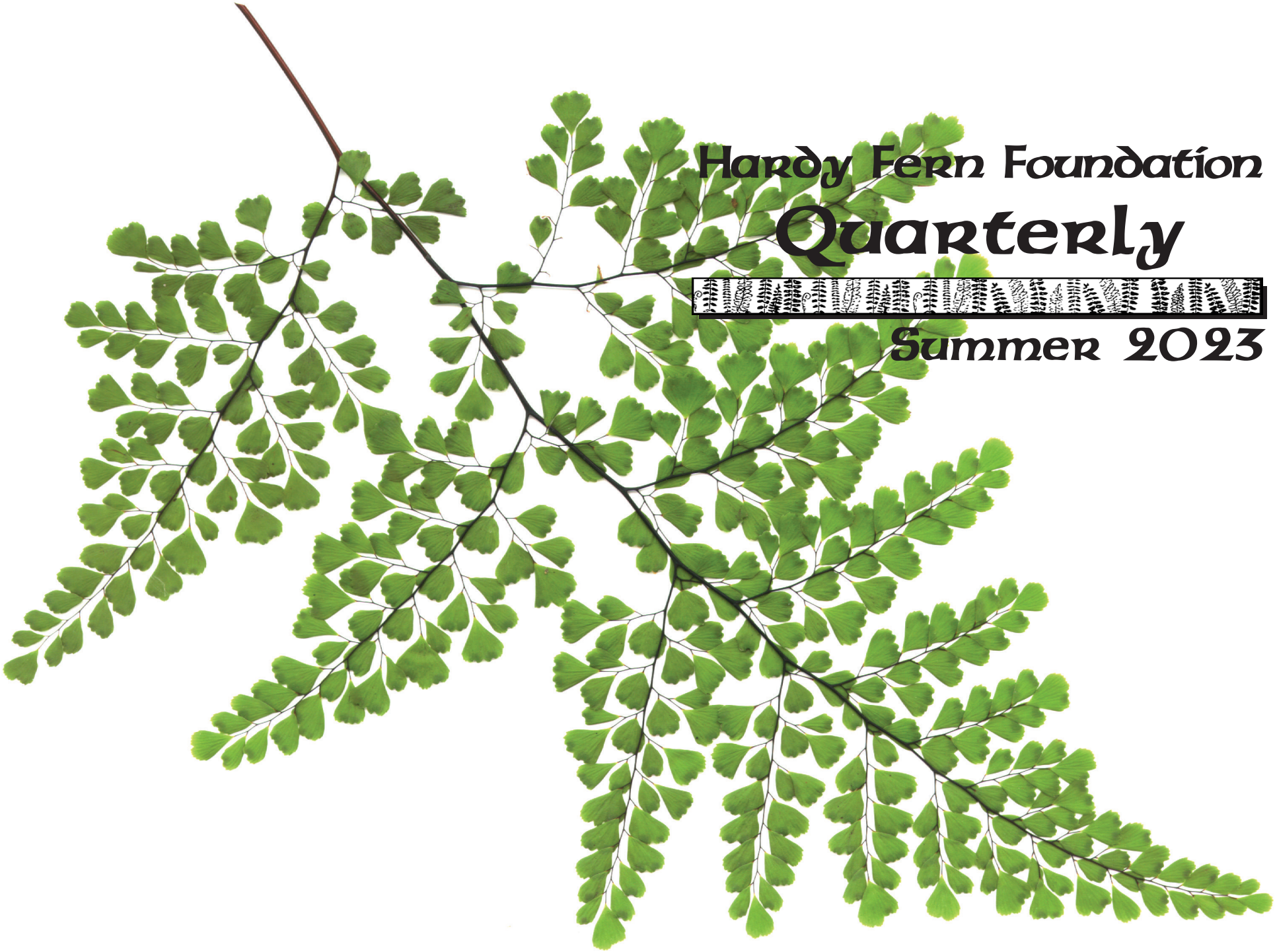

Hardy Fern Foundation Quarterly

Summer 2023

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;
Bartlett Arboretum & Gardens in Stamford, Connecticut;
Bellevue Botanical Garden, Bellevue, Washington;
Birmingham Botanical Gardens, Birmingham, Alabama;
Cornell Botanic Gardens, Ithaca, New York;
Dallas Arboretum, Dallas, Texas;
Denver Botanic Gardens, Denver, Colorado;
Dixon Gallery and Gardens, Memphis, Tennessee;
Ganna Walska Lotusland, Santa Barbara, California;
Georgia State University Perimeter College Native Plant Botanical Garden, Decatur, Georgia;
Heronswood, Kingston, Washington;
Inniswood Metro Gardens, Columbus, Ohio;
Lakewold, Lakewood, Washington;
Lewis Ginter Botanical Garden, Richmond, Virginia;
Powell Gardens, Kingsville, Missouri;
Rotary Gardens, Janesville, Wisconsin;
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

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President's Message

Hello Hardy Fern Foundation Community:

Happy summer everyone! I hope you have been enjoying our longer days and (so far) mild temperatures. Fingers crossed for the weeks ahead. As for the Hardy Fern Foundation, we have had a joyful and productive spring.

The HFF's hoop house at the Rhododendron Species Botanical Garden is looking splendid, it's protective plastic covering removed to allow the ferns access to the fresh air. The hoop is managed efficiently and beautifully by our fantastic staff member, Dennis Beatty, who grows and maintains the diverse collection of ferns our foundation has collected over time. The inventory in the house includes spore grown rare species, as well as plants of various sizes grown for fern distribution and sale.

We are nurturing several exciting species of Blechnum, as well as *Osmunda lancea* and *Polystichum otophorum,* the latter being new to North America. We can thank our founder, Sue Olsen, for bringing back spore of the Polystichum from England. I'm particularly interested in that species and look forward to learning how it performs in various gardens around the country, as we are planning to distribute it later this year for testing in our affiliate gardens. There are now 18 gardens involved who have been providing interesting and educational information for many years contributing significantly to our HFF mission.

