



ASSOCIATION OF

S.G.A.P. Fern Study Group

Newsletter Number 43

ISSN 0811-5311

DATE - DECEMBER 1988

"REGISTERED BY AUSTRALIA POST - PUBLICATION
NUMBER NBH 3809."

LEADER: Peter Hind, 41 Miller Street, Mount Druitt, 2770.

SECRETARY: Moreen Woollett, 3 Currawang Place, Como West, 2226.

TREASURER: Joan Moore, 2 Gannett Street, Gladesville, 2111.

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

Another year draws rapidly to an end and its time to remind members that fees fall due in January for the 1989 year. It is perhaps timely too to reflect on our Group's activities and to make a plea for more contributions from members, on this occasion not in a direct financial sense.

There is benefit for most of us in knowing more about the practicabilities of propagating and cultivating our native ferns. All members have experienced successes and failures, please write so those experiences can be passed on to others through this Newsletter. Later in this issue there is a request directed to members who bought ferns at the recent Wildflower Exhibition in Sydney to report the results achieved. If you purchased ferns bought-in at the time of the Exhibition we would greatly appreciate your help.

This issue we welcome a new member, Ian Higgins from Victoria. Ian has written and said that the following ferns are native to the Castlemaine area: Adiantum aethiopicum, Blechnum minus, B. nudum, Cheilanthes austrotenuifolia, Lastriopsis acuminata, Pleurosorus rutifolius, Doodia media, Marsilea drummondii Marsilea sp (all the foregoing are being grown by Ian- how many members would like to hear from Ian about the conditions under which the Cheilanthes spp and Plurosorus rutifolius in particular are growing), Cheilanthes sieberi, Pellaea falcata, Pteris tremula, Polystichum proliferum, Asplenium flabellifolium, Azolla filiculoides, Blechnum chambersii, Culcita dubia, Cyathea australis, Pteridium esculentum and Ophioglossum lusitanicum.

However the real feature this Newsletter is inclusion of a paper that Peter Bostock of the University of Queensland had published recently in "Austrobaileya", Thank you Peter for allowing us to share your knowledge. The subject Adiantum whitei has been the centre of intense speculation among some of our members and we are privileged to have the benefit of your scholarship. And we offer no apology for the botanical language in the article although for many of us it somewhat slows comprehension.

Peter has written as follows:

" Irene Cullen asked me to forward you a copy of my paper on Adiantum whitei. I am sorry reprints are not available, but so far the Qld Herbarium has resisted requests to provide reprint copies of papers in Austrobaileya to authors."

REDISCOVERY AND STATUS OF *ADIANTUM WHITEI* BAILEY (ADIANTACEAE)

P.D. Bostock

Botany Department, University of Queensland, St Lucia, Qld 4067

Summary

Adiantum whitei Bailey (Adiantaceae), formerly recorded from a few localities in south-eastern Queensland, is now known to have a wider range in north-eastern Australia. The receptacle of this taxon bears thick-walled trichomes, a condition not previously reported for the genus. *A. whitei* is reduced to varietal status under *A. hispidulum* Sw.

The original collections of *Adiantum whitei* were from Kenmore, a western suburb of Brisbane. Other contemporary collections came from the nearby suburbs of Indooroopilly and Enoggera, Lawnton (One Mile Creek) ca 16 km north of Brisbane and Maryborough ca 215 km north of Brisbane. The last collection (other than cultivated specimens) appears to have been from Kenmore in December 1931 (AQ142926, BRI).

Recent collections of *Adiantum* taxa include a robust tripinnate fern collected 9 km SW of the type locality (State Forest 494 Moggill, Bostock 190, BRI) which matches one of the syntypes of *A. whitei* (Kenmore, May 1915, White AQ24496 (BRI)). A collection from ca 6 km NE of the type locality was subsequently propagated from its spores (R.Hill, pers.comm.). The descendants have been distributed under the horticultural names *Adiantum* aff. *whitei* and *Adiantum* sp. 'S.E. Qld'. More recently *A. whitei* has been found to be common along creeks in the southern and western parts of Brisbane and specimens now in cultivation in Brisbane are reputed to have come from as far afield as Mt Spec ca 1500 km north of Brisbane (C.Ritchie, pers. comm.).

A revised description of *A. whitei* is given here, based on specimens examined by the author.

