THE HARDY FERN FOUNDATION
P.O. Box 3797
Federal Way, WA 98063-3797
Web site: www.hardyferns.org

The Hardy Fern Foundation was founded in 1989 to establish a comprehensive collection of the world's hardy ferns for display, testing, evaluation, public education and introduction to the gardening and horticultural community. Many rare and unusual species, hybrids and varieties are being propagated from spores and tested in selected environments for their different degrees of hardiness and ornamental garden value.

The primary fern display and test garden is located at, and in conjunction with, The Rhododendron Species Botanical Garden at the Weyerhaeuser Corporate Headquarters, in Federal Way, Washington.

Affiliate fern gardens are at the Bainbridge Island Library, Bainbridge Island, Washington; Bellevue Botanical Garden, Bellevue, Washington; Birmingham Botanical Gardens, Birmingham, Alabama; Coastal Maine Botanical Garden, Boothbay, Maine; Dallas Arboretum, Dallas, Texas; Denver Botanic Gardens, Denver, Colorado; Dixon Gallery and Gardens, Memphis, Tennessee; Georgia State University Perimeter College Native Plant Botanical Garden, Decatur, Georgia; Inniswood Metro Gardens, Columbus, Ohio; Lakewold, Tacoma, Washington; Lotusland, Santa Barbara, California; Rotary Gardens, Janesville, Wisconsin; and Whitehall Historic Home and Garden, Louisville, Kentucky.

Hardy Fern Foundation members participate in a spore exchange, receive a quarterly newsletter and have first access to ferns as they are ready for distribution.

Cover design by Willanna Bradner

THE HARDY FERN FOUNDATION QUARTERLY

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Editor's note: We regret the late delivery of our winter issue. The original was last seen being delivered to the Post Office. UPS delivered the comp copies to us but when no one received their regular copy the printer visited the Post Office on our behalf. He was told that “it's out for delivery”. Six weeks later it was still “out there” somewhere and Impression Printing kindly redid the issue for us. Enjoy!

Hardy Fern Foundation Quarterly Spring 2019 - 21
President's Message

This year marks the 30th anniversary of the Hardy Fern Foundation. We have been busy planning several special events for this including special speakers, garden tours and celebratory events. Over these many years the HFF has grown from a small group of committed individuals to a vibrant organization with members from around the world. One of our first celebratory events this year will be at our annual Fern Festival and Rare Plant Sale on May 31 to June 1 at the Center for Urban Horticulture at the University of Washington. We will have on hand a wide selection of ferns and other choice perennials along with a great selection of companion plants for your fern plantings. On Friday evening we are pleased to announce that well-known botanical explorer, writer and lecturer, Daniel Hinkley will be speaking for us. Dan is an entertaining and informative lecturer, and this should not be missed.

We are planning for three 30th anniversary garden tours this summer. The first will be held June 9th visiting two exceptional private gardens in the South Sound area of Puget Sound followed by a tour and reception at the Rhododendron Species Botanical Garden, our HFF headquarters. I am pleased to say I will be leading this tour along with fellow HFF board member Rick Peterson and we both look forward to seeing and sharing these gardens with a bunch of enthusiastic fern lovers!

One of the highlights for our anniversary year will be a celebration at the recently opened Amazon Spheres in downtown Seattle. These amazing structures just opened a little more than a year ago and feature three glass spheres reaching four stories high filled with exotic tropical plantings, living walls and a ferrery! This event will be a wonderful opportunity to see these iconic buildings and enjoy the skillfully executed gardens. We greatly appreciate Ron Gagliardo, Sr. Manager of Horticultural Services, for helping to make this event happen. This fabulous event will be limited in attendance so watch for the notice in early summer and sign up early!

