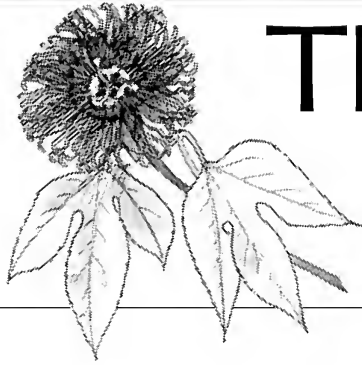


TENNESSEE NATIVE PLANT SOCIETY



Volume 36, Number 4

December 2012

TNPS Aids Botany Projects, Honors Robert Kral

TNPS named Robert Kral, emeritus professor of biology at Vanderbilt University, to its Botanists Hall of Fame, during the society's annual meeting in September at Carson Springs near Newport. (See short biography of Dr. Kral on page 5.)

The annual meeting, attended by 48 members, provided an opportunity to hear about several on-going projects, including the pending publication of the Tennessee technical manual, a follow-up to the society's wildflower book, and the winter "twig book" by Eugene Wofford, which is receiving a \$5,000 grant from TNPS.

Members also heard two excellent lectures, one by David Haskell, award winning author of *The Forest Unseen*, and Jamie Donaldson, a leader in the restoration of the Grassy Balds on and around Roan Mountain.

Bart Jones, TNPS president, announced that next year's annual meeting, also scheduled for September, will be held jointly with the Kentucky Native Plant Society at Lake Barkley State Park, northwest of Clarksville.

Bart said that once again members can expect combinations of programs in the evenings and field trips in the afternoons. Additional and alternative activities will also be organized.

He said that joining with KNPS will provide a special opportunity to net-

Continued on page 5

TNPS Has New Website, Plus Facebook Page

Some people may think TNPS consists of older folks who use only a pen, but the society is now taking the big dive into interactive and social media.

Check out the new website, which has several levels of information and offers an opportunity to join TNPS and pay dues on-line.

The website is at www.tnps.org. Current features include:

- A home page slide show presenting some of our Tennessee native plants.
- Membership application and renewal via credit card or PayPal, or the option of printing then mailing the membership form with a check.
- A Newsletter archive in case you missed an issue (oh my!) or just want to look back at what we've done (and looked like) in the past.
- Field Trip information, both past and present.
- Resources for gathering more information about native plants

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TNPS members gather for annual-meeting field trip in the Smokies.



Merry
Christmas

TNPS Newsletter

December 2012

Vol. 36, No. 4

This newsletter is a publication of the Tennessee Native Plant Society and is published four times a year, generally in February, June, August, and November.

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 public education 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 for each calendar year are:

Regular: \$20

Student: Complimentary

Institution: \$50

Life: \$250

Dues may be sent to:

Tennessee Native Plant Society

P.O. Box 159274

Nashville, TN 37215

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Box 856, Sewanee, TN 37375 or

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TNPS Website:

www.tnps.org/



From the President

As we complete another year, I think it is safe to say it was quite successful. I hope everyone had a chance to attend a field trip or participate in the annual meeting. But reflection necessitates projection, and now is the time to make plans for the coming year.

By the time this issue of the newsletter is in your hands, the field trip planning committee will have met and started to flesh out the excursions for 2013. But it is not too late to add a trip, so if you know of a place that we would be interested in visiting or if you would like to lead a hike, let me know by shooting an email to bjones7777@hotmail.com.

Next year will also be focused on what promises to be a spectacular joint annual meeting with the Kentucky Native Plant Society at Lake Barkley State Park in western Kentucky. It is still in the early planning stages, but I feel sure it will be an event that will set a new benchmark for our annual meetings for years to come.

Take a look at the re-launch of our website. Member Karen Ripple has been busy constructing a fabulous cyber portal for us, so many thanks go to her. Although more work remains to be done on the site, check www.tnps.org periodically.

In the next few weeks you will be sent a card reminding you of our annual fund drive. The last three years we have benefitted greatly from your generosity and have been able to fund several exciting projects such as the website redesign and the winter twig book, and increase the honorarium to our speakers. Our society has an unusually high percentage of life members, so this extra source of income is critical for maintaining flexibility to address issues and opportunities as they arise through the year.

