
WILDFLOWERS

The Bulletin of the Botanical Society of Western Pennsylvania • April 2007

Next Meeting is April 9

The next meeting will be Monday, **April 9**, 7:15 p.m., at Kresge Theater, Carlow College, 3333 Fifth Avenue, Pittsburgh, PA (Oakland). Kresge Theater is on the top floor of the Grace Library and is accessed from the upper campus. Place a note on your dashboard saying "Botanical Society Meeting," or use your parking permit.

Dr William Lord will present "Hypovirulence and the American Chestnut."

Hypovirulence is a viral disease that infects the fungus that causes Chestnut blight and can reduce the blight's ability to kill the tree by slowing down its progress. Hypoviruses may be responsible for the relatively minor effect of the blight on the European Chestnut. Dr. Lord will discuss research and management that combines hypovirulence with blight-resistant grafting in efforts to revive the American Chestnut.

Dr. Lord has been involved with the Pennsylvania Chapter of the American Chestnut Foundation since retiring as a veterinarian in 1992. He writes articles for the Foundation's publications, and is keenly interested in the history of the Chestnut blight in the U.S.

Discover Carnegie Museum's Botanical Roots

We are honored that the Carnegie Museum's Meet the Scientist series for April will feature the Botanical Society of Western Pennsylvania.

On **Saturday, April 14**, Bernadette Callery, Museum Librarian will present "Discovering Carnegie Museum's Botanical Roots." Ms.

Callery will take visitors on a journey through archival material and published works produced by the Botanical Society of Western Pennsylvania. The Society's 1899 gift of their herbaria collection formed the basis of the Museum's specimen collection, and a later gift of the books began the departmental library.

The program begins at 1 p.m. in Botany Hall, 2nd Floor. For directions and admission information, call (412) 622-3131 or visit www.CarnegieMuseums.org.

The Wind and the Willows: A short treatise on why willows are worth a second look

The priest-turned-anthropologist, Tilliard de Chardin, once wrote "the purpose of evolution is ever more perfect eyes in a world in which there is ever more to see." While this statement may be more poetic than scientific, it is true that both the quantity and diversity of life forms on earth have been increasing continuously and dramatically for the past 600 million years (except for extinction events). And it is fair to say that eyes have come a long way too, since the first primitive worm developed a primitive nerve ending that could translate light waves into nerve impulses fired off to a primitive brain.

Willows are something new to see. While from a distance they are typically mere uninspired shrubs, the closer one looks at and into these humble plants, the more exotic and compelling they become.

We might begin a journey to the willows by noting a few of their mysterious aspects. Why

do most willows bloom before their leaves appear? Why do their floral structures appear in the form of many wind-pollinated plants—that is, elongated clusters of tiny flowers called catkins—while they are in fact insect pollinated? If they are insect pollinated, why do the little willow flowers lack petals, which evolved precisely because they attract insects? And if the flowers lack petals, why do insects come to them at all? Last but not least, why are there male and female willows, i.e., why do male catkins and female catkins appear on separate plants?

The blooming of the willows, early in the spring, often before the leaves appear may be the single most important harbinger of the new year. On the very day that the first willow catkins open, migrant songbirds such as the ruby-crowned kinglet and the yellow-rumped warbler reappear after a winter absence, as the willows begin to palpably vibrate with the buzz of swarms of winged insects.

The catkins are simple though attractive structures, well worth a closer look with a hand lens. The female catkins are composed of numerous small capsules neatly arranged along a stalk, each with a small bract at its base (the capsules can be hairy or glabrous and the scale can be dark or light; these are important features if you want to identify the willow to species). The male catkins, which appear on different plants than the females, are a similar arrangement of very basic male flowers, each with a small bract, attractively set in place along a stalk. Just before these catkins burst open in full bloom, they form the fuzzy paw-like structures that elicited the name "pussy willow."

Both male and female catkins also have a nectary at the base of each tiny flower, producing—you guessed it—nectar, which serves as an inducement for insects to visit. The male catkins are bright yellow, thanks to hundreds of pollen-producing anthers, and serve as a visual attractant to insects in the absence of colorful petals. Because of this insects will typically visit male catkins first, picking up pollen in the process, prior to visiting the female

catkins, which are usually close by, but lack the bright color. This optimizes for the willows the chance that the capsules will be pollinated, and would have to be considered a well thought-out plan, if there were a mind involved in any of this.

While willow catkins have an almost pre-floral, primitive appearance to them, in fact they are considered to have evolved through and away from having showy petals. That is to say, while ancestral species did have petals, modern members of the genus have given them up as extraneous.