Rhizome short-creeping, semi-erect, stoloniferous; scales concolorous, with entire margins and acuminate apex. Fronds approximate, occasionally remote, to 60 cm long. Lamina to 30 cm long, 20 cm broad, triangular, 2- to 3-pinnate, herbaceous to coriaceous. Rachides invested with antrorse red-brown hairs. Pinnae numerous, narrow-triangular, simply pinnate in their apical half. Ultimate segments symmetric and cuneate-flabellate becoming dimidiate and rectangular to trapeziform towards apices of pinnae and lamina; distal margins shallowly lobed, dentate when sterile; segment surfaces invested with numerous short pale trichomes (to ca 0.4 mm long) and a few similar but longer ones, denser abaxially. Indusia crowded, 1 to 4 per lobe, oblong to subrectangular, joining the segment margin proper at a narrow sinus, bearing on their outer surface numerous dark brown uniseriate thick-walled trichomes, which are also scattered among the sporangia. Spores with minutely granulate perine adhering rather loosely to the exine. Fig. 1.

Recent authors (Jones & Clemesha 1981, Elliot & Jones 1982, Goudey 1985) have speculated that *A. whitei* is a hybrid. Jones and Clemesha (1981) and Goudey (1985) proposed *A. hispidulum* Sw. and *A. formosum* R.Br. as putative parents. Little evidence is offered in support of this statement, although Goudey (1985) lists a number of morphological characters of *A. whitei* which are common to one or other of these species.

In his original description and accompanying illustration, Bailey describes the rhizome of *A. whitei* as 'creeping'. Investigation of the new collections has shown that the 'creeping' rhizome is a stoloniferous branch that on occasion bears fronds spaced a few centimetres apart. The apices of mature stolons bear a tuft of fronds indicating reversion to a short-creeping rhizome. In this respect, the rhizome ramification of *A. whitei* is similar to that of both *A. hispidulum* and *A. aethiopicum* L., another taxon

