



ASSOCIATION of

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

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**SPORE BANK:** Barry White, 24 Ruby Street, West Essendon. Vic. 3040

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## NOTES FROM SOUTH EASTERN QUEENSLAND

### Report of outing to Upper Tallebudgera Creek, Sunday 2 July. 2000.

Contributed by Merle Gynther

We met at a nearby reserve at Upper Tallebudgera. Our group consisted of about eighteen members and friends, including a welcome representation from the Gold Coast area. We were lucky with the weather despite a tendency to showers to remind us of the closeness of the ranges of the Gold Coast hinterland.

Charlie Booth was our knowledgeable local guide. His assistance even extended to locating a plank to enable a dry-shod crossing of the creek! This led to the largely intact remnant lowland vinescrub on Gibson's property. We found a treasure of native plants, including 33 species of ferns mostly along the creek and its side branches. A highlight was *Selaginella andrewsii*, which is restricted to this general area. It was a new species for all of us except Peter.

It was disappointing to note a number of weed species creeping in along the creek, apparently carried down from habitation further upstream.

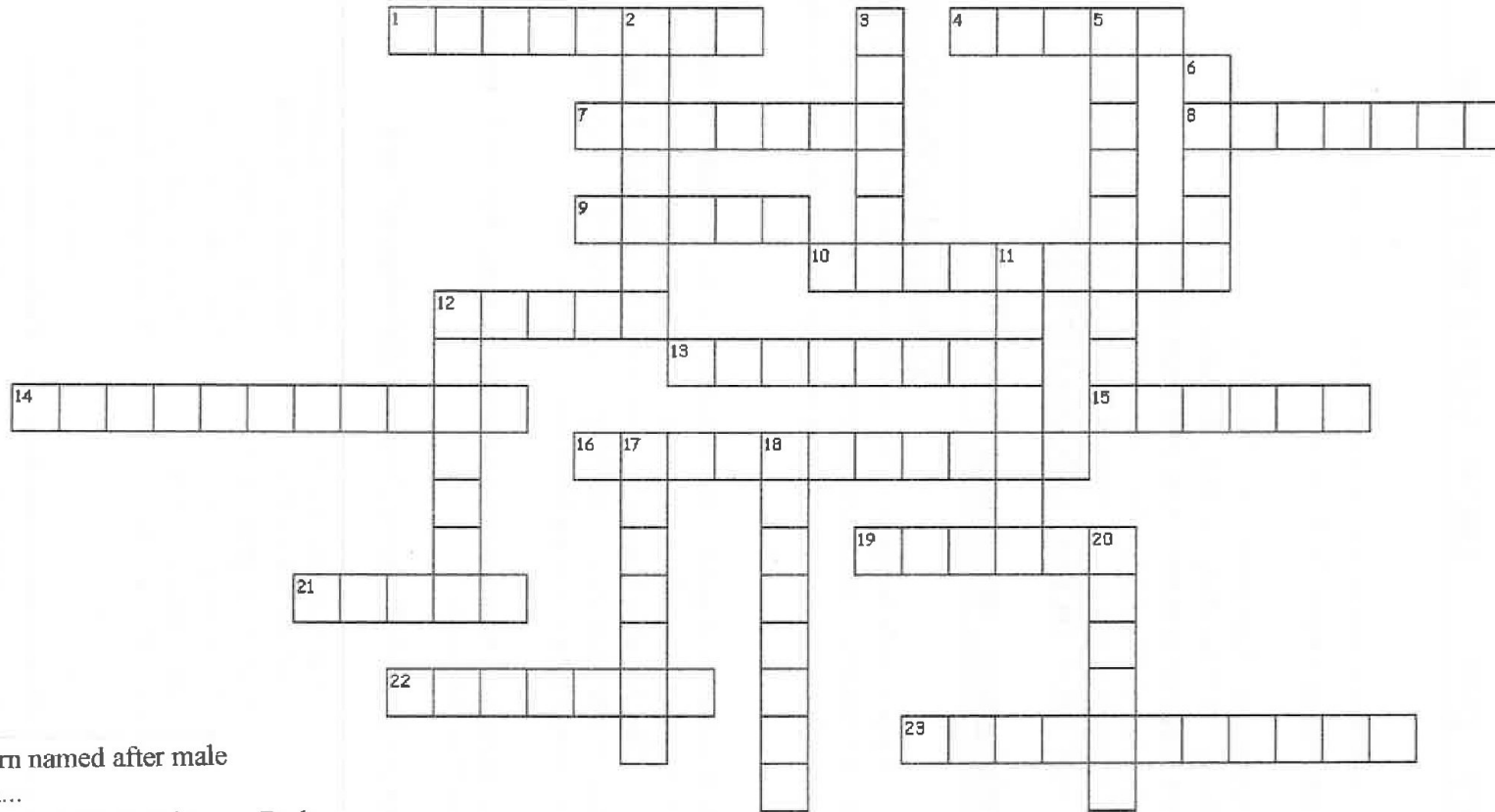
### **Fern Species seen at Gibson's Property, Upper Tallebudgera Creek**

