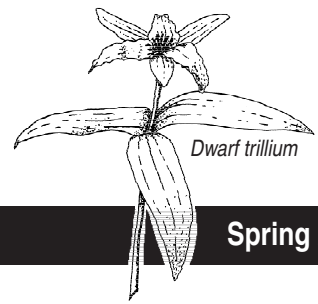


THE PLANT PRESS



Volume V, No. 2

Newsletter of the Friends of the Herbarium

Spring 2001

Lejeunea cardoti Discovered at Sewanee

His delight was evident in the e-mail message: "I'm very happy (excited!) to report that yes at Morgan's Steep on the Domain of the University of the South across the creek where I pointed out the little liverwort and hoped that it would be *Lejeunea cardoti*, new to Tennessee and most northern location globally (previously the species was known from Florida, Louisiana, Mexico and disjunct to South America in Paraguay, Brazil, and Argentina), that it is *Lejeunea cardoti*." You could almost hear a virtual chuckle.

And so, another coup for Sewanee, to stand alongside our other successes, including the undefeated football team of 1899; the oldest literary quarterly in America; our phenomenal number of NCAA graduate school scholarships; and 23 Rhodes Scholars. Now this! Botanist Paul Davison has found a record plant population right here on the Domain—a banner day for The University of the South!

Paul was here in search of a rare independent fern gametophyte, *Hymenophyllum tayloriae*, that had not yet been seen in Tennessee. Originally described as a narrow endemic of the Carolina mountains, the *Hymenophyllum* has since been discovered beneath sandstone overhangs of the Cumberland Plateau in northern Alabama. Paul is confident that it is in Tennessee, too, waiting to be found.

The mid-December foray with Paul and Herbarium staff members Yolande Gottfried and George Ramseur was an experience in appreciation of the small. Paul enjoys spending time peering through his hand lens into slits in the cliff faces, cracks in tree bark, and depressions in the bare earth in search of liverworts, fern gametophytes, and other minuscule plants. These microhabitats are just now being scrutinized for their life forms, and Paul is convinced that anyone who takes the time to examine the organisms that live here will come to value them.

Maybe a short "Botany 101" digression to define terms is in order here. First, liverworts. These diminutive plants, like their relatives the mosses, have little or no specialized interior cells for transporting water and nutrients. They are usually restricted to damp environments like moist soil, rock crevices, and tree bark. There are two major types: "thalloid" liverworts superficially resemble the lobes of a human liver. (Because of this feature, during the Middle Ages they were thought to have medicinal value for the treatment of liver ailments!) "Leafy" liverworts look like tiny prostrate mosses. *Lejeunea cardoti*, the plant that Paul found at Morgan's Steep, is of the latter type.

Second, fern gametophytes. All plants, including oak trees, daffodils, ferns, and liverworts, have two distinct generations, termed "gametophyte" and "sporophyte," in their life cycles. (Remember "alternation of generations"?) In ferns, the sporophyte is the green, leafy plant that we picture when we think of ferns. The gametophyte is totally different. It is a tiny plant that, depending on the species, may look like a bit of algae or a thin, fingernail-sized leaf that grows flat on the ground and usually dies after reproducing.

A few ferns in our area exist mainly or exclusively as gametophytes—they skip the sporophyte generation altogether. Because they were first discovered in the Appalachian Mountains, independent fern gametophyte species are often referred to as Appalachian gametophytes. Apparently, they have evolved from tropical species in which the gametophyte is more cool-hardy than the sporophyte. The *Hymenophyllum* that Paul is looking for occurs only as a gametophyte in the Carolinas; in Alabama, both gametophyte and sporophyte are found.

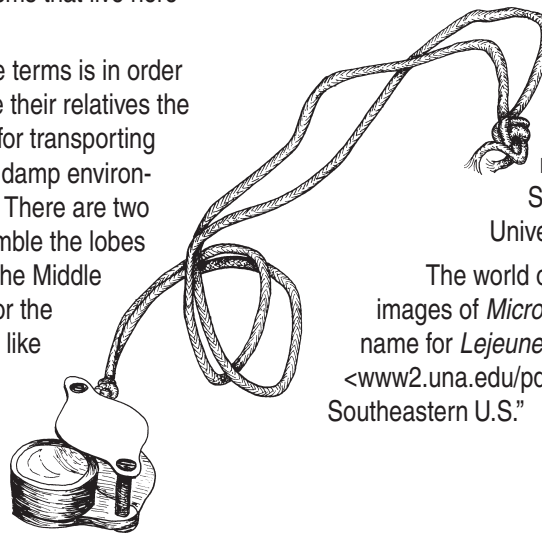
The University's history of protecting sites like Morgan's Steep has boded well for these small and seemingly insignificant plants. Paul made several interesting discoveries on the Domain, including finding *Vittaria appalachiana*, another of the Appalachian gametophytes. Although he did not find the elusive *Hymenophyllum* that day, now that he knows about this place he will return.

