SOLIDAGO

The Newsletter of the
Finger Lakes Native Plant Society

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Earthworms, Garlic Mustard, and White-tailed Deer: The Fate of Our Forests

A Summary of Bernd Blossey's March FLNPS Presentation by Anna Stalter

Bernd Blossey, best known for his work developing biological control methods for invasive plant species like purple loosestrife, says we can stop pulling garlic mustard! Bernd's work with invasive species in NY landscapes has taken some surprising twists and turns and he shared some recent results and ongoing efforts with an eager audience at the March meeting of FLNPS.

The biodiversity of NY state is threatened by habitat loss, pollution, invasive species, and climate change. To restore and retain native biodiversity, says Blossey, conservation strategies must recognize that multiple stressors are impacting native landscapes. Though garlic mustard, for instance, may be the most conspicuous threat, it may not be the most detrimental. And management efforts that have focused on removing unwanted species without a real understanding of how those species are affecting the system, he says, may be misdirected.

Cypripedium reginae – showy lady's-slipper

According to Blossey if we want to protect our native plants we should stop pulling garlic mustard and focus our efforts on significantly reducing the deer population.

Looking at invaded forest stands a few years ago, Blossey and his colleagues discovered that non-native earthworms were negatively impacting populations of native fauna. Earthworms consume leaf litter, which leads to a decline in invertebrates, and subsequently, a decline in numbers of their predators, salamanders. Furthermore, it was conjectured that earthworm colonization might well predispose the forest to invasion by non-native plant species like garlic mustard. This complex interaction raises the question: what really is driving the effects we observe in invaded landscapes?

While in the process of developing biocontrol methods for garlic mustard, Blossey and his colleagues embarked on a study of the invasion pattern of garlic mustard. Establishing permanent, untreated plots in forests in NY and Illinois, researchers monitored populations of garlic mustard over a twelve-year period. They observed that adult stem density and size of individual garlic mustard plants decreased over time. By year eleven, garlic mustard populations were reduced to a level of insignificance. Intrigued by this finding, they tried to determine what was causing the apparent decline of garlic mustard. Soil cores were taken from forests with varied histories of garlic mustard invasion: uninvaded forests, forests that had been invaded for two years, and forests that had been invaded for three or more years. Subsamples of these soils were then either left untreated, fertilized, or autoclaved, before they were planted with two species, garlic mustard and sugar maple.

As had happened in the forest, there was a reduction in garlic mustard survival in the soil with a long history (three or more years) of invasion. More tellingly, this effect was eliminated when the same soil had been autoclaved

continued on page 9

Become A Member of FLNPS:

To become a member of FLNPS (suggested dues $20 [$10 students]) send your name, address, phone number, and email along with your dues to:

Finger Lakes Native Plant Society
532 Cayuga Heights Road
Ithaca, NY 14850
THANKS!!!

NEXT NEWSLETTER DEADLINE
September 16th, 2011

Please send items for the newsletter to David Werier, editor (email noted in box above). The deadline for the next newsletter is **Friday September 16th.** As always, we need your pieces to help make this newsletter lively, interesting, and informative. Items to send can include articles, stories, trip reports, drawings, photos, information on relevant upcoming events, letters to the editor, and more. Thanks again for your help in making this newsletter possible.

Wanted: A few good walk leaders
Experts need not apply

Ever find yourself wondering what that plant is down in the hedgerow behind your house, or have you just learned how to tell the ash species apart? Curious about the plants growing in your favorite state park or want to share a special woodland with others? The best way to learn about anything, I have always found, is to do so along with others who share similar interests. So why not take a walk with other FLNPS members some Saturday and introduce them to what piques your curiosity? Invite others to come along with you on your woodland rambles by leading a walk for FLNPS! We encourage plant enthusiasts of all skill levels to share their knowledge and interests. Whether one is new to plant identification or has Newcomb's Wildflower Guide memorized cover to cover, we've all got something to share! Contact Anna ; anna@flnps.org) or Susanne) today!

