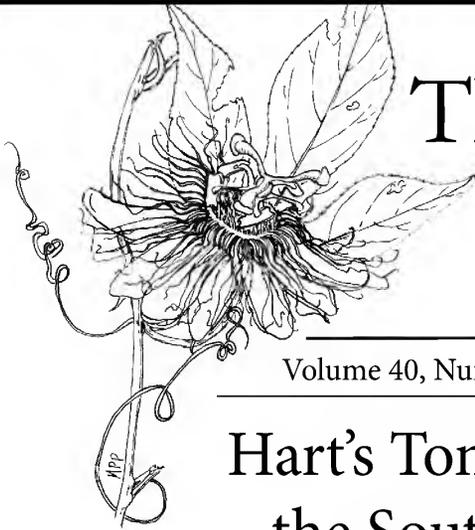


TENNESSEE NATIVE PLANT SOCIETY



Volume 40, Number 2

June 2016

Hart's Tongue History at the South Pittsburg Pit

The winter is a fairly slow time for botanists, as you might imagine. Report writing and half-hearted attempts at organization are as constant as the winter gray. We dream of the first field day while we stare misty-eyed over our steaming coffee cups out our drafty windows.

This year, I was pleasantly surprised with an email in my inbox in late February. I forget the exact details now, but in a roundabout way it came to be that a student and fern-enthusiast at SUNY, Mike Serviss, would be in the region for some camping, and that his co-worker associated with U.S. Fish and Wildlife Service, John Wiley, was also planning to be in the region surveying and collecting tissue samples for genetic analysis of American Hart's Tongue Fern (*Asplenium scolopendrium* var. *americanum*).

Roger McCoy, Andrea Bishop and I agreed to meet up with the two. Roger and I had never been to the site. We were also joined by Mary Priestley and Park Greer, a ranger at South Cumberland State Park who is a very experienced climber. We met at the Sonic in South Pittsburg, had our introductions and then headed out. (South Pittsburg is one of these towns where you can meet at the Sonic and still be in the middle of the woods in the same breath.)

There is a lot of history associated with this species in Tennessee. It is arguably our rarest plant, and with that rarity comes a lot of attention and fascination. We are extremely lucky that its entire written history is documented in some fashion – unheard of for many of our rare plants. Augustin Gattinger supposedly had a second site

for this fern from Post Oak Springs in Roane County. It has been searched for by early and modern botanists alike and not been found. There is also a record from Shady Valley in 1933, as well, but the reference is flagged in the heritage database as “exceedingly dubious”. That leaves Tennessee with one known extant population of Hart's Tongue Fern.

The first written reference that I have been able to find comes from the Torrey Botanical Bulletin, in which John Williamson published “*Scolopendrium vulgare* Discovered in Tennessee.” Mr. Williamson did not visit the site, but was sent the fern along with other Pteridophyte specimens by a “Mr. Cheatham”. This Mr. Cheatham describes finding the fern in great detail – and he also describes the pit as being approximately 40 ft. deep (today it is about 70 feet deep). It

certainly wasn't deep enough to prevent him from climbing down in it using only a pole! He doesn't describe how many plants are there, but he does describe how many times he collected and gives some evidence that there was plenty to collect:

“In a few days I came again, provided with a rope, by which I descended and returned with an armful of plants. The following summer I returned to get more specimens of my Deer-Tongue, so I took two men, had two trees cut down, making a ladder by which I reached the bottom of the sink, and secured my prizes.”

Continued on page 7...



Hart's Tongue Fern with coin for scale.

TNPS Newsletter

This newsletter is a publication of the Tennessee Native Plant Society and is published four times a year, generally in February, June, August, and November.

The Tennessee Native Plant Society (TNPS) was founded in 1978. Its purposes are to assist in the exchange of information and encourage fellowship among Tennessee's botanists, both amateur and professional; to promote public education about Tennessee flora and wild plants in general; to provide, through publication of a newsletter or journal, a formal means of documenting information on Tennessee flora and of informing the public about wild plants; and to promote the protection and enhancement of Tennessee's wild plant communities.

Dues for each calendar year are:

Regular: \$20

Student: Complimentary

Institution: \$50

Life: \$250

Dues may be sent to:

Tennessee Native Plant Society

P.O. Box 159274

Nashville, TN 37215

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Please send comments and material for the TNPS newsletter to sannfleming@gmail.com

A Letter from the President

Hello everyone,

We've had a beautiful spring, and I hope you have been out and about to look at Tennessee's great plants.

It's not too early to start planning on coming to the Annual Meeting in September! Details are included in this newsletter. We are planning a great meeting and hope to see you. You will get information about sharing photos and getting your plant questions answered at our annual meeting.