*Adiantum diaphanum*  
*Adiantum silvaticum*  
*Asplenium australasicum*  
*Blechnum cartilagineum*  
*Christella dentata*  
*Cyathea leichhardtiana*  
*Doodia aspera*  
*Lastreopsis marginans*  
*Ophioglossum pendulum*  
*Psilotum nudum*  
*Selaginella andrewsii*

*Adiantum formosum*  
*Arachniodes aristata*  
*Asplenium polyodon*  
*Blechnum patersonii*  
*Christella parasitica*  
*Davallia pyxidata*  
*Doodia caudata*  
*Lastreopsis microsora*  
*Platynerium bifurcatum*  
*Pyrrosia confluens*  
*Sticherus flabellatus*

*Adiantum hispidulum*  
*Arthropteris tenella*  
*Azolla pinnata*  
*Calochlaena dubia*  
*Cyathea cooperi*  
*Dennstaedtia davallioides*  
*Hypolepis muellerii*  
*Microsorium scandens*  
*Platynerium superbum*  
*Salvinia molesta* \*  
*Vittata ensiformis*

# PTERIDOLOGICAL PUZZLE



## Across

1. Latin name of fern named after male deer *Platycerium*...
4. Aust. Fern with Royal Connection..... Barbara
7. Common name for *platycerium bifurcatum*
8. Latin name for sickle fern...
9. Latin name for nest...
10. Drought resisting fern is called a...
12. Lithophytic ferns grown on...
13. Latin name for mare's tail fern: *Asp.* ...
14. Aust. member of tropical fern family is *Oleandra*...
15. Author of Aust. *Ferns: How to Grow Them* Successfully is..... Chaffey
16. Plants growing in the ground are called...
19. *Polysticum proliferum* is called Mother...
21. Common name for *Blechnum* species
22. Hard water fern is *Blechnum*...
23. Ferns growing in association with a fungus are called.....

## Down

2. Plants which grow on fern fronds are called...
3. *Pteris Umbrosa* is commonly known as ..... brake
5. What term applies to plants growing on trees
6. Ferns multiply from division or .....
11. Fronds once divided are ...
12. An underground stem is a ...
17. Ferns growing in one region only are called .....
18. Victorian suburb where SGAP Spore bank located is West.....
20. Former name of *Microsorium Pustulatum*.....

ADDENDUM TO K. ROGERS JUNE ARTICLE.

"Shot myself in the foot" says Keith

In the June Newsletter the item on "Genus Asplenium" I inadvertently referred to *Asplenium robinsonii* as perhaps *A. australasicum* X *A. polyodon*. This is not so and should be, perhaps *A. australasicum* X *A. obtusatum*. In Flora of Aust it refers to it as *Aspienium australasicum* f. *robinsonii* (F. Muell)

