

FERN SOCIETY OF VICTORIA
NEWSLETTER

Volume 34, Number 1
January/February 2012



Fern Society of Victoria Inc.

ABN 85 086 216 704

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Objectives of the Fern Society of Victoria

To bring together persons interested in ferns and allied plants

To promote the gathering and dissemination of information about ferns

To stimulate public interest in ferns

To promote the conservation of ferns and their habitats

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Subscriptions

Single	\$17.00
Pensioner/student	\$14.00
Family	\$19.00
Pensioner family	\$16.00
Overseas	\$25.00 (overseas subscription

payments by international bank cheque in \$Aus, by airmail please)

Subscriptions fall due on 1 July each year

Meeting venues

The Kevin Heinze Garden Centre, 39 Wetherby Road, Doncaster [Melway 47 H1]

Other meetings as advertised in this Newsletter

Timetable for evening general meetings

7:30 Pre-meeting activities – sale of ferns, spore, books, merchandise and special effort tickets. Also library loans and lots of conversation.

8:00 General meeting

8:15 Workshops and demonstrations

9:15 Fern identification and pathology, special effort draw

9:45 Workshops and demonstrations

10:00 Close

Opinions expressed in this Newsletter are the personal views of the authors and are not necessarily endorsed by the Society, nor does mention of a product constitute endorsement.

Next Meetings

7:30 pm, Thursday 16 February 2012

Location: Kevin Heinze Centre, Doncaster (see inside cover for details)

Barry White: *Doodia* and related genera

Fern competition: *Doodia*

Saturday 31 March 2012

Excursion to Endeavour Fern Gully environmental rehabilitation project

Location: Red Hill, Mornington Peninsula (details in the next newsletter)

Time: 11 am

Bring; picnic lunch to enjoy after the excursion

FSV members and guests welcome



Cover image: *Phylloglossum drummondii*. Photo: Barry White.

Above: *Doodia caudata* at Australian National Botanic Garden, Canberra. Photo: Robin Wilson.

President's Note

The Annual General Meeting held on 17 November saw no new nominations for Committee, and the outcome was – with all incumbent members being prepared to stand again – an unchanged line-up of Committee members and office-bearers. Taking a positive stance on the situation, this indicates that members remain supportive of the current Committee and its direction of the Society. However, again I would make the point that renewal of the composition of Committee is a sensible objective for any group such as ours, so urge others to nominate at the next AGM.

The honorary position of Auditor was once again performed most efficiently by member Bernadette Thomson in the 2010/2011 year, and Bernadette kindly consented to offer her services again this year, which offer was readily and gratefully endorsed at the AGM. Bernadette served for a long time as a Committee member prior to taking responsibility for the audit. Thanks Bernadette.

As Bernadette acknowledged at the AGM, the Society's finances are in good shape, not least because our Treasurer Don Fuller pays close attention to effective investment of accumulated funds. The financial position is very sound regardless of the lower total subscriptions compared with earlier years. Thanks to Don, and all other members of Committee for their contributions in the 2010/2011 year.

I discussed with Committee ahead of the AGM the possibility that FSV might (in pursuit of one of its founding objectives: to promote the conservation of ferns and their habitats), seek to take an active role in some fern habitat rehabilitation efforts. This could involve using FSV volunteer resources for research, advisory input, sourcing ferns, etc. – and possibly also

using some of its accumulated funds to assist in obtaining ferns for such projects. The Committee was supportive, so during the AGM I put the question of the possible use of FSV funds in this way to the members present, seeking reactions. No dissent was expressed – the idea met with the support of those present. So expect to hear more on this subject. Any comments/reactions by members are invited, and perhaps suggestions for projects which may be worthy of consideration by FSV.

On the night of the AGM members also offered ferns for sale, and many found new homes. Thanks to all who participated, and especially Tony Arthur who donated a number of beautiful large ferns that he said were taking up too much room in his fernery which were sold to benefit the FSV and part-fund a donation to Kevin Heinz Centre. Special personal thanks to Tony for donating a plant of *Drynaria rigidula* to me, having read my lament in the last FSV Newsletter that I no longer had one!

On the subject of fern habitat conservation, we now have a firm invitation to visit the Endeavour Fern Gully environmental rehabilitation project in Red Hill, on the Mornington Peninsula on Saturday 31 March 2012. More details in a later Newsletter, but we'll meet there at 11am, expecting most members may wish to have a picnic lunch in the vicinity after our inspection of the property. FSV members and interested guests welcome.

