The Sewanee PLANT PRESS

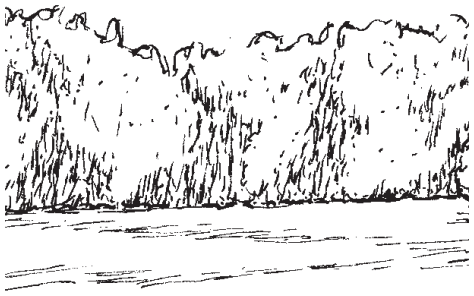
Volume XV, No. 2 | Newsletter of the Friends of the Herbarium | Spring 2011

Sewanee Environmental Institute

The Sewanee Environmental Institute is approaching its third summer of exciting field course offerings and what a summer it is shaping up to be with the addition of two new courses along with two ongoing courses and our highly successful pre-college program.

The popular Field School in Archaeology taught by Dr. Sarah Sherwood will be based out at a recently acquired house overlooking Shakerag Hollow this summer. The Archaeology Field School students will be joined for part of the time by students from the summer archaeology program at Mississippi State. Together they will be excavating new historic and prehistoric sites on the Domain. We are delighted that Sarah (currently at Dickinson College) has accepted Sewanee's offer of a tenure-track position in Environmental Studies and will be joining our faculty this coming fall as the University Archaeologist. We are also excited to welcome Dr. Chris Van de Ven (recently on the faculty of Albion College) to campus this year as Sewanee's new GIS faculty instructor and manager of the Landscape Analysis Laboratory. Chris will be co-teaching SEI's "Reading the Landscape" course with me this summer. Students in this class use GIS and GPS technology in the field to examine the ecological consequences of past land-use practices on the Domain.

A third course being offered this summer is SEI's brand new environmental film-making program called "Lens and the Landscape." This will be taught by Dr. Greg Pond from Sewanee's Art Department and Rory Fraser (currently with Stanford University's documentary film studies program). Students in this class will learn the fundamentals of shooting a documentary film with an environmental theme. This year the program will be joining up with the Archaeology Field School and the Reading the Landscape course to conduct an interdisciplinary study of the King Farm location on the Domain. SEI has invited Dr. John Willis (History Department) to serve as a supporting faculty member to all three courses as they collaborate this summer in weaving together stories of people and land at the King Farm.



This May, SEI inaugurates a new tropical ecology course in Belize. This 10-day course will be based out of two remote field stations: one on an island in the Belizean Barrier Reef and another at a rainforest location at the foothills of the Mayan Mountains. Every day at each site will be packed from early morning to well into the night with activities that allow students to explore intensely these unique environments. I will be leading this course and will be joined by Jordan Casey, a recent Sewanee alum, who is currently in a PhD program at Cook University in Australia studying the ecology of the Great Barrier Reef.

Finally, SEI is offering its third annual Pre-College Field Studies Experience this summer, June 26th – July 9th. This program is for rising juniors and seniors in high school who are interested in advancing their knowledge and skills in the study of the environment and want to explore the ecosystems of the Domain. This program has proven its worth by yielding Sewanee many outstanding matriculating students these past two years from all over the country.

To learn more about these summer programs, please visit the SEI website: sei.sewanee.edu

— Jon Evans, SEI and Herbarium Director

Blue Eyes of Springtime

The poet Heine called violets the "blue eyes of springtime." And what could be more emblematic of that season than these, among the most commonly known and easily recognized of our wildflowers? John Eastman writes, "It's the most visible begin-ning, this low, blue flame in the woods. I think of it as a pilot light that ignites the entire burst of resurrection we call spring." Remember childhood bouquets of purple violets and yellow dandelions? Like dandelions, the flowering of violets is triggered by day length, so they may even flower again in the fall when days are once again a similar length.