For the herbarium staff, it was a treat to see some of the minute flora of the Domain through this engaging teacher's eyes, and it is a pleasure to announce the discovery on the Domain of the University of the South of the northernmost population worldwide of the liverwort

Lejeunea cardoti. Sure, it is inconspicuous and identifiable only by means of a microscope, and we probably will not be able to find it again on our own! But we know it is here, one more piece of the biodiversity puzzle at Sewanee and another "first" for the University of the South!

The world of small is pretty interesting. To see images of *Microlejeunea globosa* (the currently accepted name for *Lejeunea cardoti*), visit Paul Davison's website at <www2.una.edu/pdavis>, and go to "Liverworts of the Southeastern U.S."

—Mary Priestley



THE PLANT PRESS

The Sewanee Herbarium
Biology Department
The University of the South
735 University Avenue
Sewanee, TN 37383

WEB SITE

[http://www.sewanee.edu/
biology/herbarium](http://www.sewanee.edu/biology/herbarium)

EDITOR

Mary Priestley
(931) 598-3346
mpriestl@sewanee.edu

CONTRIBUTORS

Jon Evans
(931) 598-1304
jevans@sewanee.edu

George Ramseur
gramseur@sewanee.edu

Yolande Gottfried
ygottfri@sewanee.edu

COMPOSITOR

Tammy Scissom

Thanks!

Many thanks to all contributing members for your support! Your donations make *The Plant Press* and other Herbarium publications possible. Of the 550 or so people whose names are on our mailing list, about 200 have made gifts to the herbarium, and of those about half have made a contribution since January, 2000. If yours is a complimentary copy, please consider sharing it with someone who would enjoy it.

New Supporting Members

Sandy and Bruce Baird
Sam Breyfogle (and matching gift)
Janet Graham
Bruce Hackemann
Jim Ann Howard
Beth Marchman
Monteagle Sunday School Assembly
Kathryn Ramseur-Riley
Dawn Zeedyk



Alumni Report

The last Alumni Report moved from strictly academic careers to the more commercial specialty of plant pathology. In response to that column, Aaron Welch commented that his claim that he was "the only plant pathologist with a liberal arts background" had been disproved!

Aaron Welch, known as Ron at Sewanee, graduated in 1967 and returned to his hometown to enter a graduate program in plant pathology at North Carolina State University in Raleigh. Because of a slow start in his freshman year at Sewanee, he was not initially offered funding there. But after a semester of a full course load of study by day and working nights in a gas station, he earned a 4.0 average. This established his reputation, and he was given a Research Assistantship and a chance to enjoy graduate school. "I thank Sewanee every day for making me learn how to study and showing me that I could indeed do it and do well."

In May of 1969, he married Janet Privette and was preparing to write his MS thesis when he was drafted. He volunteered for the Navy Medical Corps, with the thought that it would be "near science." This was before he learned that Navy corpsmen served with the Marines and suffered a high mortality rate in Southeast Asia. Aaron's Vietnam War service, however, was spent "giving baby shots in Portsmouth, New Hampshire." While in Portsmouth, he re-established his friendship with Bill Wade, a fraternity brother at Sewanee, who is now headmaster at St. Andrews-Sewanee School.

Following his Navy service, Aaron returned to NC State and completed an MS and a PhD in plant pathology. His research concerned the enzymatic breakdown of cells when the fungus *Pythium* causes a tomato to rot. He also described a hydrotropic response of the fungus during the infection process. Aaron remembers May 10, 1976, well. On that day his first child was born five hours before he defended his final thesis!