A fine FSV Christmas celebration lunch was very kindly hosted by Mirini and Russell Lang at their Glen Waverley home in early December, and we thank them sincerely for their hospitality, and the opportunity to view and appreciate their fine garden and fern collection.

Barry Stagoll

**Found in a Christmas "cracker" (you may have heard it before):
What's the most popular gardening magazine in the world? WEEDERS' DIGEST**

Editor's Note

Due to the recess from FSV activities during January, preparation of the first two issues of the Newsletter is always a challenge. This year we have been rescued by some interesting content from Barry White and Barry Stagoll. However the next issue, which will appear in only a month from now, at present is nearly empty apart from one item by Don Fuller held over from last year. Can I please make a special appeal to any members who have fern-related horticultural or botanical items of interest, to please get in touch with me and help contribute to the next issue by

providing either images and/or text.

Many thanks and Happy New Year to all FSV members.

Robin Wilson



Huperzia varia (see article Fern Allies/Lycophytes by Barry White starting page 8 of this issue). Photo: Barry White.

Drynaria in China

Barry Stagoll

South Australian member Ron Robbins telephoned a few weeks back, to send apologies (and seasonal greetings to Victorian members, which we reciprocated) in connection with the FSV Christmas celebration - which the Robbins have regularly attended in previous years. Ron also wished to make some enquiries about the *Drynarias* we'd come into contact with on our visit to western China in 2008.

I've since written to Ron to provide him with what we know about the western Chinese *Drynaria* species (there's many - we saw only a few of them in the wild – but one of the showiest *Drynaria quercifolia*, for instance, was quite common in the parts we travelled). Australia (very fortunately in my opinion, as they're one of my favourite genera) has native *Drynaria* species, but not as many.

Ron has concentrated quite a bit of his attention – and competence in cultivation of ferns – on *Drynaria*. Hence his interest in the Chinese species.

For the FSV Newsletter record, our authoritative Native Ferns and Fern Allies of Yunnan China records the species found there as:

my (non-technical) notes on distinguishing features

<i>D. bonii</i>	pinnae of fertile fronds are few and relatively broad with a sharp apex
<i>D. delavayi</i>	Similar to <i>D. quercifolia</i> but more delicate in appearance of fronds, pinnae of next fronds not fused to give leaf-like
<i>D. propinqua</i>	fronds fan-like, pinnae in ladder palm-like configuration
<i>D. roosii</i>	slightly crumpled leathery fertile pinnae – reminiscent of <i>Blechnum watsii</i>
<i>D. rigidula</i> *	long, open fertile fronds with narrow pinnae
<i>D. quercifolia</i> *	relatively broad-lobed fertile fronds, nest leaves imitative of large oak leaves
<i>D. sinica</i>	pinnae of fertile fronds straight, set close together, excluding apex mostly at about 90°

*also occurs in Australia

All grow epiphytically or in rock crevices, rather than in the open ground.

The only Australian species not recorded for China is *Drynaria sparsisora*, which is very close to *D. quercifolia* in appearance, but slight differences including a less orderly arrangement of sori on fertile fronds.



Drynaria delavayi from China. Photo: Barry Stagoll.

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Fern Allies/Lycophytes

Barry White

The term "Fern Ally" is an endangered term as it is considered to be no longer an appropriate description and is being replaced by the term "Lycophyte".

Plants which have been included as Fern Allies are ones which more complicated than the mosses and liverworts and have some characteristics in common with ferns. However they do have some distinct differences from ferns. There is often confusion as to what plants are included in the Fern Allies group.

Some of the plants which have been included as Fern Allies in the past are *Botrychium* (Moonwort), *Helminthostachys*, *Ophioglossum* (Adder's tongue), *Psilotum* (Skeleton fork-fern), *Tmesipteris* (Fork-fern) and *Equisetum* (Horsetail, Scouring rush). The DNA evidence is that these are true ferns and therefore they should be referred to as such.

The other plants which have been classified as Fern Allies are *Isoetes*, *Selaginella*, *Huperzia*, *Lycopodium*, *Lycopodiella*, and *Phylloglossum*.

The current view based on DNA and other evidence is that these are more closely related to the flowering plants than to ferns and therefore it is not appropriate to call them Fern Allies and an alternative and more appropriate term is Lycophytes. However the term Fern Allies will probably persist for some time; and for convenience the ferns and lycophytes are likely to continue to be grouped together as in the book "Biology and Evolution of Ferns and Lycophytes" which was published three years ago. And the Fern Society of Victoria will undoubtedly continue to regard Lycophytes as an appropriate area of interest.