**SPORE BANK – Current list**

<i>Acrostichum speciosum</i> 4/00	<i>Adiantum whiteii</i> 1/99	<i>Arachniodes aristata</i> 1/00
<i>Asplenium australasicum</i> 5/98	<i>Asplenium milnei</i> 5/00	<i>Blechnum camfieldii</i> 5/00
<i>Blechnum chambersii</i> 2/99 B	<i>Blechnum fluviatile</i> 2/00	<i>Blechnum minus</i> 6/99
<i>Blechnum patersonii</i> 8/99 B	<i>Cyathea australis</i> 3/99	<i>Cyathea celebica</i> 3/99
<i>Cyathea cooperi</i> 9/99	<i>Cyathea cooperi</i> 'Brentwood' 98	<i>Cyathea cooperi</i> v. <i>cinnamonia</i> /99
<i>Cyathea leichhardtiana</i> 1/00	<i>Cyathea robusta</i> 2/98	<i>Cyclosorus interruptus</i> 3/99
<i>Debaria Petersenii</i> 6/00	<i>Dicksonia antarctica</i> 2/00	<i>Dicksonia youngiae</i> 1/99
<i>Displazium australe</i> 6/00	<i>Doodia australis</i> 12/99	<i>Lastreopsis acuminata</i> 9/98
<i>Lastreopsis hispida</i> 2/00	<i>Macrothelypteris torresiana</i> 6/00	
<i>Microlepia speluncae</i> 5/98	<i>Ophioglossum pendulum</i> 2/00	<i>Platycterium bifurc.</i> cv. Hilo /99
<i>Platycterium bifurc.</i> cv. HulaHands /99		<i>Platycterium bifurc.</i> cv. Roberts /99
<i>Platycterium bifurc.</i> var. <i>venosa</i> "Mt. Lewis" /99		<i>Platycterium bifurc.</i> cv. Willinckii Scofield /99
<i>Platycterium hillii</i> /99	<i>Platycterium superbum</i> (Cairns) /99	<i>Platycterium superbum</i> 09/99
<i>Platycterium veitchii</i> 08/99	<i>Polystichum australiense</i> 12/99	<i>Polystichum formosum</i> 6/99
<i>Pronephrum asperum</i> 3/99	<i>Psilotum nudum</i> 8/99	<i>Pteris umbrosa</i> 12/99
<i>Sticherus flabellatus</i> 8/99	<i>Sticherus urceolatus</i> 3/99	<i>Tectaria confluens</i> 6/00

Thanks to Claire Schakel for donation of spore. Please more spore donors wanted. No special qualifications required, if you are uncertain about the material please send it and I can sort it out. Mixtures of spore and sporangia are quite acceptable, as are portions of fertile fronds – Barry White

**GROWING FERNS FROM SPORE.****CONTRIBUTED BY BARRY WHITE**

**1. Preparing a Suitable medium.** Any fairly coarse, porous material seems to be suitable. Very old, well decomposed, shredded soft tree fern fibre gives excellent results if available. Peat moss (unsieved), crushed terra cotta used successfully. Another alternative is a mixture of equal parts coarse sand and treefern fibre or peatmoss.

Pots 5 or 6cm square are quite sufficient to grow a large number of ferns, enabling a few different species to be raised in a relatively small space. The pots may be filled with the chosen medium or a 2-3 cm layer may be added on top of your normal potting mix. The mixture may be sterilised by carefully pouring hotwater through the mix and then standing the pots in hot water, up to the rim, in a closed container for an hour. The pots should then be removed, hotwater poured through the mix for a second time and then allowed to cool, again in the closed container. An alternative is to microwave the mixture, which should be well moistened, for a period long enough to thoroughly steam the mixture. Sterilisation is necessary to kill off any moss or fungus spore, or unwanted fern spore, which might be present in the mix.

**2. Sowing the Spore** - Open the paper envelope containing the spore carefully. The envelope should contain enough spore to sow at least one container but may have enough for 3 or 4. If the spore are sown too heavily the resultant prothalli may have to be pricked out early to avoid overcrowding problems. To

sow the spore, hold the open envelope about 6-7 cm above the pot and give it a gentle tap to allow the spore to float down onto the top of the mixture. This must be done in a perfectly still room, completely free from any draughts or breezes.

