On The Fringe

Journal of the Native Plant Society of Northeastern Ohio



Ann Malmquist is sitting on a bench sponsored in her honor by the Native Plant Society of Northeastern Ohio at the West Woods Nature Center of the Geauga Park District.

Ann Malmquist, Founder of The Ohio Native Plant Society

In August we lost our founder and the moving spirit of the Native Plant Society. The society was her creation, and she lovingly nurtured it for 30 years. Singlehandedly, Ann brought together groups from all over Ohio and focused their attention on native plants. She spent countless hours driving all over the state, meeting people, and spreading enthusiasm for preserving and protecting our natural heritage. She knew that only direct experience could energize people to value native plants, and the core of the society's activities has always been the naturalist-led field trips to observe, and perhaps discover, the plants in Ohio's many parks and preserves. The Native Plant Society was conceived at the First Annual Wildflower Symposium at the Holden Arboretum in May, 1982. On September 30, 1982, nine people convened at the Holden Arboretum to form the Society. At this meeting, as in subsequent activities of the Society for many years, Ann Malmquist was the prime mover and guide. By the end of the first year, she had recruited 142 members. Ann's first goal was to establish a network of chapters under the rubric of the Ohio Native Plant Society. Ann did all the paperwork for a 501(c)(3) charter and created a local Northeastern Ohio chapter. She traveled around the state and eventually got seven native plant groups to join us. Ann was an indefatigable hostess, and she established a tradition of Annual Dinners featuring important speakers in the field of native plants. She began *On The Fringe* as a monthly newsletter, and later as a quarterly journal. She had monthly programs and field trips, traveling throughout Ohio and as far as the Bruce Peninsula in Canada and the Atlantic shore of Rhode Island. One accomplishment that stands out is the establishment in 1987 of *Trillium grandiflorum* as the Ohio state wildflower. Ann Malmquist, Dick Moseley, and Guy Denny saw this three-year project through the tortuous political process. In 1987 an endowment fund was set up to recognize Ann's role in creating the Ohio Native Plant Society, and the Northeastern Ohio chapter. A grant is given annually for research, conservation, or education on a project that clearly supports the mission of the Society. All donations to the Native Plant Society made in Ann's memory will be added to this fund.

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On The Fringe

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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 – Winter 2016

Saturday, Jan. 30, 2:00 pm – From Field to Herbarium. Cleveland Museum of Natural History**.** What happens to all those plants Jim Bissell collects in the field? Get a behind-the -scenes look at how these plants are processed into the herbarium and used to document the flora of northeastern Ohio. Registration required by calling Judy at 440-409-1688 or emailing at judysbarnhart@gmail.com.

Sunday, Feb. 14, 2:00 pm – A Cultural, Historical and Modern Day Plant Hunter's Tour Through China. The West Woods Nature Center, Geauga County. Join Tom Sampliner, photographer and past Native Plant Society president, as he shares his travels to China, including highlights from Beijing, Xian (terra- cotta warriors), the Rainbow Mountains in Gansu Province, the major Panda rehabilitation center in Chengdu, then on to the rugged mountains of Sichuan Province and Aba Autonomous Region, both labeled the center of world diversity for the slipper orchids and other marvelous flowering plants set amidst fantastic earth features of travertine and tufa. A few ancient towns and markets round out the program. Presented in conjunction with the Geauga Park District. Directions: take St. Rt. 87 east from Rt. 306 in Russell Township approximately two miles to the park entrance on south side of the road. 9465 Kinsman Road, Novelty, Ohio 44072. No registration required.

Saturday, March 26, 2:00 pm – Phenology: The age-old science of predicting blooming times and insect activity. The West Woods Nature Center, Geauga County**.** Phenology is the study of recurring phenomena and their relationship to weather and climate. Bird migration, hunting and gathering seasons, plant blooming, insect appearance are examples of events that have been recorded for centuries. Denise Ellsworth of OSU Agricultural Research Center will share how phenology tells us what's blooming and what insect activity is in the near future. With an easy-to-use web-based biological calendar, participants will learn how to customize this calendar for garden plants and insects. Presented in conjunction with the Geauga Park District. Directions: take St. Rt. 87 east from Rt. 306 in Russell Township approximately two miles to the park entrance on south side of the road. 9465 Kinsman Road, Novelty, Ohio 44072. No registration required.

The Native Plant Society of Northeastern Ohio Awards
Ann Malmquist, Founder
The Gentian Award for 2015

Today we take the opportunity of honoring Ann Malmquist, founder of the Ohio Native Plant Society and of our Northeastern Ohio chapter and an unflinching champion of the natural environment.

When she was a young child her father took her on extended vacations to the Minnesota wilderness and taught her to love and respect the land and the stars. In later years this introduction evolved into a life-long crusade to protect the environment from the depredations of commercial development, logging, and mineral exploitation. Her zeal to keep well-drillers conforming to regulations is legendary. At one point she drove her car down railroad tracks to check for infractions and was obliged to retrace her route in uncomfortable haste.

Ann was active in the Audubon Society and the Cleveland Museum of Natural History. She was head of the Women's Committee there for years and turned her skills as an organizer and hostess to the annual Ark in the Park Christmas fundraiser. Her connections to CMNH earned the Native Plant Society a wonderful venue for our annual dinners in the Dinosaur Hall.

Ann's lasting contribution to preserving and conserving our native plants is the establishment of the Ohio Native Plant Society. For years she drove all over Ohio, generating enthusiasm and a commitment to forming organizations dedicated to recognizing the importance of native plants and protecting them. By 1988 there were eight chapters of the Society. Each chapter was free to follow its own needs and interests. The Northeastern chapter has concentrated on naturalist-led field trips to nature preserves, parks, and private lands that are not generally open to the public, along with programs focused on enlarging skills in plant identification.

