



Botanizing at Lake Dimmick

Sewanee's lakes support some of the most interesting and varied flora on the Domain. Created during the latter half of the 20th century, they provide areas for scientific research and wildlife habitat, and—most importantly—some serve as sources of drinking water. All add immensely to the aesthetic appeal of the Domain. In the opinion of Forestry Professor *emeritus* Charles Baird, “the creation of these lakes has turned out to be the most beneficial physical change on the Domain in the last half century” (Baird, 1996).

Lake Dimmick, formerly known as Day Lake, it is one of the three reservoirs on which the Sewanee community relies for its drinking water. In the 2003 Management Plan, issued by the Office of Domain Management, University Forester Ken Smith and then-Domain Manager Joe Burckle state, “Today with an increase in population both inside and outside the Domain, the protection of Sewanee's water sources has become increasingly important” (Smith and Burckle 2003). It is a tribute to far-sighted University administrators that we have this significant natural resource.

I first visited the area in the spring of 2004, when students in the Department of Forestry and Geology invited me to help identify herbaceous plants there. Their senior seminar project was a study of the lake and its surrounding watershed and the production of a hypothetical land use proposal

for the area. In their report they suggested that, in accordance with the University's mission statement, the land should be left undeveloped and possibly used for recreational and educational purposes (“LCC Consulting, Inc.” 2004).

This past summer, Herbarium staff and summer intern Leighton Reid (C'06) spent several days exploring the environs of Lake Dimmick to document the plant life. We could not help noticing that the 80-acre lake, by far the largest on the Domain (for comparison, Lake Cheston is just over seven acres), is home to a diverse assemblage of wildlife. Great blue herons fish here, as do wood ducks and kingfishers. Beavers have built dams and lodges. We saw box and snapping turtles, a couple of snakes, and, of course, deer. Human use includes hunting (on the portion of the watershed that is not owned by the University) and fishing. Sewanee's crew team practices here.

A remarkably intact second-growth forest surrounds the lake. Of the 15-or-so species of exotic plants that are invading the Domain

forests, only Nepal grass is a serious problem here. Instead, we found a complex upland forest, dominated by oak and hickory, with mountain laurel, blueberry, and wild azalea in the understory. Wild ginger, princess-pine, partridgeberry, and rattlesnake plantain orchids hug the ground. Shrubs not found elsewhere on the Domain include sweetspire (*Itea virginica*), early St. Johnswort (*Hypericum nudiflorum*), and a hackberry (*Crataegus*) that is still to be identified.

The wetland areas along the lakefront [approximately 5 miles long (Willis 2005)], especially the sphagnum bogs tucked into the numerous inlets, are most interesting. Here we found wild raisin; buttonbush; cinnamon, chain, and royal ferns; and wildflowers such as Indian cucumber-root, Solomon's seal, and cowbane. We also discovered the green woodland orchid (*Platanthera clavellata*), which we had feared had been extirpated from the Domain. Much more widespread was the yellow fringed orchid (*P. ciliaris*)—we estimated 150 plants, mostly right at the lake's edge. They were accompanied by

cardinal flower, southern lady fern, arrow arum, and yellow-eyed grass.

Because of its land use history, location, and topography, the diverse flora of Lake Dimmick is providing us with new plant species not otherwise found on the Domain. So far, we have about 10 new species from Lake Dimmick, and each time we go out we find two or three more. Given

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Searching for *Clematis morefieldii*



On Monday June 27, I met herbarium curator Mary Priestley and state botanist Claude Bailey at Sewanee's Memorial Cross to look for the federally endangered flower *Clematis morefieldii*, Morefield's leather flower. After a quick introduction (I had never met Claude) we began hiking south on the Perimeter Trail and then turned off-trail and headed down the mountain toward Cowan.

As we walked, we passed quickly through the oak-hickory forest on the sandstone cap and entered a more seldom seen forest of white and blue ash (*Fraxinus americana*, *F. quadrangulata*), rusty blackhaw (*Viburnum rufidulum*), and aromatic sumac (*Rhus aromatica*) with scattered black walnut (*Juglans nigra*), persimmon (*Diospyros virginiana*), and shagbark hickory (*Carya ovata*). We passed by sandstone boulders covered in crossvine (*Bignonia capreolata*), over mats of thin-stalked yellow pimpernel (*Taenidia integerrima*) and through thick clusters of poison ivy (*Toxicodendron radicans*) that came up to our calves.

After about half an hour on the karst slope, we emerged into a drier, more open patch of red-cedar (*Juniperus virginiana*) on the top of a limestone bluff. Mary and I were admiring the yellow and brown on a blooming prairie coneflower (*Ratibida pinnata*) when Claude exclaimed, "Here it is!"