With PhD in hand, Aaron took a job with E. I. DuPont Agriculture Products Department. After company training in Wilmington, Delaware, he was assigned to Memphis as a development representative for the Midsouth. He did field work on experimental and newly-registered crop protection chemicals (pesticides), trained sales representatives to handle technical and customer complaints, and helped university people to get recommendations and grant-supported research. In his work with cotton insect control and row crop and forest weed control, he was often working with agriculture school researchers and other professionals who taught him a great deal about entomology

and weed science.

From Memphis, he moved to McAllen, Texas, in the Rio Grande Valley to work in sales. There he learned a lot about agriculture, especially citrus and vegetable production. But this was neither his favorite job nor his favorite place, so in 1983 he took the opportunity to move to Bradenton, Florida, to be the Field Station Manager.

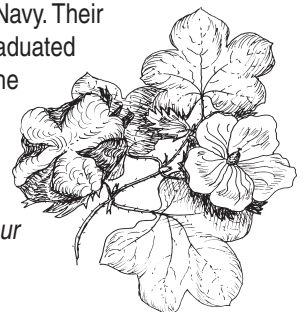
Of his work at Bradenton, Aaron says, "Over the years I performed hundreds of efficacy trials on countless experimental fungicides, insecticides, and herbicides on practically every crop grown in Florida and elsewhere. Also, beginning in the late 80s, I got involved in EPA-mandated GLPs (Good Laboratory Practice Standards). These are rules that govern every aspect of determining crop residues for tolerances and federal registrations under the Federal Insecticide, Fungicide, and Rodenticide Act.

"In fact, my site was chosen for one of EPA's random audits in 1996. It is somewhat disconcerting for your government to come into your office looking for fraudulent activity without cause, but that is basically what the audit is. Of course they couldn't find any (the EPA mantra is that if you work for industry you are inherently dishonest, etc.), and grudgingly (I think) gave our site and our work a finding of 'No Citeable Infractions,' but were quick to point out that we couldn't use this 'finding' as any sort of implied (or otherwise) endorsement by the EPA."

Due to changes within DuPont's corporate structure and the closing of some research facilities, Aaron left DuPont about a year ago and established an independent company, Welch Agricultural Services, Inc. He will continue the testing of protection chemicals on a contract basis, and he is negotiating with DuPont to purchase the Bradenton field testing site.

Aaron and Janet have two children. Aaron III, a graduate of the University of North Carolina, is in the Navy. Their daughter Quinn graduated from Sewanee in the class of 2000 and is working for a patent law office.

—George Ramseur



Spring Calendar of Events

Shakerag Hollow • Sat., Mar. 17, 1:30 PM
George Ramseur, leader. Shakerag Hollow is Sewanee's "Mecca" for spring wildflower enthusiasts. Meet at Green's View parking lot. 2 miles, moderate.

Bluebell Island • Sat., Mar. 24, 10:00 AM
Co-sponsored with the South Cumberland Regional Land Trust and South Cumberland State Recreation Area. Expect to see bluebells, trout lilies, and possibly the elusive dwarf trillium. Meet at Tyson Food Co. on Highway 50.

Botanical Drawing • March 31, 10:00 AM
Ed Carlos, instructor. Meet at the Lake Cheston picnic pavilion. Morning session 10-noon; afternoon session in Shakerag Hollow 1:30-3:00. Rain date: Apr. 7. The purpose is to initiate aspiring artists of any age into the meditative pleasures, insights, and technical knowledge of drawing representationally. Bring pencils and drawing paper.

Fiery Gizzard • Sun., Apr. 1, 9:00 AM
Park Ranger Tim Wheatley and Mary Priestley, co-leaders. Co-sponsored with South Cumberland State Recreation Area. Many spring wildflowers along a rugged 10-mile trail from Grundy Forest through the gorge to Raven Point and back. Bring a sack lunch and extra water. Meet at Grundy Forest parking lot. Strenuous.

Shakerag Hollow* • Sat., Apr. 7, 10:15 AM
George Ramseur, Mary Priestley leaders. Co-sponsored with the Tennessee Aquarium. Meet at Green's View parking lot. 2 miles, moderate.



Found on "7th Hole of Course"

Shakerag Hollow* • Sun., Apr. 8, 1:15 PM
George Ramseur, Yolande Gottfried leaders. Co-sponsored with the Tennessee Aquarium. Meet at Green's View parking lot. 2 miles, moderate.