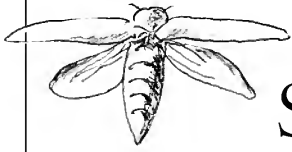
I also want to wish everyone a happy holiday season, and I look forward to serving you as president for the next two years.

See you on the trail.

Bart



TNPS treasurer Darel Hess said, "Think spring," when he sent these excellent photographs of *Dicentra cousins*, *Dicentra canadensis* (left), and *Dicentra cucullaria*.



Another Exotic Pest Spreads Destruction

Officials of the Great Smoky Mountains National Park recently confirmed the first backcountry infestation of the emerald ash borer, an alien insect that is devastating ash tree populations in the eastern U.S. and Canada.

The emerald ash borer is a half-inch-long metallic-green beetle that lays eggs on the bark of all species of the ash. After hatching, the larvae burrow under the bark and create feeding tunnels that cut off nutrient and water flow to the tree. The tree can die in three to five years, according to park biologist Glenn Taylor.

Accidentally introduced to North America from Asia, the ash borer was first discovered in southeast Michigan in 2002, and has spread to 16 states and two Canadian provinces killing tens of millions of ash trees.

Many biologists say potential damage from this insect rivals that of Chestnut Blight and Dutch Elm Disease. The insect threatens the entire North American *Fraxinus* genus, unlike past invasive tree pests, which have only threatened a single species within a genus. The green ash and the black ash trees are preferred by the insect. White ash is also killed rapidly, but usually only after green and black ash trees are eliminated.

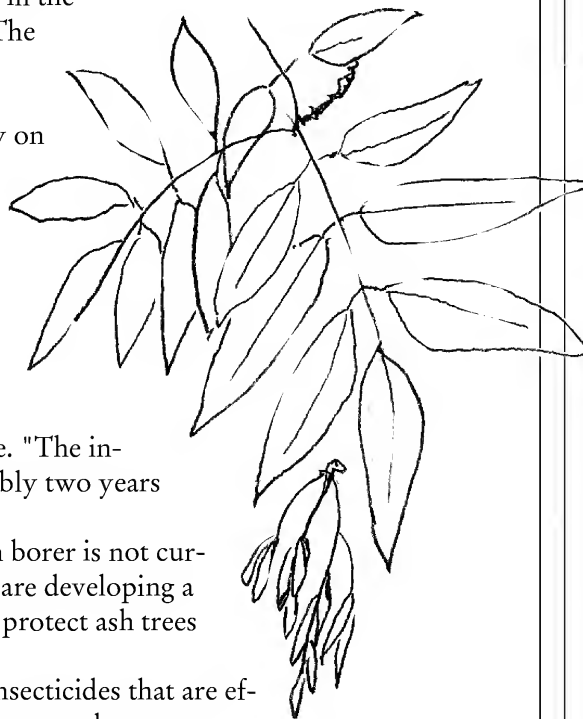
The emerald ash borer probably arrived in the U.S. on solid wood packing material carried in cargo ships or airplanes originating in its native Asia.

Officials have been monitoring the spread of the borer since 2009. Front country infestations in the Smokies were confirmed in June 2012 at Sugarlands Visitor Center and at the Greenbrier entrance to the park. An off-duty park employee discovered the backcountry infestation on an administrative trail in the Greenbrier area on November 8. The employee noticed a pile of bark chips at the base of several ash trees. Signs of woodpecker activity on ash trees is an excellent indicator of an infestation.

Paul Merten, a forest insect specialist from the USDA Forest Service in Asheville, North Carolina, confirmed the presence of the borer at the site by looking under ash tree bark for feeding tunnels left by the immature beetle. "The infestation is well established, probably two years old or older," Merten said.

Complete eradication of the ash borer is not currently feasible, but park managers are developing a plan to maintain public safety and protect ash trees where possible.

Although expensive, there are insecticides that are effective for individual trees, but owners and managers should research products carefully. New remedies are being developed.



TCV to Honor Special Friends

Tennessee Conservation Voters (TCV) will hold its annual fundraiser, "Nature Votes" at Waller law offices in downtown Nashville on February 22. The party will provide a chance for elected officials and citizens to meet and enjoy local food, plus beverages, live music, and live and silent auctions. TCV will honor our "Legislative Friends" and discuss plans for the 2013 session.