The highlight of our HFF year has got to be the 50th anniversary Fern Fest weekend! The weekend featured a terrific two-day plant sale, held this year at Bellevue Botanic Garden. Plants were sold from HFF's own collection, as well as by several great nurseries: Keeping it Green, Sundquist, and Growing Girls.

Richie Steffen also organized a special lecture/retrospective presentation on the history of Fern Fest, with amazing archival photos of the early days. The lecture was capped by the presentation of an inaugural Hardy Fern Foundation Service Award, bestowed on Sue Olsen and John van den Meerendonk, for their tireless work on furthering the organization and its goals. (See separate article.)

And there was a Fern Fest Garden tour! Our very successful garden tour took place in Seattle's historic Mt. Baker neighborhood, featuring five gardens, each with their own character, features, and plants. We are grateful to the gardeners for opening their private spaces to attendees, who were understandably enthusiastic about the opportunity.

Our tours continued into late June with a much enjoyed visit to the outstanding Snohomish County gardens of Robert Fairfax who as an artist and landscaper has created an exceptional five acre woodland garden and Mary Palmer whose lush garden features an extensive collection of unusual plants arranged as lovely vistas.

Our other tour is a special mid July excursion to Far Reaches Botanical Conservatory. I'm sure it will be exceptional and will report on it in our fall issue.

All in all, we will continue with many opportunities to learn and connect with old friends and new. If you have any ideas for future events, please send them my way. We are a volunteer-driven organization, and we greatly appreciate our community of plant lovers.

Yours in garden love,

Bonnie Berk,
HFF President

In the Name of the Fern: Wallich's Wood Fern *(Dryopteris wallichiana)*

Daniel Mount
Carnation, WA

Wallich's wood fern, *Dryopteris wallichiana*, is one of 43 plants named in honor of Nathaniel Wallich, a boundary-breaking Jewish surgeon and botanist born in Copenhagen in 1786. At the age of 21 he sailed to Calcutta, where he spent most of his life studying the flora of the Indian Subcontinent. During his lifetime, he collected extensively in northeastern India, Nepal, and Burma, as well as being superintendent of the Royal Botanical Garden, Calcutta. The Wallich Herbarium, a sub-herbarium of the Kew Herbarium, has over 40,000 specimens many collected by Wallich and his colleagues.

The first herbarium specimen of *D. wallichiana* was collected by Wallich himself in 1820 at 8200' of elevation in the Himalayas of Nepal. One of this fern's common names is alpine wood fern, because it is almost always found at high elevations. Like many ferns it has had many botanical names. In 1827 it was first named *Aspidium wallichianum*. Though the generic name did not stick, the honorific specific epithet did.

Kew Herbarium of the first collection of Dryopteris wallichiana in Nepal in 1820, by Nathaniel Wallich

Dryopteris wallichiana has a wide ranging and rather idiosyncratic distribution. It is called a tropical, subtropical, temperate and even alpine fern in the many sources I researched for this article. Though the core populations are found in the Himalayas and western China, it is found across the globe. Japan hosts a small population in a cave in Sakurajima peninsula on the island of Kyushu, thought to be extinct from recent volcanic activity. At 6500' on Mount Inyangani in Zimbabwe there is the only population on mainland Africa, though it can also be found on the island of Madagascar. It grows extensively at high elevations throughout Latin America from central Mexico, it's only presence in North America, to Argentina. There are reports of it in Jamaica. And it is found on all the Hawaiian Islands except Lanai, with dense populations in the mesic forest at higher elevations on the Big Island. It occurs from western Turkey through Iran; in Georgia it is reported as growing at only 400' of elevation. And there is one naturalized population at very low elevations on the north coast of Holland, bunking its alpine reputation.

This diverse distribution tells pteridologists two things: that Wallich's wood fern is a very old fern – though I found no references to fossils of this fern—and that it is a highly variable fern with regional differences. This brings us to Christopher Fraser-Jenkins' work.

Fraser-Jenkins is a British Pteridologist. In his late 20s he stepped into Wallich's footsteps and moved to India, where he collected and studied the ferns of the Subcontinent for over 40 years. His expertise is the genus Dryopteris. He has recently tackled the species *wallichiana* and tried to make sense of this wide-ranging fern. Fraser-Jenkins I would say is a "lumper", a botanist who groups different species into a single species, instead of a "splitter" a botanist who looks for smaller and smaller details to break a single species into many species. Fraser-Jenkins has taken several different species and created a series of subspecies within *wallichiana*. In 2022 The Indian Fern Journal published a list of nine subspecies he described, though not all have been officially recognized yet.

They are:

***Dryopteris wallichiana* subsp. *wallichiana,* the widest ranging of the nine.**

***D.w.* subsp. *himilaica,* as you might have guessed, from the Himalaya region.**

***D.w.* subsp. *bhutanica* also from the Himalayas.**

***D.w.* subsp. *pachyphylla* from Himalayas to Taiwan.**

***D.w.* subsp. *nepalensis*, Himalaya region.**

***D.w.* subsp. *madrasensis* from Southern India and Sri Lanka.**

***D.w.* subsp. *coriacea* from Tukey, Transcaucasia and Iran.**

***D.w.* subsp. *reichsteinii* from Zimbabwe.**

***D.w.* subsp. *parrisiae* from New Guinea.**

In North American gardens you will probably encounter subsp. *wallichiana*, though subsp. *coriacea* and subsp. *nepalensis* were also available here in the Pacific Northwest in the past. And possibly subsp. *pachyphylla*.

