

Sewanee's American Chestnut Orchard

The email from Sewanee classmate Jack Agricola (C'72) arrived November 11. Titled "Save the Date," Jack was inviting me and other members of our class to help plant something called a "progeny orchard" of American chestnut trees on the Domain.

Jack reminded us of the ceremonial planting of four American chestnut seedlings on the central campus between Spencer and Snowden academic buildings that was part of our class's 40th reunion celebration in 2012. The previous summer, I had participated in another small planting of seedlings on a former pine plantation in Compartment 20 on the western part of the Domain.

Jack and I were at Sewanee during an unusual time. The Vietnam War, which was to end in 1975, was in its last throes. Some of our classmates were veterans. And we helped celebrate the first Earth Day in 1970 by picking up roadside trash. On Earth Day 1971, we sat in chapel as the assistant chaplain gunned his motorcycle and roared through the building, followed by students who poured cans full of garbage in the middle of the nave. The message: are these actions any more disrespectful than what we are doing to Creation? Whether or not we agreed with the tactics, the point was clear.

Jack put it this way: "As we absorbed pretty heady world events at varying rates, one thing I conclude is that we gained an environmental sensitivity for efforts of restoration in general or we developed a lingering desire to 'make things right again.'" And so he invited us to help establish an orchard of these embattled trees as part of the effort to bring the species back as a player in the forests that it dominated before being ravaged by the chestnut blight early in the 20th century.

In response, some of us came in early December to help Domain Manager Nate Wilson, a number of forestry students, and members of The American Chestnut Foundation (TACF) to plant approximately 800 blight resistant seedlings, called Restoration Chestnut 1.0, on a clearcut pine plantation on the western reaches of the Domain. The trees represent the 30-year culmination of breeding efforts to develop a natural resistance to the blight that has reduced

this keystone species to functional extinction. The purpose of this orchard, and others like it, is to test the ability of the tree to survive in a natural environment.

The seedlings were all raised at TACF's Meadowview Orchard in Virginia. Each is labeled with a tag identifying its genetic heritage, the orchard and block where it was grown, and the individual seedling itself. They were laid out in a grid on a 2.5-acre clearcut far back in the western reaches of the Domain—out Breakfield Road and beyond. Around the circumference



of this grid planting, another 200 chestnut trees were planted to serve as a buffer between the monitored plants and the forest.

The idea of Sewanee's co-sponsoring this orchard with TACF emerged from discussions between Sewanee forestry professor Ken Smith, Domain Manager Nate Wilson, and my classmate Jack. Thomas Saielli, TACF regional science coordinator, oversaw the three-day planting. One evening he gave a presentation about the American chestnut breeding program and the science behind the progeny test at Sewanee.

Alec Hill, a junior double majoring in forestry and English, was one of the student volunteers. He worked with a team of five to move a 100m tape through the planting area, setting out a grid, and indicating with spray paint the locations where the seedlings should be planted. "It was interesting to meet other volunteers from differ-

ent walks of life, all with different motivations behind their willingness to give of themselves to this project," Alec commented recently.

Once the mighty giants of the eastern forests, American chestnut (*Castanea dentata* (Marsh.) Borkh.) trees numbered in the billions. Before the accidental importation of *Diaporthe parasitica* Murrill, the Asian fungus that caused the chestnut blight, the tree may have comprised 30% of the canopy on the Domain. The American chestnut was fast-growing and massive, reaching heights of 100 feet and diameters of five to six feet. A prolific producer of large nuts, the chestnut was a nutritional mainstay for humans as well as for forest animals.

By 1950 the fungus had killed an estimated four billion mature trees from Maine to Georgia. Several attempts to breed blight-resistant trees in the mid-1900s were unsuccessful. In 1983, a group of scientists formed The American Chestnut Foundation with a mission to develop blight-resistant trees. Now assisted by nearly 6,000 members, volunteers, and partners, the organization is undertaking the planting of potentially blight-resistant trees in select locations throughout the eastern U.S.

Sewanee's Office of Domain Management will be monitoring the seedlings and controlling competing vegetation on the site until the trees are tall enough to shade out competition. Nate Wilson further explained, "This study is intended to test viability of the b3f3 hybrid in a single silvicultural context (clearcut). We hope that further partnerships can involve outplantings within the native forest in replicated silvicultural settings to learn more about how microclimate and canopy cover affect growth."