The fact that the flowers bloom before the leaves are developed optimizes their visibility to potential pollinators, and may have obviated the need for bright floral structures (petals) to serve as attractants. Blooming early in the spring also insures the undivided attention of the available cadre of pollinating insects, as there are few other flowers to compete with at this time.

Most willows can reproduce asexually, making genetically identical copies by sprouting new plants from underground roots, or rooting from branches that are pressed to the ground or broken off the parent plant. This type of reproduction has the obvious advantage of not requiring a mate, and is for that reason rather commonly found among plants that pioneer disturbed sites. Willows are, of course, common along rivers and streams, which are frequently scoured by high-water events.

There is a disadvantage to asexual reproduction, and that is that the genetic diversity of the population is reduced. Every asexually produced plant is a genetic replica of the parent. Genetic diversity is a valuable asset in a constantly changing world, because it allows varied responses to variable environmental conditions. Willows have optimized the genetic mixing that does occur in a population by evolving the trait of dioecy (the direct translation from the Latin root is 'two houses'). Willows are dioecious, which means that male and female flowers are on separate plants. Therefore self-pollination—a flower or a plant

pollinating itself, which creates a clone of the original—is impossible in willows. Sexual reproduction can only occur between different plants, which mixes up the genes of the parents and creates genetically unique offspring.

The willow family is made up primarily of two genera, the willows (*Salix*) and the poplars (*Populus*). Poplars are 100% wind pollinated; they produce no nectar and attract no insects. Their catkins are much longer than willow catkins, and they are pendulous, hanging down to catch the breeze. Willows on the other hand are about 90% insect-pollinated, and most willow catkins are erect, making them more visible to insects. Willow pollen is small and light though, and a lesser percentage still takes a chance on riding the wind in search of a receptive female flower.

Willows are attractive and intriguing, and you might just as well use your ever more perfect eyes to observe and enjoy them.

by Dana Visalli - Reprinted with permission from the Methow Naturalist, a journal of natural history in Washington State.

Opportunities to Study, Discover and Enjoy Native Plants

▪ **Pennsylvania Institute For Conservation Education** - The following are among the many natural history classes offered by Pennsylvania Institute for Conservation Education. Visit www.picweb.org for more information, or call (570) 458-5227 to request a catalog.

At Home in the Landscape – A Natural History of Plants and People – by Lisa Schnell. **August 6, 2007** at Hawk Mountain Sanctuary - In this class participants will consider what it means to be at home ecologically. Learn to recognize and appreciate the natural history of native plants in this area. Participants will write and share their experiences with home, place, and landscape.

Grasses, Sedges, and Rushes by Sarah Miller. **August 13-14, 2007** (Mon - Tue) in the State College Area - Join an experienced botanist to learn

skills necessary to identify these challenging plant species using diagnostic characters and botanical keys. Basic morphology and the use of simple and complex keys will be highlighted. Participants will practice their plant identification skills in the field.

Ferns and Mosses by Susan Munch, Ph.D.

September 8, 2007 at Ricketts Glen State Park - Investigate the habitats and uniqueness of ferns and mosses in old forests, wetlands and Appalachian landscapes. Learn to identify major common genera and species from an experienced botanist.

▪ **Adirondack Teacher Institute** - Dr. Tom Lord at the Indiana University of Pennsylvania would like to invite members of the Botanical Society to an opportunity to learn and enhance their knowledge of the outdoors.

The Institute will take place on **July 28 - August 1, 2007** at the Silver Bay Association YMCA in the New York Adirondacks. Participants immerse themselves in workshops such as environmental physics, geology of the Adirondacks, ornithology, pisces studies in Lake George and much more. Of interest to native plant enthusiasts are classes in mycology, woody plants, ferns and mosses and wildflowers. For information, call Silver Bay at (518) 543-8833, x 350 or visit www.silverbay.org/page5852.asp

▪ **Oglebay Institute's Terra Alta Mountain Camp** - For 78 years, the world's top naturalists, botanists, ornithologists, and ecologists have traveled to Terra Alta, WV to explore, learn, and play in the unique Allegheny Mountain habitats. Experts teach through hands-on lessons, utilizing spectacular nearby areas such as Cranesville Swamp, Cathedral State Park, Fernow Experimental Forest, Dolly Sods, and Canaan Valley. These programs may be of interest to Botanical Society members:

Insectivorous and Other Wetland Plants Weekend - **July 6-8** - Join Bill Beatty on trips to Olsen Bog and Cranesville Swamp to see pitcher plants, round-leaved sundew, creeping snowberry, golden club, buckbean, and horned bladderwort.