Shakerag Hollow • Sat., Apr. 14, 10:00 AM
Jon Evans, leader. Meet at Green's View parking lot. 2 miles, moderate.

Collins Gulf • Sat., Apr. 21, 10 AM
Mary Priestley, leader. Co-sponsored with South Cumberland State Recreation Area. This area is acclaimed by many as the park's best for spring wildflowers. Meet at the Collins West trailhead, just beyond the Swiss-Memorial School in Gruetli-Laager. Bring a sack lunch and extra water. 5 miles, strenuous.

Franklin State Forest • Sun., Apr. 22, 1:30 PM
Co-sponsored with South Cumberland State Recreation Area. We'll be looking particularly for Catesby's trillium. Meet at the Forest Ranger's headquarters on TN Highway 156 (South Pittsburg Highway). 2 miles, moderate.

Shakerag Hollow • Sun., Apr. 29, 2:00 PM
Jean and Harry Yeatman, leaders. The flora in Shakerag Hollow changes weekly in the springtime. The later bloomers should be at their height now. Meet at Green's View parking lot. 2 miles, moderate.

*There is a small (\$6) charge for this event, part of the Chattanooga Spring Wildflower Celebration. Make reservations by telephoning the Tennessee Aquarium, (423) 267-FISH.

For information on these and other events, telephone:

Sewanee Herbarium (931) 598-3346 • South Cumberland Regional Land Trust (931) 598-5120 • South Cumberland State Recreation Area (931) 924-2956 • Tennessee Aquarium (423) 267-FISH

Picking flowers and digging plants are prohibited in all of the above-mentioned natural areas.

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



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

Collection Highlights



"Phi Delta Theta Fraternity
(best on campus) yard"

One of the main goals of the Herbarium from the start has been to process the accumulated collections of generations of Dr. George Ramseur's

students, still in their original newspaper, some dating back to 1959. This has involved countless hours of work by people too many to name (but mostly by Mary Priestley and Yolande Gottfried) and will be completed this year, a major milestone. Handling these specimens and labels gives the worker some sense of the students and their times and prompts questions and speculation.

The first collection of any given student, properly given the collector's number "1" on the label, is often of special interest. One whose name is only listed as "Inge" has as his first a very carefully pressed *Taraxacum officinale* G.H. Weber ex Wiggers, or common dandelion, collected on April 3, 1969, from the "Phi Delta

Theta Fraternity (best on campus) yard." It is recorded thus for posterity on the label of record number 3965 in the permanent collection.

The specimen given the first record number in the Herbarium database (a kind of accession number), quite by chance it is assumed, is a specimen of *Geranium maculatum* L., the wild geranium. This is a lovely pink spring wildflower that is fairly common on the University Domain (and is featured in a photo on the Herbarium home page). It was collected at High Top on April 1, 1976, by Emily J. Butler and Stephen H. Smith, who seem to have been a notable team of collectors.

Emily and Stephen, along with Susan Fox, collected our only specimens of *Hydrastis canadensis* L., or goldenseal, just a few days later, on April 5, 1976. They are beautifully pressed and mounted, even to being sewn to the paper whereas most specimens are only glued. This plant is commercially exploited and is on the Tennessee rare plant list, so its location will not be given here, in case the population is still there after all these years!

Seabury Stoneburner and Edmund Rhett seem to have been another interesting team. Their collections were always done together, with the same collector's number on all six or so (three for each) duplicate specimens and with complete label information, indicating organization and efficiency.

Do the collections by G.C. Osborne of *Smilax* (sic) *racemosa* and *Polygonatum biflorum* at the "7th. Hole of course" or by R. O. Elam of *Diodia virginiana* in rough of first hole of golf course" in the same spring of 1968 imply that they did botany fieldwork while pursuing other pastimes?

Even the newspapers in which the plants were pressed are often of interest, spanning as they do the era of the Cold War, civil rights activism, and Vietnam. The Herbarium has saved a few of them for historical interest.

—Yolande Gottfried

To be continued . . .



Record No. 1

Printed on Recycled Paper

SEWANEE

The University of the South

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

ADDRESS SERVICE REQUESTED

COMING
NEXT ISSUE:
Update on the
Search for Sewanee's
Big Trees!

NON-PROFIT
ORGANIZATION
U.S. POSTAGE
PAID
PERMIT NO. 4
SEWANEE, TN