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SPORE BANK: Phyll Brown
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Articles from Regional Newsletters and Fern Societies are occasionally offered for inclusion in our Newsletter. As some tedium could be caused to members who have read the original publication I usually feel reluctant to use them; however the following excerpt from the Queensland Region Newsletter will interest those of us who have admired and sought after the bipinnatifid BLECHNUM NUDUM illustrated in colour in Australian Ferns and Fern Allies:-

FISHBONE WATER FERN

Gary G. Kenning.

FAMILY: Blechnaceae

GENUS: Blechnum. Linn.

(Said to be derived from Blechnon, a Greek name for a fern.)

Grows along shaded water - courses in moist scrubs throughout Queensland. Particularly abundant around the Atherton Tableland. This species has a wide range from the Queensland tropics, southward to Tasmania and South Australia. It was once thought to be a form of the New Zealand BLECHNUM DISCOLOR.

DESCRIPTION:

B.NUDUM. Labill

Rhizome thick, ascending into a trunk of .305 metres or more. Fronds .305 to .610 metres or sometimes longer, pinnate or deeply pinnatifid, the rachis and stipes glabrous and shining black, with scales only at the base of the stipes. Barren fronds are lance-shaped, pinnatifid; pinnules entire, the upper ones pointed, the lower ones blunt. The fertile fronds pinnate, narrower, the pinnae very narrow and soriferous on the whole upper surface.

GROWING CONDITIONS:

Responds well to cultivation. Likes a damp position and filtered sunlight. In very favourable conditions the barren segments become toothed, so that the frond is bipinnatifid. This is simply a luxuriant growth and the plants usually revert to a normal form when removed from this environment.

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GWEN HARDWICK, on making a close inspection of several B. NUDUM ferns growing in her garden, discovered that one only differed, in that it displayed a "TOOTHING" of pinnae on the upper part of the lamina. The ferns are of a similar size and age; receive ample water and were fertilised early in the year with Nutricote slow release pellets. We later noticed this same variance on a few ferns in the Tidbinbilla Nature Reserve.

MAURICE HAENKE of Caringbah in a recent letter said that PELLAEA and PTERIS species germinate readily in his garden, P. PARADOXA even in quite dry areas exposed to western sun. Maurice continued "On another aspect of propagation; some years ago I was told that Bird's Nest Ferns, when bisected, had the potential to regrow into whole plants! I tried this with a mature specimen, one half promptly completed its rosette, while the other half made no regrowth, but many months later I found a number of tiny "DAUGHTER" plants growing from the cut surface of its crown. They did not appear to be sporelings, but to have sprung directly from the parent plant, I was able to detach these after further growth and most survived to become healthy mature specimens. Further budding of new plants continued over the next year or so, while the parent half plant slowly died back, until now it appears to be quite extinct. In my limited experience I have not read of such a phenomenon."

Two members from Western Australia have suggested materials that Peter Althofer could use as mulch among the ferns in the shade area at the Burrendong Arboretum.

RHONDA WHITE Writing from Gidgegannup W.A. said that they can buy by the bag, truck or trailer-load, woodchips, Jarrah sawdust or bush mulch from woodchipping in the South-west (poor Jarrah how sad). Rhonda has also found pea size gravel to be effective and look good when used in conjunction with sawdust, straw is also good as it rots down and kills weeds as does shredded newspaper covered with sand.

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Also from the West our second correspondent wonders if the Arboretum would have access to large quantities of sawdust, buzzer chips or pine bark fines and says that any one of these when spread as a mulch is good for keeping down weeds. The letter goes on "Sawdust is the most common thing used on fernhouse floors and benches here and if warmth and humidity are right the ferns will grow from spore on it. In past years I spread sawdust where the sand was hot, black and dry, the area is now thick with DENNSTAEDTIA DAVALIOIDES although much of it is in full afternoon sun. Something that a fern friend did may be of interest. She has Australian natives growing and they are a beautiful sight, but in one area amongst them a BLECHNUM BRASILIENSE wasn't doing so well as it was being choked by the roots of a native shrub. As it was impossible to dig it out she cut the fern off at ground level (it had quite a trunk on it) and replanted it like a big cutting with her other ferns. It grew new roots and looks lovely! When I showed surprise she said that she thought it was a tree fern and that it was alright to move it in this way. I have a CYATHEA COOPERI that I would have liked to move in this manner but thought it was only DICKSONIAS that could be transplanted without roots. Have any members transplanted BLECHNUMS or CYATHEAS bare - root? I've a BLECHNUM FLUVIATILE with a trunk of about four inches and I've noticed that it droops its fronds and looks very sad when I water overhead and the water runs into the centre

