The Sewanee PLANT PRESS

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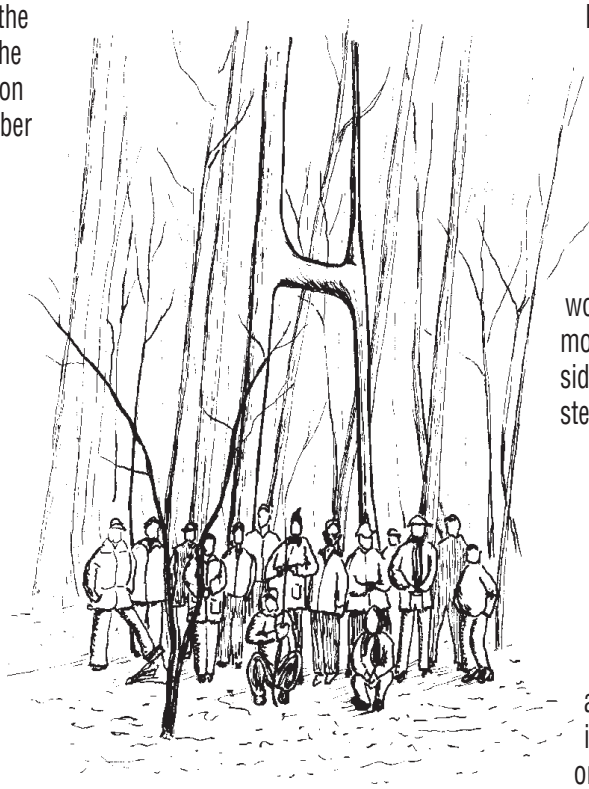
# Sewanee's H Tree

One of the frequent trip offerings of the Sewanee Herbarium is "A Visit to the 'H' Tree." With no further explanation this simple title has attracted a large number of curious persons. What is the H tree?

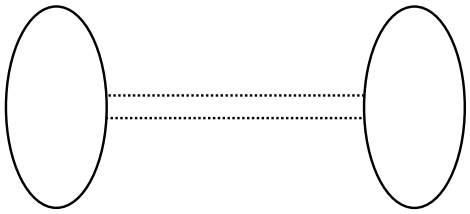
The H tree is really two trees that appear as an "H" because of the natural graft of a lateral branch of a white oak tree with the trunk of another white oak. They grew about five feet apart and a branch about 15 feet up the south tree made contact with the tree to the north. Against great odds, there was enough abrasion to produce contact of the two cambial layers and then enough stability to allow them to grow together. This was many years ago.

As they appear today, the north tree is the larger and it seems to be larger above than below the prominent lateral cross branch. The south tree is smaller above than below the cross branch and the top part is not doing well. The topmost few feet have died and fallen off. This is probably the forerunner of a lower case "h" tree since the other parts appear to be healthy. The cross branch looks larger than the south trunk and is thickened on the upper side as it joins the north trunk. It appears that the main growth pattern is up the lower south trunk, across the lateral branch, and up the north top.

The "H" configuration is extremely rare but it demonstrates clearly a fairly common but rarely recognized growth phenomenon called **reaction wood**. Reaction wood is growth in a special part of the stem that causes a change in form or direction. It has often been observed that young trees that are held in rigid upright position by use of guy wires do not develop as large a trunk diameter as those that are left free for the wind to bend them back and forth.

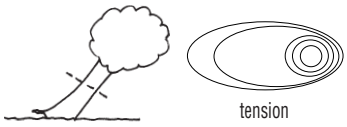


Reaction wood in the form of **tension wood** plays a role in shaping the form of the H tree. When observed from a site facing the H, the trees appear to be "normal" but on closer inspection the lower trunks are seen to be elliptical in cross section:

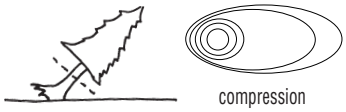


The connecting lateral branch of the H tree acts like a brace and prevents significant movement parallel to the two stems, but allows movement perpendicular to the H.

Reaction wood can be seen in the cross section of a tree that has tilted or fallen over but with roots intact enough to keep the tree alive. It will show a pattern of circular growth rings in the center until the point when the tree was upset. If the tree was an Angiosperm, the group to which most of our deciduous trees belong, one would see a bulge of tension wood where most of the new growth occurred on the top side. This growth tends to pull the upper stem to the vertical:




In Gymnosperms, the group of pines and other needle evergreens, the response is **compression wood**, which forms a bulge on the lower side of the stem and tends to push the tree to a vertical position:




To put this in layman's terms: if you had a prized tree that fell and you wanted to set it upright you have two choices, you could get a crane to lift it, as with Angiosperms, or you could get a jack to push it up as the Gymnosperms do.

Sewanee's H tree is located about 0.5 miles down the Old Cowan Road below the Cross. It can be enjoyed as an attractive specimen of nature or as a scientific study of nature's engineering.

