

ASSOCIATION of

*S.G.A.P. Fern Study Group*

*Newsletter Number 52*

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A Review of S.B. Andrew's "Ferns of Queensland"

Published by Queensland Department of Primary Industries

Reviewed by Peter Hind

After many years of awaiting "Ferns of Queensland" by S.B. Andrews, it has been published in 1990, just over a decade from its sited publication date 1979 in "Ferns, Fern Allies & Conifers of Australia" by Clifford and Constantine.

The delay in publishing, of course, has caused the book to be out of date already. However, it is still the most comprehensive work available on Queensland ferns. The appendices help to redress this problem. Hopefully, it may be revised in the near future to incorporate the appendices into the main text, particularly in the keys.

The excellent line drawings are helpful in identification. Unfortunately, the nomenclature used on the plates occasionally does not match the text, e.g., Dicksonia herbertii on the plate, Dicksonia youngiae in the text. As pointed out in Appendix 2 on page 392, these species do co-exist ..... so, as the source of the material used for the illustration is not stated, which one is illustrated?

After all that, I would still recommend this book. All serious fern addicts must have a copy, as I suspect it will be a long time before we see anything better.

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"Ferns of Queensland", the first complete flora of Queensland ferns and allies, is available from SGAP Book Service, Bower Bird Books, P.O. Box 104, Winmalee, N.S.W., 2777, for \$50.60 plus postage applicable on 1 kg.

### Another Ferny Place

During the short period of his membership, Calder Chaffey has won a reputation for being one of the most avid searchers after ferns and ferny places. Calder is also a keen identifier and his thoroughness is typified by the manner in which he has written concerning the identification of the local rainforest tree ferns. A sincere thank you Calder for sharing your knowledge in your article which appears elsewhere in this Newsletter.

Calder has recently written of an interesting fern area that others might enjoy visiting. An extract from Calder's letter follows.

"I have been meaning to tell you of a find on my way home from the last fern meeting at Wauchope. I found a small rainforest reserve up from Wingham - Goorganna Nature Reserve. One enters from the top of the plateau and walks down a good track descending about 600 m to a waterfall on Mumford Creek. Walk is 2.7 km to the bottom. Reserve 2 by 2 km. It is absolutely crowded with ferns with patches of dry, wet and in spray under falls. It would be well worth while for a future fern meeting. Good accommodation at Wingham or Wauchope or maybe we could get a place at Bonny Hills where we had the SGAP Conference. I only had a couple of hours to spare but noted a goodly number of ferns.

### Report on Activities of South East Queensland Group

The Group had a good start to the year when 25 members met at the home of Peter and Pat Bostock on Sunday 3 February.

We welcome Geoff Edwards to our Group and great to see Joyce Ward back as a regular.

Peter Bostock has a new neighbour, David Denton (formerly of Woombye) and although in residence only a week, he showed us his large collection of ferns, which took the move well. He has a big and varied collection of Drynaria rigidula in its many forms.

Time was limited on our Lastreopsis study. It was decided that five members would make a special day to co-ordinate the information we have to date. We hope to come up with a reasonably workable "Amateurs Field Guide for Lastreopsis".

### Contributions Most Welcome

Items for the Newsletter are always eagerly received. Please share your experiences / views / observations relating to ferns, with the membership generally by forwarding items to the Secretary.

The deadline for our next Newsletter is 15 May 1991.

And please remember our Spore Bank! Contributions of fresh spore are appreciated - please forward direct to Jenny Thompson.

Having just received my Pteridological Societies Bulletin Volume 4, No 1, 1990; somewhat suprised to find an obituary to Dr Holttum who I am sure we would all agree was indeed the worlds 'Grand Old Man of Ferns'. An accepted leader around the world; having made many enquiries about ferns from him in the past, I always found him ready to share his vast knowledge with anyone requiring assistance. His many works have assisted over the years as a guide to all those interested in ferns. So I decided to send you details as recorded in the British Pteridological Societies Bulletin.

**RICHARD ERIC HOLTUM ScD**

1895-1990

Dr Eric Holttum, the Grand Old Man of pteridology, died on 18 September 1990 at Kew, Surrey. He had reached the end of a long and productive life and had drawn his scientific work to a close with his account of *Tectaria* for *Flora Malesiana*, sent to the Editor in 1988. He was mentally active to the end, and over the last few months had been piecing together his autobiography.

Holttum was born in Linton, Cambridgeshire, on 20 July 1895. He went to the Quaker schools of Saffron Walden and Bootham, York, continuing his education at St John's College, Cambridge. His college years, however, were interrupted by the First World War. Holttum, a Quaker, served in the Friends Ambulance Unit and received the Croix de Guerre for his active service.