The Native Plant Society was conceived at the First Annual Wildflower Symposium at the Holden Arboretum in May, 1982. On September 30, 1982, nine people convened at Holden to form the Society. At this meeting, as in subsequent activities of the Society for many years, Ann Malmquist was the prime mover and guide. For many years Ann oversaw the whole organization, from soliciting memberships to calling anyone who failed to renew his membership or failed to respond to the Annual Dinner invitation in a timely fashion. She established the official publication, *On The Fringe*, which has appeared regularly for 32 years, with continuing high scholarly standards. It remains in the current holdings of a dozen professional libraries.

One of Ann's lasting actions is the establishment of *Trillium grandiflorum* as the Ohio State Wildflower. This required the co-operation of legislators and the collaboration of the Ohio Division of Natural Resources Department of Natural Areas and Preserves. Guy Denny and Dick Moseley were instrumental in achieving her goal. Ann was always punctilious in acknowledging everyone who helped her in her projects.

During her lifetime Ann would not let us recognize her many contributions to forwarding the cause of preserving native plants. A successful outcome of her efforts was sufficient reward. However, I would like to mention a few of her accomplishments.

She created an endowment fund dedicated to supporting outside projects that reflect the mission of the Native Plant Society. Each year a $500 grant is made at the Annual Dinner, following a competitive application process.

She raised $1,500 to support the beginnings of a wildflower garden at the Holden Arboretum. She also provided labor and expertise for the establishment of a wildflower garden at what was then the Cleveland Garden Center, now the Botanical Garden, and at the Chagrin Falls Public Library.

One of her early projects was the establishment of a population of the endangered Royal Catchfly, *Silene regia*, at the Holden Arboretum. She raised money and supported staff in locating a population to transplant and nurture until it flourished independently.

We are grateful and privileged to have had the opportunity to be part of Ann's creation, and I hope we will continue to work toward her goal of preserving, protecting, and conserving native plants, wherever we find them.

The plaque has a picture of a Fringed gentian and says:

Gentian Award
For Dedication to the Native Plants of Ohio
Ann Malmquest
2015

Judy Barnhat's Memories of Ann

I first met Ann at the organizational meeting of the Native Plant Society, while I was an intern at the Holden Arboretum in May of 1982. Then we really got to know each other when we were on the board of Cleveland Audubon together.

Ann definitely had the power of persuasion. When NPS President Jean Roche retired and decided to move to Florida, Jean and Ann took me out to lunch after a moss workshop at Kent State. Ann talked me into running for the presidency though I had a full time job and was raising two boys. I accepted because of my love of plants and wanting to teach people to love them as I did.

Ann would call me to offer suggestions. Her gruff voice and stern disposition were very distinctive. Though my boys had never met her, when she called and my boys answered the phone, they would tell me the mean lady had called. We both had a passion for native plants. She will be missed.

Judy Barnhart is the Vice President of the Board of the Native Plant Society of Northeast Ohio.

2015 Native Plant Society of Northeastern Ohio Annual Grant

Thanks to the foresight of our founder, Ann Malmquist, the Native Plant Society has an endowment that helps to support the funding of an Annual Grant. This Grant is given to individuals or groups working on projects that demonstrate excellence in research, conservation or education that clearly support the mission and goals of the Native Plant Society of Northeastern Ohio.

Our organization is honored to have the ability to support such worthy projects. It is because of the generosity of our members and especially those who have, over the years, contributed to grow the endowment that we are able to support such good work. This year we had eighteen worthy proposals for our grant, it was very difficult to choose just one, so the board voted to fund a second grant. This year we have 2 Grants to award.

The first grant goes to the Nature Conservancy's Grand River Conservation Campus at the Morgan Swamp Preserve in Ashtabula County where they are creating a learning garden adjacent to a new Nature Center in an existing building. The $500 Grant will help provide native plants and shrubs to benefit insects, butterflies and birds in the new garden. This garden will increase nectar sources and habitat for pollinators and birds. Plus, it will help the public and school groups achieve a better understanding of what native plants are and how their communities are critical to a healthy ecosystem. Karen Adair of the Nature Conservancy is accepting the grant for this project.

The second grant is awarded to expand the outdoor education program at Independence High School to enable environmental science students to participate in the Leaf Pack Network. Leaf Pack Network is a citizen science project that examines the macroinvertibrate communities in a stream using manmade leaf packs that are submerged in a stream for several weeks. The macroinveribrates found are used as an indicator of the connection between trees and streams and to draw conclusions about the habitat quality of the stream. The information gathered will be added to a large database representing watersheds from Central America to Midwestern US. Independence High School may be the first in the region to contribute to this study, hopefully paving the way for other school districts to get involved. Students will gain an understanding of the interconnectedness of species within an ecosystem, be exposed to career opportunities in botany, conservation, restoration and other natural sciences. Jim Palus, Graduate Research Associate Forest Ecosystem Restoration and Ecology Lab at Ohio State University and Scott Maretka, Biology Teacher at Independence High School Land Lab will accept the $500 Grant for this project.

We thank all of the dedicated people who design and implement the projects that we help to support with our grants and all of those with wonderful projects that we may not have been able to support. Keep up the great work!

Hybrids, Cultivars and Ecovars

"It is now within the power of individual gardeners to do something that we all dream of doing: 'to make a difference'". In this case, the 'difference' will be to the future of biodiversity, to the native plants and animals of North America and the ecosystems that sustain them."

~ Doug Tallamy, *Bringing Nature Home*



Cardinal flower, *Lobelia cardinalis*, and an American goldfinch

The mission of the Maryland Native Plant Society is to promote awareness, appreciation and conservation of Maryland's native plants and their natural habitats. Of course, gardens are not natural habitats but we know that gardeners have an impact on our environment by the plants they choose. So let's discuss the sometimes difficult question of the value of cultivars and how they fit in (or not).

