



Hardy Fern Foundation
Quarterly



Summer 2015

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; Georgia Perimeter College Garden, Decatur, Georgia; Inniswood Metro Gardens, Columbus, Ohio; Lakewold, Tacoma, Washington; Lotusland, Santa Barbara, California; Rotary Gardens, Janesville, Wisconsin; Strybing Arboretum, San Francisco, California; University of California Berkeley Botanical Garden, Berkeley, California; 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

HARDY FERN FOUNDATION QUARTERLY

THE HARDY FERN FOUNDATION QUARTERLY

Volume 25
ISSN 1542-5517

No. 3

Editor- Sue Olsen



President's Message	50
Richie Steffen	
HFF Affiliate Garden Report Georgia Perimeter College Native Botanical Garden.....	51-54
George Sanko	
HFF Affiliate Garden Report Lotusland	55
Virginia Hayes	
Color Photos	56-57
Japan Fern Trip continued.....	58-61
Tim Pyner, Pat Riehl and Daniel Yansura	
<i>Polystichum xdycei</i> - <i>Polystichum proliferum</i> x <i>P. braunii</i>	61-62
James R. Horrocks	
She likes ferns.....	62-64
Jo Laskowski	
Welcome New Members!.....	64

***** Mark your calendars *****

**HFF Fall Social - October 10, 2015
at the Bellevue Botanical Garden**

**Come for the entertainment, displays and plants for sale, as we
host our annual get-together for all our membership.**

President's Message ~ Summer 2015

As the new president of the Hardy Fern Foundation I am looking forward to representing our organization on its regional, national and international platforms. We have accomplished so much since the beginning of the HFF and I am excited about how much we have coming up in future years. As the curator of the Elisabeth C Miller Botanical Gardens and in charge of overseeing a large fern collection, I appreciate ferns from the garden to the wild and look forward to working with our membership and the gardening public to encourage the enjoyment of ferns.

The Hardy Fern Foundation celebrated the 44th Annual Fern Fest plant sale in early June. This long standing sale also coincides with our annual meeting and fern lecture. This year John Van den Meerendonk retires from his position as president after three years of fulfilling this commitment. John's tireless and enthusiastic support of the HFF and ferns in general has inspired many of us and personally I feel I have large shoes to fill as the new president. A huge thank you also goes to Rick Peterson for his service as Treasurer for the last three years. All of Rick's efforts are much appreciated and we are looking forward to his continued service on the board. I am looking forward to working with our new Treasurer, Nancy Strahle.

At our annual meeting three new board members were added including Forrest Campbell and Dave Gibson. Forrest and Dave are filling two vacated positions and they both have attended and volunteered at many HFF events and are eager to participate in the guiding of the organization. Our third new board member is Michelle Bundy, who shifted from being curator of the HFF for the last 19 years to being the regional sales representative of the wholesale nursery, Casa Flora. We sincerely thank Michelle for those many years of being an exceptionally dedicated employee with many creative ideas and an abundance of initiative. I'm sure these will translate into her service as a member of the board. I would like to welcome all three new board members and congratulations to the other members of the board in continuing their service.

Members who were able to attend the annual meeting heard Pat Riehl speak about her trip to Japan. Those that could not make the meeting can enjoy the second installment of Pat's article about her travels. It was very interesting to see the rich fern flora of this country and see some of the cultural landmarks of Japan.

Our affiliate garden program is an essential part of our education program. This issue continues the features of these gardens and their fern collections. I recently had the opportunity to visit Whitehall in Louisville, Kentucky. It reminded me of how much dedication these institutions have to the HFF and their fern gardens. I am looking forward to reading about each one I hope you enjoy them as well.

All the best,
Richie Steffen
Hardy Fern Foundation President

Our HFF 25th Anniversary continues with informative reports from our affiliate gardens. Welcome to Georgia Perimeter College's garden and Lotusland.