A few years ago, I noticed some anomalies in a 15-year-old swath of Wallich's wood ferns I planted in a client's garden. Though growing under the same conditions half of the ferns were smaller, with more leathery fronds with less of the distinctive scales on the rachis. When I checked my notes I saw I had bought two separate lots on 2 different occasions. Obviously one batch was mislabeled, I thought. I contacted every fern expert and enthusiast I knew in the Pacific Northwest and England. Most had conjectured that the smaller fern was not *Dryopteris wallichiana*, yet had no idea what it might be. During this process the photos I took of it landed in Fraser-Jenkins' email box twice. And I got two different responses. In one response he called it a "very interesting beast", and proposed *D. parrisiae*, now *D. wallichiana* subsp. *parrisiae*, and then went on to wonder how spore of a fern from New Guinea ended up in a garden in Seattle, Washington. In the other response he said he now thought "quite certainly" that it was subsp. *pachyphylla*.

Pachyphylla and wallichiana Photo by Daniel Mount

I took a frond of this fern to my local fern mentor, Richie Steffen, at the Miller Garden and we compared it to the subsp. *coriacea* growing there. It was a dead-on match, and the likelihood of my buying that subspecies here was quite high. Still I labeled mine "subsp. *pachyphylla*?", out of a desire to have a fern no one else had. With its variable and assorted classifications I'm still working on getting a firm identity of this fern.

Wallich's wood fern is a desirable garden fern. "One of the stars of the fern world," as Martin Rickard calls it in his new book "Ferns for Cool Temperate Gardens". But buyer beware.

Sue Olsen, in her now classic "Encyclopedia of Garden Ferns", writes "Despite or perhaps because of the disparities of its native habitats, *Dryopteris wallichiana* responds erratically to domestication." I can attest to that. In my own garden they are slow to grow and often die over winter. I always blamed it on our cold damp winters and heavy soils. Yet Tony Avent of Plant Delights Nursery in North Carolina, attributes his repeated failure with this fern to the South East's hot humid summers. At the Rhododendron Species Botanical Garden, south of Seattle, there is a cluster of stunningly gigantic ones. They were grown from spore collected by Executive Director Steve Hootman in 1997 at 7700' in West Central Yunnan. They are happy at 515' of elevation, with regular supplemental summer water under the canopy of our native conifers.

RHODODENDRON SPECIES BOTANICAL GARDEN HOOTMAN 1997 COLLECTION PHOTO BY DANIEL MOUNT

I think my own error with this fern was thinking it wanted to be dry. In winter, yes, but not in summer. The new croziers for the coming year begin developing in summer and fall. Ample water at this time and possibly fertilizer, might help build a stronger plant. I only started this method last year and have already noticed a difference in the size and health of my plants.

The limitations of Wallich's wood fern in the garden have kept it out of the limelight compared to other "stars" of fern world, like showy autumn fern (*Dryopteris erythrosora*) or the colorful Japanese painted ferns (*Athyrium niponicum* cvs). But that all changed about 20 years ago with the chance discovery in a small fern nursery in the southern of England.

Just a mile away from the Jurassic Coast, famous for its fossils, Bob Hollister of Country Gardens Nursery discovered a colorful sporeling among the *Dryopteris*

wallichiana he was propagating for sale. He kept it aside and grew it on. Noticing its good coloring and structural shape, Hollister began propagating it from spore and distributing it to gardens, nurseries, and fern experts for evaluation. Deemed garden worthy, he named it 'Jurassic Gold' for the English coast not the Hollywood movie.

Dryopteris Jurassic Gold Photo by Bob Hollister of Country Gardens Nursery on the Jurrasic Coast in England

Hollister engaged a European commercial fern grower to get it out to the public. Now *Dryopteris wallichiana* 'Jurassic Gold' ('Hollasic')– this is its patent name– is propagated by spore in Europe. All *D. wallichiana* are apomictic, meaning that they reproduce asexually virtually self-cloning. (Look for an article on apomixis in ferns in a coming issue of the quarterly).

Meanwhile just a few hours north of Hollywood, Monrovia Nursery, who distributes 'Jurassic Gold' in the U.S., seized the opportunity and trademarked the name 'Jurassic' for a series of fern introductions currently being released. They are propagating it by tissue culture. Nils Sundquist, of Sundquist Nursery in Washington, believes this is a "lovely and worthwhile" selection of *D. wallichiana* subsp. *nepalensis,* but not necessarily unique.

About the same time as Hollister made his discovery in England Judith Jones of Fancy Fronds Nursery here in the Pacific Northwest introduced a cultivar of *D. wallichiana* subsp. *nepalensis* she called 'Molten Lava' which she reports has since been propagated as Jurassic Gold. It suggests that Hollister's fern is also from subsp. *nepalensis*. I lost my 'Molten Lava' a few years ago, but I will try spore from my 'Jurassic Gold' when it produces some. It has a patent pending and commercial reproduction is *verboten*. I'm hoping there are some hidden colors still waiting to be found.

When Wallich climbed into the mountains of northeastern India 200 years ago, botany was still a very young science. I doubt he was looking for the next star of the

fern garden, like me. He studied medicine at a time when it was tightly bound with botany, most medicines coming from plants then. I have found no record of this but imagine he was just as interested in how all these plants were used by the indigenous peoples he encountered. Wallich's wood fern, or, as the Indians called it, "basket fern" had a history of use for treating parasites in both humans and animals. Research into the bioactive compounds began in the 19th century and is still going on today. Wallich's wood fern, and other wood ferns, contain varying degrees of terpenylated acylphloroglucinols (there's a mouthful). These compounds have been shown to have antiparasitic effect in laboratory experiments. Possibly these compounds developed in these ferns as protection from predation. I noticed a slug napping under a Wallich's wood fern frond, after destroying the hosta next to it. It had covered the frond with slime, but hadn't taken a single bite.