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Fern Allies/Lycophytes (continued)

Lycophytes (*Isoetes*, *Selaginella*, *Huperzia*, *Lycopodium*, *Lycopodiella*, and *Phylloglossum*)

As a group Lycophytes have small single-veined leaves, with a single sporangia on the leaf base. Their spore bearing leaves may be grouped together in a cone or strobilus, and the sporangia wall is two or more cells thick.

Isoetes: (Quillwort) There are about 100 species with 15 in Australian and three in Victoria:

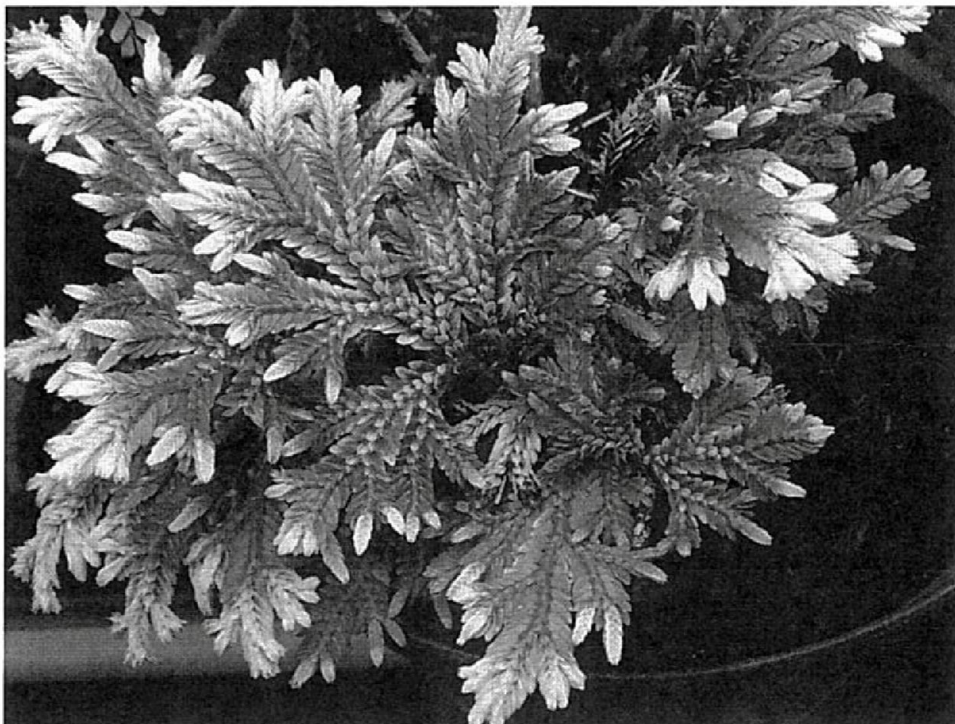
Isoetes drummondii, *I. pusilla* and *I. muelleri*. It is not uncommon but is frequently overlooked

Isoetes has a grass like appearance with cylindrical leaves 5 to 30 cms long, and a corm like base. It usually grows in shallow water or muddy banks. Both the leaves and the roots have distinctive air chambers. There are two types of sporangia and they are found in the hollow leaf bases, the megasporangia contains the female megaspores, and the microsporangia contains the

small male microspores. The spores grow into female and male prothalli respectively.

Isoetes has an unusual type of photosynthesis which helps to conserve water, and which is also present in cacti. Probably more importantly this type of photosynthesis also allows it to grow in waters with quite low nutrients. Although the name indicates evergreen the plants growing on mud may die down in the summer.

Selaginella: There are about 750 species in the world with 10 or 11 in Australia, and two native to Victoria *Selaginella gracillima* and *S. uliginosa*, both are widespread. *Selaginella kraussiana* from South Africa has become naturalized in Victoria, NSW, and South Australia, and the golden form of *S. kraussiana* is very common in cultivation. *Selaginella* may grow erect or scrambling, and may have leaves of two distinctly different sizes. The sporangia are held singly at the base of a leaf,



Selaginella martensii. Photo: Barry White.

