

Hardy Fern Foundation
Quarterly



Summer 2021

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; **NEW 2020!**
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;
Inniswood Metro Gardens, Columbus, Ohio;
Lakewood, Lakewood, Washington;
Lewis Ginter Botanical Garden, Richmond, Virginia;
Powell Gardens, Kingsville, Missouri; **NEW 2020!**
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

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
253-838-4646 ext. 111

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@gmail.com

Editor:
Sue Olsen

Graphics:
Willanna Bradner
(cover design)
Lori Gibson
(quarterly design)

Website Administrators
Lori and Dave Gibson

BOARD OF DIRECTORS

President: Richie Steffen

Vice President: Michelle Bundy

Immediate Past President: John van den Meerendonk

Recording Secretary: Charles Ogburn

Corresponding Secretary: TBD

Treasurer: Nancy Strahle

Board Members:

Forrest Campbell	Rick Peterson
Brian Collins	Linda Pyles
Kathryn Crosby	Pat Riehl
David Gibson	Jane Whiteley

Honorary/Advisory Members:

Naud Burnett	Jerry Doherty
Carolyn Doherty	Nils Sundquist

Member at Large:

Sue Olsen

Program Manager:

Dennis Beatty

THE HARDY FERN FOUNDATION QUARTERLY

Volume 31
ISSN 1542-5517

No. 3

Editor- Sue Olsen



President's Message 2021	62
In the Name of The Fern: <i>Thelypteris parasitica</i>	63
Daniel Mount	
The Fern Collection of the Hardy Fern Foundation: 2021 Inventory Report Part 2	68
Michelle Bundy and Richie Steffen	
Fern Inventory Part 2.....	70
HFF Virtual Annual Meeting and Fall Social	72
Name that Dryopteris?	73
Mike Heim	
Rotary Botanical Garden Fern List	76
Michael Jesiolowski	
Asian Dryopteris: A Treasure Trove For the Garden	78
Richie Steffen	
Welcome New Members.....	85
Colors for Summer	86
Photos by Dave Gibson	
We Wish to Thank Our Donors for Their Generous Support Over the Past Year.....	88

President's Message 2021

HFF Quarterly – Summer Issue

Welcome to the summer issue of the HFF Quarterly. This summer is an unusual mix of joy and apprehension. Having the added safety of a vaccine along with the lifting of pandemic restrictions has been wonderful, yet there is a lingering hesitation to take advantage of these expanded freedoms. Last summer I spent most of my time working in my own garden, but one of the ways I am hoping to get out more this year is to do some hiking over the next few months. The Pacific Northwest is known for its beautiful wilderness and scenery, and one goal is to see a few native ferns I have not seen in the wilds of Washington State. On the top of this list is *Dryopteris arguta*, coastal wood fern. This is not a rare fern here, but it is uncommon through the western part of the state. Coastal wood fern has a wide range from British Columbia to Southern California and I have occasionally come across this fern in Southern Oregon and Northern California, but not in the home state so we shall see what I can find this summer!

If you need a little fern inspiration during these longer days of the year, be sure to sign up for our HFF webinars. We will have a series of classes starting in July that will cover many aspects of growing, identifying and gardening with ferns. Members will have a reduced fee of \$10.00. If you have a friend who is interested, but not yet a member, they can sign up for \$15.00. These should be fun and informative; and, if you miss the webinar, we will send you a recording that is available for two weeks after the date.

Another goal of the summer is to make an extra effort to collect spore of some of the rarer and more uncommon ferns in my personal collection as well as at the Elisabeth C Miller Botanical Garden's collection where I work. Many of these collections will go directly into the HFF's fern production program and, with some luck, be offered on our members-only fern distribution lists. We are just beginning the third year of a cooperative spore growing program with the Miller Garden and a few of the plants we have been producing should be available this fall, although in limited quantities. I am really excited about this program and I am looking forward to increasing the number and types of ferns we can make available to our members. Keep an eye out in late summer for the members-only fern list to be emailed to you. Also, if you are in the area, we will have our first in-person fern sale in September at Bellevue Botanical Garden on September 18th.

I hope to see some of you at our upcoming webinars and maybe at our plant sale!

All the best,

Richie

Richie Steffen
HFF President

In the Name of The Fern: *Thelypteris parasitica*

Daniel Mount
Carnation, WA

Photos by Daniel Mount

I was introduced to *Thelypteris parasitica*, the parasitic maiden fern, on a recent fern tour to Japan. Velvety and graceful it charmed me, but those charms quickly dulled as we saw it over and over again. It proved to be a rather ubiquitous fern, to the point of being weedy, like many thelypteroid ferns. It was considered uncommon where we traveled, on the island of Shikoku, the northern reaches of its range. At our hot spring hotel outside of Kochi it created a ground cover under the shrubs among the parking lot plantings. I could see it had been cut back recently with a weed-whacker and resprouted as a "dwarf" a few centimeters high, far below the maximum one meter sized for the fronds.



THELYPTERIS PARASITICA WITH A DOUBLE TIP, PROBABLY DUE TO DAMAGE FROM A WEED-WHACKER. ON THE SIDE OF A FOREST ROAD ON KAKEROMA ISLAND, SOUTH OF AMAMI.

