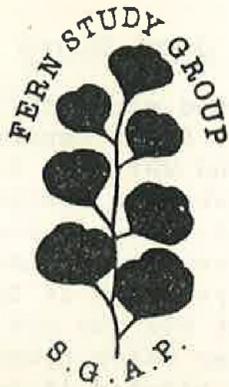


30 MAR 1990

ASSOCIATION of

S. G. A. P. Fern Study Group



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SPORE BANK: Jenny Thompson, 2 Albion Place, Engadine, 2233

A new project! We want to gather information concerning the time of the year when the spore of our native ferns are mature and ready for collection. There doesn't appear to be much recorded about the sporing times of our ferns. At a recent Fern Seminar in Armidale, John Williams of New England University deplored the lack of this basic information for anyone interested in propagating ferns.

Our Leader raised the subject at the February meeting at Stony Range and suggested ways in which we could approach the project. Important considerations mentioned by Peter included the need to gather many individual recordings, the location and effect of climate, and whether the ferns are growing in the wild or in cultivation, and if in cultivation, whether grown in pots or in the ground. We don't know what effect these various ^{factors} have on sporing times, or even if ferns of the one species of the same age and grown in similar conditions, always spore at a particular time of the year. Peter said he suspected that rainfall could be a factor which caused certain ferns to set spores - but we do not know.

We are a Study Group and so all of us hopefully are recording some observations of ferns that we have cultivated or that we see periodically in the bush. We hope that members will assist with the project by keeping a record of the time of the year (month) when they notice that spore is ripe and ready for collection. In due course we will ask that you provide the information to the Secretary for collation and dissemination of the results to members.

Ann Long has designed a form which would be appropriate for recording purposes. Use of the form would assist in identifying some possible variables which influence sporing time and could also aid validation of results. A copy of the form is attached at the back of this Newsletter, use it as a guide to the significant points to be recorded in our research. Some members may already have information on sporing times, either information that has been published or which is as a result of personal recording. Please write to the Secretary and tell us what you have so it can be evaluated. Your information could be valuable.

Growing NardooContributed by Joan Moore

I have been growing Marsilea drummondii, the common nardoo, since 1973, easily most of the time, but there have been two hitches. The first occurred soon after I was given the first piece, which I put in mud and water in a small bowl. It thrived until the winter came - a dry one - when it stopped growing, and with hazy thoughts of imitating its natural conditions in the clay pans out west I let it dry out. In spring it did not reappear. I had not realised that my little piece of fern did not have the resource of lots of rhizomes buried deep in damp clay, and so simply died. But all was not lost. I had given a piece to a friend with an old bathtub for water plants, her nardoo had survived, so I took a piece back. This time I planted it in a deep (about 18") plastic tub, and never let it dry out again. There is some mud on the bottom, fronds grow under water, or float spread out on the surface or stand above it. Sometimes they cascade down the sides of the tub. They have silvery hairs on both surfaces and glint in the sun. The plants share the water with water snails and little brown fish called gambusias, not native, I am told, but they were obtained for me from a local creek long ago. The fronds disappear in winter (that is, between about July and October, a little behind the official seasons), and come back in spring. To be on the safe side I also planted some in soil in another container, drained, but I water it a lot. This piece does not die down in winter, merely becomes less vigorous.

Last winter the second hitch occurred. In the tub I always had azolla and, uninvited, duckweed. Both grew so vigorously I used to scoop them off in handfuls and fling them on the garden as mulch. The azolla would almost disappear in winter too and reappear about the same time as the nardoo. A couple of years ago it did not reappear. Twice I obtained small pieces from different friends, twice it failed to grow. Examining the remains of the second piece I found tangled in it little red wriggly things with lots of legs. So last summer the nardoo had no azolla competition. Instead, the water became quite murky. I found threads of an alga in it, and they were attached firmly to the rhizomes and stems of the nardoo. I used water-clearing mixtures as sold for aquariums; the situation eased for a while then the alga came back. I watched the fern rhizomes succumb bit by bit through last winter, and the fronds did not reappear. I concluded that the absence of azolla covering the water had let too much light in. I was going to empty the tub and start all over again - tedious! one has to catch all the little fish - when a Fern Group member who lived nearby offered me some azolla. In a few weeks the surface is now covered with it (the red wriggles apparently died of starvation in the interval) and the water is clear underneath. So now I will replant the nardoo and hope for the best.

