



**Hardy Fern Foundation
Quarterly**



Summer 2006

THE HARDY FERN FOUNDATION

P.O. Box 3797

Federal Way, WA 98036-3797

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.

Satellite fern gardens are at the Stephen Austin Arboretum, Nacogdoches, Texas, Birmingham Botanical Gardens, Birmingham, Alabama, California State University at Sacramento, Sacramento, California, Coastal Maine Botanical Garden, Boothbay, Maine, Dallas Arboretum, Dallas, Texas, Denver Botanic Gardens, Denver, Colorado, Georgeson Botanical Garden, University of Alaska, Fairbanks, Alaska, Harry P. Leu Garden, Orlando, Florida, Inniswood Metro Gardens, Columbus, Ohio, New York Botanical Garden, Bronx, New York, and Strybing Arboretum, San Francisco, California.

The fern display gardens are at Bainbridge Island Library, Bainbridge Island, WA, Lakewold, Tacoma, Washington, Les Jardins de Metis, Quebec, Canada, Rotary Gardens, Janesville, WI, University of Northern Colorado, Greeley, Colorado, and Whitehall Historic Home and Garden, Louisville, KY.

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.

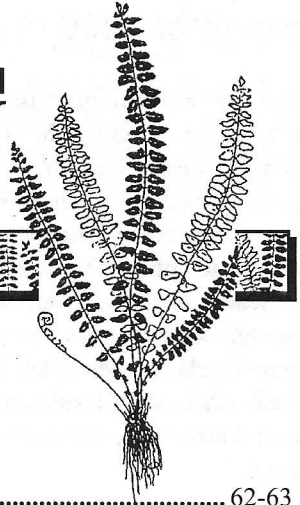
Cover Design by Willanna Bradner

HARDY FERN FOUNDATION QUARTERLY

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The Spore Exchange Needs You!

Please send your spores to our Spore Exchange Director:

Katie Burki
501 S. 54th St.
Tacoma, WA 98408

Summer 2006 President's Message

Welcome to the summer issue of the HFF Quarterly. At the Fern Fest, our annual membership meeting, the presidency was passed from the capable hands of John van den Meerendonk to me. I thank John for all his hard work over the past three years as president. Under his leadership we have seen the organization move forward in many positive ways. John was a driving force in the creation and installation of a highly successful fern display at the Washington Park Arboretum in Seattle. He has also set the stage for a thorough revision of the HFF website, a new growing structure for our nursery, and the beginnings of a stumpery at our main display garden at the Rhododendron Species Botanical Garden. His enthusiasm has been an inspiration for all on the board and I congratulate him on a job well done. I look forward to my continued work with John over the next three years.

The Fern Fest was a great success. Many good ferns were sold and we enjoyed a great lecture by noted fern expert Robbin Moran. Fortunately, he was able to spend a few days in Seattle before leaving to tour some great gardens and see some ferns in the wild. Robbin's lecture was both entertaining and informative and we will not soon forget his creating a cloud of flames by igniting the spores of *Lycopodium*!

We have three new board members added at the annual meeting Barbara Carman, Pat Riehl, and Diane Thompson. Barbara is a long time member of the HFF and has served on the board in the past. She has been very active in the gardening community around Puget Sound. She has been involved with the Tacoma Garden Club, Lakewold Gardens, the Northwest Horticulture Society and much more. Her long service to the area will be a valuable addition for us. Pat Riehl is an avid plant enthusiast and an extremely capable member of the Seattle gardening community. Pat has served as president of the Northwest Horticulture Society and is a very active supporter of the Elisabeth C. Miller Library, a Seattle based horticultural library. Pat and her husband recently purchased new property with much more land to house her ever growing plant collection. Diane Thompson came to us from the Rhododendron Species Foundation. Diane serves on the executive committee on the board of the RSF and has served as President of the Seattle Rhododendron Society. She tends a beautiful and diverse garden in Bothell, Washington. Her commitment and organizational skills are exceptional as well as her enthusiasm for ferns and rhododendrons. I am looking forward to working with Barbara, Pat and Diane in the future as well as all of my friends on the HFF board.

