



## Sewanee's New Natural History Society

In September, 2005, a group of university students formed an organization called the Sewanee Natural History Society (SNHS) in an effort to promote interest in and understanding of the ecology of the Domain and surrounding natural areas. We lead field trips in search of interesting organisms and habitats; we print a newsletter to document our findings; and we plan to host guest lectures by experts in different ecological fields.

Many students choose Sewanee based on its amazing natural endowment, an 11,000-acre forested Domain where students can learn, reflect and relax. Though some students do regularly take advantage of this blessing, most when asked, say they would like to spend more time in natural areas near the university. Leighton Reid, Valerie Moyer, and I founded the SNHS this fall to make these areas more accessible by providing organized field trips. Since its founding, the organization has led numerous field trips on and off the Domain, held several meetings with the nearly 30 members, and printed three editions of our newsletter, the *Pipistrel*.

To inaugurate our group we took about 15 students to the ephemeral pond near Piney Point to search for breeding Marbled Salamanders (*Ambystoma opacum*). Our first venture was a great success: we located a number of beautiful large females ready to lay eggs under logs around the pond margin. The trip stimulated a great deal of interest and enthusiasm among the participants. Field trip leaders shared what they knew about ephemeral ponds and the life history

strategy of *Ambystoma* salamanders and referred the other students to resources for further investigation.

We continued our outings with several fall migration bird walks at Morgan's Steep co-led by Dr. David Haskell. Those who made it out at 8 AM were treated to an early morning showcase of the great variety of colorful warblers, vireos, tanagers, thrushes, grosbeaks, and orioles that pass through Sewanee's forests for a few weeks each spring and fall as they travel between their Latin American wintering grounds and their North American breeding areas. Some walks had as many as 20 participants who were again very interested in what they witnessed.

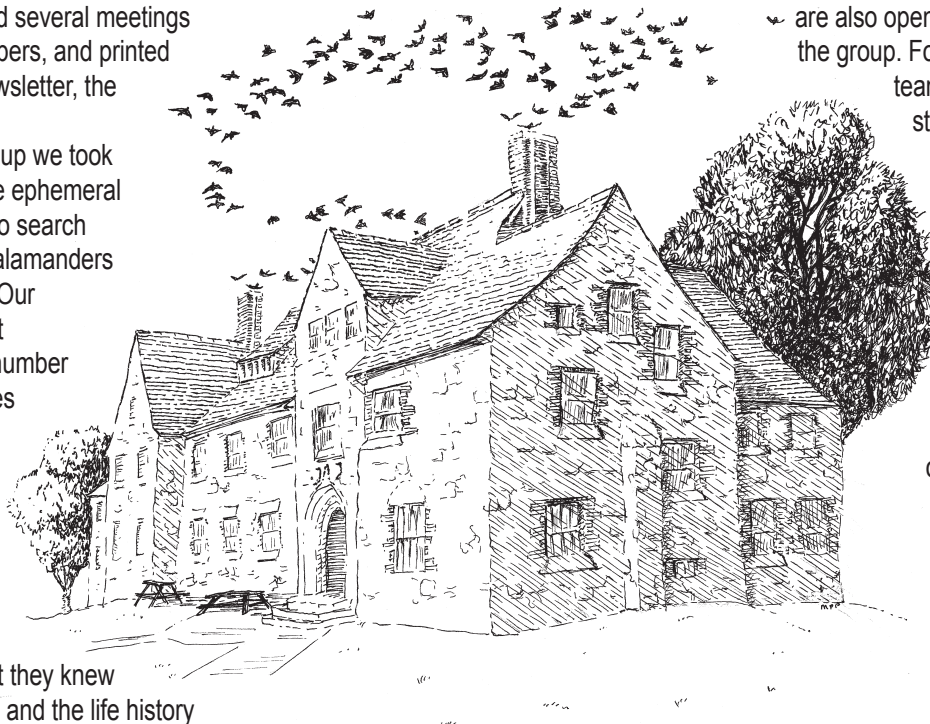
The SNHS even found a way to enjoy migration on central campus. On several September evenings we gathered at Cannon dormitory to witness flocks of hundreds of Chimney Swifts (*Chaetura pelagica*) circle and eventually dive into the

chimney to roost. The birds were stopping in Sewanee on their way to Peru where they winter. We also made a few quick trips to a pond in Winchester to view the site's three wintering Whooping Cranes (*Grus americana*), a highly endangered species.