Hardy Fern Foundation~Affiliate Garden Report Georgia Perimeter College Native Botanical Garden

George Sanko ~ Decatur, GA

Introduction: The native plant garden at Georgia Perimeter College has been an affiliate Garden of the Hardy Fern Foundation since 2011. The garden is celebrating 25 years in 2015, and in that time has accumulated 390 + fern taxa from all over the world. The garden is located on the flood plain of Doolittle Creek in a region southeast of downtown Atlanta known as Soapstone Ridge. The flood plain itself is composed of Mixed Mesic forest, with high ground of Pine Forest and Meadow-Roadside habitat. Periodic flooding and poor native soils are our chief challenges: our garden soils are amended with sand, compost, and Permatil (heat-expanded slate) to improve growing conditions. (See photo pg. 56)

Weather & Climate: The brutal winters of 2013-2014 and 2014-2015 have largely missed the Georgia Piedmont region, most of the brunt of the storms tracking north of the Georgia-Tennessee border. Of the two winters, that of 2013-2014 was certainly the worst, with snow, ice, and several periods of below-freezing temperatures for two days or more. These winters have by and large had little effect on the ferns in the Garden, with the possible exception of our xeric species, both Georgia native and Southwestern native, that show little tolerance for winters that are both cold and wet. Despite the cold winter, the near-normal rainfall we experienced in 2014 rendered the fern display the lushest in recent memory. Certainly more devastating to our plants was the "Easter Freeze" of 2007. While not particularly late for our region of the state, the freeze was particularly damaging because no freezing temperatures had occurred since Valentine's Day nearly two months previous, and there were 3 nights in a row where the temperature fell below 32 degrees F. Although drought has not been a significant factor since 2012, it was ever-present for the preceding twenty years or more. Periodic flooding also puts our plants to the test: the garden has flooded many times in 25 years, the most notable recent floods being in 2005 and 2009.

Rating Criteria: The Garden was reviewed on March 21, 2015. Temperatures had moderated enough by that time that the crosiers of many fern taxa were emerging, although some ferns were evaluated that had not yet shown signs of emergence. As we evaluated the plants, we made performance observations at both the genus and, in certain instances, the species level. In selecting and rating the taxa featured below, we developed four criteria by which to rate them, and an example genus that fits the criterion:

- 1 **Thriving-Excellent** - ferns that have survived in the Garden for 10 years or more; plants consistently look good and spread; top performers. *Coniogramme* is a non-native genus that gives a thriving performance in our Garden.
- 2 **Adequate** - ferns that do well for 5 years +/-; severe weather might cause decline or death; plants lack vigor and spread little if at all. *Arachniodes* is an example of an adequate, non-native genus.
- 3 **Average** - plants may survive but do not spread in the Garden. Our native *Adiantum pedatum* defies cultivation unless perfectly sited. It is better suited to the mountains farther north. *Dryopteris sieboldii* is another example for Category 3.
- 4 **Poor** - ferns may survive 1-2 years; often succumb to heat, cold, flood, or other adverse condition. *Blechnum*, another genus of which we have no natives, is a suitable example for Category 4.

Respectfully submitted by George Sanko and Rick Barnes

Plant	Rate	Comments
<i>Adiantum pedatum</i>	2	Native to GA mountains; perfect siting critical in Piedmont
<i>Adiantum xmairisii</i>	2	Best performer over the years
<i>Arachniodes davalliaeformis</i>	2	Holds up well once established; nearly evergreen; took a hit in the winter of 2013-2014
<i>Arachniodes simplicior</i>	2	Most other species do well also
<i>Asplenium ebenoides</i>	3	Native - grows well where you don't plant it; doesn't grow where you do
<i>Asplenium trichomanes</i>	3	A pleasant surprise this year; growing in rock that is neither sandstone nor limestone
<i>Astrolepis sinuata</i>	2-3	Native - survives but struggles with cold, wet winters
<i>Athyrium asplenioides</i>	2-3	Our native is great!
<i>Athyrium niponicum</i>	2	Thrives, but tends to fade in summer heat
<i>Athyrium otophorum</i>	2	Does not spread, but does flourish
<i>Blechnum spicant</i> / <i>B. niponicum</i>	2	<i>B. niponicum</i> somewhat better; heat and humidity a problem
<i>Cheilanthes lanosa</i> / <i>C. tomentosa</i>	2-3	Native - protection from excess winter water essential

