ASSOCIATION of

S.G.A.P. Fern Study Group

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How I Propagated Blechnum nudum - Ed.: A Modest Report! Contributed by Ian Cox

In the December 1994 Newsletter the Editor suggested that it was a notable achievement to donate about 30 Blechnum plants to sell at the last Kariong Spring Festival. Not really! - It was all due to Mother Nature.

It all started when we moved to our present home in April 1992. We brought with us from the old garden as many of the ferns as we could in pots. These included 4 or 5 Blechnum nudums, of which two were fairly mature plants. These pots of ferns were put on metal stands in the shadiest place we could find, which happened to be against the southern wall of the house. They stayed here until we got around to making a fern garden which we finally did last year. After about 15 months sporelings of Blechnum nudum started to appear in the sandy bush soil underneath the pots. The sporelings were left here until their fronds had grown to about 30-40 mm long and were considered large enough to pot. They received their moisture from the rain, and from drips when pots above them were watered now and again. So these ferns were produced with minimal effort on our part - the ferns themselves did most of the work. It would be interesting to know if other readers have had similar experiences with Blechnum nudum or other species of ferns.

Plant That Ended an Australian Trek

The article that follows on page 2 was taken from the 'National Geographic' as a contribution to the Newsletter by Kyrill Taylor. The Marsilea ("nardoo") silhouettes are of fronds from plants originally grown by Joan Moore. The following description relevant to the article's mention of "sporocarps of the nardoo fern", is taken from 'Australian Ferns & Fern Allies' by Jones & Clemesha.

Marsilea: Rhizome long creeping, slender, branched, growing in mud with erect leaves or growing submerged with floating leaves; leaves (sterile fronds) on long stipes, each consisting of two pairs of leaflets arranged in a fourleaf-clover pattern. The spores are borne in sori, in a case formed by modified leaves and termed a conceptacle. This is attached to the rhizome by a pedicel. The pedicel and conceptacle are together known as the sporocarp. Sporocarps are mainly produced by plants in drying conditions.

Plant That Ended an Australian Trek

In an epic journey of 1,650 miles, Robert O'Hara Burke, William John Wills, John King, and Charles Gray in 1860-61 became the first Europeans to cross Australia's uncharted interior south to north (GEOGRAPHIC, February 1979). But tragedy struck on their return: Burke (bottom), Wills, and Gray died as they traveled home from the Gulf of Carpentaria to Melbourne.