of the crown. I've bought several of these at different times and always lose them and yet I can grow other BLECHNUM species. The N.S.W. Dept. of AG's comment on using fish emulsion was interesting, some of the older "Fernies" here say not to use it because the oil clings to the roots of ferns and does them harm. They have studied this, through a microscope. I was interested in Ray Best's article on PTERIS VITTATA. I have two ferns very much alike, but different and I have never been able to decide the correct name. Perhaps P.VITTATA and P. LONGIFOLIA are two different ferns and not two names for one fern. I will make an effort to have them identified when they have spore fronds again."

NEWS FROM THE SPORE BANK:

During the past two years Gwen Hardwick has attended to the Spore Bank as well as typing for our Newsletter. Demands on her time dictate that she can no longer do both... "It is with regret that I am standing down as Spore Bank Curator, corresponding with so many members has been rewarding, as are the friendships that have developed. I have gained much knowledge of ferns by actually studying the different spore during the process of stocking the Bank; here I must mention that the use of the microscope and sieve has been of tremendous advantage and thank those who contributed towards the purchase of the two items. Many thanks to those who wrote such interesting letters when requesting or donating spore; particularly Rod Hill of The Fern Society of Victoria whose donations and advice have been most appreciated."

Gwen Hardwick.

Listed below is the current spore in the Bank. Please send your self addressed envelope

ADIANTUM	FORMOSUM	7/80		DICKSONIA	YOUNGIAE	7/81	8/81
ACROSTICHUM	SPECIOSUM	6/80		HYPOLEPIS	AUSTRALIS	1/81	
ASPLENIUM	BULBIFERUM	12/80		LASTREOPSIS	ACCUMINATA	12/80	
"	NIDUS	10/80	11/80	"	DECOMPOSITA	7/80	
BLECHNUM	CARTILAGINEUM		5/80	"	NEPHRODIOIDES	7/80	
"	FLUVIATILE	4/80			(Lord Howe Island)		
"	NUDUM	8/80	10/80 11/81	MACROTHELYPTERIS	TORRESIANA	4/80	
"	VULANICUM	7/80		MICROLEPIA	SPELLUNCAE	2/81	4/81
BOLBITIS	QUOYANA	3/81		PELLAEA	FALCATA	1/81	
CHEILANTHES	DISTANS	4/80		"	VIRIDIS	4/80	
CHRISTELLA	DENTATA	4/80		POLYSTICHUM	AUSTRALIENSE	4/80	
CYATHEA	AUSTRALIS	3/80		"	FORMOSUM	7/80	
"	CELEBICA	7/81	8/81	PLATYCERUM	SUPERBUM	4/80	
"	COOPERI	2/80	11/81	"	VEITCHII	6/80	
"	CUNNINGHAMII	2/80		PTERIS	TRIPARTITA	2/81	
"	REBECCAE	8/81		"	UMBROSA	12/80	
"	ROBERTSIANA	12/80		"	VITTATA	1/81	
CULCITA	DUBIA	1/81	4/81	RUMOHRA	ADIANTIFORMIS	3/80	
CYCLOSORUS	INTERRUPTUS	2/81	3/81	STENOCHLAENA	PALUSTRIS	2/81	
DICKSONIA	ANTARCTICA	4/81	7/81	TAENITIS	PINNATA	4/81	

The Bank will now be looked after by PHYLL BROWN of 154 EDGAR ST. CONDEL PARK. N.S.W..2200. Phyll is a very keen collector of ferns and one who has tried her hand at spore propagation with some success.....