Mushrooms - **September 7-9** - Instructor Walt Sturgeon will provide insights into the fascinating

world of fungi. Local field trips into varied habitats will provide for an abundance of species. Collections will be identified, displayed and available for additional study and discussion.

Terra Alta Mountain Nature Camp is held on **June 17-23** (week 1) and **June 24-30** (week 2). Staff includes top botanists, ornithologists, naturalists, and other expert instructors throughout the region.

For more detailed information, contact Bill Beatty at wildnat@verizon.net or call Oglebay Institute's Schrader Center at (304) 242-6855.

▪ **2007 annual Joint Field Meeting of the Botanical Society of America**, Torrey Botanical Society, and Philadelphia Botanical Club will meet on the campus of Davis and Elkins College in Elkins, West Virginia, from **Sunday, June 17 to Thursday, June 21**. The program includes three all-day field trips plus four evening lectures on pertinent topics. Field trips will visit Canaan Valley State Park, Dolly Sods Wilderness Area, and other interesting botanical sites to examine spruce forests, heath barrens, and sphagnum glades.

For further information or a registration form please contact: Larry Klotz, chairperson; lhklot@ship.edu, (717) 477-1402

▪ **Pennsylvania Native Plant Society's Spring Plant Festival** will take place at Rhoneymeade Arboretum and Sculpture Garden on **May 5th 2007**, from 10:00 to 4:00 p.m. The venue features many old trees and landscaped gardens with outdoor sculpture. Vendors of native plants, organically grown vegetable starts, original artwork and native plant books will be present. For more information and directions, visit www.pawildflower.org.

▪ **The 17th annual Native Plants in the Landscape Conference** will be held **June 7-9, 2007** at Millersville University in Lancaster County. The 2007 program includes topics for all native plant enthusiasts, such as "Design Inspired By Plant Communities" by landscape consultant Rick Darke and "Plant Locally, Save Globally" by botanist and ornithologist Jim

McCormac. A popular display and plant sale area features native plants, books and artwork. Pre-conference field trips will visit the Susquehanna River and school gardens. For information, visit www.millersvillenativeplants.org or call (717) 872-3030 for a detailed brochure.

Field Trip Schedule

Saturday, April 14, 2007 – Visit the Carnegie Museum for the Meet the Scientist series.

Sunday, April 15, 2007
Duff Park, Westmoreland County
Leader: Glenn Davis; (724) 335-4252,
glennbet@comcast.net
Time: 2 p.m.

Directions: From Pittsburgh, take I-376 east (Parkway East) to its end at US 22 East – Murrysville. Travel US 22 for 5 miles to a traffic light and Sheetz at School Rd. Turn right onto School Rd, traveling about 1/8 of a mile, cross the bridge over Turtle Creek, and park in the parking lot on the right.

Saturday, April 21, 2007
Muddy Creek Holly Trail, Erie National Wildlife Refuge, Crawford County
Leader: Lee Ann Reiners;
reiners@surferie.net; 814-398-8571
Time: 1 p.m.

Directions: Take I-79 north to Exit 154-PA 198/Saegertown; travel PA 198 east to Saegertown; US 19 north to Cambridge Springs (watch for US 19 to take a right turn at the intersection in Venango). In Cambridge Springs, when you come to the red light, go straight onto PA 408. Follow it for about 1 1/2 miles to the American Legion building on the left. Pull into their parking lot to meet (Restrooms will be available at the Legion.) We'll drive from there to the trailhead.

Expect to see many early spring wildflowers such as White Trout Lily, as well as spring migrants, along a boardwalk trail. If the weather

is nice, we can visit the Trolley Line Trail—you might need boots for this trail.

Saturday, April 28, 2007

Roaring Run Natural Area, Armstrong County

Time: 1:00 p.m.

Leaders: John Kocon & Roaring Run Watershed Association

Directions: From Pittsburgh, take I-376 Parkway East and continue on US 22 east for 1.5 mile to PA 286 (Golden Mile Highway). Continue on PA 286 – it will become PA 380 after the commercial development. Continue on PA 380 to PA 66 and travel PA 66 north (right at end of ramp) to Apollo. Cross the bridge into Apollo and turn right at the traffic light immediately after the bridge. Follow this road through the town about 0.8 mile until a fork; take the right fork onto Canal Road. The road dead-ends at the Roaring Run trailhead parking lot. We will meet here and then proceed to a second parking lot at the head of the ravine.

