



TENNESSEE NATIVE PLANT SOCIETY NEWSLETTER

VOLUME 18, NUMBER 1

FEBRUARY 1995

Natives With a Purpose

by Meredith Clebsch

You may not be aware that there is a major fru-fra going on at the moment in the nursery industry concerning native plants. You may have heard that it was passed down from on high, Big Bill, that native plants should be used whenever possible, and practical on government landscape projects. You and I know that in principle, this is a very noble idea and could have numerous benefits. However, the nursery industry is nervous and even the president of the national association seems to consider "radical environmentalists" to be the culprit. It is understandable since there are many nurseries that grow non-native plants, however, there are many other non-government jobs that use lots of plants. Defining exactly what a native plant is, as we all know, can be a sticky question and that is also causing a bit of a rub.

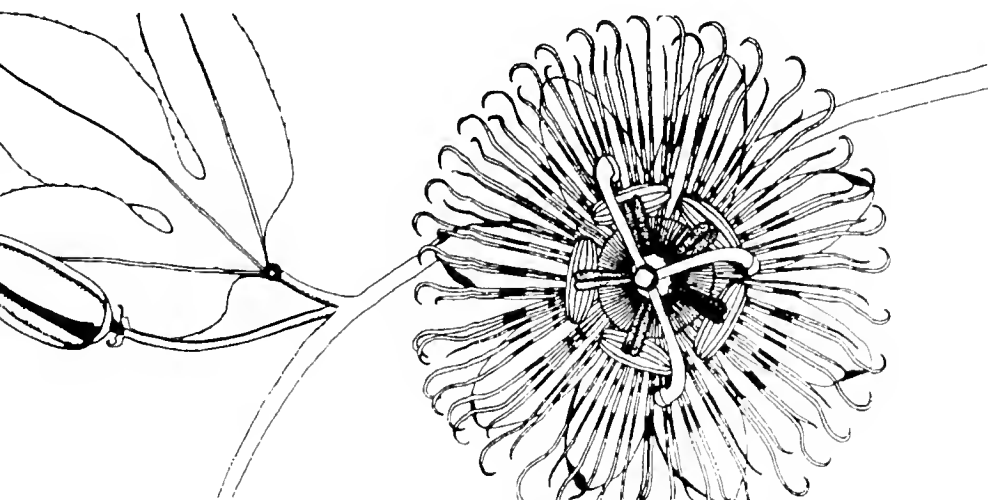
However the issue washes out, I think we will all be better off having had to make some hard decisions concerning the long term considerations that are necessary if we are truly going to "do the right thing" and aim at sustainable landscapes. I hope you can share your efforts with others so that they too might appreciate why these "new" landscapes are good for us all and not a dangerous threat to undermine the nursery industry.

Since most of you are more likely to be involved in fairly small pieces of landscape, and may still be unsure of what the "right" way to manage it is, I thought reviewing some

general principles might help get you off the block and into the yard.

Without a knowledgeable guiding light to focus on, many eager, enthusiastic attempts at creating wildness easily lead to frustration. Most gardens, natural or otherwise, take 2-3 years to begin to look like what they are supposed to. This is the toughest time to stick to your guns and not reach for the Round-up and the weed-eater. You may find yourself needing a pep talk from time to time, and you will certainly need ammunition for convincing (convincing?) skeptics, so here are a few definitions of some of the less understood aspects of native gardening. Consider this a mini-ecology lesson to help you focus your efforts for the long term.

Major Definite Benefit-- Increasing biodiversity. It takes a certain degree of maturity and patience to look beyond what is blooming today and consider the whole picture of how everything we do affects every other thing. Most of us, by now, understand that human behaviors are largely responsible for the accelerated pace of reductions of whole species and the overall reduction in numbers of most others. Because plants and animals evolved together, many non-native plants are of little or no use as food or shelter to the native inhabitants. Natural landscapes provide reasonable facsimiles of native habitats and increase the number of species (biodiversity) of both plants and animals. Therefore, this is probably the most important side-effect to the use of native plants.



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**The Tennessee Native Plant Society,
Department of Botany, the University
of Tennessee, Knoxville, TN 37996-
1100.**

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RULES TO HIKE BY

The following rules were recently printed in the field trip schedule of the Georgia Botanical Society. One would think that these rules wouldn't have to be stated, but all of us, especially field trip leaders who lead trips one day and return the next to find all the flowers gone, know not to take anything for granted. These rules should be followed at all times, not just on field trips.

* NO COLLECTING

* **NO PICKING** except for those few plants used by the field trip leader for educational purposes on the trip. Certainly no bouquets!

* Please do not use a TNPS or any field trip to (and I love this) "**scope out**" places to later return and remove plant material.

* Make every attempt to remain on established trails and where trails do not exist, make every attempt **not to trample the vegetation.**

REMEMBER, *take only photographs and leave only footprints.*



PHOTOGRAPHING WILDFLOWERS-- PART VIII

BLACK AND WHITE IN COLOR

by David Duhl

No, this is not the name of a foreign film. And it's not one of those "artsy" things that nobody understands, either. It's going to make sense if you'll just read on.

The fact is, film will record very light colors (whites) and very dark ones (blacks) as gray. Not just any gray, mind you, but a lifeless, washed-out gray. The kind of gray you were always afraid your gym socks might become.

The problem is that all cameras are calibrated to make everything look gray. It's usually a good idea because it allows us to make properly exposed pictures.

What's really happening is that a little person in the camera matches the needles or LED readout to read a correct exposure when he/she thinks the result is gray. It usually works out quite well: a bright scene alerts him/her that there's too much light on the gray subject, and tells you to let less light on the film. A dark scene? That little person interprets it as not very much light on the gray subject and asks you to add more light. Here's a great test: photograph a white piece of paper and a black one by metering off the paper. What do you think the result will be?

This all works fine unless we really want the subject to be dark (black) or bright (white). In this case, we want no advice from the little person in the camera. Here's a real example. We find a beautiful specimen of white trillium in the spring, and we want to make a close-up of it. If we meter off the white petals, the result will be "gym sock" petals. We have to outsmart the camera and override it, letting more light into the camera than the meter suggests.

Here's another common example. You've memorized the contents of this article and happen upon another white trillium. Not wanting to fall into the gym sock trap, you meter on something that you know will result



in a properly exposed photograph--like some fallen leaves, for example. The result...overexposed white petals! Here's why. The camera suggested a properly exposed photograph, but the film can only handle a subject only so much brighter than the correct exposure. The white petals are too much. In this case--when we did not meter off the white--we needed to let less light in than our camera suggested. Most things will be slightly underexposed, but the whites will look great.

Now, this is not just limited to whites. Dark subjects have similar problems. Whatever you do for whites, just do the opposite for dark subjects. Yellow similarly misbehaves, as does pink. The result? When photographing yellow sunnysbells, pink Sabatia, or wild ginger, you've got a problem. Only now you know how to solve it.

FEDERAL TRADE COMMISSION ISSUES REGULATIONS: LABELS ON WILD-COLLECTED PLANTS

Previously, guidelines (18.0, definitions & 18.6) for the nursery industry allowed plants that originated from the wild to be disguised as "nursery grown", confusing or misleading the environmentally concerned consumer. The new guidelines define "Nursery Propagated" plants as those reproduced and grown under cultivation from plants, seeds or cuttings lawfully collected from the wild state. "Propagated" as reproduced from seeds, cuttings, callus or other plant tissue, spores or other propagules under a controlled environment that is intensely manipulated by human intervention for the purpose of producing selected specimens or hybrids. Furthermore, 18.6 is amended to make it "deceptive" to sell or distribute products collected from the wild state without disclosing that they were collected from the wild state.

Birds and butterflies are beautiful and lovable and easily enticed within reach by simple improvements to habitats. The less photogenic critters need equal time and habitat. No matter if you have one scarlet sage in a clay pot on your 5x5 porch in the middle of town, or acres of native grasses, flowers and woodlands in the country, you have made a contribution to species other than your own.

Landscape Restoration: recreating plant communities and allowing them to continue to change by natural succession. Often this approach is more appropriate for large scale landscapes that have sustained major damage and need a boost to help them back to something resembling their original condition. Strip mines, drained wetlands, road projects, golf courses and large construction sites are good candidates for restoration. This would be considered a purist approach since only plants that would be expected before disturbance on that site are allowed. Considerable planning and data collection are involved for successful restorations. An important note, though, aside from the initial preparations, restorations, by design, carry on naturally and are minimally managed. As a result, this can be one of the least costly methods in the long run.

Natural Landscaping: creating and managing native plants in more or less a fixed state. This approach may begin in a similar manner to restoration, but succession may be halted at a desired stage, for example, a meadow, by management such as mowing or selective clearing. Species included are not necessarily specific to the original site, though sticking to at least regional natives is recommended. Smaller areas, from backyards to small acreages, are most often handled this way to maintain a desired effect, in a natural way.

Community: Very Important! Plant communities can be described as associations of plants that are naturally reproducible. Different forest types, oak/hickory or pine, are examples of community types that occur over and over again in the natural landscape. You might expect to find similar plants along edges of different ponds in the same region, but roadside ditches might have completely different plants, even though both areas are wet. (Why?) When planning, remember to consider **all** of the plants--herbaceous, shrubby and woody--in the community. The way that these are combined is also important and is termed *spatial diversity*. As you might guess, increasing the number of species in each of these levels creates a layered habitat that can support more species of animals by supplying more year round food and shelter. Given a similar structure using non-native plants vs. native plants, the native group will be utilized more and have a higher diversity of native wildlife species.

The significance for you and what you are attempting to create is that, given similar environmental conditions (including soil type, drainage, rainfall, light, etc.), certain plants tend to show up together. (How do they do that?) As a result, animals

that use these plants tend to show up together. (Hard to believe?) A basic understanding of your own growing conditions and the community type that is most appropriate, is very important. For example, a meadow or prairie community may be your goal. If your site is heavily wooded, you need to reconsider. Is it a wet lowland or a dry bank? Most of the frustrations with naturalizing projects stem from trying to create a community that is radically different from what the site would naturally support. The expense of grading, adding topsoil (it usually washes off), fertilizer, adding irrigation or drainage lines, is rarely the best choice except on severely damaged areas. Take the time to understand all you can about your particular site before deciding how best to manage it.

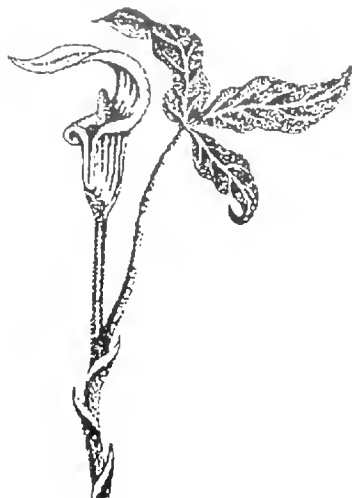
Corridors and Hedgerows: pathways and connectors between natural areas to allow and encourage the safe movement of wildlife and plants. Fragmentation is the term used to describe how our natural landscapes are often chopped up and distant from one another. This is a major reason that species are not able to find each other and reproduce and therefore don't have the minimum amount of habitat to survive. Creating large enough natural areas is often not possible, but protecting and connecting several smaller areas can be enough to keep many species viable in an area. The common practice of herbiciding fencerows and roadsides contributes to the problem. Often just allowing these areas to grow is all that is necessary to provide enough of the right habitat to increase the number of birds and other wildlife dramatically. Avoid over-managing for neatness and instead encourage letting leaves, limbs and down trees stay in the landscape. These not only benefit soil structure as they break down, but are great habitat for grubs etc. which are a major food source for many larger animals. Edges of rivers and creeks are excellent areas to be considered as corridors since water adds another essential element for species survival. Many farm woodlots could easily be connected by corridors along fences, lanes and creeks. Abandoned urban areas might be minimally managed to create prime habitat for many species. More homes with native landscapes will allow many species to move back into our neighborhoods and our lives. This is a very simple and inexpensive method with great potential for increasing interest and diversity in small areas.

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Edges-- the boundary where two community types meet. Where communities meet and often overlap, the number of species is higher than in either one independently. This is because species from each community will, at times, use the edge. The edge between a woodlot and a pasture is often very distinct. Not much room for interaction. If however, there was a transition zone of say, sumac and other medium sized plants for several yards, you could expect to see much increased activity in the area. In your planning, think of possibilities to increase the edges and decrease the abrupt end to a community type. The visual effect will be more pleasing and natural, also. Along these lines, you should also consider leaving or including dead snags. These are very important for birds during breeding, nesting and as a source of grubs etc. Snags also make it much easier for watchers to see birds!

