



The purpose of the Oklahoma Native Plant Society is to encourage the study, protection, propagation, appreciation and use of Oklahoma's native plants.

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15 November 2012

Gaillardia

The Oklahoma Native Plant Society Newsletter

CALENDAR

Note: the events dated below are followed by either a page number for further descriptions or the contact person.

Sept 10: NE Chapter Meeting with a presentation by Amy Buthod, Page 6

Sept 13-14: ONPS Annual Meeting at Selma Living Laboratory, President's Paragraph.

Sept 24: Central Chapter Meeting at new site on OCU campus, Page 6

Oct 6: Cross-Timbers Booth at Garden Fest, Oklahoma Botanical Garden & Arboretum, Stillwater, Page 6

Nov 13: Cross-Timbers Dessert Potluck and Lecture, Page 6

Fabulous Wildflower Fridays, the 3rd Friday of each month, Page 7

Note: all members are invited to all meetings, including board meetings, and are encouraged to bring guests.

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PRESIDENT'S PARAGRAPH

This has been a great year for the Oklahoma Native Plant Society. We have more new members this year than in recent memory; due in large part to a successful membership drive with Pat Folley's new book *The Guide to Oklahoma Wildflowers*. A new Southwest Chapter has been established in the Medicine Park area that will undoubtedly bring more new members anxious to do some botanizing.

The Indoor Outing and numerous local field trips and presentations have sparked new interest in the state's native flora. Our new website is receiving acclaim from members, nonmembers, and even some other state native plant societies. Finally, plans are underway for what hopes to be a very exciting Annual Meeting in the northwest part of the state. ONPS is definitely "branching out" in order to reach all areas of the state.

Annual Meeting: This year's Annual Meeting will be at the Selman Living Lab located near Alabaster Caverns State Park in the Cimarron Gypsum Hills of northwestern Oklahoma. This 320-acre natural area is operated by the University of Central Oklahoma and will provide an excellent site for our Annual Meeting on September 14-15. A separate mailing has gone out to ONPS members with registration information and Gloria Caddell, coordinator for this event, is now receiving registrations from those interested in attending. The deadline for registration is September 5th, so hurry and make arrangements to attend. More information can be found at the ONPS website (www.oknativeplants.org).

Southwest Chapter: For the first time in a number of years, a new ONPS chapter was approved at the June meeting of the Board of Directors. The Southwest Chapter is based out of Medicine Park. I wish to acknowledge the following charter members of the this new chapter: Tony Booth, Jeremy Dixon, Dr. Mike Dunn, Maryruth Cunningham, Doug Kemper, Larry Meese, Doyal & Carrie Reed, Helen Riley, and Vic & Lisa Roberts. For more information, contact Doug Kemper at dkemper@mpmns.org. The official headquarters of the Southwest Chapter is the soon to be constructed Medicine Park Museum of Natural Science (<http://www.mpmns.org>).

Activities this Fall: If you are looking for some weekend botanizing activities this fall, the two activities below will undoubtedly provide lots of opportunities to check out our native flora, to socialize with others interested in the natural sciences, and even a chance to take a look at something other than plants if the need arises.

Oklahoma Academy of Science will hold its Fall Field Meeting at Boiling Springs State Park on September 21-23. More information can be found at the OAS website (<http://oas.uco.edu>).

BioBlitz! Oklahoma will be held at Foss State Park & Washita National Wildlife Refuge on October 5-7. Registration information can be found at the BioBlitz! website (<http://www.biosurvey.ou.edu/bioblitz/BioBlitz.html>)

Membership renewal: It is indeed an exciting time to be a member of the Oklahoma Native Plant Society. I hope our current members will soon take time to renew their memberships. All dues paid after September 1 applies to the following calendar year; so renew early if you get the opportunity. And with the holidays rapidly approaching, consider a gift membership for that person who has everything.