The National Wildlife Federation describes native plants as adapted to the conditions of the area where they have evolved, including precipitation, temperature range, soil, water and other species (plant or animal). Native plants are the foundation of the entire food web, whether on public or private property. They support native insects, which are the most important food source for most native birds. These insects are also needed for pollination of many plants. Ecovars (short for ecological variety) are species of native plants that have been bred from seed collected from diverse populations of plants in a specific region. Their genetic diversity reflects the natural diversity within a given region. Cultivars (short for cultivated variety) are plant varieties that have been developed by humans through selection or genetic manipulation. An individual native plant may be selected because of an unusual trait such as a dense growth habit, or an unusual color variation. But hybrids are plants that are the result of interbreeding between two or more species of plants.

Hybrids can be created using local species, but often the parentage is unknown because the interbreeding happened so long ago. Hybrids can also be created by breeding closely related species from different parts of the country or even the world. When cultivars are selected or hybrids created, their special traits must often be maintained by continual selection or cloning (cuttings, division, tissue culture). These are plants that generally would not be found in quantity in the wild and, in many cases, would not persist without human intervention.

Gardeners need to realize when they consider purchasing cultivars that the leaf chemistry may differ from the species making the plant unpalatable to native insects. A plant that has been bred to have showier blossoms may be less accessible to pollinators. Double-flowered cultivars have extra petals that usually replace or hide the nectar-producing flower parts, making them undesirable to pollinators.



Common milkweed, *Asclepias syriaca*, visited by a great spangled fritillary

Cultivars are often selected to serve a particular need in our gardens such as "Little Joe" Joe-Pye weed for a small space. Or we may be attracted to a color



Cardinal flower, *Lobelia cardinalis*, visited by a ruby-throated hummingbird

palette and seek out plants with purple foliage like Forest Pansy redbud. There are many reasons why gardeners may choose cultivars, but one goal may eclipse another.

A thriving pollinator-friendly garden can include cultivars. Each cultivar is going to be different and we simply do not know which ones do or do not serve a particular ecological function. There has been little research so we must take it on a case-by-case basis, making our own observations. Are birds eating the fruit on the Red Sprite Winterberry holly? Are pollinators passing by those showy hybrid flowers? Will the insects that many birds need in their diet be able to digest the leaves of a particular cultivar? When a cultivar is touted as 'pest-resistant', that should be a warning sign to gardeners who want a wildlife habitat.

If a plant isn't a hybrid or a cultivar, it is open-pollinated. Some trees and most grasses and ferns are wind pollinated and windborne seeds have an extensive gene pool; but many plants are pollinated by insects and have a limited geographical distribution. So it would be more important to acquire herbaceous plants that are locally-sourced. Genetic diversity is important because it ensures a healthier plant population. Most hybrids have less genetic diversity than seed-grown plants because hybrids are propagated in a way that preserves their special traits. Genetic clones will have exactly the same DNA.

Many hybrids can and do reproduce by seed, but the plants that result will most likely not have the unique characteristics of the original hybrid. Cultivars may be another story. "Chocolate" white snakeroot, *Ageratina altissima* Chocolate, does grow true to seed and reports are that it can displace or outpace the ecotype if the two plants are grown in the same area. One benefit of cultivated plants purchased at a garden center is that we know they haven't been collected from the wild. They are readily available and they offer the gardener many choices (for instance a more compact plant). But open pollinated indigenous plants are adapted to our soil and climate, have the most genetic diversity and ensure plant/soil/insect compatibility. So these indigenous plants will be high on the list of many of the MNPS gardeners. But how do we find them? A good place to start is the resources section of the MNPS website mdflora.org/publications/nurseries.html. We also list native plant sales in the spring and fall. And if you are shopping at area nurseries, start asking questions based on the information in this article. The more we ask for truly native plants the more they will become available.



Cupflower, *Silphium perfoliatum*, with a Spicebush swallowtail.

Editors note: Another place to start building your knowledge about native plants is our own website; nativeplantsocietyneo.org and plants.usda*.gov.*

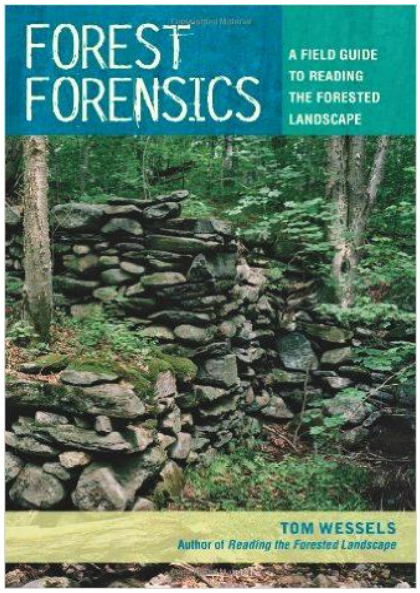
Photos by Rochelle Bartolomei.

Reprinted from *Marilandica*, a publication of the Maryland Native Plant Society. Fall/Winter 2013, Vol 4 No 3.

Book Review:

Forest Forensics:
A Field Guide to Reading the Forested Landscape
1st Edition

By Tom Wessels



Publisher: Countryman Press
Pages: 160 pages
ISBN-10: 0881509183
ISBN-13: 978-0881509182
Paperback, Kindle
Price: $10.69, 9.99 (price varies)
Size: 5 × 7.5”

Take some of the mystery out of a walk in the woods with this new field guide from the author of *Reading the Forested Landscape*. Thousands of readers have had their experience of being in a forest changed forever by reading Tom Wessels's *Reading the Forested Landscape*. Was this forest once farmland? Was it logged in the past? Was there ever a major catastrophe like a fire or a wind storm that brought trees down?

Now Wessels takes that wonderful ability to discern much of the history of the forest from visual clues and boils it all down to a manageable field guide that you can take out to the woods and use to start playing forest detective yourself. Wessels has created a key—a fascinating series of either/or questions—to guide you through the process of analyzing what you see. You’ll feel like a woodland Sherlock Holmes. No walk in the woods will ever be the same.

Review taken from www.books.wwnorton.com.

