On The Fringe

Journal of the Native Plant Society of Northeastern Ohio

Call for Articles

We invite articles of general botanical interest or about particular native or invasive plants to be published in *On The Fringe*, the quarterly Journal of The Native Plant Society of Northeastern Ohio. Please send your articles to co-editor Diane B. Christensen, 8400 Top Rail Lane, Novelty, Ohio 44072 or at dbpolice@roadrunner.com.

In an effort to preserve the high standards of our Journal, article submissions will be accepted if they are accurate and well-written and if we think they would be of interest to our audience.

Volunteers and Suggestions Needed

As the new Public Relations Chair on the Society's board, I am in quest of ideas and volunteers to help promote our Society. My objective is to introduce it to as many audiences as possible, to find those who would be interested, but are unaware of our Society. Since the Public Relations Chair has only recently been created, I have a blank slate on which to work. I am very interested in hearing from you and listening to your ideas on how best to promote our Society. In particular, I am looking for:

1. Ideas on how to inform as many as possible about our Society and its mission.
2. Information about nature or botanical events where we can man an information booth, ideally but not necessarily at no charge.
3. Volunteers to help man a booth at these events. You do not need to be a native plant expert. If you are interested or know of anyone who would be interested in volunteering, even for a couple of hours, please let me know.

I would really like to hear from you, so please contact Tracey Knierim at tjncrew@aol.com or on my home phone (440-543-6399).

Program Schedule – Summer 2011

Saturday, June 11, 10:00 a.m. - Noon - Invasive Species at University Farm - Cuyahoga County. Visit Case Western Reserve University Farm to learn about invasive species research with Jean Burns, Assistant Professor at CWRU. Walk the farm. Identify common invasive species, including learning to identify common invaders such as the bush honeysuckles, *Lonicera maackii* and *L. morrowii*. Discuss methods of prediction and prevention of biological invasions, including the use of population modeling tools to predict the future population growth of introduced species. Squire Valleevue and Valley Ridge Farms, 37125 Fairmount Blvd, Hunting Valley, OH 44040, between Rt. 91 and Rt. 174 (Chagrin River Road). Call Judy to register at 440-564-9151 (H) or 440-286-9516 ext 2011 (W).

For more information about the NPSNEO go to:
www. nativeplantsocietyneohio.org

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The Journal of The Native Plant Society of Northeastern Ohio is published 4 times a year at Novelty, Ohio. ISSN 8756-6087. Questions or comments are welcome and may be addressed to Diane B. Christensen, 8400 Top Rail Lane, Novelty, OH 44072; 440-666-4870, dbpolice@roadrunner.com; or Bill Oberdick, 2459 Charney Rd., University Hts., Ohio 44118, 216-371-3345, boberdick1905@att.net

The Mission of The Native Plant Society of Northeastern Ohio is to promote the study, appreciation and conservation of the native plants and plant communities of Ohio.

Program Schedule – Summer 2011, con't.

Saturday, July 16, 11:00 a.m. - Ravenna Arsenal - Portage County. Rick Gardner, ODNR Division of Wildlife Botanist, leads this trip to see sundew, variegated scouring-rush, long beech fern, hobblebush, and many other rare species. Must be a US citizen (federal security reasons). This is a joint field trip with the Mohican Native Plant Society. Registration limited. Directions sent upon registration. Call Judy to register at 440-564-9151. Registration deadline June 30th.

Saturday, August 13 - 10:00 - 11:30 a.m. - Mentor Marsh - Lake County. Mentor Marsh Naturalist Becky Donaldson takes us on a tour of this National Natural Landmark that occupies an ancient abandoned channel of the Grand River. A beech-sugar maple forest occupies the higher elevations bordering the marsh, with a mixed oak swamp forest on the east. See the new rain garden developed with grant money from our Society and rebounding native marsh vegetation along the Wake Robin trail following stewardship treatments to keep the phragmites at bay. Directions: From Rt. 2, take Rt. 44 north 0.5 miles to Rt. 283 (Lake Shore Blvd). Proceed west 0.5 mile to Corduroy Rd. Turn right approx 0.5 mile to the Mentor Marsh House: 5185 Corduroy Road, Mentor, Ohio 44060. Call Judy to register at 440-564-9151 (H) or 440-286-9516 ext 2011(W).

MARK YOUR CALENDARS!

Annual Meeting of The Native Plant Society of Northeastern Ohio at the Cleveland Museum of Natural History - September 16, 2011 - 6:00pm. The Explorer Series Presentation will immediately follow.

Explorer Series Presentation will host David Karowe; A Professor of Biological Sciences at Western Michigan University in Kalamazoo, Michigan.

He is an expert on climate change and has been conducting research for over 15 years on the effects of rising atmospheric carbon dioxide on plants and higher levels in the food chain. He has published numerous articles and presented numerous talks on climate change. Dr. Karowe is currently writing a book on climate change and its ecological consequences.

Obituary
Frederick W. Case, Jr.
Saginaw, Michigan

Frederick W. Case Jr. was a well-known teacher and botanist. He gave the featured talk at two annual meetings of our Society and wrote articles for our Journal, *On The Fringe*. He passed away Wednesday, January 12, 2011 at age 83.

The son of the late Julia Blanche (Coash) and Frederick W. Case Sr. he was born February 16, 1927 in Saginaw, Michigan. He married Roberta Elizabeth (Boots) Burckhardt, February 14, 1953. She passed away June 8, 1998.

He was a graduate of Arthur Hill High School and received his Bachelor of Science and Master's in Education from the University of Michigan. He served with the U.S. Army during WWII. He returned to Arthur Hill High where he taught biology and natural science until his retirement. He was named their Honor Alumnus in 1978. He was named the Outstanding Biology Teacher in Michigan in 1971 and Outstanding Science Teacher in 1987. Fred and Roberta authored three books and authored or co-authored many articles for magazines and scientific publications about native orchids, trilliums, insectivorous plants, wildflowers and gardening.

He received numerous awards and recognition for his achievements in botany and lectured extensively. He had been associated with Cranbrook Institute of Science, The University of Michigan Matthaei Botanical Gardens, Longwood Gardens, The Michigan Dept. of Natural Resources Committee on Endangered and Threatened Plants, the Michigan Botanical Club, and many other nature and horticultural groups. He enjoyed opera, theatre, reading, traveling, fine dining and Ketchup.

Surviving are a son and daughter-in-law, David B. and Sheri Leaman Case, three granddaughters, other relatives, and many dear and loyal friends.

Those planning an expression of sympathy may wish to consider the Nature Conservancy of Alabama, Roberta Case-Pine Hill Reserve, the Michigan Nature Association, the Children's Zoo at Celebration Square, or the charity of their choice.

A Pear by Any Other Name…

By Ellen Jacquart

You've probably heard of Bradford pear. How about Aristocrat pear? Or Cleveland Select, or Chanticleer? These are all cultivars of an Asian species called callery pear, which is probably the most popular ornamental tree in the US. Visit any subdivision strip mall in mid-April, and you'll see rows of callery pear covered in large, loose clusters of white flowers. Those flowers are one of the reasons it's so popular; other reasons include its small size, symmetrical lollipop shape, and resistance to disease. And, once upon a time, they were also popular because the trees were sterile, so no messy fruits covered the ground.