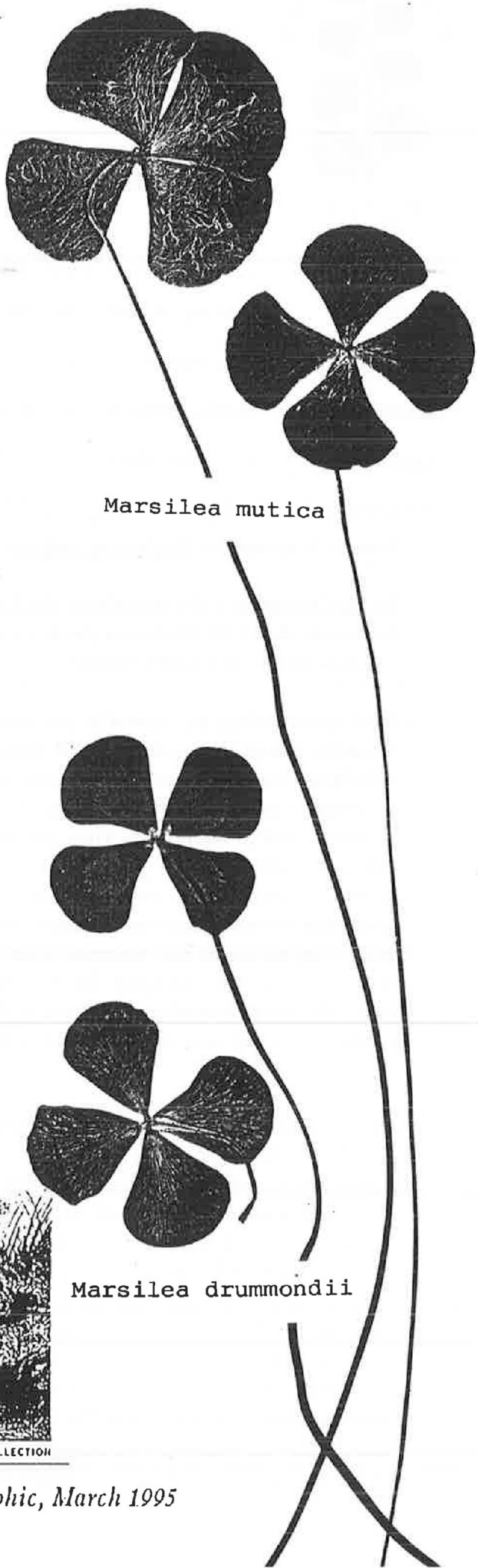
SYDNEY FILMWORKS

Historic accounts attribute the deaths to starvation. Now two Australian scientists, relying on 20th-century medical knowledge and clues in the explorers' journals and letters, offer a new theory. John W. Earl, a biochemist at Sydney's Royal Alexandra Hospital for Children, and Barry V. McCleary, an agricultural scientist, say that the Burke-Wills party had plenty of native food. But they believe the explorers prepared it improperly and died of beriberi, caused by a deficiency of thiamine—vitamin B_1.

Their own rations of flour and salted beef running low, the Burke-Wills party received the seedlike sporocarps of the nardoo fern (above) from Aborigines, who ground them with water to make a thin palatable paste. The scientists discovered that nardoo sporocarps contain large amounts of thiaminase, a fast-acting enzyme that breaks down and destroys thiamine. But mixing nardoo with water stops the enzyme's action.

The trekkers, however, ground the nardoo dry, the way Europeans prepare grains, thus releasing the thiamine-destroying enzyme. The explorers experienced weakness and pain in their legs, then developed wasted muscles and hypothermia so that they could not move. One by one, all but King died.

THE GRANGER COLLECTION



Marsilea mutica

Marsilea drummondii

National Geographic, March 1995

Doodia - the Queensland Way!

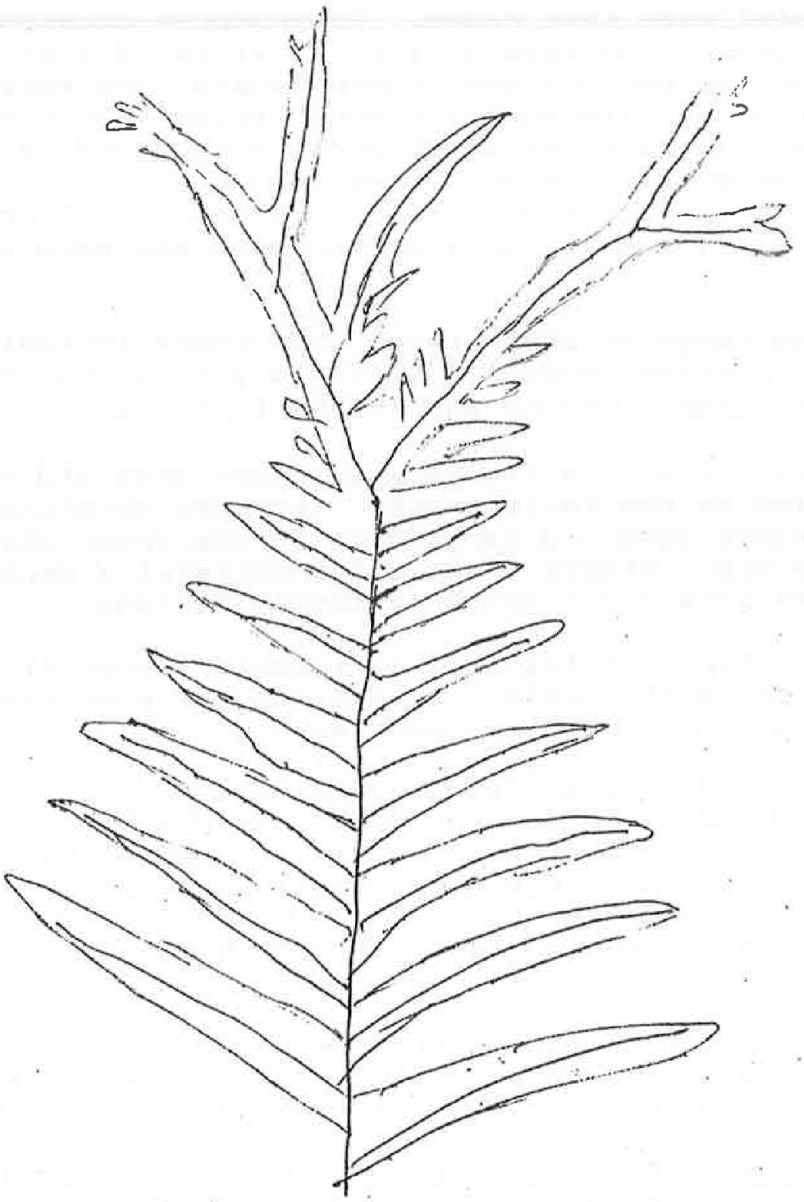
In our December 1994 Newsletter, following a description of Doodia heterophylla and Doodia squarrosa, it was mentioned that none of the Sydney members present at the meeting had either of these ferns growing. We wondered how widely they are grown by Queensland members.