Following his return to Cambridge, he obtained a First Class Honour's degree in Botany in 1920 and as part of his post-graduate studies on fossil ferns, he carried out fieldwork in Greenland with Prof. A C Seward. The fossils he collected were related to present-day tropical species, and in 1922, perhaps with a desire to see things first-hand, he successfully applied for the Assistant Directorship of the Singapore Botanic Gardens, becoming Director in 1926. There his life-long interest in ferns was established. He was an observant botanist and also made very significant studies of many other groups, in particular, orchids, gingers, bamboos and sedges. He was an avid plant collector and made many trips to different States of Malaya, and to British North Borneo (now Sabah), where he made the first substantial collection of pteridophytes of Mt Kinabalu in 1933.

His contribution to the botany of SE Asia has been well documented in his own account published for his eightieth birthday (in *Fl. Malesiana Bull.* 28: 2477-2500, 1975, which has a complete list of his publications to that date). In 1942 Japanese troops invaded Singapore, but luckily his wife and two daughters had already left for Australia. Aware of the value of Holttum's pre-war work, the Japanese ordered him to continue his research at the Gardens. He therefore spent the three and a half years of the occupation on uninterrupted taxonomic research which laid the foundation of many substantial publications, including his account for *Flora of Malaya*, Vol. 2, Ferns (1954).

The writing of *Ferns of Malaya* gave Holttum a broad perspective of the relationships of genera and the delimitations of families, and he began to see fundamental links that were not apparent in the accepted classification at the time, that of Carl Christensen. These views Holttum published as 'A revised classification of Leptosporangiate ferns' in the *Journal of the Linnean Society of London (Botany)* (vol. 53: 123-158, 1947) a few months before E B Copeland's *Genera Filicum*, which unfortunately over-shadowed it. They formed, however, the basis of Holttum's approach to further fern studies and the arrangement for the pteridophyte series of *Flora Malesiana*, of which he was to become the general editor.



In 1949 Eric Holttum resigned from the Directorship of the Gardens and became the first Professor of Botany at the new University of Malaya in Singapore. He retired to England in 1954 and settled at Kew, where he was given facilities to work in the Herbarium at the Royal Botanic Gardens until his death. A true field man, Holttum loved his Wednesday visits to the fern houses there, where many of his own living collections were growing. He encouraged Bert Bruty, Supervisor of those houses in the 1950's and 1960's, and explained the ecological requirements of these tropical plants.

It was extremely sad that in the mid 1970's he began to lose his hearing and although he mastered lip-reading, having a two-way conversation became increasingly difficult. This did not stop him attending meetings however, and in 1981 he went to the International Botanical Congress in Sydney. It was there that the International Association of Pteridologists was set up and Eric Holttum was a natural choice for its first President, a post he held until the next Congress in 1987.

Holttum had been given many accolades: an ScD from Cambridge University, an honorary DSc from the University of Malaya, gold medals for orchidology from America, Malaysia, and the RHS, and for excellence in tropical botany by the Pacific Tropical Garden in Hawaii. His great achievements, particularly since his 'retirement', are an inspiration and example to us all.

Holttum joined the BPS in 1950 and members of the Society will remember him as our President from 1960-63, and as a Vice-President thereafter. Our annual meeting at Kew was for years rounded off with tea at the Holttums, when many of his Malaysian treasures could be seen. With his wife, Ursula, he frequently joined our field excursions, constantly pointing out interesting features about our native ferns - the number of vascular strands in the stipe, the unicellular hairs in *Thelypteris*, glands on the scales of *Phegopteris*. He never ceased to teach, yet it was always in an inspiring, friendly, modest, almost conversational style over a meal, on the train, or walking in the field. He was also excited at things others showed him, and was often heard to say that characteristic 'Golly, golly', a phrase Ursula disliked and repeatedly scolded him for using, but to no avail.

## A SIMPLE METHOD OF IDENTIFICATION OF THE TREE FERNS OF N.E. N.S.W.

by Calder Chaffey

This method only refers to tree ferns found growing naturally in the area of N.S.W. from Pt Macquarie to the Queensland border and from the coast to the tablelands. It is not suitable for the identification of specimens growing in gardens. These could be species brought in from other districts and more characteristics may have to be considered to make an identification.

Most keys depend on observation of material from the fern which is not always available at all times of the year. We have all experienced the disappointment of finding a specimen without the opportunity to return and identification has been made uncertain because the fronds were not bearing spores at that time of the year. The following key selects a number of characteristics which make identification certain, and in any season some of these can be found. Occasionally one characteristic alone is enough to make a certain identification, e.g. the two types of scales present on *Cyathea cooperi*. In the key below the mark "~" designates that this characteristic alone is sufficient to identify this fern if indigenous and growing in N.E. N.S.W. For use select from the headings "A" to "J" according to the material you have been able to find and work through each section to a possible identification. Of course if you are lucky enough to get three or four types of material you should come to the same conclusion in each section proving the identification.

Tree ferns are here defined as ferns having an upright habit with a woody caudex or trunk. The hard exterior of the trunk is covered on more or less of the upper part by the basal part of the stipes of the dead fronds and the extent to which these persist helps in identification. At least some of the trunk is composed of the fern rhizomes forming tough aerial roots visible on the lower surface. The top is crowned by a mass of spreading fronds. To conform with this definition *Blechnum nudum* has been included.