<i>Cheilanthes sp.</i>	3-4	All western natives succumbed to cold, wet winters; cold tolerance is proved; tenting a must in the garden in winter
<i>Coniogramme sp.</i>	1	Excellent in our Garden; <i>C. intermedia</i> 'Yoroi Musha' is a vigorous spreader and a showstopper!
<i>Cyrtomium sp.</i>	3+	As with <i>Polystichum</i> , improving drainage with Sand and Permatil is essential for survival; cold winters will severely set them back
<i>Dryopteris x australis</i> '	1	The most common native fern in the garden
<i>Dryopteris erythrosora</i>	1	Tolerates anything; the most common exotic fern in the garden
<i>Dryopteris namegatae</i>	3+	
<i>Dryopteris purpurella</i>	1	Always reliable
<i>Dryopteris sieboldii</i>	3	Holds up, but never looks great
<i>Lepisorus bicolor</i>	1	Not evergreen, but hardy in our zone
<i>Matteuccia struthiopteris</i>	1	Native, but slightly south of the natural range; excellent!
<i>Osmunda cinnamomea</i> (now <i>Osmundastrum cinnamomeum</i>)	1	Native
<i>Osmunda regalis</i>	1	Varietals are Category 2; <i>O. claytoniana</i> does not tolerate our heat and lower elevation
<i>Polypodium sp.</i>	4	Truly a genus that defies cultivation in our Garden, with one exception
<i>Polypodium vulgare</i> 'Ullong Island'	2	Our only solid <i>Polypodium</i>
<i>Polystichum acrostichoides</i>	1-2	Prefers dry shade not common in our garden; elsewhere an excellent native evergreen
<i>Polystichum sp.</i>	3	Improving drainage (Permatil & Sand) is essential for survival
<i>Pyrrosia sp.</i>	1	Good solid evergreen fern; hardest ferns to acquire

<i>Thelypteris beddomei</i> 'Korean Traveller'	1	Great groundcover fern
<i>Thelypteris kunthii</i>	1	Native - a superior spreader
<i>Woodwardia areolata</i> ; <i>W. virginica</i>	1	Native species are easy to grow; exotic species are more difficult
<i>Deparia acrostichoides</i>	1	Great native-very easy to grow.
<i>Diplazium pycnocarpon</i>	1	Native - looks great, never lost a single plant.

Fern Gardens at Georgia Perimeter



Hardy Fern Foundation Progress Report—2015 Lotusland

Virginia Hayes, Curator ~ Montecito, CA

Lotusland began trialing ferns from the Hardy Fern Foundation in 2008. It has always been an exciting day when the current year's distribution of new ferns arrive each fall. In general, the fern species and cultivars that we've received have been successful in our more Mediterranean-type climate. And according to our records, most of the species that didn't survive, never made it out of the nursery into the garden. Below are lists of the casualties and those known to be still living in the garden. (See photos pg. 56)

A few observations of note: *Cheilanthes argentea* would probably be more successful in a drier, sunnier site, so we are looking for that spot, *Pyrrosia shearereri* is extremely slow to establish, *Blechnum penna-marina* has been planted both in the ground and mounted on tufa stone and seems to thrive on either substrate, and *Osmunda* (all we've tried) are difficult, perhaps because of our more alkaline environment.

Casualties

2008	<i>Dryopteris crassirhizoma</i>	2011	<i>Adiantum aleuticum</i> 'Subpumilum'
2009	<i>Asplenium trichomanes</i>		<i>Osmunda regalis</i> 'Cristata'
	<i>Adiantum venustum</i>		<i>Dryopteris tokyoensis</i>
	<i>Cheilanthes wrightii</i>	2012	<i>Dryopteris koidzumiana</i>
2010	<i>Dryopteris bissetiana</i>	2013	<i>Cryptogramma crispera</i>