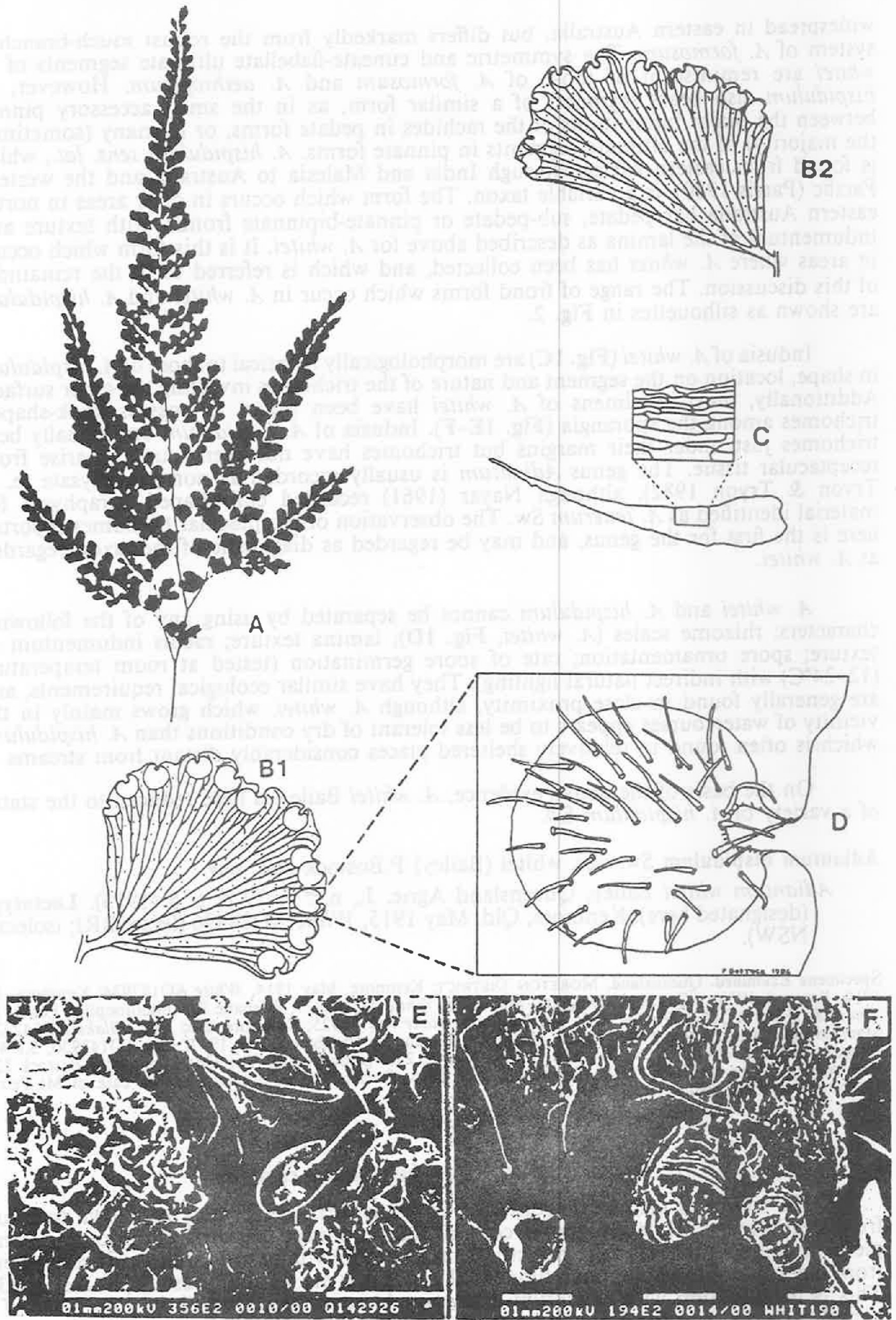


Fig. 1. *Adiantum whitei*: A. silhouette of frond (Bostock 218) $\times 0.4$. B. ultimate segments (middle of frond) (Bostock 190) $\times 3.5$. C. indusium (Bostock 190) $\times 40$. D. rhizome palea (Bostock 246) $\times 35$. E & F. scanning electron micrographs of abaxial indusial surface. E, Blake, Dec 1931, AQ142926. F, Bostock 190. (scale for E and F indicated on plates.)

widespread in eastern Australia, but differs markedly from the robust much-branched system of *A. formosum*. The symmetric and cuneate-flabellate ultimate segments of *A. whitei* are reminiscent of those of *A. formosum* and *A. aethiopicum*. However, *A. hispidulum* also bears segments of a similar form, as in the small accessory pinnae between the major bifurcations of the rachides in pedate forms, or in many (sometimes the majority) of the ultimate segments in pinnate forms. *A. hispidulum sens. lat.*, which is found from eastern Africa, through India and Malesia to Australia and the western Pacific (Parris 1980), is a variable taxon. The form which occurs in drier areas in north-eastern Australia has pedate, sub-pedate or pinnate-bipinnate fronds, with texture and indumentum of the lamina as described above for *A. whitei*. It is this form which occurs in areas where *A. whitei* has been collected, and which is referred to in the remainder of this discussion. The range of frond forms which occur in *A. whitei* and *A. hispidulum* are shown as silhouettes in Fig. 2.

Indusia of *A. whitei* (Fig. 1C) are morphologically identical to those of *A. hispidulum* in shape, location on the segment and nature of the trichomes investing the outer surface. Additionally, most specimens of *A. whitei* have been found to possess hook-shaped trichomes among the sporangia (Fig. 1E-F). Indusia of *A. hispidulum* occasionally bear trichomes just under their margins but trichomes have not been found to arise from receptacular tissue. The genus *Adiantum* is usually recorded as non-paraphysate (e. g. Tryon & Tryon 1982), although Nayar (1961) recorded club-shaped paraphyses for material identified as *A. tenerum* Sw. The observation of receptacular trichomes reported here is the first for the genus, and may be regarded as diagnostic of the taxon regarded as *A. whitei*.

A. whitei and *A. hispidulum* cannot be separated by using any of the following characters: rhizome scales (*A. whitei*, Fig. 1D); lamina texture; rachis indumentum or texture; spore ornamentation; rate of spore germination (tested at room temperature (12-24°C) with indirect natural lighting). They have similar ecological requirements, and are generally found in close proximity, although *A. whitei*, which grows mainly in the vicinity of watercourses appears to be less tolerant of dry conditions than *A. hispidulum*, which is often found in relatively sheltered places considerably distant from streams.

On the basis of the above evidence, *A. whitei* Bailey is here reduced to the status of a variety of *A. hispidulum* Sw.

***Adiantum hispidulum* Sw. var. *whitei* (Bailey) P. Bostock stat. nov.**

Adiantum whitei Bailey, Queensland Agric. J., n.s. 4: 39 & t. 5 (1915). Lectotype (designated here): Kenmore, Qld, May 1915, White AQ24496 (lecto: BRI; isolecto: NSW).