Best wishes and happy botanizing, Adam Ryburn



BOTANIST'S CORNER

Itch and Scratch!
Ron Tyrl

Have you ever had a rash develop after contact with poison ivy? Have you ever come in contact with poison ivy but didn't develop a rash? If your answer was "yes" to the first question, you, I, and many other Americans have something in common. If your answer was "yes" to the second question, don't be too complacent. Poison ivy, the bane of many field biologists and ONPS members, is the subject of this column. In the following paragraphs, I want to give you a brief introduction to a few aspects of the species.

Poison ivy is a species commonly encountered across Oklahoma. One also hears others talking

about poison oak and poison sumac occurring in the state, and often there is considerable confusion about the culprit's identity. The plant that one person calls poison ivy, may be called poison oak by another, or poison sumac by a third.

Originally positioned in the genus *Rhus*, poison ivy and its relatives poison oak and poison sumac are now classified in genus *Toxicodendron*. The genus is a member of the Anacardiaceae or cashew family, a family that comprises 69–82 genera and 700–850 species of trees, shrubs, and vines. Distribution of the family is primarily tropical and subtropical in both the Old and New World. In addition to cashew (*Anacardium*), notable members include mango (*Mangifera*), pistachio (*Pistacia*), smoke-tree (*Cotinus*), and pepper tree (*Schinus*). In North America, there are 12 genera and about 40 species, both native and introduced. *Toxicodendron* is native to eastern Asia and North America, with 5 species occurring in the latter:

- T. diversilobum* (Torr. & A.Gray) Greene, poison oak, western poison oak
- T. pubescens* Mill., eastern poison oak three-leaved ivy
- T. radicans* (L.) Kuntze, poison ivy, poison mercury
- T. rydbergii* (Small ex Rydb.) Greene, western poison ivy
- T. vernix* (L.) Kuntze, poison sumac, poison elder, poison ash

Although the formally applied common names for the 5 species are given above, the common names poison ivy, poison oak, and, to a lesser extent, poison sumac are applied almost interchangeably to all 5 species. Each individual person often has his or her own concept of what these poisonous plants are, depending upon where he or she has lived or has read or heard. The reason for this ambiguity is that these species are morphologically quite variable and very similar. Plants can grow as herbs arising from rhizomes, climbing woody vines with aerial rootlets, thicket-forming shrubs, or small ill-shaped trees. Their leaflets can be large or small, toothed or lobed,



and glossy dark green or pale yellow-green. Further complicating identification is the tendency for hybridization between some species. Taxonomists, however, have related the common names to specific species and their geographical distribution. *Toxicodendron diversilobum* is now believed to be a species of the West Coast states. *Toxicodendron vernix* is distributed principally east of the Mississippi River, with greatest abundance in the southeastern quarter of the continent, where it is characteristically found in swamps. Interestingly, it has 5 leaflets rather than 3 as is characteristic of the other 4 species.

The remaining three North American species do occur in Oklahoma, and unfortunately, in such abundance as to cause problems for those who are sensitive. *Toxicodendron rydbergii* is typically encountered in the western quarter of the state, including the Panhandle, whereas *T. radicans* and *T. pubescens* are characteristic of the eastern two-thirds of the body of the state.

How does one recognize our Oklahoma species of *Toxicodendron*? The familiar Boy or Girl Scout adage is applicable to all three species. Telling them apart is more difficult because of the previously mentioned morphological variability and putative hybridization. However, there appears to be consistent differences in growth form; the presence of aerial, adventitious roots; and the presence of hairs on the petioles, leaflets, and drupes. It is important to note that leaflet size, lobing, toothing, and color are not useful characters to distinguish among the three species. If the plant is a climbing vine or a climbing shrub attached to other plants by aerial roots, it is *T. radicans*. *Toxicodendron pubescens* and *T. rydbergii* are free-standing shrubs or subshrubs and lack aerial roots. If you are brave enough to get close and observe whether the “berries”

(actually drupes) are pubescent or glabrous, you can distinguish between these last two species.