Our Treasurer has passed on a note received from Ross Scott of Kenilworth, which accompanied a plant of Doodia squarrosa sent as a gift to Joan. As the letter contains items of interest to all Doodia fanciers, we hope that Ross won't mind us printing part of his letter as follows.

About ten years ago I planted some Doodia aspera in the rainforest area at the local school and now two of the descendants have normal sterile fronds, but the fertile fronds are normal aspera and are resembling Doodia heterophylla on each clump. Doodias seem to have their own genetic laws.

The Doodias will never win a prize as the most beautiful fern at the Show, but the antics they get up to can e quite fascinating. I have a bipinnatafid one that has grown into a clump a metre across - Doodia aspera.

The crested Aspera is known from a number of places in Queensland and N.S.W. I have traced the outline of a local specimen on the back of this page. (Ed.: reproduced below).



NOTES FROM MID NORTH COAST - VISIT TO FAR NORTH COAST

compiled by Steve Clemesha

From the 21st to 24th January inclusive, the mid north coast group visited the Minyon Falls area, Terania Creek and four of the eight remnants of the Big Scrub that once was the largest area of subtropical rainforest in the southern hemisphere, covering an area as large as the Sydney metropolitan area. Today only eight small remnants of this once magnificent area remain.

On our first day we went to Terania Creek and did what signposts indicated is a 20 minute walk. Here we set a record - 4 hours for a 20 minute walk. The track leads to Protesters' Falls, the former meeting place of Terania Creek demonstrators. Their work was very important. It led to this area being included in the Nightcap National Park and an end to logging in rainforests. On this track our group saw two ferns for the first time. Selenodesmium elongatum grew on wet, shady, almost vertical clay slopes beside the track. Unlike other filmy ferns we have in NSW its habit is tufted like a miniature Blechnum. It has an erect or very short creeping rhizome.

Dicksonia youngiae grew in wet places near the creek. This tree fern is confined to South Queensland and northern NSW and is not plentiful over that range. It produces accessory growths on the trunk and at the base so that if it falls over, as well as the end turning upright and growing again, the secondary offsets form new plants. Its sori are much larger than those of D. antarctica. In cultivation it grows easily and is quite drought resistant once established. Under good conditions young plants will produce fertile fronds in 3 or 4 years. It grows readily from spores. The only fertile fronds we saw were old fallen ones.

A wide range of other ferns grew there including Diplazium dilatatum, Cyathea cooperi, australis and leichardtiana and most of the more common ground and epiphytic ferns.

A second track in the Terania Creek area did not have as many species as the falls track. Its most outstanding feature was a volcanic dyke - a large pool in the creek which is a good swimming place. Pteris tremula and Christella dentata grew on the edge of this track which is mostly lantana.

In the Minyon Falls area Gleichenia mendellii grew beside the creek above the falls. G. dicarpa was plentiful also and some plants of G. rupestris were seen.

G. mendellii resembles G. rupestris but its pinnules are smaller and hairs are present along the rhachises whereas in G. rupestris they are smooth and bare. G. mendellii grows in swampy ground while G. rupestris grows mostly on rocks. G. mendellii in NSW previously has been found only in three coastal swampy areas between Yamba and Woolgoolga. It should be looked for in other areas.

One clump of G. mendellii grew in a roadside gutter on a hill - a most unusual habitat for it. Sticherus lobatus was plentiful and S. flabellatus was found a number of times.

Although we saw Doodia aspera in most areas we visited it is much less common than in mid north coast areas.