Unfortunately, things have changed. Over the last decade, callery pear has become invasive over much of the eastern U.S., and reports of callery pear moving out of cultivation are coming in from all around Indiana. How did this formerly sterile species become a fruit-laden invader?

Bradford pear was the first popular cultivar of callery pear, and for many years it was the *only* cultivar. It had an upright branching form that was very popular in urban landscaping. To reproduce exactly the same genotype that resulted in the favorable characteristic—branching pattern, flower color, or what have you—cultivars are propagated vegetatively, so each individual is genetically identical to every other individual. This means the millions of Bradford pears that were planted around the country were all clones of each other. Because of this trees were sterile, unable to produce fruits.

Fast forward a few years…it becomes apparent Bradford pear has some bad traits. Specifically, the branching pattern and weak wood almost guarantees that, given heavy snow or high winds, the tree will split and die. In response, plant breeders worked to come up with new, better cultivars that didn't have that weakness. Dozens of cultivars flooded the

market and were planted across the landscape. Once these genetically different cultivars were planted next to the Bradford pears, boom! They were able to produce fruits. Lots and lots of small, brown, round fruits that cover sidewalks and allow these pears to move out of cultivation.

As Keith Clay of Indiana University once put it, the interspersed planting of all these different cultivars in urban areas has created an "orgy of reproduction" in callery pear. Perhaps the worst affected area in Indiana is Crane Naval Reserve. A nearby nursery that once grew different callery pear cultivars has resulted in a huge .influx of fruits into this forested area, and it is estimated that 80% of the wooded acres are infested with callery pear.

Pease do our forests a favor and don't plant callery pear! Fortunately, Indiana has plenty of other species to plant that are not invasive.

To see a list of native species for landscaping, go to INPAWS.org and click on Gardening with Native Plants.



Everyone with access to a patch of earth can make a significant contribution toward sustaining biodiversity. There is an unbreakable link between native plant species and native wildlife—native insects cannot, or will not, eat alien plants. When native plants disappear, the insects disappear, impovising the food source for birds and other animals.

—Timber-Press promoting Doug Tallamy's *Bringing Nature Home*

Reprinted from the *Inpaws Journal,* Indiana Native Plant and Wildflower Society Winter 2010-11

Swamp Milkweed
Asclepias incarnata L
Milkweed Family (*Asclepiadaceae*)

By Melanie Choukas-Bradley

Milkweeds have long been magnets for children, with their irresistible feathered seeds bursting from canoe-shaped follicles in late summer and autumn. Thirteen milkweed species are indigenous to Maryland, serving as host and nectar plants for butterflies and attracting a wide range of other colorful insects that have found adaptive means to cope with the toxic milky sap that many milkweeds contain. Swamp milkweed's flowers are a deeper pink than the more familiar common milkweeds' (*A. syriaca*), their leaves are narrower, and as the name implies they favor moist habitats. When I take my summer wildflower identification class to a pond near Sugarloaf Mountain, the students swoon over the swamp milkweed umbels lining the shore, and the haloes of butterflies surrounding them. Butterfly expert Par Durkin says: "Whenever I see swamp milkweed, it's quite popular as a nectar source with all the butterflies in the vicinity. As soon as I spot it, I wade right over because they're all there, easy to observe." According to Stanwyn G. Shetler and Sylvia Stone Orli's *Annotated Checklist of the Vascular Plants of the Washington-Baltimore Area* (Smithsonian Institution), most swamp milkweed (*Asclepias incarnata*) plants in the Washington-Baltimore area flora fit the characteristics of variety *pulchra*. Wesley M. Knapp, Eastern Region Heritage Ecologist and Botanist with Maryland DNR's Wildlife and Heritage Service, describes variety *pulchra* as "moderately to densely pubescent, with broader leaves having rounded to subcor-datebases, apex acute to short-acuminate, and plants relatively strict [straight and upright]." Another subspecies or variety of the plant that may he found in Maryland and Virginia is *incarnata,* which Wes distinguishes by: "stems

and leaves sparsely pubescent to glabrescent, leaves narrow, the base obtuse to truncate, with a long-acuminate apex. These plants are usually much branched."

Flowers: Small, 1/4 - 1/3 inches long, usually rose-pink, in large, rounded, upright umbels. Flower configuration unique to milkweeds: the 5 petals are reflexed beneath a 5-parted crown-like corona containing 5 "hoods" and 5 incurved "horns." Each anther bears two waxy masses of pollen (each called a *pollinium;* plural = *pollinia*). According to Alonso Abugattas, Arlington County naturalist and director of the Long Branch Nature Center:

> These [pollinia] attach to potential pollinators' legs when they stop by to collect the vast amounts of nectar *Asclepias* species produce. Occasionally, though, a small insect gets its leg caught in the slits that contain these structures and it is not strong enough to pull itself out. The small insect then may struggle until it dies or falls prey to a predator, unable to escape. On many occasions I have found these small corpses hanging by a leg or proboscis from a flower.

Fruit: Swamp milkweed follicles are slender and finely pubescent, 2-4 inches long and tapered at both ends. They split open to release many seeds, bearing fluffy hairs that suit them for blowing or flinging through the air (thus their popularity with children).

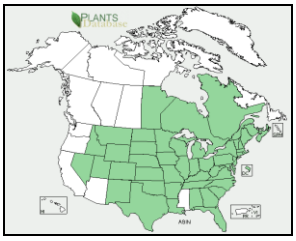


Leaves: Opposite, simple, 3-6 inches long, with entire margins. Lanceolate to oblong-lanceolate, glabrous or sparsely pubescent (although locally the common variety *pulchra* is quite pubescent). Apex acuminate; base acute, rounded or subcordate.
Height: 2-6 feet.
Habitat and Range: Wet meadows, pond edges, stream banks, freshwater marshes, swamps; Nova Scotia to Florida, west to Saskatchewan, Utah and New Mexico.
Herbal Lore: According to Alonso, the genus *Asclepias* is named after the Greek god of healing, reflecting the traditional medical uses of milkweeds. Steven Foster and James A. Duke (*Peterson Field Guides: Eastern/Central Medicinal Plants)* report: Swamp milkweed "root tea [is] diuretic, carminative strongly laxative; induces vomiting. American colonists used it for asthma, rheumatism, syphilis, worms, and as a heart tonic. Warning: Potentially toxic. Maryland Native Plant Society board member, master gardener and weed warrior Marney Bruce (founder of Simplicity Matters Earth Institute) says that author Timothy Coffey "writes that Pueblo Indians cut it down when ripe, rub it so as to separate the fibers, and make of it beautiful and very strong fishing lines and fine sewing thread. He notes that early botanists remarked at how tough and strong the stem is." When I queried a few members and friends of the Maryland Native Plant Society about swamp milkweed and milkweeds in general, I discovered a widespread and deep fascination for this genus. Dr. Edward M. Barrows, biology professor at Georgetown University and director of the Georgetown University Center for the Environment, shared many wonderful milkweed stories, and this is my favorite: "When I was on Oahu, Hawaii in 1976 during a lovely November day with an ocean breeze, I was amazed to see giant milkweed shoots which were about 10 feet tall growing in a garden." Dr. Barrows noted: "This plant might have been *Calotropis procera* = *Asclepias procera,* Giant Milkweed, native to 'West



Africa through India." He went on to say: "I had to rub my eyes to make sure I wasn't dreaming in Rousseau Land... The plants looked like giant, mutant *Aselepias syriaca* to me, and it seemed like

the Mean Giant might descend on them at any moment looking for children to eat. I saw normal-sized Monarchs nectaring on the flowers. Both species are aliens on Oahu—a poor, hapless island under water in aliens."