The tree ferns it is possible to find in this part of the state are:

<i>Blechnum nudum</i>	<i>Cyanogens</i> sub gen <i>Cyathea australis</i>
<i>Todea barbara</i>	<i>Cyathea</i> sub gen <i>Cyathea cunninghamii</i> **
<i>Angiopteris evecta</i> *	<i>Cyathea</i> sub gen <i>Sphaeropteris leichhardtiana</i>
<i>Dicksonia antarctica</i>	<i>Cyathea</i> sub gen <i>Sphaeropteris cooperi</i>
<i>Dicksonia youngiae</i>	

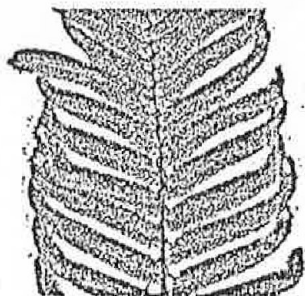
\* NOTE: *Angiopteris evecta* is only known to exist naturally in NSW by one specimen in the NE corner.

\*\* *Cyathea cunninghamii* has never been recorded in N.E. NSW but it is possible that it will be found in the Border or Nightcap Ranges as it exists only a few kilometers to the north on the Lamington Plateau. It is therefore included for completeness.

### KEY

#### A LAMINA

1 Fertile and sterile lamina markedly dissimilar	<i>Blechnum nudum</i> ~
2 Pinnatifid (sterile lamina)	<i>Blechnum nudum</i>
1* Fertile and sterile lamina similar	3
3 1-pinnate-pinnatifid to 2-pinnate	<i>Todea barbara</i> ~
2 to 4-pinnate	<i>Angiopteris evecta</i>
2-pinnate-pinnatifid to 3 pinnate	<i>Cyathea</i>
3-pinnate to 3-pinnate-pinnatifid	<i>Dicksonia</i>

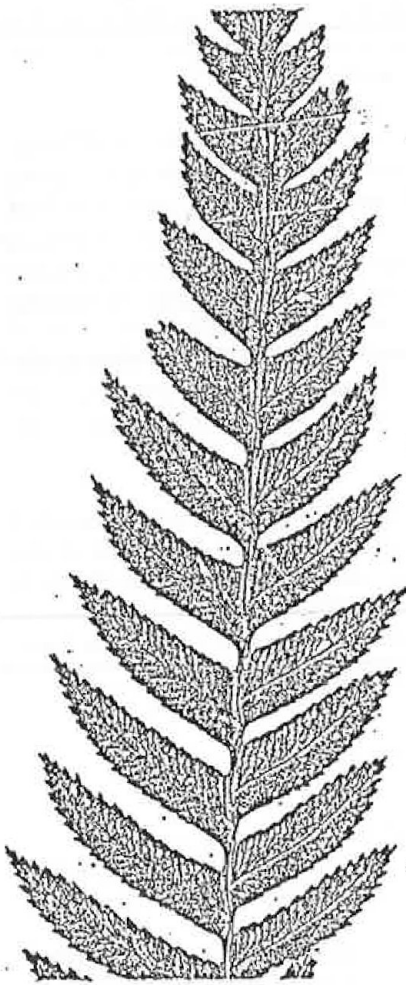


FERTILE FROND-

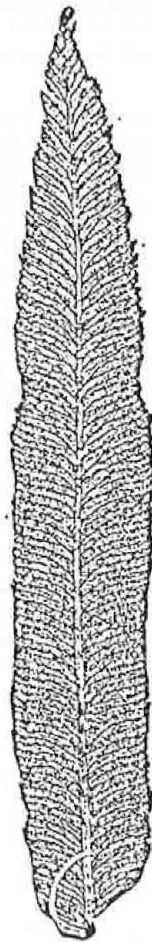


BLECHNUM NUDUM

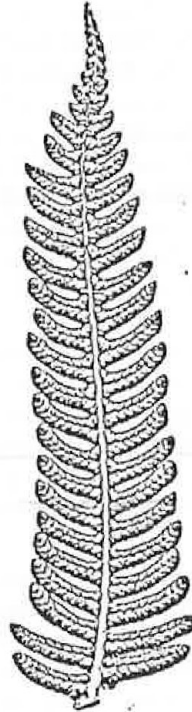
-STERILE FROND

ULTIMATE SEGMENTS  
 OF FRONDS


TODEA BARBARA



ANGIOPTERA EVECTA

CYATHEA  
COOPERIDICKSONIA  
YOUNGIAE

## B STIPES

Round . . . . .  
 Channelled on dorsal surface . . . . .

Angiopteris evecta ~  
 All other tree ferns included in this area

## C STIPE BASES ON CAUDEX

1 Usually deciduous . . . . .  
 1\* Stipe bases persisting on caudex . . . . .  
 2 A few persisting . . . . .  
 2\* Most stipe bases persisting . . . . .