All the best,
Richie Steffen
HFF President

Fern Cultivation in Northern Utah
Part one by James R. Horrocks

Northern Utah, with its semi-arid climate, presents some real challenges to growing ferns. In fact, a fern garden in the valley is really quite unique. Several factors limit the number of species that can actually be cultivated with any degree of success. First, all, the relative humidity is quite low during the summer months. Secondly, semi-arid climates, more often than not, produce rather alkaline soils. Consequently, the size of the fern gardens and the variety of ferns cultivated are quite reduced. A microclimate must be maintained and ferns are mostly grown in the shade with very little sun.

What follows is a listing of species that the author has personally grown or attempted to grow with notes as to possible reasons for their success or failure. Obviously, ferns requiring high humidity and those needing acidic soil have not fared well, if at all, but there have been some interesting surprises.

- Adiantum capillus-veneris - I attempted these once but they were young plants and I could not get them established. I would like to try them again. I suspect they may need rather high humidity. Adiantum hispidulum - Has survived cold winters here with protection but ultimately died out. Low humidity most likely a factor.
- Adiantum micrachium - Attempted but unable to establish. Adiantum pedatum - I have both the eastern variety and the western var. alpinum. They seem to do fairly well here despite the low humidity. A.P. var. subulatum attempted but failed. Low humidity most likely the problem.
- Adiantum tenuissimum - Difficult to establish but it takes hold - watch this. It is my best Adiantum, spreading among the larger rocks and remaining very fresh and green. Evergreen through the winter here if covered with snow. Anoectchidium - Many of these are cold hardy but seem to require high humidity. They also grow so slowly here that they have not thrived. Slugs and snails are particularly troublesome. Species attempted with generally the same disappointing results are: Anoectchidium arizonicum - Variegatum - Several authors have allied to the "white" stripe down the middle of the pinna. For me it has always been light green in color, never white.
- Anoectchidium rhizophyllum - Failed slugs and snails probably responsible.
- Anoectchidium gracile - I am presently experimenting with this one. It has by far been the strongest grower and is very easy from spore.
- Asplenium densum - Known as "Indian's Dream" and native to the alpine regions of Utah. I suspect it should remain in an alpine environment, since it dwindled and died out in my garden. Asplenium - Most of these seem in need of relatively high humidity. Even A. platypterum, which I expected to thrive here, failed. Slugs and snails a major nuisance. Species attempted with disappointing results are:
- Asplenium platypterum
- Asplenium trichomanes
- Athyrium filix-femina - Native to the mountains of Utah, this fern responds quite well in the garden but tends to look rather disappointing by late August. Variants grown include:
- Athyrium filix-femina 'Fleischl'
- Athyrium filix-femina 'Victoriae'
- Athyrium filix-femina 'Minutissimum'
- Athyrium filix-femina 'Cristata'

I am confident many other varieties of this species would probably do well here in Utah.

Athyrium xerophyllum - Hardy but only producing new fronds from the parent fronds. Very susceptible to slugs and snails.
- Athyrium nipenniscum var. pictum - I acquired this as A. goringianum var. pictum. It has done surprisingly well here.
- Athyrium phlebophorum - Hardy but rather cautious in growth. Plants grown in a large cold-frame did very well. Humidity most likely a factor.
- Athyrium pycnanthum - I am surprised that this fern is not offered in more listings. It has always been a strong grower for me, needing only adequate moisture and protection from late frosts and wind. The one-pinnate fronds are unique among North American deciduous ferns. My colony is over twenty years old.

Blachman spicant - Did fairly well here but ultimately died out, the soil probably not being acid enough.
- Blachman penne-marina - Rather disappointing results. This fern seemed to require high acidity and humidity. I could never get it started even after several tries.

Cystopteris fragilis (Asplenium fragilis) - Failed slugs and snails probably responsible.
- Cystopteris officinarum (Asplenium ceterach) - Unsuccessful.
- Cheilanthes dalmatica - Failed utterly.
- Coniogramme - I attempted both C. intermedia and C. japonica. Unfortunately the slugs ate them to the ground before winter arrived. Hardly questionably here.