Landscape is much more than scenery to be observed or even terrain to be traveled, as this fascinating and many-layered book vividly shows us. Etched into the land is the history of how we have inhabited it, the storms and fires that have shaped it and its response to these and other changes.

An intrepid sleuth and articulate tutor, Wessels teaches us to read a landscape the way we might solve a mystery. What exactly is the meaning of all those stone walls in the middle of the forest? Why do beech and birch trees have smooth bark when the bark of all other northern species is rough? How do you tell the age of a beaver pond and determine if beavers still live there? Why are pine trees dominant in one patch of forest and maples in another? What happened to the American chestnut? Turn to this book for the answers, and no walk in the woods will ever be the same. 60 black-and-white etchings and illustrations.

Review taken from www.amazon.com

Have you ever wondered how the forest you’re walking through evolved? Why are these trees smaller than those? Why is the ground level here pillowed but not over there? This field guide contains a simple dichotomous key, which leads you through an analysis of the landscape and its history. Slip it into your pocket on your next field trip and let it tell you what kind of plants you might find hidden in the seed bank.

Review by Charles Fletcher, Board member of the Native Plant Society of Northeastern Ohio.

Going Native

By Peggy Spaeth

Often you end up in a place different than your planned destination. I've wanted to identify all the wood warblers who pass through northern Ohio each spring, and I do know the majority by sight. (Well, okay, I know the males in spring plumage.) But as I walked through the woods each spring I was drawn more to the plants on the forest floor, which thankfully did not flit about when I leafed through a field guide to identify them. I began to observe the progression and succession of plants throughout the seasons and fell through Alice's rabbit hole into a rich universe parallel to conventional gardening. After all, with all of the interconnected flora and fauna, why be limited to birds?

I so loved being in the forest that I decided to replicate it in my small urban yard.

Fortunately, there was a mature tree canopy of maples, catalpa, and the oaks that reached over from the neighbor's yard. I added to the infrastructure by planting understory trees: a redbud on a site-line directly out my dining room window, then two clumps of serviceberries.

The way that I learned about what woodland plants would grow in my habitat was walking in the forest. For years I'd hiked the paths of Jackson Field for the peace and beauty. But I became more intentional, observing what plants bloomed when. There is nothing quite as exciting as walking the same forest path regularly. Discovering first spring beauty, then toothwort, bloodroot, trillium, jack-in-the-pulpit, the *dicentra* trio, Virginia bluebells, and phlox was intoxicating. I still remember the thrill of my first Canada lily on the bank of the Chagrin River. And one day a friend and I found a huge plant in a grove of young willows that looked like it belonged in an exotic country, we identified it as purple Angelica. Who knew?

My project to have a garden of native plants became a cause when I heard entomologist Doug Tallamy speak at a native plant symposium at the University of Wisconsin Arboretum in Madison, where I was babysitting my granddaughter for a couple of weeks. He spoke about how insects, plants, and birds co-evolved in particular habitats. Imported insects can decimate our natives, as the Emerald ash borer is doing. But an insect that co-evolved with a plant feeds on it without destroying it. My Aha Moment was when I thought, "Oh no, something is eating my redbud. Oh yes! Something is eating my redbud!"

The best part of Tallamy's slide show was a succession of photos of a vireo bringing various caterpillars to its nestlings. He could identify each one, and also which native plant or tree in his own yard the insect came from. Since his talk I've been giving his book, *Bringing Nature Home*, to my gardening friends, and without exception reading it has changed their approach to their own yard.

One of the biggest challenges of planting a native garden is sourcing plants. There are few commercial nurseries that carry natives, and the plant sales of nonprofit organizations have a limited supply. Native plant nurseries in other states promote prairie plants, but before development Ohio was 96% wooded, not prairie. Northeast Ohio could use a native plant propagator of woodland plants. In the meantime, my fellow native plant gardeners and I divide plants and collect seeds to share.

As a new convert to native plants, I am a shameless proselytizer. My friends and I have started *Go Native*, a movement organized around the idea that individuals and institutions can effect significant positive changes to our environment by planting only plant species native to the region in which they are planting. The concept is broader than the popular campaign for pollinators, which focuses on planting prairie plants and milkweed for monarchs. There are thousands of pollinating insects that specialize on specific native plants and are eaten by specific birds. As we educate ourselves we hope to share what we learn and begin an urban demonstration garden of natives in spring 2016.

The good news is that this May, President Obama announced the creation of a pollinator corridor 1560 miles long on Interstate 35 from Duluth, Minnesota to Laredo, Texas. Imagine the increased biodiversity if power line corridors, median strips, corporate campuses, and individual homeowners restored monocultures of lawn into native habitat. Native plantings are not maintenance free but rarely involve mowing and edging with emission-producing machines. Landscapers would be turned into gardeners!

Hiking with the Native Plant Society of Northeastern Ohio has been invaluable in learning about native plants. There's nothing quite like being with knowledgeable people who can open a door for you. This spring for the first time I saw blue cohosh tendrils impossibly push through the leaf litter. I never would have seen it, or named it, without someone pointing it out to me. Now I follow the progression of plants even more eagerly than *Downton Abbey*, from the first green shoots to flower and seed.

Not all of nature exists for humans to use as food, or building materials, or medicine. Tallamy wrote “It is curious that the news media have drawn our attention to the loss of tropical forests yet have been silent when it comes to how we have devastated our own forests here in the temperate zone.” Let’s all go native. Biodiversity is good for its own sake - and ours.