Similar Species: More than a dozen milkweeds are indigenous to Maryland. Deep rose-pink corollas and moist habitats are the best means to separate swamp milkweed plants from other locally indigenous species.
Blooming Time: June - August.
Fruiting Time: Fruits mature and split open during summer and autumn.



When I queried a few members and friends of the Maryland Native Plant Society about swamp milkweed and milkweeds in general I discovered a wide-spread and deep fascination for this genus.

Photos (this article) by Tracey Knierim, NPSNEO Board Member

Many members and friends of the Maryland Native Plant Society contributed to this article, including: Alonso Abugattas, Carole Bergmann, Edward M. Barrows, Marney Bruce, Pat Durkin, Cris Fleming. Wesley M. Knapp, Karyn Molines, and Rod Simmons. Thank you to everyone who contributed!

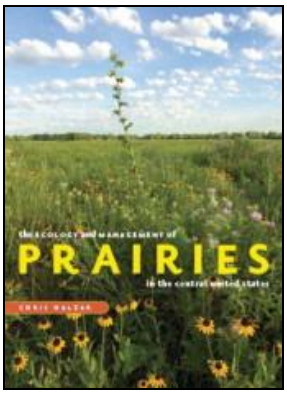
Reprinted from *Marilandica*, a Publication of the Maryland Native Plant Society. Volume 1, Issue 1, fall 2010.

Book Review

New Book on Prairie ecology & management

The Ecology and Management of Prairies in the Central United States, by Chris Helzer, published for the Nature Conservancy by the University of Iowa Press, 2010, paperback, 208 pages, illustrated, $29.95.

Review by Arlene Kjar, MNNPS member; president of Prairie Partners of Cannon Valley, a volunteer group in Northfield, Minnesota that helps others with nature areas; a member of Prairie Smoke Chapter of the Prairie Enthusiasts; and a retired teacher.



The Ecology and Management of Prairies in the Central United States is an excellent book that provides background knowledge about how prairies work. The author provides information on how to mix and match management techniques in ways that will help to keep prairies vigorous and viable.

Chris Helzer is the program director for The Nature Conservancy's Eastern Nebraska Project Office in Aurora, Nebraska. He oversees the management and restoration of approximately 5,000 acres of conservancy-owned land.

The first part of the book consists of a description of the complex workings of prairies. Grasslands that are dominated by only a few plant species, especially non-native grasses, lack the ability to support the majority of prairie-dependent species and, in Helzer's opinion, are not prairies. He defines a plant community as all the plants that grow and interact together in a particular place. The strategies the plants develop to survive strengthen the community's ability to respond to drought, flooding, intense grazing, fire and other disturbances. A high quality prairie can have as many as 150 - 300 species of plants.

Helzer believes that invasive species removal needs to be prioritized. He feels that preventing new weeds from becoming a problem should always be first.

He states that the reason grassland birds are so scarce is because they need a very large area for nesting. Their predators come in from the edges of the prairie, especially when trees are present. A greenway patchwork of areas that are close or connected can provide corridors for their movement.

In the last half of the book, he identifies different ways to manage the prairie. Patch-burn grazing is a system in which a third of the prairie is burned. Cattle (or the grazing animal of choice) will eat from that area and leave the rest of the prairie to grow. This allows the grasses and forbs to recover. Every year another third of the prairie is burned, and the grazing animals will move to the new area without being fenced.

This is an excellent book to add to your nature library.

Reprinted from the *Minnesota Plant Press*. The Minnesota Native Plant Society Newsletter, Fall 2010, Vol. 29, No. 4.

An 18th Century American Botanist
A Genealogical Connection Between The Native Plant Society of Northeastern Ohio and Humphry Marshall

By Beverly A. Stamp

Beverly A. Stamp is a member of our Society. It is no surprise she is interested in native plants inasmuch she is related to the famous Eighteenth Century American botanist, Humphry Marshall. This article is a little bit off the regular On The Fringe path, but we thought it describes an interesting connection. We hope that when you read OTF, you are often pleasantly surprised by what you find. The On The Fringe Editors.

Some years ago my mother completed the genealogy of our family. On my father's side, she was pleasantly surprised to discover an 18th century botanist ancestor named Humphry Marshall. Her entire research was completed at the Western Reserve Historical Society in University Circle, Cleveland, Ohio.

The record begins in about 1630 with the birth of Humphry's grandfather, also named Humphry, who resided in the town of Gratton, Derbyshire, England. This was in the area of the Episcopal parish of Youlgreave, the Church of England. Grandfather Humphry and his wife, Hannah, had eight children. The seventh child was Abraham Marshall, father of Humphry Marshall the botanist. Abraham was born in 1669 in Derbyshire, England and died in 1767 in Chester County, Pennsylvania. He was brought up Episcopalian but at age sixteen became a well-regarded minister in the Society of Friends, known more commonly as Quakers. In 1700, at about the age of 31, he emigrated to Darby,

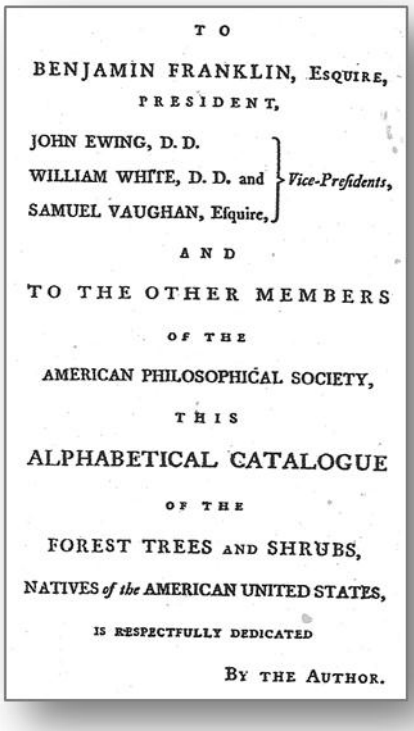
Pennsylvania. In about 1702/03 he married Mary Hunt, who was born about 1682 in Kent, England. They had nine children, the eighth child being the botanist Humphry Marshall, born in 1722.

The basis for the Marshall lineage from 1630 to the 1720's consists of baptismal records from the parish of Youlgreave, England. Records of the "Marshall Family of Pennsylvania, 1650-1952" from the Chester County Historical Society were consulted as well.