Specimens Examined. Queensland. MORETON DISTRICT: Kenmore, May 1914, White AQ142924; Kenmore, Jul 1914, Young & White AQ142928; Enoggera, May 1916, White AQ142927; Brisbane R., Indooroopilly, Feb 1916, Young & White AQ142929; One Mile Ck, Lawnton, Blake AQ142925; Kenmore, Dec 1931, Blake AQ142926; Maryborough district, Young AQ142923; University Bushhouse [Brisbane], Dec 1937, Goy AQ142930; S.F.494 Moggill, Brisbane, Bostock 159, 184, 189, 190, 218, 246, 252; garden plant, The Gap, Apr 1986, Bostock 225; cultivated plant ex Mt Spec, NNW Townsville, Apr 1986, Ritchie s.n.; cultivated plant ex base of Mt Petrie, Brisbane, Apr 1986, Peach s.n. (all BRI).

Agamospory in the *A. hispidulum* complex

The source of taxonomic confusion in many fern species may be shown to result from agamospory. Thus the spores contain the unreduced parental chromosome complement and sporophytes arise directly from gametophytic tissue. Archegonia are absent from the gametophytes although functional antheridia are usually present (Walker 1983). This is the situation with *Adiantum caudatum* L. *sens. strict.*, which is a member of a complex consisting of at least seven taxa (Lovis 1977).

Agamospory has also been reported as the normal state in *A. hispidulum* (Manton & Sledge 1954, Abraham et al. 1962, Ghatak 1977, Bidin 1983). The sole exception is Brownlie (1957, 1965) who reported only meiotic chromosome counts. At least 4 cytotypes have been identified in *A. hispidulum* (Walker 1983), but detailed studies linking morphology and cytology in the taxon are not available.



Fig. 2. Silhouettes (not to scale) showing frond forms in *Adiantum whitei* and *A. hispidulum* in Queensland: A-C. *A. whitei* sens. str. A. Bostock 190. B. Bostock 218. C. cultivated ex Mt Spec, NNW of Townsville, Richie s.n. D-H. *A. hispidulum* sens. lat. D. Bostock 235. E. Bostock 251. F. Bostock 245. G. Bostock 250. H. Bostock 151.

In all investigated cases of hybrids between apomicts and sexual species (where the apomict must be the male or antheridial parent), the offspring have been apomictic (Walker 1979, 1983, 1985). The production of fertile spores by *A. whitei* is not unexpected, even if the taxon should prove to be a natural hybrid between *A. hispidulum* and another (sexually reproducing) *Adiantum* taxon. Walker (1985) commented on the ability of agamosporous taxa to build up extensive agamic complexes in this manner and the possibility that *A. whitei* has its origins in such an event (or events) cannot be discounted.

The numerous morphological similarities between *A. hispidulum* and *A. whitei* indicate a common ancestry, but the latter taxon is sufficiently distinguished by virtue of its frond dissection and receptacular trichomes to be given varietal status.

Acknowledgements

I wish to thank the Society for Growing Australian Plants, Queensland Region, Inc. (SGAP) for publishing a request for material of *A. whitei*; the Queensland SGAP Fern Study Group for their donations of cultivated specimens; Rod Hill of Frankston, Victoria for his invaluable field observations and freely offered information; the Director of the Queensland Herbarium for permission to study the *Adiantum* collection; the Queensland Department of Forestry for permission to collect in forestry reserves, and Prof. H.T. Clifford and Mr. P.I. Forster (University of Queensland) for commenting on drafts of this paper.