Hope to see you there,

865-938-7627, ssretiree@yahoo.com

Thanks to all,



Certificate in Native Plants

Interested in deepening your understanding of native plants, or learning about ecological horticulture, sustainable landscape design, or maybe nature journaling or even basic botany? If so, you should look into the courses offered in the Chattanooga area through the Certificate in Native Plants, which TNPS is co-sponsoring with the Tennessee Valley Wild Ones (TVWO) and Reflection Riding Arboretum and Nature Center.

Whether you think you might like to go for certification, which involves a volunteer component as well as coursework, or just want to take some of the classes for fun, you as a TNPS member are eligible to participate for a reduced fee. On July 9, for instance, I will lead a half-day workshop in nature sketching and journaling, which has become a real interest of mine. The regular fee is \$45, but TNPS members can take part for \$35. In August, Ann Brown will teach a class on pollinators, and in the fall I will team up with fellow TNPS member Richard Clements to teach two full-day classes in the Form, Function, and Beauty of Plants (translation: basic botany, which I really enjoy). All of those classes will take place at Chattanooga's Reflection Riding.

Continued on page 3...

2016 TNPS Annual Meeting
September 16–18, 2016
Please complete and return by August 1st

* REQUIRED

Registrant # 1

Name* _____
Address _____
Telephone _____
Email* _____
Special Needs: _____

Registrant # 2 (if applicable)