An interesting observation is that Mary Hunt's sister, Elizah, was the mother of the botanist John Bartram. Therefore, Humphry Marshall and John Bartram were first cousins. John Bartram was the older cousin, having been born in 1699, twenty-three years before Marshall. During their lifetimes, they were both equally well known; however, Bartram is much better known today than Marshall. According to the *Plain Dealer* (Feb. 23, 2011), Benjamin Franklin and John Bartram were good friends. Franklin enjoyed going to Bartram's home for a tankard of cider and dinner. In addition, Bartram's Garden is still flourishing in Philadelphia on the bank of the Schuylkill River. Marshall's Garden, however, in Marshallton, 23 miles west of Philadelphia, was not cared for after his death in 1801 and fell into ruin. Marshall and Franklin also corresponded; in fact, I have a copy of a letter to Marshall in Franklin's handwriting.

Humphry Marshall was married twice, but had no children by either marriage. The ninth and last child of Abraham Marshall and Mary Hunt Marshall was James Marshall Sr., born in 1725, Humphry's brother and my direct ancestor. Due to the fact that Humphry Marshall had seven brothers and sisters who had many children, there are many possible other descendants like myself who can claim Humphry Marshall as an ancestor.

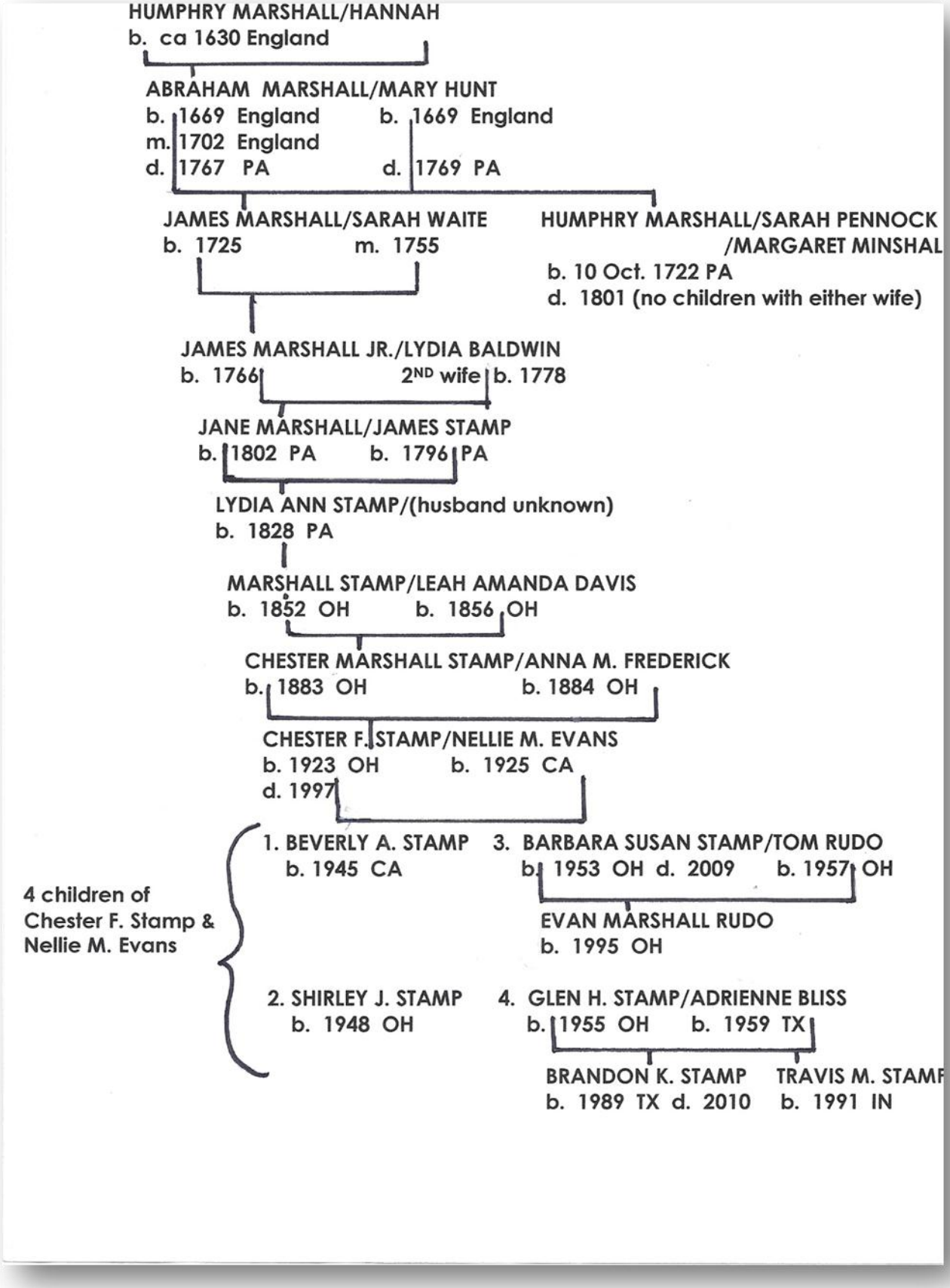
James Marshall Sr. married Sarah Waite in 1755. They were the parents of James Marshall Jr., whose second wife was Lydia Baldwin. They gave birth to Jane Marshall, who was born in 1802 in Pennsylvania. She married James Stamp, my great, great, great grandfather, born in 1796 in Pennsylvania. Jane Marshall Stamp and James Stamp were the parents of Lydia Ann Stamp, born in Pennsylvania in 1828. She was my great, great grandmother, who gave birth in 1852 to Marshall Stamp, my great grandfather. The father of Marshall Stamp is unknown.



TO
BENJAMIN FRANKLIN, ESQUIRE,
PRESIDENT,
JOHN EWING, D. D.
WILLIAM WHITE, D. D. and
SAMUEL VAUGHAN, Esquire,
} *Vice-Presidents,*
AND
TO THE OTHER MEMBERS
OF THE
AMERICAN PHILOSOPHICAL SOCIETY,
THIS
ALPHABETICAL CATALOGUE
OF THE
FOREST TREES AND SHRUBS,
NATIVES *of the* AMERICAN UNITED STATES,
IS RESPECTFULLY DEDICATED
BY THE AUTHOR.

Lydia's parents, Jane Marshall Stamp and James Stamp, helped to raise Marshall, while his mother, Lydia Ann Stamp, worked as a seamstress out of their home. In addition to her seamstress skills, she was an accomplished tailor who was primarily known for making mens' suits. Lydia lived until she was 89 years old, and Marshall until 95 years old.

Both Marshall Stamp and his son, Chester Marshall Stamp, my grandfather, retain "Marshall" in their names; however, the name was lost for two generations following Chester Marshall Stamp's birth. My sister, Barbara Susan Stamp Rudo and her husband, Tom Rudo, agreed to honor my request to preserve the Marshall name by naming their only child Evan Marshall Rudo. Hopefully, Evan and his cousin Travis Stamp will continue to honor the name of this famous botanist in the future.