After researching *Dryopteris wallichiana* for this article I thought I would see it differently, see beyond its star-quality beauty. See it as part of a global high elevation ecosystem, as a useful plant in human and veterinary medicine, as an important player in commercial horticulture. But when I walked away from the screen and walked out to the garden, I found I was still caught up in the beauty.

No doubt Wallich, in his time, was, too.

Walliciana unfurling Photo by Daniel Mount

Showing its upright form Bellevue Botanical Garden Photo by Daniel Mount

Alabama Appalachian Fern Encounters

Article and Photos by Mike Heim
Hayward, WI

Last summer (August of 2022) I decided to explore a part of the U.S. new to me, the Appalachian Mountains of Alabama. This ancient mountain system reaches its southernmost point in the east-central part of the state with both the Cumberland and the Blue Ridge Ranges terminating there. That made me wonder how the flora, including ferns, might differ from montane areas farther to the north.

All the soils that I saw were well-drained and acidic, having developed over the eons from the weathering of quartzite or sandstone, the latter being the more commonly encountered bedrock. Even tho the soils are virtually identical to those of similar elevations to the east in the Carolinas, there are some distinct and often quite obvious differences in the flora. For instance, I did not see any eastern white pine (*Pinus strobus*) or Canadian hemlock (*Tsuga canadensis*) in the wild anywhere in northeastern Alabama, while amongst the ferns, the same applied to the netted chain fern (*Woodwardia areolata*) and Hartford fern (*Lygodium palmatum*).

Even so, the ferns that I did encounter were wonderful. Two species were particularly common in woodlands, the Christmas fern (*Polystichum acrostichoides*) and cinnamon fern (*Osmundastrum cinnamomeum*). Back home in Wisconsin, cinnamon fern is limited to swampy woods, being replaced by interrupted fern (*Osmunda claytoniana*) on drier sites. Not so in Alabama, where cinnamon fern thrives even within relatively dry woods on ridgetops, with interrupted fern nowhere to be seen. Christmas fern favored its usual haunts, typically the sheltered slopes of ravines.

It was exciting to see my first maiden fern (*Thelypteris kunthii*) in the wild. It was a real standout with its glowing green color, forming a small genet, i.e. clonal population, on a stream flat.

Asplenium rhizophyllum on ss boulder

Finally, a couple of mossy sandstone boulders laying in the deep woods not far apart from one another really caught my attention. One was carpeted in walking fern (*Asplenium rhizophyllum*), while the other was graced with a patch of the tiniest form of gray polypody (*Polypodium polypodioides*) that I had ever seen. These beauties are a great example of founder control, where the first plant propagule (in this case a spore) to colonize a new site ends up being dominant there. I see examples of this all the time when exploring our northern Wisconsin *Sphagnum* bogs. Two bogs next to one another, but not connected, will frequently have different species depending upon which arrived first.

If you enjoy botanizing on your travels, then I highly recommend exploring the backroads of northeastern Alabama. There are many living treasures, ferns and otherwise, to be discovered. In summer if you can tolerate extreme heat and humidity (and like to avoid crowds) or other times of year if you prefer more comfortable hiking conditions.

Polypodium polypodioides on SS boulder

Save the Date!

HFF Fall Sale
Bellevue Botanical Garden
September 9th, 2023 from 10:00 - 3:00.

Asplenium scolopendrium 'Mini Crinkle'

Article and Photos by Sue Mandeville
Springfield, OR

Aspleniums grow easily for me. My soil is neutral and since aspleniums like slightly alkaline soil, an addition of a few crushed oyster shell (chicken grit) makes them thrive in my garden. They are hardy, evergreen and can take part sun.

The spore used originally came from an early order (possibly 2006) from the British Pteridological Society. This was before PayPal and I remember stuffing cash into an envelope for membership so I could participate in the spore exchange. I ordered every *Asplenium scolopendrium* cultivar they had. (*Asplenium scolopendrium* 'Crispum', 'Angustifolium', 'Cristata', 'Peraferens', 'Marginatum', 'Muricatum') By 2015, I had loads of aspleniums and on occasion one would sport. That's how 'Mini Crinkle' came to be. I also sowed lots of 'Crispum Group' looking for a perfect specimen plant and ended up with hundreds of plug size ferns. Needing the space, nearly all were sent to HHF for the member fall sale in 2016.

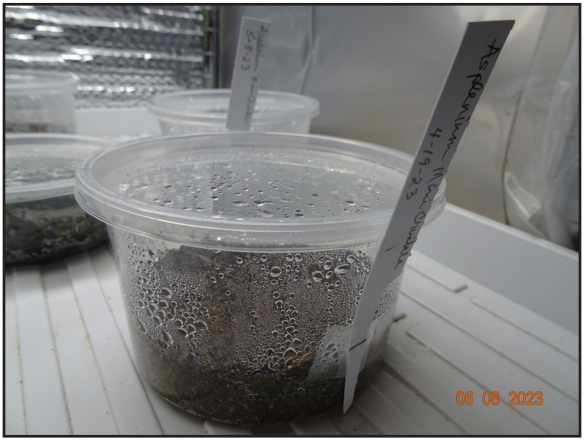
'Mini Crinkle does not produce spore so you have to propagate by division or stem propagation. It is a very slow grower and tends to bunch up if you don't keep up with dividing. Stem propagation is the best and easiest propagation method for me. Best to start in spring using last year's stems, not the fresh new growth. Taking instructions from the experts, this is the method I use for stem propagation:

1. **Microwave a shallow container of moistened sand, to the point of steaming. Allow to cool.**
2. **Prep the stems. Grab the old stems gently with tweezers and push down to break the stem free from the mother plant. Clean off soil.**
3. **Dip the stem pieces in dilute bleach and rinse thoroughly in sterile water.**
4. **Place the stem pieces on the sterile sand, close the cover.**
5. **Place the container in bright light and wait.**

For detailed instructions, please see:

Vegetative Reproduction in Ferns, by Martin Ricard, Hardy Fern Foundation Newsletter, Special publication on propagation, Spring 1998, Vol 8, No. 9, pg 30-33.