Name* _____
Address _____
Telephone _____
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Special Needs: _____

~~~~~Registration Fees~~~~~

| FEES                          | INDICATE NUMBER* | TOTALS* |
|-------------------------------|------------------|---------|
| \$15.00/person                | _____            | _____   |
| \$90.95/night (1 or 2 nights) | _____            | _____   |

**TOTAL ENCLOSED:** \_\_\_\_\_

Mail check payable to TNPS to:

TNPS Conference  
725 Creek Dr.  
Chattanooga, TN 37415

*Cont'd from page 2...*

In 2013, Reflection Riding launched the certification program, in partnership with TNPS and TVWO. It was inspired by established programs like that of the New England Wildflower Society and newer programs that had popped up at the Birmingham Botanical Gardens and the University of Georgia. TNPS members Larry Pounds, Richard Clements, and I were among the initial instructors. After staffing changes at Reflection Riding, TVWO stepped in to take the lead in managing the program. They held a 2-day retreat in February at which Mitchell Kent represented TNPS. There, our partnerships were renewed, educational curriculum established, and a restart date of summer 2016 selected.

Sounds right in line with TNPS, doesn't it? And I can tell you from working with members of the Tennessee Valley chapter that they are an energetic and savvy group. They take field trips, too, and they've arranged for our own Dennis Horn to show them May Prairie.

If you live anywhere near the Chattanooga area, I encourage you to look into the Certificate in Native Plants. For more information, google Tennessee Valley Wild Ones or email me at marypriestley@bellsouth.net.

*~ Mary Priestley*



## When Are Dues Due?

Unless you are an email subscriber, check your mailing label for your membership date. You are paid through the year listed just above your name. You can pay TNPS dues at any time, and now you can pay online at the TNPS Website. Just go to [www.tnps.org](http://www.tnps.org), click "Membership," and follow directions there. If your address has changed, you can email the new address to [info@tnps.org](mailto:info@tnps.org). We cannot print the newsletter in full color, but you may be pleased to find all the color in email copies and at the website. [www.tnps.org](http://www.tnps.org)

# 2016 TNPS Field Trips

## Monte Sano Preserve, AL, March 19, 2016

Oh, these early spring wildflower field trips! The spring ephemerals definitely earn their monikers as there can be a very narrow window when trying to catch them in bloom. So each year, we leaders fret and worry about will they or won't they be in flower. This was the case for the Monte Sano Preserve trip, as the highlighted species, American trout lily (*Erythronium americanum*), can be notoriously difficult to catch at peak bloom. This year, the season seemed to be a bit ahead of normal, so we were hoping the trout lilies would still be hanging in there.

As we gathered at the Wildflower Trail trailhead, we had a large group of TNPS folks joined by an even larger group of people from the Land Trust of North Alabama, who oversee the preserve. Cathie Mayne gave a short talk about the Land Trust's work and Brian Finzel from the Huntsville Wildflower Society highlighted some of the plants that could be expected on the trail. Finally, we embarked on the trail, and immediately were amazed by the carpet of trout lilies draped on the slopes above the creek. As it was still early in the morning, most of the flowers were just beginning to open (on the return trip, most were fully open, inviting lots of camera clicks). Unfortunately, we were just past peak flowering, but there were still many dozens of blooms in good condition. One could only wonder what the previous weekend would have looked like.

This trail held very good species diversity and we were lucky to catch quite a lot in flower, either just holding on or just coming on. Some highlights were long-spurred violet (*Viola rostrata*), large-flowered bellwort (*Uvularia grandiflora*), round leaf ragwort (*Senecio obovatus*), shooting star (*Dodecatheon meadia*), purple phacelia (*Phacelia bipinnatifida*), rue anemone (*Thalictrum thalictroides*), false rue anemone (*Enemion biternatum*), Mercury spurge (*Euphorbia mercurialina*), common wood violet (*Viola palmata*), twisted trillium (*Trillium stamineum*), Virginia bluebells (*Mertensia virginica*), wild geranium (*Geranium maculatum*), and Virginia spring beauty (*Claytonia virginica*).



Bloodroot - *Sanguinaria canadensis*



Yellow Trout Lily - *Erythronium americanum*

After lunch, we ventured a bit further to the Mountain Mist Trail at Monte Sano State Park. This is a higher elevation trail and some of the earlier spring flora was at peak here. Masses of bloodroot (*Sanguinaria canadensis*) were scattered all along the trail. Other species in flower included harbinger-of-spring (*Erigenia bulbosa*), sweet Betsy (*Trillium cuneatum*), blue cohosh (*Caulophyllum thalictroides*), cutleaf toothwort (*Dentaria laciniata*), smooth yellow violet (*Viola pubescens*), star chickweed (*Stellaria pubera*), baby blue eyes (*Nemophila aphylla*), and sharp-lobed hepatica (*Hepatica acutiloba*).

I would like to thank Linda Berry for bringing these sites to my attention and helping plan and organize the field trip.

## 2016 TNPS FIELD TRIPS

### Fontanel and Elizabeth Cave Property, Davidson Co., TN, April 2, 2016

The e-mails kept coming and the group swelled to over 40 participants for this cool April Saturday.

When I called Fontanel to confirm TNPS was coming, I was informed the trail we planned to hike was closed because of construction at the outdoor amphitheater. However Darel located the grounds manager that morning and gained permission for us to hike the trail.