HUMPHRY MARSHALL/HANNAH
b. ca 1630 England
ABRAHAM MARSHALL/MARY HUNT
b. 1669 England
m. 1702 England
d. 1767 PA
b. 1669 England
d. 1769 PA
JAMES MARSHALL/SARAH WAITE
b. 1725
m. 1755
HUMPHRY MARSHALL/SARAH PENNOCK /MARGARET MINSHAL
b. 10 Oct. 1722 PA
d. 1801 (no children with either wife)
JAMES MARSHALL JR./LYDIA BALDWIN
b. 1766
2ND wife
b. 1778
JANE MARSHALL/JAMES STAMP
b. 1802 PA
b. 1796 PA
LYDIA ANN STAMP/(husband unknown)
b. 1828 PA
MARSHALL STAMP/LEAH AMANDA DAVIS
b. 1852 OH
b. 1856 OH
CHESTER MARSHALL STAMP/ANNA M. FREDERICK
b. 1883 OH
b. 1884 OH
CHESTER F. STAMP/NELLIE M. EVANS
b. 1923 OH
b. 1925 CA
d. 1997
4 children of Chester F. Stamp & Nellie M. Evans
1. BEVERLY A. STAMP
b. 1945 CA
2. SHIRLEY J. STAMP
b. 1948 OH
3. BARBARA SUSAN STAMP/TOM RUDO
b. 1953 OH d. 2009
b. 1957 OH
EVAN MARSHALL RUDO
b. 1995 OH
4. GLEN H. STAMP/ADRIENNE BLISS
b. 1955 OH
b. 1959 TX
BRANDON K. STAMP
b. 1989 TX d. 2010
TRAVIS M. STAMP
b. 1991 IN

Downspout Bog Gardens

Creating a downspout bog garden is a maintenance-free way to capture rainwater for your plants and reduce the quantity of water rushing into local waterways during storms. By including native plants in your garden you'll virtually eliminate the need for watering, fertilizing and pesticides.

Some of the most beautiful and unusual of our native plants thrive in moist conditions. It is, however, easy to create a small bog by re-directing rainwater from your rooftop. Once completed, a bog garden will look like any other garden except during the most severe droughts. Otherwise you won't need to water it.

Outline the shape of your bog garden and dig it out to a depth of one meter. The bottom of the plot should slope slightly away from the foundation of your house to direct excess moisture into your lawn or garden.

- Line the plot with plastic and poke a few holes several centimeters above the bottom to allow excess water to drain out.
- Refill the hole with a mixture of the excavated soil, peat moss, and other organic materials you have on hand (compost, pine needles). Many bog plants like a slightly acidic soil.
- Mound the soil somewhat to allow for settling.
- Wet the mix thoroughly.
- Cut your downspout and attach an elbow, and if necessary, an extension, to direct rainwater into your bog garden and away from your foundation. Most hardware stores carry an array of downspout extensions.
- Add your plants and get ready to enjoy a beautiful and unusual garden.

Bog gardens are an alternative to rain barrels and an effective water conservation technique. Normally, water entering storm sewers flows out in a concentrated, and often polluted, rush at single points along nearby waterways. This rush of water can cause erosion, wash away fish-spawning beds and cause other damage to the waterways ecology. By re-directing storm water from your roof and other impermeable areas you can reduce the impact of rainwater entering nearby creeks.

The many impermeable surfaces (roads, sidewalks, driveways, patios, buildings ...) in cities prevent rainwater from being absorbed into the land to recharge groundwater. Instead, rainwater and snowmelt run off these surfaces into sewers, picking up dirt, oils, pesticides, and other pollutants along the way. You can help to lessen the environmental damage by encouraging precipitation to stay where it falls—providing a reservoir of much-needed moisture for your trees and garden.

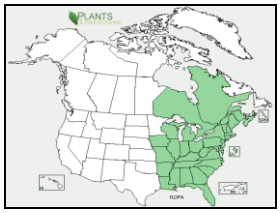
Rainwater is healthier than municipally-treated water for our gardens as some plants are sensitive to chlorine and other additives.

Here are some simple measures you can take to conserve rainwater:

- Disconnect your downspout and redirect the flow onto your lawn or into your garden, or save it in a rain barrel.
- Contour your landscape to direct rainfall/snowmelt away from hard surfaces, allowing the moisture to infiltrate into the ground.
- Remember, gardens absorb rain more quickly than lawns, trees more quickly than gardens. Plant in layers to create a more interesting landscape and a more moisture sensitive garden (add low plants and shrubs under trees).
- Use native plants purchased locally from ethical growers whenever possible. They need only what the local environment provides. Once they're established, no watering, fertilizing, or pesticides required!



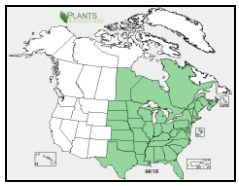
Swamp rose *Rosa palustris*



A Selection of Plants Suitable for Bog Gardens

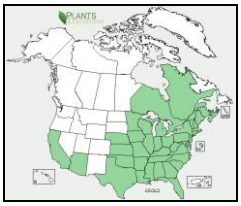
Native plants will thrive without further inputs once established in the right location. The following plants are suitable for moist areas in Great Lakes area gardens:





Jack in the pulpit *(Arisaema triphyllum)* Unusual green/brown flowers featuring a spathe (pulpit) surrounding an upright spadix ("Jack"). Red berries. Up up to 65 cm high.





Buttonbush *(Cephalanthus occidentalis)* Round white "pincushion" flowerballs in early summer. Butterflies, bees, and hummingbirds are attracted to the nectar. Seeds eaten by waterfowl, leaves/twigs by deer. Up to three metres high.

Turtlehead *(Chelone glabra)* Charming white flowers bloom from late summer into fall. Food for Baltimore Checkerspot butterfly larvae. Attracts hummingbirds. Pollinated by bumblebees. One metre tall.



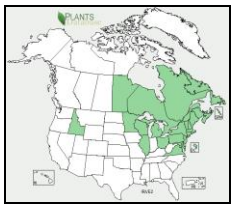




Red Osier Dogwood *(Cornus stolonifera)* Loosely-spreading deciduous shrub with red twigs in winter. Important food for wildlife. Up to three metres high.

Spotted Joe Pye Weed *(Eupatorium maculatum)* Pink-purple flower clusters. Blooms late summer. Provides food for a variety of butterflies (Eastern Tiger Swallowtail, Great Spangled Fritillary, Silver-spotted Skipper) and other wildlife. One to two and a half metres high.





Blue Flag Iris (*Iris versicolor)* A lovely native iris with flowers ranging from pale to very dark blue. Blooms late spring. One metre plus.

Cardinal Flower *(Lobelia cardinalis)* Brilliant red flowers that attract hummingbirds. Blooms late summer. 70-130 cm.

Swamp rose (*Rosa palustris)* Pink five-petalled flowers in early summer. Rosehips eaten by birds and other wildlife. One metre to two metres high.

Swamp Milkweed *(Asclepias incarnata)* All milkweeds are host plants for Monarch butterfly caterpillars and nectar plants for other butterflies. Showy pink flowers in summer. 70-130 cm.

Reprinted from a North American Native Plant Society flyer. For information about the North American Native Plant Society, visit their web site at www.nanps.org or email them at nanps@nanps.org.