Cyathea cooperi  
 2  
 Angiopteris evecta  
 All other tree ferns of this area

## D STIPE BASES

Purple/black, shiny . . . . .  
 Brown, smooth . . . . .  
 Thick, fleshy, dark brown . . . . .  
 Rough with conical spines to 3 mm . . . . .  
 Warty, brown . . . . .  
 Sharp spines to 4 mm, brown . . . . .  
 Rounded tubercles to .5 mm . . . . .  
 Warty to smooth . . . . .

Blechnum nudum  
 Todea barbara  
 Angiopteris evecta  
 Cyathea australis  
 Cyathea cunninghamii  
 Cyathea leichhardtiana ~  
 Cyathea cooperi  
 Dicksonia

## E STIPULES AT BASE OF STIPE

Small- 2-3 cm, one pair . . . . .  
 Large and fleshy-7-15 cm, one pair . . . . .

Todea barbara  
 Angiopteris evecta

F CAUDEX (TRUNK) - all measurements UP TO:

60 cm X 5 cm, black, fibrous, often multiple	Blechnum nudum
1.5 cm X 40 cm, black, fibrous	Todea barbara
90 cm X 45 cm, dark brown-black	Angioptera evecta
20 m X 40 cm, stipe bases persist upper 2/3	Cyathea australis
20 m X 15 cm, mostly covered with stipe bases	Cyathea cunninghamii
7 m X 10 cm, mostly covered with stipe bases	Cyathea leichhardtiana
12 m X 25 cm, oval scars from deciduous stipes	Cyathea cooperi
5 m X 80 cm, matted roots below, stipes above	Dicksonia antarctica
5 m X 20 cm, dark matted roots and stipe bases	Dicksonia youngiae

G SCALES (at developing frond bases)

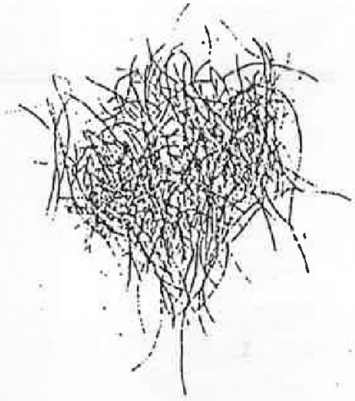
1 Scales of one type only present	
Dark brown, 2 cm narrowly triangular	Blechnum nudum
Glossy brown to 5 cm X 3 mm	Cyathea australis
Thin, pale, dull to thick, dark brown, shiny	Cyathea cunninghamii
1.5 to 3.5 cm X 1 to 3 mm	
Silky pale straw to 6 cm X 1 mm.	Cyathea leichhardtiana
1.* Scales of two types present	
Straw papery and dark brown needle-like	Cyathea cooperi ~



SINGLE TYPE OF FLAT SCALES  
CYATHEA AUSTRALIS



FLAT AND HAIR-LIKE SCALES  
CYATHEA COOPERI



HAIRS  
DICKSONIA YOUNGIAE

H HAIRS (at developing frond bases)

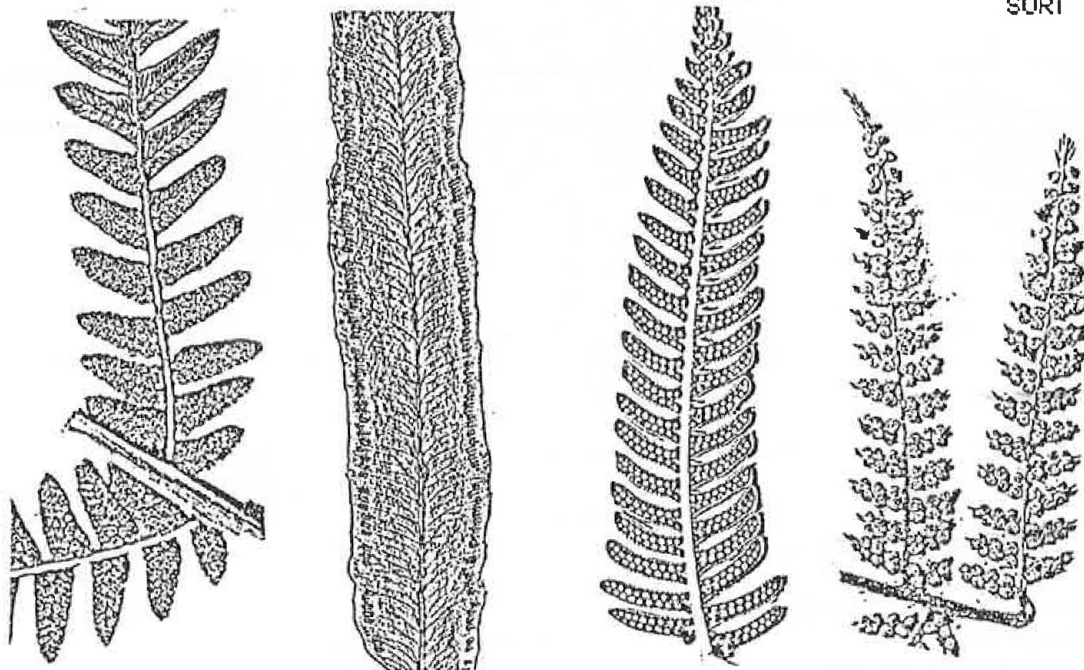
Glossy ginger brown	Dicksonia antarctica ~
Bristly, glossy dark red brown	Dicksonia youngiae ~