Just Plant It!!

Hopefully, these concepts will help you narrow your focus to something doable. Don't try to wait until you know everything before you start, or you never will start. And by all means, involve others, young or old; gardener or couch potatoes; dumb or dumber; professional or amateur. My old gym teacher told me one of life's all time truths which is "One does not like what one cannot do," and once someone sees what they have done grow and blossom, they will like it!



NATIVE PLANT SALE WILDFLOWER FESTIVAL APRIL 8-9, 1995

Reflection Riding and the Chattanooga Nature Center will have its annual spring Native Plant Sale and Wildflower Festival April 8-9. A myriad of wildflowers should be blooming within Reflection Riding's 300 acres, visible from car or one of the many hiking trails.

The plants that will be on sale have been propagated mostly from the native plants in the Riding...none dug from the wild. For more information or an order form, call 615/821-9582, or write Reflection Riding, 400 Garden Rd, Chattanooga, TN 37419.

WILDFLOWER WALKS OFFERED AT BAYS MOUNTAIN PARK

10 a.m. Each Saturday in April and May 6

3:15 p.m. April 16, April 29, April 30, May 6 and May 13

12:30 p.m. May 6

Wildflower walks will be lead by a trained naturalist at the above dates and times. Each will last 1 1/2 -2 hours. Participants should meet at the upstairs entrance to the Nature Center. Bays Mountain Park is located 6 miles from downtown Kingsport, TN and may be accessed from Exit 57B on I-81 and then Exit 51 from I-181, then follow the signs. There is a \$3 per car parking fee. Walks are free. For more information contact Joe Taft at 615/229-9447.

EXOTIC PEST PLANT COUNCIL SYMPOSIUM

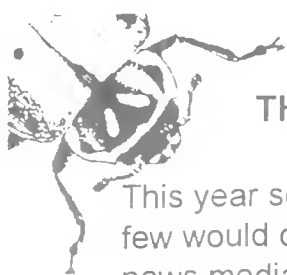
The Tennessee Exotic Pest Plant Council (TN-EPPC) will host the second annual Tennessee exotic Pest Plant Symposium to be held April 7 & 8, 1995 at the Scarritt-Bennett Center in Nashville, TN.

Sessions will address the issue of exotic plant invasion and related problems caused by "biological pollution". This will include sessions that focus on public policy issues, scientific perspectives, education, control and management of exotics, restoration and native plant issues. The keynote speaker will be Dr. Carol Baskin, professor of botany at the University of Kentucky.

Registration for the symposium is required and early registration is advised, as space is limited. To register, or for further invormation please contact:

Dr. Darlene Panvini
Vanderbilt University
Box 1537B
Nashville, TN 37235
615/312-7290

Brian Bowen
Dept. of Env. and Cons. /Ecological Services
Division
L&C Tower 8th Floor
401 Church
Nashville, TN 37243-0447
615/532-0436



THE INVASION OF THE LADY BUGS

This year seems to be the "year of the lady bug". Though few would call the lady bug a bother, folks are calling the news media, extension offices and entomologists around the state complaining about the number of lady bugs. They just seem to be the hot topic of conversation this winter. They're everywhere, in houses, sheds and porches. I even collected a couple of hundred from an old smoke stand I bought at a junk store last month! I put most of them in the refrigerator to rest until spring and a couple on my Cymbidium to see if they would munch on the scales that plague the plant.

There are about 5000 species of lady bugs (lady beetles or ladybird beetles) in the world and about 400 in North America. Only three species are plant feeders and garden pests. Lady bugs are easily the most beneficial insects, feeding on aphids, scales, mites and mealy bugs, and play a major role in holding down outbreaks of these pests. (If you grow butterfly weed in your garden, be sure to grow a few lady bugs too! They should call it aphidweed instead of chiggerweed) Both the adults and larvae are voracious predators and the larvae look like tiny, fat, black and red spiny alligator vacuum cleaners going through a patch of aphids! After passing through 4 growth stages, the larvae attach themselves by the tail to a leaf or branch, pupating in the last larval skin and emerging as adults a few days later.

Adults are oval or round, with a flat underside and are red, orange or yellow with black markings, or the other way around, with very short antennae and a very tiny head. Adults gather by the thousands as cold weather sets in and hibernate under rocks and branches. Several species enter houses in the fall to hibernate until spring. I had never seen this until we moved into the house we're in now. From what I hear, once a lady bug house, always a lady bug house, which seems to annoy some people. I think it's great. In the fall, we had swarms of lady bugs in the yard and then I started noticing them upstairs, only they weren't, aren't, hibernating. They're crawling everywhere, so I collect them by hand and put them in the refrigerator. I heard the other day you should vacuum them up and put them outside, but neither seemed very kind to the beetles.

When the weather warms up, lady bugs, either purchased or collected, should be gently released in the garden in the evening, so they won't fly away. It helps to have a good supply of aphids and other pests for them to feed on. Please don't use pesticides! 3000 lady bugs will protect about one acre and it takes about 1500 of the beetles to make an ounce.

NON-TNPS WILDFLOWER ACTIVITIES

March 25 River Bluff Trail Spring Wildflower walk. Norris Reservoir, Norris, TN. 10 a.m., parking lot of trail. Call Judith Bartlow 615-632-1592.

April 1-2 Norris Dam State Park Wildflower Weekend 10 a.m. & 2 p.m. hikes. River Bluff Trail and Rock Creek Trail. Call Mike Scott at 615-426-7461.

April 14-16 Fall Creek Falls Wildflower Pilgrimage 615-881-5708

April 15-16 and April 22-23 Frozen Head State Park Wildflower Pilgrimage. 615-346-3318.

April 21-23 Warrior's Path State Park Spring Festival. Wildflower walks, bird life, nature photography, etc. 615-239-8531.

April 23 Standing Stone State Park Wildflower Walk 8 a.m. 615-823-6347.

April 28-29 Cedars of Lebanon State Park Wildflower Pilgrimage. 615-443-2769

May 6-7 Roan Mountain State Park. Wildflower and bird walks plus Bob McFee will speak on Highland Grazing: Angora Goats on the Roan. June 16-18 49th Annual Rhododendron Festival, guided tours to the Roan's rhododendron "gardens". 615-772-3303.



1995 FIELD TRIPS

The following tentative 1995 schedule of field trips will be submitted to the TNPS Board of Directors at its February meeting. Some trips will be described in more detail in future issues of the Newsletter. Trips are led by persons familiar with native plants of the area. These trips provide an opportunity to observe, photograph, and learn about our native flora. Since plant protection and conservation are primary objectives of our organization, digging and collecting is NOT PERMITTED.

Please contact the leader in advance for those trips that you plan to attend. This not only lets the leader know the number of participants, but also ensures that last minute changes and updated information are known prior to the trip.

Keep the schedule handy and plan to attend as many trips this year as possible. See you on the trail!

1995 TNPS FIELD TRIP SCHEDULE (PRELIMINARY)

<u>DATE</u>	<u>EVENT/LOCATION/COORDINATOR</u>
MARCH 25	Bluebell Island, Franklin Co.; extensive population of <i>Mertensia virginica</i> and other spring wildflowers on an island in the Elk River. Also, search for dwarf trillium, <i>Trillium pusillum</i> , not seen here since the early 1980's. Easy hiking, prepare for muddy soil. Leader: Sanford McGee, Sewanee 615-598-5942. Meet at 10:00 a.m. CST at Tyson Foods Parking Lot, 1 mi toward Winchester on Hwy 50 from Exit #127 off I-24 between Manchester and Monteagle.
APRIL 9	J. Corn Farm; rich spring flora including Blue-eyed Mary, <i>Collinsia verna</i> , also Trilliums; hiking easy to moderate; Leaders: Milo Pyne, 615-532-0440; Andrea Shea, 615-532-0439. (NOTE: SUNDAY TRIP) For Corn Farm trip, meet at 12:30 p.m. CST at Valley Market, across from the Cone Oil Station on Hwy 31, 2 mi N of Millersville Exit #104 off I-65, N of Nashville. Note: before or after Corn Farm trip, possible additional visit to an apparent American Chestnut tree in the Joelton vicinity, with some attendees of the EPPCI meet; call Milo for details.
April 15	Standing Stone State Park, Overton Co; outstanding diversity of spring flora; lots of Phacelia and Trilliums; hiking easy to moderate on park trails. Leader: Candy Swan, 615-528-4698. Meet at 9:00 a.m. CST at the Park Office on Hwy 136, between Livingston, Celina and Gainesboro.
April 27-29	Smokies Wildflower Pilgrimage
April 30	Sunday Hike after Smokies Pilgrimage; meet at Sugarlands Visitor Center, 9:30 a.m. EST; hiking easy to moderate on park trails.
May 13	Cummins Falls, Jackson Co. rich spring flora (lots of <i>Phacelia bipinnatifida</i>) and dramatic waterfalls; hiking moderate to difficult off trails; Leader: Milo Pyne, 615-532-0440 or 383-8767 home; meet at 10:00 a.m. CST at Wildwood Market at Bloomington Springs where Hwy 291 from Cookeville meets Hwy 56; Exit 280 (Baxter/ Gainesboro) off I-40.
May 20	Swan Creek Area, Lewis Co; <i>Liparis loeselii</i> , seepfens and foliage of <i>Pamassia grandifolia</i> ; short, easy hike (slippery rocks in stream bed) afternoon visit to Rattlesnake Falls in Western Maury Co; hiking easy to moderate. Leaders: Bill & Kay Jones, 615-285-2777. Meet at 10:00 a.m. CST at Jones' home, "Ridgetop" N side of Hwy 99/ 412, 4 mi W of Hampshire and 4 mi E of Natchez Trace Parkway.
June 17	Laurel Snow Pocket Wilderness to see Camelia (<i>Stewartia ovata</i>), also medicinal plants; hiking moderate to difficult, ca 4 mi roundtrip. Leader: Christine Bock (Tennessee Aquarium Horticulturist) 615-785-4071. Meet at Hardees in Dayton, TN; N of Chattanooga on Hwy 27 at 10:30 a.m. EST. Call for details.
September 8-10	Joint meeting with the Kentucky Native Plant Society at Natural Bridge State Park, KY. details in later newsletters

TNPS "GOODS" AVAILABLE

TNPS T-SHIRTS with multicolored design on GRAY, WHITE, BRIGHT YELLOW and MINT GREEN 50/50 shirts are \$10.50 ea + \$2 postage.

SWEATSHIRTS same design on gray 50/50 shirt are \$18 +\$2.50 postage.

HATS white twill with passion flower design \$7.50 + \$2 postage.

NOTECARDS original rare plants or medicinal plants \$3 ea + \$1 postage.

DECALS white with purple passion flower design \$1 and self-addressed, stamped envelope.

Checks should be made payable to TNPS and orders should be sent to: Nita Heilman
429 Rivermont Dr
Clarksville, TN 37043.

If you have questions about sizes, colors or postage on more than one item shipped to the same address, please contact Nita at the above address, or call her, after 5 p.m. at 615/645-9338.

RENEW YOUR MEMBERSHIP IN TNPS

If your dues are current, your mailing label will read **1995** or later. If your mailing label shows a date earlier than 1995, please keep your membership current by sending a check to:

**Tennessee Native Plant Society
Department of Botany
University of Tennessee
Knoxville, TN 37996-1100**

Membership Categories:

Regular \$15, Student & Senior \$10, Institutional \$20, Life \$150. You may give a special **One - Year Gift Membership for \$10**. Renewal dues will be the regular \$15 membership fee. Please indicate who is giving the gift membership and the name and address of the person receiving the gift membership. Perfect for those hard-to-shop-for friends and family!

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1172 S DRY VALLEY RD.
COOKEVILLE, TN 38506
615/528-4698

**Bulk Rate
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*Insist on nursery propagated
native plants. If you're not sure,
ASK!*



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WHAT MAKES MY WILDFLOWER SEEDS GROW?