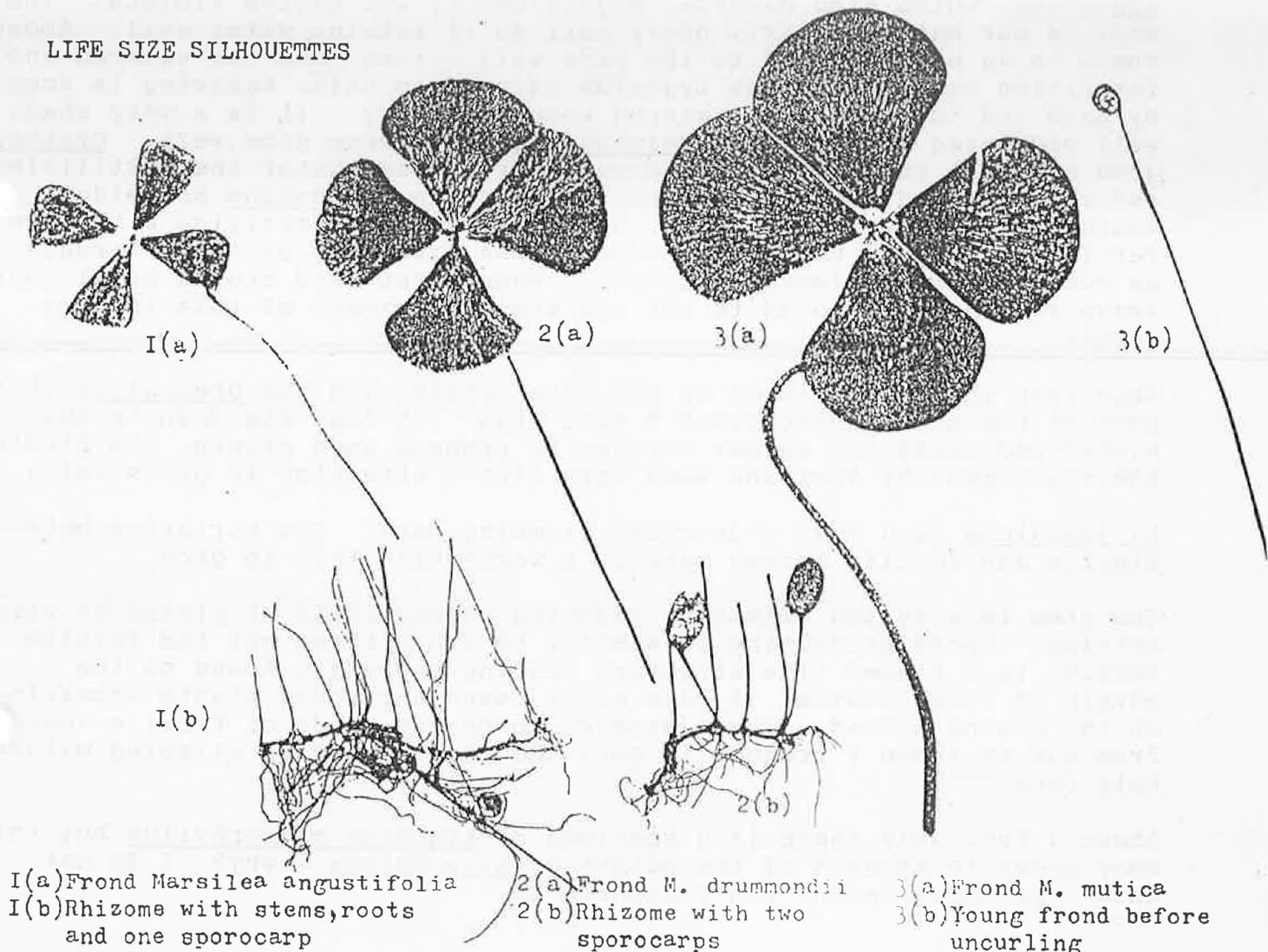
I have also grown Marsilea mutica for about ten years. At present I have it only in water, in a similar tub. It too dies down in winter and then comes up again. It did not suffer the alga infestation even though the tubs are side by side. Maybe, as the fronds are larger, they shade the water better? Mutica is the most beautiful: large, bright green and shining, the fronds have a pattern on them, the centre is a lighter green than the rest. Later a brown line will develop between the two zones. And there are fronds much larger than mine on plants in the Sydney Botanic Gardens.

Marsilea angustifolia I have grown so far only in mud, not deep water, mainly because the container I put it in leaks. The fronds are smaller than drummondii and are quite smooth. It will spread rapidly in damp ground - or even not so damp. In the Gardens there is an area where numerous trial plots of different grasses are maintained, and among them, doing fine, is M. angustifolia. I once let M. drummondii loose in the garden and it too spread very fast: I had to take it out of there. Either of these might do very well as lawns, though like couch and kikuyu they would no doubt invade the garden.

Sporocarps do not appear on the ferns growing in permanent water, only on those in mud, and towards the end of summer. All I could find at present (midsummer) was one on the angustifolia, still developing. I have drummondii sporocarps preserved from previous years, but none from mutica.

The only diseases I have observed are brown radial streaks which show sometimes on the fronds, especially of drummondii, perhaps a virus, but they do not detract from the appearance of the plant and do not seem to affect it much. Anyone with ornamental water in the garden should grow some nardoo.

LIFE SIZE SILHOUETTES



(Our sincere thanks to Joan for submitting the above article and illustration. In doing so, Joan wrote, "Herewith the article on Nardoo. I am afraid it is long and wordy. I could have put down the essentials in a few lines I suppose but then it would have been anything anyone could look up in a text. You can use the photocopier silhouettes if you like. I went over to the local Newsagents to do them of course he said " Are they four leaved clovers?" Being life size it is rather large for an illustration. I tried to draw something smaller, but it was beyond me. The drummondii sporocarps I took from my pressed records. I had gathered them in 1984, and while I was doing this photography one of them split open, it was in the shop and I lost the piece. A shame, I could have tried germinating them!")

Lygodium japonicum

Contributed by Betty Rymer.

Family: Schizaeaceae- from Northwest Western Australia and Asia.

If you are like me it is often sheer luck that a plant seems to be put in the right place to grow successfully. This seems to be the case of my L. japonicum. Often I think I have the worst appropriate spot but the plant proves me wrong.

L. japonicum has been growing in my shade house for the last six years and is very well protected from winds and frost tucked in a corner, its roots under an Oreocallis sp. and completely shaded by Microlepia speluncae, which also has grown magnificently and native violets. The soil is our natural fairly heavy soil so it retains water well. Above there is an elk attached to the side wall - this does get watered and fertilized and I guess the Lygodium gains from this. Watering is done by hand and the ground is watered when necessary. It is a very shady well protected corner where Helmholtzia and ferns grow well. Cyatheas grew too well and had to be removed. Eric does most of the fertilising and when I asked, he did not know the Lygodium japonicum so seldom would he fertilise it directly - he does generally fertilise with liquid fertiliser and has been using Super Green Lawn Greener (same formula as some fern fertilisers) recently. When I cut dead fronds off I just leave them on the ground to rot and there is plenty of this in this corner.