The appearance of reddened skin and watery blisters accompanied by itching and an almost overpowering urge to scratch the inflamed region typically heralds the onset of a case of poison ivy. The species is so infamous that its name is generally used for the disease it produces. Species of *Toxicodendron* are responsible for more cases of allergic contact dermatitis than all other plants, household chemicals, and industrial compounds combined. This dermatitis is a significant cause of occupational injury, especially in forestry workers and fire fighters.

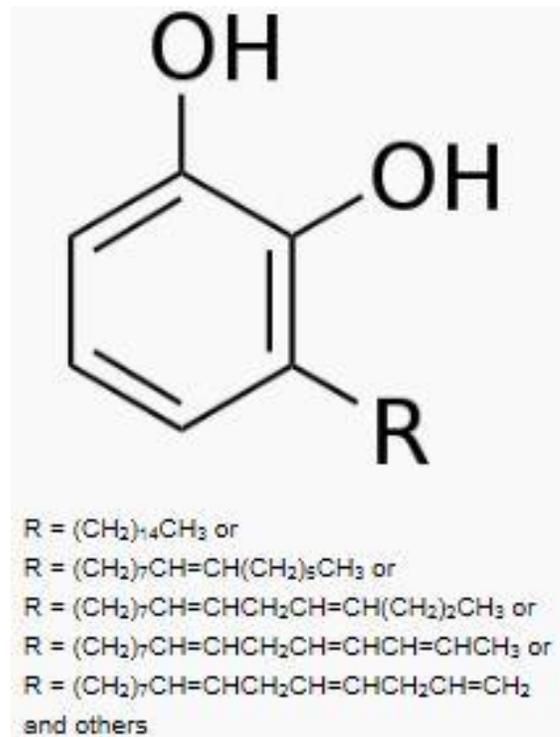


The mere mention of poison ivy may evoke apprehension in you if you are susceptible. Take heart, you are not alone. Approximately 80% of the population of North America is sensitive to poison ivy and its relatives, and an appreciable number (18–20%) of those afflicted require a physician's care or bed rest. Most individuals become sensitized in late childhood, and once they are, there is considerable cross-reactivity to contact with other members of the Anacardiaceae, as well as to *Ginkgo*, maidenhair tree.

The allergic reaction occurs when a susceptible individual comes in contact with the plant's oily resin (oleoresin), which contains a mixture of 3-alk(en)ylcatechols. This mixture of compounds is generally referred to as urushiol. The different species of *Toxicodendron* contain different mixtures of these catechol derivatives. It is these chemical differences that have contributed to the recognition of different species. For example, *T. radicans* and *T. rydbergii* have mainly 15-carbon

chains and only a few chains with 17 carbons; whereas, *T. diversilobium* and *T. pubescens* primarily have 17-carbon chains and only a few with 15 carbons. *Toxicodendron vernix* contains a slightly different mixture of 3-*n*-pentadec(en)ylcatechols.

This oily resin is present in the leaves, stems, roots, and immature fruits of all species, and readily adheres to humans, pets, and objects upon contact. Thus, exposure can be direct, that is, when one's skin touches the plant in the field or garden; or indirect when one strokes the fur of a pet who has touched the plant, wears tainted clothing, or touches contaminated tools, toys, athletic equipment. Urushiol is not volatile, but it may be aerosolized or carried on plant fragments when the plants are burned and subsequently may cause severe problems when inhaled.



Urushiol

Becoming sensitive to poison ivy and its relatives requires one or more exposures to urushiol. The catechols penetrate the outer skin layers and after oxidation to a quinone form, chemically bind with ε-amino and thiol groups in cell proteins to form an antigen that elicits a cell-mediated immune reaction. This likely occurs via macrophages or Langerhan cells as presenter cells for the T-lymphocytes, resulting in skin damage. The ease

of penetration depends upon the thickness and looseness of the skin. Seldom does one get a case of poison ivy on the pads of the fingers or palm, rather the rash appears between the fingers or on the wrist.