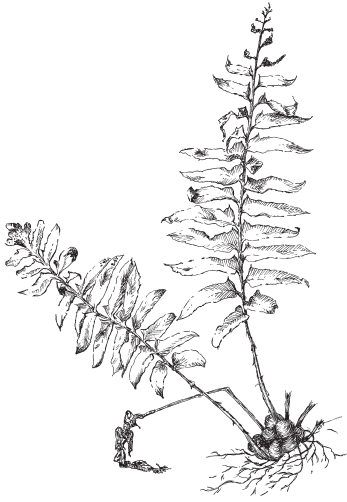
Our last official field trip of the semester was a quest for *Plethodon petraeus*, the Pigeon Mountain Salamander, a species whose worldwide range is made up of a 30 km<sup>2</sup> section of the east slope of a spur of Lookout Mountain in northwest Georgia. In this tiny area, the salamanders are most abundant in wet cave openings that receive leaf litter from the outside forest. After a good deal of searching in Pettyjohn Cave, we turned up one beautiful adult, marking the favorable end to an overwhelmingly successful first semester for the SNHS.

Though our initial efforts focused on vertebrates, we are very interested in expanding our trips to include plants, invertebrates, fungi, geology etc. We are also open to assistance outside of the group. For example, we hope to team up with the herbarium staff and Dr. Jon Evans when the flowers begin to bloom at sites such as Shakerag Hollow and Bluebell Island. We welcome all nature enthusiasts in the Sewanee community; please join us on our next outing!

—Bert Harris



# Forest Research at Cross Creek



**M**uch of the Southern Cumberland Plateau forest has been logged at one or more points during the past century, and Cross Creek, which was selectively harvested with a team of mules in 1960, is no exception. Cross Creek is a small, sometimes subterranean stream that originates in Franklin State Forest, a protected area along the Marion/Franklin county line. At many points along its route, it can be seen only through large holes in the sandstone bedrock called macropores.

On a walk through the Cross Creek watershed during early June, a visitor will first notice the outstanding abundance of wildflowers whose density and variety

distinguish it from other plateau-top forests. An assortment of lilies (Liliaceae) blanket the forest floor nearest the creek and taper off slowly up the western slope, interspersed with patches of tick-trefoil (*Desmodium* spp.) and rattlesnake plantain (*Goodyera pubescens*). A persistent naturalist may also see a breeding pair of Kentucky warblers (*Oporornis formosus*) or the characteristic whorled leaves of American ginseng (*Panax quinquefolius*).

The arboreal diversity of Cross Creek is also impressive for the plateau; among the typical oaks (*Quercus* spp.), hickories (*Carya* spp.) and red maples (*Acer rubrum*) can be found many sassafras (*Sassafras albidum*), tulip-poplar (*Liriodendron tulipifera*), black gum (*Nyssa sylvatica*), and sourwood (*Oxydendrum arboreum*), as well as a handful of black locust (*Robinia pseudoacacia*), persimmon (*Diospyros virginiana*), serviceberry (*Amelanchier arborea*), and sugar maple (*Acer saccharum*), and a collection of ragged flowering dogwoods (*Cornus florida*). Off-trail bushwhackers may notice a distinct lack of invasive species like privet (*Ligustrum*

*sinense*), Nepal grass (*Microstegium viminium*), and tree-of-heaven (*Ailanthus altissima*) that pervade some other forests on the plateau. During the winter a variety of ferns mottle the forked depression where a small run-off flows into the creek bed, and spotted wintergreen (*Chimaphila maculata*) garnishes the eastern slope and the dry rim that surrounds the watershed. It is also during the winter that the hundreds of short, bright flags demarcating three one-hectare study plots will be most apparent among the bases of gray trunks.

The great tree and herb diversity at Cross Creek was undoubtedly part of the allure of this place that inspired the Tennessee Valley Authority to establish a study site there in the early 1970s. TVA constructed, among other things, a permanent road encircling the watershed, a radio tower, a small dam to quantify the flow of Cross Creek, and a bunker complete with sandbagged walls to prevent the stray bullets of deer hunters from damaging their enormous computer.

In 1978 TVA engaged Dr. George

(continued on p. 4)

## Thanks to all our contributors in 2005!

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Nancy Womack  
Ellen Woods  
Marie Cartinhour Woods

# Winter Calendar of Events

## Early Spring in Shakerag

Sat., Feb. 11, 1:30 PM, George Ramseur  
Retired botany professor George Ramseur will lead the annual search for the first signs of spring in Shakerag Hollow—maybe even find the first hepatica—and talk about some of the old-growth trees, more noticeable in the winter woods. Meet at Green's View for this moderate 2-mile walk that may include a steep rocky section of the trail. In case of inclement weather, the walk will be re-scheduled for Feb. 25.