This year the fern climbed up the wire netting and the Oreocallis to the roof of the shade house about 8 feet high. It does die down in the winter and needs the warmer weather to promote good growth. So finding the right spot by luck and with very little attention it grows well.

L. japonicum is a most attractive climbing fern. The variation between sterile and fertile leaves make it a worthwhile fern to grow.

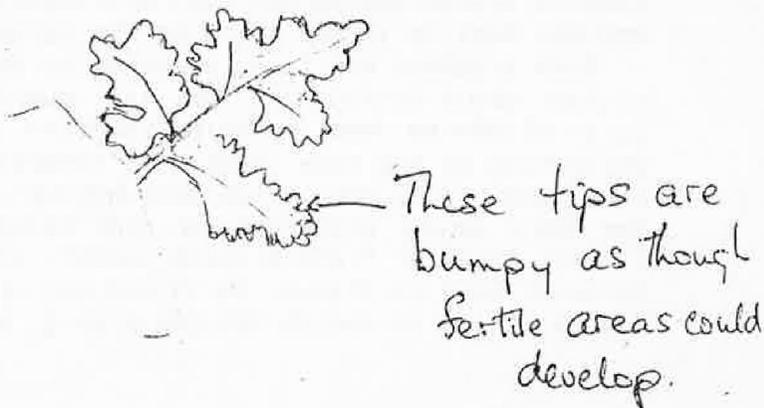
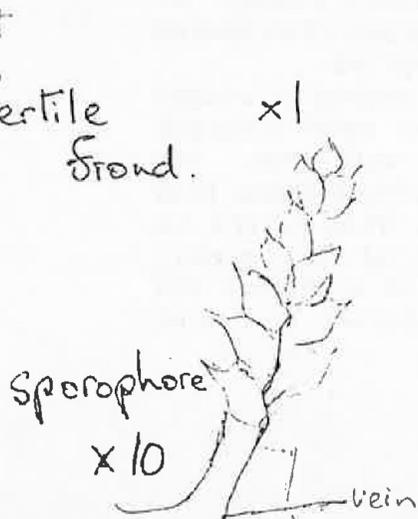
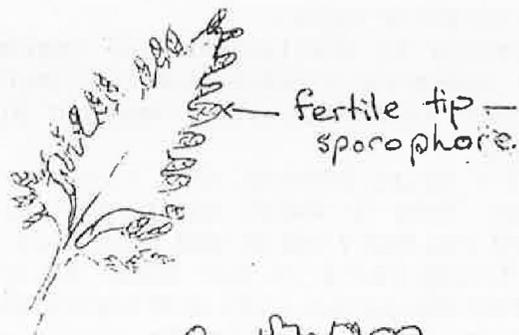
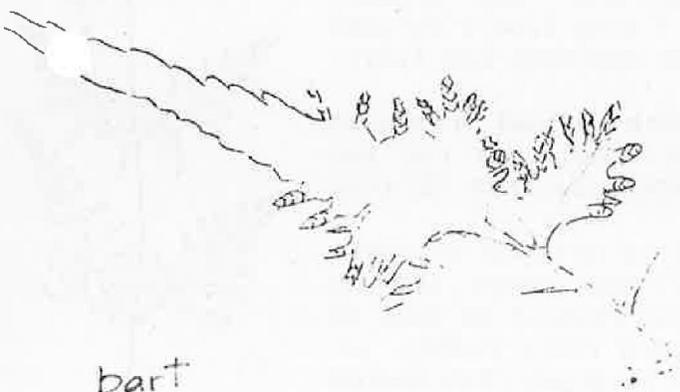
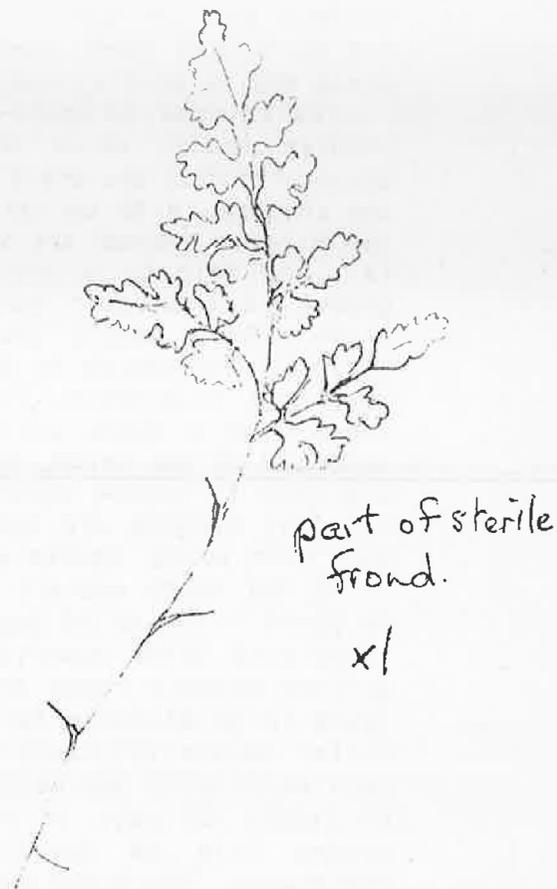
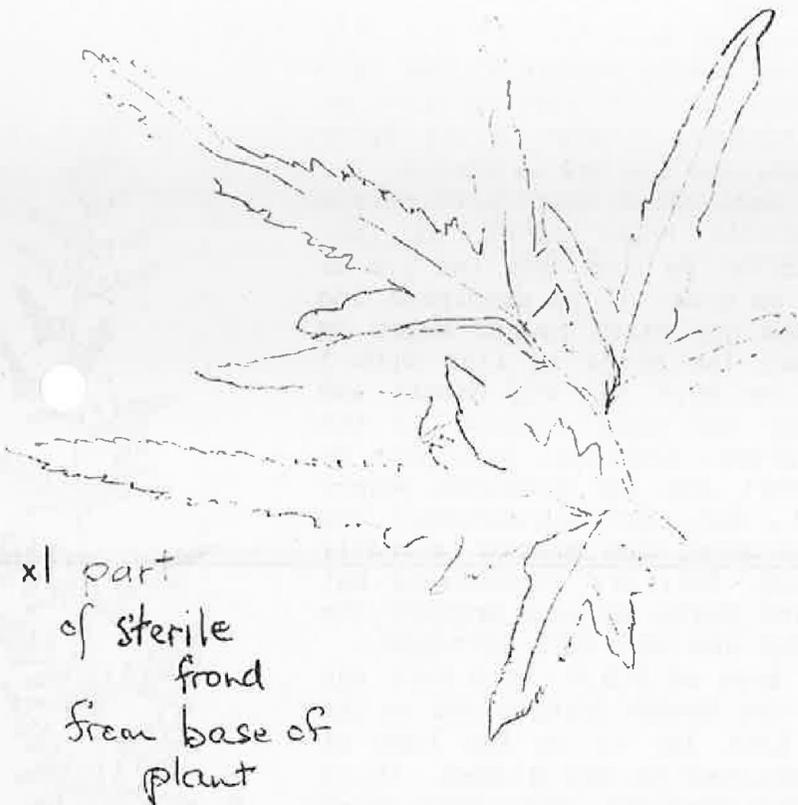
The stem is wiry and climbs by twisting around stems of plants or wire netting. Spore production is similar to other ferns but the fertile section is a finger like structure bearing sporangia found on the margin of lobed leaves. I have never found any young plants appearing on the ground around. There appears to be two kinds of fertile leaf from one of these I presume it gets the common name of climbing maiden hair fern.