*—George Ramseur*

# Sewanee Grad Enjoys Botanizing in the Southwest

*Caitlin Elam, Herbarium summer intern '03 and '04, emailed this winter from Yuma, Arizona, where she is working for the Bureau of Land Management. She wrote, "I love hiking in the desert and I have been able to see some of the West and Mexico as well, which is awesome. I just botanize everywhere I go. I love it — I can't help it, so thanks again, because without your help and encouragement I might never have realized that this makes me happy." We wrote back and asked her to elaborate a bit on her work. The following is from her response. — Mary Priestley*

In this past year spent working with the Bureau of Land Management in Arizona, Caitlin Elam (C'03) has put her botanical background to good use. "I have to key out everything now, often from the beginning, but I like doing it, it's like figuring out a puzzle and it always feels rewarding in the end." She has done various surveys for native, rare, and invasive plants and has even found time to start a herbarium and accompanying database for use by her colleagues.

Her herbarium consists mainly of herbaceous species so far. But a great many of the desert plants are woody, and the desert version of "herbaceous" is quite different from many eastern plants. It almost always includes some sort of adaptation to deter desiccation: spines, hairs, or waxy coatings.

Caitlin's first job was to survey a 1300-acre area that was recently burned. Trees that she found included mesquite, cottonwood, and several types of willows (*Salix*, *Chilopsis*, and *Bacharis*). She also located a variety of other perennials. This tract is being invaded by salt cedar (*Tamarix* spp.) and Sahara mustard (*Brassica tourniforti*), which Caitlin and her coworkers are trying to control, with the help of boy scout troops and other volunteers. Caitlin explains, "The salt cedar was introduced to stabilize the banks of the channelized Colorado River but is now one of our worst invasives all along the river." They use root rakes and chippers to remove the pest plants and then replant with natives.

How does the flora of the Southwest compare with that of the hills of Tennessee? Caitlin has found a number of genera in the desert that she recognized from her Sewanee days. In general, Sewanee seems more diverse than the desert, but "One would be surprised at the hidden diversity in the desert. It just has to wait for the right moisture at the right time to really show off."

Many of the desert's rare plants are beginning to flower now. "We don't get much rain here obviously but when we do at the right time we have a whole bundle of winter annuals which are beginning to sprout up right now. So I have my work cut out for me after a long dry period." Soon she will begin surveying likely localities for rare plants and using GPS technology to record the locations of those that she finds.

Graduate school is in Caitlin's plans, as is a return East. "I miss the forest," she explains. We will watch with interest as this young botanist's career unfolds.


## THE PLANT PRESS

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*Drawings by Mary Priestley*


# Botanical Happenings

### Tennessee State Natural Areas Week

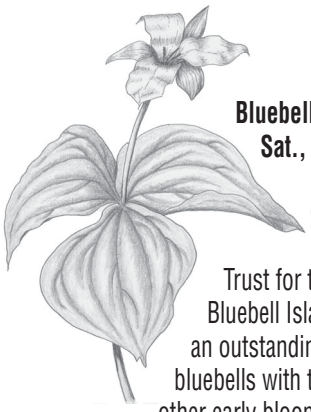
Tennesseans are encouraged to join together in a weeklong celebration of State Natural Areas Week to be held March 29–April 4 (see Spring Calendar of Events). Natural Areas Week will be celebrated across the State with hikes, canoe floats, and interpretative programming at many of Tennessee's 68 State Natural Areas. These unique lands are preserved in perpetuity, and protect habitat for many species of rare plants and animals.

For more information about Natural Areas Week events in each state region call: (northeast) 865 594–5601, (southeast) 423 634-5774, (middle) 615 741-9205, (west) 731 512-1369 or go to the natural areas webpage at <www.state.tn.us/environment/nh>. The Natural Areas Program is administered by the Tennessee Department of Environment and Conservation.

### Trails and Trilliums

"Trails and Trilliums," a Native Plant Celebration and Sale at St. Andrew's-Sewanee School, will take place May 1 from 10 a.m. to 4 p.m. on the SAS campus in Sewanee. The event will include wildflower walks (see Spring Calendar of Events), guest speakers, and workshops. More than 2000 native plants (ferns, wildflowers, trees, and shrubs) will be available for sale, along with garden and plant accessories. Trails and Trilliums is sponsored by the SAS Parents' Council. For information, call 931 598-5651 or email wildflowers@sasweb.org.

# Spring Calendar of Events



**Bluebell Island**
**Sat., March 27, 10 a.m.**
Join the South Cumberland Regional Land Trust for their annual Bluebell Island Ramble to see an outstanding display of bluebells with trout lilies and other early bloomers. Meet at the Tyson Food Co. plant on Highway 50 in Decherd. Easy except for crossing the Elk River on a log (if it's still there!).

