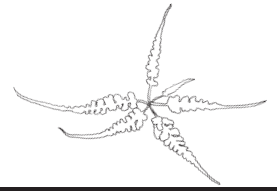


THE PLANT PRESS



Volume VIII, No. 1

Newsletter of the Friends of the Herbarium

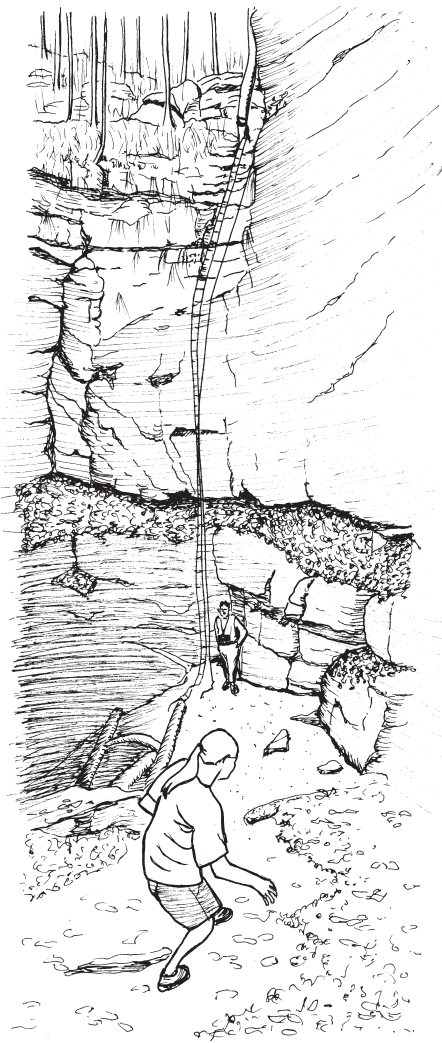
Winter 2004

Update on the Hart's Tongue Fern in Tennessee

The Hart's Tongue Fern (*Asplenium scolopendrium* L. var. *americanum* (Fern.) Kartsch & Gandhi) is on the Tennessee Natural Heritage Program's 2003 Rare Plant List. The species is endangered in this state and is considered to be extremely rare. It has a Federal Status of "Listed Threatened," meaning it is likely to become a globally endangered species in the foreseeable future. The Hart's Tongue Fern is usually found in the Northeast, where temperatures are cooler. In the state of Tennessee, the plant has been reported from the Cumberland Plateau, Ridge and Valley and the Blue Ridge physiographic provinces. It is usually found in sinkholes, where the moisture and temperature resemble that of its native Northeast climate.

Currently the Hart's Tongue Fern is known to inhabit only one sinkhole in Tennessee, which is located in Marion County near South Pittsburg. This past November, I climbed down into that sinkhole with Dr. George Ramseur and Mary Priestley to check on the status of the population. The forty-foot vertical drop made this exceedingly interesting! Dr. Ramseur heaved his homemade rope ladder down into the hole, and the journey began. He climbed down first, and then Mary and I followed. The sinkhole was beautiful! The sun shone down on the waterfall and the array of green mosses and liverworts that covered the rocks. Once we were down in the hole, Dr. Ramseur saw the first small Hart's Tongue plant. After carefully inspecting the area, we found a total of five plants in the sinkhole. This is the largest number of ferns seen in the sinkhole in several years.

The trip was a great success and made for a very unique and interesting Friday afternoon!



In February of 1935, Eleanor McGilliard of the University of Chattanooga Department of Biology sent a letter to Mr. and Mrs. Lodge in South Pittsburg concerning the history of the Hart's Tongue Fern in South Pittsburg. Mr. Lodge responded, explaining that he had first heard about the

fern 50 years previously (1885) from an English botanist named Mr. Middleton. Mr. Middleton had been very familiar with the fern in England, and through scientific channels had heard of its presence in a sinkhole in South Pittsburg. The young Mr. Lodge used to accompany the Englishman on trips down into the sinkhole. In 1900, Mr. William R. Maxon and a Mr. Pollard, both from the Smithsonian Institution, were escorted down into the sinkhole in order to collect specimens of the fern. By 1925, very few ferns were left, and there were no remaining ferns at the very bottom of the sinkhole. It has been hypothesized that between 1900 and 1920 a destructive flood washed the soil and ferns away. The only fern specimens remaining after this time were found on the rocky shelves that were protected from the devastation of the flood.