If you would like to learn more about rain gardens, check out this great step by step how-to manual available online. Just remember, the plant lists do not necessarily contain species native to Ohio.

Rain Gardens: A how to manual for homeowners.
http://www.dnr.state.wi.us/org/water/wm/dsfm/shore/documenys/rgmanual.pdf

Jackson Bog State Nature Preserve

Relics of the Ice Age

Plants native to the boreal regions far north of Ohio were able to survive and reproduce ahead of the advancing glacier as it continued its southward thrust. The southernmost edge of the glacier stopped just south of this area in Stark County. The Jackson Bog area was in a narrow belt between two lobes of glacial advance: the Killbuck lobe to the west and the Grand River lobe to the east. The result was a tremendous outwash area with large amounts of poorly sorted and varied glacial materials deposited in huge piles in the original landscape.

As the climate gradually warmed and the glacier retreated northward, a new landscape emerged, one of hills and hummocks and kettle-hole lakes. The new relief was a result of the deposition of materials scraped and transported by the glacier. As the ice continued its retreat, the northern plants began to spread across the cold, muddy plains. Though thousands of years have passed, some isolated sites still possess the character of that early post-glacial setting. The most prominent of these communities are the acid bog and the 'sweet bog' or alkaline fen. Because of the draining of wetlands by man, few of these relicts remain today.



Pitcherplant
Sarracenia purpurea

Plant Species

Pitcher-plant (*Sarracenia purpurea*) and round-leaved sundew (*Drosera rotundifolia*), which are carnivorous, grow in and around the open seep areas. Here their bizarre adaptive qualities serve them well. They are able to obtain nitrogen and trace minerals by attracting and trapping insects. Normally found in acid bogs, this is one of only two fens in Ohio where pitcher plant grows. Other unique plants include the small fringed gentian (*Gentiana procera*), the extremely rare ladies-tresses (*Spiranthes romanzoffiana*), Kalm's lobelia (*Lobelia kalmii*) and grass-of-Parnassus (Parnassia glauca).

In the areas below the seep zones the dominant plant is a woody shrub, shrubby cinquefoil (*Potentilla fruticosa*). Its five-petaled, pale yellow flowers can be seen throughout the summer. Shrubby cinquefoil is the most abundant plant of the fen community.



Grass-of-Parnassus
Parnassia glauca

As one moves away from the seep areas, a number of shrubby plants and small trees begin to occur including poison sumac (*Rhus vernix*), alder, willow and dogwood. Between the fen meadow and the small stream to the west is an area of swamp-shrub association. There the effects of the alkaline water have been diminished and typical

northeastern Ohio plant communities take over the landscape.



Round-leaved sundew
Drosera rotundifolia

The Preserve

Jackson Bog is a 5.7 acre preserve located in northern Stark County and owned by the Jackson Township Local Board of Education. The area was dedicated in 1980 as an interpretive preserve to be protected for the education and enjoyment of present and future generations of Ohioans.

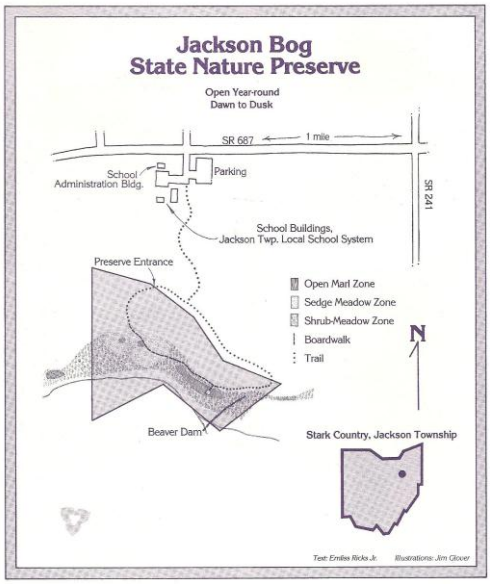
The uniqueness of Jackson Bog is a result of natural events that occurred thousands of years ago. Beginning more than a million years ago, at least four major continental ice sheets advanced into Ohio. The most recent glacier, named the Wisconsinan, bulldozed its way south from eastern Canada and lumbered across much of North America about 25,000 years ago. The glacier carried millions of tons of rocks and other debris. It completely altered the local landscape and for thousands of years Jackson Township lay under a blanket of ice hundreds to thousands of feet thick.

The Fen Community

Jackson Bog, which is actually a fen, or alkaline bog, lies at the foot of a dry, sandy kame (a glacially deposited hill or ridge). The belts of kames in this area of Stark County provide an extensive aquifer. These highly permeable gravel deposits readily absorb surface water and then hold it in staggering quantities as groundwater. Whenever this groundwater reaches the surface, as it does here in Jackson Bog, artesian springs and seeps result. Springs emerge from beneath the elongated kame that borders the northern edge of the preserve. It is these gravel deposits with their corresponding springs that hold the key to the very existence of Jackson Bog, as well as to its future.

These gravel deposits through which groundwater flows contain large amounts of limestone-rich gravel. As the groundwater percolates through these highly permeable soils, it tends to dissolve out the limey materials and becomes highly charged with calcium and magnesium bicarbonates. Furthermore, when the groundwater reaches the surface, calcium carbonates precipitate out, forming a grayish white, lime rich mud known as marl. Few plants can survive such extremes in pH that may vary from 8.0 to 9.0, much less the low oxygen content of the spring waters and their chilly 54°F' year-round temperature. The cool surface and subsurface temperatures in a fen greatly influence seed germination as well as the length of the growing season. Consequently, the fen is a very hostile environment for most plants.

Since very few plants can survive in the seep areas of the fen, these areas remain open and wet year-round. Below the seep zone is an area where plants survive on the remains of earlier generations of plants. This zone consists of a shallow substrate of peat, which is dead sphagnum moss. As this peat continues to build up, it rapidly increases in thickness, creating a better drained and less harsh environment. The plates of peat, bound together by a multitude of fibrous roots, are held suspended or, in a limited sense, "float" above the artesian springs.



Nature Preserve Status

In 1970, the Ohio General Assembly passed the Natural Areas Preservation Act establishing a statewide system of nature preserves to ensure protection of Ohio's natural heritage. This act was amended in 1976 to create the Division of Natural Areas and Preserves as the agency charged with administering the program.

Jackson Bog is a fragile, easily disturbed ecosystem that has been set aside and protected by the law for scientific and educational purposes. Dedicated state nature preserves represent the finest examples of Ohio's

vanishing natural features. Public visitation is encouraged but closely regulated to protect the natural integrity of the preserve so that it may be passed on, unimpaired, to future generations. Please help protect this special place by observing the rules and regulations posted on the bulletin board and by remaining on the boardwalk!

Reprinted from a brochure published by the Ohio Department of Natural Resources, Division of Natural Areas and Preserves.
Photos (this article) by Tracy Knierim, NPSNEO Board Member

White Water Lily

By Gordon Mitchell

Those of us who have visited ponds or lakes have probably observed lily pads floating upon the water's surface. Although some of these lily pads may be of an alien species, there is one species that is native to this area. That species is the White Water Lily (*Nymphaea odorata* Aiton).