**Shakerag Hollow**
**Sat., April 3, 9 a.m. George Ramseur, Yolande Gottfried**
**Sun., April 4, 12 noon. Mary Priestley, Jeanne Lumpkin**
The Sewanee Herbarium staff is leading walks for the 9th Annual Spring Wildflower Celebration presented by the Tennessee Aquarium and The Tennessee Wildflower Society. These walks are open to the local public. Meet at Green's View parking lot (past the golf course). 2 miles, moderate, with one fairly steep incline.

**Collins Gulf**
**Sat., April 3, 10 a.m. Mary Priestley**
**Sat., April 10, 10 a.m. Mary Priestley, Ranger Jason Reynolds**
The April 3 walk is part of the Tennessee State Natural Areas Week celebration. Collins Gulf, in South Cumberland State Recreation Area, is the only other local spot that rivals Shakerag Hollow for numbers and diversity of spring wildflowers. Meet at the Collins West trailhead, just beyond the Swiss-Memorial School in Gruetli-Laager. Bring lunch and extra water. 5 miles, strenuous, with one difficult creek crossing.

**Buggytop Trail**
**Sat., April 17, 10 a.m. Yolande Gottfried**
Co-sponsored with the South Cumberland State Recreation Area as part of their Spring Wildflower event. Hike with Yolande and a park ranger down to the area outside the entrance to Carter Cave to see some wildflowers, such as bishop's cap, not seen in Shakerag. Meet at the Buggytop/Carter Cave trailhead parking area on the Sherwood Road (Hwy. 56). Bring lunch and extra water. 4 miles round trip, moderate to strenuous.

**Shakerag Hollow**
**Sun., April 18, 1:30 p.m. George Ramseur**
This is Sewanee's "Mecca" for wildflower lovers, and this leader is the expert. Meet at Green's View parking lot (past the golf course). 2 miles, moderate, with one fairly steep incline.

**Birdwatching at Morgan's Steep**
**Sat., May 1, 8 a.m. David Haskell**
This is a good time and place to spot spring migrants on their way through and Sewanee's summer birds newly arrived, with a professor of ornithology. Canceled in the event of rain.

**Trails and Trilliums**
**Sat., May 1, 10 a.m. to 4 p.m.**
St. Andrew's-Sewanee School is sponsoring a day of wildflower sales, walks, and workshops. Among the events will be walks in Shakerag Hollow, as follows:

10:30 a.m.—Harry and Jean Yeatman
1:30 p.m.—George Ramseur and Mary Priestley
2:30 p.m.—Jon Evans and Yolande Gottfried
Meet at the St. Andrew's-Sewanee School Campus. 1 to 2 miles, moderate, with one fairly steep incline.

All times are CST or CDT.

Wear appropriate shoes on all of these walks. Risks involved in hiking include physical exertion, rough terrain, forces of nature, and other hazards not present in everyday life. Picking flowers and digging plants are prohibited in all of the above-mentioned natural areas.

For more information on these events contact Yolande Gottfried at the Herbarium (931.598.1798) during regular business hours or by e-mail at <ygottfri@sewanee.edu>. For directions to Collins Gulf or Buggytop Trail contact the South Cumberland State Park Visitors' Center (931.924.2980).

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# 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):

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Amount Enclosed: o $10.00 o Other: $ _____

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

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

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# New Conservation Easement at Bridal Veil Cove

The Land Trust for Tennessee is proud to announce the permanent protection of 161 acres of the Bridal Veil Cove, one of Tennessee's spectacular wild and rugged mountain gorges. Donated as a perpetual conservation easement by landowners Terri and Roland Monette of Tracy City, TN, and their partners Marilyn and Jim Anthony of Trussville, AL, this is The Land Trust's first project in the South Cumberland Mountains and Sequatchie Valley region of Tennessee.

Working with The Land Trust's South Cumberland and Sequatchie Valley staff and volunteers, which includes the Herbarium staff, the owners were able to permanently protect the acres but maintain its ownership. The Bridal Veil Wilderness Preserve has scenic waterfalls, cascading mountain streams, abundant and diverse wildlife, prehistoric human habitation sites, rugged cliffs, and caves. The cove is home to a number of rare bird and plant species including the Yellow Billed Cuckoo, Ginseng and the American Chestnut. With assistance from University of the South researchers, many of these unique features were documented during the course of the project.

Tenacious volunteers Mary Davis, Caitlin Elam, Dr. Jon Evans, Yolande Gottfried, Dr. David Haskell, Mary Priestley, Dr. George Ramseur, and Brett Scheffers hiked different sections of the cove, over boulder fields covered in poison ivy, to help assay the plant and animal life in the cove as part of the baseline documentation (see *The Plant Press*, Autumn 2003, "Summer 2003 Herbarium Activities"). Their report will serve as the benchmark for stewardship of the conservation easement through time. With their help, The Land Trust was able to quantify the species present thus verifying the importance of the cove and its protection. The landowners hope the study of the cove's resources will be an ongoing educational opportunity for the Herbarium and the University.

*—Buck Gorrell*
*South Cumberland–Sequatchie Valley*
*Project Manager*
*The Land Trust for Tennessee*

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