—Mary Priestley

Portions of this article appeared in The Sewanee Plant Press summer 2012 issue lal.sewanee.edu/herbarium/ and online in Sewanee Today news-archive.sewanee.edu.

See Robin Gottfried's review of *American Chestnut: The Life, Death, and Rebirth of a Perfect Tree*, by Susan Freinkel in the Winter 2014 issue of *The Sewanee Plant Press*.

Callie Oldfield, Post-Baccalaureate Fellow

Meet Callie Oldfield, the herbarium's new post-baccalaureate fellow. Although she isn't slated to graduate until May, Callie has completed all requirements for her major in Biology with a minor in Environmental Studies. So she's decided to come work with us until she goes to graduate school.

Her first project is to prepare a paper on the flora of the Domain for submission to a journal this spring. At the heart of the paper is the list of plants that have been identified on the Domain. Among the 1100-plus different taxa (species, subspecies, and varieties) that we have found here, three or four are records for Tennessee and two are new to science, according to Dr. Dwayne Estes of Austin Peay State University.

You'll be able to keep up with her work on the flora and other projects through our blog,

The Goings-On of the Sewanee Herbarium, at sewaneeherbarium.wordpress.com.

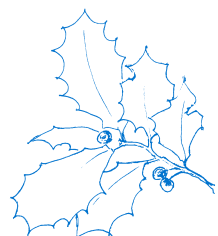


Callie is no stranger to research. The Joelton, Tenn., native has done several inde-

pendent study projects with Dr. Jon Evans. Besides the flora paper, she's working on a long-term (15–20 year) study of chestnut oak on the Domain and one on the interaction between feral hogs and nut sedge on St. Catherines Island. One summer she identified 414 plant species from photos taken by participants in Sewanee's annual Field Study in Belize course, which she herself took a couple of summers ago.

Her plans for the future? "I don't have a really defined directive as far as graduate studies—maybe plant/animal interactions or invasive species," she explained. Meanwhile, we are lucky to have her working in the herbarium.

—MPP



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Winter Calendar of Events

Valentine's Day Mountathon
Sewanee Herbarium, Spencer Hall
Sat., Feb. 14, 9:30–11:30 a.m.
Mary Priestley

Happy Valentine's! Come spend the morning mounting pressed plants and take home a simple handmade card for your sweetie, as well as a guide to mounting pressed plants. Pressed plants are always useful and often quite beautiful. The methods that we use have been passed down through generations. Meet in the herbarium on the first floor of Spencer Hall. The main entrance is across from duPont Library and there is parking behind the library.

Hunt for the First Hepatica
Shakerag Hollow
Sat., Feb. 21, 1:30 p.m.
Yolande Gottfried

A walk to see what might be out early in Shakerag—maybe some hepatica, pepper-and-salt, or star chickweed. If flowers are scarce on the ground, we'll look at mosses, liverworts, lichens, club mosses, and even some ferns, which are not fazed by winter weather. Meet at the trailhead parking area near the University gates. It will be an in and out hike, about two hours depending on weather and hikers, with some steep inclines which may be icy or muddy and definitely will be rocky.

Early Spring Wildflowers
Shakerag Hollow
Sun., March 29, 1 p.m.
Jon Evans

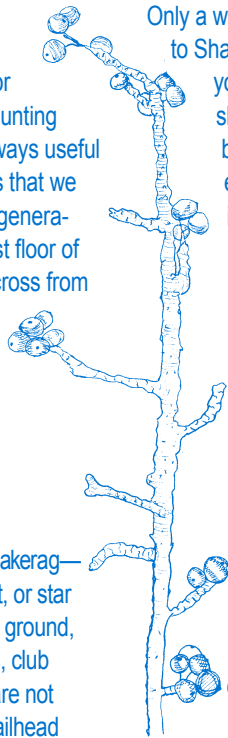
Only a week until Easter and it's time to head to Shakerag Hollow. If you don't get out early you might miss the beginning of the big show—bloodroot, trout lily, Dutchman's breeches, and spring beauties bloom early and fade fast. The walk will also include an introduction to winter botany as the woody plants will still mostly be bare of leaf. Meet at Green's View for this moderate-to-strenuous two-mile walk that may include a steep rocky section of the trail.