If you are interested in being a sponsor please contact me, Michelle Haynes, at haynesm@realtracs.com or the TCV office (615-269-9090). Tickets can be purchased at the door. Also, check for updates at www.tnconservationvoters.org.

Our coalition of state conservation groups, including TNPS, is dedicated to educating voters and politicians, advocating for laws that protect the environment, and holding legislators accountable. Despite a hostile, anti-regulatory legislative climate, our top accomplishments include: getting dedicated funding into the budget on a recurring basis for preservation of wetlands, wilderness areas, and parks; working to develop responsible regulations on "fracking"; and conducting an extensive grassroots and advertising campaign to end mountaintop removal mining that pushed the bill out of committee and garnered public and legislative support. We also continued our efforts on bills related to solar energy, water quality, and land preservation.

All of our resources are dedicated to educational and lobbying efforts, and we rely heavily on individual donors.

Thank you for letting me represent TNPS on the TCV Policy Council.

Michelle Haynes

Early Spring Orchids by Bart Jones

The earliest blooming of all our orchids is a rarely seen species, *Listera australis*, the southern twayblade. The diminutive plants have two small oval leaves that are opposite each other about halfway up the stem which is where the common name twayblade is derived. The tiny flowers are dark purplish maroon and have an unusual forked lip like a snake's tongue and the plant as a whole is easily overlooked. Currently it is only known from two counties in Tennessee, but one of those is Fayette, site of our March 30 field trip to see the population at Mineral Slough in Ghost River State Natural Area. Search low moist woods, often near creeks and small rivers, in late March for these charming plants.

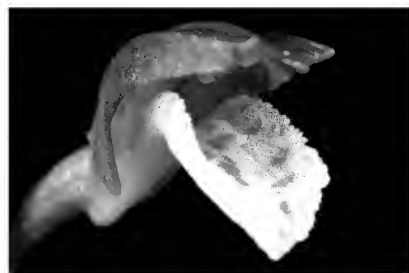
One of the showiest and most widespread species of early blooming orchids is *Galearis spectabilis* or showy orchis. It is commonly found in Middle and East Tennessee but also found in Chester and Decatur counties in West Tennessee. The plants consist of two glossy green leaves from which a flower spike of three to 10 flowers emerges. Each flower is composed of a purplish pink hood formed by

the sepals and petals and a contrasting white spade-shaped lip which has a nectar spur projecting from it. This species can be found in moist, rich woods blooming in early to late April depending on elevation.

Corallorhiza wisteriana



Spring coralroot (*Corallorhiza wisteriana*)



riana, or spring coralroot, is commonly found throughout the state in rich woodlands, but is very difficult to locate due to its unusual growth cycle. Being a saprophyte (living off rotting organic matter) the roots remain underground, often for several years, until they have acquired enough energy to support flowering. In early spring, those individuals will send up a purplish brown



Showy orchis (*Galearis spectabilis*)

flower spike with 10 to 20 small flowers, the sepals and petals the same purplish color as the stem, with a white lip with small purple spots. The common name results from the roots having an uncanny likeness to bleached coral.

Spring is also a great time to search for two orchids that have overwintering leaves, *Aplectrum hyemale* or puttyroot and *Tipularia discolor* or crane fly orchid, the most common orchid in the eastern U.S. Puttyroot's leaves are large grayish green both top and bottom with white fibrous veins, while crane fly orchid's leaves are glossy green on top and rich purple beneath. Both species' leaves wither by the end of April, so flag locations now. In May, puttyroot will send up flower spikes and crane fly orchid will flower in August. After the flowers fade, new leaves will emerge that will overwinter once again.



Crane fly orchid (*Tipularia discolor*)

Bart Jones

At its 2011 annual meeting, TNPS announced the creation of the Tennessee Botanists Hall of Fame to recognize both professional and amateur botanists who have made significant contributions to botany and to their particular disciplines.

The four botanists named then were André Michaux, Augustine Gattinger, A.J. "Jack" Sharp, and Elsie Quarterman. Dr. Quarterman was the only member of the group still living.

At the annual meeting in September, Robert Kral, Vanderbilt University emeritus professor, was named to the hall of fame. His short biography here shows again the notable contributions being made by Tennesseans to the scientific field we love.