**3. Conditions for Germination.** - Spore may be sown any time of the year, but germination will be faster in the warmer months of the year. For successful germination spore must be kept moist at all times. This is simply achieved by placing the sown pots in a closed container (e.g. plastic ice-cream container, food crisper, glass aquarium covered with a sheet of glass, or the pot may be just placed in a plastic bag. Provided the container is reasonably well sealed the pot should remain moist almost indefinitely. If it becomes necessary to add water, stand the pot in cool boiled water, watering from above may wash spores away. The pot should be placed in a well lit position but not in direct sunlight e.g. on a south facing window ledge. In a warm well lit position germination usually occurs in about 1 to 2 months and appears as very small green specks which gradually grow into flat heart structures (prothalli) about ½ to 1 cm in diameter. The initial growth may be mistaken for moss. Germination may take several months if conditions are not good. The prothalli, which are the intermediate stage of the life cycle of the fern, each have a male and a female portion, the male portion releases sperm which swim across to fertilise the egg. The fertilised egg then grows to form the fern proper. The first appearance of fronds may vary from 2-3 months in very rapid species to years.

Most problems result from overcrowding of the prothalli (from too heavy sowing) or from contamination due to poor hygiene. Fungi, mosses and algae may overgrow or damage the prothalli. Overcrowded prothalli may be pricked out into another container as soon as the problem is noticed.

Mosses and algae are best avoided by careful hygiene - proper sterilisation of the mix and only using water which has been boiled. An open loose mix helps to avoid algal growth.

**4. Pricking out and Potting On.** The thickness of the growth of the prothalli will often determine when to prick out. If the surface of the mix is heavily covered with prothalli pricking out should be done at this stage, pricking out small clumps of prothalli into a mix prepared and sterilised as for the original sowing. Usually pricking out is done when the sporeling has one or two fronds although it may be done at any stage. The young ferns may be transplanted into standard propagating mix, or into a mixture of about 2 parts peat moss, 2 parts washed river sand and 1 part mountain soil. Before pricking out, the sporelings should be gradually hardened off over about a fortnight and subsequent to the pricking out be returned to cover under glass or plastic until safely re-established.

It should be possible to lift the sporeling off the pot with its prothallus still attached. At this stage true roots will usually not be well developed, and the prothallus can be gently pushed down onto the surface of the new pot or tray to support the tiny plant. This should be done fairly quickly and should be very gently watered and placed under glass again. Treatment with a product such 'Maxicrop' or 'Plant Starter' will assist establishment of the new plant.

If the sporelings are allowed to grow too large and crowded before they are pricked out they may be scooped out in clumps with a spoon, placed in a saucer of water, and then gently separated and planted into tubes or trays. Again they should be replaced under glass without delay.

The newly transplanted sporelings should be allowed to develop under glass until their fronds are about 5-10 cm high. At this stage they may be very gradually acclimatised by slowly raising the glass cover, a few millimetres at a time, over a period of about two weeks.

Using the techniques outlined above, it is not unusual to grow one or two hundred ferns from each 5-6 cm pot sown with spore.

#### ANSWERS TO CROSSWORD

Down 2. Bubils 3. Jungle 4. L. spore 11. Pinnate 12 Rhizome  
 17. Endemic 18. Essendon 19. L. jium. ACROSS 1. Superbum  
 4. Todea 7. Elkhorn 8. Pellaea 9. Nidus 10. Xerophyte 12. Rocks  
 13. Polypod 14. Neritiformis 15. Endemic 16. Terrestrial 19. Shield  
 21. Water 22. Wattii 23. Mycorrhizal



## **SPORE TREATMENT WITH BLEACH**

**Contributed by Geoff Simmons**

The use of sodium hypochlorite solution to reduce or eliminate microbial contamination of fern spores is often recommended.

The question of whether the use of such substances has any effect, especially undesirable results, on the prothalli has been raised particularly for research on prothalli. Therefore it is interesting that an article on the subject (American Fern Journal 88:2:81 -1998) concludes that "We thus recommend that surface sterilization be avoided unless it is required to prevent contamination"

Although the authors -R. Hamilton and C. Chaffin - were only dealing with spores of one fern species, their results suggest a word of caution. There is an additional aspect in that use of bleach further complicates growing ferns from spores and more work for amateurs operating in the ordinary garden situation.