Tennessee Rare Species Protection Program Administrator David Lincocome, who last visited the site about five years ago, has a grant through the Cincinnati Zoo to collect spores and leaf tip tissue from all the southern sites that have recorded sightings of the Hart's Tongue Fern. He plans to visit the South Pittsburg site in the spring, in order to collect some tissue from the ferns for cryopreservation and experimentation with the tissue culture propagation.

It was quite an honor to be able to participate in this search for the elusive Hart's Tongue Fern. It is remarkable that this plant is still growing in rural Tennessee, where it first sparked the interest of botanists over 100 years ago.

—Jeanne Lumpkin, *Biology major, C'04*

From the Editor



It is a great pleasure to commence, with this issue, Volume VIII of *The Plant Press*. We thank the Office of Print Services for all they do to maintain the high quality of the newsletter. And we are indebted to the Office of Alumni Relations for underwriting the cost of postage.

Our wildflower walks and other activities continue to attract participants from Sewanee and the surrounding area. We are grateful to the many talented people who volunteer their time to lead our programs. Special thanks go to Herbarium Associate Curator Yolande Gottfried for preparation of our calendar of events.

Our articles present a taste of the activities of Sewanee's Herbarium, Landscape Analysis

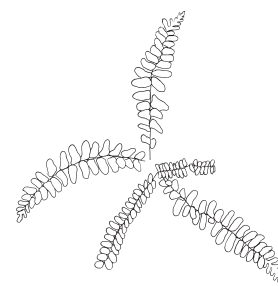
Lab, and Department of Biology. This issue focuses on ferns, highlighting several members of the *Asplenium* genus, the spleenworts. Biology major Jeanne Lumpkin writes about a recent trip with Herbarium Director Emeritus George Ramseur and me to check on Tennessee's rarest plant, the Hart's Tongue Fern. And Herbarium Director Jon Evans describes plans for a study of the distribution of ferns on the Sewanee Domain. Currently 27 fern species, representing 10 families, are known to inhabit the Domain. It will be interesting to see the results of this study.

Great news on the Shakerag Hollow Initiative front! As we go to press, the South Cumberland Regional Land Trust has raised approximately 95% of the funds needed to purchase 200 or so acres of the Hollow. Plans are to work with The Land Trust for Tennessee to secure a conservation ease-

ment on the land and then donate it to the University. I was pleased to be invited to write an article about Shakerag for the March '04 issue of the *Tennessee Conservationist Magazine*.

Finally, thanks so much to the Herbarium's supporters. The names of those who made donations in 2003 are listed below. We could not do this without you, our readers and supporters. We hope that in 2004 you will find *Plant Press* articles and Herbarium activities that interest you.

—Mary Priestley



Illustrations:
Mountain and Ebony
Spleenworts

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Winter Calendar of Events



Winter Botany

Sunday, Feb. 1, 1:30 p.m.

George Ramseur

Join us for a hike down the Old Cowan Road to find Sewanee's unusual "H" tree. If you missed this last year, here's your chance! George will introduce tree anatomy and overwintering strategies and give tips for winter identification of some of the more common woody plants. Maybe we'll also find a few of the earliest spring wildflowers, or see a groundhog see its shadow (a day early). Meet at the War Memorial Cross for a 1-mile moderate hike.

Nature Drawing and Watercolor

Saturday, Feb. 7, 10:00 a.m.-12:00 noon

Charley Watkins and Bob Askew

These local artists will give a workshop on line drawing from natural materials and adding watercolor. An opportunity not to be missed! Pencils and paper will be available, but please also bring your own materials and other media that you may want to work with. Meet in Woods Labs room 121.