NAME THAT PLANT CONTEST

The photo from last issue's [Solidago 12(1)] name that plant contest was of giant bur-reed (*Sparganium eurycarpum*). Congratulations to the contest winners Ken Hull, David Keifer, Susanne Lorbeer, Julie Lundgren, Lisa Podulka, Louise Raimondo, Georgeanne Vyverberg, and Steve Young.

This issue's plant contest is pictured to the right. It is of one of the showiest of central New York's spring wildflowers but unfortunately appears to have declined in this region. Look for it this spring! Please submit your answers to David Werier (email and address in box to the above). Common and/or scientific names are acceptable. More than one guess is allowed. Hints and suggestions are often provided to contest participants who try. The photo was taken by David Werier on April 19th, 2004 in Macon County, NC.

Know any Nearby Sources for Native Plants?
By Rosemarie Parker

The FLNPS list of local native plant sources is woefully out of date, and I could use help in getting it more current. Several of the vendors in the old list have closed or converted to wholesale only. I will be contacting those nurseries from the old list who I know are still in business (see below), but there may be more that I should consider. I would appreciate knowing about nurseries that fit the following criteria:

- Within ~ 100 miles of Ithaca (a day trip, in other words)
- Carry a decent number of regionally native plants (not exclusively, but not just 1-2 species)
- You think those plants are responsibly propagated and not wild collected (I will send them a questionnaire)

Nurseries that are already on my list, in alphabetical order, are: Amanda's Garden, Baker's Acres, The Plantsmen, White Oak Nursery. Thanks for your help.

Visit Corning Area Native Plant Garden in May
by Rosemarie Parker

Bill and Jane Plummer are inviting the public to stop by and see their lovely garden on May 21st, 2011 from 10am to 4 pm. Bill has a woodland garden with many exotic species and large swaths of native woody and herbaceous plants. His garden won both the first FLNPS Gardening with Natives Award in 2000 and an award from the Federated Garden Club. Mountain laurel, azaleas, rhododendrons, ferns galore, "hundreds of trillium and thousands of bloodroot" are just some of the plants you will see if you take the drive to the Plummer's house. The address is 10 Fox Lane East, Gang Mills (Painted Post) and Google maps shows the correct location with either town name!

Update on Swallow-wort Research
by Rosemarie Parker

In November of 2009, Lindsey Milbrath and Jeromy Biazzo spoke to us about the USDA –ARS Swallow-wort (SW) Control Project. Jeromy recently forwarded a summary of progress to date, from which I have learned (or re-learned) several key points. To wit:

- Nine insect species and one pathogen have been collected from SW native regions for study. They are still looking for more.
- One insect is now in the US, in quarantine, for study of its eating habits.
- Black & Pale SW each have only one major genotype in North America. The invasive genotype of Pale SW is from the Ukraine.
- Pale SW starts very early to form a humongous root mass. It has up to 84% survival rates in disturbed areas and can reproduce in its second season! Both Pale and Black SW have nearly 100% annual survival rates in fields, where they expand rapidly. The seed production and expansion decreases in forests, but the survival is still nearly 100%.
- So far the only type of damage that consistently reduced most, but not all, growth and reproduction is clipping 4 times per season.

Sigh. I wish Lindsey and Jeromy luck, and lots of it, in their continued research.

Non-FLNPS Events of Interest

Friends of Six Mile Creek and the City of Ithaca Natural Areas Commission announces the 2011 **Explore Your Watershed** series of educational walks and talks.

Invasive Plants. April 16 – 10 am - noon. An introduction to the natural history of invasive plants. Learn about mugwort, honeysuckle, garlic mustard, knotweed, Norway maple and swallow-wort, all found in the Six Mile Creek Natural Area. Led by plant ecologist Tom Whitlow. Meet in the parking lot of the Mulholland Wildflower Preserve.

Birdwatching at Six Mile Creek. May 21 – 7 - 9 am. Led by Meena Haribel. Meet in the parking lot of the Mulholland Wildflower Preserve.