References

- ABRAHAM, A., NINAN, C.A. & MATHEW, P.M. (1962). Studies on the cytology and phylogeny of the pteridophytes VII. Observations on one hundred species of South India ferns. *Journal of the Indian Botanical Society* 41: 339-418.
- BIDIN, A. (1983). Penelitian sitologi pada genus *Adiantum* L. (Adiantaceae). *Sains Malaysiana* 12: 275-286. (Cytological studies in the genus *Adiantum*) (in Malay, Engl. summary).
- BROWNLIE, G. (1957). Cytotaxonomic studies on New Zealand Pteridaceae. *New Phytologist* 56: 207-209.
- BROWNLIE, G. (1965). Chromosome numbers in some Pacific pteridophyta. *Pacific Science* 19: 493-497.
- ELLIOT, W.R. & JONES, D.L. (1982). Encyclopaedia of Australian plants, suitable for cultivation. Vol. 2. Melbourne: Lothian.
- GHATAK, J. (1977). Biosystematic survey of pteridophytes from Shevaroy Hills, South India. *the nucleus* 20: 105-108.
- GOUDEY, C.J. (1985). Maidenhair ferns in cultivation. Melbourne: Lothian.
- JONES, D.L. & CLEMESHA, S.C. (1981). Australian ferns and fern allies. Revised Edition. Sydney: A.H. & A.W. Reed.
- LOVIS, J.D. (1977). Evolutionary patterns and processes in ferns. *Advances in Botanical Research* 4: 229-415.
- MANTON, I. & SLEDGE, W.A. (1954). Observations on the cytology and taxonomy of the pteridophyte flora of Ceylon. *Philosophical Transactions of the Royal Society of London. Series B.* 238: 127-185.
- NAYAR, B.K. (1961). Ferns of India. I. *Adiantum* L. *Bulletin of the Lucknow Botanic Gardens* No. 52.
- PARRIS, B.S. (1980). *Adiantum hispidulum* Sw. and *A. pubescens* Schkuhr (Adiantaceae: Filicales) in New Zealand. *New Zealand Journal of Botany* 18: 503-506.
- TRYON, R.M. & TRYON, A.F. (1982). Ferns and allied plants with special reference to tropical America. New York: Springer-Verlag.
- WALKER, T.G. (1979). The cytogenetics of ferns. In A.F.Dyer (ed.), *The experimental biology of ferns*: 87-132. London: Academic Press.
- WALKER, T.G. (1983). Chromosomes and evolution in Pteridophytes. In A.K.Sharma & A.Sharma (eds.), *Chromosomes in evolution of eukaryotic groups*: 103-141. Boca Raton: CRC Press.
- WALKER, T.G. (1985). Some aspects of agamospory in ferns—the Braithwaite system. *Proceedings of the Royal Society of Edinburgh* 85B: 59-66.

Subscriptions : 1989.

The fee for the 1989 calendar year is \$3:00. Renewal notice is enclosed with this Newsletter. Please remit to the Treasurer, Joan Moore, 2 Gannett Street, Gladesville, N.S.W., 2111.

More From Peter Bostock

Our thanks once again to Peter Bostock, this time for contributing the following article about a field trip that I am sure all of us would liked to have shared.

NORTH QUEENSLAND - 1988

As part of my Australian Biological Resources Study grant for preparation of the Flora of Australia treatment of *Adiantum* and related species, I took part in a 4 week field trip to North Queensland during April of this year. During the period, field trips were made to the wet rainforest areas of Davies Creek, Tinaroo and Mt Lewis. Our party was able to spend a few days in the Chillagoe area, and, because of the non-existent wet season (at least in the north of Queensland), we were able to get to Iron Range and the Weipa area at a time when all the plants were still leafy and fertile.

I would like to share some of my impressions of this trip, my first botanical expedition to the north. The areas chosen for the 1988 trip were primarily intended to allow collection of living and preserved material of the species covered by my ABRS grant: *Adiantum*, *Doryopteris*, *Pellaea*, *Taenitis*, *Pityrogramma* and *Paraceterach* (more about the final genus, *Anogramma*, later).

Our party was spoilt rotten the day after we arrived in Mareeba - our host, Dave Liddle, had arranged a visit to the upper reaches of Davies Creek SE of Mareeba. Imagine recording more than 75 species of ferns in a few hours, without having to walk more than 200 metres. All those ferns I had dreamed about, and thought were rare as the proverbial hen's teeth: *Pteridoblechnum neglectum* (a weed!), *Diplopterygium longissimum* (ditto), *Ctenopteris maidenii*, *Crypsinus simplicissimum*, *Macroglena brassii* & c. It almost spoilt the trip to Tinaroo, where due to some navigation errors, we ended up in a less than optimum area on the first visit, with only about 10 more 'new' ferns to add to the list. I will admit that the *Angiopteris evecta* at the Tinaroo site was impressive, a trunk of about 44 gallons capacity and fronds to about 6 metres long.

The dry country around Chillagoe was a high point of the trip. *Paraceterach muelleri* had eluded us in the Mareeba area, but the granite outcrops near Almaden and, later the same day, the limestone 'karsts' of Chillagoe produced some spectacular specimens. Chillagoe was very dry, even though it drizzled during our visit, and the fern flora of about 9 species may not seem much to write home about, but I was not disappointed. Imagine crawling thru' a narrow tunnel about 3 metres long and 75 cm diameter, which opened out into a 'grotto' formed from a collapsed cave, the walls about 20 metres high, and the silty floor carpeted with a mixture of *Adiantum aethiopicum*, *A. philippense* and *Doryopteris concolor*. And on the walls, tiny plants of *Cheilanthes pumilio*, and a few very large plants of *Amphiseuron opulentum*.