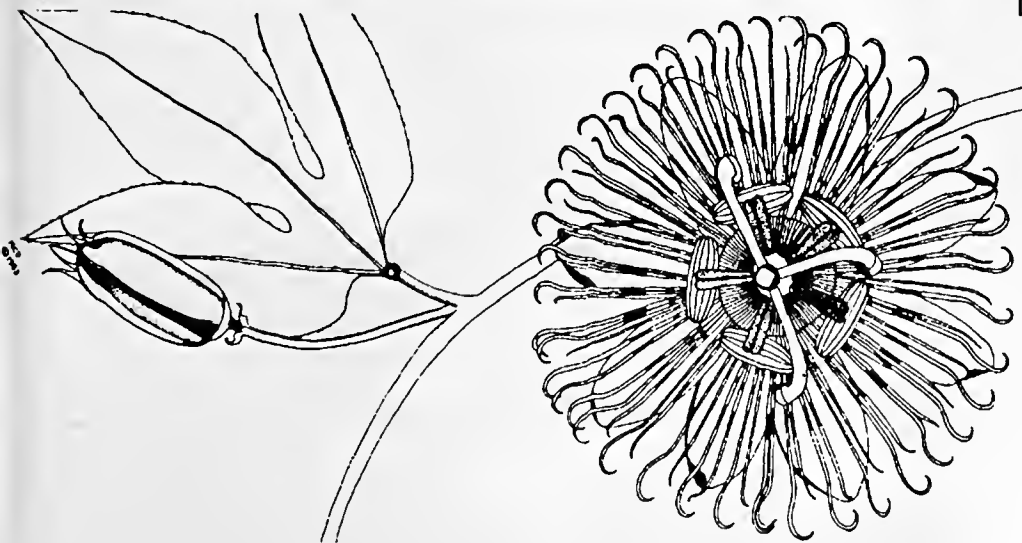
What makes some seeds sprout while others lie buried in the soil, seemingly dead? If we consider the growing conditions of a wildflower species, we can better understand the importance of planting its seeds in the proper place and time.

After a plant has flowered and produced fruit, the seeds within can be dispersed in a variety of ways. The wind will carry some seeds long distances, while others will fall to the ground close to the parent plant. Animals will carry some seeds that stick to their fur and later fall off, or eat the seeds and later eliminate them.

Whatever the dispersal mechanism, seeds end up in a variety of locations and conditions that either promote growth or prohibit it. When a seed lands in an inhospitable environment, it remains dormant until conditions are amiable for germination and growth of the plant to fruition. Remember-the ultimate goal of any species, plant or animal- is to perpetuate the species, so production and protection of the seed stock is essential.

Some built-in protection devices inhibit seed germination until specific environmental and physiological requirements are met. For example, some desert plants have a chemical that inhibits seed germination. Plants that live in arid environments with annual rainy seasons developed this chemical mechanism, which does not allow germination until there is sufficient water to support growth of the entire plant. The inhibitor, located just under the seed coat, prevents germination until the seed has received enough water to leach out the inhibitor- indicating that the rainy season, and not a sporadic shower, has arrived.

Another protective system is a hard seed coat (*Hibiscus*) that requires scarification to break it open, allowing water to enter and germination to begin. Over time, natural events including microbial decay, fire, and digestion by animals, begin to break down or scarify the hard seed coat. Alternate doses of freezing and thawing will break open seed coats. Plants benefit from natural scarification because it prevents all seeds of a species from germinating at the same time. If all seeds were to germinate at the same time, a drought or freeze



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PHOTOGRAPHING WILDFLOWERS

PART IX

by David Duhl

THE SHARPER IMAGE

Whether you're an absolute beginner or a serious amateur, it's a sure thing that someday you're going to make a real effort to see if your wildflower pictures are in sharp focus. Here's how serious photographers take a critical look at it.

It may be hard to accept at first, but the fact is that a projected slide or a printed negative cannot reveal if your pictures are sharp (in focus). It's important to examine the processed film that's not affected by the optics of a projector or enlarger. To do this, you'll need two things: a light source and a loupe.

The light source could be a light box specifically made for viewing slides, a homemade equivalent or even a bare bulb, although an incandescent bulb won't be balanced for daylight and may make slides look orange. The point is, you need something to backlight the slide or negative like a projector or enlarger would.

The key to checking sharpness is a good loupe (pronounced loop). A good loupe is as valuable as the best lens you own. It's nothing more than a magnifying glass, but its optics are such that optical distortions are eliminated. Of course, the more distortions you want eliminated, the more you're going to pay for the loupe. You could spend anywhere from ten to one hundred fifty dollars for a loupe. It depends upon what your needs are. For most of us, a good standard loupe in the neighborhood of twenty-five dollars does just fine and is well worth the money. Here's what to do.

Make sure the loupe is full-frame. That is, make sure you can see the entire slide or negative when you look through it. Also make sure the edges are just as sharp as the center. To check this, you could use the loupe to examine a written page. The letters at the edge of the loupe should be just as sharp as the ones in the center.



Loupes come in various powers. For most of us, a 4X power is about right. In other words, the image you view through the loupe will be increased four times, plenty of magnification to see any flaws or out-of-focus areas.

So why pay the money for an expensive loupe? At some point, you'll want to look through an expensive loupe just out of curiosity. When you do, you'll see a world of difference. Because these loupes correct for common optical aberrations, most importantly, astigmatic, you'll be able to take a more critical look at your photographs. If you've ever made an enlargement of one of your wildflower photographs and the print was not as sharp as you remembered the original to be, look again through a good loupe.

A good loupe is the best editing assistant you could possibly be associated with. If you've spent your hard-earned money for a good camera system, then it makes some sense to invest in a loupe that will really show you what your camera system is producing. For wildflower photography, another benefit emerges when you look through a loupe. Some features-like the hairs on flower stem or the fascicles on some plants-are plain as day when seen through a loupe. Sometimes it even helps in identifying the specimen. A good loupe was absolutely critical in the photograph selection committee's work for the TNPS wildflower book. Sad to say, some beautiful projected images were not as sharp when viewed through a loupe and made it no farther in the selection process.

Whether you're interested in publishing your work, making prints or just appreciating the features of the wildflowers you've seen, consider using a loupe to view your work.

JOINT MEETING WITH KENTUCKY NATIVE PLANT SOCIETY

The TNPS will hold its Annual Fall Meeting with the Kentucky Native Plant Society September 8-10 at the Natural Bridge State Resort Park in Kentucky. This is sure to be a great meeting. Mark your calendars now and plan to attend. Details in later issues of the Newsletter.



Native plants such as Purple Coneflower, Coreopsis, Firepink, Penstemon, Hibiscus, Rudbeckia, Sunflowers, Bee balm, Passion flower, Joe Pye weed, Liatris, Phlox, Goldenrods, Boneset, Asters, Buckeyes, and Ironweed all provide nectar for adult butterflies and are easy to grow in the garden. Along with nectar and larval plants, try to provide damp areas or shallow puddles in your butterfly area. Remember to avoid pesticides if you are gardening for butterflies or other wildlife.

NATIVE PLANTS AND THEIR BUTTERFLIES

Native butterflies depend on a variety of native plants to survive. Many flowers serve as nectar sources for adult butterflies, but the adults only lay their eggs on specific plants that will feed the emerging caterpillars. These are a few plants that you can provide in your yard to encourage both adult and larval butterflies.

Pipevine Swallowtail	Dutchman's Pipe
Zebra Swallowtail	Pawpaw
Tiger Swallowtail	Yellow poplar, Sweet bay, wild black cherry, ashes, choke cherry and Spice bush
Spicebush Swallowtail	Spicebush and Sassafras
Sulfur	Legumes
Spring Azure	Dogwood, New Jersey Tea, Viburnums
Eastern Tailed Blue	Legumes
Gulf Fritillary	Passion flower
Other Fritillaries	Viola sp.
Buckeye	False foxglove and Wild Petunias
Monarch	Milkweeds
Morning Cloak	Willows, elms and cottonwoods
Comma	Nettles, American Elm and hops
Red Admiral	Nettles
American Painted Lady	Gnaphalium and Antennaria spp.
Silver-spotted Skipper	Legumes especially Locust and Wisteria



MOST UNWANTED LIST

In 1992, Jonh Randall, Invasive Weed Specialist of The Nature Conservancy (TNC), sent a survey regarding pest plant problems around the nation. Land managers from TNC preserves responded with their lists of invasive plants that threaten land management. As good neighbors, State Highway Departments will find and hopefully control these plants on their roadside right-of-ways.

Some 150 species were listed, noting which States have these plant problems. Here are the most common pest plants reported that are also commonly found on highway ROWs:

Tree of Heaven
Garlic Mustard
Japanese Barberry
Smooth Brome
Downy Chess
Thistles
Knapweeds*
Russian/Autumn Olive*
Japanese Honeysuckle
Purple Loosestrife
White/Yellow Sweetclover
Reed Canary Grass*
Common/Tall Hedge Buckthorn*
Multiflora Rose*
Johnson Grass
Periwinkle
Kudzu
Dame's Rocket*
Crown Vetch*
Burning Bush*
Amur Honeysuckle*
Bicolor Lezpedeza*

A complete list and a list of noxious weeds in Tennessee can be obtained by calling 612/290-3233.

* shows species used in Tennessee, by State Agencies, to revegetate, "beautify" or attract wildlife along roadsides and in wildlife management areas.

DID YOU KNOW?

- Sugar maples release phenolics that inhibit yellow birch.
- Walnut trees give off juglone, inhibiting other trees, shrubs & herbs.
- Oaks exude coumarins & other phenolics, inhibiting herbs & grasses
- Asters & goldenrod exude phenolics that inhibit sugar maples & black cherry.

PLANT CONSERVATION DIRECTORY NOW AVAILABLE

The 1995 *Plant Conservation Directory* (\$18.00) is now available from the Center for Plant Conservation. In this newly-revised directory, the Center has compiled the names, addresses, and telephone numbers of botanical, conservation, governmental, and scientific personnel and organizations nationwide and by state that may be able to assist with plant conservation efforts. In addition, the directory identifies rear plant laws and rare and endangered plant lists by state.

Also just published is the Center's *Guidelines for the Management of Orthodox Seeds*. (\$14.00) This 78-page booklet is primarily intended for use by the Center's Participating Institutions, but will also provide other organizations and interested individuals with a source of practical ideas regarding orthodox seed collection, storage and management. A comprehensive bibliography on seeds and seed storage is also included.

Send orders to:

Publications
Center for Plant Conservation
P.O. Box 299
St. Louis, MO 63166-0299
314/577-9450 Fax 314/577-9465

would destroy the entire seed stock. Spreading germination out over time ensures that at least some of the plants would survive.

Seeds are also sensitive to other environmental influences such as light and temperature. Some seeds will not germinate until they are exposed to the proper amount of light. Tiny seeds, *such as Lobelia and Aquilegia*, require light to indicate their depth in the soil, and sun-loving plants have light-sensitive seeds that will not germinate under a heavy shade canopy. Conversely, many seeds must experience darkness to trigger germination.

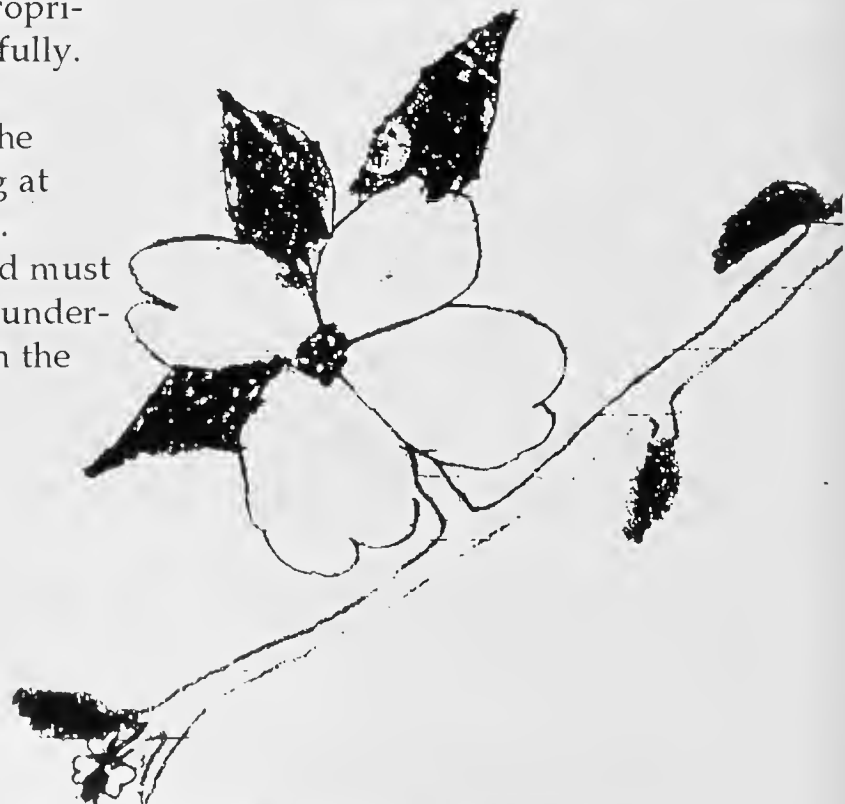
Seeds are extremely varied in their temperature requirements; some may need to experience a specific low temperature over a length of time or they will not sprout (*Asclepias*), which protects the seeds by preventing them from germinating too early and getting nipped by a late freeze. In other seeds, high temperatures will prevent germination, while warm temperatures may induce it. This thermodormancy acts as a calendar for the seed, protecting it until the appropriate season arrives, so the plant can grow successfully.