By the time this arrives to you I will have just returned from Germany on a jointly sponsored trip by the British Pteridological Society and the Hardy Fern Founda-

tion. This will be an exciting trip visiting some of the best private collections in Europe. I am pleased that three board members will be joining me on this trip, Sue Olsen from Bellevue, Washington and Pat Riehl from Seattle, Washington along with a member at large, Naud Burnett from Dallas, Texas. I give many thanks to the extraordinary efforts of Dr. Peters for arranging this wonderful trip. Watch for a detailed report of our adventures in an upcoming Quarterly.

The last news to note is the successful growth of spore given to the HFF from recent trips to Chile and Costa Rica. A few young plants have grown from the Chilean collections and we hope to confirm the identities of a few individuals. I hope to get to a more thorough write up of the Chile expedition in the near future. Spore collected in the high elevations in Costa Rica have started to show some green on the growing media. We hope they will continue to grow well. Best wishes for the summer and may there be a good rain just when you need it.

All the best,

Richie Steffen



New Members

Suzanne Bagshaw & Marvin Anderson

Pamela Burton

Lynn and Hank Helm

Carolyn Jones

Jo Laskowski

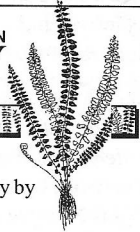
Peter Aiau & Susan Ormbrek

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Shirley Sidell

Charles Wolfram

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

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A Hardy Rabbit's-foot Fern

Dr. Dan Jones

From Frond Notes, Birmingham Fern Society – September 2005

Some of the most attractive indoor ferns are the Rabbit's-foot and its relatives, such as Squirrel's-foot and Hare's-foot. They are members of the genus *Davallia*, a name chosen to commemorate Swiss plant collector, Edmond Davall (1763-1798). Davallioids are frequently displayed in hanging baskets in greenhouses and are valued for their triangular, shiny, finely divided leaves which are nicely complemented by intriguing thick rhizomes covered with prominent woolly scales. The catchy popular names associated with these ferns are derived from the "furry" appearance of the rhizomes. Rhizomes (horizontal stems) of most ferns are hidden underground, but the furry feet of davallias are generally displayed prominently. Indeed, they enhance the attractiveness and interest in davallioids when they creep over the surfaces of containers in conservatories or crawl over rocks in warm gardens.

The long-standing appreciation of davallioids is evinced in the first record (1462) in Japanese history of the cultivation of ferns in pots. *Davallia mariesii* was reportedly planted in small trays and presented as a gift to a general ("Ferns in the Japanese Culture" by Kenichi Watanabe; translated by Takeko Hayashi in "Fiddlehead Forum". 31, 4, 2004).

Forty years ago, the deciduous *D. mariesii* var. *mariesii* was imported from Japan in the dormant leafless condition. It was known as the Japanese ball fern because entrepreneurs enhanced the fern's appeal and made it a novelty by tying its furry rhizomes into a variety of figures and shapes including balls. The configured rhizomes were hung in gardens and entry ways, and when the fronds emerged, the figure formed by the tied rhizomes would delight as it "came to life".

Although the temperature tolerances of davallias are not well known, most are frost tender. Two of the hardiest are *D. mariesii* var. *mariesii* (Japanese ball fern) and *D. mariesii* var. *stenolepis* (Squirrel's-foot fern; often sold as *D. trichomanoides* in commercial trade), but even they can generally tolerate only light freezes. Tony Avent (Proprietor of Plant Delights Nursery, Inc., Raleigh, NC) has recently introduced a more cold-hardy selection of *Davallia mariesii* with the cultivar name of 'Korea Rocks' and a common name of Hardy rabbit's-foot fern. He reports it was collected at the base of Korea's Wolchusan Mountain at 1,000' elevation, and that it has proven to be completely winter-hardy in the warmer parts of Zone 7 which would include Birmingham (Zone 7b). He notes that "looking just like the hanging basket plant, the thick 'hairy' rabbit's foot rhizomes creep very slowly, while giving rise in spring to 6" tall lacy green fronds" (2005 Fall Sales Catalog, Plant Delights Nursery, Inc.).