Frond Base Propagation, by Julian Reed, Hardy Fern Foundation Quarterly, Fall 2013, pp 108-111.



CONTAINER WITH SAND

STEM STARTS

MINI CRINKLE

Heronswood and Ferns

Ross Bayton, Garden Director
Heronswood Garden, Kingston, WA

On June 9 th, Heronswood finally inaugurated it's Raining Wall, the crowning feature of the Renaissance Garden, designed by Dan Hinkley and HFF past president John van den Meerendonk. The creation of the Renaissance Garden began in 2019, with first plants in the ground in late 2020, but the arrival of the pandemic in early 2020 pulled the breaks on the garden's development. Funds had been raised to develop a feature wall and gathering area, with intricate irrigation providing a constant drizzle of water, to enable a green 'wallpaper' to develop on the wall, rich in ferns and other moisture-dependent species. That wall is now complete and Heronswood celebrated the opening with donors, volunteers and staff who made it possible.

Raining Wall Photo by Sue Olsen

Raining wall dedication Photo by Ross Bayton
L-R Ross Bayton, Dan Hinkley,
John van den Meerendonk

The Renaissance Garden was the first newly developed garden area at Heronswood since the property was purchased by the Port Gamble S'Klallam Tribe in 2012. It sits at our northernmost point between the parking lot and highway, and in order to reduce traffic noise and more importantly provide a home for our fern collection, we retained the large cedars that dominate this area. Western red cedar (*Thuja plicata*) is a native tree endowed with much cultural significance for the S'Klallam. It provides wood for canoes, paddles and poles, bark for weaving hats and cedar roses, and foliage for medicinal use. It was perhaps the presence of these cedars, plus of course the game-changing purchase of the garden by the Tribe, which influenced Dan and John in their creation of a garden that pays homage to the Tribe and its history. In essence, the Renaissance Garden portrays an abandoned logging camp that has been swallowed up by the forest as it was reborn, evoking the many links that the S'Klallam have with timber harvesting in Kitsap County.

For those of you who have visited us, you'll know that the Renaissance Garden has two distinctive features: its many stumps and its elaborate fern table. The stumps were largely donated by a logging firm from a clearcut near the garden, though a few were here already, and they give the garden the feel of a Victorian stumpery. They provide the height that can be missing from a fern garden, filled with largely herbaceous fern species, whilst also adding wildlife habitat. The table, which is designed to simulate the mess hall in a logging camp, was built by volunteers and has a four-inch depth of soil with over 50 plant species growing in it. Mainly ferns, but with a smattering of orchids, hostas and others, it provides an element of theater and a prime opportunity to grow those dainty species often lost within the larger garden landscape.

Fern Table Photo by Ross Bayton

Of course, with John van den Meerendonk in the driving seat, ferns were always going to be a major part of our landscaping in the Ren, and he encouraged us to apply for HFF Affiliate Garden status. With over 200 species and cultivars, our fern collection contains both the common and the rare. In order to ensure a lush landscape, we added mass plantings of common species such Japanese painted fern (*Athyrium niponicum*, with 8 cultivars) and autumn fern (*Dryopteris erythrosora*,

including 'Brilliance' and 'Radiance'), but dotted rare and often wild-collected ferns amongst them. The Renaissance Garden is not just home to ferns, but also houses rare and unusual hydrangeas, arisaemas, trilliums and mahonias. Flowers are rare and the garden's aesthetic relies on the variation in texture, movement and subtle color of fern fronds and other associated foliage.

Athyrium niponicum Photo by Ross Bayton

The central area of the Renaissance Garden is well-established and, thanks to John's great facility for installing irrigation, now feels lush and exotic. The south slope of the garden presented something of a challenge however, as it is steep and hot, with much less tree canopy. The Raining Wall provided a solution as the constant moisture dripping down the basalt wall generates humidity, but in adjacent borders, we are experimenting with a palette of ferns, shrubs and perennials that we hope will tolerate the sun, whilst keeping the lush, fern-draped feel of the main garden. The wall itself is imposing and steep, a prerequisite for dripping, built with basalt rock of varying sizes. Irrigation along the summit runs throughout the day and excess moisture is collected in a pipe at the foot of the wall, to drain into the nearby pond. Plantings include ferns such as *Adiantum aleuticum* 'Subpumilum', various Carex and Epimedium, plus curiosities such as *Ypsilandra thibetica*. On top of the wall, *Woodwardia unigemmata* will provide a curtain of foliage, with stately *Pteris wallichiana* giving grandeur. Our inaugural event took place in front of the wall and John's irrigation system proved largely unnecessary on opening night, as Mother Nature took care of the watering with extensive rainfall. It was however pleasing to thank our many donors for their contributions, and to discuss with John and Dan their inspiration when designing the garden. We have recently booked a wedding at the garden, and the bride has opted to use the Raining Wall for the ceremony, a vote of confidence that this will become a popular attraction for our visitors.

Heronswood is open Wednesday through Sunday, 9am to 3pm, with weekend only opening in winter.

We hope you'll come and see us!

A New Legacy Award for the Hardy Fern Foundation

Richie Steffen
Poulsbo, WA

In early June, the Hardy Fern Foundation celebrated the 50th anniversary of our long running plant sale, Fern Fest. Over the years, Fern Fest has not only included the best fern sale in the country, but also garden tours, lectures and educational demonstrations. Although these additional events did not happen every year, the 50th anniversary milestone seemed like a time to mark this special occasion with more than just a plant sale. This year we rekindled the garden tour and had a very special presentation in the evening after the first day of the sale.

