 856 296.

In the Sydney Area

Sunday 23 June 1991, Outing to Cabbage Tree Creek
If travelling from Sydney along Bells Line of Road, turn left at lights at North Richmond, keep right at St John of God Hospital, proceed towards Grose Vale, turn left into Cabbage Tree Road and continue to its end. Meet at entrance of Avoca Reserve at 9.30 and commence walk at 10 sharp. Carry lunch and wear sturdy shoes, some scrambling and ascent / descent steep in parts. Enquiries to Peter 625 8705.

Saturday 20 July 1991, Meeting at Mount Druitt
Meet from 12 noon, at the home of our Leader, 41 Miller Street, Mt. Druitt. If travelling from Sydney along Great Western Highway turn right when opposite B.P. Service Station into George Street, fifth street along George St. is Miller, turn left. Formalities commence 1 pm. Bring afternoon tea. Enquiries to Peter 625 8705.

Saturday 17 August 1991, Outing to Bowens Creek
Those intending to participate in this walk from Bilpin to Bowens Creek are requested to register with the Secretary on 528 4881 by no later than the preceding week end. Meet at Fruit Bowl Bilpin, times will vary from 8.30 am if nominating to leave car at Mt Irvine end of walk, registration will enable proper planning of intended car shuttle and permit walk to commence by no later than 10 am. Carry lunch and please don't forget to register!

Week of 16 to 22 September 1991, "Spring in the Gardens"
Helpers will be needed for N.S.W.-SOAF's Exhibition at the Royal Botanic Gardens, details next Newsletter.

Don't Throw Out That Dead Fern
Recently Les Taylor advised members not to be too hasty in throwing out plants that looked dead in their pots, but just to put them aside in the shade house. The remark was greeted with a good deal of humour, "You must have a funny collection of pots, Les." Les made his rejoiner at our most recent meeting, arriving with three pots full of various volunteer ferns. "Yes" Les told us, I have a lot of pots and there's a lot in them." Apart from the ferns, the three pots contained *Asplenium flaccidum*, two tiny sporelings growing on top of the long dead parent plant; *Bauera rubioides*, apparently reshooting (and this a rare double red form) "after being "dead" for ages"; and finally, a *Lycopodium sp.* about 8 cm high evidently having grown from spore that had been in the pot for several years. Good on you Les, we will hang on to our dead plants for a bit longer now.