Another cave, not quite as difficult of access, contained a few dozen clumps of *Nephrolepis radicans* var. *cavernicola*. These ferns were all about 5 metres off the floor of the grotto, and all except one were favoured as nesting sites by paper wasps. While we attempted to pry a few fronds off the lone 'safe' plant, paper wasps would fly past to investigate the disturbance. This *Nephrolepis* looks somewhat like *N. cordifolia*, but lacks the tubers, and does not produce many fronds per tuft, but it makes up for this lack by the large numbers of stolons, each of which bears numerous scattered short rhizome branches. The Chillagoe area also produced a tiny plant referable to *Adiantum capillus-*

veneris, but not at all as I expected it to be. The specimen I found was growing in a sunny exposed position on rocks almost in a creek, and had fronds only a few cm long and a rather robust creeping rhizome.

The second half of the trip was spent getting to Weipa and Iron Range, and exploring vine forests (*Drynaria quercifolia*) and Pandanus swamps (*Lindsaea walkerae*, *Lycopodium cernuum*, *Lygodium reticulatum* etc) in the Weipa area, and then the wildly varied habitats at Iron Range. For example, palm swamps with *Lindsaea walkerae*; great jumbled rockpiles infested with *Asplenium laserpitiifolium*, *A. nidus*, *Antrophyum reticulatum*, *Pyrrosia lanceolata*, and *Lycopodium phlegmaria*; gallery rainforest along the Claudie River with *Amphineuron terminans*, *Tectaria brachiata*, *Lygodium flexuosum*, the giant NQ form of *Adiantum aethiopicum*, and *Pyrrosia lanceolata* (definitely another weed).

Some of you will have seen the 'silver' *Pellaea* which has come into cultivation from North Qld, and one of my aims was to find populations of this form. We were fortunate to accomplish this, with the help of Reg Lockyer of Ravenshoe. The silver or more correctly, glaucous-fronded specimens of *Pellaea* seem to be confined to volcanic scoria, and were growing only on boulders of this material. Both *P. falcata* var. *nana* and *P. paradoxa* appear to be able to produce the silver forms. Just what the mechanism is, is not known but the forms do appear to be stable and unaffected by environmental changes.

The only ferns required for the Flora treatment that I was unable to find were *Taenitis blechnoides* and *Doryopteris ludens* - but Dave Liddle and Paul Forster and some other helpers remedied this with respect to *T. blechnoides* in June, by undertaking a second trip, this time to the tip of Cape York. Unfortunately I wasn't able to go (some references to a divorce and/or bankruptcy were mentioned when I broached the idea with the boss). But there is always next year! *D. ludens* remains a mystery (there has apparently been only one collection from Australia).

I must acknowledge the assistance of the Bureau of Fauna and Flora for financial support, the Director and staff of Queensland Herbarium and CSIRO Research Station, Atherton, for their help, the Queensland National Parks and Wildlife Service and the Forestry Department of Queensland for assistance with permits for access and collection, and the many people who gave freely of their time to provide information and other help. In particular, David and Iris Liddle who provided a home, vehicles, potting & shadehouse facilities and a great deal of other support during our stay in Nth Qld.

PS: A plea for specimens of *Anogramma leptophylla* for the Flora of Australia study: if any southern reader can supply me with material of this species, living or alcohol preserved, I would be very grateful. I will pay reasonable expenses, ie packaging, postage etc, and supply small vials if required. Living plants should be wrapped in wet tissue, and packed in a plastic bag. Methylated spirit is OK for temporary preservative but PLEASE pour off the alcohol before mailing the specimen.

Peter D. Bostock, Botany Dept., Univ. of Qld., St. Lucia 4067.

Introducing Our New Treasurer

Margaret Olde has retired from the position of Treasurer after four years efficient service. Thank you Margaret for the period that you spent performing this responsible and what can be at times a tedious task in spite of the heavy demands on your time. A warm welcome to our incoming Treasurer, Joan Moore. We are very grateful to you Joan for offering to handle money matters for the Group.

A COURSE OF STUDY ON FERNS

Included in the current Ecofest Programme is the following course on ferns which may be of interest to some members. Registration or enquiries should be directed to:
U.N.E. Continuing Education, P.O. Box 1570, Coffs Harbour.
N.S.W., 2450.