The evening event was a short presentation of how Fern Fest started and how it has developed over the years. One consistent feature of this event, and so many other activities of the HFF, was the participation and encouragement of our HFF founder, Sue Olsen. Taking this into consideration, it seemed only appropriate to recognize Sue's long-term commitment to the HFF and all the work she has done on behalf of the organization. The board of the HFF decided to create a new legacy award to recognize outstanding service to the Hardy Fern Foundation. This new award is to be called the **"Sue Olsen Service Award"** with Sue Olsen being the first recipient.

Sue has more than earned this recognition over the years. She has served on the board of the directors from the very beginning on the HFF in 1989 and was the first president of the HFF. She is probably best known for her work on the Quarterly, our regularly published journal filled with all things fern related.

Sue has served as our volunteer editor since its publication soon after the HFF was founded. She has also been an incredible ambassador for the HFF by corresponding with fern enthusiasts and experts from all over the world often followed up with traveling to these counties to see their gardens and their native ferns in the wild. Sue has also served as a mentor to so many, always willing to share her knowledge and expertise. She has certainly influenced my love of ferns over the years.

To commemorate this award, Past President Richie Steffen and his husband and fellow HFF board member Rick Peterson oversaw the design and production of creating a commemorative coin that was given to Sue and will be received by other recipients in the future. The coin features three stylized ferns representing three natives of the Pacific Northwest, where the HFF was started. The emerging croziers represent the young fronds of *Blechnum spicant*, deer fern. Blechnums are one of Sue's favorite groups of ferns. On the reverse side the Hardy Fern Foundation logo fern, *Asplenium trichomanes*, maidenhair spleenwort is centrally featured. This logo was originally created by Sylvia Duryee, another one of our very influential founding members who passed away several years ago. Both ferns occur not only in the Pacific Northwest but are also native to several countries around the world. These two ferns represent

the connection our organization has to fern enthusiasts around the world. The last fern represented is *Polypodium glycyrrhiza*, licorice fern. This winter growing fern represents the diversity of habitats and forms that ferns have and challenges us to have open minds and embrace adaptability to keep the HFF a strong and prominent fern organization into the future. It is also the only fern on the coin to be found entirely in the Northwest. This is the fern to help us remember the roots and beginning of the organization.

"Sue Olsen Service Award" Commemorative Coin
Photo by Richie Steffen

Knowing that Sue is not one to enjoy being the center of attention we also took this opportunity to present the second service award to a long-time board member and extremely talented garden creator, John van den Meerendonk. John's work with the HFF began soon after it was founded. John was the owner of Botanica, Inc., a landscape design, construction and maintenance firm that added ferns to many gardens throughout the Puget Sound area. John enthusiastically supported the HFF affiliate garden program and was instrumental in creating the Bainbridge Island Library fern garden and helped this garden become one of our affiliate gardens. The HFF stumpery would not be what it is today without the tremendous amount of work John put into designing, building and planting this remarkable space. John also designed and installed fern gardens at Bellevue Botanical Garden and the Signature Bed at the Washington Park Arboretum in Seattle. His recent endeavors focused on new garden areas at Heronswood Garden in Kingston, Washington. The xʷəbaʔ shəyí (New Life Spirit) Renaissance Garden is a spectacular display of ferns and an array of rare and unusual plants.

The Sue Olsen Service Award is a small token to recognize the huge accomplishments that these two individuals have contributed to the Hardy Fern Foundation. We are grateful for their service and look forward to sharing this ongoing award with others who have given so much in the love of ferns.

L to R: John van den Meerendonk, Sue Olsen, Richie Steffen
Photo by Greg Olsen

Thank You from Your Editor

Sue Olsen
Bellevue, WA

PHOTO BY SUE NEVLER

Due to the kindness of my children, Greg, Kris and Tam as well as many wonderful Hardy Fern Foundation friends, especially John van den Meerendonk, Linda Pyles, Dave Gibson, Michelle Bundy, Richie Steffen and Rick Peterson plus Sabine Nittritz of Germany and many others, I was treated on May 6th to an incredibly joyous and very special 90th birthday celebration. It was held at one of my favorite places the beautiful Heronswood Garden north of Bainbridge Island, WA and was an absolutely delightful gathering of many friends - with added pleasure from assorted tasty treats and a magnificent cake. A Happy Birthday indeed 😀.

And then thanks to a super-secret "don't tell yet" campaign I received some very special greeting cards and tales of happy times messages from friends around the world. Many included photos of visits and excursions providing joyful souvenirs of the past that were then combined and assembled into a glorious memory book by my family. It is an absolute treasure of happy times and I'm still glowing from and will continue to experience the joy.

And yet another unexpected magnificent gift of happiness was yet to come. As you will read elsewhere, the Hardy Fern Foundation created an Honorary Service Award named after Sue Olsen. It was presented to me by Richie Steffen as a special conclusion to his exceptional Fern Fest history lecture. I was totally overwhelmed by the honor (almost to tears) and I am indeed very honored. However, the honor must also go to all the dedicated workers starting with the "We Can Do It" dozen who organized the HFF 34 years ago, to the enthusiasts who have carried us through the years to the HFF of 2023. One of those is the hard working and very dedicated

John van den Meerendonk who has created and maintained many special gardens including the Bainbridge Library Garden, the Heronswood Renaissance Garden and the magnificent stumpery at the Rhododendron Species Botanical Garden among others. He too was recognized and given a well-deserved service award. Thank you, John for your years of friendship and service.

In closing, a huge thank you to everyone. It hardly begins to express my gratitude and appreciation, but I do indeed thank you all very, very much. A very happy Sue.