## Mountain Goat RR Biking/Walking Trail

Sat., Feb. 18, 1:30 PM, Yolande Gottfried  
Enjoy the winter landscape on Sewanee's (relatively) new paved walkway. Pick up some tips on winter tree identification; find out why some exotics become invasive; learn how to tell one pine from another; and even a bit about ferns, mosses, and lichens. Time and distance will be tailored to participants in this easy walk. Strollers and well-behaved dogs are welcome. Meet at the gravel parking area east of the Sewanee Market and former Sewanee Pharmacy on Highway 41-A. In case of inclement weather the walk will be re-scheduled for Feb. 25.

## Wildflower Identification

Sat., March 18, 10-11:30 AM, 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 Mary's key to Sewanee's spring wildflowers. The flowers will probably be small, but they promise to be beautiful. Meet in Woods Labs room 121.

*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 the above-mentioned natural areas.*



## THE SEWANEE PLANT PRESS

The Sewanee Herbarium  
Dr. Jon Evans, Director  
Biology Department  
Sewanee: The University of the South  
735 University Avenue  
Sewanee, TN 37383

### WEB SITE

<http://www.sewanee.edu/biology/herbarium>

### EDITOR

Mary Priestley  
marypriestley@bellsouth.net

### CONTRIBUTORS

Bert Harris  
harrjb0@sewanee.edu

Leighton Reid  
reid\_jl0@sewanee.edu

### CALENDAR

Yolande Gottfried

### COMPOSITOR

Tammy Scissom

*Drawings by Mary Priestley are of Cannon Dormitory, Christmasfern, a saprophytic fungus, and chimney swifts.*

*For more information on these or other Sewanee Herbarium events, please contact Yolande Gottfried at the herbarium (931.598.3346) or by email 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.

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



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**Research**, continued from page 2

Ramseur, Sewanee's plant biologist, to conduct a survey of the trees of Cross Creek and of Fall Creek Falls State Park. Their original intent was to determine whether acid rain created by atmospheric pollution at a coal power plant in Stevenson, Alabama, was affecting tree growth and mortality on the Cumberland Plateau, 30 miles to the north. But the unintended consequence of the study was that permanent plots were established that would later be used to extract the first long-term data on ecosystem change in a protected forest on the Cumberland Plateau.

In 1998, Dr. Jon Evans, Kevin Hiers ('95) and Sarah McCarthy ('99) painstakingly relocated these study plots by tracking down unique trees from Dr. Ramseur's study, such as a lone shortleaf pine (*Pinus echinata*), a post/white oak hybrid (*Quercus stellata/alba*), and a chestnut oak (*Quercus prinus*) that was 70 cm in diameter. Evans, Hiers, and McCarthy were joined by Dr. Ramseur and the Sewanee Herbarium staff to re-sample

the watershed and compile a new set of data to analyze 20-year trends in forest change. Though unpublished, the results obtained by this study were compelling and suggested a serious decline of several oak and hickory species. The drastic loss of flowering dogwood to the dogwood blight was also painfully clear in their data<sup>1</sup>.

During the summer and early fall of 2005, Dr. Evans and I returned to Franklin State Forest to get a better understanding of forest change in Cross Creek. Although the bunker and radio tower have now been dismantled and parts of the road are deeply rutted from erosion, we found the plots and, with help from Natasha Cowie ('07), Valerie Moyer ('07), Kevin Willis, Bert Harris ('06), and Yolande Gottfried, we sampled them again.

From these data, Dr. Evans and I have confirmed the decline in all oak species (especially red oak species) and hickories as well as the increase in tall, understory maples. The trend from oak/hickory to maple as the dominant canopy tree type may be the result of fire suppression, which is advantageous for the shade-loving maple

saplings and detrimental to the oaks and hickories that need open areas with lots of sunlight to be competitive. We have also identified several patterns of change in size class distribution over the 28 years since Dr. Ramseur's original study. We hope that these patterns will begin to shed some light on what a "changing" forest community looks like, a difficult task given that a single individual can survive in the canopy for over 200 years.

This winter Dr. Evans and I will continue to look for significant trends, especially in terms of species distribution using GIS (computer mapping). We will present our data at the end of March at the Association of Southeastern Biologists conference in Gatlinburg, TN.

—Leighton Reid, C'06

<sup>1</sup> For more information on the 1998 study in Franklin State Forest, see J. Evans, 1999. Sewanee Botanical Research Update, *The Plant Press* 3(3).

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# SEWANEE

THE UNIVERSITY OF THE SOUTH

Herbarium, Biology Department  
735 University Avenue  
Sewanee, TN 37383-1000

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