



TENNESSEE NATIVE PLANT SOCIETY

Volume 48 Number 3

September 2024

Poison Ivy, *Toxicodendron radicans*

By Bettina Ault

INSIDE THIS ISSUE

Plant Profile: Poison Ivy	1,6,7
President's Musings	2
TNPS Scholarships and Grants 4 Native Plants Awarded	3
Fieldtrip Reports	4,5

The featured plant in this issue is our old friend poison ivy (*Toxicodendron radicans*, formerly *Rhus radicans*). This common vine/shrub is widely considered a nuisance because of its propensity to cause dermatitis, but it is an integral part of many forest ecosystems.

Poison ivy is a member of the Anacardiaceae (cashew family), which includes many temperate and tropical species including cashews, mangos, and sumac. *Toxicodendron radicans* is found throughout the eastern US from Quebec south to Florida and west to the Rocky Mountains. A related species, eastern poison oak (*T. pubescens*) is found in the southeastern US from Virginia westward to Texas and Oklahoma. Western poison ivy, *T. rydbergii*, occurs in the western US. An additional dermatitis-causing *Toxicodendron* species, poison sumac (*T. vernix*) is found in a few TN counties along the western Cumberland Plateau and two counties in northeast TN

(including Shady Valley).

Identifying poison ivy is of course important (we are taught the time-honored phrase “Leaves of three, let it be”). *T. radicans* can occur as a climbing or trailing vine or a shrub.

Climbing vines are notable for a hairy



appearance secondary to numerous aerial rootlets. (“Don’t touch hairy tree trunks”). Leaves are alternate and compound with three leaflets. The end leaflet has a long stalk and a pointed tip; the lateral leaflets are stalkless.

Leaves are pale green when young and become dark green as they mature; margins may be smooth or notched, even on the same plant. Leaves turn a vibrant red in the fall. *T. radicans* is dioecious, with male and female greenish-yellow flowers borne on separate plants in May to July. The fruit, which is mature in August-October, is a drupe (a fleshy outer coating surrounding a seed with a

(Continued on page 6)

TNPS Newsletter

This newsletter is a publication of the Tennessee Native Plant Society and is published four times a year, generally March, June, September, and December.

The Tennessee Native Plant Society (TNPS) was founded in 1977. 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:

Individual/Family: \$20

Student: Complimentary

Institution: \$50

Life: \$250

Dues may be sent to:

Tennessee Native Plant Society

P.O. Box 159274

Nashville, TN 37215

Officers

Karen Ripple Hill, President
Allan Trently, Vice-President
Bettina Ault, Secretary
Jennifer Trently, Asst. Sec.
Kim Sadler, Treasurer

Directors

Anne Ballentine
Sue Bible
Dennis Horn
Bart Jones
Larry Pounds
Mitchell Kent

Newsletter Editor

Donna Bollenbach

President's Musings

The weather is starting to shift into cooler nights, so we know fall is coming. There are many more hot days ahead of us, but there has been a subtle shift. Goldenrod, wingstem, and ironweed are either blooming or preparing to bloom. The many species of cone flowers are being reduced to seed heads. And I'm watching my first crop of pawpaws for signs of ripening. This week along an empty stretch of county road we were treated to a massive display of sundrops blooming bright yellow. I don't recall ever seeing them there before this lovely surprise.

Change is also coming to TNPS. At the end of December I will step down after four wonderful busy years as President.

Mitchell Kent, whom many of you met at our Roan Mountain Conference (which he masterfully organized) has agreed to take the reins with my blessing. I'm sure he will do a great job of leading this wonderful organization.

Nominations for other positions are being finalized and will be announced in September. As is true in the garden, the only constant is change. That's what allows plants (and us) to grow.

Some exciting events have been happening in the background this year that will be covered in a Round Table Seminar later this fall. It's not strictly TNPS but does affect us and our members. Some of us have been busy amending and revising our town/county ordinances to REQUIRE new

developments to plant a minimum of 50% native plants and prohibiting the planting of invasive species. We are not asking to allow the planting of native species, we are working on requiring native species!