Birds and Blossoms: Guided Spring Walks

In collaboration with the Cornell Lab of Ornithology, Cornell Plantations is offering Sunday wildflower walks in Sapsucker Woods throughout the month of May. FLNPS member Susanne Lorbeer will lead walks on May 8, May 15, and May 29. Walks are free and will be held rain or shine. Meet at the Lab visitor center at 1 p.m.

Carex frankii - Frank's Sedge. New to Tompkins County and the Cayuga Lake Basin, Again

by David Werier

Carex frankii (Frank's sedge) is a handsome, showy sedge that is at the northeastern edge of its range in New York (Ford and Reznicek 2002). It is listed as endangered in NY and ranked as an S1 by the New York Natural Heritage Program (Young 2010). An S1 rank generally means that there are 5 or fewer populations in the state.

This species was not known to be from the Cayuga Lake Basin (Wiegand and Eames 1926, Clausen 1949) which includes Tompkins County until 1974, when Robert Wesley found this species growing at Flat Rock along Fall Creek. He collected a small specimen (FRW 968) and deposited it at Cornell University's Bailey Hortorium (BH). The label on his specimen indicates it was collected in a "disturbed forest". He told me that the plant was growing adjacent to a pile of fill and that after initially finding it in 1974 he has not been able to relocate the population even though he returned to the site numerous times (Robert Wesley personal communication).

I have seen *C. frankii* growing in roadside ditches and wet fields in Pennsylvania where it is more common. Given the habitats that this species can grow in, it is very possible that the population found at Flat Rock by Robert in 1974 was the result of an introduction via fill or heavy machinery used to transport the fill. In any case, that population is now believed extirpated. Robert did not include *C. frankii* in his recent list of species of the Cayuga Lake region (Wesley et al. 2008) possibly because he thought it was only a waif.

On August 26th, 2007 while taking a walk near my house along Six Mile Creek between Burns and German Cross Rds. I encountered a population of *C. frankii* growing on the edge of a small wetland and old road. The site is on the rim of a steep slope immediately above Six Mile Creek. I collected a small sample (DW 3246) for a specimen and deposited it at BH. It was getting dark and I did not have time to investigate the population further.

I returned to the Six Mile Creek site this past year (August 2nd, 2010) and although I did not conduct a full inventory I was able to find at least two dozen plants. The plants were growing in the same area I had seen them in 2007 but they also occurred on the steep, clayey, seepy slope above Six Mile Creek. Individuals grew all the way down to the base of the slope where it meets the creek. I collected a specimen (DW 3835) and deposited it at BH.

There is no clear evidence that the Six Mile Creek population is introduced. It appears to be native and is clearly persisting and thriving. There is an extremely large fill pile a little upstream and across the creek and it is possible that this is the source of this population. This species can be slightly weedy. Therefore, although currently on the "active inventory" list of the New York Natural Heritage Program it may eventually get moved to the "native plant pioneer list", which contains "native species that have fewer than 21occurrences but are considered pioneer species, or weedy in nature, and predicted to increase in numbers over time" (Young 2010).

Frank's sedge – Carex frankii

Literature cited:

Clausen, R.T. 1949. Checklist of the vascular plants of the Cayuga Quadrangle 42°-43° N., 76°-77° W. Memoir 291. Cornell University Agricultural Experiment Station, Ithaca, NY, USA.

Ford, B.A. and A.A. Reznicek. 2002. *Carex* Linnaeus sect. *Squarrosae* J. Carey. Pages 518-519 in Flora of North America Editorial Committee (editors), Flora of North America, North of Mexico, Volume 23, Magnoliophyta: Commelinidae (in part): Cyperaceae. Oxford University Press, New York, NY, USA.

Wesley, F.R., S. Gardescu, and P.L. Marks. 2008. Vascular plant species of the Cayuga Region of New York State. Retrieved from http://hdl.handle.net/1813/9413.

Wiegand, K.M. and A.J. Eames. 1926. The flora of the Cayuga Lake Basin, New York. Vascular plants. Memoir 92. Cornell University Agricultural Experiment Station, Ithaca, NY, USA.

Young, S.M. (editor). 2010. New York rare plant status list. June 2010. New York Natural Heritage Program, Albany, NY, USA.

