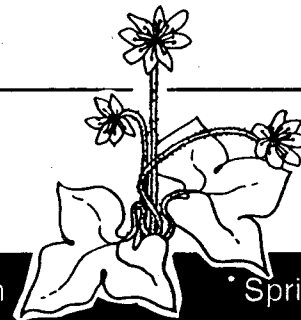


THE PLANT PRESS



Volume III, No. 2

Newsletter of the Friends of the Herbarium

Spring, 1999

The Value of Small Herbaria

Recent studies have shown that smaller herbaria throughout the Southeast, and even some larger herbaria, are being orphaned by their supporting institutions. I wish to demonstrate the value of herbaria at colleges and comprehensive universities in this region.

Small herbaria have intrinsic value. They are a major source of information concerning the biota of various regions of the country. Although much of the data concerning plants that are considered imperiled has been gathered by various conservation groups, we cannot really document rarity without knowing what is not rare.

In addition, small herbaria serve as a repository for vouchers [specimens for verification of research] from studies completed at the supporting institutions. The importance of vouchers should make researchers at the various institutions deeply concerned that they can rely on a safe and easily accessible location to deposit these crucial specimens.

The most important and urgent reason to maintain herbaria at colleges and comprehensive universities is the fundamental value of herbaria as teaching tools. Organismic studies are a fundamental part of biology and evolution, and the need to teach organismic biology to all students of biology is just as important today as it was a century ago. When we begin to examine possible sources for the scientists of the future, we discover that the colleges and comprehensive universities are the places where students develop interests in biology, and then these students get advanced degrees and become productive members of the scientific community.

If we choose to ignore organismic biology at the colleges and comprehensive universities, we are creating a generation of scientists without the skills to deal with the problems we are beginning to see on the horizon. If we

1998 a Record Year

Atmospheric scientists now claim that 1998 was one of the warmest years in recorded history on this planet, and so perhaps it is no coincidence we got a taste this past year of what global warming may mean for the Cumberland Plateau: extreme weather events. Over the last 12 months SE Tennessee has experienced: a record summer drought, a severe winter ice storm, and now an unusually warm spring. All of these weather events have had their impact on the ecology of the Plateau. We are particularly interested in assessing the impact of this past summer's drought on the composition of the Plateau forest. Along the bluff edge, in particular, there appeared to be a very high degree of selective mortality among certain understory tree species by the end of the summer.

We will be assessing the consequences of the drought through long-term forest monitoring plots that we have established at various locations on the Plateau. We have hypothesized that severe droughts occurring on a frequency of 25-50 years (such as has occurred this past year) play a critical role in controlling the composition of the canopy at the dry end of the moisture gradient. These extreme punctuated events may serve to periodically eliminate potential recruitment into the canopy of less drought tolerant species which accumulate in the understory between droughts. This may indeed be the

(continued on p. 4)

choose not to support the relatively small herbaria at these institutions, we are losing one of the major tools that can be used to generate excitement and questions about plant diversity and evolution.

—Zack E. Murrell
Department of Biology
Appalachian State University

Excerpted from an article in the Dec. '98 issue of the Bulletin of the Association of Southern Biologists, entitled, "What is the Function of a Herbarium in a Department of Biology at Colleges and Comprehensive Universities?" Printed here with the author's permission.

The Sewanee Herbarium: Education—Research—Conservation

The Plant Press

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Please Note

As the membership of the Friends of the Herbarium grows, so does our mailing list! At this point, we need to give some thought to the distribution of *The Plant Press*.

If you are receiving a complimentary issue of this newsletter and would like to continue to do so, please let us know. And please share with your interested friends who might like to join the Friends of the Herbarium.

—Mary Priestley

Aliens in our Midst

Invasion by aliens has been a popular theme in movies and television. Perhaps the most disturbing stories are those in which the characters are unable to distinguish the normal members of the community from the invaders until it is almost too late. Somewhat the same thing is happening in native plant communities (see *The Plant Press*, Autumn, 1998), and concerned individuals are forming organizations to expose the alien invaders and to try to do something about them before it is too late.

One such organization has been the Tennessee Exotic Pest Plant Council (TN-EPPC), which held its first annual symposium in March, 1994. Similar councils exist only in California, Florida, and the Pacific Northwest. Dr. George Ramseur, Director Emeritus of the Sewanee Herbarium, was a member of the research committee formed at that time and helped produce a list of "Invasive and Exotic Pest Plants in Tennessee." The list "focuses on non-native, invasive plants that are a problem in natural communities and ecosystems on public and private lands in Tennessee. In general, these plants have the potential to disrupt the natural landscape — invading forests, glades, barrens, wetlands and other natural areas." The intention of the committee is "to educate the general public and land managers about these invasive plants and to discourage their use in landscaping, restoration and enhancement."

These plants, of course, respect no boundaries, and so, recognizing the regional character of the problem, the TN-EPPC is presenting the first annual symposium of the newly established Southeast Exotic Pest-Plant Council, March 18-20, 1999, in Oak Ridge, Tennessee. This symposium will mark the transition from the Tennessee EPPC to a regional organization for the Southeast with a mission to "raise public awareness about the spread of exotic plants into natural areas, facilitate the exchange of information concerning management and control of invasive exotic plants" and "initiate campaign actions to prevent further introductions," among other aims.

A pest plant species is one whose range and distribution are altered by human interference, purposefully or accidentally. The abrupt addition of a species upsets the balance of a community, the interaction of diseases and predators that keep populations under control. Thus, the Princess tree in Beijing is planted to beautify the streets while it is listed as a severe threat in Tennessee. By the same token, the black cherry of our woodlands is a pest in Germany.