We certainly saw plenty of other thelypteroid ferns. *T. flexilis*, endemic to the Kochi Prefecture, whose charms had more to do with the climb into a little gorge to see a small clump of it, than any intrinsic beauty. But somehow, as bold as it was, *T. parasitica* stuck in my head. Was it really parasitic? It certainly had the green foliage of a photosynthesizing plant. Why *parasitica* then? No one I was travelling with seemed to have an answer, not even our Japanese guide, Yamaguchi-sensei, an expert on the ferns of his country.



THE ENDEMIC *THELYPTERIS FLEXILIS* IN A DARK GORGE ON THE SHIMOYA RIVER, SHIKOKU, JAPAN

When I returned home I decided to find out for myself.

And I opened a can of worms.

Fern nomenclature is complicated at best and downright confounding at worst. The genus *Thelypteris*, lumbering around the globe with 900 species or so, was no exception. Even the experts called its nomenclature “controversial and fluctuating”.

And there were further changes afoot. In 2016 The Pteridophyte Phylogeny Group—PPG which is an informal international group of systematic botanists who collaborate to establish a consensus of the classification of lycophytes and ferns, based on phylogenetic studies of plant relationships—divided the Thelypteridaceae, the marsh fern family, into 2 subfamilies and 30 species. Until then all members of the family were in the genus *Thelypteris*. I consider myself more a lumpener than a splitter, but even I think maybe that genus *Thelypteris* was just a little too big.

And the change came to *T. parasitica*, too. Now in the subfamily Thelypteridoideae and the genus *Christella*, named after Swedish botanist Konrad H. Christ.

The parasitic maiden fern received its first botanical name way back in the 18th century, when it arrived as a dried and pressed specimen in the hands of Linnaeus in Stockholm. In 1752 the Swedish naturalist Pehr Osbeck had just come back to Sweden from a 2-year collecting trip in the Canton region of China. He turned over 600 specimens to his mentor, a year before the publication of his seminal work *Species Plantarum*. Fern taxonomy was certainly in its infancy then, and ferns rather



THELYPTERIS/CHRISTELLA PARASITICA GROWING WITH FARFUGIUM JAPONICUM IN AMAMI NATURE OBSERVATION FOREST, AMAMI OSHIMA, JAPAN.

poorly understood. Linnaeus put this fern in the genus *Polypodium* along with all the other ferns with round sori located abaxially on the frond.

But this did not last long. Though the generic name *Thelypteris* from the Greek *thelys* meaning female and *pteris* meaning fern, was coined in 1763 by German naturalist Casimir Christoph Schmidel, our parasitic maiden fern would not become a *Thelypteris* until 1962, after 50-some name changes. In 1801 it was put in the genus *Aspidium*, in 1827 *Nephrodium*, in 1851 *Lastrea*, in 1891 *Dryopteris*, in 1915 *Christella*, and in 1935 *Cyclosorus*. I am sparing you the litany of species name changes, but *parasitica* did recur again and again. And when this rather common, weedy fern was returned to *Christella parasitica* in 2019, the specific epithet given it by Linnaeus some 260 odd years earlier was once again in place.

But why?

To my frustration, I could find no information as to why it was given this name. I couldn't even find a parasitic fern of any kind.

I can only speculate that it is because of its invasive nature.

According to the Invasive Species Compendium, where it is still listed as *Cyclosorus parasiticus*, this widespread fern grows throughout most of tropical SE Asia and the Polynesian Islands with a disjunct and morphologically different population in Eastern Africa. It invades pastures and citrus and betelnut orchards throughout the area, a nuisance more than anything else.

Though it could have easily spread by spore throughout this range, it is suspected that it may have been moved through the region as an ornamental or a contaminant in pots of other plants. It is also collected and used for a long time for its antibacterial properties; another reason it may have been transported by humans throughout the islands of the South Pacific.



PAUL RIPLEY OF BRITISH PTERIDOLOGICAL SOCIETY COMPARES *THELYPTERIS PARASITICA* (TOP) AND *T. ACUMINATA* (BOTTOM) AND THEIR HYBRID (CENTER) AT OKAWA DAM LAKE, AMAMI OSHIMA.

In the States the USDA only reports it growing in Hawaii, where it is considered to be introduced by humans either deliberately as an ornamental or accidentally. It is found in weedy gulches and as a colonist on grazed lands often with the much wider ranging and weedier *Christella* (*Thelypteris*) *dentata* with which it forms hybrids. A triple whammy for Hawaii's native plants. Seven native species are endangered due to these encroaching maiden ferns.

Yet none of this speaks of parasitism to me.

I was introduced to *Thelypteris parasitica* the same years its name changed to *Christella*. I'm sure someone on the tour mentioned it, but it looked like a maiden fern to me so *Thelypteris* it was. The Japanese call it ke-hoshida, which loosely translates as hairy-ear-fern; most certainly part of its charm is the delicate white hairs veiling its fronds. The Greek word *thely* can mean tender or delicate as well as female, for all its aggressiveness it is a lovely fern. I had contemplated stealing a chop stick from the hotel dining room and prying a bit of parasitic maiden fern from the parking lot. I stopped, thinking "All I need is another weed in my garden". And fearful it might

actually be a parasite.