Fern Allies/Lycophytes (continued)

and the spore bearing leaves are held in a tight terminal cluster called a strobilus. As with Isoetes there are two types of sporangia. One usually contains four large female megaspores and the other maybe a thousand or so male microspores. Again these grow into female and male prothalli respectively. Both types of spores start to develop into prothalli while still within the plant, and fertilisation may also occur within the plant or on the ground. Some Selaginellas are tropical but the temperate ones are very easy to cultivate.

The other four genera (*Huperzia*, *Lycopodium*, *Lycopodiella*, and *Phylloglossum*) are grouped in the order Lycopodiales.

Members are homosporous (i.e. the spores are all the same size), epiphytic or terrestrial, leaves are similar in size and shape (cf. with *Selaginella*), spores germinate in the dark, and the prothalli are subterranean, lack chlorophyll and depend on a fungus.



Selaginella kraussiana strobilus with microsporangia. Photo: Barry White.

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Fern Allies/Lycophytes (continued)

Huperzia: Resembles a giant moss, may be terrestrial or epiphytic. Branches divide evenly at each stem division. species

There are twelve of *Huperzia* in Australia with just two in Victoria: *H.australiana* and *H.varia*. Some *Huperzias* are very rare and may be becoming extinct in the wild. They are mostly cultivated in well drained hanging baskets. Some cultivated species are *H. squarrosa* (Rock Tassel Fern), *H.phlegmaria* (Common Tassel Fern), *H.phlegmarioides* (Layered Tassel Fern), *H.dalhousieana* (Blue Tassel Fern), and *H.carinata* (Keeled Tassel Fern)

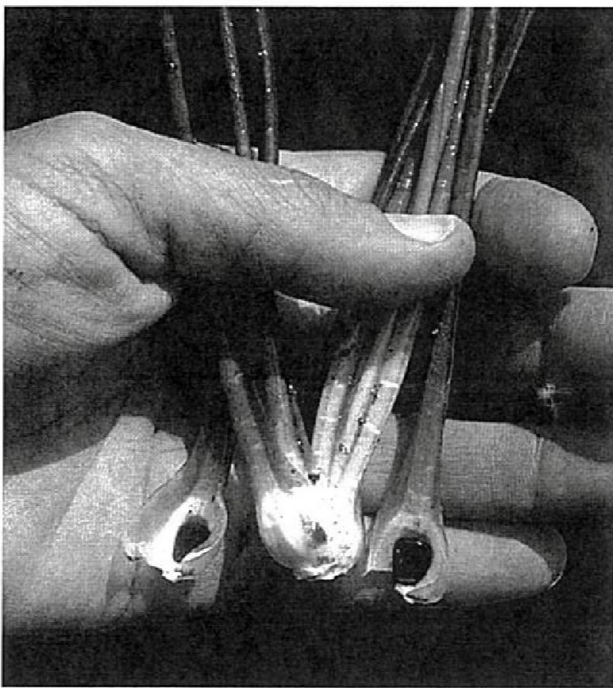
Lycopodium and *Lycopodiella* are similar to *Huperzia* but divide unevenly into two at each stem division. They are more often terrestrial, and the main stem or rhizome is of indeterminate length.

There are four species of *Lycopodium* in Australia viz. *L.scariosum*, *L.fastigiatum*, *L.deuterodensum*

and *L. volubile*. The first three are present in Victoria. They tend to resent disturbance and are slow growing and often difficult to maintain in cultivation.

The *Lycopodiella* have only minor differences to the *Lycopodiums*. The suffix -ella indicates that they are small *Lycopodiums*. There are five species in Australia with two in Victoria viz. *L.serpentina* (Bog Clubmoss) and *L.lateralis* (Slender Clubmoss).

Phylloglossum (Clubmoss) There is only one species *Phylloglossum drummondii* (see cover image), and it occurs only in Southern Australia and N.Z. This is an odd little plant with a tuft of small (1-2 cms) round fleshy leaves, an underground tuber and a spore bearing spike about 4 cms high. They may occur in extensive patches in wet areas after fire, and also in wet sandy area in open heathlands or shrublands.



Isoetes gunnii. Photo: Barry White.



Huperzias at Fern Show. Photo: Barry White.

See bottom of page 14 for two more of Barry White's fern ally images.

Vale Barry Hubbard

The Society has lost another of its long time members. Barry Hubbard of Parkes passed away suddenly on the 7th of January. Barry joined the Society about the time of the trip to Tasmania in 1987. Despite being in N.S.W. Barry and his wife Lyn were regular attendees at shows and other events in Melbourne. He will be sadly missed.