FERNS IN NORTHERN NSW 18/19 February, 1989 — Dorrroughby Field Studies Centre.

This weekend course will use a workshop approach to learning to recognise and name native ferns and "fern allies". Two half day laboratory sessions will be used to give an insight into structural and recognition features of members of the fern group: added to this will be demonstrations of a typical ferns lifecycle, and the shedding of spores by the unique sporangium splitting mechanism (watched under stereo microscope). A full reference set of NSW fern specimens, (some dry, some fresh) will be available for study. The other half of the school will consist of field trips to see and recognise ferns in their natural habitat on the Nightcap Range. Participants will be issued with the new *Field Guide to the Ferns and Fern Allies of NSW* by John Williams and Poh Woodland. This provides a simple but accurate way to identify ferns and their relatives, using a breakdown into major distinctive groups and a description of all ferns in each group, with every species illustrated. The Dorrroughby Field Studies Centre is located 25 km NNW of Lismore. Fee: \$70 (plus accommodation and catering charges if needed).

Buyers Please Report

Elsewhere in the Newsletter mention is made of the sale of ferns bought in for the Wildflower Exhibition.

It is known that many of the ferns sold went to collections and gardens belonging to members. If you bought any of the ferns would you please record your experiences with them over the next few months. Then drop a note to our Secretary, Moreen, indicating which ferns are growing well, which ones are struggling, whether the ferns have been potted on or planted in the ground, the conditions under which they are growing, details of any fertilisers used, and which ferns, if any, have died. We would like all responses to be received by the beginning of May 1989 so that the results can be collated and advised to members in the following Newsletter. If you wish to remain anonymous you do not have to supply your name, but we would still value your advise of your achievements with those ferns. Therefore please send in a report in order that the consolidated information can be made available for the benefit of members generally and assist in planning the selection of ferns to be purchased for future sales.

Notes on Outing to Central Coast

We were delighted to have Irene and Russ Cullen from Rochedale, Queensland, among members who participated in this double event on 21 August. Unfortunately we didn't have enough time to fully explore either segment of the outing.

The ^{day} began at Elaine and Ian Slade's fine property and fern nursery at Peats Ridge. How we envied them their home among the beautiful bushland. The first large glasshouse that we visited contained a big collection of ferns about one half of which were natives and also many orchids. Owing to the absence of our knowledgeable Leader and less than complete labelling, much identification was speculative. Outstanding specimens that were named as well as being admired, included Dawallia solida, Drynaria rigidula including the cultivars Knigheitei and Robertsii, in a large pot Angiopteris evecta, Colysis ampla. This last named fern and a number of others looked spectacular growing in hollowed-out pieces of the trunk of large tree ferns, Psilotum nudum and Asplenium polyodon.

After a morning "cuppa" we were shown the Slade's commercial stock growing in a very large glasshouse the cleanliness and orderliness of which was impressive and the ferns looked vigorous and healthy. Many ferns were looked on in wonder and were taken away, including dare it be said, one large exotic! Our sincere thanks to Elaine and Ian for allowing us to visit and for their generous hospitality.

After a short drive to Somersby Falls just west of Gosford and lunch, we descended the steep gorge and explored the area adjacent to the Falls. Problems of identification soon emerged, the first with a Tmespteris sp. After some searching numerous plants were found, all small and unlike most local species of this genera, growing on moist crevices towards the base of rock walls, rather than on tree fern trunks. These were subsequently identified as T. truncata. Adjacent to this area there were many Blechnum wattsii, or were some of those growing among the rocks B. ambiguum as we know that B. wattsii usually favours more loamy soil situations.

Attention was drawn to an outwardly fairly similiar fern, but one that was more upright. Irene called it B. camfieldii and a later check confirmed its prescence in the area.

After crossing the stream below the Falls there was another puzzle a small thin strap-like plant, was it a fern ally. Margaret thought so in spite of the doubters and after research late that night she reported that it was Shizaea rupestris.

One final puzzle, Russ spotted a Sellaginella sp. There are two species growing naturally in the area but subsequent discussion with our Leader indicated that it was probably S. uliginosa.

Report on Wildflower Exhibition 16-18 September 1988

This annual highlight of S.G.A.P. activities in N.S.W. was held this year at a new venue, the huge Basketball Stadium at Bankstown. Apart from Plant Sales all exhibits were indoors and were brilliant in both quality and diversity. Although there was no separate exhibit of ferns, a number of the displays included ferns. Many of these ferns were outstanding specimens including several from the Royal Botanic Gardens.