Cryptogramme - Mostly alpine plants with which I have never had success. C. arctoicarpa, the Parsley Fern, which is native in Utah, is a so-called "lime-hater" and did miserably in my garden. I have never attempted C. stelleri, which is known in Utah from only one locale.

Cyclosorus pensilis - A notorious contaminant of spore cultures and a greenhouse weed. Believe it or not, I actually have one that has survived three cold winters with some protection.

Cytanium macrophyllum - Another great deal harder than imagined.

Cystopteris fejeensis - Grown here for fourteen years. They have thrived, looking their best by late August and September.

Cyrtomium fortunei - Most likely the hardest of the Cyrtomiums, those like to be nestled up against large rocks.

Cystopteris macrophyllus - Another great surprise, establishing itself rather well in the garden.

Cystopteris arctoicarpa - Has done quite well nestled against a large boulder.

Cyrtomium fragilissimum - Marginal performance. This one did much better when I moved it into the cold-frame. Perhaps it was too small for the open garden.

I have always wanted to try C. heliandra but have never been able to acquire it.

Look for part two in our next newsletter

Reprinted from Fall/Winter 1990

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Dixon Gallery and Gardens
Tonja Ashworth
Memphis, TN

Founded in 1976 by Hugo and Margaret Dixon, the Dixon Gallery and Gardens is a fine art museum and public garden distinguished by its diverse and innovative programs in the arts and horticulture. The 17 acre grounds feature a working cutting garden, woodland garden, formal gardens, and a sensory garden set to open in 2019. The Dixon is continually expanding its collections of ferns, boxwoods, native azaleas, and camellias.

The fern collection is highlighted along the Terrace Walk, which lies between our woodland gardens and the sweeping South Lawn. Our formal cutting garden which produces flowers used for floral designs inside the museum nearly year-round is unmatched in beauty, size and productivity by any other public garden in the U.S.

Spring is full of color and excitement with our annual display of 100,000 tulips. The Dixon is proud to be a part of the Hardy Fern Foundation Affiliate Garden Program as we work together for excellence in horticulture and education.

Heronsworth Logging Camp (Renaissance Garden) Part 1
David Gibson
Bainbridge Island, WA

Just a little over two years ago I was attending the end of the year Heronsworth meeting at the Port Gamble S’Klallam tribal center in Kingston Washington. The meeting included lectures, raffles and a sampling of plants for sale from Windcliff. After buying 6 Dryopteris sieboldii and 3 miniature Rhododendrons I took my seat and could not stop thinking about the half-flat of D. sieboldii left for sale. Even after Dan Hinkley started speaking I was still staring at them when I heard these words for the first time ‘Heronsworth is putting in a stumpery’. My head whipped around and with one eye still on the ferns for sale I heard it again ‘stumpery’.

The Heronsworth stumpery will not be your classic Victorian stumpery. It will be staged as an old logging camp, representative of a small portion in the long history of the Port Gamble S’Klallam tribe, with lots of upright tree snags and stumps and stacks of lumber.

The S’Klallam name for the stumpery is ḵəwəs shayi (meaning new life) and the name for this section of Heronsworth will be Renaissance Garden.

Presently, after a couple of years of planning, the project is well under way. At the time of writing...
trees and undergrowth have been thinned out just enough to let in light for plants to grow, sprinklers have been installed, stumps and snags are in place, and paths are starting to take shape. Four to five hundred yards of garden mix soil is being trucked in to make the foundation for the new beds. A footbridge over a pond will connect the main garden to this new section.