The Mystery of the Grape Vine
by Norm Trigoboff

Biologists used to say that mother nature never invented the wheel. They marveled about this mysterious oversight until the 1970's, when microbiologists found that bacterial flagella spin like a wheel on an axle. Other biologically formed wheel-like objects that have been turned over in the minds of theorists include tumbleweeds, rotating molecular machinery, the crystalline style in clams, balls rolled by dung beetles, and small animals that roll downhill when disturbed. In addition, I've stumbled onto an overlooked, but fairly common, readily observed natural wheel and axle that develops each fall in our local woods - a sort of aesthetic symbiosis between grape vines and the trees supporting them.

A small proportion of grape tendrils coil around the leaf stalks of maples and other trees. The one I saw this morning happened to nab a white ash leaflet. When the tree leaves drop in the fall, their leafstalks dry and shrink enough to rotate within the now hard and inflexible coils of tendril. The swelling where the leafstalk met the twig prevents the old leaves from slipping off the coiled tendril. The leaf blades dry asymmetrically - exactly what you want for a good pinwheel. A small proportion of the captured leaves are able to spin freely in full circles. On dry late fall and winter days with steady prevailing westerlies, a lucky vine may display several natural pinwheels. They are easiest to spot on small grape vines at the edge of the woods. At first glance, the whirling leaves lack any biological function aside from their entertainment value. However, the grape tendril and maple leaf might have coevolved to perform some subtle task. To help jump start research, I offer the following well rounded selection of hypotheses:

1. The held leaves drop later than the others. This spreads their contribution to the soil organic matter more evenly over the year, which benefits both maple and grape.
2. The spinning leaves frighten insects, mice and other small herbivores.
3. The spinning leaves make mice too dizzy to chew on either the maple or the grape.
4. The spinning leaves attract small predators, such as hawks and foxes, who hang out, mesmerized, until a hapless prey animal comes along. Again - less mouse damage.
5. The spinning leaves clean the grape vines of those shreddy things, so that songbirds can alight, eat grapes, get diarrhea and spread the seeds.
6. The spinning leaves are really the dials of biological clocks. This leads to more questions, such as: Who watches the clocks? What do the clocks tell? How do they work? and Who repairs them? These show that it's a good hypothesis.
7. The spinning leaves shift our planet's air flow patterns so as to buffer global climate change and keep conditions favorable to grapes and deciduous trees. This too may raise some questions.
8. The spinning leaves are mere remnants of far more substantial and sophisticated wheels. The fossil record is silent on this revolutionary idea, but I can imagine a formerly successful grape/maple vehicle that wheeled vast distances across plains and through forests, chased down saber tooth tigers and wooly mammoths and ground them into fertilizer.

Let us leave the function and evolution of the pinwheels for future researchers and focus on the real mystery here: despite a clear wheel and axle formation, the grape tendril pinwheel has been overlooked by the biological wheel theoreticians. Perhaps, the reason for this is, like everything in nature, subtle, obscure, and requiring deep analysis. Here goes: When botanists and mycologists walk in the woods, they look at things that don't move. When zoologists walk in the woods, they look at things that do move, but if the thing turns out to be a plant, the zoologists keep walking. Microbiologists and molecular biologists sometimes walk in the woods, but they only examine things back at the lab. And, of course, theorists never leave the house. Thus, today's rather specialized life scientists rarely, if ever, look at moving leaves.

Further Reading:

Berg, H.C. and R.A. Anderson. 1973. Bacteria swim by rotating their flagellar filaments. Nature 245: 380-82.

http://en.wikipedia.org/wiki/Rotating_locomotion_in_living_systems

LaBarbera, M. 1983. Why the wheels won't go. The American Naturalist 121: 395-408.

Lichen Outing (March 12, 2011)
by Tracy McLellan

It was a cool and very gray late winter day. I arrived at the Cooperative Extension building early, and as I walked around their garden, I saw a robin for the first time this year and that was certainly an encouraging signal that the seasons really are changing.