In humans and primates, the familiar clinical signs develop in about 5 days on first exposure or in 24–72 hours in sensitized individuals. Initially, the skin shows mild reddening and swelling at the contact site accompanied by intense and intolerable itching. These signs are followed by more intense reddening and formation of vesicles that rupture, exude fluid, and lead to crusting and scaling of the skin. New lesions may continue to develop for several days. In severe cases, there may be systemic signs such as vomiting, diarrhea, and abdominal pain. Without treatment, the dermatitis normally peaks in 4–5 days and disappears in 10–21 days.

Individuals differ genetically in their sensitivity to urushiol. Some react to contact with amounts as small as 0.001 mg; whereas, others are "immune" as long as the intensity of exposure does not exceed their higher levels of tolerance. Anyone can become sensitive. The severity of the response varies with the individual, the extent of exposure to urushiol, the size of the exposed area, and the thickness of the outer layer of skin.

There are many horror stories and almost as many myths related to exposure to plants of *Toxicodendron*. If you are sensitive, you might have your own. I am famous for once (and only once) confusing poison ivy and lemon sumac on a field botany trip. Perhaps one of the best, or worst, is the episode in which a student participating in a Shakespearean play, draped himself, clad only in a loin cloth, with vines from a local woodland. Two days later he was hospitalized with a debilitating localized rash.

There are many myths that have been disseminated over the years about the disease problems caused by poison ivy, poison oak, and poison sumac. For example, contrary to popular belief, the fluid from ruptured blisters does not spread the dermatitis; it is simply serous fluid from the tissue. Appearance of a rash away from the primary site of inflammation may be due to unsuspected contact with contaminated clothing or other articles. In addition, although the signs

typically begin 24–72 hours after exposure, new lesions may develop over the next 2 weeks, giving the appearance of spread from the initial eruptions.

The best protection against a case of poison ivy is recognition and avoidance of the plants. However, if contact does occur, prompt removal of the urushiol may reduce the probability of dermatitis developing. In general, urushiol takes about 10–15 minutes to penetrate the skin. It is thus possible to prevent the reaction by washing the contact area well with soap and water within in this time period. A variety of commercially available products to remove the oily resin are also available. Washing with bleach, gunpowder, gasoline, hair spray, or mustard to prevent the rash from developing are well-known folk remedies of questionable efficacy that I am not especially keen to try.

One folk remedy that seems to have some validity is the belief that drinking the milk of goats or cows that have eaten poison ivy will desensitize a person. A variation of this approach has been used with limited success, with repeated intramuscular or oral administration of urushiol over a prolonged period to reduce the allergic reactions of highly sensitive people. Interestingly, John Smith reported in 1609 seeing Native Americans eating leaves of poison ivy to protect themselves; this is perhaps the first written record of the effects of the species. In addition to prophylactic desensitization, barrier creams and lotions are used to prevent or retard allergen penetration of the skin and its subsequent oxidation and protein binding.

Just as there are many myths about getting a case of poison ivy, there are perhaps as many remedies to cure it: drip the juice of green tomatoes or horse urine on the inflamed area; rub the blisters with wild touch-me-not (*Impatiens* spp.) or the inner surface of a banana peel; apply a mixture of salt and buttermilk or vinegar on the rash; or apply crushed leaves of mouse-ear chickweed (*Cerastium* spp.) or plantain (*Plantago* spp.) to the blisters. Commercially available drying agents such as calamine lotion are easier to apply. Severe cases may require the use of corticosteroids.

ONPS field trips to Oklahoma's many geographically and botanically exciting areas are

always pleasurable outings and one typically has pleasant memories of them. As you enjoy the company of your fellow botanists and make each new botanical discovery on your next one, don't forget to be on the lookout for poison ivy and its relatives. Otherwise, you might have a longer reminder of the trip than you expected.