Selection of clean fronds, collection of spores in a clean environment away from contaminated areas such as shade-houses is desirable. Even after a working life as a microbiologist, I must say that I have never used bleach on spores- perhaps results may have been different if I had, but on the other hand I have been quite satisfied with my attempts at growing ferns from spores and have never considered the extra work involved in the use of bleach is warranted.

### **SYDNEY PROGRAMME FOR COMING MONTHS**

**Compiled by Joan Moore**

September. Meeting cancelled due to anticipated road chaos because of Olympics.

October 21<sup>st</sup> Saturday. Excursion to Glow Worm Tunnel. Meet at zig zag Railway Station Clarence 10a.m. for 10.30a.m. departure.. If late proceed by road to Glow Worm Tunnel Entrance. Some members may also like to take ride on zigzag railway

November 26. Christmas meeting. At home of Ian and Tamara Cox.- 5 Ivy Place Kenhurst from 11a.m. Please bring plants to exchange instead of presents as in other years. Please ring Tamara (ph:9654 2533) by Nov. 18<sup>th</sup>., that you are coming and what you will bring as your contribution to the feast.

### **FORTHCOMING EVENTS S.E. QLD. FERN STUDY GROUP**

**Compiled by Irene Cullen**

Friday 8<sup>th</sup> September - Set up fern display at S.G.A.P. spring flower show at Mt. Gravatt show grounds.

Sat. 30<sup>th</sup>. Sep. & Sun. 1<sup>st</sup>. Oct., weekend excursion to Mt. Clunie via Woodenlong .meet at cabins 9.30 a.m. on Saturday. Day trippers arrive 9.30.a.m. Sunday. For further particulars ring Peter Bostock on 07.3896 9508 or 07.32026983

Sunday 5<sup>th</sup>. November -meet 9.30.a.m at Doug & Kath Johnson's home 140a Bankside St. Nathan for last meeting of year -Bring ferns for a ferns swap and lots of ideas for next years progamme.

### **NOTES FROM - S.G.A.P. STH. EAST QLD. GROUP**

The group met at Rod Pattersons on Sun. 4<sup>th</sup>. June -it was a well attended meeting and we were rewarded with being able to view many of Rods interesting fern hybrids - After a brief meeting, Peter Bostock told us of an interesting trip he'd had in Nth. Qld. And also of the seminar he had attended in Darwin.

Members are always grateful to Peter for these interesting talks –Rod Patterson gave a brief history of his fern garden -his ferns for sale area was reduced by quite a number before the group left for home.

The venue for our August meeting was at the home of Nev and Shirley Deeth – set on a delightful small acreage at Camp Mountain. A small creek runs through the property, where many ferns naturally grow. Although four regulars were not able to be there it was a well attended meeting. Arrangements had to be made for our forthcoming display at September’s Annual Flower Show, also our October weekend visit to Mt. Clunie –Threatening showers held off while the party explored the ferns along the creek-Lunch ended a very pleasant outing Thank you Nev. and Shirley.

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**CREPIDOMANES VITIENSE** - Thanks to Irene for letting me know that *Crepidomanes Vitiense* description can be found in the October edition of Flora of Australia. As I do not receive this publication I am still unsure if this is a new plant or a renaming.

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**CONTRIBUTIONS SOUGHT** - I would once again like to appeal to individuals or groups to send articles, questions on their favourite plant, an interesting spot they may have visited, a tip on how to grow, or propagate plants, or something you’ve discovered about watering, light, mixtures, fertilisers etc. Questions have generated a deal of interest in the past. It is your newsletter, help us make it work better for you!

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**ORDERING SPORE**

Spore is available free of charge from Barry White, 24 Ruby St,  
West Essendon. Vic. 3040. Ph (03) 9337 9793

When ordering please include a stamped addressed envelope  
The area of collection is available on request. Spore donations are always welcome,  
including fresher samples of ones already on the list.

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**DEADLINE FOR COPY** - Closing date for material to be included in the September Newsletter is August 15<sup>th</sup>, 2000. Your contributions are valuable – whether as a group or individual. I strongly urge groups from the various States to send articles.

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