1. Early spring; April 8, 2015


2. Early spring


3. First flower


4. Leaves


5. Flush with flowers

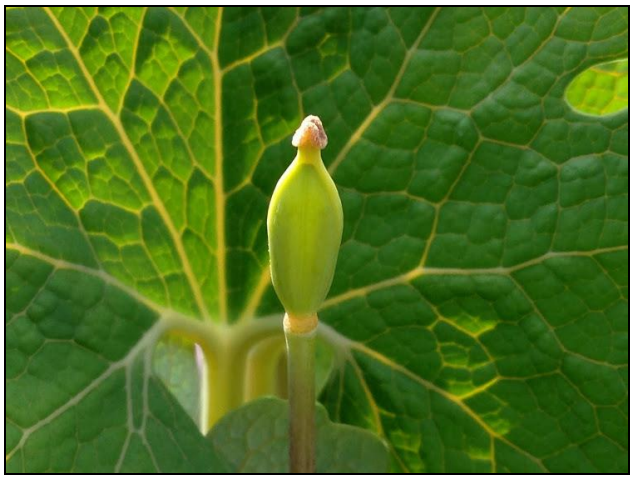

6. Close up of flower



7. A pollinator



10. Dried seed pod



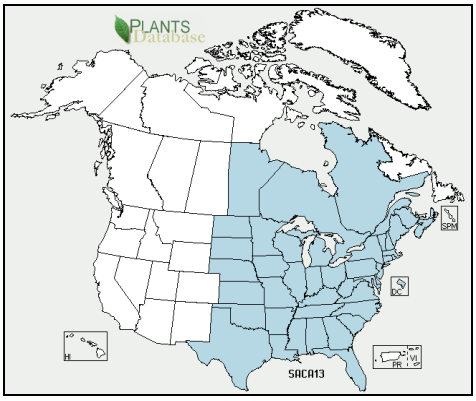
8. Setting seed pod



11. Dispersed seeds on ground for next year; June 9, 2015



9. Open seed pod



Sanguinaria canadensis L.
bloodroot

Peggy Spaeth is a new member of the Native Plant Society of Northeastern Ohio. She is a retired arts administrator who enjoys outside hiking among native plants or gardening with native plants whenever possible. Photos taken by author.

Invasive Plant:

Winter Creeper, *Euonymus fortune* (Turcs.) Hand.-Mazz.
Staff-tree family (Celastraceae)

DESCRIPTION
Climbing euonymus, also known as Winter Creeper, Emerald'n Gold, and Gaiety, is an evergreen, clinging vine. It can form a dense groundcover or shrub to 3 feet in height, or climb 40-70-foot-high vertical surfaces with the aid of aerial roots. Dark green, shiny, egg-shaped leaves, from 1-2 ½ inches long, with toothed margins and silvery veins, occur in pairs along the stems. Stems are narrow, minutely warty, and have abundant rootlets or trailing roots. Clusters of inconspicuous green-white flowers are produced on a long stalk from June to July and are followed in the autumn by pinkish to red capsules that split open to expose seeds adorned with a fleshy orange seed coat, or aril.

ECOLOGICAL THREAT
Traits that make climbing euonymus a desirable ornamental plant, such as its rapid growth, evergreen nature and tolerance of harsh conditions, also make euonymus a threat to natural areas. Climbing euonymus can outcompete native vegetation by depleting soil moisture and nutrients, blocking sunlight, and by forming a dense vegetative mat that impedes the growth of seedlings of native species. Vines on trees continue climbing and can eventually overtop them, covering the leaves and preventing photosynthesis.

DISTRIBUTION IN THE UNITED STATES
Climbing euonymus is currently scattered throughout the eastern U.S. in populated areas.



Winter Creeper, *Euonymus fortunei*
Photo by Chris Evans

HABITAT IN THE UNITED STATES
Climbing euonymus tolerates a variety of environmental conditions, including poor soils, full sun to dense shade, and a wide pH range. It does not do well in heavy wet soils. Natural forest openings resulting from wind throw, insect defoliation or fire are vulnerable to invasion and provide conditions for satellite populations of climbing euonymus to get started.

BACKGROUND
Climbing euonymus was introduced into the U.S. in 1907 as an ornamental ground cover.

BIOLOGY & SPREAD
Climbing euonymus spreads vegetatively with the help of lateral shoots produced along its long main branches and by new plants that emerge from rootlets also produced along the stem at short intervals. Vines climb rocks, trees, and other supporting structures. Flowers formed in the summer produce mature fruits by fall that are equipped with fleshy edible structures (arils) that are fed on by birds and other wildlife, which disperse it. Climbing euonymus also escapes from neglected gardens and is carried by water, to undisturbed forest and riparian areas.

MANAGEMENT OPTIONS
A variety of mechanical and chemical methods are available for management of climbing euonymus. Grubbing, a rather

labor intensive method, is effective for small populations or environmentally sensitive areas where herbicides cannot be used. Using a pulaksi or similar digging tool, remove the entire plant, including all roots and runners. Juvenile plants can be hand-pulled when the soil is moist and root systems are small. Any portions of the root system remaining may resprout. All plant parts including stem fragments and mature fruits should be bagged and disposed of in a trash dumpster to prevent reestablishment.



Winter Creeper foliage, *Euonymus fortunei*
Photo by James H. Mille

Chemical

Cut stem application

Cut stem treatment, using systemic herbicides applied to freshly cut stems, is effective in areas where vines are well established on or around non-target plants, or where they have grown into tree canopies or other vertical surfaces. Cut the stem as close to the ground as possible and immediately apply a 25% solution of glyphosate (e.g., Roundup®) or triclopyr (e.g., Garlon) and water to the cut stem. This procedure is effective at temperatures as low as 40° F. Subsequent foliar applications of these herbicides may be required. Cutting without the application of herbicides is generally not recommended because this will lead to root sprouting.

Foliar application

Foliar applications of herbicide can be used to control large populations. It may be necessary to precede foliar sprays with cut stem treatments to reduce the risk of damage to non-target plants. Apply a 2% solution of glyphosate or triclopyr and water plus a 0.5% non-ionic surfactant to thoroughly wet all foliage but not so heavily that it drips off leaves where it may affect desirable plants. Glyphosate is a non-selective systemic (i.e., travels through the plant vessels) herbicide that may kill even partially sprayed plants. Triclopyr is selective to broad leaf species and is a better choice if desirable native grasses are present. Ambient air temperature should be above 65° F.