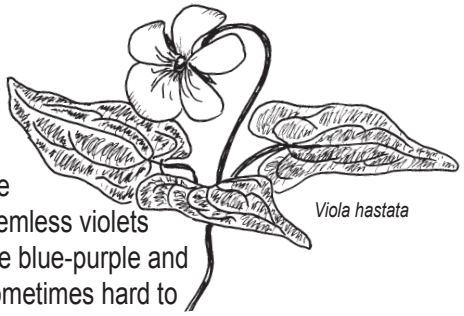
The flowers have a distinctive shape. There are five petals: two upper ones, two on the sides, and one on the bottom that acts as a landing strip for pollinators. To further guide these pollinators, the side and bottom petals generally have colored veins, even more visible to the UV-sensitive eyes of a bee, leading to the spur at the back of the bottom petal. The spur contains the nectar lure and the pollen-bearing stamens. In case there is no visit from a pollen-carrying bee so early in the spring, many violets have a back-up system of a second kind of flower, produced later in the season and close to the ground, that is self-pollinating. Both kinds of flowers produce seeds, which may then be carried by ants to their underground nests where they eat the oil-rich body on the seed (elaiosome), leaving the rest of the seed in an ideal environment for germination.

Many of our associations with violets — mythical lore, medicinal and culinary uses, perfume — actually pertain to the Old World sweet-scented violet, *Viola odorata* L., which occurs in some areas of North America as a garden escape, though not in Tennessee. North America, however, has six times as many native violets as the Old World. The *Fifth Checklist of Tennessee Vascular Plants* lists twenty-seven species and varieties of violets, and of these, eighteen have been collected on the Domain of The University of the South. This article will offer a glimpse at these eighteen.

So, how to get to know the violets and tell them apart? Keys to violets usually begin with a characteristic that many might not first be aware of — whether the plants are caulescent (stemmed) or acaulescent (stemless). The common blue violet, *Viola sororia* Willd., for example, is stemless — all the leaves and flowers emerge at the ground surface from underground structures. Others, such as the early blooming halberd-leaved yellow violet, *Viola hastata* Michx., have stems that branch into leaves and flowers above the ground surface.

Of the stemmed violets, one is an annual, *Viola bicolor* Pursh., field pansy. It has rather small bluish to white flowers and may be numerous in waste places. One of the yellow stemmed violets, *Viola hastata* is one of the earliest bloomers in Shakerag Hollow. *Viola tripartita* Ell. var. *glaberrima* (DC.) R.M. Harper, smooth three-parted violet, is similar, but lacks the silvery mottled patches as on the leaves of *Viola hastata.* Smooth yellow violet, *Viola pubescens* Aiton var. *scabriuscula* Schwein ex Torr. and A. Gray, has the familiar heart-shaped leaves. The two white stemmed violets are *Viola canadensis* L., Canada violet, and *Viola striata* Aiton, cream violet. Canada violet grows to sixteen inches tall in mesic woodlands and has a yellow center to the flower. Cream violet is found in open or wooded alluvial areas and has brown-purple veins on the petals. The very long, upraised spur on the blue-violet long-spurred violet, *Viola rostrata* Pursh., distinguishes it from the somewhat similar American dog violet, *Viola labradorica* J. Schrank, which also has bearded petals whereas the long-spurred violet does not.

There are three white stemless violets: *Viola blanda* Willd., sweet white violet, *Viola lanceolata* L., bog white violet, and *Viola primulifolia* l., primrose-leaved violet. The last two have rather narrow, long leaves, those of bog white violet being much narrower, and both occur in wet places. The lovely and mildly fragrant sweet white violet grows in rich woodlands and has heart-shaped leaves. The rest of the stemless violets are blue-purple and sometimes hard to distinguish. The common blue violet, *Viola sororia* Willd., may even be a weedy pest in gardens. The similar marsh blue violet, *Viola cucullata* Aiton, has noticeably erect leaves and flowers (and prominent sepal auricles, if you know what to look for!) and grows, of course, in wet places. *Viola hirsutula* Brainerd, southern woodland violet, is found in dry deciduous woods. These last three have heart-shaped leaves, but the remaining three have variously-shaped leaves and may even be hard to identify with a guidebook: *Viola palmata* L., palmate-leaved violet, *Viola sagittata* Aiton var. *sagittata*, arrow-leaved violet, and *Viola subsinuata* Green, wood violet. The final Domain violet, though, anyone can name and recognize — *Viola pedata* L., bird's-foot violet. The leaves with deep, narrow divisions give it the bird's-foot name, and the large, flat-faced flowers with numerous petal color variations and bright orange stamens make it a standout in the open, often sandy or gravelly places where it grows.