So far we have been successful in two townships, and are assisting in others. We are also looking at making changes at the county level. The catch is that we can only do this within the jurisdictions where we reside. We can advise and guide others to do the same where they

live, and that will be the focus of the Round Table--to guide others in making a change in their town, in their county. If we can develop momentum across the state, then maybe we can convince the Tennessee legislature to pass

a state-wide ordinance or law. There are real possibilities, but it requires a little effort by a lot of folks across the state. And I'm not being facetious about a little effort. The process is surprisingly easy. Think about it. Is this possible in your town?

Join us at the RoundTable where we will share our experiences and answer whatever questions you might have. Timing of this seminar will likely be in November. We will send out a notice by email and post it on our website calendar.

Karen



Iron weed, *Vernonia gigantea*



TNPS typically provides an annual scholarship to the Cullowhee Native Plant Conference, but this year we also provided a scholarship for our TNPS Conference at Roan Mountain SP. Emily Sue Laird was selected from among our student memberships to receive a scholarship covering conference registration, meals, and lodging. As a grad student at UT Knoxville, she had just wrapped up her practicum project on “Rewilding the Oakwood-Lincoln Park neighborhood in Knoxville through native and high-ecologically performing plantings in residential lawns.” Congratulations Emily!

Our inaugural award group of six schools received \$500 grants to purchase Tennessee native plants for student plantings in connection with a suitable curriculum. In addition to a \$500 check each school receives two books for reference: *Wildflowers of Tennessee* by Horn et al. and *Woody Plants of Kentucky and Tennessee* by Jones and Wofford. A mentor was also provided for each school to help guide site selection, plant choices, planting techniques, maintenance needs, and possibilities for future planting projects at their schools.

Congratulations to the following schools, teachers, and mentors! We look forward to seeing before and after photos of your achievements next spring.

- **Arlington Middle School** in Arlington, TN (near Memphis) – Teachers: Sherida Person and Shannon Blackburn – Mentor: Glenda Rhodes
- **Decaturville Elementary School** in Decaturville, TN – Teachers: Christee Pettigrew and Brynn Kelley -- Mentor: Bart Jones
- **Nolensville High School** in Nolensville, TN – Teacher: Anna Crombie – Mentor: Rebecca Abel
- **Normal Park Museum Magnet School** in Chattanooga, TN –Teacher: Matty Hardy – Mentor: Terri Joyce
- **Saint Rose of Lima Catholic School in Murfreesboro**, TN – Teacher: Ben Garretson – Mentors: Phyllis Kitzler and Kate Patrick
- **West High School in Knoxville**, TN – Teachers: David Krebs and Kathryn Hensley – Mentor: Robyn Cooper

These grants were made possible in part by the generous contribution of Margaret Fletcher in honor of her late husband Chaplain Col. Russ Ragon of Chattanooga. Grant applications are currently closed, but will reopen next spring.

May 11, Skymont Scout Reservation Orchids

Fieldtrip report by Chuck Wilson

Fourteen intrepid individuals elected to explore Skymont Scout Reservation near Altamont, Tennessee, on a beautiful clear day in May in spite of recent severe storms that damaged some of the anticipated orchid species.

At the first site down a gentle slope were several lily-leaved twayblade (*Liparis lilifolia*) plants, a few of which had survived the strong winds and rain. Further down and closer to a stream that had clearly flooded but now receded were a few of the very rare Loesel's twayblades (*Liparis loeselii*) that had been damaged by swept debris but somehow had survived.

The second site was a mesic flat mixed pine/hardwood woods that hosted hundreds of pink lady's-slippers (*Cypripedium acaule*) that had also been impacted by the recent strong winds but a few of the blooms survived. At their prime, the orchids at this spot exhibit interesting color variations and their density yields a spectacular sight. There was some evidence of soil disturbance by armadillos at this site.