Survivors

2008	<i>Arachniodes standishii</i>		<i>Pyrrosia shearereri</i>
	<i>Polystichum x dycei</i>	2012	<i>Adiantum x mairisii</i>
	<i>Woodwardia unigemmata</i>		<i>Blechnum novae-zelandiae</i>
2009	<i>Arachniodes miqueliana</i>		<i>Dryopteris wallichiana</i>
	<i>Dryopteris koidzumiana</i>		<i>Woodwardia unigemmata</i>
2009	<i>Dryopteris crispifolia</i>	2013	<i>Blechnum penna-marina</i>
	<i>Cyrtomium falcatum</i> 'Butterfieldii'		<i>Osmunda regalis</i> 'Decomposita'
	<i>Dryopteris sublacera</i>		<i>Phyllitis scolopendrium</i> 'Angustifolia'
2010	<i>Dryopteris namegatae</i>	2014	<i>Cheilanthes argentea</i>
2011	<i>Cyrtomium lonchitoides</i>		<i>Cyrtomium falcatum</i> 'Rochfordianum'
			<i>Dryopteris filix-mas</i> 'Parsley'



**Georgia
Perimeter
Garden**

Decatur, GA

Photo left courtesy of
George Sanko

Lotusland

Montecito, CA

Photo right courtesy of
Sue Olsen



**Georgia Perimeter
Garden**

Decatur, GA

Photo left courtesy of
George Sanko

Lotusland

Montecito, CA

Photo right courtesy of
Sue Olsen





Deparia lancea

Photo left courtesy of
Dan Yansura

*Polystichum
craspedosorum*

Photo right courtesy of
Pat Acock



*Lepisorus
thunbergianus*

Photo left courtesy of
Dan Yansura



Polystichum xdycei

Photo right courtesy of Sue Olsen



Japan Fern Trip continued

Friday 24th October - Hakone District, Lake Ashino and Otamaga Pond
Tim Pyner

Starting at the coach park by Lake Ashino (35°14'02.4"N, 138°59'53.5"E) a large colony of a small *Lepisorus onoei* was immediately spotted growing on the bole of a large tree. This charming little fern with narrow, leathery fronds about 5cm tall often formed large colonies on trees, walls and even wooden handrails along our route. Armed with our fern list with colour photos that we received from Mr. Oka each morning we started on an easy walk, ascending gradually up a wide path alongside Lake Ashino. This turned into a slow stroll due to the large number of new ferns along the route. The sight of handsome shuttlecocks of *Deparia orientalis* halted us from the very start and a mat of *Selaginella remotifolia* carpeted the ground nearby. Further on a large colony of *Diplazium squamigerum* was growing amongst bamboo. We reached a mossy retaining wall and here several *Asplenium* species were established giving us our first opportunity to examine some Japanese species. *A. sarelii* and *A. tenuicaule* are small species with bipinnate fronds that are rather similar in appearance that we would see quite frequently over the coming days. However the third species, *A. ruprechtii*, was very easy to recognise as it has small, entire fronds that root at the tip. It is very closely related to the American walking fern, *A. rhizophyllum*. *Polystichum* was proving to be a very difficult genus to understand and several different species were seen on shady banks including *P. polyblepharum*, *P. tagawanum*, *P. tripterum* and the tiny *P. craspedosorum*, another small fern with rooting frond tips. (See photo pg. 57) We finished in an area of *Cryptomeria* plantation where we saw *Polystichum makinoi*, *P. pseudomakinoi* and the magnificent *P. ovatopaleaceum*. Mr Oka laid out fronds of these and *P. polyblepharum* and demonstrated the differences in scales and soral position. This proved very helpful in recognising these species and also in spotting new species and hybrids over the coming days. As always our interpreter Asher, was of immense help whenever called upon to translate fern talk.

Our last stop was at Otamaga Pond (35°12'10.6"N, 139°30'51.6"E), a small lake hosting some familiar ferns, *Onoclea sensibilis* and *Thelypteris palustris*. Our goal, however, was to find ferns of much greater interest. Walking into the forest we soon came across some boulders coated with a minute Grammitid fern, *Micropolypodium okuboi*. The fronds measured between 1 and 3cm long and were coated with fine reddish bristles. From a distance they resembled mosses of the genus *Fissidens* rather than ferns but close examination with a hand lens revealed tiny sori on the back of the fronds. Further on we reached a large rock where we had our first encounter with filmy ferns. Here we saw *Hymenophyllum wrightii*, *H. barbatum* and a member of the difficult *Vandenboschia radicans* complex, *V. x stenosphon*.

Unfortunately due to traffic congestion the planned visit to our final site, Gotemba, was abandoned, however the ferns seen by Lake Ashino exceeded expectations and made up for any disappointment.