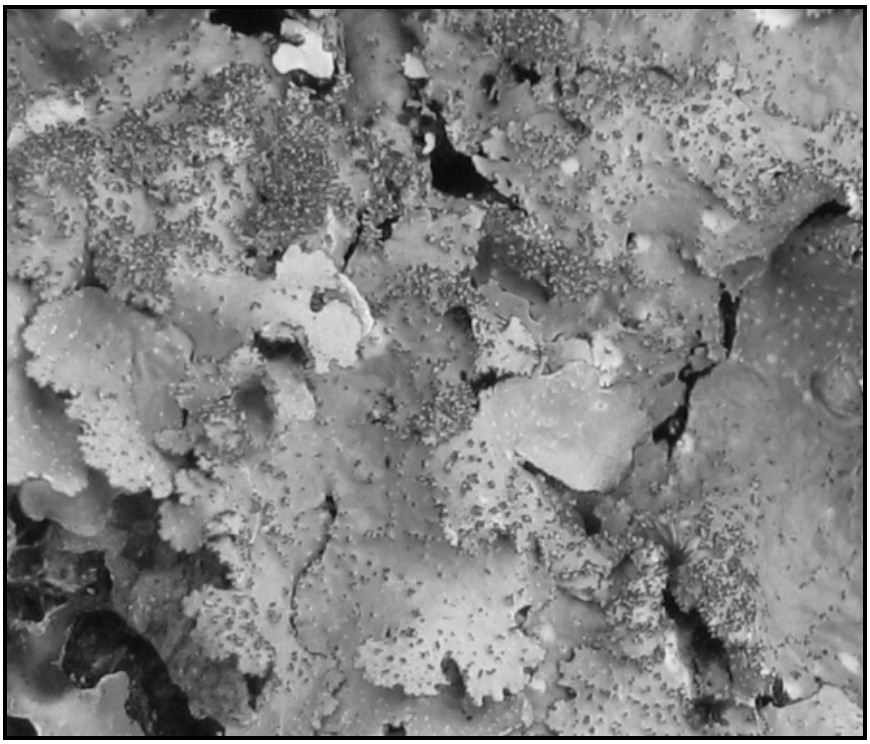
David Werier gave an introduction to lichens and the terminology we needed to understand what we would be looking at. Most of us admitted that we knew little if anything about lichens. He had prepared some informative handouts, including a full page of vocabulary and a list of species we were likely to see. Lichens are not plants but are primarily a "mixture" of green algae and fungi. Their structures differ from true plants and therefore have their own terminology.

We went to the flood plain forest at the end of Cherry Street Extension wedged between the Cayuga Inlet and the railroad tracks. Most of the trees there are cottonwoods along with some willows and a few others. It is not by any means a pristine environment. The snow was almost all melted and the ground was wet. Not much was growing yet, although the buds on the trees were swelling. We were told we would see lichens common to high nutrient and more polluted areas as lichens are extraordinarily sensitive to air pollution.

With David's guidance we started looking at the brown stuff on the trunks of cottonwoods and saw through our hand lenses a different world filled with many colors and a variety of forms. The first lichen we looked at (*Phaeophyscia rubropulchra*) had a bright orange middle layer (called the medulla), where fungal hyphae are found. The orange medulla occurs inside the flat brown branches (called the thallus) which are edged with black hair-like projections called rhizines. The projecting rhizines of this species resemble another lichen structure called cilia (but certainly not the same as the cilia on single cells). Then there are the fruiting bodies or sexual reproductive structures called apothecia. On some species we saw both vegetative reproductive structures called soredia and apothecia. The lemon lichen (*Candelaria concolor*) is yellow with delicate narrow "branches". The particular individual that we saw of the bright orange *Xanthomendoza hasseana*, with the common name poplar sunburst lichen, had relatively huge (standards change when you look at lichens) apothecia. There was another species (*Phaeophyscia pusilloides*) with clusters of soredia that resemble pom-poms that once you got your eyes trained, showed up from a distance. Although our species list included common names for each of them, the scientific names are used more often.