There, just on the edge of the bluff was a small, rather unhealthy looking vine about two feet long; it was the *Clematis* we had been looking for, and it was (barely) on the Domain side of the yellow-dashed boundary line! A bit more searching in the area revealed about eight individuals,

which were considerably more vigorous than the first. One of these was in flower, and one was fruiting.

As Mary clipped the specimen with fruit to press for the herbarium, Claude explained to me the difference between *C. morefieldii* and its close relative *C. viorna*. First, *C. morefieldii* has small, cobweb-like pubescence along its red stem and *viorna* does not. *C. morefieldii* also has pink, bell-shaped flowers which fade to yellow and green at the tips, whereas *viorna* is uniformly maroon. Finally, *C. morefieldii*'s bracts grow from the base of the peduncle; the bracts on *Viorna* typically emerge closer to the calyx.

There are several reasons why *Clematis morefieldii* is a significant discovery on the Sewanee Domain. *C. morefieldii* is a federally endangered plant, which, until 2005, was considered an endemic to five sites in Madison County, Alabama, all within ten miles of one another. This spring, however, Dwayne Estes, a PhD student at the University of Tennessee, located a population in Hawkins Cove Natural Area just south of the Domain. Since then, Claude has been searching for (and finding) more *Clematis* in the coves and on the treacherously slippery limestone bluffs of southern Tennessee.

The unique thing about our population is that the Domain is currently the northernmost extension of *C. morefieldii*'s native range. Furthermore, we now have a cool new plant to add to the Vascular Flora of the Domain as well as one of the only specimens of fruiting *C. morefieldii* in the world! The realization that we have *C. morefieldii* habitat also ushers in hope for the discovery of smoke tree (*Cotinus obovatus*), *C. morefieldii*'s most important indicator species, which has been searched for on the Domain, but never found.

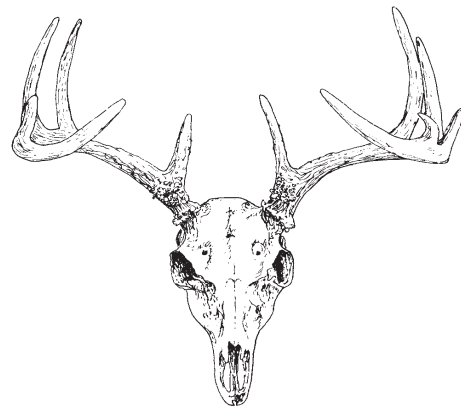
After our *Clematis* encounter, we decided to keep exploring and try to find the boundaries of our tiny, valuable population. As we did so we stumbled upon a couple of unique items, one of which was the perfectly preserved skull

of an eleven-point buck; it even had all of its teeth (which is more than I can say for most of the natives in my hometown of Orange, Virginia). We also discovered a ring of squaw root (*Conopholis americana*) around a white oak (*Quercus alba*). Squaw root's life history is quite intriguing; it is a non-photosynthetic, parasitic plant that extracts nutrients and sugars from oak trees through their mycorrhizal fungal associations underground. It lives most of its life beneath the surface and only emerges once per year in late spring/early summer to reproduce.

Eventually we were able to determine the extent of our *C. morefieldii* population, and using our observations and Claude's knowledge of conditions at other sites, we extrapolated that other patches of *C. morefieldii* may exist on the Domain, but only on dry limestone bluffs between about 1300-1400 feet elevation and only then if the bluff is on the south-facing slope of a streambed that drains west. A fairly limited range for the newest addition to our flora!

Having satisfied all of our appetites for endangered species hunting, we began the long trek back up the mountain. As we approached the top, we came upon a beautiful spring with an old stone basin built into it for water collection. Hot from the hike, we were all happy to splash a little spring water on ourselves, snack on a few blueberries (*Vaccinium corymbosum*), and enjoy the cool air that blew out from between the cracks in the stone wall. It was a fine end to a thrilling day of botanizing.

—J. Leighton Reid '06



Autumn Calendar of Events

Bird Walks

Sat., Sept. 17, Sun., Oct. 2, and Sat.,
Oct. 8, 8-9:30 AM

Join J. Bert Harris C'06 and Dr. David Haskell. Meet at the bluff overlook on Morgan's Steep. Cancelled in the event of rain or high winds. Participants may come on all or part of the walk. Some binoculars will be provided.