The White Water Lily is a member of the Order *Nymphaeales*, the Water Lily Family *Nymphaeaceae*, the Subfamily *Nymphaeoidea*, and the Tribe *Nympheae*. Water Lilies are not true Lilies (*Liliaceae*). The generic name, *Nymphaea*, is from the Greek name, *Nymphe*, who was the goddess of water in both Greek and Roman mythology. The specific epithet, *odorata*, is Latin for "fragrant" or "scented".

Previous scientific names for this species were *Castalia lekophylla* Small, *Castalia minor* (Sims) Nyarady, *Castalia odorata* (Aiton) Wood, *Castalia pudica* Salisbury, *Castalia reniformis* (deCandolle) Trelease ex Brenner and Coville, *Castalia tuberosa* (Paine) Greene, *Nymphaea alba* Michaux, *Nymphaea minor* (Sims) deCandolle, and *Nymphaea tuberosa* Paine.

Nymphaea tuberosa Paine was a name of a separate Water Lily species. Because these two species often experienced separate growing conditions, they were thought to be two separate species. However, they have now both been reclassified as subspecies of a single species of the White Water Lily.

At different times and places both these Water-lily subspecies had other common names. Some of these names were Alligator Blankets, Alligator Bonnet, American White Water Lily, Beaver Roots, Bennets, Cow Cabbage, Fairy Boots, Fragrant Water Lily, Large White Water Lily, Pond Lily, Purple-leaves Water Lily, Queen of the Water, Scented Pond Lily, Small White Water Lily, Sweet Water Lily, Sweet-scented Pond Lily, Sweet-scented Water Lily, Toad Lily, Tuberous Water Lily, Water Cabbage, Water Nymph, Water Queen, and White Pond Lily.



Description of the Water Lily

Perennial

Height: Being an aquatic plant, its height varies with the depth of the water. It can live in water as shallow as 6 inches if the water level is stable or as deep as 15 feet if the water is clear.

Stem: Its stems are long, cylindrical, soft, flexible, spongy, and mucous-coated. They anchor the leaves and flowers to the roots. Both the leaves and the flowers have separate stems. Depending upon the subspecies, these stems may or may not have 4-5 purple streaks.

These stems have rounded cross-sections and have 4 hollow air-filled channels or tubes (lacunae) for buoyancy and for the movement of oxygen, carbon dioxide, and methane gases between the leaves and the roots. These gases enter through the younger leaves and exit through the older leaves.

Leaves: The White Water Lily only has basal leaves. Its first year leaves are a cluster of pointed leaves upon short stalks and are submerged below

the water. Its second and subsequent year leaves are flat, floating, and orbicular. Their oval rounded shape may have evolved to protect them from both the wind and the waves. They have a V-shaped notch or cleft at their base and have entire margins. They are palmately veined and are about 3-12 inches in diameter.

These leaves have smooth and leathery surfaces. The upper surfaces of the leaves are shiny green and have heavy, waxy, cuticle layers for waterproofing. The lower surfaces of the leaves have thick, slippery, mucous-like coatings to protect them from abrasive contact with other plants and from aquatic herbivores.

Unlike the leaves of other plant species, their stomata (air pores) are located upon the top of their leaves. These pores regulate the flow of gases in and out of the leaves.

Depending upon the subspecies, the lower surfaces are either green or purple-red. The purple-red color may help raise the leave's temperature above that of the water in order to speed transpiration.

These leaves provide shade, shelter, and habitat for many species of fish and aquatic invertebrates. However, too many leaves can hinder boaters and fishermen.

Flowers: The White Water Lily usually flowers during its third year. The flowers are white or pink, radially symmetrical, about 1½-9 inches wide, and are solitary. Each flower has numerous upright spreading or overlapping petals arranged in numerous rows, with those within the inner rows being narrower and with all petals having their tips being either broadly rounded or tapered. Each flower also has four rounded, green or colored sepals that may be red on the outside and white on the inside; about 40-100 yellow stamens with the outer stamens being as wide as the petals; and one compound pistil with many united carpels, a disk-shaped stigma with 10-35 lines radiating from the center, and no style. Depending upon the subspecies, these flowers may or may not be fragrant.

These flowers are in bloom from early morning until early afternoon. The flowers last about 3-5 days. Flowering season is usually May-September.

These flowers are protogynous. The female flowers mature before the male flowers. This prevents self-fertilization.

These flowers are insect pollinated. Honey Bees (*Apis mellifera* L.), Sweat Bees (Family *Halictidae*), or Beetles (Order *Coleoptera*) will pollinate these flowers. After fertilization, the flowers close, the stem coils like a spring, and the closed flowers are pulled underwater.

Fruit: The fruit pod is composed of globular or ovate, leathery, spongy, fleshy, and leathery berries. The fruit is submerged underwater for about 3-4 weeks while the seeds mature.

Each fruit pod may have about 600-700 seeds. Each seed is enclosed within a fleshy sac, called an aril, which gives the seeds buoyancy. After the seeds mature, the aril breaks off, floats away, and later decomposes to release the seeds.



Seeds: The seeds are about 1/12-1/6 inches long, oblong, starchy, and green. After the seeds are released from the decomposed aril in the fall, they sink to the bottom. These seeds will germinate the following spring. These seeds are a favorite food of Waterfowl, especially Wood Ducks (*Aix sponsa* L.), Scaups (*Aythya* sp.), and Teals (*Anas* sp.).

Rootstalk: The rootstalks consist of roots and large, thick, horizontal, ovate, spongy, scaly, and starchy rhizomes. These rhizomes may be 3-4 inches long. They are brown but may turn purple when exposed to the air.

These rootstalks branch freely and can form new plants. They may break apart to float away and to form new plants elsewhere. During the winter, most of the plant dies back to the rootstocks. Muskrats (*Ondatra zibethicus* L.), North American Beavers (*Castor canadensis* Kuhl), and White-tailed Deer (*Odocoileus virginianus* Zimmermann) eat these rhizomes.

Habitats: The White Water Lily is found in ponds, in lakes, and in quiet waters of rivers and streams.

Range: The White Water Lily ranges in southeastern Canada and in the eastern U.S. as far west as the Great Plains. Within their range, they are a very common species. Unfortunately, in the western U.S., they are a non-native, invasive species.

Edibility
Parts of the White Water Lily are edible by humans. The young, unfurling leaves may be eaten raw or cooked. The raw leaves should be washed, chopped, and may be added to soups or stews. The rhizomes' tubers may be boiled, roasted, or prepared like potatoes. The unopened flower buds may be cooked or pickled. The ripened seeds, which have protein and oil, may be boiled, fried, dried and ground into flour, or creamed like corn. All boiling should be done for about 5-10 minutes, with several changes of water.