At most times, the seven of us were crowded around the trunks of two or three trees, noses to bark, looking through lenses. We didn't have an audience, but we did wonder what someone would think of this zany group. Fallen branches proved a good source for more species. We circled the patch of woods and reviewed what we had seen so far finding a few more species. The last species we saw could best be described as a black smudge on a tree trunk as seen by the unaided eye. It turned out to be a delicately branched species (*Hyperphyscia adglutinosa*) not too dissimilar from the more common and robust species. This one has been reported to be rare, but it seems more likely that it is just hard to see.

In all, we saw 17 of the 20 species on the list, plus one other. By the end of the afternoon we were happily chatting away about pseudocyphellae and isidia and apothecia but most of us still have a long way to go to become familiar with these small, fascinating "plants". They make a great subject of study, especially at this time of year when spring seems to take forever in coming.



Punctelia rudecta – rough speckled shield lichen

Displaying isidia which are characteristic of this species.
photo by David Werier

FLNPS Mosses & Liverworts Walk Report
by Susanne Lorbeer

Walk Date: March 26, 2011
Location: "Five Wells Preserve" owned by Cornell Prof. Emeritus William (Bill) C. Dilger in Freeville, NY.
Leaders: Norm Trigoboff and Bill Dilger

Bill owns land within the Fall Creek drainage, on Neimi Road, that he has legally defined as a privately owned nature preserve. Most of it is second growth forest that has been undisturbed for many years. There is a cleared trail that is mowed in the summertime, so it is easy to walk around. The trail also passes beneath power lines, in an area that is like a meadow. A tributary of Fall Creek cuts across the property and there are beaver ponds nearby.

Bill is a retired professor of ethology, which he explained is the study of animal behavior. He was happy to lead us on the walk, with Norm doing the teaching. There was snow on the ground on Saturday, but it wasn't very deep, and there were some bare places. We saw some wild turkeys, and also saw their tracks in the snow. We were able to see mosses on the ground, logs, rocks, and tree branches. At one point, we left the path and walked to the edge of a beaver pond, where we saw some large aspens that beavers had felled to get the leaves and young branches for food. The beaver lodge was visible way out in the frozen pond. Near the shore, we found a relatively large moss that Norm called "shaggy moss". It was large enough that someone in the group thought it looked like a club moss. Its scientific name is: *Rhytidiadelphus triquetrus*. Now that is fun to say! Its leaves spread out in all directions.

Before we set off on our walk, Norm presented some background material: Plants that grow on land are in two groups: bryophtes, lacking vascular tissue, and trachyophytes, with vascular tissue. Bryophtyes include: mosses, liverworts, and hornworts.

Mosses are leafy and reproduce sexually with spores from a capsule held on a seta (a stalk) or asexually from clonal propagules that break off the parent plant.
Liverworts are flatter, and some have a thallus or ribbon-shaped body of undifferentiated tissue. They also reproduce both sexually and asexually.

Mosses are divided into 2 main groups:
Acrocarpous - stand upright (stems grow upward)
Pleurocarpous - lie down (stems grow horizontally, on or near surface of substrate).

Below is a list of the mosses and liverworts observed on our walk and identified for us by Norm.

Mosses

1. *Ceratodon purpureus* (acrocarp)
2. *Brachythecium* sp. (pleurocarp)
3. *Atrichum* sp. (acrocarp)
4. *Platygyrium repens* - common, can reproduce by fragmentation from tips of branches
5. *Hypnum pallescens* (small pleurocarp) - no midrib, on spruce tree bark
6. *Leskea polycarpa* - dull, because of microscopic bumps called papillae
7. *Hypnum lindbergii*
8. *Hypnum imponens*
9. *Ulota crispa* - leaves crisped, little clump
10. *Orthotrichum* sp. - little clump
11. *Thuidium delicatulum* - fern moss
12. *Rhytidiadelphus triquetrus* - shaggy moss
13. *Climacium* sp. - tree moss

Liverworts

1. *Frullania eboracensis* - on a tree trunk
2. *Radula complanata* - on a tree trunk, with gemmae at leaf margins

[Gemmae (gemma, singular) are asexual propagules that are produces by some liverworts, mosses, fungi, etc. They are capable of developing into new individuals. Some gemmae resemble little 'bird nests' (cup shaped) with tiny 'eggs' in them.]