Saturday 25th October - Miho Park, Yokohama area
Pat Riehl

We had a shorter day in the field since in the afternoon we had a series of three presentations by members of the Nippon Fernist club followed by a buffet meal together with them. Unfortunately the traffic was bad and the 1 hour bus ride took 2. This delay was exacerbated by the driver being unable to find the entrance to the park. The only positive was the absorbing sights of the neighbourhoods we passed through. On arrival at Miho Park (35°30'10.6"N, 139°30'51.6"E) we were told not to stop and look at the first ferns as we were there to see some special ferns and time was short

These new ferns sightings were *Botrychium japonicum*, *B.nipponicum* and *B.ternatum*. The largest was *B. japonicum* with a serrated edge, then *B. ternatum* with a lighter mid rib and finally *B.nipponicum* with crisped foliage. This was my first experience seeing *Botrychium* and it was hard to believe it is a fern.

Moving along we passed a large interpretation board created by the Yokohama municipal corporation locating various ferns and showing the fern life cycle. Our next serious fern sightings were *Dryopteris hondoensis*, *Deparia conilii*, *Polystichum fibrillosopaleaceum* and *Polystichum polyblepharum* and their hybrids. Also *Dryopteris lacera*, *Dryopteris uniformis* and their hybrids.

We were walking in a woodland with a high tree canopy so the light was filtered onto a trail that was very uneven with many exposed tree roots to navigate. Another of today's goals was to see the hybrid between *Osmunda lancea* and *O. japonica*. To find it we went off the trail and down a steep slope past *Helwingia japonica*, *Wisteria* and an earth star fungus.

After going up and down the hill someone found our quarry up the hill. Moving back down the hill we passed a large patch of variegated *Coniogramme japonica* well over a metre tall. Ahead was an amazing sight, a tree trunk totally covered in *Lemmaphyllum microphyllum* reaching high above everyone's head.

We were back in time to freshen up just a little before heading for dinner with the Nippon Fernist Club in a hotel conference room. One Japanese woman was wearing a beautiful pale yellow kimono with a fern pattern in the fabric. The first speaker was Dr. Iwatsuki who explained that Nippon Fernist Club is not a usual sort of name and the name tries to convey how the club feels about their study of ferns. Dr. Atsushi Ebihara gave a presentation on the population of native ferns of Japan, the total of which is 1,110. A few of the genera numbers he gave us were *Hymenophyllum* 39; *Asplenium* 37; *Dryopteris* 164. Interestingly enough the vast majority are located on the Pacific Ocean side of Japan. Dr. Ebihara has also written on the taxonomy of Japanese *Hymenophyllum*. Dr. Norio Sahashi then gave a presentation on *Ophioglossaceae*. He brought many herbarium sheets, some of which were very old, to show the subtle differences, which were very interesting. We had been introduced to him on our first night in Japan. Dr Sahashi has served as president of the Nippon Fernist Club for ten years. The presentations were

followed by dinner and a chance to meet new friends and exchange information on ferns.

Sunday 26th October - Jinmuji Forest and Hokokuji Temple Daniel Yansura

Sunday morning, with the bustle of the city of Kamakura surrounding us, we entered the quiet Jinmuji Forest (35°18'14.2"N, 139°36'21.7"E) on the Miura Peninsula. The entrance was lined with a number of woodland ferns we had seen earlier in the trip, *Cyrtomium fortunei* var. *clivicola*, *C. laetevirens*, and *Onychium japonicum*, while cracks in a concrete wall on our right provided a home for *Asplenium incisum* and *Lygodium japonicum*. Once through the entrance, the quiet, winding, wooded path climbed slowly through beautiful stands of *Arachniodes standishii*, *Dryopteris pacifica*, and *Microlepia marginata*. Soon the trail passed near some rock walls and a few Buddhist shrines, and expectations rose for finding epiphytic ferns. *Selliguea hastata* was our first sighting and a delightful new fern to most of us. Further along the rock wall we spotted *Vandenboshia x stenosphon*, as well as the simple, stiff, dark green fronds of *Deparia lancea*. (See photo pg. 57) Nearby on the ground was a beautiful clump of *Arachniodes aristata* with dimorphic fronds. Approaching the temple we saw a bank of *Polystichum lepidocaulon* from the tips of which a bulbil starts a new plant. Careful searching found one plant with 4 generations that had developed from the original plant.