CHAPTER ACTIVITIES

Cross-Timbers Chapter Ron Tyrl

Chapter members and guests ventured forth on June 16th to tour the OSU Botanic Garden and Cow Creek Restoration and Bank Stabilization Project. Directed by ONPS member Sharla Benjamin Lovern, the purpose of the project is to stabilize the existing bank along the creek's meander bend and prevent further erosion from claiming portions of the botanic garden. The project area of the creek is approximately 6.2 acres with a channel length of 2,769 linear feet. In addition to the construction of a new channel, an overflow channel, and riffle grade control structures, the project includes bank stabilization research plots and a wetland area. A vegetation plan and mitigation plan were prepared in order to insure that the existing herbaceous flora was reestablished as quickly as possible. Limiting site disturbance and protecting key areas in order to preserve as much of the existing vegetation as possible were goals of the project. Use of species native to central Oklahoma also was a goal. Sharla led the group about the site and described what had been done and the native species being planted. To see the amount of soil moved, the changes in bank contours made, and the plants established was quite an experience. It is anticipated that chapter members will assist Sharla in monitoring plant cover and species diversity in the project. A professional engineer whose research and work has focused on stream degradation and streambank stability, Sharla is presently a Ph.D. student in the Environmental and Natural Resources Program at OSU. On Saturday, October 6th, members of the chapter will man an information booth for ONPS and *Color Oklahoma* at *Garden Fest* being hosted by the OSU Botanic Garden. The event opens at 9:00 AM and continues until 4:00 PM.

On Tuesday evening, November 13th, the chapter will host another dessert potluck beginning at 7:30 PM. Ron Tyrl will give a presentation titled *Have you Sown Any Wild Seeds Lately?* Chapter members will again be bringing their favorite desserts to share. The location of the gathering will be announced later.

Central Chapter Joe Roberts

The Central Chapter will resume activities on September 24th at 7pm. We are going to meet at a new location this year; Oklahoma City University in the Dawson-Loeffler Science Building, room 102. You can find a campus map online at <http://www2.okcu.edu/admission/map.aspx> Our speaker will be Dr. Adam Ryburn of the OCU Biology Department, and current President of ONPS. Adam will give a botanical presentation, and also discuss upcoming Central Chapter projects, including a survey of vascular plants around Lake Hefner in Oklahoma City. This is another exciting opportunity for us to help improve the level of knowledge of native plants, so please come and get involved.

After that, we will continue to meet the last Monday of each month. Please make note of the new location for our meetings, and bring a friend! Call Joe at (405) 820-6851 with any questions, or send me an email at joeroberts13@cox.net

Northeast Chapter Alicia Nelson

Our chapter has not been active in community events or field trips this summer. It, as you well know, has been too hot! We have enjoyed our "Wildflower Friday" social times but many of us have been traveling or enjoying family time. As fall approaches, our field trip coordinator will finalize one last field trip when the weather is cooler. The details will be shared at our next meeting on September 10th at 7:00 pm at the Tulsa Garden Center.

We are pleased to have Amy Buthold as the guest speaker at our next meeting. Amy is a Botanical Specialist at the Oklahoma Biological Survey, University of Oklahoma. She currently manages the Robert Bebb Herbarium and is the acting Heritage Botanist charged with monitoring the state's rare and at-risk plants. She will enlighten us with her experience on the floristic inventories

conducted throughout the state, with highlights at the City of Tulsa’s Oxley Nature Center, Redbud Valley and the Oklahoma Natural Heritage Inventory. Come and join us at 6:30 pm prior to the meeting for light refreshments.

Please come and share your ideas at the next meeting, for the Indoor Outing in February 2013.

Our chapter will be hosting this event and we want to plan a great meeting for all ONPS members across the state.

Join us for “Wildflower Friday’s” on the third Friday of each month at Panera Bread on 41st and Hudson in Tulsa at 5:30 pm. It’s a great time

socializing with friends, identifying the latest wildflowers in the field and sometimes viewing photos from our own photographers in the group.

WELCOME THESE NEW MEMBERS

**Julie Gahn, Hulbert
Doug Kemper, Medicine Park
John LaGroue, Edmond
Carolyn Manes, Oklahoma City**

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