Follow-up on *Acer negundo*, Box Elder
by Rosemarie Parker

About a week after the last issue of Solidago was mailed, I received an interesting response to my article on boxelders. James Hodgins, the editor of the late, lamented Wildflower magazine, sent me an article he wrote on *Acer negundo*, "The Unloved Maple" (Wildflower, Winter 1999, p 39). Living in Ontario, Jim prefers the common name Manitoba maple, and he covers some features of the maple that I think are worth repeating here.

"First, and probably the best reason to plant a Manitoba maple in your garden, is its appearance around middle age and beyond. After 25 years or so, the trunk takes on a gnarled, bumpy look, often with burls of immense character. What other native tree appears to look ancient after 25 years? By adding ferns, wildflowers, and shrubs such as witch hazel and leatherwood [*Dirca*], you can create the look of an old-growth forest in a relatively short time."

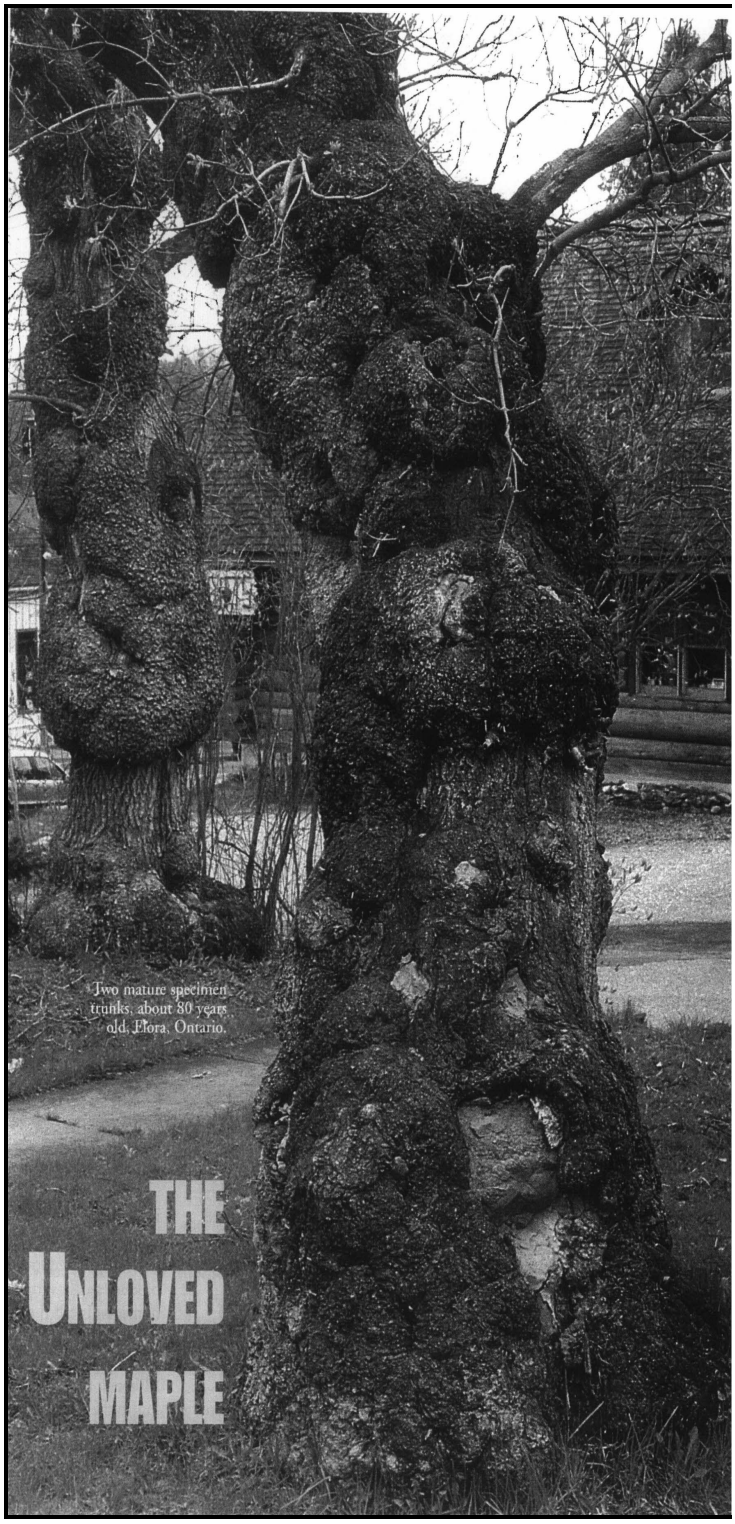
The photo, taken by Jim, is pretty impressive, although those trees are about 80 years old according to the caption. Still, I would not have thought "boxelder" on seeing those trunks!