These protective mechanisms are only a few of the ways seeds protect themselves from germinating at inopportune times in inhospitable environments. Recognizing the trials and tribulations that a seed must endure before it will germinate makes it easy to understand the importance of sowing the right seed, in the right place, at the right time.

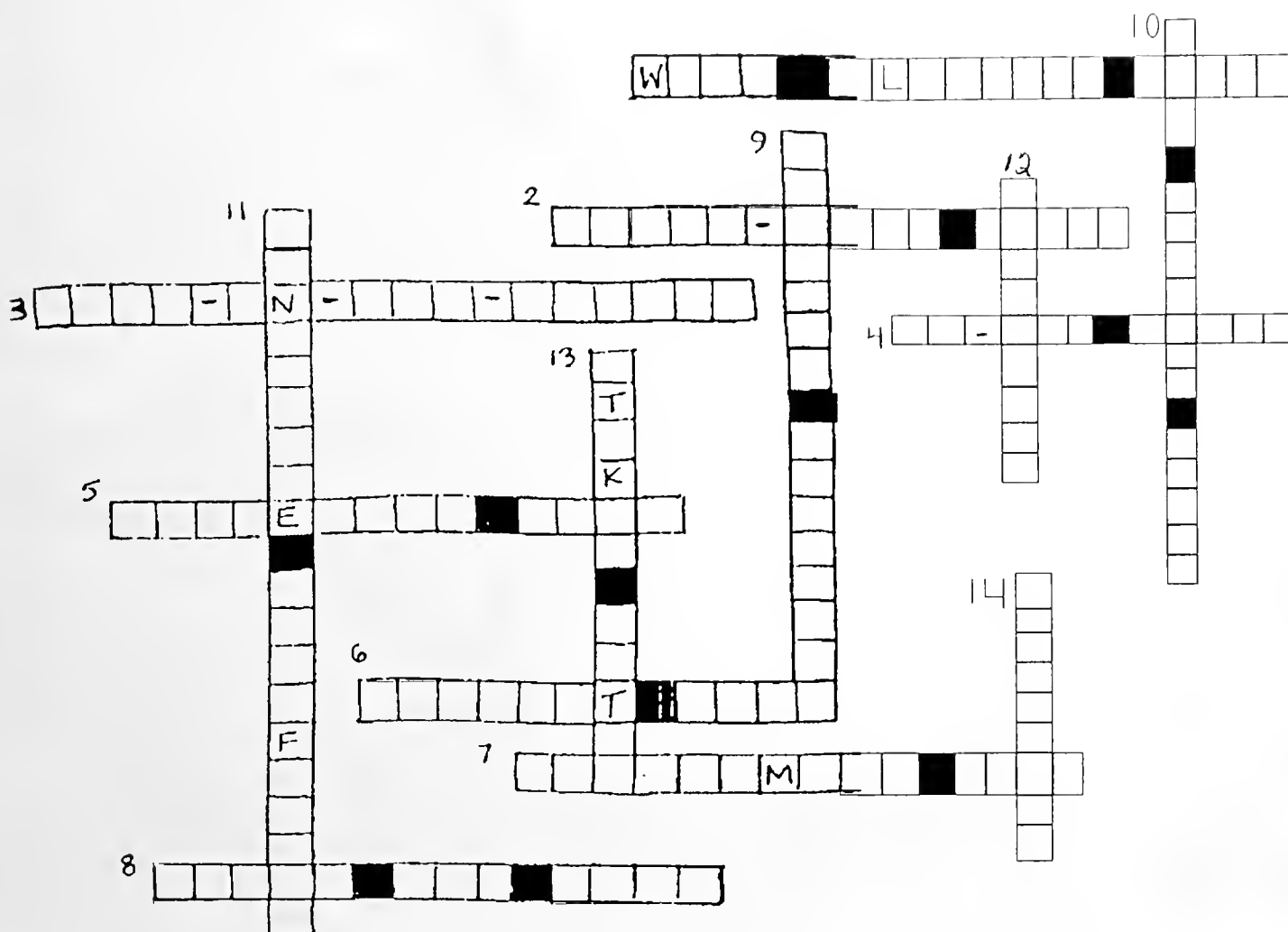
Elinor Crank
Research Horticulturist
National Wildflower Research Center

DOWN

9. I like wet ground, where roots go deep, yellow blossoms as humans sleep
10. Handsome soldiers standing tall, violet royal in early fall, give me a drink or even drought, New England's fairest will prove out.
11. Man should come to know my face, or mine will be a dying race, Laws in our United States may save me from the saddest fate.
12. Old MacDonald had a farm, pastures dotted with my charm, spring lambs dance in dewy meadows, rich in luminescent yellows.
13. Shades of lavender in sunny spaces, hardy beauties for garden places.
14. Blame me not for cough or sneeze, golden plumes on autumn's breeze.



Native flowering dogwood by Chad Shockley, 3rd grade, Spencer Elementary School



ACROSS

1. Blue-grey foliage, deeply lobed, will grace the gardens I am told, Long past when pink hearts unfold.
2. The second leg of the Triple Crown jests three-year olds of some renown, the fastest horse will wear my colors; gold & black are Preakness honors.
3. Each early spring, in bogs & woods, You'll find my spathe & nod ding hood. Jack will not have far to reach, in seeking Sunday's place to preach.
4. I serve roadside, fields & ditches, often found in sunny niches, Would the May still be of grace, Without my cheerful daisy face?
5. I am a rather hardy fellow, flashy orange in the meadow, My tap root reaches deep to drink, to dig me up is rude, I think.
6. Hummingbirds are pleased to find, bright orange trumpets on my vines.
7. My kind have grown on earth, you see, long before man came to be. My greens are fronds, don't call them leaves, under these are spores, not seeds.
8. Clever gardeners have often found how gracefully I cover the ground, from April through October frost, these golden stars will not be lost.

THE CULLOWHEE CONFERENCE LANDSCAPING WITH NATIVE PLANTS

The 12th annual Cullowhee Conference will be held in Cullowhee, North Carolina from July 20-22. An optional day of field trips will precede the conference. Many topics will be discussed, including "The Magic of Stone", "Native Grasses with Landscape Potential", "Woody Plant Propagation Workshop" and many more. To receive more information, contact Sue Dietz, Office of Summer School & Continuing Education, Western Carolina University, Cullowhee, NC 28723 (1-800-WCU4YOU)

Saturday, June 17

Field trip to Laurel Snow Pocket Wilderness to see Mountain Camellia & medicinal plants. Moderate to difficult ca. 4 mi. round trip. Meet at Hardees in Dayton, TN 10:30 Eastern Daylight time. Call Leader Christine Bock at 615/ 785-4071 for details. Joint trip with new Tennessee Wildflower Society!

RENEW YOUR MEMBERSHIP IN TNPS

If your dues are current, your mailing label will read **1995** or later. If your mailing label shows a date earlier than 1995, please keep your membership current by sending a check to:

**Tennessee Native Plant Society
Department of Botany
University of Tennessee
Knoxville, TN 37996-1100**

Membership Categories:

Regular \$15, Student & Senior \$10, Institutional \$20, Life \$150. You may give a special **One -Year Gift Membership for \$10**. Renewal dues will be the regular \$15. Please indicate name and address of giver and receiver of membership.

Vol. 18, No. 2 April 1995

Printed on recycled paper

TENNESSEE NATIVE PLANT SOCIETY NEWSLETTER

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TENNESSEE NATIVE PLANT SOCIETY NEWSLETTER

VOLUME 18, NUMBER 3

JUNE 1995

✓ GLOBALLY SIGNIFICANT RARE PLANTS IN TENNESSEE

Listed as Endangered by U.S. Fish & Wildlife Service

Tennessee Coneflower (*Echinacea tennesseensis*)

This plant, with its dazzling bright, pinkish blossoms is one of the best known rare flowers. It is also one of the first to receive federal listing as an endangered species. It exists in only seven places in the world, all of which are in Middle Tennessee's Davidson, Rutherford and Wilson Counties. The coneflower lives in open areas where thin soil overlays limestone. Depending on the depth of the soil and the surrounding plants, these areas are either called cedar glades or cedar barrens.

The Tennessee Coneflower was probable once more common than it is now. At one time, it was probably harvested, with other Echinaceas, as a cure-all medicine. One problem with saving this species as a garden flower is that it hybridizes with other species of Echinacea and is being lost through genetic contamination.

Ruth's Golden Aster (*Pityopsis ruthii*) Named for a school teacher in Knoxville who first discovered the species at the turn of the century, this plant was not seen again by a botanist until 1953. By the late 1960's, it was thought to be extinct. However, it was found again and exists in only one area of the world, Polk County, Tennessee. This small flower, topped by bright yellow blossoms, grows on boulders that lie in the Ocoee and Hiwassee River beds. Both of these rivers are regulated by up-stream dams.

Green Pitcher Plant (*Sarracenia oreophilla*) This plant is fairly well-known because of its ability to trap and eat insects. It can grow up to 12 inches high and has large green flowers. A Fentress County bog, which was drained in the late 1950's or early 60's was the only known site for this or any other pitcher plant species in Tennessee. The remaining sites are in northern Alabama and one location in northwest Georgia. Pitcher plants are threatened by drainage of their wetland homes, fire suppression and collection.

Large-flowered Skullcap (*Scutellaria montana*) This member of the mint family lives only in dry forest in northwestern Georgia and southeastern Tennessee. The plant obtained its name unusual name from the shape of its seeds, which resemble a skull. The flowers of this plant are a beautiful lavender and white. A large population of this plant is found in Prentice Cooper State Forest.

Cumberland Sandwort (*Arenaria cumberlandensis*)

This species, which was discovered about 15 years ago, makes its home only in rocky river gorges in parts of the Cumberland Mountains in Tennessee and Kentucky. Most of the known sites occur within four Tennessee Counties and mainly on public lands. The plant grows to only 3-4 inches high and has tiny white flowers.

Small Whorled Pogonia (*Isotria medeoloides*) This rare orchid is located in more sites than any other of Tennessee's federally-listed species. Populations of this grayish-green orchid occur in all of the eastern seaboard states from Maine to Georgia, except Maryland. Wherever the plant grows, its numbers at a specific location are very few. Tennessee's only known site has about a dozen plants. Because of its color, it is easily overlooked.

(Reprinted from *The Tennessean*, 1990)

Mountain Avens
Geum radiatum



**TENNESSEE NATIVE PLANT SOCIETY
NEWSLETTER**

**JUNE 1995
VOLUME 18, NUMBER 3**

This Newsletter is a publication of the Tennessee Native Plant Society and is published six times a year, generally in February, April, June, August, October and December.

The Tennessee Native Plant Society (TNPS) was founded in 1978. Its purposes are to assist in the exchange of information and encourage fellowship among Tennessee's botanists, both amateur and professional; to promote education of the public about Tennessee flora, and wild plants in general; to provide, through publication of a newsletter or journal, a formal means of documenting information on Tennessee flora and of informing the public about wild plants; and to promote the protection and enhancement of Tennessee's wild plant communities.

Dues are \$15 for the calendar year (\$10 for students and senior citizens, \$20 for institutions, and \$150 for life memberships). Membership privileges include a subscription to the TNPS Newsletter. Dues may be sent to:

**The Tennessee Native Plant Society, Department of Botany
University of Tennessee
Knoxville, TN 37996-1100.**

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Candy Swan, Editor

From the Editor:

Please remember that all TNPS officers and board members, including yours truly, are **volunteers**. Most of us have lives, jobs and responsibilities outside TNPS. Without going into detail, I'm a very busy person. The Newsletter is not usually the first priority in my life. I really enjoy putting the Newsletter together and I try to get it out as quickly as possible, with content that you will find interesting and helpful.

Recently I have discovered that, to arrive in your mailbox on time, The Newsletter must be ready to take to the printer **6 weeks** ahead of time. The printer can sometimes have it ready in 2 weeks, but the post office evidently has a **month** to deliver bulk mail. Other organizations have the same problem with their newsletters. The Georgia Botanical Society has gone back to sending its newsletter first class because of this. We don't want to do this, so please be patient. Field trip and meeting dates and times, which I think is top priority, **has** been timely and no one should have missed a field trip or meeting because of the Newsletter schedule.