Content for this article taken from www.nps.gov/plants/alien/fact/eufo1.htm. Pictures taken from www.invasive.org.

What is NAPCC?

The North American Plant Collections Consortium (NAPCC) is a network of botanical gardens and arboreta working to coordinate a continent-wide approach to plant germplasm preservation and to promote high standards of plant collections management. NAPCC Collections may serve as reference collections for plant identification and cultivar registration. Collection holders make germplasm available for taxonomic studies, evaluation, breeding, and other research. Participating institutions compare holdings with others to identify duplications and gaps. This makes efficient use of available resources, strengthening collections through combined collaborative activities.

What is germplasm preservation?

This term refers to the saving of living tissues that can be utilized to produce new plants. Germplasm is the genetic makeup (DNA) of an organism; in other words, germplasm is the complete hereditary material of a particular kind of plant or animal. Plant germplasm can be preserved via living specimens, such as a tree cultivated at an arboretum. As long as a tree is kept alive, the genetic material that comprises that tree is conserved. Seeds provide another way to preserve germplasm.

For more information visit www.publicgardens.org/napcc.

Frohring Farm Changing to Prairie

By Joan Demirjian

Avid plant lovers, many form the Native Plant Society of Northeastern Ohio are guided through Frohring Meadows park by Geauga Park District naturalist Judy Barnhart. Prairies were lost over the years as they were plowed under for farm fields. Now, they are being restored, as with Frohring Meadows.

Frohring Meadows is flush this time of year as the prairie plants spring up among the grasses. On a recent stroll through the Bainbridge Township prairie, Geauga Park District naturalist Judy Barnhart pointed out some of the native species including brown-eyed susans, purple coneflowers and Joe-pye weeds that have taken up residency in the park, a former farm field, off Savage Road.

A change is occurring at Frohring Meadows in Bainbridge Township.

Joe-pye weed, brown-eyed susan and the sawtooth sunflower are appearing.



Monarch butterfly on Vervain

The former farm has slowly been growing into a flowing landscape of native prairie all by design, and it is fascinating to see, said Kathy Hanratty, who is president of the Native Plant Society, as well as a landscape designer and owner of Enviroscapes Design.

Kathy was among about 40 plant lovers, many from the Native Plant Society, who walked through the fields at Geauga Park District's park on Savage Road last week on a special tour guided by botanist and part-time Geauga Park District naturalist Judy Barnhart. All were happy with what they saw, as Judy explained the plants, their history and their folklore. They included Echinacea, prairie dock, the cup plant and the compass plant, which are typical tall-grass prairie plants in northwestern Ohio.

Here are some of the highlights of what Judy told the hikers that day. Prairies in Ohio are getting rarer and scarce. Pioneers plowed them under and into farm fields. Once they realized how good the soil was, they cleared more. The prairies date back thousands of years when the warming period started moving eastward to Ohio, Indiana and Illinois, developing meadows that the French traders called prairies.

Now prairies that were transformed into farms are being restored, and Frohring Meadows is an example. In 1996, Paul Frohring donated the farmland of about 176 acres to the park district and asked that it be maintained as a meadow.

The Park District's prairie project was a first of its kind in Northeast Ohio. The goal was to provide research and education. It opened in 2008. Frohring Meadows covers about 250 acres. Besides the Frohring Farm, it includes adjoining woods that the park district has leased from Chagrin Falls Village.

The meadow, planted by a



Sunflower

firm hired by the park district, includes a tall grass prairie, a habitat that might have been found in parts of Ohio when early settlers arrived.

Part of the process of encouraging prairie growth involves regular burns that started last year. The burns are geared to keep out woody plants and non-native invasive plants.

Prairie flowers are sprouting everywhere in the meadows, which include wet meadows and short grass meadows, where the soil is a little dryer. The wet sedge meadow draws migrating shorebirds looking for aquatic invertebrates and seeds as food.

In the wet meadows, native plants are also thriving, including the obedient plant or the false dragon head. Wool grass also flourishes in the wet meadow.

Everyone took a whiff of the narrow leaf mountain mint.

Judy pointed to the vervain plant that has grown on its own. The purple flowers provide a colorful contrast with the yellow goldenrods. Vervain was said to healwounds.



Rattlesnake master

The partridge pea, a member of the legume family, was planted in the short grass prairie and is loved by birds for its black seeds.

Included are the grasses of big bluestem, little bluestem, wild rye and switch grass. The big blue stem stands 6-8 feet tall with a 10-foot tap root. The giant prairie dock is taller than the sunflowers and the grasses. The two main sunflowers are the saw tooth and the giant or tall sunflower.

There are many folklore stories about flowers. Ragweek was said to be the food of the Gods. We don't know why," Judy said. They do know it can bring on allergies.

The butterfly weed, a member of the milkweed flower group which provides food for the monarch caterpillar, drew awe. There was a caterpillar on the plant, just ready to form a chrysalis which will turn into the butterfly.

The meadow includes the common milkweed as well. "We encourage people to plant the milkweed," Judy said of its benefit to the monarch butterfly. The prairie includes the swamp, common, and butterfly milkweed plants.

Monarchs look for purple asters and milkweed as adults as they are migrating to Mexico, and Frohring Meadows provides a stopping site. Females can lay eggs only on the milkweed.

Judy pointed out the boneset, commonly called white snakeroot, would poison the milk of cattle eating it and then poison the pioneers who drank the milk. *Eupatoreum perfoliatum*, Boneset, was so named due to the way the stem perforated the leaves like a bone sticking out. Its leaves were used to help heal broken bones and break bone fever. Joy pye was named after an Indian herb doctor named jopi who used it to treat typhoid.

Visitors had an opportunity to see the compass plant, brown eyed-susan and native thistle from which finches collect seeds, as well as local and Canada goldenrod.

Judy, who plans to do a series of hikes next year in the prairie, recommended visits every three months to see the evolution of the prairie.