I INDUSIUM

1 Indusium present	2
2 Indusium complete	3
3 Indusium globular	4
4 Indusium splitting into 2 lobes almost equal or remaining as a hemispherical scale	Cyathea cunninghamii
4* Indusium composed of two valves	5
5 Indusia under 1.4 mm	Dicksonia antarctica
5* Indusia over 1.4 mm	Dicksonia youngiae
3* Indusium linear	Blechnum nudum
2* Indusium incomplete of a few fringed scales around the sori	Cyathea australis ~
1* Indusium absent	The other tree ferns of the area

## J SPORES

1 Fertile & sterile lamina very dissimilar	2
2 Fertile fronds narrow and sporangia covering ventral surface . . . . .	Blechnum nudum ~
1* Fertile & sterile lamina similar	3
3 Sporangia not grouped into sori	4
4 Sporangia covering the basal area of the ventral surface of the lower pinnae . . . . .	Todea barbara ~
3* Sporangia grouped into sori	5
5 Sori oval	6
6 Clusters of 3 to 7 pairs of sporangia near margin of pinna . . . . .	Angiopteris evecta ~
5* Sori round	7
7 Sori solitary on the lobes of the pinna away from the central vein	8
8 Sori under 1.4 mm . . . . .	Dicksonia antarctica
8* Sori over 1.4 mm . . . . .	Dicksonia youngiae
7* Sori paired along central vein of pinna	Cyathea species
1 to 10 pairs sori 0.5 to 1 mm	Cyathea cooperi
2 to 12 pairs sori 0.3 to 0.8 mm	Cyathea leichhardtiana
3 to 8 pairs sori 0.5 to 1 mm	Cyathea australis



TODEA BARBARA

ANGIOPTERIS EVECTA

CYATHEA COOPERI

DICKSONIA YOUNGIAE

## GLOSSARY

Caudex	Axis or trunk of a tree fern consisting of stem and often rhizome	
Hair	Epidermal appendage consisting of an elongated cell or number of cells	
Indusium	A membrane covering a sorus	
Lamina	The expanded part of a leaf	
Pinna	The primary segment of a divided leaf lamina	
Pinnate	A compound leaf where the lamina is divided and the leaflets arranged on opposite sides of a common rachis	
Pinnatifid	A lamina cut into lobes each side about half way to the midrib	
Pinnate- <td>Pinnatifid</td> <td>Divided first pinnately (1X, 2X, 3X etc) with the segments of the final division cut into lobes</td>	Pinnatifid	Divided first pinnately (1X, 2X, 3X etc) with the segments of the final division cut into lobes
Rachis	The stems of a compound leaf bearing the pinnae or pinnules	
Rhizome	An underground stem	
Scale	Thin flattened papery structure attached to part of a fern	
Sorus	A cluster of sporangia on the fertile part of the lamina	
Sporangium	An organ producing and containing	
Stipe	The leaf stalk from the caudex to the lamina	
Stipule	An appendage at the base of the stipe	