Site manager David Young graciously offered to show us other wetland areas on the 2500-acre reservation for our exploration. At several points he recounted the remarkable temporary increase in water depth during the recent storms. Plant expert Dennis Horn assisted in identifying various wildflower species that were encountered. Some other orchid species not yet in bloom were found, including dozens of *Platanthera* leaves at the base of a rather spectacular waterfall.



Loesel's twayblades, *Liparis loeselii*
Photos by Chuck Wilson

May 25, Devil's Breakfast Table, Scour Prairies

Fieldtrip report by Larry Pounds



Cumberland rosemary, *Conradina verticillata*. Photo by Dennis Horn

The day started with heavy thundershowers, but 12 of us gathered at Daddy's Creek to view a strange type of prairie. Most natural prairies depend on dryness, shallow soils, and fire to keep the trees and shrubs out. The small prairie we saw uses shallow soil and the scouring force of occasional flood waters to maintain its openness. Too much scouring would eliminate the prairie plants, while too little would allow trees to survive.

Scoured habitats are unusual enough to have plants that are restricted to them. For example, Cumberland rosemary (*Conradina verticillata*) is found only in scoured habitats along three river systems, all on the Cumberland Plateau. These are the Obed, Big South Fork, and Caney Fork. Damming of these could easily have led to the extinction of the Cumberland rosemary. Tennessee Citizens for Wilderness Planning successfully fought dams on both the Obed and the Big South Fork. Our visit was timed right to see Cumberland rosemary in full flower.

July 13, Ghost River State Natural Area

Fieldtrip report by Allan Trently

On Saturday, July 13th, Allan Trently led ten participants into the sand post oak barrens located within the Ghost River State Natural Area in Fayette County. This was a joint event with TNPS and the Tennessee Division of Natural Areas (TDNA).



Sand Post Oak, *Quercus margaretta*, Photo by Allan Trently

The sand post oak barrens is a unique plant community in Tennessee. In the state, the community is only found along the sandy hills adjacent to the Wolf River in Fayette County. There is no other place in Tennessee where this community exists. Tennessee species of special concern found in the barrens include Plukenett's flat-sedge (*Cyperus plukenetii*), sand post oak (*Quercus margaretta*), as well as the state endangered plant capillary hair sedge (*Bulbostylis coarctata*).

In addition to these rare plants, we also observed Catesby's false bindweed (*Calystegia catesbeiana*), hoary skullcap (*Scutellaria incana*), lots of legumes (family Fabaceae), butterfly milkweed, (*Asclepias tuberosa*) and many others.



Participants at the TNPS and TDNA joint event.

July 20, Balsam Mountain Loop Tour

Fieldtrip report by John F. White

On July 20, 2024, six people attended the Balsam Mountain Field Trip despite overcast and rainy weather. Allen Sweetser and John F. White, co-leaders, anticipated the impact of the weather on potential attendees. However, as the trip began, the sky cleared, and a wonderful day of observing flowers followed.

During July, plenty of wildflowers were in full bloom at higher elevations along the Blue Ridge Parkway and in the Balsam Mountain area. This was in contrast to lower elevation areas where many of the flowers were starting to fade. We spotted around fifty-nine species of wildflowers during our stops and short hikes, and that doesn't even include the different types of trees, shrubs, and ferns we saw.

Wildflower species, such as Leather Vasevine (*Clematis viorna*), Hollow Joe-Pye weed (*Eutrochium fistulosum*), and Turk's-Cap Lily (*Lilium superbum*), were observed at Blue Ridge Parkway overlooks. Heintooga Road overlooks offered Featherbells (*Stenanthium gramineum*), Greater Tickseed (*Coreopsis major*), Deptford Pink (*Dianthus armeria*), Filmy Angelica (*Angelica triquinata*), Hairy Wood Mint (*Blephilia hirsuta*), and Dwarf St. John's Wort (*Hypericum mutilum*), to name a few.