Annual Meeting Success —Continued

work and learn about neighboring wildflower enthusiasts.

At Carson Springs in September, members were led on a hike from the Cosby Center in the Smokies up the Big Creek Trail to Mouse Creek Falls, about two miles above the trailhead. (See field trip description on next page.)

Nominations for New Terms

Another item of business brought before the membership was a slate of nominees, both officers and directors. The nominees, all to continue in their positions, are Bart Jones, president; Todd Crabtree, vice-president; Margie Hunter, secretary; and Darel Hess, treasurer; and Dennis Horn, Lorie Emens, and Larry Pounds, directors. Additional nominations will be accepted until January 7. If no additional nominations are received, the nominees above will be installed.



David Haskell, left, Jamie Donaldson, and Dennis Horn discuss their biological perspectives, during the TNPS annual meeting in September.

Vanderbilt's Robert Kral Fifth Member of TNPS Hall of Fame

Robert Kral grew up on a dairy farm in Iowa and became inspired by his father's large library of Luther Burbank's writings. After studying forestry and serving in World War II and Korea, he continued his education at Florida State University, where he earned his doctorate. He then began teaching and would eventually settle in 1965 at Vanderbilt University to teach for the next 30 years.

He has contributed to the botanical literature to the tune of over one hundred papers and two books. A two-volume tome with detailed information on rare plants of the Southeast amounts to over 1,000 pages. He even contributed illustrations for those volumes.

While producing those documents he was diligently fleshing out the intricate details of botany in the southeastern United States. He was also fulfilling his duty teaching at Vanderbilt University and curating a growing collection of plant specimens.

Along the way he became the recognized authority on the genus *Xyris* and has discovered several new species in that group. He even discovered a new species of *Xyris* in Tennessee, *Xyris tennesseensis*.

His contributions to ongoing projects is significant. His work on difficult groups, like sedges, for the *Flora of North America* project is proof of his extensive knowledge. Other botanists think so highly of Dr. Kral that they have named new species in his honor. The latest of these was just described by Dr. Dwayne Estes. *Penstemon kralii* is found in areas of limestone outcrop soils on the southern Cumberland Plateau.

His influence also extends to the northern end of the plateau where the species that he and Dr. Eugene Wofford of UT described resides. The Cumberland sandwort, *Minuartia cumberlandensis*, is found in sandstone rock houses near the Tennessee/Kentucky border.

In the decade or so since he retired from teaching at Vanderbilt Dr. Kral has continued to curate the treasure trove of specimens he accumulated during his long career.

These specimens, which were collected by Dr. Kral and numerous other botanists, are now housed in a facility in Texas. That's a long commute from south Georgia, where he now resides, and just one example of the dedication that has made this man one of the giants of botany in Tennessee and beyond.

Todd Crabtree

TNPS FIELD TRIPS

Big Creek, Great Smoky Mountains National Park
September 15, 2012

Our field trip for the annual meeting took us along Big Creek just across the state line in North Carolina. The trail is wide and stays close to the creek. The sound of water making its way over and between the cobbles and boulders was always near, varying with the cascades and riffles along the way.

One of the first plants to catch our attention was pale jewel weed (*Impatiens capensis*). There were just a few flowers, but quite a few fruits were poised to spring open and fling seeds away from the parent plant. It takes some experience to discern which fruits are at the peak of pressure and will explode at the slightest touch. If you choose wisely the reward is a tiny burst of seeds and elaters that is almost impossible for the human eye to follow.



Spikenard (*Aralia racemosa*)

Another interesting plant we observed was American spikenard (*Aralia racemosa*). It had numerous dark crimson fruits which looked like a frozen explosion of spherical rubies.

Further on, between the creek and the trail we discovered a patch of fumitory (*Adlumia fungosa*). This species is



Pink turtlehead (*Chelone lyonii*)

listed as rare in Tennessee and grows in the mountains. It is usually associated with rocky openings near creeks or on steep slopes. The plants we saw were climbing over rocks and into a thicket of rhododendron.

At several spots on the banks of the creek were small colonies of cutleaf coneflower (*Rudbeckia laciniata*). The bright yellow flowers on some of the plants were above our heads. A small rivulet that crossed the trail harbored a few pink turtleheads (*Chelone lyonii*). We stopped at our destination for a restful lunch across the creek from an elegant waterfall.