John van der Meerendonk, past president of the Hardy Fern Foundation, has been instrumental in the construction of the first phase of the project and has faced many challenges. Locating logs and stumps and then transporting them without damage and then placing them in the garden can be arduous, costly and time consuming. With that part complete, now the focus is on adding top soil for the new beds, installing paths and acquiring the planned plant material. If you are interested in learning more about the garden, Heronswood welcomes volunteers to Weed, Walk & Talk volunteer days that are scheduled for the second Wednesday and the fourth Saturday of each month under the direction of Dan Hinkley, garden director. This is a good way to learn about the plants in the garden and who knows you may end up working in the new stumpery, for more information go to heronswoodgarden.org

Stay tuned for Part 2…

Hardy Fern Foundation
FERN FEST 2019

In the Pacific Northwest, FERN FEST is one of the premier fern sale events of the year. Not only is it a great chance to shop a huge selection of ferns, it's a perfect time to get your questions answered by our knowledgeable board members and staff!

FRIDAY, May 31, 2019
noon - 6PM

SATURDAY, June 1, 2019
10AM - 2PM

Center for Urban Horticulture
3501 NE 41st St
Seattle, WA 98105-5699

Also on-site will be several vendors who offer the new, the unusual, and the tried and true—all great companion plants for ferns!

Foliage Gardens
Growing Girls Nursery
Keeping It Green Nursery
Sundquist Nursery

7PM lecture on Friday, May 31
Dan Hinkley

Please check our website for more information:
hff@rhodygarden.org

free parking / purchase hold area / carry-out assistance / experts on-site
Ferns in Singapore
Pat Acock
St. Mary Cray, England

We are fortunate that our son, Richard and daughter-in-law, Laura live in South Island, New Zealand. On going with the British Pteridological Society Tour, so well lead by Jennifer Ide, in 2000, I felt I might never stand the long journey again. However, having Richard living there gives us the ideal excuse to visit for an extended stay, which seems to becoming annual. We usually break the journey on the way back in Hawaii and have now explored all the major islands apart from Molokai.

This year we decided to break the journey on the way out and decided on 6 days in Singapore. I looked in the Natural History Museum Library, London for books on Singapore ferns and was delighted to find a nice little book called The Ferns of Singapore Island by Anne Johnson. This was originally published in two parts of The Malayan Nature Journal (1959) but was popular enough to be turned into a book which went to a second edition in 1977. I looked online and was delighted to find many copies ranging from $13 to $120 so I went for the cheapest. You probably cannot imagine my delight when I opened the package to find that the book originally paper covered was leather bound.

In preparation for the grand tour I read it and found that the author had used Professor Holttum’s Flora of Malaya to find the correct names and it only took me a little while to update the genera I did not recognise. I downloaded 15 great walks in Singapore from the web and with my 2 maps annotated by my friend Steve Perkins who had spent 3 years out there in the army, I decided on the best wild places that might be worth a visit.

Singapore as you know is one of these super cities around the globe and I was a little worried it might have been totally concreted over. However the city is reserving the very best areas of the original jungle. Alfred Russell Wallace when he visited in 1854 was the first to comment that the rate of clearing the jungle if it continued would leave the island without its natural beauty and was one of the first to worry about this continuing unfolding disaster. After staying a while in a hotel, he moved inland to Bukit Timah staying with a French catholic missionary. Here at night he frequently heard the roar of tigers and these were a constant danger during these times often taking the unwary traveller. This hill, the highest part of the island today is still the richest for all wild life but you are expected to stay on the circular route to the top of the hill and back.

We wisely never hired a car since the whole island is serviced by a railway network that can take you effortlessly to all parts of the island apart from the extreme NE which is soon to be rectified. Now the Botanic Gardens are well worth a visit and we went to look to see what evidence was left of Professor Holttum’s legacy as the most famous of the garden’s directors. We were not disappointed as his old laboratory is now a museum with many references to his work especially on orchid hybridisation and of course his beloved ferns. Within the gardens is a small area of the original forest and the native ferns were in abundance all around the gardens. We probably needed a second day there.

In Professor Holttum’s picture in his old laboratory now a museum in the Singapore Botanic Garden.

Asplenium nidus colonises any tree whose bark holds sufficient moisture to grab a foothold even down to the base in some areas.