As we reached the higher elevation of the Jinmuji Temple (35°18'13.8"N, 139°36'23.1"E), some new ferns caught our attention. The first of these was *Crepidomanes minutum*, growing on a tree and on a nearby rock. Although difficult to photograph because of its small size, it was a pleasure to see. The narrow entrance into the temple grounds was lined with a high man-made rock wall with ferns in every niche between rocks: *Sphenomeris chinensis*, *Adiantum capillus-veneris*, *Selliguea hastata*, *Pteris cretica*, and the usually terrestrial *Woodwardia orientalis*.

The Buddhist temple itself was built in the 8th century, and consisted of a few well-kept buildings, shrines and a huge brass bell. The surrounding peaceful garden was covered with moss as well as plantings of *Selaginella moellendorffii*, *Pyrrosia lingua*, and a huge bowl of *Marsilea*, possibly *M. crenata* or *M. quadrifolia*. Near one of the outer walls we discovered *Hymenasplenium hondoense* in dense vegetation. This medium-sized fern has delicate leaves and needs high humidity, and it was certainly one of the most exciting finds of the day.



Hymenasplenium hondoense

Photo courtesy of Pat Acock

On the way back we took a different trail down the slope and entered a narrow, wet, fern-filled canyon, where everything was big and lush, due to the ideal growing conditions.

Arachniodes standishii, *Polystichum tripterum* and *Deparia lancea* hung to the steep slopes on either side of us, while huge specimens of *Coniogramme japonicum*, *C. intermedia*, *Diplazium wichurae*, *Polystichum polyblepharum* and *P. fibrillosopaleaceum* filled the lower levels. Eventually we descended to drier areas near the end of the trail, and *Pteris* and *Cyrtomium* species, as well as the small *Anisocampium niponicum*, (*Athyrium niponicum*) were the most predominant ferns (35°18'31.6"N, 139°35'51.4"E).

In the late afternoon we went to see the Hokujuji Temple (35°19'16.1"N, 139°34'11.1"E), established in 1334. The gardens had beautiful plantings of moss and bamboo, with *Selliguea hastata* and *Lepisorus thunbergianus* growing naturally in the moss on most rocks. (See photo pg. 57)

That evening we all gathered in Martin's hotel room to drink wine and recall the wonderful ferns we had seen in Tokyo's outlying areas. The next morning we would be taking the train south to the mountains near Kyoto.

Polystichum xdycei

Polystichum proliferum* x *P. braunii

James R. Horrocks

Salt Lake City, UT

This beautiful and rather imposing hybrid is named after the late Jimmy Dyce, an avid researcher dealing with the classification of *Polystichum* cultivars and their many variations. This fern is a product of laboratory hybridization performed by the late Anne Sleep of Leeds University in Britain. Many of her hybrids included one parent that was bulbiferous such as *P. andersonii* or, in this case, *P. proliferum* from Australia which was crossed with *P. braunii* to give us *P. xdycei*. The bulbil-producing character persists in the subsequent progeny allowing for the ability to reproduce this otherwise sterile plant. *P. xdycei* is one of the largest polystichums in the nursery trade, comparable to the Pacific north-west *P. munitum*. (See photo pg. 57)

Description: The rhizome is represented as an "imposingly robust crown". The stipes are quite short and very scaly, the scales blackish-brown with a tannish outline. Pinnæ appear almost to the ground as in the parent *P. braunii*. The bipinnate-pinnatifid fronds are lanceolate in outline and widest near the upper third. 20 to 30 pairs of mid to dark green pinnæ are present. One to three bulbils are found on the underside of some fronds 2 to 4 inches from the apex. The pinnæ between the bulbils and the apex are quite reduced. The bulbils, found in the notch near where the pinnæ attach to the rachis, can form into small plants while still attached to the frond if conditions are humid enough. In dryer climates this is usually not the case. Spores are produced but are sterile. The sori are closer to the margins than the midrib.