Barry White

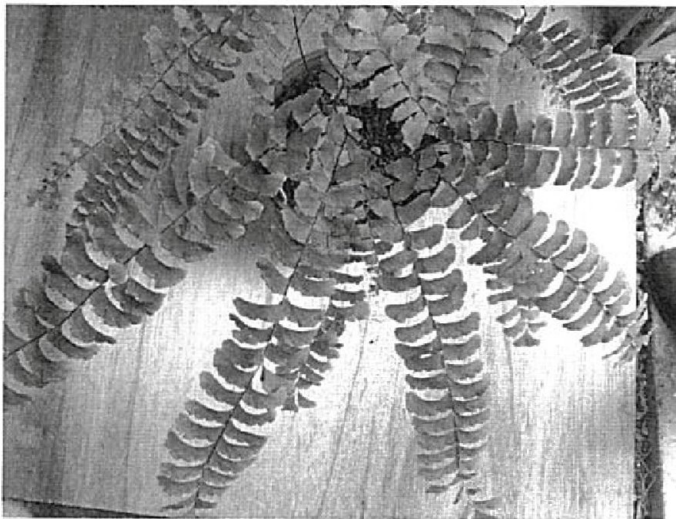
This page and the next carry 6 images of deciduous ferns from the November 2011 meeting of the Fern Society of Victoria.



Athyrium filix-femina 'Frizelliae'. Photo: Barry White.



Athyrium japonicum 'Pictum'. Photo: Barry White.



Adiantum pedatum. Photo: Barry White.



Aleuritopteris kuknii. Photo: Barry White.

2011/2012 MEMBERSHIPS NOW DUE

Membership subscriptions for the Fern Society of Victoria for the financial year 2011-2012 are now due. If you have not already done so, prompt payment would be appreciated - not only does this save your society money, but it makes the job of the Committee much easier. Membership costs for different categories of membership are located on the inside cover of this and all issues of the Newsletter, as are contact details for mailing your subscription.

As of July 2011, it is also possible to pay membership online via membership page of the Society's website <http://home.vicnet.net.au/~fernsvic/Member.html>. Online payments are possible either by credit card or via PayPal account. When you fill out the form online, don't forget to click "update total" before you start entering payment and address details. Thanks to Barry White for setting up this very convenient facility (I have used it myself this year) - Barry White's email address is on the Membership page in the unlikely event anyone has problems.

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Phegopteris decursive-pinnata. Photo: Barry White. *Osmunda regalis*. Photo: Barry White.

2012 Calendar of events — Fern Society of Victoria

7:30 pm, Thursday 16 February 2012

Location: Kevin Heinze Centre, Doncaster (see inside cover for details)

Barry White: *Doodia* and related genera

Fern competition: *Doodia*

Saturday 31 March 2012

Excursion to Endeavour Fern Gully environmental rehabilitation project

Location: Red Hill, Mornington Peninsula (details in the next newsletter)

Time: 11 am

Bring; picnic lunch to enjoy after the excursion

FSV members and guests welcome

April 2012

An excursion to Powelltown and Glen Navook is being considered. Confirmation and details will be provided in the next newsletter.



Lycopodiella cernua. Photo: Barry White.



Lycopodium volubile. Photo: Barry White.

Fern Society of Victoria Spore Bank

Fern spore is free to members of the Fern Society of Victoria who donate spore. Otherwise the cost is members 50 cents per sample, non-members \$1, plus \$1.00 to cover postage and handling. Available at meetings or by mail from Barry White, 34 Noble Way, Sunbury, Vic. 3429 Australia, Ph. (03) 9740 2724. There is no charge for spore for overseas members, however to cover postage two International Reply Coupons would be appreciated; or alternatively spore may be exchanged. International Reply Coupons are being phased out in favour of PayPal via the FSV website. Overseas non-members may purchase spore at three packets for each International Reply Coupon, plus two coupons per order to cover postage and handling. There is a limit of 20 packets per order. Some spores are in short supply please include alternatives. Queries can be emailed to: Barry White barry_white1@msn.com.au. The following list is current as of January 2011, but consult the web page at <http://home.vicnet.net.au/~fernsvic/Sporlist.html> for updates and for details of payment options for spore purchases.