In ancient Greece a parasite was a person who received free meals in exchange for being charming and amusing. Could this fern, even as a dried herbarium specimen, have charmed Linnaeus, prompting the name.

I doubt it but we'll never know.

Daniel Mount will be exploring the naming and names of ferns in an annual article, appearing in the summer issue.



A 19TH CENTURY HERBARIUM SPECIMEN FROM THE ROYAL BOTANICAL GARDENS KEW, SHOWING THE MANY NAME CHANGES OF THELYPTERIS/ CHRISTELLA PARASITICA.

The Fern Collection of the Hardy Fern Foundation: 2021 Inventory Report Part 2

Michelle Bundy and Richie Steffen
Photos by Dennis Beatty

The Hardy Fern Foundation maintains a large collection of ferns at its headquarters at the Rhododendron Species Botanical Garden (RSBG), Federal Way, Washington. In the spring issue of the Quarterly 1/3 of the collection was reported including about half of the garden at the RSBG. When the Victorian Stumpery was added to the garden in 2009 it was developed as a showcase for some of the best performing ferns for maritime Pacific Northwest gardens as well as to provide specialized growing conditions for some ferns and companion plants. Most of the ferns in this area will have high ratings combined with exceptional performance. Many of the ferns listed here have been in the ground since 2009, with a few older accessions moved from other areas in the garden and a few newer accessions added as the plants became available and space allowed.

For gardeners in the region this is an excellent listing of ferns to consider for widespread use in the landscape. 🌿





Fern Inventory Part 2

GENUS	SPECIES	SSP/VAR or CULTIVAR	Notes	Rating
Adiantum	aleuticum		Pacific NW native	5
Adiantum	aleuticum	var. subpumilum	easy to grow dwarf, good drainage	5
Adiantum	mairisii		best with some sun, no hot sun	5
Adiantum	venustum			5
Arachniodes	miqueliana		new growth susceptible to slugs	2
Arachniodes	standishii			5
Asplenium	scolopendrium		best in part shade/some sun	5
Asplenium	scolopendrium	Cristatum Group	best in part shade/some sun	
Asplenium	scolopendrium	Fimbriatum Group	best in part shade/some sun	
Asplenium	scolopendrium	'Kaye's Lacerate'	best in part shade/some sun	
Asplenium	trichomanes		Pacific NW native	5
Athyrium	filix-femina	Cristatum Group	best with some sun, no hot sun	
Athyrium	filix-femina	Cruciato-cristatum Group (syn. Victoriae sporling)	best with some sun, no hot sun	
Athyrium	filix-femina	'Frizelliae'	best with some sun, no hot sun	3
Athyrium	filix-femina	'Frizelliae Cristatum'	best with some sun, no hot sun	3
Athyrium	niponicum	var. pictum (Cristatum Group) 'Applecourt'		5
Athyrium	niponicum	var. pictum		5
Athyrium	otophorum			5
Blechnum	chilense		can be damages in cold winters	4
Blechnum	penna-marina			5
Blechnum	penna-marina	Chilean form		5
Blechnum	penna-marina	'Cristatum'		5
Blechnum	spicant		Pacific NW native	5
Cyrtomium	macrophyllum			5
Cyrtomium	caryotideum			5
Cyrtomium	fortunei			5
Dicksonia	antarctica		needs winter protection	3
Dryopteris	affinis		susceptible to leaf hopper damage	4
Dryopteris	affinis	'Crispa Gracilis'		5
Dryopteris	affinis	'Cristata'	susceptible to leaf hopper damage	4
Dryopteris	affinis	'Pinderi' (needs to be verified)	susceptible to leaf hopper damage	tbd

GENUS	SPECIES	SSP/VAR or CULTIVAR	Notes	Rating
Dryopteris	championii			5
Dryopteris	complexa		susceptible to leaf hopper damage	4
Dryopteris	complexa	'Robusta'	susceptible to leaf hopper damage	4
Dryopteris	complexa	'Stableri'	susceptible to leaf hopper damage	4
Dryopteris	complexa	'Stableri Crisped'	susceptible to leaf hopper damage	4
Dryopteris	crispifolia			4
Dryopteris	cycadina			5
Dryopteris	dilatata	'Crispa Whiteside'	susceptible to leaf hopper damage	4
Dryopteris	dilatata	'Lepidota Cristata'		4
Dryopteris	dycei			5
Dryopteris	erythrosora			5
Dryopteris	filix-mas	'Cristata'	susceptible to leaf hopper damage	4
Dryopteris	filix-mas	'Cristata Jackson'	susceptible to leaf hopper damage	4
Dryopteris	filix-mas	'Fluctuosa Cristata' (aka. 'Parsley')		4
Dryopteris	koidzumiana		needs sun and warmer climate, slow growing	2
Dryopteris	lepidopoda			5
Dryopteris	pycnopteroides		very slow	3
Dryopteris	sieboldii		slow, needs warmer climate	3
Dryopteris	sublacera			4
Dryopteris	wallichiana			5
Matteuccia	orientalis		very vigorous and spreading	5
Onoclea	sensibilis		weak growing	3
Osmunda	regalis			5
Osmunda	regalis	'Decomposita'		5
Osmunda	regalis	'Purpurascens'		5
Osmunda	regalis (sporling)			
Polypodium	calirhiza	'Sarah Lyman'	slow growing, summer dormant	4
Polypodium	glycyrrhiza		summer dormant, Pacific NW native	4
Polypodium	scouleri			5
Polypodium	vulgare	Cristatum Group (poor form of 'Bifido Multifidum')	poor form, needs removal	1
Polystichum	makinoi			5
Polystichum	munitum		Pacific NW native	5
Polystichum	munitum	'Sword Play'	very slow to develop	3