Unfortunately the excellence of the exhibits was not matched by the weather and it rained on each of the three days and attendance was not as high as in recent years.

Approximately 800 ferns bought in for sale by our Group sold readily and all were cleared at a satisfactory overall profit. Some losses of ferns occurred prior to sale, particularly two species Blechnum cartilaginium and Doodia media which are usually regarded as being hardy. On the other hand the North Queensland ferns and others considered difficult survived the shock of transport and exposure and looked healthy at the time of sale.

On behalf of the Group thanks is due to all who assisted with the Exhibition and especially to Kyrill Taylor for care of the ferns and Roy and Bea Duncan from Newcastle for transporting the ferns and helping erect the shade area.

Report on Meeting at Sylvan Grove

Twenty members attended this 23 October meeting held in the Native Plant Gardens in the suburb of Picnic Point. We were fortunate to have Robert Miller, who is employed at the Gardens and responsible for much of the care and maintenance. attend the morning session and conduct us on a walk along the paths. The fact that the walks had to be terminated less than half way through the Gardens in order to have time for lunch, is an indication of how much there was of interest to S.G.A.P. enthusiasts.

The Gardens have been developed over the years by Bankstown City Council. Some of the natural vegetation remains, particularly the trees, but there has been a great deal of planting resulting in what Robert called an Australian style bush garden. The display of spring flowering daisies is a feature and for us the more than 70

different species of ferns. Most of the ferns are growing in a closed canopy area that has been created with inspiration and the help of an overhead sprinkler system, Just a few of the numerous ferns that were noticed: firstly two North Queensland tree ferns, Cyathea celebica with conspicuous pale grey hairs and C. wollisiana with shiny green fronds and crowded segments, the local C. leichhardyana, Cyclosorus interruptus, Blechnum camfieldii, Robert told us that this fern had been transplanted from a nearby area that had been cleared for housing , and finally Pyrrosia confluens.

Red Carpet

We bid a warm welcome to these three new members.

Forthcoming Events in the Sydney Region

* Sunday 11 December 1988, 138 Fowler Road, Illawong

Meeting and Christmas get together to be held at the home of Peter and Margaret Olde. No formal study but Margaret has a fine fern house. Meet from 11 o'clock. As customary on these occasions, members are invited to bring a small gift (not over \$4) for exchange and it is proposed to pool lunches. Margaret has suggested that you contact her prior to the day and discuss what you intend bringing. Margaret's phone number is 543 2242.

* Sunday 26 February 1989, Outing to Mt. Wilson

Meet at Park opposite Chimney Cottage, MT. Wilson. Drive past the Mt. Wilson Post Office and take right hand turn. Plan to arrive in time for 10 a.m. start on the popular loop walk through rainforest area. Lunch at cars. Any enquiries to Peter 625 8705.

* Saturday 18 March 1989, Meeting at 76 Grange Crescent, Cambridge Gardens

Arrive from 12 noon, the meeting to commence sharp at 1 p.m. at the home of Max Forth. The study session is on the local Lycopods and Sellaginella spp. and members are invited to bring any samples of these to the meeting.

Peter warns against bringing any favourite potted specimens however as these usually react adversely to any disturbance. Bring lunch and afternoon tea if required. Enquiries to Moreen 528 4881.

* Sunday 16 April 1989 Outing to Newnes

Advance notice of visit to Glow Worm Tunnel at Newnes. More details next Newsletter.

* Forthcoming Events in South East Queensland.

Irene Cullen has advised that the Group's programme for the New Year will be worked out at the meeting to be held on Sunday 12 February 1989. Venue home of Irene & Russell Cullen, 39 Sunningdale Avenue Rochedale, meeting to commence at 9.30 am. For further information phone Irene (07) 3414272.



Doodia aspera

The photo is of a fertile frond of a Doodia aspera grown by Kyrill Taylor of Yagoona in the ground. Kyrill brought the frond to our October meeting. It was the only branched frond observed on the plant. Our Leader described the frond as a freak and said that it had been known to occur at times although by no means a common occurrence.

Contributions Welcomed

Articles for publication in the Newsletter are always welcomed. Of special interest are articles dealing with the propagation and growing of ferns. Please forward articles to the Secretary at the address shown or phone Moreen on (02) 528 4881. Closing date for contributions to our next Newsletter is 15 February 1989.