We saw one clump of Pellaea viridis growing in a narrow strip of open eucalypt forest between the road and creek. This commonly cultivated fern is native to Africa, Southern Asia and some islands of the Pacific. It is naturalised in southern Queensland. It differs from the native species in having bipinnate fronds.

We set another record in the Minyon Falls area - 59 fern species.

The walk to the base of the falls was most interesting. Selenodesmium elongatum was present again and Dicksonia youngiae grew in greater numbers than at Terania Creek. Its rich red-brown trunk is a good host for epiphytes. We saw Psilotum nudum, Ophioglossum pendulum and Macroglena caudata all growing on this tree fern. A large fern resembling Christella dentata grew in wet places in the gully and was at its best where it got some sun. This was Pneumatopteris sogerensis. The first about 6 pairs of pinnae are abruptly reduced. This species extends through Queensland to New Guinea, the Solomon Islands and Moluccas. The name sogerensis is from the Sogeri Plateau in New Guinea. This fern only grows in far north NSW. Only one small Tmesipteris was seen. It had no sori so we couldn't determine which species it is.

The four Big Scrub remnants were all interesting and well worth visiting but of them only the largest, the Big Scrub Flora Reserve (196 hectares), has a significant fern population. We had difficulty identifying an epiphytic fern that grew high on trees. After spending some time on it with binoculars, we found a fallen tree with it - Pyrrosia confluens and with longer leaves than those we usually see. Cyathea cooperi was much more plentiful on the far north coast than it is further south. Tall lilypilly trees, Syzigium crebrinerve, had carpeted the ground with their pinkish-purple fruit. Doodia media grew near an old bridge outside the park.

The Booyong Flora Reserve is an example of riverbank rainforest with some very large trees, including a beautiful firewheel tree which was in full flower. Ferns were most numerous on the bank of the Wilson River where there was more light and wetter conditions. Flying foxes were camped in this area. Privets growing here are a threat to it and need to be removed or killed.

Lumley Park at Alstonville is only a tiny rainforest remnant of 2 hectares or less. A plan to enlarge has been developed but so far has not been carried out. Here we set another fern record - only 6 species.

Our last stop was at Victoria Park. Here again only 6 ferns were seen and most widespread were Lastreopsis marginans, munita and L. microsora. The plants were all small except at the edge near a lookout south east. Here near the edge of the forest and more so outside among grass and weeds were the best L. maginans and L. microsora we saw. We suspect that competition for nutrients and water is probably the main reason for the scarcity of ferns in the Big Scrub remnants.

The size of Victoria Park is being doubled by turning former grass pastures into rainforest. This work was started about 6 years ago and already the area has a good range of young rainforest trees but its only fern was Pteris tremula.

MID NORTH COAST FERN STUDY: OUTING 20 - 25 Jan 1995
Whian-Whian S.F. & Nightcap Range N.P.

N: Nightcap Range N.P., Terania Creek & vicinity of Protesters' Falls
M: Minyon Falls, walk to base of falls & vicinity of Rummery Park

	N	M
Adiantum diaphanum	X	X
Adiantum hispidulum	X	X
Adiantum silvaticum	X	X
Arachniodes aristata		X
Arthropteris beckleri	X	X
Arthropteris tenella	X	X
Asplenium attenuatum	X	X
Asplenium australasicum	X	X
Asplenium flabellifolium		X
Asplenium polyodon	X	X
Blechnum camfieldii (creek form)		X
Blechnum cartilagineum	X	X
Blechnum nudum	X	X
Blechnum patersonii	X	X
Calochlaena dubia (Culcita)	X	X
Cheilanthes sieberi		X
Cheilanthes tenuifolia		X
Christella dentata	X	X
Cyathea australis	X	X
Cyathea cooperi	X	X
Cyathea leichhardtiana	X	X
Davallia pyxidata	X	X
Dennstaedtia davallioides	X	
Dicksonia youngiae	X	X
Dictymia brownii	X	
Diplazium assimile	X	
Diplazium australe	X	X
Diplazium dilatatum	X	X
Doodia aspera		X
Doodia caudata	X	X
Gleichenia dicarpa		X
Gleichenia mendelii		X
Gleichenia rupestris	X	X