I appreciate those members who have sent information for The Newsletter. Unfortunately, this information is few and far between. The responsibilities of the Newsletter "editor" is, for the most part, Newsletter "writer". Coming up with 8 pages of anything every other month is, to say to least, challenging. So please, contribute what you can, when you can to the Newsletter. I also appreciate the calls and letters, both thanks and concerns, keep them coming. However, if you do feel you must voice a "concern", remember this little anecdote:

One day I called the treasurer (as the chapter president and newsletter editor of yet another volunteer organization) of the U.C. chapter of the Tennessee Ornithological Society to pass along a complaint, oops, concern, by another member, she quickly replied, "Oh good, they must have more time to do this job than I do, I'll get everything together and send it to our new treasurer!" She was joking of course. But if you find an packet in your mailbox addressed to "Newsletter Editor, TNPS" you'll know your "concern" came on a bad day!

Hope everyone is having a fun summer and is enjoying this wonderful weather. Try to attend the **Fall Meeting** of the Tennessee and Kentucky Native Plant Societies, **September 8-10**, at Natural Bridge State Resort Park in Slade, Kentucky.





LADY FERN

Emerging when the dogwoods bloom, the first crocuses of the lady fern (*Athyrium filix-femina*) unfurl into upswept, gracefully arching fronds that dip daintily at their sharply pointed tips. These invitingly soft fronds ask to be touched. Close inspection reveals that each is a single, much-divided leaf. Fronds can vary in color from almost yellow to dark green, with bright green being most characteristic. The stems can be red or green or both.

The origin of the plant's Latin name is not clear. Apparently Linnaeus first assigned the name to the coarse bracken fern, perhaps because its reproductive structures, borne inconspicuously along the leaf margin, are concealed in a manner deemed "female". He later transferred the designation to the delicate fern known as lady fern, or wood fern's wife.

There are several varieties of lady fern native to North America. They are very similar and, where their ranges overlap, a confusing blending of characteristics occurs. The leaf of *A. filix-femina* var. *angustum*, the northern lady fern, found from Newfoundland south to Virginia and west to Iowa, narrows toward the base of its frond, while that of the southern lady fern (*A. filix-femina* var. *asplenoides*), found from Rhode Island south to Florida and west to Texas, is broader at the base. In the eastern United States, the lady fern grows two to four feet high, but in the cool, moist Pacific Northwest, it is not unusual to meet a five or six foot specimen of *A. filix-femina* var. *cyclosorum* (also known as var. *sitchense*), a variety most commonly found in mountainous areas. At the opposite end of the spectrum, there is the diminutive *A. filix-femina* var. *minutissimum*, which attains a height of only five inches.

The lady fern is easily distinguished from other native ferns. Simply turn over one of the plant's fronds and examine the underside. Fertile fronds have distinctive

crescent-shaped spore clusters, or sori, arranged obliquely in two rows in a herringbone pattern along the central vein.

A durable and adaptable plant, the lady fern is hardy in Zones 3 through 8. It tolerates drier soils better than most other ferns, although drought, heat waves and persistent wind will scorch the fronds. Timely watering will prevent this damage. Grown in humusy, consistently moist, acid soil the lady fern will colonize, both by self-sown spores and by its short, creeping rhizome. Over time this rhizome will send up fountains of feathery fronds at intervals of six inches to a foot, imparting an aura of cool tranquillity to a shady bank or border.

Plant lady fern in spring after ground has thawed and danger of frost is past. Although it can be transplanted in spring or fall, division is best attempted in spring, just as a fresh growth spurt is beginning. For the patient, it is relatively simple to start new plants from spores collected in July and August.

The lady fern is lovely by water or among rocks and serves as a bright accent against the dark leaves of rhododendrons and conifers. While it will abide full sun, it does best in light shade, where it is especially effective in combination with yellow-or-blue-leaved hostas, the fern's fine-textured fronds setting off the hostas' bold, grooved leaves. When planted with daffodils, Virginia bluebells, and other early spring-bloomers, lady fern emerges in time to conceal their fading foliage. It is also the ideal screen for the spindly knees of lilies.

A light mulch of leaves protects the shallow roots from drying out, but keep it away from the crown, as it may harbor pill bugs and snails, which like to feast on tender new growth. Otherwise, pests are rarely a problem. Fungal diseases occasionally appear, especially near the base of the fronds, so avoid watering in the evening.

After toiling in the hot summer sun among the bright colors of the flower garden, a cool-green lady fern by the doorstep may be just the refreshment you and your garden need.

Reprinted from Native Americans, Horticulture, March 1993. Author Carol Bishop Hipps, an Alabama gardener.

*Editor's note: As with all native plants, especially ferns, spring ephemerals and orchids, check to make sure that the nurseries you buy from deal only in **nursery propagated plants**, not plants collected from the wild. If you're not sure, ask!*

ALIENS

Why are alien plants a serious threat? Plants that are not part of the indigenous (native) vegetation, but that have been introduced into a region are called aliens. For the most part, introduced, or alien, plant species form an important part of our environment, contributing immensely to agriculture, horticulture, landscaping and soil stabilization. But among the thousands of plant species introduced into our area, some have displayed unexpected aggressive growth tendencies. Some problematic species degrade native plant communities.

While most alien plant species do not persist in the wild, introductions since European settlement have substantially changed the composition of native plant communities throughout North America. Many exotic plants are found along roadsides and other heavily disturbed sites, others readily invade natural and semi-natural communities.

Invasive alien plants typically exhibit the following characteristics:

- * rapid growth and maturity
- * prolific seed production
- * highly successful seed dispersal, germination, and colonization
- * rampant spread
- * ability to outcompete native species
- * high cost to remove or control

Invasive aliens thrive on disturbed sites. Native plant communities fragmented by human disturbances are most vulnerable to invasion, but even intact ecosystems can be invaded by the most aggressive alien species. Invasive alien plants often leave behind their natural controls that keep them in check in their native habitats. Biodiversity is further threatened when alien plants harbor invasive pathogens, fungi, or other organisms that decimate native species, such as the American Chesnut.

Awareness of the problems caused by invasive alien plants is the first step in preventing their continued use. Public awareness will help increase responsible landscaping and conservation practices. Awareness by resource managers will help prevent the introduction of these species on public lands and preserve our natural heritage.

Learn what species are native to your area. Use native species, grown from local stock if available, for conservation and landscaping purposes whenever possible. When using alien plants, avoid highly invasive species. Support public policies that restrict the introduction of invasive alien plants and get involved in organizations and agencies that work to protect biological diversity. Ask your nursery to sell native plants propagated from local stock. Plan and implement sound practices for the control of invasive alien plants in natural areas.



SEED GERMINATION THEORY AND PRACTICE

While working on the TDOT wildflower project I got the opportunity to grow, or try to grow, several species of native wildflower from seed. I found, from the research and trial and error, that wild columbine seed needed light to germinate, butterfly weed seed would germinate readily after just a couple of weeks of moist stratification, and hibiscus would germinate in two or three days if you clipped the hard seed coat with nail clippers. Unfortunately, the project was over by the time Norman Deno's publication of Seed Germination Theory and Practice was available. If you're interested in growing native wildflowers from seed, this book is a must. Deno has taken the guess-work and mystery out of seed germination. If you use his tips, you're guaranteed success. Most of us know that factors such as storage conditions, moisture, temperature and time all affect seed germination. But which seeds need what? Deno, like most seed germination researchers, found that different seeds have different delay mechanisms, and until those are destroyed, seeds will not germinate.

The book describes the specific conditions needed to germinate 2500 species of plants, and what to do with the seedlings once they germinate to raise them into healthy plants. The book is available for \$20 from Norman C. Deno, 139 Lenore Drive, State College, PA 16801. Order this book before you collect another wildflower seed! Not available in bookstores.

NATIVES IN THE GARDEN

The wild columbine (*Aquilegia canadensis*) bloomed early and long in front of my house, but stayed low and looked kind of pitiful. My attempt to use it as a ground cover in the front yard where my poor compacted soil serves as dog-playground didn't work. It just wouldn't grow well in the compacted soil. I did collect a lot of seed from the plants before the leaf miners destroyed them. The plants in the shady, moist bed in back did great and looked great along the very low windows of our old house. A friend took the columbine I shared with her last fall and put the plants in a partly sunny border in well-broken-down mulch. The plants grew to almost 5 feet tall and were covered with flowers for weeks. They were actually showy at 30 mph from the road! I also gave her purple coneflower (6 feet!), Beardstongue (*Penstemon smalli*) grew to 4 feet and False Sunflower (*Heliopsis helianthoides*) over 10 feet. All covered with flowers. I don't know what was in her mulch but I want some. I gave another friend an tiny Ironweed (*Vernonia altissima*) three years ago and right now it is 12 feet and still growing!

My bloodroot (*Sanquinaria canadensis*) bloomed beautifully beginning March 22 for a couple of weeks. I was able to collect seed for new plants. The firepinks (*Silene virginica*) were gorgeous! This is such a good garden plant and so easy to grow from seed. The plants in my garden grew over 2 feet tall and some had 30 blooms at once, without any pampering. They bloomed for over a month. As the firepinks were finishing-up, the *Penstemon smalli* began to bloom and looked great.

My butterfly weed (*Asclepias tuberosa*) bloomed early and long and looked great with purple coneflower (*Echinacea purpurea*). I've cut it back now to encourage it to bloom again. The purple coneflower and prairie coneflower (*Ratibida pinnata*) look great together. Both are good garden plants. The prairie coneflower needs to be staked or placed where its habit of falling over isn't a problem. I have it wedged in between purple coneflower and garden phlox and it looks nice. It also looks nice sprawling over a fence. My bluestar (*Amsonia tabernaemontana*), unhappy after its third move, hasn't bloomed though the plant looks healthy. The wild bergamont (*Monarda fistulosa*) loves its new place at the back porch and has been blooming for weeks. The hummingbirds and bumble bees love it. It is in a moist, sunny bed with some non-native mints and native *Helianthus*, which isn't blooming yet but is about 7 feet tall and very healthy. The cardinal flower (*Lobelia cardinalis*) and blue lobelia (*L. siphilitica*) by the bird bath is getting ready to bloom, as is the false dragon-head. The trumpet creeper (*Campsis radicans*) is blooming like crazy along with the passion vine, attracting humminbirds and butterflies. The blazing stars (*Liatris spicata* and *L. squarrosa*) are just beginning to bud and will draw butterflies in for a closer look. On a less successful note, the *Hibiscus moscheutos* is once again food for japanese beetles and the Copper Iris (*Iris fulva*), after four years, is still just sitting there.

more gardening...

You don't have to have a lot of land to use native plants in your gardening. Three years ago, I put in a native wildflower garden for a lady who had a large, beautiful old house with a small yard. Like many people who have small yards but love to garden, she had resorted to container gardening (I live on 80 acres and still love container gardening!) She had been planting containers with the basic annuals every year and decided that she wanted a butterfly garden. It was really a lot of fun! First, we picked-out some very large containers and decided on a location, right in front of the house, by the street. We placed the containers as close to where we wanted them as we could, because once they were planted, they were too heavy to move. The containers were oriented around a folk art bird bath with rocks in the bottom so that both birds and butterflies could use it. We filled the bottom of each container with pea gravel for drainage and filled the rest of the pot with a soil-less potting mix. Three larger containers occupied the right side of the sidewalk with the bird bath and one smaller container on the left held the major butterfly plant, butterfly weed (*Asclepias tuberosa*). Even with the large taproot, this plant will do well and over-winter in a large container for at least one season. We transplanted it from the pot to the ground the second year without the usual damage done to the taproot when transplanting. In the other containers we used purple coneflower (*Echinacea purpurea*), lance-leaved coreopsis (*Coreopsis lanceolata*), cardinal flower and great blue lobelia (*Lobelia cardinalis* & *L. siphilitica*), Rose Mallow, (*Hibiscus moscheutos*), Blazing star (*Liatris spicata*), prairie coneflower (*Ratibida pinnata*) wild ageratum (*Eupatorium* sp.) and sweet goldenrod (*Solidago odora*). All the plants, after three years are doing great and the butterfly garden is beautiful, complete with butterflies. This year some of the plants were divided for more containers or planted in the ground. These containers also provide enough flowers for cut flowers to be brought inside. False sunflower (*Helianthus helianthoides*) and Ironweed (*Vernonia altissima*) were planted around and among the containers. The owner also plants butterfly-attracting annuals among the containers in the spring and summer. (She decided after the first year the rose mallow wasn't one of her favorites so, after it over-wintered in the container, we dug it out of the container and replanted in my yard.) These containers have to be watered quite often and they are fertilized regularly. On very dry, hot days, the containers are sometimes watered 2-3 times. Some container plants for shady locations are wild columbine, cardinal flower, most ferns, false wild indigo, carolina bushpea, sweet goldenrod, alumroot and wild geranium. If you don't have a lot of space, or even if you do, try your hand at container gardening with native plants. Choose your location and containers and experiment!