The trail was wet in spots from recent rain. The trail forms a horseshoe loop around the Fontanel mansion, and the massive log structure could be seen from the trail. Some of the early flowers were past including yellow trout lily and bloodroot. A few white trout lilies were still visible as were the cutleaf toothwort.



*Celandine Poppy - Stylophorum diphyllum*

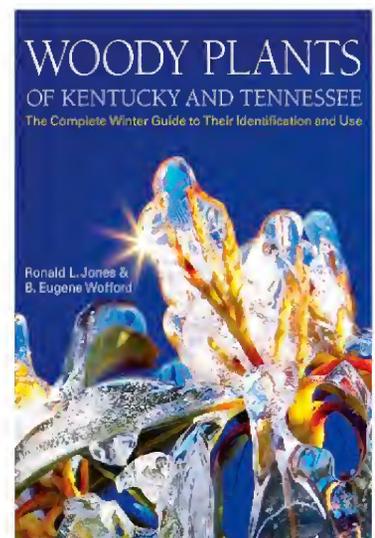
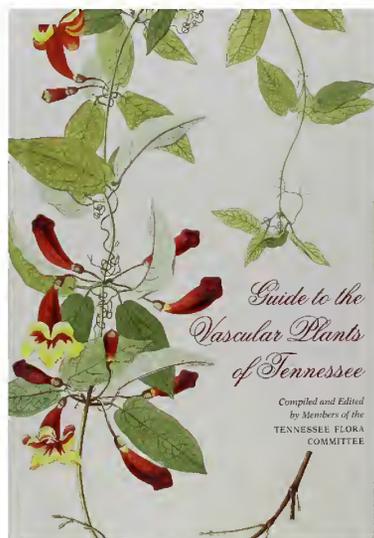
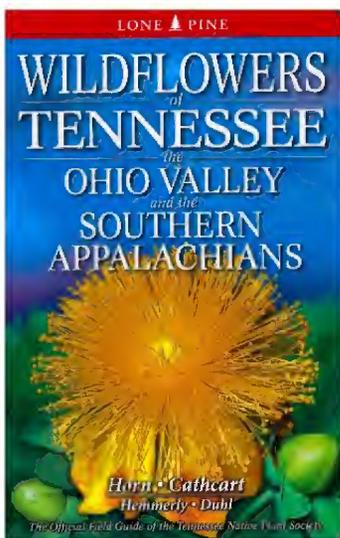
We found Virginia bluebells, purple phacelia, white baneberry, wild ginger, dwarf larkspur, smooth rock cress, false garlic (*Nothoscordum*), wild blue phlox, sweet Betsy (*Trillium cuneatum*) and sessile trillium (*T. sessile*). The false rue anemone (*Enemion*) displays were impressive.

After lunch at Fontanel, most of the group ventured over to Elizabeth Cave's property nearby. This property contains 66 acres of rich wooded ravines nestled in the edge of the Western Highland Rim. Our group found twin leaf (*Jeffersonia*), paw-paw in flower, leaves of small ramp (*Allium burdickii*), showy displays of celandine poppy, green violet, purple cress (*Cardamine douglasii*), and bent trillium (*T. flexipes*). We also found many of the same plants seen that morning at Fontanel. We searched for the puttyroot orchid found on a scouting trip in 2015 but we could not locate it. The group departed after a wonderful day of botanizing.

~ Dennis Horn & Darel Hess

## Don't forget to bring your field guides to the annual meeting at Fall Creek Falls State Park!

All books available through TNPS.



# Exploring Fall Creek Falls State Park

Given that the 2016 Annual Meeting is scheduled to take place at Fall Creek Falls State Park (FCF), I wanted to provide a brief overview of the botanical diversity and unique plant communities that this area supports. I first visited the park in early 2001 and was struck by the stunning waterfalls and the extreme topography of this area, which is located along the western escarpment of the Cumberland Plateau. It was at that time that I determined that I would pursue a floristic inventory of the park as part of my M.S. Thesis at the University of Tennessee Knoxville.

The National Park Service initially set this area aside in 1935, which resulted in the purchase of roughly 16,000 acres from private landowners. This was then deeded to the State of Tennessee in 1944 and dedicated as Fall Creek Falls State Resort Park in 1972. Subsequently, numerous land acquisitions over the last few decades have resulted in the size of the park increasing to approximately 22,000 acres. The late Donald Caplenor pursued previous floristic surveys of the area, however his survey areas were primarily restricted to the gorges and did not include the recently acquired acreage.

My survey of the park occurred from 2001-2002 and documented 879 species within its current boundaries. To put this into perspective, it was determined that FCF has the second richest flora on the Cumberland Plateau, second only to Prentice Cooper State Forest and Wildlife Management Area. This richness is attributed to the immense habitat diversity located both on the upper plateau surface and within the deep gorges.

Some of the very interesting habitats include the seepage wetlands and riparian areas along streams on the plateau surface, cliff faces, waterfall spray zones, and cave openings/karst features.

Based on this survey, it was determined that FCF currently supports sixteen species with either state or federal rarity designations. The discovery of Indian olive (*Nestronia umbellula*) along a slope within Cane Creek Gorge was a physiographic record for the Cumberland Plateau in Tennessee. A unique species that is easily observed within the park is the Northern white cedar (*Thuja occidentalis*), which is found as a stunted form upon the cliff faces near the Cane Creek Falls Overlook. By following the Cable Trail to the bottom of the gorge and walking upstream, it is possible to get a closer look at these plants and potentially observe branches at the base of the falls that were knocked off from the force of the falls. FCF also supports one of the more robust populations of the Virginia spiraea (*Spiraea virginiana*), which is federally listed.

Other highly recommended areas, which are easily accessed, include:

- Trail to the base of Fall Creek Falls where you can see red elderberry (*Sambucus racemosa*), which is more typically restricted to the mountains of East Tennessee.
- Trail along Camps Gulf, which includes cliff faces, cave openings, and a rich floral diversity.
- Numerous overlooks within the park, which include outcrops of erosion resistant sandstones and xeric species that are adapted to extreme exposure and shallow soils.

~ Chris Fleming is a senior scientist at BDY Environmental, LLC. He is also a contributing author to the Guide to the Vascular Plants of Tennessee.

## Don't miss the annual meeting at Fall Creek Falls State Park!

### September 16 - 18, 2016



Do you have photos from trips you'd like to share? Are you interested in other TNPS News? Stay up to date and follow us on facebook! Post your photos, write your own field trip reports, let us know about botanical goings-on in your neck of the woods!  
facebook.com/tennesseennativeplantsociety