About 3 feet away there is a specimen of Lygodium microphyllum but this only grows to about $\frac{1}{3}$ of the height of L. japonicum - why? I do not know - perhaps someone can enlighten me.

(Our sincere thanks to Betty for contributing the above article and the accompanying sketch of Lygodium japonicum. Betty when submitting the article, wrote as follows,

"Hope this article might help you - the drawings may be useless - but i have drawn from a specimen from my plant - hopefully showing leaf shape and the position of the sporangia etc. I know my sporophore looks different to the book but this is what I saw. Having a bit of trouble as I left the sporophore to draw this evening and the electricity has lost its power and we are in dim light - so I had a torch, hand lens and pencil - trouble was I didn't have 3 hands".

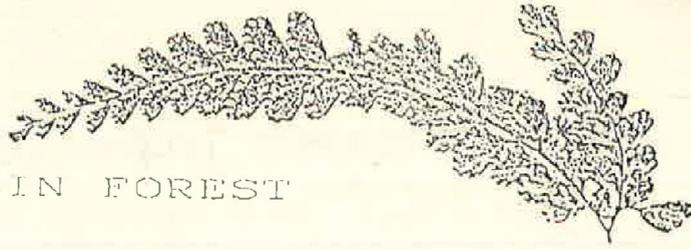
Lygodium japonicum.



FERNS

OF THE RAIN FOREST

CALDER CHAFFET



CHEILANTHES SIEBERI

Family - SINOPTERIDACEAE.

"Mulga Fern or Narrow rock-fern."

This interesting little fern is indigenous to the N. NSW rain forests and is very widespread throughout the eastern part of Australia and South Australia. It extends inland to the drier areas and to Central Australia, New Zealand and New Caledonia.

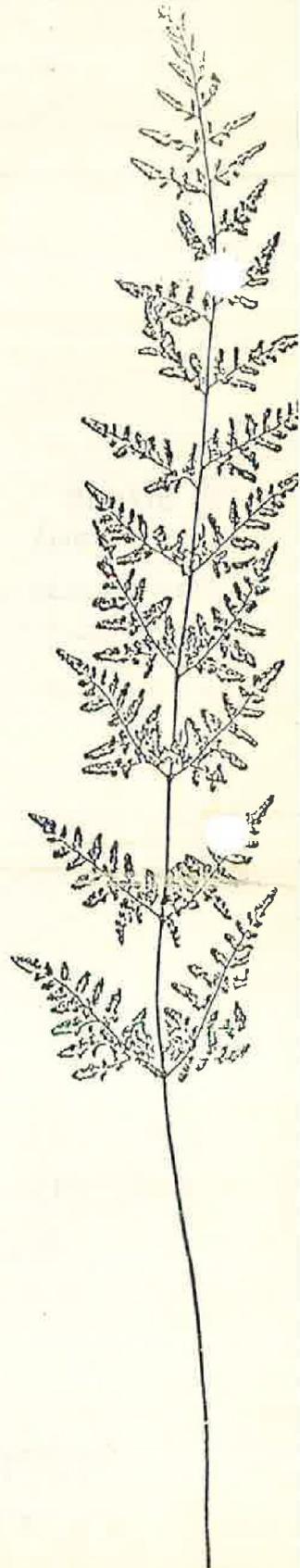
The rhizome is short-creeping or semi-erect, wiry with narrow pointed scales which develop a central light streak as they mature. Fronds are erect and stiff emanating from near the tip of the rhizome, 4-40 cm tall and 2-5.5 cm wide. It is dimorphic and the sterile fronds are very small and not often found. Shape is tail and thin to slightly triangular. The stipe is fine with a groove in the upper surface, brown to dull red and smooth and shiny. There are a few scales near the base similar to the rhizome. The lamina is mid to dark green, glabrous, bipinnate or sometimes tripinnate. Pinnae are short and the pinnules deeply lobed with a short ultimate leaflet. Sori are sub-marginal and terminal on the veins. Although interrupted they spread laterally and tend to become confluent with age. Sori are exindusiate but the leaf margins are curved under and these margins protect the sori when young. Spores are tetrahedral and very dark to black.