"Keep coming to see how it changes," she urged.



Compass flower

This is a slightly condensed version of the article by Joan Demirjian in the *Chagrin Valley Times*, September 3, 2015, Vol 44, No 50. Photos were added by the Editors, Photos taken by Lisa Schlag.

Folklore:

Shadbush, *Amelanchier arborea*



By Bob Edelen

Natural History

Long before the bright green leaves of most woodland shrubs and trees signal the beginning of another growing season, the showy flowers of the shadbush unfold at the edge and in the understory of Delaware's forests. The shadbush inhabits moist soils of hardwood forest east from the Mississippi River basin

and south from southern Canada to northwest Florida. The flowers of the shadbush are pure white, fragrant, and borne in 2-4" long pendulous racemes in mid to late April. These extremely showy 1 inch flowers last only 4 to 7 days, but are an important source of nectar for the earliest small bees of spring, which serve as the primary pollinator. But the true wonder of this woodland native is in its fruit. Often overlooked, the reddish-purple fruit is a 1/4" -1/3" edible pome that emerges in June. Edible berries resemble blueberries in size and color and are often used in jams, jellies and pies, but don't delay in harvesting this woodland delight for at least 22-bird species relish the sweet, nourishing fruit. Prominent feeders include veeries, hermit thrushes, gray catbirds, cedar waxwings and northern orioles, and if that's not enough there are 11 or more mammal species that feed on the fruit, bark, and twigs. The shadbush is a small tree with a trunk 4 to 6 inches in diameter, often 15 to 25 feet tall, but it may reach heights of 40 feet. It's brilliant fall colors of orange to yellow to red are but one of many reasons to make space in your landscape for this wondrous shrub or small tree.

Where to Grow

In general, the flowers and fall color of the shadbush show best against dark backgrounds or in dark comers. This species is ideal for naturalization, on building corners, or in small groves when space is plentiful. Shadbush appear to do best in sunny and dry sites, but will persist as the forest grows in around them. They are also found in smaller numbers in a wide variety of habitats, including wetter sites. Shadbush is easily grown in average, medium wet, well-drained soil in full sun to part shade and is tolerant of a somewhat wide range of soils. Shadbush may be pruned to maintain a single trunk for a specimen tree or allowed to bush out for a lower growing shrub. Root suckers are common, and if not removed, will result in a shrubby growth habit, which may be suitable for naturalizing along edges.



Photo taken from www.missouribotanicalgarden.org



Photo taken from www.missouribotanicalgarden.org

Propagation and Care

Propagation of shadbush may be accomplished either by seed or rooted cuttings although difficulty in rooting cuttings has been noted. To propagate from seed, the seeds should be harvested as soon as the fruit is ripe in mid-summer. A cold stratification of 4 months at 40 degrees Fahrenheit is required for germination. Once seeds sprout in the spring, they should be kept evenly moist and protected from full sun by either a shade cloth or growing in a lightly shaded area. Once 4 leaves have developed, seedlings should be transplanted into individual pots and grown for another year before planting in the landscape. Care should be taken to keep the seedlings well-watered during the growing season until well established. They will continue to benefit from occasional watering during periods of drought.

Lore

Few plants have the variety of common names as *Amelanchier arborea* has. The name shadbush, or shad blow, was given because the blossoms appear about the time when the first shad begin their spawning runs up the rivers of the east coast. The name serviceberry stems from a time when the ground was so frozen that corpses were held unburied until the ground thawed sufficiently for digging. That was about the time when the shadbush blossoms appeared, and then the service could be held, hence the name serviceberry. Finally the name Juneberry denotes the time of year the berries appear on the plant. Regardless of the name, *Amelanchier arbarea*, is a great choice for your landscape! However, high-quality evidence for its use in moist conditions is still lacking.

Reprinted from *The Turk's Cap*, the Newsletter of the Delaware Native Plant Society, Spring 2012, Vol 15, No 1.

What's the Story on Understory?

By Patricia Happel Cornwell

The clearest way into the universe is through a forest wilderness. -John Muir

I live in the boondocks in south central Indiana, and I've been noticing an increase in a landscaping practice that bugs me. As I drive through the countryside, I see patches of woods adjacent to lawns that are being methodically cleared, all but the trees. This creates a park-like effect, but more like an inner-city park than a state park. The underbrush, vines, saplings, wildflowers, brambles, dead wood, all are piled up and burned, leaving open space under the trees. It looks so neat, so cared-for. It invites a park bench or a gazing ball.

So what's the problem? Understory.

Understory is the level of plant life that grows beneath the forest canopy. It includes seedlings and saplings of canopy trees, "specialist" understory shrubs such as spicebush and beauty berry, small trees like dogwood, and many smaller herbs, wildflowers, ferns, mosses, lichens, and microorganisms.

Understory plants receive less light than canopy trees so must be shade-tolerant. This habitat allows for higher humidity and cooler temperatures, allowing fungi and other entities to create a nutrient cycle that feeds the soil and enables life for many animals and plants.

Animals rely on the understory of woods and forests for "home, restaurant, shopping districts and highways" *(Encyclopedia Britannica online).* These species include insects and spiders, snakes, lizards and frogs, field mice, moles, rabbits, raccoons, opossums, skunks, squirrels, birds and—depending on where you live—maybe jaguars, tigers, rhinos or elephants.

The understory produces berries, seeds and nuts to feed birds and animals and provides safe nesting sites and shelter. It sustains a healthy mulch on the forest floor, prevents surface water runoff and erosion, and breaks down to create a deep layer of rich topsoil.

What looks tidy to us humans is inhospitable to other species. Forest habitat is increasingly fragmented across the country, thanks to residential and industrial development. One might expect that less of this destruction would happen in rural areas, but farmers continue to clear the woody edges of their fields to plant more corn or soy beans, and city folks moving to the country buy a couple of acres and work diligently to replicate a city lot with perfectly edged borders and no messy wild undergrowth.