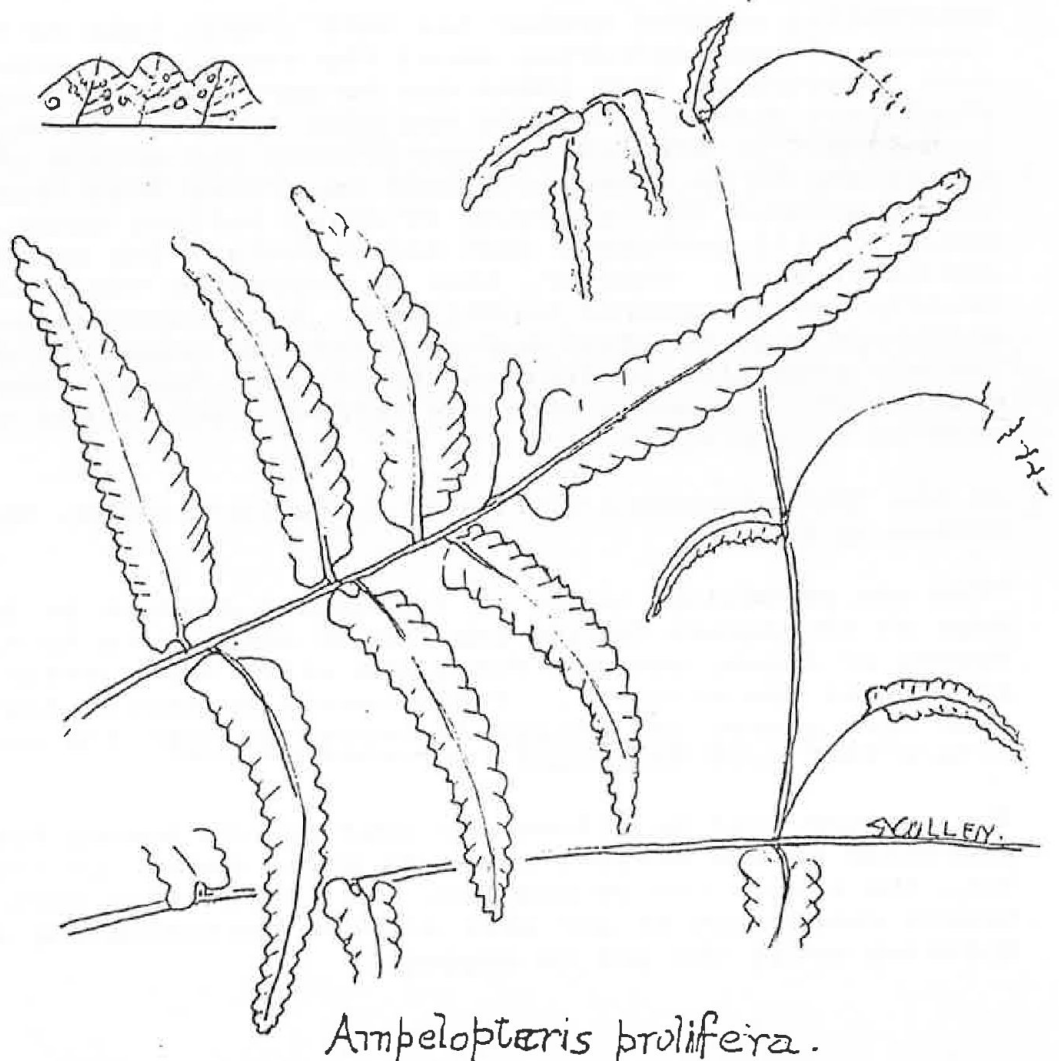
Ampelopteris prolifera.....in Gladstone Tondoon Botanic Gardens

Ampelopteris, pronounced am pel op' ter is, is aptly named from the Greek, ampelos a vine, and pteris a fern. Some of its fronds can extend 2 to 3 m in length. At the same time the frond will produce many plantlets along the entire rhachis. Given suitable conditions the plantlets will root and in turn start the whole process of plantlet producing fronds.

Little wonder it is rarely considered more than a fern oddity for the enthusiast to grow in a basket or try to keep it from invading the whole of his garden. I first saw this fern growing naturally on the banks of the Albert River (Newsletter No 9 - June 1980). It appeared to be an unattractive fern, with the ability to trip up a hapless walker most efficiently.

So imagine my surprise when visiting the Tondoon Gardens recently, to see a very attractive fern, being used as a ground cover on a gully, and to discover it was indeed Ampelopteris prolifera. Growing on a warm moist sheltered slope and covering a 3 by 4 m area, the fronds were a soft bright green, about 60 cm. Gone was its inclination to produce long tangling fronds and sparse pinnae. The area was apparently planted thoughtfully allowing the original plantlets to root well. Now they seem happy to just grow lush fronds, with an occasional one producing the long plantlet bearing frond.

Contributed by Irene Cullen



### British Pteridological Society

The International Centenary Symposium featuring pteridophyte propagation and culture, followed by a tour of fern gardens, is being held in July 1991. A varied programme is being planned which should appeal to anyone with a fascination for pteridophytes, no matter what their area or level of interest.

Many eminent growers and scientists will be contributing including David Jones from Australia. Papers to be presented include several on the history of fern cultivation, the diversity of cultivated ferns, commercial aspects and conservation. The programme will also include a visit to the living fern collections and the micropropagation unit at the Royal Botanic Gardens, Kew.

More information was published in our September 1990 Newsletter. Anyone who has not yet indicated a possible interest in the Symposium should write for further information to : Jennifer Ide, Roehampton Institute, Whitelands College, West Hill, Putney, London, SW15 3SN.

### Sterilizing Growing Medium

Phyll Brown reports having been questioned about the need to sterilize the medium used for the propagation of spore. Phyll says that she can only speak from her experience and has found that she gets excellent results by sterilizing the medium.

Apparently, another grower has told Phyll that he has good results without bothering about the sterilizing procedure. This just illustrates that there can be more than one way and we should not discourage those who wish to try a different technique. In the case of sterilizing the medium in which the spores are to be grown, it might be argued that ferns grow in nature without the necessity of using boiling water, fungicides, etc., to kill pathogens that might inhibit the spore from growing and developing. However, when we undertake the process we do usually modify natural conditions. Most importantly, we often encourage high humidity and restrict the temperature range, thereby producing conditions that favour fungal growth and other nasties which compete with our ferns. That is why the general rule is to sterilize.