In our north eastern rain forest area of N.S.W. this fern can be found in the drier parts often on the forest fringes and in the associated drier eucalypt regions. Look for it in the tops of gullies between rocks and in well drained to dry places. It is found in drier parts far inland, rocky crevices, and areas which suffer severe dry conditions. This is a very drought resistant fern which will shrivel up and become brittle, dry and brown but on return of rain it will absorb water, expand, green up and resume life as normal. Several features help its drought resistance. The frond area is relatively small with finely divided pinnae which also have recurved edges. Pinnae surfaces are finely stippled to slightly hairy.

Some species of *Cheilanthes* can reproduce without a sexual phase which essentially would require moist conditions for the motile gametes. It is not clear whether *sieberi* belongs to this group.

People are often unaware that this fern is growing on their land. If you have a patch of forest or rocky areas examine carefully and you may find an odd plant. It can readily be seen in areas like Minyon Falls in the drier parts and rocky ridges. It resents transplanting but with difficulty can be grown from spores and may survive in dry parts of the garden or rockeries.

Much argument has taken place as to whether it should be placed in the genus *Notholaena*, but its species usually have discrete sori which do not tend to become confluent with age. The derivation of the name is of some interest. *Cheilanthes* comes from the Greek, "kheilos- a lip and anthos- a flower. This refers to the sori being protected by the reflex margin of the pinna. *Sieberi* is after Frank Wilhelm Sieber, 1789-1844, an architect and botanist born in Prague. He travelled in many countries including Australia and collected 300,000 plants, many new.



Cheilanthes sieberi has been reported many times causing poisoning in cattle, sheep, rabbits and dogs from a large area of Australia. Sheep seem particularly prone. Symptoms include shivering, staggering gait, quick respiratory rate, frothing at the mouth, inco-ordination of movement, muscular spasms, aimless wandering, diarrhoea, paralysis, and often death. Death seems to be a common outcome if animals affected are exercised such as droving. Post-mortem reveals pronounced congestion of the liver and cloudy swelling of the kidneys, haemorrhagic areas in the intense enteritis and cyanotic lungs.

Analysis shows that Cheilanthes contains cumarin a chemical which interferes with blood clotting. A synthetic derivative of cumarin is used in the treatment of coronary occlusion.

Experimental feedings to animals show that the odd fern ingested causes no trouble.

It would seem that over 250 gm must be eaten to cause symptoms. However one dog died after eating the meat of affected sheep. Old dried fern seems to be more potent than a young fern. However sheep seem resistant to eat it. Young green shoots after rain are more of a problem probably because sheep find them more attractive. Some other species of Cheilanthes are also poisonous to animals.

GLOSSARY

BIPINNATE- twice divided fronds
 DIMORPHIC- producing two forms (of fronds in this case)
 EXINDUSIATE- without an indusium
 INDUSIUM- membrane covering the sorus
 LAMINA- the expanded part of a leaf
 PINNA- primary segment of a divided leaf
 RHACHIS- the main axis or mid rib of a frond
 SORUS- a cluster of sporangis or spore bearing cases

(The above article was originally prepared and published in the Newsletter of SGAP Far North Coast Group. Our thanks to the Group and Calder for allowing us to publish it here.)

Correspondent Wanted.

A letter has been received from one of our newest members, Ed Brown of 10712 Lippizan Drive, Jacksonville, Florida 32257, United States of America.

Ed has written,

"I am particularly interested in your native tree ferns, cycads and palms which tolerate some frost and colder weather. Perhaps some of your members in the inland, higher elevation areas of NSW may offer some observations about the cold tolerances of some of the Australian species. I knew a gentleman that raised your native Dicksonia antartica. Some years ago, a severe freeze hit this part of Florida and temperatures fell below 12 F (-11C) the gentleman unfortunately passed away about a month before the freeze. The tree fern lived on though. All the cycads cultivated here survived including Cycas revoluta, one lone Cycas circinnalis, Zamia furface, Zamia pumila, and Dion edule. I have read of African cycads tolerating similar temperatures though I have no direct knowledge of this.

I have a pretty good collection of subtropical ferns and would be most happy to contribute any spore or plants. Enclosed is a brief listing of some of the plants that I have, I have the necessary permits and can obtain phytosanitary certificates. Let me know what you are interested in.

I would appreciate any available spore you might offer of your native tree ferns (except Alsophilia cooperi as I have many plants). I certainly look forward to hearing from you!