"I am only a learner but find that growing from spore is a lot of fun and I'm happy to pass on any information which would encourage others to try it. At first I couldn't distinguish the spore from the husk but a loan of the group microscope and sieve made

this easy, when these were returned for use in the Spore Bank, I found that a fine silk scarf stretched over an embroidery hoop made a very successful sieve and that there are also a good range of reasonably priced microscopes and magnifying lenses available. I use screw top glass jars about 500 gramme size into which I place small pieces of broken sandstone along with broken pieces of jiffy pots, I then pour boiling water over to keep the resulting mixture very wet. The lid is placed on the jar and left till it cools. I then remove the lid and lightly sprinkle the spore quickly over the mixture (not too thick), replace the lid tightly and endorse the jar with name of species, date etc. Place the jars in a well shaded, warm place and after about a month inspect for signs of green. Some spore may take longer to germinate. At present my tiny PLATYCERIUMS VEITCHII and SUPERBUM are my pride and joy."

Phil

CANBERRA

Our excursion to Canberra during November was something to remember. We met in the National Botanic Gardens in the afternoon and as arranged were shown through the nursery and two new glasshouses. Our excellent guide, John Pike, also found time to show us a section of the gardens currently under construction, which is designed to help those in the community who may be physically incapacitated, or in some way disabled, to more fully enjoy and learn from the plants. Special features such as the sound of water cascading into a pool signals to those with impaired vision that they are entering the garden. Walkways are graded and wide so as to allow wheelchairs to manoeuvre with ease, and they are edged with low borders of specially cut timbers, placed vertically so that when touched with a cane they indicate the perimetres and curves of the paths. Surfaces are finished in a rough texture to provide sure footing. A second water feature heralds the return walk. Most of this garden will be landscaped with plants that appeal to the senses, while a part will contain low garden beds at various heights to illustrate to people who may have suffered from a stroke or some type of accident that they can still enjoy growing vegetables or plants from a seated position.

The glass houses hold splendid collections of ferns, palms and rainforest plants growing to peak size and in perfect condition due to a combination of moisture, humidity, light and freshly flowing air; indeed, the depth of colour and the general robust appearance of ferns, such as STENOCHLAENA PALUSTRIS and AMPELOPTERIS PROLIFERA made them difficult to recognise when compared to their counterparts growing in our Sydney gardens. It was an education to see ferns such as HUMATA REPENS or BLECHNUM ORIENTALE looking as they would if growing in the Tropical Rainforests of Northern Australia.

We travelled south of Canberra to the Tidbinbilla Nature Reserve which covers 5515 ha of valley floor and mountain ranges. At the information hut we viewed a documentary on the geological formation, fauna and flora of the reserve, we then chose the Lyre Bird Trail from the 56km. of available walking trails. This walk crossed streams, climbed heavily timbered hills dotted with flowering Hibbertia and descended again to the creeks bordered by DICKSONIA ANTARCTICA TREE FERNS with thick, stout trunks, some with multiple crowns and all showing spectacular flushes of new season fronds. Spreading in lush colonies, BLECHNUM NUDUM was the dominant fern, B. MINUS and B. WATTSII were represented by random, huge specimens, a few POLYSTICHUM ferns were noted and the dainty ASPLENIUM FLABELLIFOLIUM was evident throughout the terrain. Many species of

birds live in the reserve and the birdsong was a delight. A Satin Bower bird accepted bread from us at morning tea; along the trail Honeyeaters sought out the flowering Clematis vines, a large Wallaby browsed among the ferns, a black and yellow snake sunned himself on the creek bank and most remarkable of all; three lucky members spotted two Lyre birds dancing! That evening we enjoyed the hospitality of Canberra members, Barbara and Garth Setchell who barbequed a delicious meal for us in the attractive surroundings of their native garden.

TERANIA CREEK RAIN FOREST:

Recently with the assistance of a keen fern friend I had the opportunity to visit this astounding forest. We have all heard of the many attempts being made to protect it for future generations.

Approaching the area it is obvious that the original cover was much larger; the only portion left is the almost inaccessible mountain terrain. Surrounding farms give a clear indication of the rich soil and the readily available pure water supply. We find lush pecan nut plantations, banana, pineapple, and paw paw stands. Obviously after removing the rain forest, the farmers realised that some protection from the wind was necessary to grow their crops, so most have planted wind breaks of camphor laurel trees (*Cinamomum camphora*). These imports with their beautiful light green and dense foliage undoubtedly provide an excellent wind protection, however they appear to be spreading rapidly to footpaths, roads etc., in some cases entering even the very forest itself; indicating just how difficult it is to protect such a heritage.

On first entering the forest it can be seen that a number of attempts at replanting have been made by the Forestry Commission; boards indicate the tree types planted and the time of sowing; but here considerable confusion also exists, as seedlings of many of the existing trees have penetrated these new areas along with weeds and shrubs; unfortunately the result is far from effective.