In the "Encyclopaedia of Ferns" by David L. Jones, the following advice is given.

"The use of boiling water on the sowing mixture or heating in the oven at 93 degrees Centigrade for 30 minutes is to kill the spores of algae, mosses, fungi and alien ferns which may be present in the mixture. These spores germinate faster than the sown fern spores and unless destroyed smother the young ferns before they have developed.

The mixture must be allowed to cool before sowing but it is advisable to sow while the mix is still warm. If the mix is too hot, the spores can be damaged. If it is still warm then the upward convection of air will prevent contaminating spores from entering until the pot is sealed."

### Donations

Thanks is extended to the following generous members who recently made donations to our Group:

Mrs B. Geekie, Mrs F. Lowe, Mr & Mrs L. O'Connor, SGAP-N.S.W. Region, SGAP-Pine Rivers Group & SGAP-Queensland Region.

This assistance is greatly appreciated.

### Subscriptions Due

If you have not already paid your subscription for the 1991 calendar year, please remit \$4 to the Treasurer, Miss Joan Moore, 2 Gannet Street, Gladesville, N.S.W., 2111.

### Liquid Fertilizers    Extract from Victorian Fern Society Newsletter

Liquid fertilizers are those which are made from a mixture of inorganic chemicals readily dissolved in water. Because of those solubility, liquid fertilizers are very useful indeed for ferns, particularly in the growing season i.e., from September to April in southern Australia. During this time, potted ferns fed with these fertilizers on a regular basis produce a steady and pleasing growth rate. Another advantage of the ready solubility of liquid fertilizers is that nutrients become immediately available to the fern roots when applied.

Some fertilizers in this group can be used as foliar sprays through which nutrients can be absorbed through the leaves of plants. Examples of liquid fertilizers which are popular with fern enthusiasts are:

MAXICROP: Maxicrop is a product of sea weed. It is available in liquid form and has a high concentrate of elements and minerals. Maxicrop is easy to use and prepare- simply add it to a quantity of water until the desired strength is obtained. Apply diluted Maxicrop during the growing season at three weekly intervals. It is not advisable to feed liquid fertilizer in Winter, which is the time of the year when most fern species have a period of dormancy. They are entitled to a rest.

AQUASOL. Aquasol comes to us in a crystalline form containing Nitrogen Phosphorus, Potassium and other elements. It is readily soluble and for ferns should be diluted at the rate of one level teaspoon in ten litres of water. Aquasol can be applied to potted or basketed ferns at fortnightly intervals during the growing season. It is also useful as a foliar spray at the same strength and will stimulate good steady growth.

If newly emerged sporeling ferns become pale-coloured or yellowish in their sterile containers, they can be restored to green by spraying a fine mist of diluted Aquasol over them. It is advisable to use boiled water when making the dilution in this instance.

There are numerous commercial brands of liquid fertilizers available, all of which are similar to the two examples given. Readers are in no way obliged to accept that these examples are the best procurable.

Manures of poultry, horse, cow or sheep can be converted to liquid fertilizer by placing a quantity of manure in a hessian bag, tying the open end with string and suspending the bag in a drum of water.

A.S.G.A.P. FERN STUDY GROUPStatement of Receipts & Payments for the Year 1990

<u>Receipts:</u>	<u>\$</u>
Membership Subscriptions (includes \$31 in advance)	519
Donations	104
Net proceeds of Raffles	94
Interest Received	163.21
Contra - Received in error	10
Sales of "Ferns of Queensland"	875
Sales of "Fern Dictionary"	66
Postage on Book Sales	29.80
Sales of Newsletter Digests	41
Net Overseas Subscription & to SGAP-N.S.W. Limited	25.74
	<hr/>
Total Receipts	1,927.75
	<hr/>

Payments:

Donation to Burrendong Arboretum Association	3,000
Purchase of Books & Postage on Sales	958.10
Overseas Subscription to SGAP-N.S.W. Limited	23
Contra - Received in error	10
Postage of Newsletters & Correspondence	327.28
Registration of Newsletter for Posting	50
Printing & Stationery	102.78
Bank Charges & Taxes & Money Orders	33.46
Advertisements, Mid North Coast Group	20.40
Expenses associated with Book	8
	<hr/>
	4,533.02
	<hr/>

Summary:

Cash at Bank 1 December 1989	\$4,058.66
Add Receipts for Year	\$1,927.75
	<hr/>
	\$5,986.41
Less Payments for Year	\$4,533.02
	<hr/>
Cash at Bank 30 November 1990	\$1,453.39
	<hr/>
Bank Balance at 30 November 1990	\$1,453.39
	<hr/>

(The above financial report made available by Treasurer Joan Moore.  
Thank you Joan for taking such good care of our finances).