Convinced that it might be beneficial to have a "lucky rabbit's foot" in the Glade, three specimens of *D. mariesii* 'Korean Rocks' have been ordered for planting this fall. If they prove to be hardy, they could be considered for planting in the large display pots in the Glade.

Undoubtedly many of you remember a rabbit's foot was a common lucky charm in the 1960's. The rabbit's foot is one of humanity's oldest superstitious symbols, having been

used since before 600 BC. One explanation is that because hares and rabbits are prolific breeders, they are seen as symbols of fertility, and thought to provide good luck, good crops, many children and prosperity.

Will the Rabbit's-foot fern be lucky enough to survive our winter? We hope so!

(Addenda, June 22, 2006.... "All three *Davallia mariesii* 'Korean Rocks' planted last fall [October] did survive the winter but it was a relatively mild one. Although it is currently unusually hot and dry for this time of year in Birmingham, the plants show slow, but steady progress towards becoming more established in their lightly irrigated site in the garden." Dan Jones)

Cheilanthes eatonii

Eaton's lip fern

James R. Horrocks

Salt Lake City

The genus *Cheilanthes* is from the Greek for marginal flowers, referring to the lip-like aspect of the strips of reflexed indusoid tissue. This genus comprises some 125 species, most occurring in dry places world-wide. The genus is represented in Europe, Africa, the Himalayas, China, Japan, and even down under in New Zealand and Australia. In the Americas they are widely distributed from North America to Peru. The species name is after Daniel C. Eaton, a nineteenth century American pteridologist who studied the genus *Cheilanthes*.

Eaton's lip fern is an interesting little fern that frequents rocky areas in the southern United States, northern Mexico, and Costa Rica. In the southern states, it is found in Virginia, western Oklahoma, southern Colorado to central Texas, New Mexico, Arizona, and more rarely in southeastern Utah. This species is epipetric in rock crevices of either limestone or igneous rocks and terrestrial among boulders and on talus slopes. Like most cheilanthes, it seems suited to high light conditions in dryish sandy soils.

C. eatonii somewhat resembles *C. tomentosa* and hybridizes with *C. villosa* in Texas and New Mexico. Many cheilanthes resemble each other and care must be taken in proper identification.

Description: The rhizome is short-creeping and often branching with narrowly lanceolate scales. The scales are bicolorous, being pale brown with a dark reddish-brown central stripe. The stipes are clustered or tufted and are reddish-brown to purplish-black in color, bearing narrow lanceolate scales, linear hair-like scales, and some hairs. The stipes are up

Continued on page 80

Scientific Insights

by E. Charles Nelson

Outwell, Norfolk, UK

Excerpts from *The Heather News Quarterly*, Volume 29, Number 2, Issue 114, Spring 2006.

“How do you tell if a plant is native or not – an alien, an introduction, an adventive, a naturalized plant? One of the best ways is by looking for signs in the record of vegetation, and one of the finest sources of such records is peat, an abundant natural product throughout the temperate parts of the Northern Hemisphere....Undisturbed peat is like a book; layer upon layer, “page” upon “page,” it records with infallible accuracy the plants (and sometimes the animals) that inhabited that particular place when each layer was formed. The pages/layers can be read like a story, using either the remnants of stems, leaves, flowers, fruits and seeds, or (more usually) pollen grains to identify the plants that grew there. It is possible by careful examination under microscopes to identify pollen grains to individual species. Thanks to peat, we know a lot about vegetation history for many places. To show how much peat can reveal about plants, not just heathers, a paper published recently about *Selaginella* on some of the most remote islands in the world deserves attention.”

“Recent studies in the Azores, first inhabited by humans in the fifteenth century AD, show that a moss-like plant called *Selaginella kraussiana* (a relative of the ferns), often considered an alien that was introduced after human settlement, is really an ancient denizen. *Selaginella* spores (like pollen grains capable of preservation in peat) occur deep down in the “pristine” layers far below those that record human activity. The peat record from the island of Flores, the most westerly of the Azorean archipelago, extends back around 2,400 years, and spores of *Selaginella* were found throughout the core.”*

*van Leeuwen, J.F.N. *et alii*, 2005. Native or introduced? Fossil pollen and spores may say. An example from the Azores Islands. *Neobiota 6 (Biological invasions – from ecology to control)*: 27-34.