Nature Journaling

A nature journaling group, sponsored by the herbarium, meets Thursday mornings, 9–11 in the herbarium. An informal gathering, participants share observations and writing, and sketch plants or other natural objects. Everyone is welcome.

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.



THE SEWANEE PLANT PRESS

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Illustrations contributed by members of the herbarium's natural journaling group.

HERBARIUM BLOG

sewaneeherbarium.wordpress.com

For more information on these or other Sewanee Herbarium events, please call Yolande Gottfried at the Herbarium (931.598.3346) or email at ygotffri@sewanee.edu. Directions are available on the Herbarium website, lal.sewanee.edu/herbarium/, under the calendar of events.

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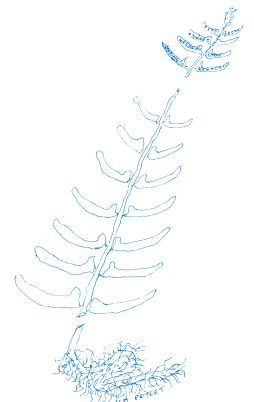
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Nature Journalers Contribute Illustrations

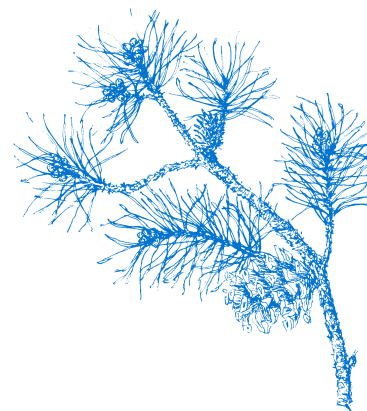
The herbarium's nature journaling group has found a diverse array of plants with which to illustrate this issue of *The Sewanee Plant Press*. It's wintertime, and most of us are finding our inspiration in evergreen plants. Margaret Woods chose a clubmoss, *Lycopodium digitatum* Dill. ex A. Braun, a diminutive plant that is found growing in pure stands of various sizes throughout the Domain. Later in the season, these plants will bear cone-like sporangia that will send spores by the millions into the air. Jim Poteet has sketched another ground-hugging plant, Christmas fern (*Polystichum acrostichoides* (Michx.) Schott). Colonists apparently used these fronds for decoration around the holidays. Margie Gallagher drew another plant that is associated with the holidays, the hemiparasitic mistletoe (*Phoradendron leucarpum* (Raf.) Reveal & M.C. Johnst.), sometimes called oak mistletoe.

My choice was Virginia pine (*Pinus virginiana* Mill.), a hardy conifer that grows on the dry ridges and clifftops, some of the toughest environments that the Domain has to offer (think Piney Point). Hollies caught the eye of both Marianne Sanders (C'16) and Latham Davis. Both species sport bright red berries, which provide wonderful winter fuel for birds and other wildlife. Note that Marianne's possumhaw (*Ilex decidua* Walter) is deciduous, whereas Latham's *Ilex opaca* Aiton is our familiar evergreen American holly.

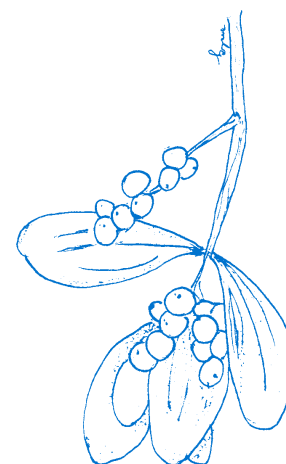
The plants illustrated here are braving the winter weather aboveground, some managing to do a little photosynthesis on warmer days. We can't forget, though, that just beneath our feet there are already stirrings of new plant life. Soon our thoughts will turn to spring and our journals begin once again to display images of woodland wildflowers.

The nature journaling group gathers 9–11 Thursday mornings in the herbarium. If you like the idea of talking about happenings in nature and sketching, photographing, or writing about them, think about joining us. Sit in when you can—we'd love to have you.

—MPP



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