Photos (this article) by Tracey Knierim, NPSNEO Board Member

Medicinal Uses
Parts of the White Water Lily also had some medicinal uses. They contain gallic and tannic acids. The rhizomes were used as an antiseptic, an antibiotic, an antispasmodic, an astringent, a cardiotonic, a demulcent, and an emollient. It was used as a decoction for intestinal troubles, as a gargle for sore throats, as eyewash, and was powdered as a poultice for boils, sores, ulcers, and other skin irritations. The macerated leaves were used as a poultice for swollen neck glands. However, the White Water Lily can be toxic in large doses. It contains the glucoside nympaline, and the alkaloids nupharine and nuparidine.

The Legend of the Water Lily
In 1917, John Couchois Wright wrote *The Crooked Tree*, which told many stories of the Ojibway (Chippewa) Tribe. One of those stories was *The Legend of the Water Lily*.

The Ojibways took precedence over all other tribes in the richness of their legendary lore and traditional tales. One of their best known legends is that regarding the water lily.

Once a young warrior noticed a star which seemed to be much brighter and nearer the earth than any of its companions. Upon going to bed the young man dreamed that the star descended and remained suspended in the air before him in the form of a beautiful maiden, who spoke as follows:

"I desire to live with the people of the earth. Show me a place where I can take up my habitation."

The young man suggested to her a place up in the trees.

"No," she said, "I would not be happy there. I would have only the birds for my companions. I would prefer to be nearer the ground where I can come in contact with the mortals of the earth whom I have learned to love."

The young man then suggested other places, along the hillside, in the valleys, or by the cliffs and rocks.

"None of those places will do, so I will select my own home."

Thus saying, she descended to the water nearby and dropped out of sight in its depth.

The young man in sorrow darted to the spot where she had disappeared, in the hopes of rescuing her.

There he saw only a beautiful white lily into which the maiden had transformed.

Those lovely flowers have ever since been found in and around the waters of the north.

Gordon Mitchell works for the Columbus, Ohio Metroparks and was a member of the Central Ohio Native Plant Society, which merged with the Columbus Historical Society in the Spring of 2010.

Green Medicine
Boneset (*Eupatoruim perfoliatum*)

By Guy L. Denny

Life was extremely difficult on the Ohio frontier. Disease and injuries took a heavy toll and doctors were few and far between. For many frontier families, "home doctoring" with herbal medicines was the only medical care available. Of all the herbal medicines, none was more popular in treating fevers, flu, colds and even malaria, than boneset tea. It was made by steeping the dry stems and flower heads of boneset (*Eupatoruim perfoliatum*) in hot water. Dried bouquets of boneset commonly hung, tops down, from the rafters of every cabin on the frontier where it was stored until sickness struck.





Boneset grows in moist soils, especially wet meadows, throughout Ohio. Ranging from Canada to Florida and west to Texas and Nebraska, boneset is easily recognized by its flat-topped clusters of fuzzy, dull-white flowers and especially by its opposite leaves, which join and surround the stem giving the appearance of being pierced by the stem. Hence, the origin of the specific name *perfoliatum*, which comes from the Latin *per* "through" and *folia* "leaves". The genus of this species honors Mithridates Eupator, King of Pontus, Greece. During the first century B.C. King Eupator reportedly was the first to medicinally use a species of this genus.

Before its widespread use by American settlers, boneset tea was popular among American Indians from whom the settlers learned of its medicinal applications. In addition to being a cold and fever remedy, it was also used to treat rheumatism, muscular pain, constipation, pneumonia, pleurisy, and gout. The name "boneset" seems to imply that it might somehow have been used in treating or setting broken bones. Such is not the case, however. The common name was derived from its extensive use in treating a form of influenza known as breakbone fever, which caused severely painful body aches.

Although some modern researchers now question the medicinal value of boneset, the dried leaves and flower heads were listed in the U.S. Pharmacopoeia from 1820-1840 and in the National Formulary from 1926-1950. In any case, boneset played a major role in the cultural history in Ohio and is a fascinating component of our natural heritage.



Guy L. Denny – 6021 Mt. Gilead Rd., Frederickton, OH 43019
Reprinted from ODNR Division of Natural Areas & Preserves Newsletter.

Invasive Plant:

Smooth Brome, *Bromus inermis*

Description

Smooth brome, also known as Hungarian brome, is a non-native, long-lived, herbaceous perennial. This cool-season grass can grow nearly 4 feet tall. Emerging in late March, the numerous basal and stem leaves are smooth, under ½ inch wide and up to 8 inches long. Each leaf has a characteristic "W" shaped wrinkle near its tip. From May to July, a nearly smooth stem supports the flowering portion of the plant. The flower heads are characterized by having 4-10 upright branching-spikes. Each spike is 1-2 inches long and comprised of up to 10 blunt tipped florets. The florets take on a purple-brown color as they mature from June to August and begin to set seed. Reproduction is both by seed and by its aggressive rhizomes.



Habitat

Smooth brome grows well in open areas such as roadsides, riverbanks, open fields and woodland edges. It is drought resistant and may go dormant during harsh conditions. It is also tolerant of periodic flooding. Open areas such as prairies, savannas, and meadows are extremely susceptible to invasion by smooth brome.

Distribution

Smooth brome was introduced to the United States from Europe and eastern Asia in 1884. It was, and still is, used as a forage crop for livestock and for erosion control along streams. It is found throughout the United States except for the extreme southeast. It is found throughout Ohio. It is most common in agricultural areas where it has escaped from its intended use.

Problem

Because of the early season growth and aggressive spread of smooth brome, it can out-compete many of the warm-season native plants found in prairies and grasslands for water and nutrients. The sod-forming roots of established smooth brome populations can prevent other species from emerging. Seeds may stay viable for up to 10 years, which coupled with its tenacious growth, makes this grass species difficult to eradicate.

Control

Mechanical Prescribed burning after shoots emerge in late spring can help control the spread of smooth brome. This also helps favor native warm-season species of plants. However, early burning may favor the growth of smooth brome. Continual mowing can also be effective but this normally affects non-target species as well. Control should be undertaken to prevent seed production.





Chemical A systemic herbicide such as Roundup® or Glypro®, or a grass-specific herbicide such as Fusilade® can be effectively applied to dense populations in April or May. Care must be taken to avoid non-target species.
Biological Currently there are no biological controls for smooth brome.

Additional Information Source:
Sather, N. 1987. Element Stewardship Abstract for Awnless Brome, Smooth Brome. The Nature Conservancy.

Reprinted from *Invasive Plants of Ohio*, A series of fact sheets describing the most invasive plants in Ohio's natural areas. The Nature Conservancy.



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Donations to the Endowment Fund to support the annual grant are always welcome.

Make checks payable to:
The Native Plant Society of Northeastern Ohio
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- Raise awareness of the ethical issues regarding native plants
- Encourage surveys and research into native plant species and the publication of findings
- Promote cooperation with other programs and organizations concerned with the conservation of natural resources

On The Fringe

In this issue:

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Swamp Milkweed – Melanie Choukas-Bradley
Book Review: New Book on Prairie ecology & management
An 18th Century Botanist - Bev Stamp
Downspout Bog Gardens – North American Native Plant Society
Jackson Bog State Nature Preserve ODNR
White Water Lily – Gordon Mitchell
Folklore: Green Medicine – Guy L. Denny
Invasive Plant: Smooth Brome

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