Culture: Being a hybrid, this fern demonstrates considerable vigor as many hybrids do. It is at its best in a woody soil with plenty of leaf-mold, growing rapidly, producing 2 ½ to 3 ½ foot fronds that display a “giant horizontal wheel of foliage” as Sue Olsen puts it. It is magnificent in dappled shade under tall trees. The curious bulbils can be detached from late summer on into the fall and planted where the humidity is very high such as in a terrarium environment one would use to grow ferns from spores. *P. xdycei* is gradually becoming available in the U.S., having successfully survived winters in Great Britain and Europe. It is considered hardy to possibly Zone 6.

References:

Olsen, Sue, 2007, *Encyclopedia of Garden Ferns*, Timber Press, Inc., Portland
Rickard, Martin, 2000, *The Plantfinders Guide to Garden Ferns*, Timber Press,
Steffen, Richie, & Olsen, Sue, 2015, *The Plant Lover's Guide to Ferns*, {In association with Kew Royal Botanical Gardens}, Timber Press, Portland

She likes ferns...

Jo Laskowski ~ Seattle WA

Pat Riehl likes ferns. She likes dogs. She likes Japan. You could figure that much out because she has her very own Stumpery, her poodles are her babies, and her house exudes a cool elegance from the presence of its understated Japanese accents.

You can know a person for a long time, and not really know much about them. It turns out that Pat loves Japan. **LOVES** Japan. And she was able to combine her passion for ferns with her passion for Japan when she went on a magnificently orchestrated fern trip to Japan last fall. At the Hardy Fern Foundation's annual Fern Fest on June 5th, she talked about what she had seen, and where they had gone, and how they got on.

A manageable collection of ferns from Great Britain, the United States, and Australia assembled last October for this trip. Each day an itinerary was provided by their hosts, listing the ferns that were likely to be seen that day. And just imagine—there were usually photographs included!

Over several days the list of ferns that Pat saw grew:

Botrichium nepalense, growing like a weed there
Botrichium japonicum, *Botrichium niponicum*

Sometimes she saw other things, like a 4-inch long praying mantis: “Now I don't know if that's normal or not...”

Coniogramme japonica, *Osmunda* spp.: with lots of hybrids
Lemmaphyllum microphyllum

Micropolypodium sp.

Pyrrosia lingua

Asplenium hondoense: “There are cool *Aspleniums* there...”

Dennstaedia spp., *Adiantum capillus-veneris*

Pyrrosia linearifolia

Deparia spp., hybridizing like crazy

Athyrium otophorum

Woodsia spp., growing in rock crevices

Microlepia spp.

Polystichum makinoi, *Adiantum* spp., growing on rock

Loxogramme sp.

Dryopteris formosana, rare in Japan, *Asplenium* sp., fronds heavy with bulbils

Sometimes she saw other things, like land leeches. Reforestation, population decline, and global warming have swelled the population of this critter in Japan, making a sighting all but guaranteed. Sometimes she mentioned other things, like heated toilet seats. It seems that she’s inclined.

And filmy ferns all over the place, growing on tree trunks and growing on rocks. “It was like dying and going to heaven...”

The Brits added a dimension to the trip that was all their own. Individuals in this dedicated, and some would say crazy, group had no hesitation climbing down slick banks to fast-flowing rivers to drop into the classic ground pose on exposed rocks: magnifier to eye, face to ground, rump in the air. They professed no interest in the temples, and donned rain gear in a deluge in Yokohama to go out and collect ferns, bringing them back to their hotel rooms to ID. Especially troublesome for them was the food, and it’s said that one of them went so far as to bring his own crackers and live on biscuits for the duration.

Unlike the Brits, Pat was captivated by the temples and shrines. Shinto shrines are legion to the spirits that embody natural forces like wind and fire, animals, or an aspect of the landscape deserving of respect or awe, like mountains or waterfalls.

Pat’s voice softened as she tried to explain the effect that the shrines and temples had on her. Her hands waved futilely as she tried to put words to what you can’t, to explain the sense of sacred.

She saw the Silver Pavilion, the planned retirement villa of a 15th century shogun. It was going to be finished with silver leaf, but its builder died too soon. Today the site includes half a dozen other temple buildings, a moss garden, and a unique dry sand garden. His grandfather’s retirement villa had been the template for this shogun’s plans, and it was called the Gold Pavilion. Unlike the Silver Pavilion, the Gold Pavilion had, in fact, been covered with gold leaf. But only the top two of its three stories.