## Cont'd from front page...

This “Mr. Cheatham” was the brother of General Cheatham (who has his own fascinating history). He was in charge of one of the branches at the State Prison and was also in charge of finding new mining pits – a task that allowed him to exercise his other interests in the natural world. Not knowing that this was a species already described, he named it “Bune Fern” after O.R. Bune, who owned the property at the time. I like to interpret his italicized “Deer-Tongue” as hinting at some disappointment that it was a known species. Personally, I am unaware if these specimens have survived or where they may be today.

Shortly after this, news spread of the fern and it sounds like botanists as well as laymen were visiting the site for collection. Some may have formally contacted the Lodge family (the landowners for much of the site’s written history, and the same Lodge family responsible for much skillet-baked cornbread), and some may have trespassed but it is difficult to determine. Eleanor McGilliard, University of Tennessee at Chattanooga’s first herbarium curator, wrote the Lodge family in 1935 trying to learn more about the fern and how it came to be rare. She alludes to over-collection in one of her questions: “I know that there were a great many plants in 1900, and that soon after that scientists took many specimens for herbaria and laymen took many to transplant. About what year did the Lodges realize that they were becoming too scarce?” Mr. Lodge’s response might allude to the fact that there was more visitation to the site than the Lodge family was aware of, as he states that he didn’t think many specimens had been taken from the site. Or, perhaps, natural degradation of the habitat may have been the primary contributor to its seemingly sudden collapse?

One visitor Mr. Lodge does describe is an Englishman that visited during his childhood. The man he simply calls “Mr. Middleton” and refers to him as a fine botanist who had learned of the fern through “scientific channels.” It sounds like this Mr. Middleton was settled in the area, somehow in relation to the cement plant that had made South Pittsburg “a town of prominence.” Middleton is described later by E.L. Lee in 1906 as “an enthusiastic botanist, who had a mania for snakes and ferns.” Eleanor McGilliard also later mentions that Middleton was in the area selling insurance – but clearly he was bored with that and more interested in botany!

The “rumor” about someone spreading spores from a Canadian population of *A. scolopendrium* var. *americanum* is attributed to Mr. E.W. Graves and a written account of this spore-spreading event was published by Eleanor McGilliard in 1936 in the *American Fern Journal*:

*“[Graves] told me that in 1929 he had carried with him spores from a plant growing in his garden which had originally come from Owen Sound, Ontario. These he sowed on the top of the south slope and toward the south-west. He felt sure there were no plants on the upper shelf at that date.... It is with great pleasure that we report at least twenty-six plants flourishing in the year 1935. We must add, though, that probably only the four adult plants on the lower shelves are from the original stock, while the twenty infants are no doubt from spores, (mentioned above) and at least the large plant on the upper shelf has likely been planted there since 1929.”*

My descent into the pit was ungraceful. Having no experience in outdoor climbing or rappelling, I was given only quick instructions, some confident reassurances and some coaching about how to proceed. I flipped upside down briefly, said a few words that won’t be repeated here, and then I righted myself and steadily made my way to the bottom of the pit floor. Shaking uncontrollably, I began madly photographing it while Mike Serviss followed. While I was photographing, he spotted a fern... and then another... and then... yes... another... and finally we began to realize there were quite a few of them scattered around us! Most of them were one or two fronds, the biggest of which were only two inches in length. The substrate is slick, covered in wet leaves and numerous bryophytes, and we were careful to walk the same



*The group present for the 2016 site visit.*

## THE TORREY BOTANICAL CLUB

SOUTHERN APPALACHIAN  
BOTANICAL CLUB

Fern Atlas of North America (2d ed.) \$8.00  
 American Plant Names (3d ed.) \$3.00

WILLARD N. CLUTE & CO.  
 Indianapolis 8, Indiana

paths to keep the disturbance minimal. Finally after counting all the individuals, photographing each one with a coin for scale and taking some data on canopy cover, Mike took out his clipping scissors. We choose the healthiest plant with the most fronds and very gingerly he clipped a piece and placed it in a plastic ziplock. This specimen will be included in a study that looks at the genetics of this species across its range. Amongst the questions that this study will answer is the question of whether or not Mr. Grave's spores survived in the pit?

Examining the history of this site, it's clear that there seems to be the initial and precipitous decline close to the turn of the century. Coupled with or following this event, there are accounts of major flooding events changing the structure of the pit and washing away suitable habitat. The numbers do not even get close to those reported in the 1800's, but there is still a waxing-and-waning of sorts that can be seen in the data with the surviving individuals. This can lead one (or at least me) to questions whether or not the Canadian spores did survive, or if in fact what Eleanor McGilliard saw was just a "boom" year for the original population? Time will tell and there is a lot to speculate over, but only one mystery will be solved while the answer will sprout many more questions!

-Sunny Fleming

*Eleanor McGilliard included the two group photos taken on the 1947 visit in the back of a copy of the American Fern Journal. She is second from the right.*

TNPS Newsletter  
 P.O. Box 159274  
 Nashville, TN 37215