Your editor thanks Joyce Descloux for submitting the article, as well as author E. Charles Nelson and Joyce Prothero (editor of the HNQ) for permission to publish.

Dear Members,

Hello! Hope this letter finds you and your ferns doing well. Following, you will find our fall 2006 Fern Distribution list. We have a good supply of most ferns listed but ordering early is always recommended. Ferns will be shipped via UPS on Monday, September 18th. Ferns are priced as listed and you will be billed at the time of shipping. **Please don't send payment with your order.**

UPS will not deliver to P.O. boxes so please be sure to give us a street address.

Send your order by **September 11th** to:

Michelle Bundy, 16038 -46th Ave S., Tukwila, WA 98188.

If you have any questions or would rather e-mail your order, you can also contact Michelle at thebundys5@comcast.net. Thank you for your support of the Hardy Fern Foundation!

***Athyrium otophorum* - Eared Lady Fern**

Zones 5-9, deciduous

This Japanese native is a great ornamental fern. It grows to be 1 ½ to 2' tall. A deciduous woodland species which prefers full to part shade and a rich loamy soil that is consistently moist but well drained. The new fronds are a soft sherbet green aging to a dusky grey-green. The stems or stipes are a deep burgundy color. In the spring the unfurling fronds are a dark maroon. Colorful fern for the edging of a bed or pathway. Foliage contrasts nicely with a dark green background. Does very well in pots. Foliage will decline if allowed to dry out too often. **\$6.00**

***Blechnum penna-marina* - Alpine Water Fern**

Zones 5-8, evergreen

Widely distributed across cooler latitudes in the Southern hemisphere. This low growing evergreen fern forms a beautiful groundcover, spreading moderately by creeping rhizomes. It forms a thick carpet and is great for suppressing weeds. Completely non-invasive. Very cold hardy, easy to grow, prefers a moist, well drained soil in part shade, but will tolerate sun, wind and frost. This fern does beautifully planted as an edging along a bed or pathway, beside a water feature or between rocks. If placed in a sunnier position be sure to mulch plants and provide plenty of moisture. New fronds are a pinkish-bronze color aging to a dark green. Can be easily propagated by division. **\$8.00**

***Cheilanthes fendleri* - Fendler's Lip Fern**

Zones 5-8, deciduous

This very hardy cheilanthes grows 6 - 12" tall and is tripinnate. It requires good drainage and protection from winter wet. This fern does very well in pots and will form nice, large colonies. Native to the southwestern United States and northern Mexico. **\$6.00**

Dryopteris formosana

Zones 6-9, evergreen

Native to Japan and Taiwan, this fern is completely evergreen for us here in Seattle. The new growth tends to be late to emerge in the spring and is a bright, almost lime green color. Mature size is 3' tall with a very upright habit. This lovely fern deserves to be used more often and we are excited to see it become more widely available. **\$6.00**

***Phyllitis scolopendrium* - Hart's Tongue Fern**

Zones 5-9, evergreen

This unique fern, with its lush green foliage and bold texture, is a must for any fern or woodland garden. Ultimately reaching about 2' tall, the Hart's tongue fern prefers part to full shade and a well drained soil which, to look its best, has been amended with lime. An acidic soil can be made more basic by placing sticks of chalk around the base of the plant or by incorporating concrete rubble, limestone chips or oyster shells around the plants. Root rot can be a problem with this species so be sure drainage is adequate. Once they are in the right spot they are very easy to grow and worth the extra effort. **\$6.00**

***Polystichum setiferum* 'Divisilobum'**

Zones 5-8, evergreen

'Divisilobum' grows to be approximately 2' tall and 2' wide. The soft, feathery foliage of this fern is very eye-catching and contrasts well with thicker textured ferns or companion plants. Prefers a partially shaded spot with a rich, well drained soil. Very easy to grow. **\$6.00**

Whitehall Stumpery Update

Ralph Archer

Louisville, KY

An article (Summer 2003 HFF Quarterly) discussed the initial construction of a stumpery at Whitehall Historic Home in Louisville, KY. Since then, a significant expansion has resulted in additional experience and there have been several inquiries requesting more detailed descriptions of how to construct stump beds. For these reasons, a follow-up article was deemed in order.