Report on Function at Dural, 2 December 1990

Our end of year get together was held at the home of Pat Kenyon and Ted Newman. Twenty four members attended and there were rave reports about the hospitality of our hosts and the excellence of the arrangements. Thank you Pat and Ted. A thank you also to Kyrrill for your impromptu address.

Report on Outing to Hazelbrook, 23 March 1991

There were a few doubtful starters to this outing, members saying they would only go if it was not too hot. A fine, warm day in Sydney turned to a showery one when we reached the mountains. It wasn't hot and Jenny for one, quickly changed from shorts to long trousers. All twenty of us donned rain gear as we followed Peter down to Hazelbrook Creek. Gleichenia dicarpa was the first fern recorded and shortly after, G. microphylla the latter being the more prominent on the day. Blechnum minus, B. nudum and then small Cyathea australis were identified, followed by the dainty Lindsaea linearis and L. microphylla. Not nearly so attractive and more prominent was the Bracken, Pteridium esculentum, also some fine specimens of Todea barbara growing near the creek, many with metre high trunks.

Close to the first of the Falls, and past some wet, slippery rocks, Peter pointed out the filmy Hymenophyllum cupressiforme, Blechnum ambiguum growing from its favoured rock crevices, two oddities Tmesipteris truncata and Schizaea rupestris and then hanging from the damp rock face Grammitis billardieri. Leaving this area Lycopodium laterale was found growing on an earth bank, then we passed large stands of Culcita dubia and Blechnum cartilagineum before reaching Horseshoe Falls. At these Falls, under a huge over-hang there were countless Blechnum patersonii and on none of these could we find a divided frond. Roy did point to one patch with markedly rippled, wavy fronds that were very attractive - it would be interesting to discover if spore of these produced ferns with similar shaped fronds, but alas no viable spore were present. From the rock wall Pat found Polyphlebium venosum which is seldom seen away from the trunks of Dicksonia antarctica tree ferns and then Peter located a small Adiantum which he thought might be A. hispidulum. (A closer examination later proved that it was).

After a short walk, at Glowworm Nook Falls amidst treacherously slippery rocks, Peter showed us several plants of Blechnum gregsonii, some with fertile fronds which we observed to be almost as wide as the sterile fronds, most with what our Leader told us are its distinctive pendant fronds. Another Blechnum identified nearby was B. wattsi, while there were many of the beautiful giant filmy, Leptopteris fraseri some with globular spore quite apparent, and a small patch of the tiny Hymenophyllum australe.

We completed the round walk past the cliffs of the Amphitheatre in somewhat warmer conditions. Lunch under shelter from the showers ended our visit to an area of many interesting ferns.

FORTHCOMING EVENTSIn South Eastern QueenslandSunday 7 April 1991, Excursion to Springbrook

Meet 9 am sharp, Purling Brook Falls Car Park. Ring Peter Bostock (07) 202 6983, or Irene Cullen (07) 341 4272 if weather is doubtful. Members from Northern N.S.W. (and elsewhere) welcome.

Sunday 2 June 1991, Meeting at Greenbank

At 9.30 am Kerry Rathie's home, 5 Salston Road, Greenbank. Peter Bostock will give an account of his trip to the Ungella area.

In the Mid North Coast of N.S.W.Sunday 3 March 1991, Trip to Yarrahapenny

Turn about 47 km North of Kempsey at Warrell Creek on to the Way Way Forest Drive (or Rosewood Road). Meet at Pines Picnic Area at 10 am.

In Sydney AreaSunday 24 March 1991, Meeting at Collaroy Plateau

Note slight change from previous advice. We now start at 10.30 am at the home of Jan and John Fairley, 129 Claudare Street, Collaroy Plateau for a cuppa and a look at their garden. Then a short drive to Stony Range for meeting and lunch. Jan has asked Alec Blombery to be at Stony Range for a guided tour after the Study Session on *Psilotum* and *Ophioglossum*.

Saturday 20 April 1991, Outing to Bilpin

Meet at 9.30 at the Fruit Bowl, Bilpin. We leave from the Fruit Bowl at 10 sharp by car convoy to nearby Waratah Park. It is only a short, easy walk to the ferny area. Lunch at cars. Enquiries to Moreen, 528 4881. We last visited this area in July 1987.

Saturday 25 May 1991, Meeting at Merrylands

At the home of Dulcie Buddee, 4 Leigh Street, Merrylands. Arrive from 12 noon, meeting starts at 1 pm. Study session will deal with Angiopteris and Marattia. Hot water available, bring plate for afternoon tea. Enquiries to Dulcie, 632 5179.

Sunday 23 June 1991, Outing to Cabbage Tree Creek

From Sydney along Bells Line of Road, turn left at the lights at North Richmond, keep right at St John of God Hospital proceed toward Grose Vale, turn left into Cabbage Tree Road and continue to its end. Meet at entrance to Avoca Reserve at 9.30 and commence walk to Cabbage Tree Creek at 10 sharp. Carry lunch and wear sturdy shoes, some scrambling and descent / ascent fairly steep. Enquiries to Peter phone 625 8705.