	N	M
Grammitis stenophylla		X
Histiopteris incisa		X
Hymenophyllum cupressiforme	X	X
Hypolepis glandulifera	X	
Hypolepis muelleri	X	X
Lastreopsis marginans	X	X
Lastreopsis microsora	X	X
Lastreopsis munita	X	X
Lindsaea linearis		X
Lindsaea microphylla		X
Lunathyrium petersenii	X	
Lycopodium laterale		X
Macroglena caudata	X	X
Microsorum scandens	X	X
Nephrolepis cordifolia	X	X
Ophioglossum pendulum		X
Pellaea falcata	X	X
Pellaea viridis		X
Platycerium bifurcatum	X	X
Platycerium superbum	X	X
Pneumatopteris sogerensis		X
Psilotum nudum	X	X
Pteridium esculentum		X
Pteris tremula	X	X
Pteris umbrosa	X	
Pyrrosia rupestris		X
Selenodesmium elongatum	X	X
Sticherus flabellatus	X	X
Sticherus lobatus	X	X
Tmesipteris (species not determined)		X
Todea barbara	X	X
Vittaria elongata	X	X

Big Scrub Remnants

SPECIES	BSFR	B	LP	VP
Adiantum diaphanum	X			
Adiantum hispidulum	X	X		
Adiantum silvaticum		X		
Arthropteris beckleri	X			
Arthropteris tenella	X	X		X

SPECIES	BSFR	B	LP	VP
Asplenium australasicum	X			X
Asplenium polyodon	X			
Blechnum cartilagineum	X			
Blechnum patersonii	X			
Calochlaena dubia (Culcita)	X			
Cheilanthes sieberi	X			
Christella dentata	X	X	X	
Cyathea cooperi	X		X	
Davallia pyxidata	X			
Dennstaedtia davallioides			X	
Diplazium australe	X			
Doodia aspera	X			
Doodia caudata	X	X		
Doodia media	X			
Hypolepis glandulifera				X
Hypolepis muelleri		X		
Lastreopsis marginans	X			X
Lastreopsis microsora	X	X	X	X
Lastreopsis munita	X	X		X
Lunathyrium petersenii	X			
Microsorum scandens	X			
Pellaea falcata	X			
Platycerium bifurcatum	X		X	
Platycerium superbum	X	X		
Pteris tremula	X			X
Pteris umbrosa	X			
Pyrrosia confluens	X	X	X	
Pyrrosia rupestris	X	X		X

BSFR : Big Scrub F.R. B: Booyong LP: Lumley Park VP: Victoria Park

Platyzoma microphyllum

The sketch on the right was taken from"Ferns of Queensland" by S.B.Andrews. Refer to article on page 9, "Report on Meeting at Dural, 9 April 1995".

A good description of Platyzoma microphyllum is given in Jones & Clemesha's book "AustralianFerns and Fern Allies" - an extract follows:

Platyzoma is a monotypic genus apparently confined to northern Australia in sandy or swampy situations, often forming colonies several metres in extent.

Platyzoma microphyllum is a beautifulfern which grows in sandy, swampy soil in open situations, sometimes forming dense colonies. It appears to be quite drought resistant, no doubt aided by the thickened, reduced pinnae and dense covering of hairs on the rhizome.

NOTES FROM SOUTH EASTERN QUEENSLAND

REPORT - Outing to Cooloola National Park, Sunday -Monday, 30 April to 1 May, 1995.

Our weekend outing was a success, with eight members staying overnight at Rainbow Bay. Our leader Peter Bostock drove up for the day on Sunday.

Cooloolah is a landscape based on sand. Its many habitats include extensive wallum heaths and towering rainforests containing huge Kauri pine trees. Fraser Island to the North East is a continuation of the same type of sand-based landscape.

On Sunday, Peter lead us via Camp Milo to a section of upper Searys Creek. The track lead through heath vegetation. *Pteridium esculentum* and *Schizeae bifida* were beside the track. A short fairly steep walk down hill brought us to another world. Now there was deep shade under rain forest and a fast flowing clear creek with a sandy bottom. Sections of creek were swampy with dense vegetation deemed impenetrable for our outing. Notable ferns in the gully included numerous *Dicksonia youngiae* and large trunked *Todea barbara* at the edge of the running water. Others were *Blechnum cartilagineum, Blechnum wattsii, Lindsaea brachypoda and Schizaea dichotoma.* Surprisingly, *Schizaea dichotoma* was also an epiphyte on trunks of *Todea barbara.* Other epiphytes included *Asplenium astralasicum, Drynaria rigidula, Macroglena caudata, Platycerium bifurcatum, Psilotum nudum, and Tmesipterus truncata.*