About half of the group took a slight detour on the way back to our lodgings to see a rare parasitic shrub. Pirate bush (*Buckleya distichophylla*) is parasitic on evergreen trees, and in Tennessee it prefers hemlock (*Tsuga canadensis*).

Todd Crabtree

Rock Island Fall Hike
Sept. 22, 2012

The beginning of autumn coincided with our return to Rock Island State Park to continue the survey of plants in the park. We met again at the market in beautiful downtown Rock Island. Those on the hike included Janie Finch, Bill Taber, Donna Ward and friend Linda Quinn, Louise Gregory, Darel and Gail Hess, B.C. Hudson, and Dennis and Sherry Horn.

We again headed to the Twin Falls parking area to begin our hike on the Downstream Trail. This trail has the greatest variety of plants, and the views along the Caney Fork River are ever changing. The water flow was the highest I had seen at Rock Island, likely caused by the 4- to 5-inch rainfall in the area the Monday before. Kayakers were having a great time.

All of the participants were knowledgeable of and interested in the plants we observed along the trail. All together we added 89 species to our earlier list of plants for this trail, and as a result lunch was significantly delayed. We finished the trail at 2:30 pm, about an hour-and-a-half later than intended.

Plants found on this trail included white crownbeard (*Verbesina virginica*), yellow leafcup (*Smallanthus uvedalis*), white-flowered leafcup (*Polymnia canadensis*), pink thoroughwort (*Fleischmannia incarnata*), downy lobelia (*Lobelia puberula*), wild sensitive plant (*Chamaecrista nictitans*), cupseed (*Calyocarpum lyonii*), tall rattlesnake root (*Prenanthes altissima*), short-pappus goldenrod (*Solidago sphacelata*), and of course many others. Darel was able to determine this goldenrod by observing the short pappus surrounding each disk floret with a hand lens.

Lunch at the Rock Island Market is always great. I enjoyed a barbecue plate and coconut cream pie. After lunch

TNPS FIELD TRIPS

we had only an hour to explore upstream of the falls along the trail that follows the base of the high bluff. By now the group was down to five, and we were joined by Janie's husband Ric. We found rigid goldenrod (*Solidago rigida*), late purple aster (*Aster patens*), lesser calaminth (*Calamintha nepeta*), and axilflower (*Mecardonia acuminata*). The water was too high in the river to explore the rocky streamside vegetation, so we decided to conclude our hike for the day.

A species list for Rock Island State Park has now been compiled from the plants observed during the two TNPS field trips this year. Also included were species recorded during other hikes in 2011 and from an initial list obtained from the park naturalist. The final list has been forwarded to the Tennessee Department of Environment and Conservation to be included in their plant data base.

Dennis Horn

Walls of Jericho October 20, 2012

The area surrounding Walls of Jericho State Natural Area contains some very rare plants, and on our trip we saw a few of these. During our steep descent towards Hurricane Creek we encountered two rare plants that are closely associated with forests and woodlands on limestone soils.

Ear-leaved goldenrod (*Solidago auriculata*) (see sketch) is at the northern limit of its range in Tennessee but it is not difficult to find in this area. The leaf is so distinctive that it is easy to identify even if the plant isn't flowering. Cumberland rosinweed (*Silphium brachiatum*) is restricted to the southern plateau and is found sporadically on south- and west-facing slopes. It too has a distinctive leaf shape that makes recognition possible without flowers. Most plants are seen without flowers. Only at the edges of glade openings in the forest and artificial breaks in the canopy, like trails and roads, does it flower profusely. It can reach heights of eight to ten feet. For such a large plant, it has very small yellow inflorescences.

Limerock arrow wood (*Viburnum bracteatum*) sticks closer to streams than the two previously mentioned species. It has a heart-shaped leaves, and in the fall they turn a deep burgundy or sometimes a dull yellow color. As the trail was pushed between the stream and the steep slope above, we began to see the arrow wood. In the spring these streamside plants are weighted down by the large white tresses of flowers.

We saw witch hazel flowering on the creek banks. The

yellow flowers have long thin strap-like petals, and they attract a moth that is active in the winter. When most plants are closing up shop for the winter, witch hazel has made a bargain to open for the moth in exchange for the service of pollination.