Vittaria ensiformis as well as very large Platycerium coronarium and Drynaria quercifolia clinging in the canopy. We saw Stenochlaena palustris on the ground and then scrambling up into the canopy. Try as we might we never saw the clusters of fertile fronds at the tops but it might have been the wrong season.

On the mainland at the other end of the cable car was Mount Faber with one of the islands stunning walkways through the forest. I came across a local pointing into the forest at what I thought was a cyathea. Thinking I had found one of the fern fraternity I

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did not know until Grace arrived and told me he was pointing at a very thin lime green snake of about 2 ft in length climbing through the bushes at eye level. How did I miss it?

The following day we went to Bukit Timah. Map reading was a disaster and we found ourselves trying to get into the park from a driveway above which were people circumnavigating the hill on trail bikes. Undaunted we allowed a couple to catch us up. They had been born here but had spent time in London working in the city. Grace kept them company as I tried to record all the new ferns. They eventually led us on the correct trail where we saw a few weedy ferns and a huge car park. Walking in to the park proper we tried the two Wallace trails but saw few ferns and the trails were in need of some work which had been started. All was revealed. This lower secondary forest had been a huge dairy farm up until quite recently and the park had inherited it with all its infrastructure. They were trying to turn the cow shed into a field centre with more space than they could possibly use but had tried manfully to cover some of the walls with posters.

We decided to take it slowly up the hill in the 100% humidity and 90 degrees heat and turn around if it was too bad. However, on the hill it was cooler and we came across an excited group of policemen. I of course, to Grace’s embarrassment, had to engage them in conversation to find out what was going on. There were a group of boys who had gone missing. We started to see a lot more ferns that were new to us. Unfortunately, as we neared the top one really interesting fern was under the wire and a warden from the ranger station above gave Grace a severe lecture for her to convey to me that no-one was allowed to leave the marked paths.

Another day we took the train to another part of the harbour area where the book mentioned a colony of *Dipteris conjugata* which I really wanted to see. This was marked as on the cliffs at Labrador where there was supposed to be plenty. A trail guide I found on 15 great walks in Singapore said that it was now extinct. However, I found someone managing one of the gardens and he led me to a map and he showed me where it was. We set off and after a while an electric cart caught up and it was the park director who asked us whether we were the couple looking for the dipteris. He told us to jump in and drove us round to see it. They have been looking after the remainder of the colony for many years now and this year a tree had fallen on it and had to be carefully removed. He also mentioned there was another colony on the army firing range but confessed he had not been to see it.

The star fern in Singapore must be *Platycerium coronarium*. I must confess to having difficulty telling the platyceriums apart but will never have any trouble with *P. coronarium* now with its unusual non-shield fronds, the mature ferns having the fertile part as a specialised disc at the first bifurcating frond, standing out horizontally. This is unique to *P. coronarium*, I understand.

Singapore is a wonderful city to visit with a transport system ideal for quickly moving around. The high humidity and daily temperature of 32°C is readily acclimatised too and the wild areas are well looked after with good paths. The parks are maintained and generally looked after, appreciated and used by the islanders.

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We’re pleased to announce that our talented board member Daniel Mount has been hired as a regular contributor by *Fine Gardening* magazine.

Read, Learn and Enjoy!
Spore Exchange News

One of the advantages of membership in Hardy Fern Foundation is access to our Spore Exchange. This gives members who have an interest in propagation the opportunity to grow many ferns that are not otherwise available.

The spore in the exchange comes largely from members who mail us spore they have collected from their own plants or on their travels. We are very grateful for their contributions and hope more members consider contributing to our spore exchange. It benefits many members who avail themselves of this wonderful source of spore.

If you have questions about growing from spore or how to collect and prepare spore, you may contact me at fernspores@hotmail.com and I will attempt to answer your questions.