How to Identify Plants: a Workshop

Sat., Sept. 24, 9 AM-1 PM, Herbarium Staff

Using the new *Wildflowers of Tennessee, the Ohio Valley, and the Southern Appalachians*, the official field guide of the Tennessee Native Plant Society, and other keys and guides, participants will work through the process of using these aids to "key out" plants and then move to Lake Dimmick/Day Lake to try out our new skills. Bring a lunch. Please bring your own books if you have them. Meet in Room 121 of Woods Labs on the Sewanee campus. Registration is requested (but not required) by contacting Yolande Gottfried (see below).

Wildflowers of Tennessee

Mon., Sept. 26, 1:30 PM, Dennis Horn

Dennis Horn will present a talk and slide show to the Sewanee Garden Club on the recently published *Wildflowers of Tennessee, the Ohio Valley, and the Southern Appalachians*, the official field guide of the Tennessee Native Plant Society, of which he is a principal editor. This is the book used in the plant identification workshop on September 24. All are welcome to attend the talk. Please contact Yolande Gottfried (see below) for directions to the meeting.

Abbo's Alley

Sat., Oct. 1, 8:00 AM, Mary Priestley

Mary will lead "A Guided Walk through Abbo's Alley" on Sewanee's Family Weekend. All are welcome to

participate. Meet in the campus Quadrangle (beside All Saints' Chapel) for this easy one-hour walk.

Trails at St. Andrew's-Sewanee School

Sun., Oct. 2, 2 PM, Yolande Gottfried

Meet in the parking lot behind the gym at St. Andrew's-Sewanee School to explore some sections of their trail system in such diverse areas as wetlands and sandstone outcrops. This will be a moderate 2-hour walk.

Homecoming Open House

Fri., Oct. 7, 4-5 PM

The Herbarium will be joining the Biology Department for an open house during Homecoming weekend. We will be gathering in the courtyard of Woods Labs. You don't have to be an alum—just come!

Out on a Limb

Oct. 19–Dec. 14, The Dead Plants Society

An exhibit of nature journaling and related artwork by Sewanee's Dead Plants Society will be up at Stirling's Coffee House Gallery. An opening reception is planned for Thursday, Oct. 20, at 4 p.m. A reading will be held at 4 p.m. on Sunday, Oct. 23.

Ferns of Sewanee

Nov. 28, 1:30 PM, Mary Priestley

Mary will give a presentation highlighting these lovely and deer-resistant members of our flora to the Sewanee Garden Club. All are welcome. Please contact Yolande Gottfried (see below) for directions to the meeting.

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 931.598.5327 or by e-mail at ygottfri@sewanee.edu.

THE PLANT PRESS

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Tammy Scissom

Drawings by Mary Priestley are of Clematis morefieldii, Lake Dimmick, deer skull, and Platanthera clavellata.

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:

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



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that these plants have not been found on other parts of the Domain after decades of botanizing, this is surely a unique botanical area on the Domain. We look forward to more discoveries this fall and in the future around this increasingly important resource.

—Mary Priestley

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Smith, Ken and Joe Burckle. 2003. 2003 Management Plan Beyond Sewanee's Central Campus: A Ten-Year Strategic Plan for the Domain. http://www.sewanee.edu/Forestry_Geology/OFM_Page/ODM.htm

Willis, Kevin 2005. Landscape Analysis Laboratory, The University of the South. Personal communication.

Update on Pond Research

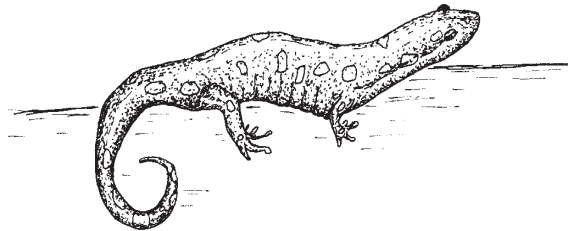
Brett Scheffers (C'05 Environmental Studies Major) presented his Honors research project at the Society of Wetland Scientists conference in Charleston, SC (June 5-10). Brett won "Best Student Oral Presentation" at this national scientific conference and received a plaque and a \$250 prize. We are proud to note that Brett was in competition with graduate students for this award.

Brett's research documented the distribution of ephemeral ponds on the Cumberland Plateau using remote sensing and GIS technology and evaluated the

impact of land use on these wetlands, 1997-2003. In September, Brett and I (along with Kevin Willis and Chris Butler) will be submitting a manuscript based on this research to the journal *Wetlands*.

Recently Brett, Bert Harris and David Haskell submitted a manuscript to the *Journal of Field Ornithology* from their research investigating the importance of ephemeral ponds as nodes of bird diversity on the Plateau. Both Brett and Bert received internship scholarships to complete these projects this past summer.

—Jon Evans



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