In the Balsam Mountain area, we saw White Wood Aster (*Eurybia divaricata*), Fly Poison (*Amianthium muscotoxicum*), Rugel's Ragwort (*Rugelia nudicaulis*), Large False Hellebore (*Veratrum viride*), and one of the best finds of the day, Southern Blue Monkshood (*Aconitum uncinatum*).



Leather Vasevine, *Clematis viorna*



Turk's-Cap Lily, *Lilium superbum*



Deptford Pink, *Dianthus armeria*



Fly Poison, *Amianthium muscotoxicum*



Southern Blue Monkshood, *Aconitum uncinatum*

(Continued from page 1)

hardened coat), initially green and then white when mature. Poison oak is similar, except that the leaves are pubescent (hairy) and slightly lobed. A number of plant species have enough resemblance to poison ivy to cause confusion: box elder (Sapindaceae), mock strawberry (Rosaceae), jack-in-the-pulpit (Araceae), and American hog peanut (Fabaceae) leaves resemble *T. radicans* and can be unfairly accused.

Plants in the Anacardiaceae can be highly allergenic. The allergen is urushiol, a complex mixture of organic oils released when the leaves or other parts of the plant are crushed. The oil can also be transmitted by smoke from burning. Urushiol consists of a catechol ring with attached hydrocarbon side chains of various lengths and degrees of saturation. The ability of urushiol to induce an allergic reaction may vary depending on the degree of unsaturation of the hydrocarbon side chains (less than half of the general population develops a reaction to saturated side chains, while as many as 90% may react to side chains with unsaturated bonds). The classical reaction to urushiol (classic poison ivy reaction) is Type IV (delayed-type or T-cell-mediated) hypersensitivity: the initial symptoms (rash, blistering, and itching) usually appear in 24-48 hours and can last for 2-3 weeks. In the United States about 70-85% of individuals react to urushiol. 10-15% may not get dermatitis initially, but it may develop with repeated exposures. The response to urushiol may fluctuate with time.

Treatment of urushiol dermatitis is mainly supportive, with cool water soaks and oatmeal baths, oral antihistamines, and topical corticosteroids (and occasionally oral steroids or steroid injections in severe cases). Topical Benadryl is not felt to be helpful in relieving symptoms and can even lead to an allergic reaction in some individuals. The most important thing is prevention: avoiding the plants when possible, wearing gloves when gardening, and prompt removal of the oil from the skin with soap and water (dish detergent is as effective as and much cheaper than fancy poison ivy soaps). It is possible to get urushiol dermatitis from secondary contamination (from clothing, shoes, tools, or the fur of pets), and precautions should be taken. Jewelweed (*Impatiens*) is a time-honored folk remedy for poison ivy: the crushed leaves are said to help prevent dermatitis when applied to skin exposed to poison ivy, and it has been noted that jewelweed is often found growing near *T. radicans* (not surprising, as both plants thrive in moist edge woods). Sadly, there is no evidence that jewelweed has much effect on urushiol dermatitis in clinical trials. Mashed jewelweed leaves appeared to decrease the degree of dermatitis when applied promptly to exposed skin, but they



were no more effective than Dawn dishwashing detergent and water. Jewelweed extract had no effect. However, the good news is that for individuals with a tendency for severe cases, as of 2021 a vaccine is in development at the University of Mississippi to try to decrease the immune response to urushiol.

Although poison ivy has caused a good deal of human misery and is often considered a nuisance, it is a vital part of ecosystems across the US. The fruits provide food for more than 60 species of birds. They are particularly helpful to overwintering birds when food supplies are scarce. The leaves are eaten by white-tailed deer, black bears, raccoons, and rabbits and several species of reptiles and amphibians; unlike humans, animals do not have adverse reactions to urushiol. Over 100 insects and mites, including several species of moths, use *T. radicans* as a host plant.