Early Spring Wildflowers

Sunday, Feb. 29, 1:30 p.m.

Yolande Gottfried

"Leap" into spring on "leap" day and come out to see the early season bloomers: bloodroot, harbinger-of-spring (salt-and-pepper), hepatica, halberd-leaved yellow violet, and more. Meet at Green's View for a two-mile moderate hike through Shakerag Hollow, which can include a strenuous steep climb.

Wildflower Identification

Saturday, March 13, 10-11:30 a.m.

Mary Priestley

Get a jump on learning to identify wildflowers in this early spring workshop. Become familiar with some of the basic plant identification terminology, and try out a new identification key that we have devised especially with Sewanee's wildflowers in mind. The flowers will probably be small, but they promise to be beautiful. Meet in Woods Labs room 121.

Illustration: Walking Fern

THE PLANT PRESS

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WEB SITE

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Tammy Scissom

Drawings by Mary Priestley

For more information on these or other Sewanee Herbarium events, please contact Yolande Gottfried at the herbarium (931.598.1798) or by e-mail at <ygottfri@sewanee.edu>.



Membership Application/Renewal

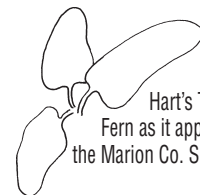
The Friends of the Sewanee Herbarium support the work of the Herbarium: education, research, and conservation. A \$10.00 annual contribution would be very much appreciated. The date of your most recent contribution is printed on your address label.

Name and Address (if different from that on the mailing label on the back):

Amount Enclosed: \$10.00 Other: \$ _____

Please make check payable to The University of the South. Gifts are fully tax deductible. Send to:

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c/o Mary Priestley
735 University Avenue
Sewanee, TN 37383



Hart's Tongue
Fern as it appears in
the Marion Co. Sinkhole

Others who might like to receive *The Plant Press*: _____

Some Ferns of the Sewanee Domain

While we may not have the Hart's Tongue fern (*Asplenium scolopendrium*) here at Sewanee, we do have 31 other species of ferns and fern-allies documented in the Sewanee Herbarium as living on the Domain. According to state botanical records, we could have at least another 23 species present on the Domain. Of these possible additional species, 14 are evergreen and therefore can be identified in the winter. Some of these ferns and fern-allies were noted for the Sewanee area by botanists in the early 1900s but have not been seen since that time.

This spring, as part of my Conservation Biology class and Chris Butler's GIS and Ecology class (Chris is a Visiting Assistant Professor in Biology), our students are going

to create potential habitat maps for these evergreen ferns on the Domain using the Landscape Analysis Lab GIS databases. Students will then use these maps to conduct a systematic search of the Domain to see if we can find these ferns. This search could take us to some of the more remote corners of the Domain that few people ever visit, such as limestone sinks and cliff-faces.

On a recent field trip with my Plant Ecology class to document a new population of *Asplenium pinnatifidum* (Lobed Spleenwort) on the Domain, we discovered a small population of *Asplenium x trudellii* tucked up against the base of the sandstone bluff.

Asplenium x trudellii is an uncommon, sterile hybrid between *Asplenium pinnatifidum* and *Asplenium montanum* (Mountain Spleen-

wort). Not only was this a new discovery for the Domain, but it was unusual to find several individuals of different sizes present in one location suggesting that the population is being maintained.

How could this be happening if this hybrid is supposedly a sterile triploid (i.e. doesn't produce viable spores)? I posed this question to Randy Small, a fern systematist in the Botany Department at the University of Tennessee who suggested that perhaps some kind of apogamy (reproduction through unreduced spores) must be going on. I have invited Randy down to Sewanee this spring to help us further ponder the *Asplenium* populations of the Plateau!

—Jon Evans

Illustration: *Asplenium x trudellii*

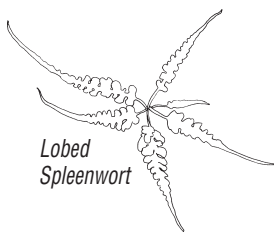
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