Sunday, April 29, 2007

Enlow Fork Ecology Extravaganza!

Enlow Fork Natural Area, Greene County

Contacts: Larry Helgerman, bobolink1@earthlink.net; Mary Joy Haywood, (412) 578-6175

Time: Pack a lunch and arrive early!

This year's Ecology Extravaganza will again feature a variety of outings to explore the area's flora and fauna. The day begins at 7:30 am with guided bird walks. You can come anytime and participate in as many activities as you like – all free. Representatives from nature organizations will lead walks and discussions focusing on many topics such as birds, flowers, fish, butterflies, and the total ecological picture.

Directions: From Pittsburgh, travel I-79 South toward Washington and head west on I-70 West. Exit I-70 at Exit 15 (Route 40/Chestnut St) and turn right to head east toward Washington. At the second stop light, turn right onto Franklin Farms Rd and travel 1 mile to a T intersection with PA 18. Turn right onto PA 18 and continue

a little over 14 miles to its junction with PA 231. (Note: do not take PA 221 which joins PA 18 from the west (right) and leaves PA 18 on the east (left)).

At the junction with PA 231 (East Finley Dr), turn right and travel for 1.8 miles until PA 231 heads north (right) at a 3-way intersection. At this point, continue straight onto Enon Church Rd and continue for a little over 4 miles to an intersection. At the intersection, continue straight across a bridge onto Walker Hill Rd for 1.6 miles to a sharp right turn for the game lands (Smokey Row Rd). Continue down Smokey Row Rd to game land parking lots at the bottom of the hill.

Saturday, May 5, 2007

Crouse Run, Allegheny County

Time: 1:00 p.m.

Leader: Loree Speedy (724) 872-5232; mousemapper@verizon.net

We will walk in Rachel Carson's footsteps to honor her on her 100th birthday. Noted environmentalist and author of *Silent Spring*, Rachel studied biology at the Pennsylvania College for Women in Shadyside; her biology teacher Mary Skinker brought Rachel and her classmates to Crouse Run for Saturday field trips. They traveled the Butler Electric Railroad, signs of which are still visible in the valley.

Directions: From Pittsburgh, take PA 28 north to PA 8 North. Travel PA 8 for 6.6 miles to make a left onto Craighead Rd. (This left turn is about 0.7 miles after Harts Run Rd). Travel Craighead Rd a short distance and make a left onto Mt Royal Blvd. After 0.4 miles, make a right onto Sample Rd. Travel downhill 0.7 mile to a highway bridge and park on left just before Royal View Rd. If you cross a second highway bridge you've gone too far.

The Rachel Carson Trail has been rerouted to cross a stream twice. If you do not want wet feet, wear waterproof boots. Otherwise, bring a change of shoes and a sense of adventure.

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WILDFLOWERS is published monthly by the Botanical Society of Western Pennsylvania. We welcome short articles of botanical interest, drawings, and notices of botanical events and group activities. Send to the editor at the above address. Deadline for submissions is the 23rd of the previous month. WILDFLOWERS is printed on recycled paper.

The Botanical Society of Western Pennsylvania - Membership Information

The Botanical Society was founded in 1886. The object of the Society shall be to bring together those who are interested in Botany and to encourage the study of this science and a knowledge of plants. Annual dues are \$10.00 for individual and \$15.00 for family. Students can join at half-rate. To join, mail your name, your address, and check payable to "Botanical Soc. of W PA" to Loree Speedy, 279 Orr Road, West Newton, PA 15089. Your membership includes a subscription to the monthly bulletin WILDFLOWERS.

The Society meets the second Monday of each month, September through June, at 7:15 p.m. sharp, at Kresge Theater, Carlow College, 3333 Fifth Avenue, Oakland. All are welcome to the informative program and business meeting.

Wildflowers of Pennsylvania – Ordering Information – 400 pages of text and 612 color photographs

Wildflowers of Pennsylvania can be purchased for \$20.00 (plus \$1.40 sales tax for PA residents). Forward your check, made payable to Botanical Society of Western PA, to Dr. Haywood at the address below. If you order by mail, add \$2 postage and handling for one book, \$3.00 for two, \$4.00 for three, \$4.50 for four. Send your request to Dr. Mary Joy Haywood, RSM, Ph.D., 3333 Fifth Ave., Pittsburgh, PA 15213-3165 (412) 578-6175; mjhaywood@carlow.edu