GENUS	SPECIES	SSP/VAR or CULTIVAR	Notes	Rating
Polystichum	neolobatum	dark green form	often has distorted growth	3
Polystichum	neolobatum	Olsen form (olive green in color)		5
Polystichum	polyblepharum			5
Polystichum	retrosopaleaceum			4
Polystichum	setiferum			5
Polystichum	setiferum	Bevis Group 'Bevis'		5
Polystichum	setiferum	Divisilobum Group		5
Polystichum	setiferum	Plumosomultilobum Group		5
Polystichum	setiferum	Rotundatum Cristatum Group		3
Polystichum	wilsonii		poor location, need better spot	4
Polystichum	xiphophyllum		needs some sun	4
Pyrrrosia	lingua		slow growing, need excellent drainage	4
Pyrrrosia	sheareri		slow growing, need excellent drainage	4
Woodwardia	unigemmata		best in rich moist soil	5

Hardy Fern Foundation Virtual

Annual Meeting 11:00am

Fall Social Lecture 1:00pm – Speaker to be announced

**Fern Frond Showcase
for members and their guests**

This year's Annual Meeting and Lecture will be a virtual event held through the Zoom app. You will receive an email with information about registration for this free event closer to the date.

Meeting will begin at 11:00am (PDT), Lecture will begin at 1:00pm (PDT) on October 23rd, 2021

Please check the HFF Website hardyferns.org under Events for updates.

Name that Dryopteris?

Mike Heim

Photo #1



Photo #2



Photo #3



Photo #4



Here are your options

Dryopteris affinis robusta	Dryopteris lepidopoda
Dryopteris amurensis	Dryopteris namegatae
Dryopteris arguta	Dryopteris oreades
Dryopteris cachmiriana	Dryopteris polylepis
Dryopteris caucasica	Dryopteris pseudofilix-mas
Dryopteris championii	Dryopteris purpurella
Dryopteris chinensis	Dryopteris pycnopteroides
Dryopteris crassirhizoma	Dryopteris sichotensis
Dryopteris decipiens	Dryopteris sublacera
Dryopteris dickinsii	Dryopteris tokyoensis
Dryopteris dickinsii 'Incisa'	Dryopteris uniformis
Dryopteris dilatata	Dryopteris varia
Dryopteris dilatata 'Recurvata'	Dryopteris varia sancrosancta
Dryopteris erythrosora	Dryopteris wallichiana
Dryopteris filix-mas 'Barnesii'	Dryopteris X australis
Dryopteris filix-mas 'Furcans'	Dryopteris X celsa
Dryopteris filix-mas 'Linearis Polydactyla'	Dryopteris X complexa
Dryopteris filix-mas 'Parsley'	Dryopteris X complexa 'Stableri Crisped'
Dryopteris filix-mas 'Stableri'	Dryopteris X remota
Dryopteris goeringiana	Dryopteris X separabilis
Dryopteris hondoensis	Dryopteris -crispate
Dryopteris lacera	

Please send your choices to
Mike Heim
ginkgoheim@gmail.com

Have Fun...