Pickle hint: Instead of using alum to keep your home-made pickle crisp, try adding 1-2 wild grape leaves to each jar of pickles. It safely keeps those cukes crispy!

INCREDIBLE EDIBLE & MEDICINAL NATIVES

COMMON ELDERBERRY (*Sambucus canadensis*)

The Common Elderberry is a shrub (3' - 13') with large leaves (4" - 11") composed of 5-11 coarse-toothed elliptic leaflets. The stout twigs have a large white pith and small wart-like lenticels. Bark is brownish. The May-July blooming 5-petaled flowers are small and white in dense flat-topped clusters. The fruits are small, juicy, seedy, purple-black drupes beginning in August. Elderberry grows in open areas, in moist, rich soil.

Elder seeds and branches found in Stone Age diggings show that this plant has been used by man since before recorded history. *Sambucus* is derived from the Greek word *sambuke*, a musical wind instrument made from elder wood. The white pith can be easily removed from the elder sticks, leaving a hollow pipe for making a flute.

The mythological goddess Freyja chose elder as her abode because of its beneficial medicinal qualities. In medieval Europe, however, the elder was avoided because of its reputation for being associated with evil and witches! It was considered dangerous to sleep in the shade of an elder, or plant one near the house, because of its evil, narcotic effects. For the same reason, cradles were never made from elder wood. Witches needing to hide in a hurry could hop into the nearest elder tree and transform herself into a branch. They also lived in elder trees, so people were afraid to chop them down for fear of retaliation from the witch's spirit. Of course, the fact that a person would die within three days of chopping down an elder tree probably had something to do with it too. Another belief held that if you first apologized to the witch, you could safely cut the tree. Probably the elderberry got the bad reputation because, eaten raw, it is poisonous and poisonous plants were believed to be associated with witches and the Devil.

Elderberry is one of the herbs used in the fires set on St. John's Eve (June 23) in medieval times, along with St. Johnswort, mugwort, milfoil, vervain, camomile, lavender and malefern. The purpose of the fires, lit on hills and other high places, was to purify the air of evil spirits to ensure the protection of the people, their animals and their crops. When properly smoked, the herbs could be hung in houses and barns to further repel the powers of evil. They could also be worn around the neck. This custom of burning fires at the beginning of summer is thought to have originated with the ancient Gauls.

The medicinal parts of the elderberry are the root, bark, leaf buds, leaves and flowers. It is used as a cathartic, diaphoretic, diuretic, purgative, and stimulant. Indians used root-bark tea for headache, mucous congestion, and to promote labor in childbirth. An infusion of leaves and flowers, or a decoction

that can be used as a wash for skin problems, wounds and inflammations and is used in natural commercial skin preparations. A tea of the the flowers, taken warm will induce sweating, for headaches due to colds, for "twitching eyelids"/eye inflammation and for rheumatism. Used cold, the tea has diuretic properties. An infusion of the leaf buds is a strong purgative. Fresh berry juice evaporated into a syrup is a mild purgative. The dried berries can be made into a tea that is useful in diarrhea, "summer complaint" and cholera.

The flowers and berries of the elderberry are delicious, and not poisonous, when prepared properly. The flowers and ripe berries can be made into wine. The flowers can be dipped in batter and fried into fritters. The green flower buds or green berries can be pickled. The ripe berries can be made into pies, jelly, juice and can be dried. The berries can be removed from the stem with your fingers or by using a coarse comb or by drying. The fresh berries sometimes have a rank taste that disappears after preparation.

COMMON SENSE CAUTION: Don't ingest plants that you can't positively identify and always use caution and good sense when using any plant medicinally or for food. Elder flutes are great for older kids but are not appropriate for young children who still suck or chew on toys.

ELDERBERRY WINE

2 quarts ripe, fresh elderberries, stripped from the stem
4 quarts water
4 cups sugar
1 piece fresh ginger (2-3 inches long)
1 teaspoon whole cloves
2 envelopes dry yeast or 2 cakes fresh yeast

Combine everything except yeast in an enamel kettle, bring to a boil, lower heat, cover and simmer for 1/2 hour. Strain liquid into a 2-gallon crock, let cool. Add yeast and stir, let mixture rest for 2 days, covered with a cloth. After two days, skim off any foam, pour into small-necked glass or crockery bottles, cover with cheesecloth and leave in a cool place until there is no hissing sound coming from the wine, about 2 weeks. Filter or decant carefully into final bottles and put in an airtight stopper or cork. Let the wine mature for at least 2 months before using.

(editors note: I have drank good elderberry wine, but never made good elderberry wine. One day while talking with an old wine-maker and banjo player from East Tennessee, I complained that my elderberry wine was only fit for fruit flies and to be poured down the drain. He said he always put a box of prunes in his and I asked "why prunes?" He laughed and said "why, to cover-up that nasty elderberry taste!" I've never been able to find an elderberry wine recipe with prunes as an ingredient. Let me know how your turns out.)

ELDERBERRY JELLY

3 3/4 cups elderberry juice extracted from 3-4 pounds of ripe elderberries (cover with water, in an enamel pan, bring to a boil over medium heat, turn down heat and simmer for about 15 minutes, cool and strain for juice)

1/4 lemon juice

1 box pectin

5 cups sugar

Bring juices and pectin to a boil over high heat, stirring constantly, add sugar, bring to a boil and boil for exactly 2 minutes. Set off heat and skim off foam. Pour into sterile jars and seal. (about 5 half pint jars). For Elderberry / Grape Jelly use 2 1/2 cups elderberry juice, 2 1/2 cups wild grape juice and 7 cups sugar.

ELDERBERRY CAPERS

2 cups unripe elderberries or elder-flower buds

1/4 cup salt

1 cup water

1/4 sugar

1 cup cider vinegar

Wash elderberries or flower buds, drain well and place in sterile jar. Dissolve salt in water and pour over berries or buds. Cover with a cloth and let stand for 2 days. Drain and pour into 2 sterile half-pint jars. Boil sugar and vinegar together for 2-3 minutes and pour into jars, fill to the top, seal at once.



Wildflower Enthusiast Remembered

Mr. Lawson Vanburen McNeese died March 23 at the age of 81. He is survived by his wife, four children, seven grandchildren and two great-grandchildren. Mr. McNeese was a long-time member the Sumner County Wildflower Society and TNPS. "Mr. Mac" was a "walking encyclopedia" of wildflowers and trees and was still active at 80 years. The Sumner County Wildflower Society has made a donation to TNPS in memory of Mr. McNeese.

STANDING STONE TRIP REPORT

The field trip to Standing Stone State Park on April 15 was great fun! We had several TNPS members and some folks who aren't members but never miss this walk. An old friend even brought me a cup of coffee, cream no sugar, before the walk. It was just like old times when I was the interpretive specialist at the park. The weather was cool, but nice. Standing Stone offers one of the best displays of spring wildflowers in the area, whether by foot or by car. We took the portion of the Lake Trail from the Recreation Hall up to the cabins. A good driving route starts at the ranger residence at the south end of the park and goes down to Overton Lodge. If you go in May, you can see *Synandra hispidula* growing at the pull-off at Bryan's Fork Trail and again at the shelter before you get to the bridge at Overton Lodge. (Unfortunately, the large stand was mowed down again this year before it went to seed.)

Just as the trail starts we found the almost invisible Spring Coral-Root (*Corallorhiza wisteriana*). Large stands of Phacelia, Large-flowered trillium, Allegheny-spurge lined the trail. Wild Ginger and Hepatica was also abundant, despite the ever-worsening erosion problem. We were too late for the Trout lily, bloodroot and twinleaf but saw these in fruit and discussed the secrets of collecting the seed to propagate these plants. Other trilliums along the trail were *T. cuneatum*, *T. luteum* and *T. sulcatum*. Blue Cohosh (*Caulophyllum thalictroides*), Black Cohosh (*Cimicifuga racemosa*) and May-Apple (*Podophyllum peltatum*) were abundant. Other plants of note were Yellow Mandarin (*Disporum lanuginosum*), Delphinium, Yellow Corydalis, Firepink, Crested Dwarf Iris, Shooting Star (*Dodecatheon media*) and *Phlox divaricata*. This is always a great trip. Hopefully the park will reinstate the "wildflower weekend" that used to be so popular with people from all around the area. There are really a lot of folks who love to come on this walk to enjoy the wildflowers and birds every year. Sadly, it was only advertised in The Newsletter this year and most people thought it had been cancelled. TNPS doesn't advertise fieldtrips in local newspapers so spread the word about fieldtrips in your area to wildflower lovers who aren't TNPS members!

**JOINT FALL MEETING
TENNESSEE AND KENTUCKY
NATIVE PLANT SOCIETIES**

**FRIDAY, SEPTEMBER 8, 1995
through
SUNDAY, SEPTEMBER, 10, 1995**

**NATURAL BRIDGE STATE RESORT PARK
SLADE, KENTUCKY 40376-9999
(606) 663-2214
1-800-325-1710**

**Mark your calendars and plan now to attend. Details
in the August Newsletter.**

Hope to see you there!



JUNE 1995 VOL.18, NO. 3

PRINTED ON RECYCLED PAPER

**WE DON'T WANT TO LOSE YOU
RENEW NOW**

If your mailing label reads 1995 or later, your dues are current. If not, please take a few minutes to renew your membership in TNPS. Make check payable to TNPS and send to:

**Tennessee Native Plant Society
Department of Botany
University of Tennessee
Knoxville, TN 37996-1100**

If your dues are not current, the August 1995 issue of The Newsletter will be the last one you will receive until you renew your membership. We don't want to lose you, but we obviously can't continue to send The Newsletter to folks who haven't paid their dues in a year or two...or three! Please renew today! If your mailing label is not correct call or drop a note to the Newsletter at the address below.

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TENNESSEE NATIVE PLANT SOCIETY NEWSLETTER

VOLUME 18, NUMBER 4

AUGUST 1995

NOMINATIONS FOR NEW OFFICERS

SUBMITTED TO MEMBERSHIP FOR APPROVAL

The nominating committee of TNPS is submitting, for member approval, a slate of officers and executive board members. The nominations are as follows:

PRESIDENT, **MILO PYNE**
VICE PRESIDENT, **KAY JONES**
RECORDING SECRETARY, **NITA HEILMAN**
CORRESPONDING SECRETARY, **ANDREA SHEA**
TREASURER, **KAREN YARBRO**

The board members serve staggered terms. Those whose term will run through December 1995 are **Sally Mirick**, **Dennis Horn** and **Bertha Chrietzburg**. Those whose term will run through December 1996 are **Shirley Nicholson**, **Larry Wilson** and **Harold Scott**.

According to the TNPS Constitution, additional nominations may be submitted, by at least ten members, within three weeks of publication of the Newsletter in which nominations are announced (August 1995 issue). In the absence of other nominations, the slate of nominations will be considered approved by the membership. Additional nominations may be sent to Kay Jones, P.O. Box 193, Hampshire, TN 38461 or call Kay at (615) 285 2777 in the evening.

IN THIS ISSUE

Joint meeting with Kentucky Native Plant Society -- September 8-10

Spring Field Trip Reports

The Birthwort Family in Tennessee

NATIONAL WILDFLOWER CENTER HAS NEW DIGS

This spring, the National Wildflower Research Center, a nonprofit organization dedicated to conserving North America's native flora, moved to new \$9 million quarters in southwest Austin, Texas. Situated on 42 acres, the center features two acres of formally landscaped gardens that showcase wildflowers indigenous to Texas as well as a system of walking paths that connect gardens designed specifically for butterflies, children, and meditation. The new facility also has a 232-seat auditorium and North America's largest rooftop rainwater collection system, the centerpiece of which is a stone cistern/observation tower. For more information on the center call (512) 292-4100.



**AUGUST 1995
VOLUME 18, NUMBER 4**

This Newsletter is a publication of the Tennessee Native Plant Society and is published six times a year, generally in February, April, June, August, October and December.