Ed will be able to obtain some spore from our Spore Bank. But if you would like to correspond and possibly exchange spore please write to him direct to the address shown above. The ferns listed by Ed are:

Acrosticum aureum, Acrosticum sp., A.danaefolium, Angiopteris evecta, Alsophilia cooperi, A. bryophylla, Blechnum brasiliense, B.gibbum, B.occidentale, Cyathea arborea, C.pubescens, C.dregei, Cibotium glaucum, C.menziesii, Ctenitis sloanei, Ctenitis subscinsa, Doodia sp., Tectaria sp., Polypodium hirsutum, Polypodium sp., Elapoglossum crinita, Ophioglossum sp.

And Would You Like Spore of African Ferns?

This request may be of interest to a member who wants to promote the growing of Aussie ferns in Africa!

J.H.Bannerman of Zimbabwe has written,

"I am interested in swapping fern spore of African ferns for ferns from Australia or Oceania".

If you would like to take up Mr Bannerman's invitation please write to him at,

Duzi Duzi, P.O. Box 3158, Paulington, Mutare, Zimbabwe, Africa.

SOUTH EASTERN QUEENSLAND NOTES AND NEWS

Twenty members attended our first meeting of the year. Peter Bostock led a discussion on Microsorium. Fortunately we were able to muster a specimen of all species, including the newly accepted Microsorium grosse from the Northern Territory. The only specimen we had of Microsorium diversifolium was a pressed frond brought back from Tasmania recently. M.diversifolium doesn't revel in the Queensland heat. There were also two mutations of M.punctatum. Also of interest was the papere delivered to the A.S.G.A.P. Seminar in Tasmania in January by Jim McLeod who advocated the use of cinders as a component in potting mix. (Cliff Ritchie's potting mix using cinders appeared in Fern Study Newsletter March 1989). It was good learn that cinders has a ph of 9, meaning it is very alkaline. But when pine bark is added at ratio of 2 pine to 1 cinders, the ph is lowered to 6.

FORTHCOMING EVENTS IN THE SOUTH EASTERN QUEENSLAND AREA

Sunday 18 March 1990 Meet at 9.30 at Cliff Ritchies, 85 Lang Street, Sunnybank Hills - North Queensland Ferns.

Sunday 22 April 1990 John Bolger, Tomewin Road, Currumbin - arrangements to be made at 18 March meeting.

Weekend 5/6 May 1990 Excursion to Wauchope, NSW.

Tasmania the Polystichum proliferum State!

Twelve Fern Study Group members were among the interstate registrants at the A.S.G.A.P. Conference held in Hobart during mid January 1990. We came away most impressed with the hospitality of our hosts, the excellence of the staging of the Conference and a conviction that we had not seen ferns growing better in their natural habitat. In particular, Polystichum proliferum which was probably the most widespread fern seen during our travels in the "Apple Isle", seemed bigger and more vigorous than any we could recall elsewhere.

Most of the "Fernies" participated in the Pre- Conference Tour which started in Devonport. Typical of the Tasmanian generosity that we were to notice so often during our stay, our billet took those of us who had arrived on the early flight for a Cook's Tour along the Northern Coast including a visit to the Fern Glade near Burnie. Earlier we had marvelled at a fine Polystichum proliferum growing in our host's wonderful garden. At the Fern Glade these ancient ferns were everywhere growing to perfection, fronds 1.5 m long, the large shiny brown scales on the stipe bases made more conspicuous in the late afternoon sun. The most obvious feature of the Glade are the many Dicksonia antarctica, huge tree ferns locally called "man ferns"; their thick bases covered with coarse hairs. Unlike the tall straight Eucalypts that are so prominent in Tasmania the trunks of many Dicksonias were twisted, some almost at right angles. In other States we are accustomed to finding small plants growing on the trunks of Dicksonias and occasionally trees, Quintinia sieberi especially, which had started life that way and subsequently overwhelmed the tree fern. Here in the Glade there appeared to be many instances of Dicksonias winning the battle for survival and having overcome and killed quite sizeable saplings and small trees. Many of the old tree fern trunks were covered with Rumohra adiantiformis, which all through our trip we invariably saw as an epiphyte, Microsorium diversifolium, Grammitis billarderi, Tmespteris sp and filmy ferns, most notable and beautiful being Hymenophyllum flabellatum with 20 cm long fronds hanging like long tresses. Blechnum wattsii and B. nudum also grew prolifically in this area and together with Dicksonia antarctica were seen throughout our trip at almost every place where we stopped to admire ferns. Inevitably of course, the peripatetic bracken, Pteridium esculentum, was also there together with Histiopteris incisa as a much softer fern than those that we were accustomed to seeing.

On the way to Cradle Mountain and the Central Plateau we stopped at Weaning Paddock Creek where the alpine ^{plain} was covered by floral beauty in miniature. A short walk to the nearby Falls revealed Doodia caudata, Asplenium flabellifolium, Blechnum penna-marina, B. fluviale and Gleichenia dicarpa, in addition to other ferns previously listed. At Cradle Mountain we divided into half a dozen different groups for walks of various distance and difficulty around its high and rugged peaks and among the spectacularly lovely cushion plants. The walk from Waldheim past Lake Dove traversed an area of rainforest where there were several patches of ferns. During the walk we added two more ferns to our list, Hypolepis rugosula and Gleichenia alpina, the latter native only to Tasmania and New Zealand. There were many acres of this Gleichenia, only 30 cm high, pinnules tightly recurved and seemingly, hugging the open grassy plains.

That night Irene Cullen produced a little plastic bag filled with samples of small ferns provided by one of our Tassie hosts. Two specimens that were new to most of us were the tiny filmy Apteropteris applanata and a small Grammitis meridionalis on our return to Sydney these two identifications were confirmed by Bob Coveny at the Sydney Herbarium. Bob an erstwhile keen member of our Study Group, is currently wrapped in Bryophytes and was most interested in the small bits of moss that had been put in the sample bag merely to provide moisture for our precious ferns.