Stumpery Bed No. I

What ended up being a sizable stumpery bed started as a pile of logs on a sloping area on the north side of a large spruce tree. The area had been cleaned of Euonymus and covered with a layer of wood chips. It lay dormant for a while and then was used as a dump for wood from a tree removal. It was adjacent to the area we already had started to plant as a fern display bed.

We spent considerable time arranging and rearranging logs. Our objective was to create a pleasing pattern that did not look contrived but appeared as natural as possible. We brought in additional logs from other log piles on the grounds to add to the original logs including longer and smaller branches to edge the paths. After we had the logs placed, we brought in loads of top soil mixed half and half with composted wood chips and poured the soil mixture around the logs to create planting pockets. The soil depth was about half to two thirds up the logs and all pockets rested on wood chips over bare soil between logs laying on the chips. We finished adding soil before the end of December, left the bed to settle over the winter and started planting about the first week in April.



We were so inspired by the results when we started planting that we decided we just had to enlarge the bed. All of the construction details were the same so far as the placement of logs on chips and the half soil half wood chip mixture added to provide a planting medium between the wood. The major difference was in the plants.

Stumperie05JuneTotal

The picture (Stumperie05-JuneTotal) shows the bed two years after planting. The original bed had a mass planting of *Athyrium* 'Ghost' at the rear with *Dryopteris oreades* and *Brunnera* cultivars in front of the *Athyrium*. These ferns have started to mature as have all of the *Brunnera*. The new portion is planted with a variety of fern species and cultivars, as well as *Primula*, *Tiarella*, *Heuchera*, *Astilbe* and two *Cimicifuga americana*. The ferns are mainly a mix of *Athyrium* and *Dryopteris* cultivars such as *A. f-f* 'Frizelliae', 'Lady Victoriae', *A. niponicum* 'Applecourt', *D. affinis* 'Cristata Angustata', and *D. f-m* 'Barnesii'.

Two large oak logs were brought in to provide a backdrop as well as a barrier separating the fern garden from the lawn area.

Main Display Bed

The main fern display bed went through a similar evolution. A large area of Euonymous was cleared and wood chips were spread to a depth of about one foot. The area was left dormant for three months prior to fall planting.

The initial plantings were mainly *Dryopteris* and *Athyrium* species and cultivars. A large log had been separated and three *D. x australis* were planted between the pieces. Several *Adiantum pedatum* were planted in the V in the lower center. Several shovelfuls of good topsoil were mixed into the chips from each planting hole and the mixture was used to fill around the ferns.



MainBed05July

The picture (MainBed05July) shows the main bed during the summer of 2005. The ferns to the center and left are mainly *Athyrium* species and the ferns to the top and right are mainly *Dryopteris*.

The large logs to the rear were from trees taken down during the winter of 2002 and placed to screen the main bed from the lawn. They were the inspiration for using the larger oak logs to screen the stump bed as described above.

Two spring applications, spaced two months apart, of a balanced slow release fertilizer were made during each of the first two years to both the main display bed as well as the stump bed. This was due to concern regarding nitrogen depletion due to the decay of the wood chips. Soil tests showed no additional applications were required for either last year or this year.

Continued on page 78

Whitehall Stumpery Update (continued from pg. 77)



LogPlanters05June

Stump Planters

A signature feature of the garden are the hollow log planters for *Polypodium vulgare* species and cultivars. The center holes go all the way through the log. They were filled with composted hard wood chips to the top and the *Polypodium* rhizomes were set level with the surface. The chips have settled over the two years so that the plants are now below the level of the log top surface. A variety of cultivars of *Phyllitis scolopendrium* are planted around the base of the planters. The picture (LogPlanters05June) shows the first group of log planters with *P. vulgare* species and cultivars. It was taken in early morning when parts of the bed have brief periods of sun. The tall plants to the upper left are of several different *Tricyrtis* cultivars.