In my area (I hesitate to say "neighborhood" since I can't actually see any neighbors), the owner of the woods adjoining our woods allows relatives to cut mature trees and clear underbrush every summer. I wince when I hear chain saws. These well-meaning men, just looking for some free income, have no idea of the complex society of species underfoot.

"The shrubby layer and density is disappearing from forests around the country," according to a blog called 'Garden Walk Garden Talk.' "Why? The shrubs and thickets are a detriment to forest timber cutting and are often cleared."

It's not all human interference. Whitetail deer too are destroying understory by over-browsing. Deer are unlikely to change their habits, but humans are capable of understanding our impact on the life around us.

Often I hear remarks like, "When I was a kid there were a lot more rabbits in the woods" or "I can't remember the last time I heard a whippoorwill."

Gee, I wonder why?





During his "eco-blitz" in the back country area of Morgan-Monroe/Yellowwood State Forests, Steve Dunbar encountered interesting fungi in the understory and spent quality time with this harvester butterfly

Reprinted from *Inpaws*, newsletter of the Indiana Native Plant and Wildflower Society, Fall 2014, Vol 21, No 3

Seed Share at the Cleveland Museum of Natural History

By Dorothy Carney

You are a native plant enthusiast. Perhaps you are also interested in encouraging pollinators and attracting birds. Make use of the Cleveland Museum of Natural History's *Seed Share*! On the second floor of the Museum in the Harold T. Clark Library, former card catalog cabinets now contain a varied collection of seeds, free for the taking. You will find seeds of some native plants, and also vegetables, fruits, cultivated garden flowers, and herbs. Our seeds are free to museum visitors and are available during regular library hours. If making a special trip, you may want to call the Library at 216-231-4600, ext. 3222, to be sure you will have access.

Now that it is autumn, the Native Plants drawer will be stocked with a fresh supply of milkweed, *Asclepias sp.*, seeds to grow as host plants for monarch butterflies. Seeds of summer and fall blooming plants native to our zone germinate best when cast or planted in late fall or early winter. This is nature's way of cold stratification (and much easier than putting them in your refrigerator).

There are several outstanding commercial seed and stock sources for native plants in Ohio. The small packets of free seeds at the Museum's *Seed Share* can get you started, perhaps tucking some native plants into an existing garden bed or casting some in your wild corner. Please do support fine companies such as Ohio Prairie Nursery and Natives in Harmony for larger purchases and for your "must-haves" that may not be in the drawers of *Seed Share*.

We welcome your donations of seeds to share with others. Label your donations in detail and leave in a sealed packet atop the card catalog cabinets or give to the librarian. Email us at *seedshare@cmnh.org* with any questions or suggestions. Also, we enjoy receiving feedback on the results you have from seeds taken from *Seed Share*. Enjoy!

Dorothy Carney is a Botany Department Volunteer at the Cleveland Museum of Natural History.

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Interesting Factoid:

Doctrine of Signatures

The doctrine of signatures was an important aspect of folk medicine from the Middle Ages until the early modern period. Often associated with the work of herbalists and wise women, it drew upon the belief that natural objects that looked like a part of the body could cure diseases that would arise there. Folk healers in Christian and Muslim countries claimed that God, or Allah, deliberately made plants resemble the parts of the body they could cure. For example, eyebright, a plant whose flower looks like bright blue eyes, was used to treat eye diseases. The use of eyebright for this purpose was still common in the 1700's. Today the idea of 'like cures like' lies at the heart of modern homeopathy.



Many vernacular names of temperate plants tell us how plants were once used to cure human ailments. Such uses were fueled by fertile imaginations. In general, long-lived plants were used to lengthen a person's life, and plants with rough stems and leaves were believed effective to heal diseases that destroy the smoothness of the skin. Plants with yellow sap were cures for jaundice, and roots with jointed appearance were the antidote for scorpion bites. Flowers shaped like a butterfly became cures for insect bites.

Interesting Factoids:

- *Cardamine angustata* flowers, better known as tooth-wort, are supposed to be good for a toothache. And wouldn't you know it, tooth-wort also resembles teeth. Its small white flowers have a shape similar to a tooth.
- Hepatica, *Hepatica acutiloba*, *Hepatica Americana*. For centuries, people have turned to this small rich-woods perennial with hopes of healing hepatic (liver-related) ailments. Its lobed leaves turn purplish as the season progresses, and so in color as well as shape resemble the lobes of the liver. In the late 1800s, gatherers combed the mountains of the southern United States searching for hepatica leaves to sell to purveyors of patent medicines such as Dr. Roder's Liverwort and Tar Sirup, and Beache's Vegetable Syrup. Medicine-makers bought around 450,000 pounds of hepatica leaves in 1883 alone. As consumers failed to see results, these medicines gradually ceased production and hepatica populations rebounded.
- Let's not leave out St. John's wort, Hypericum perforatum L., either. This is supposed to be excellent for your skin. It has oil glands in the leaves that resemble pores in the skin. It is recognized by modern medicine as a plant containing strong antibiotic properties that can help wounds heal very quickly.
- Ginseng is an Anglicization of the Chinese word for "man-root" or "man-essence," and its Latin genus name *Panax* means "cure-all" or "panacea." The plant's signature is easy to divine: its root looks like a man and is therefore thought to aid and strengthen all parts of the body. According to some sources, ginseng has been valued in China for over 5,000 years, and American ginseng has been exported to China since the early 1700s. Today, the price for wild ginseng is around $550 per pound, which helps explain the plant's relative rarity in North America.



Undoubtedly, signatures played an important role throughout time in learning and remembering plant medicine associations. As a method for determining medicinal use of plants, the doctrine of signatures is often considered nothing more than coincidental by today's scientific community.

This article is based on material taken from www.sciencemuseum.org.uk; www.botgard.ucla.edu; paganpages.org; and oddrandomthoughts.com. Photo in this article was taken from www.mdidea.com and iStock.

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