You can help by being informed about the situation and by considering carefully before planting in the garden or in parks and restoration projects. Many if not most garden plants are exotics, but not all are invasive. On the TN-EPPC list of invasive exotics, privet (*Ligustrum sinense* Lowr. and *L. vulgare* L.) is listed as a severe threat; burning bush (*Euonymus atropurpureus* (Thumb.) Seib.), English ivy (*Hedera helix* L.), and periwinkle (*Vinca major* L. and *V. minor* L.) are listed as significant threats; and rose of Sharon (*Hibiscus syriacus* L.) and star of Bethlehem (*Ornithogalum umbellatum* L.) are listed as lesser threats. One can see how easy it is to all-unknowingly contribute to the problem. This list is available at the Sewanee Herbarium and on the TN-EPPC web site, <http://www.webriver.com/tn-eppc/>.

—Yolande Gottfried

Spring Wildflower Walks

Shakerag Hollow and Bluebell Island

Mar. 20, 10 A.M. , George Ramseur, leader.
Co-sponsored with TN Native Plant Society. Meet at the Sewanee Inn. Morning hike through Shakerag (2mi/ moderate), followed by lunch at Shenanigan's and afternoon trip to Bluebell Island (1 mile/easy).

Bluebell Island, March 27, 10 A.M.

Co-sponsored with Bluebell Island Land Trust. Meet at Tyson Food Co. on Hwy. 50, just west of I-24. 1 mile/easy.

Abbo's Alley, April 3, 10 A.M.

George Ramseur and Mary Priestley, leaders.
Meet at entrance on S. Carolina Ave. Easy stroll through the garden.

Shakerag Hollow,* April 10, 9:15 A.M.

Yolande Gottfried and George Ramseur, leaders.
Co-sponsored by the TN Aquarium. Meet at the Green's View parking lot. 2 miles/moderate.

Collins Gulf, April 10, 10 A.M.

Mary Priestley, leader. Co-sponsored with South Cumberland State Recreation Area. Meet at the Collins West trailhead, just beyond the Swiss Memorial School in Gruetti-Laager. Bring a sack lunch and extra water. 5 miles roundtrip/strenuous.

Shakerag Hollow,* April 11, 12:15 P.M.

Jon Evans and Mary Priestley, leaders.
Co-sponsored by the TN Aquarium. Meet at the Green's View parking lot. 2 miles/moderate.

Collins Gulf, April 17, 10 A.M.

Yolande Gottfried, leader. Co-sponsored with South Cumberland State Recreation Area. Meet at the Collins West trailhead, just beyond the Swiss Memorial School in Gruetti-Laager. Bring a sack lunch and extra water. 5 miles roundtrip/strenuous.

Shakerag Hollow, April 18, 2 P.M.

Jean and Harry Yeatman, leaders. Meet at the Green's View parking lot. 2 miles/moderate.

Old Cowan Highway, April 24, 10 A.M.

Mary and Latham Davis, leaders. Meet at the Memorial Cross. 3 miles/ moderate to strenuous.

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

For information about these and other hikes, telephone:

Sewanee Herbarium — 598-1324

South Cumberland State Recreation Area park headquarters — 924-2956

Tennessee Aquarium — 800-262-0695

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: _____ Address: _____

City, State, Zip: _____ 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*: _____

Tennessee's Rarest Plant?

In last year's spring issue of *The Plant Press*, Mary Priestley wrote a piece about the Hart's-tongue fern which included portions of a 1897 letter from Will R. Maxon to Mrs. Joseph Lodge and a brief history of the fern. On January 26, Dennis Horne, an amateur botanist from Tullahoma, and I visited the Marion County site and were unable to find any Hart's-tongue plants. Since I first visited the site in 1963, there has been a gradual decrease in numbers, and since 1993 I have not seen more than one plant on any visit. All the plants have been very small, with fronds less than two inches long. Has Hart's-tongue fern been extirpated from Tennessee? I am afraid that it is gone, but I am not willing to give up yet. It may be that Dennis and I simply overlooked it. It is possible that there are viable spores about and they will germinate. The last several sightings have been of different plants, for they were in different locations. Yet none of these plants had matured to a state of spore production.

There are efforts under way to propagate the fern, so replanting is a possibility. Since foreign spores have already been introduced there is a some doubt about the origin of the recent plants. Replanting, then, is not necessarily replacing the original ecotype. In case native spores might germinate, several years should be

allowed before any introduction of a new germ line.

Why did this population die out? There seems to be no clearcut cause. There has been some environmental change due to trees dying or falling and altering the amount of light reaching the cave floor. The nature of the cave allows only a few hours of direct sunlight. Snails have been observed eating fern fronds, and with little else to eat this could be an important factor. For whatever cause, I doubt the unaided return of what was Tennessee's rarest plant.

—George Ramseur

Record Year, cont. from p. 1

primary factor that keeps cove trees such as tulip-poplar from successfully expanding their distribution out of the cove and onto the plateau. We will not know until leaf-out this spring whether the data support this hypothesis, since it is not clear right now how much of the drought effect in the forest we observed last year was simply premature leaf death and not selective mortality. The added mortality resulting from the ice storm may make interpretation of the results challenging.

It is only through long-term monitoring that we will begin to detect the signals of floristic change that may be associated with global warming trends.

—Jon Evans



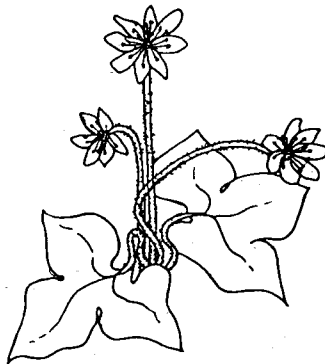
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