The Tennessee Native Plant Society (TNPS) was founded in 1978. Its purposes are to assist in the exchange of information and encourage fellowship among Tennessee's botanists, both amateur and professional; to promote education of the public about Tennessee flora, and wild plants in general; to provide, through publication of a newsletter or journal, a formal means of documenting information on Tennessee flora and of informing the public about wild plants; and to promote the protection and enhancement of Tennessee's wild plant communities.

Dues are \$15 for the calendar year (\$10 for students and senior citizens, \$20 for institutions, and \$150 for life memberships). Membership privileges include a subscription to the TNPS Newsletter. Dues may be sent to

**The Tennessee Native Plant Society,
Department of Botany, the University of
Tennessee, Knoxville, TN 37996-1100.**

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Candy Swan, Editor

The Mysterious Grassy Balds Of The Southern Appalachians

Reprinted from The Newsletter of the Southern Appalachian Botanical Society, Vol. 1, No. 2, Summer 1993, by J. Dan Pittillo.

When Europeans first came to these mountains, no one thought the grassy meadows of the high mountains were unusual. The pioneers assumed the meadows had been cleared by human activity. Indeed, the Indians often burned the forests and presumably the highland meadows. But as the early plant collectors were followed by students who were interested in vegetation patterns, the presence of the Southern Highland grassy balds became a topic of inquiry that lasted at least half a century.

How could these grassy meadows remain open and unforested in a region without a tree line? (The highest peaks are less than 7,000 feet in elevation--more than 4,000 feet below the expected tree line at this latitude.) Many theories were advanced, such as the effects of ice storms, fire, windthrow, and grazing by animals. None of the theories, however, seemed to fit observations of all sites.

One school of thought, perhaps most aptly credited to the late R.H. Whittaker, indicated that fluctuating climates may have played a significant role. B.W. Wells, on the other hand, theorized that Indians played the major role in formation of these vegetation phenomena. A more recent review of the controversy was summarized by Phil Gersmehl, a geography student at the University of Georgia. He thought that most evidence related to the European pioneers' activities, including cattle grazing, clearing, and the setting of fires.

Many of the botanists and plant ecologists have suggested there indeed may be several causes for the various grassy balds, some applicable to certain sites and some to others. The Roan Mountain area, for example, seems to fit the fluctuating climate concept of Mark and his colleagues. The straight-sided clearing of Judaculla Fields of Richland Balsam suggests the involvement of humans, giving the reported clearing for Indian ceremonies a credible cause. And the historical development of grassy balds at Graveyard Fields (just east of Richland Balsam) from a combination of timber slash and intense fire indicated how burning may have played a major role in balds formation.

Evidence of past Indian activities are beginning to accumulate and might support some of the following speculations:

JOINT FALL MEETING TENNESSEE and KENTUCKY NATIVE PLANT SOCIETIES

WHEN: Friday, September 8, 1995 through Sunday, September 10, 1995.

WHERE: Natural Bridge State Resort Park
Slade, Kentucky 40376-9999
606/663-2214
1-800-325-1710

REGISTRATION: will be from 4:00 p.m. to 6:00 p.m. Friday in the main lobby of the lodge. Friday evening registration will continue at the activities center from 7:00 p.m. to 7:30 p.m.. Saturday, registration will be in the main lobby of the lodge 8:00 a.m. to 9:00 a.m..

Registration will be \$3.00 per individual or \$5.00 per family.

PLANNED ACTIVITIES

Friday evening program- 7:30 p.m. at the activities center - slide program provided by the Kentucky Native Plant Society

Saturday Field Trips - 9:00 a.m.

Field Trip #1 - This will be an all day caravan-style field trip with multiple stops. Plans are to travel to northern Kentucky to see one of our endemic and rarest plants, Short's Goldenrod. Other stops along the way will include another rare and endemic goldenrod, the white-haired goldenrod. We will also explore parts of the Red River Gorge, one of the most interesting areas of Kentucky, both floristically and geologically. The level of activity will be light to moderate. Comfortable shoes, water and snacks are recommended. Lunch will be at an appropriate stop along the way.

Field Trip #2 - For those of you who have never experienced Natural Bridge State Resort Park, but always wanted to, this may be your ideal experience. This field trip will be an approximate 5 mile hike through the park, taking in the fall flora, the interesting plant communities and the geology of the park. We will take in such unique features as the rock garden and the natural bridge (the park's namesake). We will discuss everything that you will see and also whet your appetite for future excursions by discussing the kinds of wildflowers you might expect to see while visiting the park in the spring-time. Level of activity moderate to strenuous.

Comfortable hiking shoes, water, snacks and lunch are recommended. We will stop at a rock shelter for lunch.

Saturday evening program - 7:30 p.m. in the activities center - A Botanical Tour Through Tennessee by TNPS member Milo Pyne.

Sunday morning - The activities will be left up to the wants and wishes of those participating in this exciting weekend. Those of you wishing to take in an experience that you missed on Saturday will have the opportunity to do so. The field trip leaders will be at your disposal.

The lodge has most of its rooms blocked off for this meeting, so make sure you mention that you are with TNPS or they may tell you nothing is available. The park has excellent camping facilities and motels are available in Winchester and Lexington (30 min. to 1 hour away.) The days will be warm and the nights could turn cool so plan accordingly. - submitted by Landon McKinney, President, Kentucky Native Plant Society.

A MESSAGE FROM THE LANDON McKINNEY, PRESIDENT, KENTUCKY NATIVE PLANT SOCIETY:

Last year's joint meeting at AEDC was a great success and quite a delight for those of us who attended from KNPS. We wish to extend a warm welcome to any of you who plan to attend this year's joint meeting. You will experience a truly educational and enjoyable experience. I have been in Kentucky over 5 years. I was born, raised and botanically trained in Tennessee. Ronald Jones, who created the KNPS, was born, raised and botanically trained in Tennessee. The Kentucky Native Plant Society seems to have its roots in Tennessee and now we would like to take the opportunity to show off parts of this wonderfully diverse state. I look forward to seeing many of you at our 1995 joint meeting. I promise that it will be a truly unique experience.

Just a thought. Readers please respond...

Exotic plants and animals, harmful as they can be to natural communities, play a very important part of some ecosystems. Some native animals depend on exotic plants for food, shelter and places to raise their young. Do we really know enough about those relationships, especially in the case of exotic species that have been present for hundreds or more years, to remove these species whenever we find them, especially if it means a mass (total) removal of a species from a community in a short amount of time and during migration or nesting season of animals such as birds or insects?

FIELD TRIP REPORTS

BLUEBELL ISLAND, FRANKLIN COUNTY

On Saturday, March 25 we were greeted by Sanford McGee and an extensive crowd of wildflower and conservation enthusiasts from the Sewanee area for a romp on beautiful Bluebell Island on the Elk River. This lovely spot is almost legendary with nature-lovers in this area of the state; they speak of it with a certain reverence. The Island is truly carpeted with Virginia bluebells, *Mertensia virginica* and other spring wildflowers, most notably both the yellow troutlily, *Erythronium americanum*, and its white-flowered relative, *Erythronium album*. This is certainly the best-known site where the two species are found together in such abundance.

A few of us followed this up with a visit to some sites on the property of Arnold Engineering Development Center to check on the flora of floodplain habitats there. Numerous areas of this type have developing populations of the non-native garlic-mustard, *Alliaria petiolata* (or *A. officinalis*). Despite this plant's novelty and utility (its leaves can be eaten, if you like the taste of garlic) it should be ruthlessly removed from natural areas when encountered. It is a tremendous problem in Illinois and other states.

Sanford McGee is a long-time TNPS member who is on the board of the South Cumberland Regional Land Trust; this group has just obtained a one-year option to **PURCHASE BLUEBELL ISLAND!** If you would like to assist in this effort, write to Sanford and SCRLT at P.O. Box 615, Monteagle, TN 37356. Donations of any amount are accepted.

JOHN CORN FARM, SUMNER COUNTY

On Sunday, April 9 about 30 of us were graciously welcomed by Jack Corn and his family at their farm in Sumner County; where the rich spring flora is abundant on slopes whose canopy had unfortunately been opened up by ice storm damage during the last couple of years. In particular, we saw abundant swards of Blue-eyed Mary, (*Collinsia verna*), as well as vast quantities of all the beautiful wildflowers found in the limestone-derived soils of the lower slopes of the Highland Rim escarpment. These include white trillium, forest phacelia (*Phacelia bipinnatifida*), large-flowered bellwort (*Uvularia grandiflora*), and many other beauties. An additional hike up onto the margin of the Highland Rim enabled us to encounter fire-pink (*Silene virginica*) and other flowers that prefer the siliceous soils there. We were fortunate to have many visitors that day; let's hope that these new friends become active members of TNPS!!

CUMMINS FALLS & WASH MORGAN HOLLOW; JACKSON COUNTY

There were showers forecast for Saturday, May 13, so it was a well-prepared group that met that morning to visit Cummins Falls in Jackson County. While our search for *Synandra hispidula*, Gyandotte Beauty, was not rewarded here, we saw the remains of a rich spring flora. Due to

the rapidity with which Spring progressed, the *Phacelia bipinnatifida*, *Trilliums* and other species had finished flowering, but we were able to see them in fruit. In addition, there were abundant amounts of Dwarf crested iris, wild ginger, marginal shield fern, Allegheny-spurge, wood-nettle (which bedeviled anyone in shorts), Bloodroot, as well as Twinleaf (*Jeffersonia diphylla*) and Horsebalm (*Collinsonia canadensis*). There were several species of *Viburnum* on the slopes, including *V. rafinesquianum*, which is not rare but seems to have limited distribution in Tennessee. On the zoological front, Mike Doochin's kids were thrilled (as was I) to see a snapping turtle swimming in the shallows of the creek. Due to an overgrown trail and the need to travel on the Washmorgan Hollow, we did not make it all the way to the falls.

That same afternoon, we journeyed to Washmorgan Hollow, a site that was purchased by Hector Black, a peace activist and nursery grower who lives nearby, and was donated to the Tennessee Field Office of the Nature Conservancy. By the afternoon, even though we had avoided the strong (but small) thunderstorms in the area, it was lightly raining. Mixed mesophytic forests are beautiful in the rain, with all the moisture on the leaves, but you can't see a darned thing, it is so dark. Luckily the Gyandotte Beauty has white flowers, or I'd never have seen it. Also noteworthy here is a large population of Small-flowered wild valerian (*Valeriana pauciflora*), along with Mayapple, Forest phacelia, Twinleaf, Large-flowered bellwort, Doll's-eye baneberry, and Plantain-leaved sedge (*Carex plantaginea*). There are two distinct plant communities at this site, the floodplain of the creek, and the rich lower slopes. One could spend an abundant amount of time in either one of them. Again, due to time limitations, we didn't get to the actual waterfall. This site is worth a second look, particularly earlier in the season.

SWAN CREEK AREA, LEWIS COUNTY

Beautiful weather and the abundant hospitality of Kay and Bill Jones greeted about 25 of us at "Ridgetop" in Lewis County. Bill had just cleared the trail of woody debris, so we had an easy hike down the hill to see the Fen orchis or Loesel's twayblade, *Liparis loeselii*. This plant grows in seepage areas that originate from a calcareous portion of the Fort Payne Formation; these areas have been variously called "boggy", "fens", "seeps" or "seep-fens". Whatever one chooses to call them, they have an interesting flora. The foliage of Large-flowered grass-of-parnassus (*Parnassia grandiflora*) is abundant and characteristic of these sites. We puzzled for awhile over the identity of a plant that was either a robust Cowbane (*Oxypolis rigidior*) or a Meadow-parsnip (*Sium suave*), eventually concluding in favor of Cowbane because of its coarse teeth. Also noteworthy is a narrow-leaved *Phlox* whose identity eludes us still. More information needed! We also took a brief visit to a recently-formed beaver pond in the vicinity. Our morning activity was followed by a pleasant lunch on Kay and Bill's back porch, and then a visit to Rattlesnake Falls in Western Maury County. This site contains a well-developed spring flora (which was a little too far along) as well as a population of Eggert's Sunflower (*Helianthus eggertii*) on the dirt road approaching the falls. This site has been proposed as a state natural area, and has been a traditional visiting and courting spot for many years. In the last attempt to promote public ownership, the landowner was not interested in selling. It would also make a fine local park.

An earlier version of this article appeared as a "sidebar" in the June 1995 issue of The Tennessee Conservationist, and is used here with their permission. It accompanied an article on swallowtails titled "The Poisonous Protector: A Secret of Butterfly Survival" by TNPS member Jerry Lee Hutchens.