In the fall photosynthetic processes are shut down and chlorophyll is reduced in the leaves of deciduous plants. This recession of green reveals other pigments in the leaves and produces a varied arrangement of colors in the forest. Some leaves are falling from the trees as others are just beginning to change colors.

The curtain of leaves that obscures the high limestone walls in the deepest part of Turkey Creek cove in the summer had fallen so that we could see this dramatic feature. Two log bridges and a rock hop across Turkey Creek brought us into the wide limestone amphitheater where the creek emerges from one of the walls.

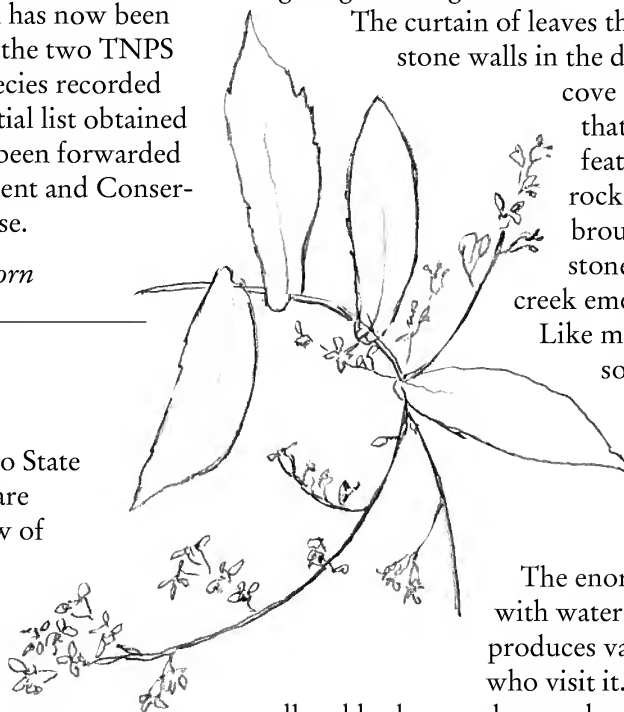
Like many other creeks on the southern part of the Cumberland plateau, this creek dives in and out of the ground. This emergence is one of the most dramatic.

The enormous bowl of limestone with water shooting out of one side produces varied reactions in the people who visit it. Children usually climb,

yell and look up and around with amazement. Adults take in the view and eventually sit down with a look of awe, reverence, and appreciation. In part, this could be due to the long steep hike in to the walls.

We retraced our steps back out of the cove, climbing the slope that will awaken in the spring with numerous ephemeral wildflowers.

Todd Crabtree



Here's a new web resource that you might enjoy: a blog that's written by Sewanee Herbarium staffers, including TNPS members Yolande Gottfried and Mary Priestley. Featuring Plant of the Day articles, news of upcoming and recent events, and other stories, the blog should be of interest to those who enjoy keeping up with botanical goings-on on the plateau.

This time of year, when we can't get out as often as we might like, a little armchair botanizing might be just the ticket. The blog is located at <http://sewanee-herbarium.wordpress.com/>. Or google Sewanee Herbarium blog, and it will pop up.

TNPS Website and Facebook Pages

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through links to other websites.

- A shop for purchasing the TNPS Official Field Guide or other TNPS merchandise such as t-shirts, mugs, and calendars.

- A link to TNPS on Facebook; however, you must be a Facebook member for access.

In the future we will add our 2013 field trips and newsletters as they are published. New field trip photos of both people and plants (please identify them) will be included as space allows. Just send them to webmaster@tnps.org or use the webmaster email link at the bottom of each web page. If you encounter errors or glitches on the website, again please email the webmaster.

Webmaster Karen Ripple is a new member of TNPS and a new resident of Tennessee, a past member of the

Maryland Native Plant Society, a former high school science teacher and teacher of teachers, author, and owner of Ripples-on-Water Websites.



Dentaria multifida

Photo by Darel Hess

Check Your Dues Date?

Check your mailing label—the year through which you have paid dues is printed at the top. If the date's 2012 or 2011, please send a check promptly to Darel Hess, our treasurer. TNPS, P.O. Box 159274, Nashville, TN 37215.

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