Viola hastata

— Yolande Gottfried

Chester, Edward W., B. Eugene Wofford, Dwayne Estes, and Claude Bailey. 2009. A Fifth Checklist of Tennessee Vascular Plants. BRIT Press.

Eastman, John. 1992. The Book of Forest and Thicket: Trees, Shrubs, and Wildflowers of Eastern North America. Stackpole Books.

Horn, Dennis and Tavia Cathcart. 2005. Wildflowers of Tennessee, the Ohio Valley, and the Southern Appalachians: the official field guide of the Tennessee Native Plant Society. Lone Pine Publishing and the Tennessee Native Plant Society.

McKinney, Landon E. and Norman H. Russell. 2002. Violaceae of the Southeastern United States. Castanea 67 (4).

Nicholson, Geraldine E. Flower Fables. Mid-America Publishing Corp.

Radford, A.E., H.E. Ahles, and C.R.Bell.1968. Manual of the Vascular Flora of the Carolinas. The University of North Carolina Press.

Sewanee Herbarium. Vascular Flora of the Domain.

Sanders, Jack. 2003. The Secret Life of Wildflowers: A Delightful Feast of Little-Known Facts, Folklore, and History. The Globe Pequot Press.

Spring Calendar of Events

Roark's Cove — Sat., April 2, 9:30 a.m. — Mary Priestley and Mary Eschbach Vance
A private property at the base of the plateau is being made available for a wildflower walk to see some species not seen on the upper plateau, such as Virginia bluebells (*Mertensia virginica*) and possibly some early shooting star (*Dodecatheon meadia*), as well as trilliums and much more. Meet at the Sewanee Inn to carpool or caravan to the site of this easy to moderate walk.

Bird Walk — Sat., April 9, 8 a.m. — David Haskell
Dr. Haskell, ornithologist and Sewanee biology professor, will be looking for spring migrants and year-round residents. Meet at the main entrance to Spencer Hall across from the duPont Library. Walk will last about one hour. Cancelled in case of rain or high winds.

Shakerag Hollow — Sun., April 10, 1:30 p.m. — Mary Priestley
This is Sewanee's "Mecca" for wildflower lovers, and the flowers should be at their peak. Meet at Green's View parking lot (past the golf course). 2 miles, moderate to strenuous, with one fairly challenging incline.

Trails & Trilliums — Sat. & Sun, April 16 & 17
Hikes on the Domain and at nearby South Cumberland State Park. Go to trailsandtrilliums.org for more information.

Bird Walk — Sat., April 23, 7:30 a.m. — David Haskell
Dr. Haskell, ornithologist and Sewanee biology professor, will be looking for spring migrants and year-round residents. Meet at Morgan's Steep. Walk will last about one hour. Cancelled in case of rain or high winds.

Shakerag Hollow — Sun., April 24, 2 p.m. — Jon Evans
Spend your Easter Sunday afternoon roaming through the spring wildflower-filled woodlands of this outstanding natural area. Meet at Green's View parking lot (past the golf course). 2 miles, moderate to strenuous, with one fairly challenging incline.

Shakerag Hollow — Sat., April 30, 10 a.m. — Yolande Gottfried
One more chance to see the later-blooming spring wildflowers. Meet at Green's View parking lot (past the golf course). 2 miles, moderate to strenuous, with one fairly challenging 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 or other Sewanee Herbarium events, please contact Yolande Gottfried at the Herbarium (931.598.3346) or by email at ygottfri@sewanee.edu. Directions are available on the Herbarium website, lal.sewanee.edu/herbarium/, under the calendar of events.