After lunch and a fruitless search for another similar gully upstream, three members returned to Brisbane. The others visited two other quite different habitats. The first was near the main Rainbow Bay road crossing of Searys Creek. Here, the creek with fringing trees, runs runs through much more open flat country than in the morning. Ferns near the creek included *Blechnum indicum, Dicranopteris linearis, Gleichenia dicarpa, Gleichenia mendellii* (with fronds whitish underneath) and *Lycopodium cernuum.*

Lastly, we walked the circuit track at the Boomien picnic area (in rainforest) to see *Ophioglossum pendulum.* In this area, other new ferns for the outing were *Davallia pyxidata, Microsorum punctatum, Pelleae falcata, Vittaria ensiformis and Drynaria rigidula* (as a massive epiphyte way up a strangling fig).

On Monday, the four remaining members walked from Boomien to Lake Poona. As well as more *Ophioglossum pendulum,* new sightings were *Asplenium polyodon and Pyrrosia rupestris.* The *Pyrrosia* was of great interest as it was spreading along the ground which was sand with some leaf litter. We found very little *Pyrrosia* on the tree trunks, which tended to be thickly covered with small orchids, *Bulbophyllum exiguum.*

Altogether, a very interesting weekend finding various ferns in sand-based habitats.

Merle Gynther (Goadby)

NOTES FROM THE SYDNEY AREA

Report on Meeting at Gladesville, 18 March 1995

Our meeting was totally occupied by Gillian Dunk author of "Ferns for the Home & Garden" who showed some brilliant slides and entertained us with accounts of the ferns from the time of dinosaurs right down to the days of the home unit and ferns of the balconies. Her slides included antique fern albums, Melbourne's Ripponlea Fernery and of ferns used in 19th Century art and architecture. Gillian's enthusiasm for her subject was especially obvious as she extolled the wonders of the unfurling croziers. We are very grateful to Gillian for arranging her schedule in Sydney in order to coincide with our meeting. A thank you too, to Joan for hosting the 21 who attended this special meeting.

Report on Meeting at Dural, 9 April 1995

Fred and Norma Johnston hosted the get-together in their home and how we loved their outstanding Australian bush garden. There were 15 members present.

Peter led our study which centred on two families Platyzomataceae and Parkeriaceae. Dealing with Platyzomataceae first, Peter explained that this was comprised of only the one fern, Platyzoma microphyllum . Some botanists actually regard it as belonging to the family Hemionitidaceae and it was treated that way by S.B. Andrews in "Ferns of Queensland". It is an attractive, distinctive fern having narrow stalk-like fronds with small but thick pinnae. Fronds are crowded and erect and of two types, inconspicuous simple fronds to 7 cm long and pinnate fronds to around 40 cm long. The rhizome is densely covered by long golden hairs. Peter stressed that it is truly dimorphic and that those who doubt this apparently have not seen it throughout the months of the wet season.

Platyzoma microphyllum forms clumps and can grow in full sun in constantly moist positions. Peter recalled seeing it growing in heath in wet, white sandy, gritty gravel near Laura in North Queensland. It is also found in similar soil conditions near Chinchilla in Southern Queensland. It is an Australian endemic fern which grows in North Western N.S.W., (but is rare in N.S.W.), and in Queensland, Northern Territory and Western Australia.

Peter said that it is a difficult fern to grow, but not impossible. He told us that he has grown it in a pot and that it demands constant moisture and plenty of light.

The family Parkeriaceae also consists of just the one genus, Ceratopteris. It has three or four species and two extend to Australia. Both Australian species are aquatic or semi-aquatic. The best known is C. thalictroides which can often be bought from aquatic suppliers. It is in demand from tropical fish owners and thrives in the warmth of a well lit tropical fish tank. It is often seen in fish tanks in restaurants growing under strong light. It is not an annual but retires and produces buds which enable the plant to perpetuate itself. Buds are formed in the axils of fertile fronds and when these plantlets develop they break free and float away as separate plants. Fertile fronds are produced only in shallow water or wet mud and are usually erect, clear of the water.

In nature the sterile lamina grows to over I m long. It is found in shallow ponds or ditches in Queensland, Northern Territory and Western Australia. It is rare in N.S.W. where it is found in the Ballina / Byron Bay districts. Overseas it is widespread throughout the tropics.The plant is edible and Peter described its as being like lettuce in taste and texture.