Next morning another of the local SGAPers surprised us with more samples including three different Lycopods. The most notable was a piece taken from a mature Lycopodium varium, 20 cm long with thin terminal cones reminding some of us of L. phegmaria from Queensland.

Our coach trip south and a lunch stop near Liffey Falls added to our list Blechnum vulcanicum, Asplenium flaccidum and the tiny Hymenophyllum australe.

During the Conference on probably the coldest day of our holiday, we enjoyed an excursion to Lake Pedder and Mt Field National Park. During a short stop at Scotts Peak Road apart from marvelling at the horizontal scrub and Eucryphia lucida (Leatherwood, as in honey) in flower, we found Selaginella uliginosa growing in peaty ground by the roadside and then the filmy Hymenophyllum rarum with rather narrow fronds, pushing out from the mossy tree trunks. Many ferns were seen along the well made paths of the Russell Falls Nature Walk including Blechnum minus, Tmesipteris billardieri, distinguished by the pointed lobes on the synangium. At the end of the day Irene produced what looked to be a "different" Grammitis. The 22 pairs of sori extended from almost the tip of the 9cm long frond to its base and was covered with short, pale hairs. A local later advised the sample lacked obvious hairs along the margins and so was not G. pseudociliata. Still we wondered, so there's an excuse for a return visit.

Red Carpet

A warm welcome is extended to the following new members :

Mr Ed Brown, Florida, USA; Mrs D. Buddee, Merrylands, NSW;
Mr T. Carlsson, Bastad, Sweden; Mrs J. Hope, Coffs Harbour, NSW;
Mr & Mrs F. Johnston, Dural, NSW; Mrs E. Middleton, Matcham, NSW;
Mrs H. Pearson, Roseville, NSW; Mrs M. Scattini, Mt. Nebo, Qld.

Subscriptions Due

If you have not already paid your subscription for the 1990 calendar year, please remit \$3 to the Treasurer, Miss J. Moore, 2 Gannet Street, Gladesville, NSW, 2111.

Ridding Your Garden of Slugs and Snails (From South Florida Fern Society)

Take a small plastic pot and cut it in half lengthwise. Lay it on its side and put snail and slug pellets underneath it. The little suckers will come sliding in for the bait while the pot keeps the bait from getting soaked every time you water. The bait lasts much longer that way.

Report on Meeting at Dural, 9 December 1989

Our last get-together for the year was a relaxed affair in the tranquility of the home of Pat Kenyon and Ted Newman. All were delighted that Ray and Marie Best were in attendance. Ray continually astounded us with his encyclopaedic type knowledge. Congratulations Pat for succeeding in sitting all 29 of us down for the sumptuous meal and a special thank you to both Pat and Ted for their hospitality and making the day go so happily.

Report on Meeting at Stony Range, 18 February 1990

We had originally planned to start the day with a visit to Jan and John Fairley's home. However, unfortunately Jan suffered a rather nasty fall a week or so prior to the meeting and therefore we went directly to our other venue for the day, the Stony Range Flora Reserve at Dee Why. We were pleased to have news during the day from Jan that she was feeling much improved and would be back with us soon.

Alec Blomberry welcomed us to Stony Range and it was a great privilege to have him stay with us throughout the day and have the benefit of some of his vast knowledge. There were 21 members present for the session on the Blechnums of North Queensland. During the discussion Peter produced the following simplified key for field identification in that part of the country.

- 1 Fronds dimorphic2
- 1* Fronds not dimorphic....5

- 2 Rhizome wiry, creepingBlechnum wurunuran
- 2* Rhizome tufted 3

- 3 Fronds simple to lobedB.patersonii
- 3* Fronds not as above 4

- 4 Sterile pinnules attached by broad bases B.nudum
- 4* Sterile pinnules stalked B. articulatum

- 5 Lower pinnules reduced to auricles B.orientale
- 5* Lower pinnules not as above6

- 6 Slender rhizome and erect frondsB.Indicum
- 6* Thick rhizome and arching fronds 7

- 7 Pinnules attached by broad bases.... B.cartilagineum
- 7* Pinnules stalked B.whelanii

Peter pointed out that Blechnum articulatum, B.whelanii and B.wurunuran were indigenous to Queensland, while B.orientale also did not extend to the other States but it was pantropic.

Several of the members said that they were growing various of the North Queensland species. But of those present, only Peter has had any success with B.orientale and he warned not to keep it in a small pot because its fast growth soon caused it to dry out, with fatal results. Joan Moore reported having B.wurunuran growing well and it is known that two plants are established in the Burrendong Arboretum.

After lunch Alec gave us a guided tour of the Reserve. those who had not visited recently were delighted at the progress of the rainforest section and the fine collection of palms. We listed 27 different species of ferns including a large Angiopteris evecta and striking Platycterium.

bifurcatum and an equally impressive Platyserium superbum. Alec is anxious to add more ferns to the collection in the Reserve and would be grateful for any donations. Blechnum, Doodia and Lastreopsis are three of the genera under represented. Can any one help? Contact Alec direct or let Jan Fairley know - Jan's number is 971 6132.

Spore Bank

Donations to the Spore Bank are always appreciated, even spore of the common species because some of our newer members request them, and of course, it is important to maintain reasonably fresh spore.

Briefly, the procedure for collecting spore is as follows.