The Phoenix Hall, the oldest surviving wooden structure from the Heian period, the nearly four hundred year span from 794 – 1185. Phoenix Hall was built in 1053, is a

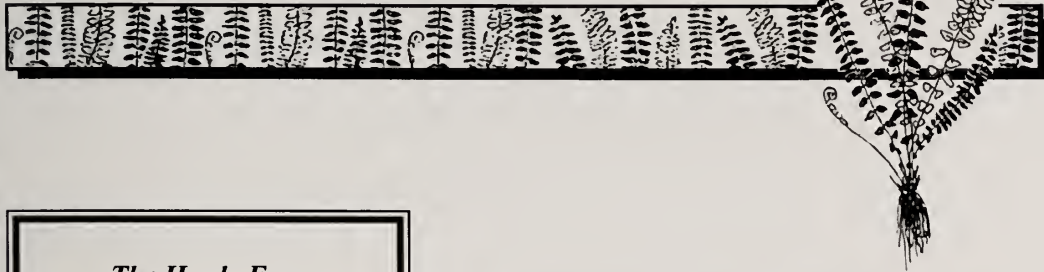
recognized World Heritage Site, and had just re-opened in April 2014 after an extended closure for repairs. Given that timely coincidence, you'd almost think the tour guides had orchestrated that, too.

It would be hard to say what Pat enjoyed the most—no doubt she was utterly captivated by the ferns she saw, and, I'd say, in equal measure by the inexplicable aura of Japan. The lights came up.

Welcome New Members!

Rance Arnold	Michael & Mimi Gustavson
Mary Ellen Asmundson	Benjamin H Hammontree
Rose Mary Bacina	Traci Jones
Sharon Ballard	Kathy Key
Dorianne Berry	Tom Kolouch
Kim Lyford Bishop	Gael Kurath
Patricia Bottoroff	Mary Leonard
William Bryan	Laura Loomis
Pam Clark	Tara MacDonald
Dave Coller	Lindsay Michimoto
Nancy Crowell	Chuck Ogburn
Barb DeCaro	Judith Oriani
L J Devraun	Nita-Jo Rountree
Jeff Dixon	Steve Santose
Ruth Dumpit	Mindi Schautz
Johanna Ehlhandt	Jeanne Schollmeyer
John Evans	Magge Soderstrom
Douglas Fields	Muyo Swanson
Carolyn Fiscus	Elizabeth Torrance
Udell Fresk	Kazuo Tsuchiya
Emily Gatch	Lou Vergeer
Frederick Gawron	Gale Wald
Gary Gibson	Paul Warren
Ann Gilpin	Mary Whitmore
Alexis & Harvey Greenberg	Craig Wier

THE HARDY FERN FOUNDATION QUARTERLY



*The Hardy Fern
Foundation Quarterly*
is published quarterly
by the

Hardy Fern Foundation
P.O. Box 3797
Federal Way, WA
98063-3797

Articles, photos, fern and
gardening questions,
letters to the editor, and
other contributions are
welcomed!

*Please send your
submissions to:*

Sue Olsen
2003 128th Ave SE
Bellevue, WA 98005
foliageg@juno.com

Editor:
Sue Olsen

Graphics:
Willanna Bradner
(cover design)
Michelle Bundy
(inside design)

Webmistress:
Michelle Bundy

THE HARDY FERN FOUNDATION

Curator: Jo Laskowski

BOARD OF DIRECTORS

President: Richie Steffen

Vice President: Michelle Bundy

Immediate Past President: John van den Meerendonk

Recording Secretary: Susie Egan

Corresponding Secretary: Pat Riehl

Treasurer: Nancy Strahle

Board Members:

Michelle Bundy	Forrest Campbell
Kathryn Crosby	David Gibson
Randall Hitchin	Linda Pyles
Meredith Smith	Nancy Strahle
Diane Thompson	Jane Whiteley

Honorary/Advisory Members:

Naud Burnett	Carolyn Doherty
Jerry Doherty	Joan Gottlieb
James Horrocks	Nils Sundquist

Members at Large:

Sue Olsen