Party Time! Photo by Kris Olsen

Welcome New Members

Carlo Borsarini

Michael Craib, San Marcos Growers, Inc

Beth Cummings

Victoria Czaplewski

Susan and Jerry Daggett

Stephanie Davis

Dominic Distefano

Elise and Gregory Erickson

David Halvax

Aslaug Haraldsdottir

Rachel and Patrick Hollister

Peggy Jackson

Daniel Livingston, Moore Farms Botanical Garden

Cindy Micleu

Erica Mishima, Yonsei Landscape

Fern Nahale

Alexander Schlicht

James Stokes

Chantel Trainer

David Walmer

Common Fern Genera: A Quick Reference

ADIANTUM - 232 species, mostly tropical, worldwide; terrestrial - common name: maidenhair

Etymology: Greek adiantos, unwetted, for the glabrous leaves, which shed raindrops (www.floranorthamerica.org)

Fronds: evergreen or deciduous, foliage delicate, lacy, often drooping, thin textured, monomorphic

Pinna: pinna fan or wedge shaped; lacking a distinct midrib

Rachis: stipe is brittle thin wirey, frequently black or red black

Sori: around the outer edges covered with a false indusium of curled segments

ARACHNIODES - 69 species, mostly tropical & subtropical; terrestrial - common name: holly fern, bristle fern

Etymology: Greek arachnion, spider's web, and -odes, having the form or nature of. It has been suggested fungal hyphae or spider webs were seen on the original material (www.floranorthamerica.org)

Fronds: evergreen, deltate or pentagonal, papery to somewhat leathery, monomorphic

Pinna: distinctive wing-like pinnae at the bottom of the frond

Rachis: shares continuous grooves from rachis to costae with *Dryopteris*

Sori: shares the kidney-shaped indusia with *Dryopteris*

Veining: Bristle-like, terminus at the ends of veins, a feature shared with many *Polystichum*

ASPLENIUM - 719 species – worldwide; terrestrial and epiphytic – common names: spleenwort, bird's nest fern, walking fern

Etymology: Greek splen, spleen thought by Dioscorides to be useful for treating spleen diseases (www.floranorthamerica.org)

Fronds: evergreen, vary variable from simple to very divided, monomorphic

Rachis: stipe is short often dark in color

Sori: sori linear in herringbone pattern; indusium attached to a vein opening on one side (clamshell fashion) or in species once considered **PHYLLITIS** with sori opening through a central split like a buttonhole.

ATHYRIUM -199 species - temperate and tropical; terrestrial – common name: lady fern

Etymology: Greek athyros, doorless the sporangia only tardily push back the outer edge of the indusium (www.floranorthamerica.org)

Fronds: deciduous, typically long thin textured, monomorphic

Rachis: Stipes usually stout and succulent grooved in a "V" shape; green or straw colored and long

Sori: sori central with half-moon to "J" shaped indusium opening along one side.

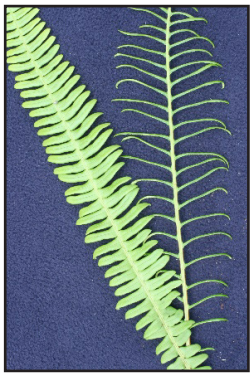
BLECHNUM – 236 species (or 30 species, mostly in Central and South America) - temperate and tropical; terrestrial - common name: water fern, hard fern

Etymology: Greek blechnon, an ancient name for ferns in general (www.floranorthamerica.org)

Fronds: Evergreen and sub-evergreen leathery; nearly all species pinnate; most hardy species are dimorphic (fertile and sterile fronds different) with fertile fronds erect, monomorphic and dimorphic on tropical and subtropical species

Sori: sori linear occupying entire space from midrib to the pinna tip of fertile frond segment; indusium linear with central lengthwise opening (slit down the middle)

(note: The Pteridophyte Phylogeny Group, or PPG, an informal international group of systematic botanists who collaborate to establish a consensus on the classification of pteridophytes currently endorses splitting the genus into 18 smaller genera.)



CYRTOMIUM - 35 species - temperate & subtropical, terrestrial – common name: holly fern

Etymology: Greek cyrtoma, arch, for the arched veins (www.floranorthamerica.org)

Fronds: Evergreen pinnate bold leathery foliage; monomorphic

Pinna: In some cases, an upward ear at the base of the pinnae similar to *Polystichum*. Terminal pinna similar to the lateral ones

Rachis: it shares the grooves continuous from rachis to costae with Dryopteris.

Sori: sori central with peltate (umbrella like) indusium like *Polystichum*, in rows of 2 or more between mid-rib and margin, unlike *Polystichum*

CYSTOPTERIS - 19 species - temperate; terrestrial – common name: bladderferns, fragile ferns

Etymology: Greek kystos, bladder, and pteris, fern, alluding to the indusium, which is inflated when young (www.floranorthamerica.org)

Fronds: Deciduous; light green, papery texture; small delicate, monomorphic

Sori: spore black when ripe; sori on veins, round in 1 row between midrib and margin, indusium when young hood-shaped, often falling at maturity

DRYOPTERIS - 346 species – worldwide; terrestrial – common name: wood fern

Etymology: Greek drys, tree (oak), and pteris, fern (www.floranorthamerica.org)

Fronds: Evergreen and deciduous, small to large; sturdy; usually divided, often finely so with only a few pinnate species, monomorphic

Rachis: Continuous grooves on the upper side of stipe, rachis, and costa; scaly stipes, lack of hairs

Sori: central placement on the pinna with kidney shaped indusium over a round sorus



GYMNOCARPIUM – 9 species – temperate; terrestrial – common name: oak fern

Etymology: Greek gymnos, naked, and karpos, fruit, referring to the absence of indusia (www.floranorthamerica.org)

Fronds: horizontal triangular fronds; deciduous; thin texture; monomorphic

Rachis: Stiff brittle stipe

Stems: spreading via underground rhizomes which are black in color; sori round



MATTEUCCIA - formerly 3 species – temperate; terrestrial – common name: ostrich fern, this genus has now been subsumed into **ONOCLEA**.