Rotary Botanical Garden Fern List

Michael Jesiolowski

Adiantum aleuticum 'Subpumilum' Dwarf western maidenhair fern
Adiantum aleuticum Western maidenhair fern
Adiantum pedatum Five finger fern
Asplenium trichomanes 'Incisum'
Athyrium filix-femina subsp. *angustum* forma *rubellum* 'Lady in Red'
Athyrium filix-femina 'Dre's Dagger' Criss-cross fern
Athyrium filix-femina Lady fern
Athyrium filix-femina 'Minutissimum' Dwarf lady fern
Athyrium filix-femina 'Victoriae'
Athyrium 'Branford Rambler'
Athyrium 'Ghost'
Athyrium 'Godzilla'
Athyrium niponicum 'Pictum' Japanese painted fern
Athyrium niponicum 'Applecourt' Crested Japanese painted fern
Athyrium niponicum 'Burgundy Lace'
Athyrium niponicum 'Eco Dwarf' Dwarf
Athyrium niponicum 'Pewter Lace'
Athyrium niponicum 'Red Beauty'
Athyrium niponicum 'Regal Red'
Athyrium niponicum 'Samurai Sword'
Athyrium niponicum 'Ursula's Red'
Athyrium otophorum var. *okanum* Auriculate lady fern
Blechnum penna-marina subsp. *alpina* Alpine water fern
Cystopteris bulbifera Bulblet bladder fern
Cystopteris bulbifera var. *crispa* Wave edged bladder fern
Cystopteris fragilis Fragile fern
Cystopteris protrusa Eastern brittle fern
Diplazium conilii Korean twin-shield fern
Diplazium pycnocarpon Narrow leafed glade fern
Dryopteris campyloptera Mountain wood fern
Dryopteris carthusiana Spinulose wood fern
Dryopteris celsa Log fern
Dryopteris clintoniana Clinton's wood fern
Dryopteris erythrosora 'Brilliance' Brilliant autumn fern (new)
Dryopteris erythrosora 'Prolifica'
Dryopteris filix-mas Male fern
Dryopteris filix-mas 'Grandiceps'
Dryopteris filix-mas 'Linearis'
Dryopteris filix mas 'Linearis Polydactyla'
Dryopteris goldiana Goldie's wood fern
Dryopteris intermedia Fancy fern
Dryopteris marginalis Marginal wood fern
Dryopteris pseudofilix-mas Mexican male fern
Dryopteris pulcherrima Beautiful wood fern
Dryopteris remota Scaly buckler fern
Dryopteris x complexa 'Stableri'
Dryopteris x separabilis Separate wood fern
Gymnocarpium disjunctum Western oak fern
Microlepia strigosa Lace fern
Onoclea sensibilis Sensitive fern
Osmundastrum cinnamomeum Cinnamon fern
Osmunda regalis var. *spectabilis* Royal fern
Phegopteris decursive-pinnata Japanese beech fern
Polypodium vulgare 'Uulong Island Form'
Polystichum polyblepharum Tassel fern (new)
Woodsia obtusa Blunt-lobed wood fern
Woodwardia virginica Virginia chain fern

Director Michael Jesiolowski's Favorites

Dryopteris filix-mas 'Linearis'

Throughout the severe drought we've experienced this season, this Linear Male fern has performed very well; looking vibrant despite a lack of water and warmer than average temperatures.



Athyrium niponicum 'Apple Court'

We have a large mass of this crested Japanese painted fern that is well-established and is a focal point in our ferns of Asia bed.



Asian *Dryopteris*: A Treasure Trove For the Garden

(Expanded version of an article originally written for the Northwest Horticultural Society's Garden Notes)

Richie Steffen

Poulsbo, WA

Photos by Richie Steffen

There are about 350 different *Dryopteris* species recognized in the world today. Commonly referred to as wood fern, buckler fern or male fern (although, the latter is generally used for *Dryopteris filix-mas*), this genus represents a very useful group of ferns that can thrive in our gardens.

The genus *Dryopteris* encompasses an extremely diverse looking group of ferns with incredible variation in the frond shapes and patterns. Yet, frustratingly, there are also species whose appearances are so similar to each other that it takes an expert and years of experience to confidently identify them correctly. Adding to the difficulties are species that will hybridize freely with other species, thus creating complicated hybrids with subtle differences from their parents and blurring the lines between species. Fortunately, there are a few traits that all *Dryopteris* share. First, on the underside of mature fronds there are small dots called sori which are the structures that hold the spore until it is ready to be released. All *Dryopteris* have "C" shaped or kidney-shaped sori. Another trait all *Dryopteris* share is a prominent groove that runs down the main stem (rachis) of the frond. As well, this groove often runs along the mid-rib of the leaflets which are attached to the rachis. This groove feature is also shared by *Athyrium*, lady ferns. An easy way to tell the two apart is that *Dryopteris* also have tan, brown or black hair-like scales along the stem and are mostly evergreen, while lady ferns are at best lightly scaled and deciduous.

Within Washington State, we have five native species, *D. arguta*, *D. carthusiana*, *D. cristata*, *D. expansa* and *D. filix-mas* but only *Dryopteris expansa* is commonly encountered in the garden or in the wild. *Dryopteris filix-mas* is a common garden fern for our region, but these are usually of European origin and typically found as cultivars that date back to the Victorian Era. With nearly 350 species worldwide, you would think there would be more than 50 or 60 species in cultivation; but after years of collecting, my personal collection barely breaks 30 species. I think one would need to be very well-connected and dedicated to have a *Dryopteris* species collection that is close to 50 species. There are, however, many cultivars and with a little effort, perseverance and a handy credit card one could acquire a few dozen named cultivars with some internet searching.