Upon entering the undisturbed forest area itself; massive trees festooned with PLATYCERIUMS (stags & elks) and ASPLENIUMS (bird's nest ferns) suspended hundreds of feet above the ground, create a cathedral like atmosphere. Occasionally, hanging mosses illuminated with the few penetrating shafts of sunlight add to this ethereal effect. Within thirty square feet of ground cover here, we find practically every species of our native ferns flourishing. No wonder the Original Australians developed such a deep respect and attachment to their land and attempted to the best of their knowledge to preserve it.

Unfortunately our time was limited, and it would be difficult and confusing to include a list of all the ferns, trees, palms, etc., that flourish in this area. However we did come across a few unusual ferns, one appeared to be a species of DIPLAZIUM; another a tree fern type that resembled CYATHEA COOPERII but with a much narrower trunk and a crown of closely clustered fronds that left a delicately patterned caudex unlike any other species seen by us. Also a large leaved GLEICHENIA MICROPHYLLA and an unusual STICHEROUS species.

Although we may make attempts to recreate rain forest and grow ferns in glass houses and artificial environments all our efforts are fitful when compared to undisturbed nature. If in our efforts we attempt to propagate some of the species that are on their way to extinction and learn how to keep them alive, we can assist others to gain an understanding of the magnificence of undisturbed nature, and create a desire to preserve our few remaining masterpieces.

RAY BEST.

This year, the importance of using a suitable soil mixture was dramatically illustrated to Sydney members when we decided to "POT-ON" one thousand sporelings. The soil mix chosen, reputed to have a ph. of about 6 was purchased from a leading Sydney supplier. When repotted our ferns showed no signs of growth and appeared to be fading away. An analysis of the soil revealed that the sawdust component was not properly composted and that the mix lacked nitrogen. Speaking to the proprietors of different plant nurseries, I found that we weren't alone with our problem, several experienced people, including landscape gardeners had used this same mix only to be embarrassed by results. One, who must have an instinctive feel for soil, rejected his delivery while it was still on the truck and sent it back. The message is; that around Sydney, the demand for soil and potting mixes is so great that they are processed in haste and sold to growers before enough time has elapsed to ensure quality. From another city came the sad story of a grower who lost ten thousand plants because the fertiliser used in a bought mix was not distributed evenly, resulting in the load containing full strength fertiliser which burnt and killed his plants overnight. In our March newsletter we will concentrate on potting mixes in the meantime "LET THE BUYER BEWARE".

BURRENDONG ARBORETUM:

To add some height to the landscape in the shade area, our group has bought ten DICKSONIA ANTARCTICA tree ferns; they were part of a large consignment of plants from Victoria which were bulldozed out to make way for a road, they were bare-root with the fronds cut off and the trunks were of the following (approximate) heights,

2	measured	2.4m (8ft)	2	measured	1.8m (6ft)
1	"	2.1m (7ft)	5	"	1.5m (5ft)

Two were attractively bent and one divided into a double trunk. We also bought three MACROZAMIA (BURRAWONG) PALMS about 1.5m (5ft) high. While selecting the DICKSONIAS I would place my hand down into the crown of each plant to feel if the new croziers were developing; after watching me do this for sometime, the dealer confided that, "he wouldn't put HIS hand into the crown of a tree fern, as it was a favourite nesting place for funnel web spiders!" In future, nor will I!

We have our first meeting for 1982 in the beautiful Blue Mountains where we will walk to the Gordon Falls. Meet on Sunday 28th February at 10 a.m. at Kedumba Park. Direction: Driving from Sydney, pass through Wentworth Falls, continue on, passing the Pottery Patch Nursery on the right, and then, just before the road goes under the railway line bridge, is Kedumba Park, I'm told we can't miss it!

As 1981 quickly draws to an end, we are solvent; we have an excellent structure to use at the Wildflower Exhibitions; we have gone a long way towards planting the shade area at Burrendong. We have also enjoyed each others company while pursuing a mutual interest. Through our mail and while on excursion we have discovered interesting facts about ferns. From Sydney we wish you good health and happiness in the coming New Year particularly our members who are interstate or in remote places.

Molly Murray
 LEADER - S.G.A.P. FERN STUDY GROUP.