Gather spore when ripe, at this stage spore usually looks shiny, but check with a hand lens to be sure.

Remove fertile frond from plant and place in a large paper bag or between a folded sheet of newspaper or card doubled over, keep in a warm dry position away from draughts for two or three days.

Remove frond and where convenient, sieve off exploded spore cases and other chaff and place spore in an envelope for despatch without undue delay.

Remember to supply name of fern, date collected and location.

Jenny has advised having spore of the following species in the Spore Bank at present.

Acrostichum speciosum, Adiantum "Comboyne", Arachniodes aristata, Asplenium attenuatum, A.nidus, Blechnum minus, B.nudum, B.wattsii, B.wurunuran, Christella dentata, Cyathea australis, C.cooperi, also its two forms "Rusty" and "Robust", C.cunninghamii, C. rebecca, C.woollsiana, Cyclosorus interruptus, Davallia solida, Dicksonia antarctica, and its form "Botanical Gardens", D.youngiae, Diplazium assimile, Lastreopsis decomposita, Lygodium reticulatum, Macrothelypteris polypodioides, Microlepidia speluncae, Microsorium scandens, M.superficiale, Platyserium bifurcatum, P.superbum, Polystichum whiteleggei, Pronephrium asperum, Psilotum nudum, Pteridoblechnum neglectum, Pteris comans, P.pacifica, P. sp. "Terania Creek", P.tremula, P.umbrosa, Rumohra adiantiformis, Sphaerostephanos unitus, Sticherus flabellatus, Christella subpubescens.

Garden Pots with Ferns for Sale

Geoff Long is doing a complete replanning of his garden. The result is a large number of pots, especially ferns for sale. He is willing to sell them to members of Fern Study Group for the cost of the pots. Drynaria sparsisora, Asplenium pteridoides, Cyathea rebecca, etc. Telephone Geoff (02) 519 5536 .

Items from Previous Newsletters

Extracts from past Newsletters are available in two small volumes and may be of interest to new members. Volume 1 contains items from the earliest Newsletters up to Number 20 and was published in July 1984. Volume 2 contains items from Numbers 21 to 31 and was published in September 1986. Copies may be obtained from the Secretary at a cost of \$2 for Volume 1, and \$3 for Volume 2, post free.

Deadline for Copy

Items for the June Newsletter close with Secretary on 15 May 1990.

FORTHCOMING EVENTS IN THE SYDNEY REGIONSaturday 24 March 1990, Outing to Tari Creek (Putty Road)

Election Day! Don't forget to arrange your absentee vote if you cannot get to a polling booth. Meet by no later than 9.30 am - remember it is a long way from Sydney, at the Service Station at Colo Heights on the Putty Road on right hand side when travelling towards Singleton. We will travel from this meeting place in convoy for about 30 km. The walk is an easy one of about 5 km along a fairly level track through mostly wet sclerophyll forest. Carry lunch. Any enquiries to Peter 625 8705.

Saturday 21 April 1990, meeting at Kenthurst

At the home of Betty and Eric Rymer, 48 Annangrove Road, Kenthurst. Arrive from 12 noon, meeting starts at 1 o'clock, study will deal with the Blechnums of Tasmania. Bring Afternoon Tea and also a stout pair of walking shoes if you intend exploring Betty's ferny gully. Enquiries to Betty 654 1831.

Saturday/Sunday 5-6 May 1990, Outing to Wilson River Reserve

The weekend has been planned as a combined outing of Sydney and South Eastern Queensland members with a special invitation to any others able to make it to this outstanding ferny area, North West of Wauchope. The Reserve is about 12 km down stream from the Banda Banda Range and contains a fine example of sub-tropical rainforest. Walks are planned on both days. It is suggested that those staying in the Wauchope area assemble at the Broadaxe Caravan Park, Lot 2 Oxley Highway, ready to depart on each day at 8.30 am. Or, meet at the picnic tables area at Wilson River Reserve, prior to commencement of walks. On Saturday, latecomers could catch up with the main Group at these same picnic tables at 1 pm.

Accommodation: Although discussions have been held with various providers, please note that individual members must make their own arrangement and booking. Suggested venues include the Broadaxe Caravan Park, phone (065) 851703, motel units, vans and powered sites; The Forestry Department's Cameron Camp situated on Hastings Forest Way - this is very close to Wilson River Reserve, phone Forestry for bookings (065) 853744, Cabins with power, hot water and gas stove for \$8 per day also there is a large grassy area for tents or caravans but has no external power; Wauchope Motel (065) 851487, \$35 for double room; Hastings Hotel, (065) 852003, \$25 for double room. There is of course ample accommodation a bit further away in the Port Macquarie District. Enquiries to Moreen (02) 5284881 or Irene (07) 3414272.

Saturday 16 June 1990, Meeting at Epping.

At the home of Rosina Bach, 33 Third Avenue, Epping, (Corner Audine Avenue). Arrive from 12 noon, meeting starts at 1 o'clock, study will centre on the "local" Blechnums. Bring afternoon tea. Enquiries to Rose at 869 1692.

Sunday 15 July 1990, Outing to Somersby Falls

Full details next Newsletter. We plan to meet at 10 am in car park area.

NAME OF RECORDER: _____

Please write your observations of the fern in the corresponding columns

BOTANICAL NAME OF FERN	IN POT OR CULTIVATED OR NATURAL	LOCATION ie SUBURB OR SITE	NUMBER OF FRONDS		DIMORPHIC OR NOT	SORI UNRIPE OR RIPE OR DISCHARGED	SORI COLOURS PRESENT	DATE	COMMENT
			STERILE	FERTILE					