Where this genus truly shines is with the Asian species. A great diversity resides within

Dryopteris from the Himalayas, Korea, Japan and China. China alone contains nearly 170 species. One of the most widely available and grown *Dryopteris* is an east Asian species, *Dryopteris erythrosora*, autumn fern. Native to Japan, China and Korea (both North and South) the botanical Latin name refers to the red sori (the spore holding dots) on the underside of the frond, although this can vary from cultivar to cultivar. It is extremely hardy, tolerating cold or hot temperatures, clay to sandy soils and is fully evergreen. If that is not enough, the common name comes from the colorful new fronds in spring that emerge with a bright orange red color before maturing to a deep green. Well-grown autumn ferns in rich, regularly watered soil can reach nearly 3 feet tall, while those grown in less-than-ideal conditions will likely only reach 15 to 24 inches. Its adaptability makes it useful in container gardening as well as creating a stunning drift in the garden. The cultivar 'Brilliance' is the form most often offered now. It has brightly colored new growth, but lacks the characteristic red sori; instead, the sori are pale green to whitish in color. Another form occasionally seen is 'Prolifica'. This slow-growing form should have thin, narrower leaflets that give the frond an unusual skeletal and lacey appearance. Under rare circumstances small proliferous buds will form on the edge of some of the leaves. 'Prolifica' appears to be a form that is found in the wild and may better be referred to as *Dryopteris erythrosora* var. *prolifika*.



DRYOPTERIS KOIDZUMIANA

Autumn fern is not the only Asian wood fern with beautiful new growth. A choice species that was commonly available a few years ago is *Dryopteris koidzumiana*,

Koidzumi's wood fern, although it is not an easy fern to grow in our maritime climate. Nevertheless, when the foliage emerges in late spring through summer, the new growth is spectacular, opening to a brilliant orange red then fading to bronze followed by dark green. Give this fern open bright shade to half day morning sun in good, well-drained soil. It has never been robust for me, but there are few ferns that can match its foliage color. To increase its vigor, I do not remove the old foliage until it begins to brown in late spring to early summer. In our climate, Koidzumi's wood fern stays between 12 to 15 inches tall and forms a loose open clump. I would love to see if the growth is more vigorous in the hot humid southeastern states.

An easier fern to grow is *Dryopteris lepidopoda*, sunset fern. This vigorous grower forms a tight crown with an upright arching vase of fronds. The new fronds of this fern have bronzy orange red color similar to autumn fern but with a more refined growing habit. Once the new fronds mature, they turn a beautiful deep dark green and reach 18 to 24 inches tall. Place this fern in good gardening conditions; it likes rich well-drained soil and regular watering during dry weather and open to dappled shade.



DRYOPTERIS DECIPIENS

Another *Dryopteris* with eye-catching new growth is the rare and difficult to find *Dryopteris decipiens*, the deceptive wood fern. This slow-growing fern is more vigorous in areas with hot humid summers. A specimen I saw in an Alabama garden was so lush and robust it was nearly unrecognizable to me, but with patience, you will be rewarded in cool-summer climates like the Pacific Northwest. The new fronds emerge a shocking peachy pink that fades to a bright green with shiny foliage. It tends to be smaller in our climate reaching 12 to 15 inches over several years. In warmer regions, it can reach a robust 24 inches tall. It is best grown in rich, well-drained soil in bright open shade to dappled light. Be sure to place this fern in a location where it will be watered regularly and treasured.

Three other species that are superficially similar to the growth habit on autumn fern

are *Dryopteris bissetiana*, the beaded wood fern' *Dryopteris championii*, Champion's wood fern and *Dryopteris hondoensis*, Hondo wood fern. I have long loved the beaded wood fern. It is excruciatingly slow to increase in size but has a refined, elegant appearance. The new fronds emerge with a light dusting of silvery scales opening to dark green foliage. Fertile fronds are quite interesting with the sori on the back of the foliage showing through to the frond surface as embossed dots giving a beaded surface. Once this was occasionally seen for sale, but over the last few years nearly every plant purchased as been misnamed. This must be grown from spore and is likely too slow for anyone other than a specialty nursery to carry it. Expect this charming delight to be priced higher due to the longer production time.

Dryopteris championii is much easier to obtain and is a gorgeous fern. Strong healthy fronds reach 24 to 28 inches tall and are dark green and shiny. This is enhanced by the sturdy stipe holding the frond up. It is covered with golden chestnut brown scales. A simple clean look on a lovely evergreen fern. The best plants I have seen are in open shade or morning sun in the Pacific Northwest. In the South and Southeast US beautiful plants can be found in dappled shade. This is a fern that enjoys its heat but tolerates cooler temps. In our HFF display garden, it is slower to emerge than many other ferns and would appreciate keeping the old foliage intact until the new fronds expand.



DRYOPTERIS WALLICHIANA

An elusive fern to add to my collection was *Dryopteris hondoensis*. The few times I purchased this fern it turned out to be slight variations of autumn fern. About four years ago, I was able to purchase a young plant raised from spore grown by our HFF founder, Sue Olsen. This has been an enchanting addition to my fern collection. The fronds emerge on the late side in spring, and as they mature, they hang horizontal to the ground with the tips slightly lower but providing a layered and tiered, open mounded plant. Although the leaf shape is similar to autumn fern, each leaflet is thinner and more delicate in appearance giving this fern a distinctive fine, almost lacy, appearance. My plant is still young, but over time I expect it to reach 12 to 15 inches tall and wide.