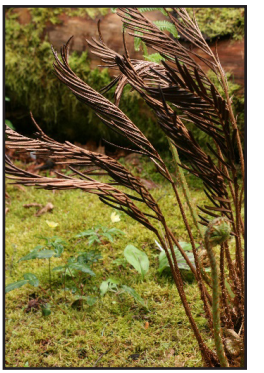
Etymology: named for an Italian physicist

ONOCLEA - 6 species – Northern hemisphere and Central America; terrestrial – common name: ostrich fern, sensitive fern, now contains species formerly in **MATTEUCCIA** and **PENTARHIZIDIUM**

Etymology: Greek onos, vessel, and kleiein, to close, in reference to the sori, which are enclosed by the revolute fertile leaf margins (www.floranorthamerica.org)

Fronds: deciduous. medium to very large; dimorphic

Sori: sori in persistent hard brown pods at maturity



OSMUNDA -15 species – temperate and tropical; terrestrial – common name: royal fern

Etymology: origin of the name is unknown with many theories of origin

Fronds: deciduous primitive ferns; large, moisture loving; dimorphic

Sori: spore not on underside of leaf but on separate stalks from rachis (sometimes referred to as flowering fern due to the golden color of the maturing fertile frond on several species).

OSMUNDASTRUM -1 species – temperate; terrestrial – common name: cinnamon fern

Etymology: origin of the name is unknown with many theories of origin

Fronds: deciduous, large, moisture loving; tufts of reddish hairs in the pinnae axils; fertile fronds wither soon after maturity dimorphic

Sori: spore on narrow upright fertile fronds; green when immature, golden brown (cinnamon colored) after spore drops.

PHYLLITIS – formerly 8 species – this genus is now subsumed into ASPLENIUM- common name: tongue fern, bird's nest fern

Etymology: Greek word meaning "green leaf."

PLEOPELTIS – 93 species- mostly tropical and subtropical, few temperate; epiphytic, rarely terrestrial – common name: scaly polypody, resurrection fern (www.floranorthamerica.org)

Etymology: Greek pleos, many, and pelte, shield, in reference to the peltate scales covering immature sori

Fronds: pinnata; very similar to *Polypodium* but can be separated by the peltate scales covering the back of the frond monomorphic

Sori: round, no indusium, brown, yellow, or orange in color

POLYPODIUM - 58 species - widely distributed, mostly temperate; epiphytic, rarely terrestrial – common name: polypody

Etymology: Greek poly, many, and pous, podion, little foot, in allusion to numerous knoblike prominences of the stem (www.floranorthamerica.org)

Fronds: evergreen or deciduous, evergreen species often with leathery leaves; usually pinnate; monomorphic

Sori: large round sori; no indusium, spores often yellow to orange in color

Stem: Prominent creeping rhizome

POLYSTICHUM - 388 species - worldwide; mostly temperate; terrestrial – common name: shield fern, holly fern

Etymology: Greek poly, many, and stichos, row, presumably in reference to the rows of sori on each pinna (www.floranorthamerica.org)

Fronds: Sturdy evergreen growth in a single crown or cluster; pinnate to finely divided foliage; frequently with shiny foliage with bristly toothed edges; unfurling fronds the bend-over-backwards, tassel-like in form; monomorphic or weakly dimorphic

Rachis: short stipes, discontinuous grooving between rachis and costa

Sori: sori covered with peltate indusium., sori typically in 1 row (rarely 2) between midrib and margin

PTERIS - 329 species - widely distributed, mostly subtropical to tropical; terrestrial – common name: brake fern, table fern

Etymology: Greek pteris, fern, derived from pteron, wing or feather, for the closely spaced pinnae, which give the leaves a likeness to feathers (www.floranorthamerica.org)

Fronds: evergreen or deciduous; monomorphic

Sori: continuous, submarginal, false indusium

PYRROSIA - 63 species – Southern Hemisphere and SE Asia, mostly subtropical to tropical, few temperate; epiphytic and terrestrial – common name: felt fern

Etymology: Greek pyrros, flame-colored, in reference to the reddish lamina (leaf surface) scales of some species

Fronds: evergreen; mostly monomorphic, stellate scales usually thickly covering the underside of the leaf

Sori: round, indusium absent

Stem: thin creeping rhizome, short of some species

WOODSIA - 54 species - temperate to arctic; terrestrial – common name: cliff fern

Etymology: for English botanist Joseph Woods (www.floranorthamerica.org)

Fronds: Small deciduous ferns; monomorphic

Sori: spores brown on the outer edges of pinna; indusium fist like opening star like from under the Sporangia

WOODWARDIA - 14 species - mostly temperate; terrestrial – common name: chain fern

Etymology: in honor of Thomas Jenkin 1820, English botanist (www.floranorthamerica.org)

Fronds: Extremely large coarse evergreen & deciduous ferns; monomorphic

Sori: sori in long lines like strings of sausage (hence chain fern); sori linear opening in a central split.

(note: The Pteridophyte Phylogeny Group, or PPG, an informal international group of systematic botanists who collaborate to establish a consensus on the classification of pteridophytes currently endorses splitting the North American species into 2 separate single species genera.)

Asplenium scolopendrium Cultivars

Photos by Sue Mandeville

'Undulatam'

'Fimbriatum group' On the small side, fronds are only 10" long.

'Peraferens' backside

'Peraferens'

Muricatum group

'Ramosum group' plant

'Sagittatum-cristatum'

'Ramo-cristatum group' frond

'Undulatum'

'Sagittatum group'

'Undulatum-fimbriatum'

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