<i>Acrostichum speciosum</i> 4/09	<i>Cyathea cooperi</i> 1/09	<i>Microsorium punctatum</i> 1/09
<i>Aleuritopteris kuhnii</i> 6/10	<i>Cyathea cooperi</i> 'Brentwood' 3/08	<i>Ophioglossum pendulum</i> 7/08
<i>Amphineuron opulentum</i> 4/10	<i>Cyathea felina</i> 10/08	<i>Pellaea cordata</i> 7/09
<i>Anemia phyllitides</i> 6/09	<i>Cyathea howeana</i> 10/10	<i>Pellaea falcata</i> 1/11
<i>Anemia tomentosa</i> 8/08	<i>Cyathea macarthuri</i> 10/10	<i>Pellaea hastata</i> 5/10
<i>Angiopteris evecta</i> 11/09	<i>Cyathea medullaris</i> 11/08	<i>Pellaea viridis</i> 1/08
<i>Arachniodes simplicior</i> 1/09	<i>Cyathea robusta</i> 9/10	<i>Platynerium superbum</i> 4/08
<i>Arachniodes aristata</i> 11/10	<i>Cyathea rebecca</i> (crested) 9/10	<i>Pleisioneuron tuberculatus</i> 12/08
<i>Arachniodes mutica</i> 10/08	<i>Cyrtomium arizonicum</i> 8/10	<i>Pneumatopteris sogerensis</i> 12/08
<i>Arachniodes standishii</i> 6/10	<i>Cyrtomium falcatum</i>	<i>Pneumatopteris costata</i> 12/08
<i>Asplenium milnei</i> 10/10	<i>Butterfieldia</i> 3/08	<i>Polystichum aculeatum</i> 7/09
<i>Asplenium nidus</i> 5/08	<i>Cyrtomium fortunei</i> 6/10	<i>Polystichum australiense</i> 5/10
<i>Asplenium nidus</i> cv.5/08	<i>Dicksonia antarctica</i> 12/10	<i>Polystichum formosum</i> 6/09
<i>Asplenium pellucidum</i> 12/10	<i>Diplazium australe</i> 5/10	<i>Polystichum proliferum</i> 12/10
<i>Athyrium filix-femina</i> (red stipe) 12/10	<i>Diplazium assimile</i> 6/09	<i>Polystichum retroso-paleacum</i> 10/10
<i>Athyrium niponicum</i> 'Pictum' 5/10	<i>Diplazium dilatatum</i> 12/10	<i>Polystichum whiteleggei</i> 10/10
<i>Athyrium otophorum</i> 12/10	<i>Doodia australis</i> 6/10	<i>Polystichum xiphophyllum</i> 3/08
<i>Blechnum ambiguum</i> 1/08	<i>Dryopteris affinis</i> 'Cristata' /08	<i>Pteris aspericaulis</i> 8/10
<i>Blechnum braziliense</i> 5/10	<i>Dryopteris dilata</i> "Crispa Whiteside" 11/10	<i>Pteris dentata</i> 12/10
<i>Blechnum chambersii</i> 9/10	<i>Dryopteris erythrosora</i> 10/10	<i>Pteris hendersonii</i> 12/10
<i>Blechnum spicant</i> 12/10	<i>Dryopteris guanchica</i> 12/10	<i>Pteris pacifica</i> 6/10
<i>Blechnum sp.</i> (New Caledonia) 6/10	<i>Dryopteris sparsa</i> 8/10	<i>Pteris tremula</i> 11/10
<i>Blechnum patersonii</i> 9/10	<i>Dryopteris wallichiana</i> 1/09	<i>Pteris umbrosa</i> 6/10
<i>Blechnum wattsii</i> 12/08	<i>Hypolepis glandulifera</i> 12/08	<i>Revwattsii fragile</i> 12/10
<i>Chingia australis</i> 6/10	<i>Lastreopsis acuminata</i> 12/10	<i>Rumohra adiantiformis</i> (Cape form) 2/08
<i>Christella hispidula</i> /09	<i>Lastreopsis decomposita</i> 6/09	<i>Sphaerostephanos heterocarpus</i> 7/08
<i>Christella subpubescens</i> 12/08	<i>Lastreopsis microsora</i> 6/10	<i>Thelypteris patens</i> 9/09
<i>Cyathea australis</i> 9/10	<i>Lastreopsis nephrodioides</i> 10/10	
<i>Cyathea baileyana</i> 12/08	<i>Lygodium japonicum</i> 2/10	
	<i>Macrothelypteris torresiana</i> 6/10	

Thank you to the spore donors who are listed on the web page.

NEWSLETTER

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