Several *Dryopteris* offer a shapely, strong habit of growth or unusual foliage that makes them particularly suited for specimen plantings. Some of my favorite wood ferns have an architecturally distinctive and refined habit of growth with one of the most striking being *Dryopteris wallichiana*, Wallich's wood fern. Placement is critical in getting the most from this fern. The largest specimens are grown in rich, moist soils with plenty of organic matter in dappled shade with regular summer watering. In these situations, plants can reach up to 5 feet in height with a tight upright vase-shaped form. In less-than-ideal conditions, the shape will be the same, but it will grow to about 3 feet tall. New fronds emerge covered in dark brown scales giving a



DRYOPTERIS CRASSIRHIZOMA

furry appearance. As they unfurl bright yellow green leaflets are revealed that slowly deepen to a dark green as they mature in summer.

A slightly smaller, yet no less beautiful, fern is *Dryopteris crassirhizoma*, the thick-stemmed wood fern. Typically reaching about 3 feet tall and wide, it usually has a more arching broad vase shape than Wallich's wood fern. The emerging fronds are also very scaly but are a golden chestnut brown. The mature fronds are also a paler, brighter green than Wallich's wood fern. This grows best in similar conditions that Wallich's wood fern thrives in: bright to dappled shade, rich soils and regular watering during dry weather.

A new species in my collection is showing great promise as a robust and stately fern. I planted three small pots of *Dryopteris shorapanensis*, Persian wood fern last spring and this year they are over 15 inches tall with a beautiful vase shape. This fern is native to Western Asia in Iran and the Transcaucasus region. Formerly known as *Dryopteris affinis* ssp. *persica*, this fern definitely shows the vigor you would expect from something once classified as a form of *Dryopteris affinis*. The fronds are a bright pea green in the garden. I have my plants in bright open shade in sandy loam with occasional watering during dry weather. Based on my cultural mistreatment while these ferns were still in small pots, I would think they could tolerate some drought and less-than-ideal gardening conditions.



DRYOPTERIS TOKYOENSIS

If you need a very upright growing fern, try *Dryopteris tokyoensis*, Tokyo wood fern. It has an extremely tight upright habit with bright light green fronds up to 3 feet tall. This fern will tolerate some sun, preferably morning sun with protection from hot afternoon heat or open bright shade. This is a widely available fern that is easy to please. Give it well-drained soil with regular watering for the lushest growth. Often classified as a semi-evergreen, I find that the foliage flops by late fall, and I will often cut it back at that time to give a tidy appearance.



DRYOPTERIS NAMEGATAE

A favorite for architectural and a bolder look is *Dryopteris cycadina*, the shaggy shield fern. The common name refers to the profuse large blackish scales along the lower part of the frond's stem. This fern has bold bi-pinnate foliage that opens into a broad mounding dome of rich forest green fronds. Mature plants reach about 24 to 30 inches tall and 36 inches wide. Provide well-drained soil in open to dappled shade. A similar but smaller species is *Dryopteris namegatae*, Japanese wood fern. The fronds are also bi-pinnate, but only reach about 18 to 24 inches tall and slightly wider. My plants are a slightly paler green than *D. cycadina*. Both of these ferns have dramatic new croziers in the spring with the emerging fronds covered in nearly black scales. The young growth looks like a hairy octopus escaping from the ground. Japanese wood fern must have shade, if it is in too much sun the fronds will yellow and burn.

One of the best ferns for bold fronds is *Dryopteris sieboldii*, palm leaf fern. It is slow growing and prefers a hotter more humid climate to excel, but it will become a striking fern here, if given time. The large leaflets, coarse foliage pattern and pale green coloring make it stand out in the garden, best when grown in rich well-drained soil with regular watering during dry weather. This fern must have shade and do not cut back until the new fronds have emerged and the old ones have turned brown. In warm, humid climates this fern is a robust grower.

There are a few Asian *Dryopteris* with unusual fronds. These can add a subtle contrast

to other plants as well as add a textural interest to a shady area of the garden. One species I was enthralled with the first time I saw it in a garden was *Dryopteris crispifolia*, wavy leaf wood fern. The finely divided foliage is also crimped and wavy along the edges of the leaflets giving a frilly delicate texture to the plant. In my home garden it is planted in a sandy loam with regular watering, and it reaches about 15 to 18 inches tall and 24 to 30 inches wide. The fronds arch out over each other making a patch of fluffy layered fronds. Surprisingly, in the mild gardens of southwestern Scotland this fern is grown in rich moist soils and reaches 3 feet in height and a width of 5 feet! Although rarely found available, it has proven easy to grow. This fern demands to be more widely grown.