The Birthwort Family (Aristolochiaceae) in Tennessee -- Distribution, Conservation and Folklore by Milo Pyne, Botanist, Tennessee Natural Heritage Program

All of the plants favored by the pipevine swallowtail are members of the birthwort family, or Aristolochiaceae. This family name, and that of the genus *Aristolochia* from which it is derived, comes from the Greek words meaning "best delivery". The group of plants is called birthworts because of their supposed value in aiding the childbirth process; the curved flowers were thought to resemble the human fetus in the womb.

In Tennessee, we have three species of *Aristolochia*; one of these is the widely distributed, but infrequently seen Virginia snakeroot or "serpent birthwort", *A. virginica*. This little plant has a zig-zag stem and heart-shaped or cordate leaves which are reduced in size as they go down the stem. Never, or rarely, found in patches, you have to look long and hard to spot this plant, whose tiny, brown flowers occur barely above the forest floor, frequently hidden by the leaf litter. Its medicinal roots smell somewhat like turpentine. It is widely scattered across the entire state. Recently, when I was helping the staff at the Warner Parks with some vegetation sampling, we encountered this plant; its discovery was a great occasion, as it had not been noted by the park staff before!

The other two are both species of pipevine or Dutchman's pipe, *Aristolochia macrophylla* and *A. tomentosa*. Both of these are high-climbing vines, and are easily overlooked unless you are either peering up in the trees for the large heart-shaped leaves, or watching for the vines themselves. These vines usually are about an inch in diameter, being narrower as well as smoother-barked than most grapevines. They also tend to grow several together, and twine around a tree in a bunch. Another way to spot them is to watch for the occasional fallen leaf on the ground, and then to look carefully for the vines. The best way to catch a glimpse of the remarkable flower is to be on a slope above the trees the vines grow in, so you encounter a flower at eye level. Otherwise, you are liable to see the flowers just out of reach of camera range up above your head.

The regular Dutchman's-pipe, *A. macrophylla*, is mostly found from the Eastern Highland Rim east to beyond the borders of Tennessee. Its sister species, *A. tomentosa*, the hairy Dutchman's-pipe, seems to prefer slightly drier sites, and replaces its smooth relative in the Central Basin and Western Highland Rim. It also turns up in counties along the southern border of the state.

In late February of this year, I was on the banks of the Cumberland River, and found a fallen leaf of one of the vines of the hairy Dutchman's-pipe. I looked above my head and was rewarded with an almost-intact fruit (which

In addition to the serpent birthwort and the pipevines, the other members of the family in our state are all low-growing herbaceous plants, collectively called "wild gingers". While a few authors place them all in the genus *Asarum* Linnaeus, most current treatments separate the deciduous *Asarum* from its evergreen relatives, which are segregated into the genus *Hexastylis* Rafinesque.

Of the wild gingers in Tennessee, the deciduous or Canada ginger (*Asarum canadense*) is the most widespread; it is found across the state, from moderate elevations in the Smokies to the loess bluffs above the Mississippi River. It is less frequent in the counties along the southern border of Tennessee, and its mesic forest habitat may have been eliminated in counties of the coastal plain of West Tennessee. In contrast to the "heartleaf" wild gingers, this plant's leaves die back in the winter; its roots are aromatic, but not its leaves. Much Tennessee material can be referred to var. *acuminatum*, which displays long-acuminate sepals or hypanthium lobes.

Several species of the evergreen wild gingers, or "heartleaf" (*Hexastylis*) are found in the state. The most widespread one is *H. arifolia* which is present from the Cumberland Plateau eastward except for the northeastern tip of the state. Its foliage is differentiated from the other species by its lighter green areas being between the principal veins, rather than along them. All plants I have seen in Tennessee display the relatively reduced calyx lobes which characterize the var. *ruthii*, named for Dr. Albert Ruth, a physician and botanist of Knoxville, whose name is also memorialized in the epithet of Ruth's golden-aster, *Hexastylis ruthii*. In contrast, the plants I grew up with in the North Carolina Piedmont belong to the nominate, longer-sepaled variety. My mother enjoyed seeing this plant in the woods, and referred to the flowers as "little pigs" for the inflorescence's resemblance to a litter of piglets.

Four other species have more limited ranges in our state. One of these, *H. contracta*, is a Federal Category 2 candidate at the present time. The Kentucky Nature Preserves Commission is currently funding studies in Kentucky and Tennessee to determine the true abundance of this plant and whether or not it should be listed by the U.S. Fish and Wildlife Service as an Endangered or Threatened species. It is found on slopes of the northern Cumberland Plateau counties, and its flower is distinct for the two constricted bands which encircle the calyx. I first saw it on a TNPS hike with Dr. Margret Rhinehart on Daddy's Creek several years ago.

Our other Tennessee species include *H. shuttlesworthii*, *H. virginica*, and *H. heterophylla*. The former species is well-marked by its large, open flowers with calyx lobes greater than 1 centimeter long. The other two are hard to separate, and additionally possible confused with *H. minor*, which is found in North Carolina. Several other species are also found in North or South Carolina, and several new ones have been recently described as new to science. The fine differences in the species are best observed in fresh material; the distinguishing characters are lost in

pressing and drying, so critical collections are best made by preserving the flowers in rubbing alcohol or a similar preservative.

In the genus *Hexastylis*, both the leaves and the roots are aromatic, having a ginger-like odor when crushed. They are reputed to have various medicinal and culinary uses; when I was living in the country in Chatham County, North Carolina, we would add a few leaves to a pot of pinto beans for a carminative effect. Despite their common name, they are totally unrelated to the ginger of commerce (*Zingiber officinale*, Zingiberaceae), which is more related to corn and bananas than to our wild gingers.

LATE - BREAKING DETAILS FOR FIELD TRIP!! SATURDAY, JULY 22

This information was received too late for an earlier Newsletter and you're probably reading this after the fact, but here goes! If you receive this Newsletter before July 22 and wish to attend this wonderful field trip call **Dennis Horn Immediately at (615) 454-7447 or 455-5742**. This trip may see *Clethra alnifolia* at AEDC and will go to May Prairie to see *Platanthera nivea* and other prairie plants. **Meet at the Main Gate, Arnold Engineering Development Center, I-24 Exit 117, 2.5 mi to gate on AEDC access road (Wattendorf Hwy) turn right at stoplight and park by Pass & Registration Building. 10:00 a.m. central time.**

Balds cont.

After the last glacial maxima, about 18,000 years ago, the high-elevation shrub and grass tundra generally gave way to advancing forests. Perhaps grazers, especially forest bison and elk, and browsers, such as deer helped keep some areas open. Windthrows and ice storms may have flattened some forested areas, providing slash that would burn easily upon drying.

Indians are known to have burned forests, often after mast fall to clear chestnuts of leaf litter and perhaps to kill the nut weevils. In fact, evidence of charcoal is found throughout the forests and most of the existing grassy balds areas. Fire would have burned any downed timber as it moved up slopes, perhaps creating new grassy openings at the high elevations as well. Burning also would have been successful in killing many shrubs and trees, leaving spaces for grass to be established and thus providing good grazing, especially during hot summers.

We now find ample evidence that Indians often camped near springs in high-elevation gaps, many of which were adjacent to the grassy balds. These camps likely were abandoned during the colder months as the Indians moved to the warmer valley floors, much as our summer second-home residents do nowadays.

PLANTS FOUND AT CATOOSA WILDLIFE MANAGEMENT AREA

For the last three years, I have participated in a bird study at Catoosa Wildlife Management Area in Cumberland, Morgan and Fentress Counties. Consisting of approximately 79,700 acres, Catoosa is the largest tract of land administered and owned by the Tennessee Wildlife Resources Agency. It is located 20 miles north of Crossville and stretches east across the Cumberland Plateau and into the Cumberland Mountains near Wartburg. The bird counts are part of the Tennessee Biodiversity Project and have been a lot of fun. The only drawbacks are getting up at 4:00 a.m., from Memorial Day through July 7, to get to Catoosa by the time the birds start singing and the ticks! Besides the birds, Catoosa has wonderful plants. The TWRA non-game biologist that I work with probably has nightmares of me yelling "Stop, Stop! Go Back, Go Back!!!" everytime I see a bird or plant. We are planning to set up a TNPS field trip to Catoosa next year. Try to come, it really will be a treat. Besides the ferns, mosses, phlox, yellowroot, pink lady slipper, native grasses, rhododendron, mountain laurel, sweet shrub, etc., this year we found two real treats. Driving down the road late in June, I spotted a blur of unusual red

as we sped down the road. I yelled, and being familiar with procedure, my friend put the truck in reverse. We found four ~~Wood Lilies~~, *Lilium philadelphicum*, right on the side of the road in an open (burned) pine stand. Two were blooming, one had just finished and the last was about to bloom. We looked around and didn't find anymore, though this plant can be easily missed, unless you happen to be there on the couple of days it blooms. The species is endangered in Tennessee. We marked the area with a "road closed" sign (we were out of flagging tape) and I was able to take photographs the next day.

Our next find was just as good, and lucky, since we usually finish the bird counts on this trail the first week of June, and would have missed the blooms of the ~~Mountain Camellias~~ (*Stewartia ovata*) all along the trail the first week of July, when we finally did those counts. The plants were gorgeous! When we first started down the trail, we saw white petals laying on the ground, but couldn't see any trees in bloom. Then we saw them, several camillias in groups, all in bloom, along the trail. This was the typical *S. ovata* with yellow-orange stamens. I can't wait to see if I can propagate this plant! I'd love a yard full of them!

**SUMMERTOWN FIELD TRIP AT THE FARM
SATURDAY, AUGUST 19, 1995**

MEET AT 9:30 A.M. (CENTRAL ^{DAYLIGHT} STANDARD TIME) IN THE PARKING LOT ACROSS FROM THE POST OFFICE ON HWY 20 IN SUMMERTOWN. WE'LL SEE NATIVE GRASSES, BLUEBERRIES AND EGGERT'S SUNFLOWER (*HELIANTHUS EGGERTII*) AT THE FARM. IN THE AFTERNOON WE'LL VISIT SEEPS ON A FORMER LEATHER TANNERY TO LOOK FOR VARIOUS LILIES AND GRASS-OF-PARNASSUS. FOR MORE INFORMATION CALL PAT & VICKI MONTAINE AT THE FARM AT (615) 964-3574 OR MILO PYNE AT (615) 532-0440. BRING CHIGGER REPELLENT.

**BUGGYTOP CAVE; FRANKLIN COUNTY
SATURDAY, AUGUST 26**

MEET AT 10:00 A.M. CENTRAL TIME AT MARKET IN SEWANEE ACROSS FROM SHENANIGANS (GREAT LOCAL RESTAURANT), NEAR SENIOR CITIZENS CENTER. I-24 EXIT 134 (SEWANEE/MONTEAGLE), GO SE ON HWY 41A/64 TO SEWANEE. 3 MILE ROUND TRIP, HIKING MODERATE, ON TRAILS. WE'LL SEE *SILPHIUM BRACHIATUM*, *HELIANTHUS EGGERTII*, AND OTHER FALL ASTERACEAE. FOR INFORMATION CALL MILO PYNE (615) 532-0440.

**THE FOLK MEDICINE FESTIVAL
10TH ANNIVERSARY
AT
THE PALACE
IN
RED BOILING SPRINGS**

JULY 29-30, 1995

**ADMISSION \$2.00 EACH DAY
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Plan to attend. This is a really fun festival with Folk Heritage Demonstrations, Arts & Crafts, Cherokee Herbal Medicine and other Native American Liveliness, Children's Activities, Food (Vegetarian available), and Souvenirs. Our own Milo Pyne will lead Plant Identification Walks at 1:00p.m. on the 29th and 11:00 a.m. on the 30th.

Accommodations

Armour Hotel	615-699-2180	Brenda Thomas
Donoho Hotel	615-699-3141	
Thomas House	615-699-3006	
Hearthstone Inn	615-666-7114	
Cordell Hull Motel	615-735-1300	
Tompkinsville Inn	502-487-9228	

For more information call Lisa Bedner at 615-653-4402



**JOINT FALL MEETING OF THE TENNESSEE
& KENTUCKY NATIVE PLANT SOCIETIES**

**FRIDAY, SEPTEMBER 8
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THANKS!

VOL 18 NO 4 AUGUST 1995

PRINTED ON RECYCLED PAPER. PLEASE RECYCLE

**TENNESSEE NATIVE PLANT SOCIETY
NEWSLETTER**

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