A number of log planters have been planted with *Polypodium* species other than *P. vulgare*. The limited experience to date shows that *Polypodium* species other than *P. vulgare* have not been adaptable to planting in this manner in this area. We plan to continue to try various other species as the experience is considered somewhat inconclusive due to the limited number of plants tried.

New Bed

In the winter of 2004-2005, we began cleaning a large area of *Euonymus* and other trash plants by digging them out with as much root structure as possible and covering the dug areas with about a foot of wood chips as had been our practice. Planting started in the fall of 2005. Photo Mvc-586f shows the area currently being planted. We placed a sizable number of logs, both horizontal and upright, in three general planting areas and planted ferns among the logs. To date the ferns planted are mainly Victorian cultivars of *Athyrium*

filix-femina and *Dryopteris* species along with some of the more colorful Asian members of these genera. A second stump area at the other end of the bed was planted in May, 2006 as well as areas edging the paths and in front of the logs at the end of the bed. We intend to continue to plant ferns this fall as well as additional woodland type plants. The vertical nature of many of the logs has caused this bed to be named "Stumphing".

As time went by, we started to experiment with the clean up and planting process. We dug out Japanese honeysuckle along with the other weed type shrubs and trees and cleared out all the tree wood trash. We then put flattened cardboard boxes (the sort that small pots are shipped in for use by nurseries) on top of the heavy *Euonymus* ground cover in part of the area and covered the cardboard with a foot of wood chips. We used a foot of just plain woodchips to cover the *Euonymus* in the remaining area and plan to let the area sit until the spring of 2007 to see if this kills the *Euonymus* without having to remove as much as possible and also to determine if the cardboard is necessary.

We have changed our planting practice to digging down through the chips to the dirt and mixing the base soil in the chips for the planting medium. Our previous method was to bring in topsoil and then mix it into the chips before filling in around the plant. Thus far the ferns planted in base soil mixed into the chips are establishing well. It does not appear necessary to bring in topsoil for planting as had been our practice.

It is hoped that this will inspire some readers to build their own stumpery. It is not difficult and makes a wonderful backdrop for a garden in the shade.



Mvc-586f



Cheilanthes eatonii

Eaton's lip fern (continued from page 65)

to one third the length of the blade. The sub-evergreen fronds are lanceolate-oblong and from 3 to 16 inches in length. The lower-most pair of pinnae are for the most part the same size as the pinnae above. The fronds taper to the apex. The pinnae are deltoid-ovate to ovate-oblong with pinnules that are oval or round and bead-like. The fronds are tripinnate to almost four times divided with scattered linear scales and hairs along the rachis. The pinnule margins are quite under rolled with a continuous narrow indusium. The sori are in groups and submarginal at the ends of thickened veins.

Culture: While Lellinger remarks that *C. eatonii* is not cultivated, Mickel mentions its ease of care as "moderate", and Hoshizaki maintains that it is relatively easy to grow in "moist-dry to dry, well drained garden soil with sand." Being easily grown from spore, as most cheilanthes are, this species could be experimented with in various exposures and soil types. Often, the most neglected specimens end up being the strongest growers. The author had an experience with *Pellaea atropurpurea* in which all of them died except for one that was "forgotten about". It still thrives where I least expected it to grow. Some ferns simply do not like to be pampered. *C. eatonii* must have a high light exposure and could not be expected to grow in a heavily shaded area. (*Ed. note....in the Pacific Northwest it needs protection from winter wet.*) For those who like to experiment with "xerics", Eaton's lip fern is certainly worth a try. It is hardy to Zone 6.

References:

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Fern Grower's Manual (2001) revised, Barbara Joe Hoshizaki and Robbin C. Moran,
Timber Press, Portland

Ferns For American Gardens (1994) John Mickel, Macmillan Publishing Co., New York

Ferns of Utah (1944) Seville Flowers, University of Utah, Salt Lake City



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HARDY FERN FOUNDATION QUARTERLY