Ceratopteris cornuta is found in Northern Queensland and the Northern Territory and in several tropical countries outside Australia. Its lamina grows to about 75 cm long which means that it is smaller than C. thalictroides, but its pinnae are broader. Peter told us that it was growing at the Royal Botanic Gardens in Sydney. It had been planted in one of the Garden's glass pyramids but did not thrive there as it was over grown by other plants and apparently resented the absence of strong light. It is intolerant of cold weather.

Report on Outing to Lawson, 20 May 1995
The long awaited rain cleared on the eve of the outing and the six members who participated enjoyed a fine if overcast day.

From the car park and picnic area the track soon divides. We went to the right first, only a short walk to and past the Fairy Falls which looked spectacular due to the unusually large volume of water. A feature of this area was the numerous Blechnum gresonii, a fern that is restricted to the Blue Mountains and Illawarra coastal ranges.

We retraced our steps then descended the very steep track to the left down to Dante's Glen, a most picturesque place in the rainforest. Peter then led us on a short walk past St Michael's Falls and further downstream under a closed rainforest canopy. During the walk up and out from Dante's Glen, Kyrill proposed a new term to assess and rate the difficulty of our walks - the Wreckme Scale! Kyrill's suggested score of 10 for this climb was not appropriate - we all survived !

Ferns recorded during the walk , which we concluded at lunch time were:
Asplenium flaccidum, Blechnum ambiguum, B.cartilagineum, B.gregsonii, B.minus, B.nudum, B.patersonii, B.wattsii, Calochlaena dubia, Cyathea australis, Gleichenia microphylla, G. rupestris, Grammitis meridionalis (Peter told us that he has had input into a paper to be published shortly separating this fern from G.billardieri), Hymenophyllum cupressiforme, Leptopteris fraseri, Lindsaea linearis, L.microphylla, Lycopodium laterale, Pellaea falcata, Pteridium esculentum, Pyrrosia rupestris, Selaginella uliginosa, Sticherus flabellatus, S.tener, Todea barbara.

DEADLINE FOR COPY

Thank you to all who have contributed articles and information to this Newsletter. All contributions received gratefully. Items for the September Newsletter should be forwarded to reach the Secretary by no later than 15 August 1995.

FORTHCOMING EVENTS : IN THE SYDNEY REGION

Sunday 18 June 1995, Meeting at Kenthurst
Meet from 11.30 am at the home of Betty and Eric Rymer, 48 Annangrove Road, Kenthurst. The study will commence at 1.00 pm on the genus Lygodium. Our special thanks to Tamara for nominating Ian Cox to present "A Members Fern". Bring lunch and afternoon tea. Enquiries to the Rymers 654 1831.

Saturday 8 July 1995, Outing to Girrakool
If travelling from Sydney, leave the Expressway at Gosford exit, turn left towards Old Sydney Town, travel approximately 1.5 km, then left pass through Park entrance gates, meet at the Car Park from 9.30 for 10 o'clock sharp start. Picnic tables and other facilities are in this area so we will probably eat lunch here. Easy walk in an attractive location. Enquiries to Peter 625 8705.

Friday, Saturday, Sunday 11 to 13 August 1995, Native Plant & Garden Spectacular
In lieu of our normal activities we are devoting our energies to help SGAP-NSW stage the 1995 Exhibition at the Nursery Industry Association's grounds at 384 Annangrove Road, Rouse Hill. If you are able to attend for any part of the three days or for set-up or pull-down duties and are not already committed, please contact Moreen 528 4881.

Saturday, Sunday 26 & 27 August 1995, Kuring-gai
And, also to help the SGAP-North Shore Group at the Festival of Wildflowers (Kuring-gai Wildflower Garden). If you are able to help in the new Fernery to talk to the visitors about the ferns at any time on either day, please contact Moreen who is organising a roster. We would like an idea of volunteers at our June meeting.

Saturday 16 September 1995, Visit to Mt Tomah
Meet at 11 o'clock at the Visitors Centre inside Mt Tomah Botanic Gardens. Peter will conduct us on a guided tour and put a name to all those ferns you have wondered about. Enquiries to Peter 625 8705.