Unfortunately, climate change has expanded the range of *T. radicans*. A research team from Duke increased carbon dioxide concentrations in an experimental forest to levels predicted for around 2050 and noted that increased levels of CO₂ resulted in bigger plants with larger leaves and higher levels of urushiol.

So, in summary:

- Leaves of three, let it be!
- Don't touch hairy tree trunks.
- Wash your skin and any objects contaminated with poison ivy oil with soap and water.
- Jewelweed is pretty, but it doesn't do much for preventing or treating poison ivy rash.

(Continued on page 7)

2024 Native Plant Seminars & Fieldtrips

The Tennessee Native Plant Society hosts monthly Native Plant Seminars. These events are held via Zoom on the third Tuesday of each month at 6:30 p.m. Central (7:30 p.m. Eastern) and last about one hour. All members, and potential members, are welcome to join the seminars at no cost. The link to join each seminar will be posted on the *Seminars* and *Calendar* pages of our website: www.tnps.org

Most past seminars are recorded and linked to our [Seminars](#) website page.

Seminar speakers are drawn from our knowledgeable membership, from professionals across the state, and from the professors and students studying our Tennessee native plants. A range of topics will be covered that may include plants that are currently blooming, native plants in our yards, current research on native plants, protections for native plants, and so much more.

Join us for an hour a month to learn more about Tennessee native plants.

Upcoming TNPS Seminars

September 17 – Sara Wittenberg, Pollinators in the Garden

October 15 – Elizabeth Hermesen, Plant Fossils of Tennessee

November 19 – Adam Bigelow, Wildflowers of Southern Appalachia

Upcoming TNPS Fieldtrips

Details of each fieldtrip are in the March 2024 Newsletter and on our website: www.tnps.org

(If you RSVP it helps with planning and carpooling)

September 7 (SATURDAY) Big Hill Pond State Park, Bioblitz, McNairy Co. Leader: Cooper Breeden, cooper.breeden@seagrasslands.org (615-545-3277)

September 21 (SATURDAY) Crab Orchard Mountain Powerline Fall Flowers Leader: Margaret Cumberland, meshearin@gmail.com, (919-339-0072)

September 28 (SATURDAY) Walker Branch SNA, Hardin Co Leader: Allan Trently allan.trently@tn.gov (731-234-4887)

(Continued from page 6)

- Poison ivy is important for wildlife.
- More poison ivy is likely coming in future years.

References

Gladman AC. Toxicodendron dermatitis: poison ivy, oak and sumac. *Wilderness & Environmental Medicine* 2006.

Motz VA, et al. The effectiveness of jewelweed, *Impatiens capensis*, the related cultivar *I. balsamina* and the component, lawsone in preventing post poison ivy exposure contact dermatitis. *Journal of Ethnopharmacology* 30Aug2012.

Wallis C. A vaccine against poison ivy misery is in the works as scientists also explore new treatment paths. *Scientific American*. 1Sep2021.

NPR news segment: Why poison ivy loves climate change. WBUR, August 30, 2023.

When Are Dues Due?

Membership lasts one year from the date of last payment. You will receive a reminder email 5 days before your expiration date asking you to renew. There is currently a grace period of 65 days in which you retain your membership status.

If you enter your member portal (**Login**, on any website page) you will see when your membership is due to expire. This is where you should renew your membership and/or sign up for auto renewal if you wish. Payment can be made either by credit card or delayed so you can mail a check. If you do not renew through the member portal, but instead use one of the **Join TNPS** buttons, you will create a separate duplicate membership account. This requires an administrator's attention to "merge" the two accounts, so please don't do this.

When choosing whether to receive the newsletter in print or email, please keep in mind that we do not print the newsletter in full color, but email copies and copies on the Newsletter page of our website are in full color.

If there have been changes to your email or physical address, please make those updates through the membership portal. If you have any questions or problems, contact support@tnps.org.

TNPS Newsletter
P.O. Box 159274
Nashville, TN 37215