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

WEBSITE
http://lal.sewanee.edu/herbarium

EDITOR
Mary Priestley
marypriestley@bellsouth.net

CALENDAR
Yolande Gottfried
ygottfri@sewanee.edu

CONTRIBUTORS
Jon Evans
jevans@sewanee.edu

Yolande Gottfried
ygottfri@sewanee.edu

COMPOSITOR
Sondra Bridges

Drawings are by Mary Priestley.

Trails & Trilliums
FRIENDS OF SOUTH CUMBERLAND

April 16-17, 2011
Monteagle Sunday School Assembly
www.TrailsandTrilliums.org

Friends of the Sewanee Herbarium

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 mail checks (made payable to "Sewanee: The University of the South") to:

Sewanee: The University of the South
Attn: Gift Records
735 University Avenue
Sewanee, TN 37383


Viola pedata

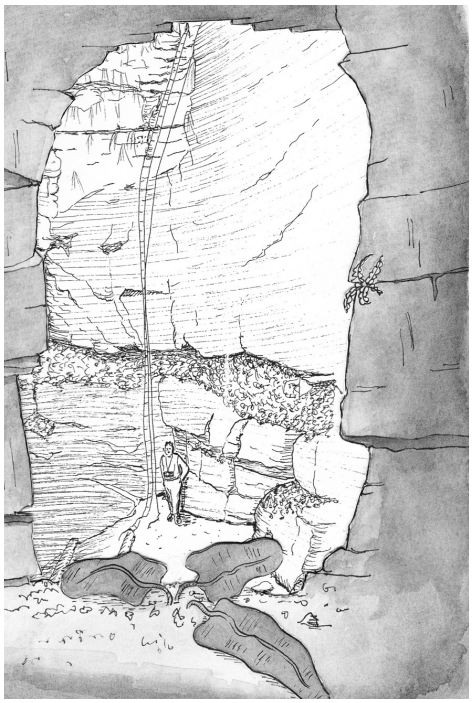
Others who might like to receive *The Sewanee Plant Press*: _____

_____

Hart's-Tongue Fern Update

Tennessee's rarest plant — a tiny population of hart's-tongue fern (*Asplenium scolopendrium* L.) that inhabits a sinkhole on the side of the Cumberland Plateau near Sewanee — is alive and well. This spring, a contingent of botanists and rare plant specialists visited the site. Equipped with binoculars and headlamps, Colgate University Prof. Eddie Watkins and student Wes Testo rappelled into the 75-foot-deep sinkhole in search of the fern. They located only one plant, but a member of the group standing above the sinkhole spotted a second even smaller one. Just two pint-sized plants — but those sightings were enough to confirm that this population, which has been barely hanging on for years, is still extant.

George Ramseur, Director *emeritus* of the Sewanee Herbarium, has visited the site many times over the years. During this period the population size has fluctuated but remained tiny, the individuals themselves too small to produce spores. The Colgate scientists have discovered that hart's-tongue



gametophytes (the minuscule gamete-producing generation in the fern life cycle)

reproduce readily, giving rise to more gametophytes. This may help to explain why the population has been able to survive though the sporophytes rarely, if ever, generate spores (which would develop into gametophytes, completing the life cycle). Possibly there is a healthy population of hart's-tongue fern gametophytes in the sinkhole, hidden among the liverworts that cover its walls and floor.

Watkins placed monitors inside and above the sinkhole to measure light and temperature. Then he and Testo gathered up their climbing equipment, and all headed back down the hillside and out of the woods. They plan to return in several months to retrieve the monitors and check on the plants. Meanwhile, the site is in good hands. "I purchased this land partly because of the presence of the rare fern," explained the landowner. "This place is even more special because of the plant."

— Mary Priestley

Viola sororia

SEWANEE
THE UNIVERSITY OF THE SOUTH
Herbarium, Biology Department
735 University Avenue
Sewanee, TN 37383-1000

ADDRESS SERVICE REQUESTED