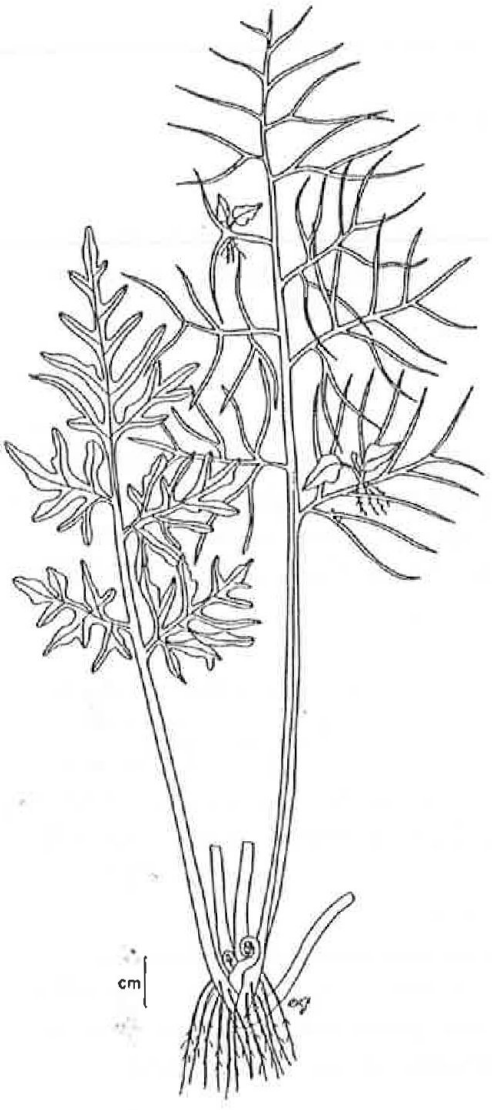
FORTHCOMING EVENTS : IN THE MID NORTH COAST , N.S.W.

For details about forthcoming events contact Charlie Charters, phone (065) 86 1088 - note new phone number.

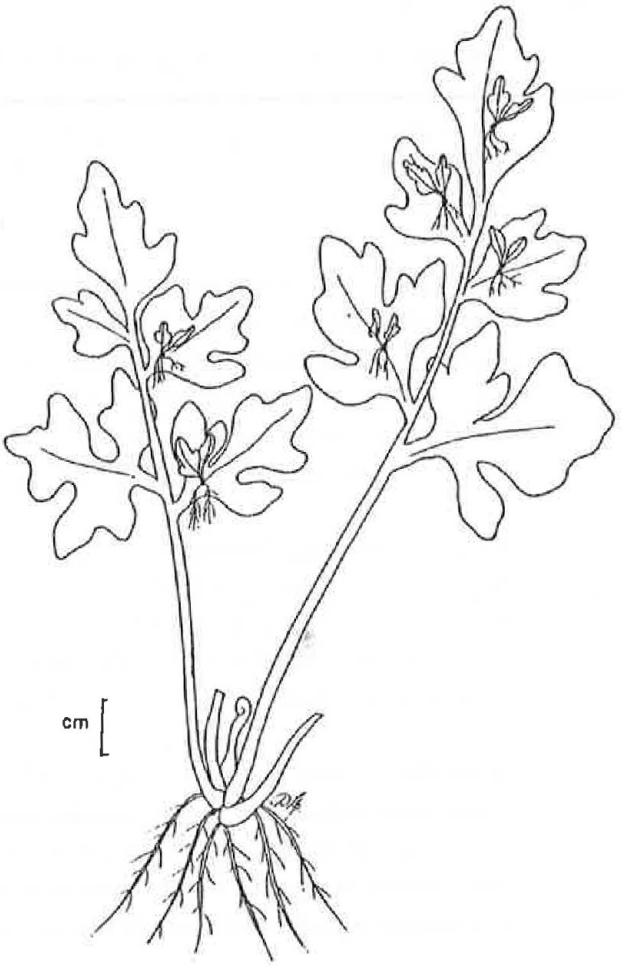
FORTHCOMING EVENTS : IN SOUTH EASTERN QUEENSLAND

Sunday 4 June 1995, Outing to Greenbank
Meet at Kerry Rathies home 5 Saltoun Road Greenbank. Study Identification of Genera. Meet at 9.30 am.

Sunday 6 August 1995, Outing to Algester
Meet at Cullen's home, 220 Ridgewood Road, Algester. Another look at Lastreopsis and arrangements for September Display.



CERATOPTERIS THALICTROIDES x1



CERATOPTERIS CORNUTA x1

Two ferns of aquatic and subaquatic habitats - sketches taken from "Australian Ferns and Fern Allies" by Jones & Clemesha.

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