Carolyn Doherty
Spore Exchange Director

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<tr>
<th>Botanical name</th>
<th>Collection Year &amp; Donor</th>
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<td>‘16, ’17 DOH; ’16 RSBG</td>
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<tr>
<td>Adiantum aleuticum ‘Subpumilum’</td>
<td>’17 DOH</td>
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<td>’17 Fitzpatrick</td>
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<td>Adiantum tenerum ‘Scutum Roseum’</td>
<td>’18 Olsen</td>
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<td>Adiantum thalictroides</td>
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<td>Arachniodes aristata</td>
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<td>Arachniodes davalliaformis</td>
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<td>Asplenium oblongifolium</td>
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<td>’18 JKL</td>
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<td>‘Lady in Red’</td>
<td>’18 Strahle</td>
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<td>Athyrium filix-femina ‘Corymbiferum’</td>
<td>’18 JKL</td>
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Athyrium filix-femina ‘Minutissimum’ | ’18 Strahle |
Athyrium filix-femina ‘Victoriae’ | ’16 DOH |
Athyrium otophorum | ’16, ’17 DOH |
Athyrium yokoscense | ’16 Gassner |
Austroblechnum penma-marina | ’18 RSBG |
Austroblechnum penma-marina ssp. penma-marina | ’18 RSBG |
Blechnum novae-zelandiae See Parablechnum novae-zelandiae |
Blechnum penma-marina See Austroblechnum penma-marina |
Blechnum penma-marina ass. penma-marina See Austroblechnum penma-marina ssp. penma-marina |
Blechnum spicant See Struthiopteris spicant |
Blechnum tabulare See Lomariocycas tabularis |
Cyrtomium caryotideum | ’18 RSBG |
Cyrtomium fortunei | ’15 RSBG; ’18 Strahle |
Cyrtomium lonchitoides | ’15 RSBG; ’18 Strahle |
Cyrtomium macrophyllum | ’15, ’18 RSBG |
Diplazium hachijoense | ’17 Hendrikkx |
Drynaria delavayi | ’18 SEH |
Dryopteris affinis ‘Stableri’ | ’15, ’16 RSBG |
Dryopteris affinis ‘Stableri Crisped’ | ’15, ’18 RSBG |
Dryopteris affinis var. boreri ‘Fureans’ | ’17 Hendrikkx |
Dryopteris arguta | ’18 Olsen |
Dryopteris cashmiriana | ’15, ’18 RSBG |
Dryopteris crassirhizoma | ’15, ’16, ’18 RSBG |
Dryopteris crisipolia | ’15, ’16, ’17 RSBG; ’16 RAS |
Dryopteris cycadina | ’15, ’18 RSBG |
Dryopteris cystolepidota | ’17 Strahle |
Dryopteris decipiens | ’18 Strahle |
Dryopteris dilatata ‘Crispa Whiteside’ | ’18 RSBG |
Dryopteris erythrosora | ’17 JKL |
Dryopteris erythrosora ‘Prolifica’ | ’18 Strahle |
Dryopteris expansavar. willeana | ’18 Olsen |
HFF 30th Anniversary upcoming events

- **Fern Fest** – May 31, June 1 – Center for Urban Horticulture plant sale, dinner, speaker – Dan Hinkley

- **South Sound Tour** – Sunday, June 9 – Old Goat Farm, private garden of Camille Paulson, ending at RSF with reception ($50, including a box lunch and a champagne reception)

- **West Sound Tour** – August TBD – Bainbridge Island Library, private gardens, Heronswood

- **Fall Sale** – Saturday, September 14 – Bellevue Botanical Garden; tour of BBG

- **Amazon Spheres** – Sept TBD - food & celebration

- **HFF Fall Social** – Saturday, October 21 – Bellevue Botanical Garden, speaker – Richie, potluck lunch

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**Support the HFF on May 8th through GIVE BIG!**

GiveBIG is returning on May 8th, 2019!

**What is GiveBIG Seattle?**

GiveBIG Seattle is a one-day online giving event to raise funds for nonprofit organizations serving Greater Seattle.

For more info visit:

https://www.givebigseattle.org/