Of course, there are many more *Dryopteris* that make great garden plants, but these are some of the most beautiful and remarkable choices. To find out more about these ferns and some of the other *Dryopteris* that are available, check out the Hardy Fern Foundation website (www.hardyferns.org). If you live in the Pacific Northwest try the Great Plant Picks website (www.greatplantpicks.org) for suitable ferns for the region. Try a few of these out if you are not growing them already and have fun in your shade garden through the summer! 🌿

Welcome New Members

Brenda Allynn Buras-Elsen

Jose Banda

Alex Baranowski

Dave & Becky Beatty

Cordalie Benoit

Ann Marie Biskar

Delaney Brummet

Alice Dionne

Paul Gardiner

Judy Guttormsen

Katie Keller

Narisa Kempster, Royal Horticultural Society

Sherrill Lane Moody

Rebecca LaRose

Gillian Mathews

Patrick McMillan, Heronswood Garden

Timothy McNitt

Charles Muller

Charles Murray

Noah Oldham

Debbie Payton

Bonnie Plikaytis

Lise Porter

Craig Quirk

Jadon Rodriguez

Keith Rossman

Troy Sapp

Martin Siaw, Xiamen Botanical Garden & ICRAM

Tom Slama

Cynthia Smith

Luis Westerband

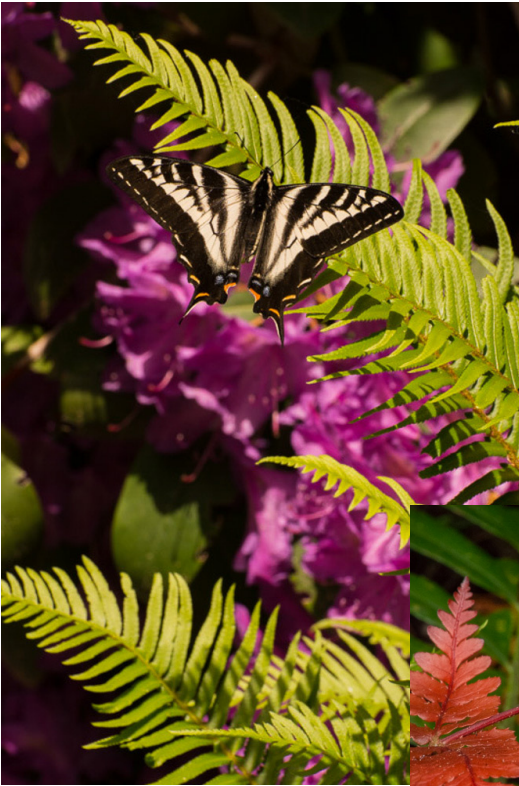
Jacque Wilder

Nathaniel Yordon

Colors for Summer

Photos by Dave Gibson

DRYOPTERIS KOIDZUMIANA



POLYSTICHUM MUNITUM, WESTERN TIGER SWALLOWTAIL



DRYOPTERIS KOIDZUMIANA, CENTER *ATHYRIUM NIPONICUM*, TOP *ATHYRIUM 'GHOST'*



POLYSTICHUM MUNITUM



BLECHNUM BRASILIENSE



ATHYRIUM NIPONICUM, ADIANTUM VENUSTUM



DRYOPTERIS KOIDZUMIANA



ADIANTUM ALEUTICUM SUBPUMILUM, A. HISPIDULUM

We Wish to Thank Our Donors for Their Generous Support Over the Past Year

Brian Aikins	Alison Evans	Chuck Ogburn
Elisabeth Allison	John Evans	Niko Okamoto
Amazon.com, Inc.	Kenneth Everding	Charles Oliver
Christine Anderson	Sara Farinelli	Sue Olsen
Suzanne & Marvin Anderson	Giovanni Fazi	Leslie Pancratz & Michael Hayman
Anonymous	Dave & Lori Gibson	Camille Paulsen
Mary Ellen Asmundson	Joan Gottlieb	Debbie Payton
Christine Baer	Greg Graves	Linda & Bob Pyles
Bonnie Berk	Patrick Green	J. Rosemary Read
Louise Billings	Frank Greer	Daniel R. Rice
Ann Marie Biskar	Paychi Karen Guh	Pat Riehl
Janet Bobo	Catharine W. Guiles	Jadon Rodriguez
Chris Boles	Sue Haffner	Lars Rosengreen
Willanna Bradner	Dr. Logan & Verna Hazen	Lynn Sires
Dr. Joseph Bryan	William C. Hibler	Helen Langer Smith
Michelle Bundy	Tom Hobson	Larry Snyder
Brenda Allynn Buras-Elsen	Laura Hudson	Magge Soderstrom
Naud Burnett II	Sarah Johnston	Marie A. Spearman
Forrest & Rene Campbell	Karin Kravitz	Richie Steffen & Rick Peterson
Nancy Campbell	Kroger Company	Gary & Jean Steffen
Patricia Campbell	Charles D. Lamade	Randy & Janice Stone
Philippe Chatelain	Edward & Donna Lambert	Nancy Strahle
Brian Collins	Mark Lyke	Nils Sundquist
Kathryn Crosby	Mary McCheyne	Jeanie Taylor
Jerry & Carolyn Doherty	Amy McCune	Barbara Thanhauser
Sheila Donley	Susan McDonald	Diane Thompson
Diane Dooley	Lynn McIntyre	John van den Meerendonk
Diana Dundore	Marilyn Michalak	Luis Westerband
Kay Dye	Lindsay Michimoto	Jane E. Whiteley
Susan Eggers	Microsoft Corporation	Roz Horder Williams
Susan E. Eichhorn	Leslie Morris-Smith	Willowmoor Foundation
Diane Elliott	Sean O'Connor	Patricia Tanttila & Dan Yansura