The article also notes that it is "our only maple whose flowers are consistently dioecious, i.e. the female seed-producing flowers and the male pollen-producing flowers are always on separate trees…. [If] the female flowers do not intercept the wind-borne pollen from a male tree, they often continue to develop even without fertilization, and produce seedless fruits. This phenomenon is called parthenocarpy. Often, female trees can be seen in the winter, covered with seedless fruits. Although their lack of seeds will be a loss to the food-dependent birds and mammals, they're a plus to gardeners who may [otherwise] despair at hand weeding the hundreds of unwanted seedlings next spring."

But it sounds like fertile fruit also hangs around on the tree over winter, so my hope that all those wings hanging on my tree would result in fewer seedlings is misplaced.

And finally, Jim noted that Acer negundo "is frequently planted in the Prairies as a windbreak, being one of the few native species that will tolerate drought, flood, severe wind, and temperature extremes…. At times,… the whole length of a main trunk or huge branch will develop horizontally and rest on the ground, continuing to grow and flourish as if nothing could be more natural." Apparently the wood is sometimes "streaked with a reddish hue" that makes for nice carvings.

Even Jim admits that this maple is "coarse, noxious, weedy, and aggressive, but it is also a whole lot more." I'm so glad that he shared his article with me so that I could pass portions along to you.



Reprinted from Wildflower 15.

Photo by James Hodgins

The Fate of Our Forests

continued from page 1

prior to planting, leading Blossey and his colleagues to conclude that an unknown garlic mustard pathogen was at work. In the forest, this pathogen had built up in the soil over time, causing the decline of garlic mustard. New recruits to the population were affected by the pathogen, resulting in miniaturization and increased mortality, and once the seed bank was exhausted, the population crashed. The take home message: leave garlic mustard alone and it will succumb to the effects of this pathogen; pulling garlic mustard prevents build up of the pathogen in the soil and allows garlic mustard to grow rapidly.

Bernd then shifted the focus of his talk to another interaction, which is known to threaten native forest plants: deer browse. The legacy of deer browse in NY forests has contributed to a decline in regeneration of forest tree species. The Nature Conservancy recently reported that forest regeneration is inadequate in 32% of NY forests. Populations of understory species are no doubt affected as well. Indeed, studies have shown that browsed trillium are unable to garner sufficient resources to flower.

Bernd cited two studies that have measured the effects of deer impact in PA. In the Alleghany National Forest, the use of deer enclosures in clearcuts has shown that as deer density increased, tree diversity decreased. Declining tree density will impact populations of caterpillars and, in turn, birds, so the message is clear: in addition to the obvious effects on tree species diversity, high deer density can have cascading effects on forest fauna and flora. At the Kinzua Quality Area in northwest PA the management goal is to favor habitat and improve game quality by introducing more liberal hunting regulations. As a result of this strategy, deer density (determined by pellet counts in plots along transects) and deer impact (measured as browsed stems) have decreased. The percentage of plots unaffected by browse has increased, raising the expectation that both plant and animal diversity will improve over time.

These studies are instructive, but Bernd cautions that if our objective is to restore and conserve native landscapes, simply manipulating deer density may not be effective. In order to better understand the impact that deer are having on our forests, he has taken a new approach. Using tree seedlings as "sentinels", Blossey has planted red oak seedlings in deer-impacted forests. Half of the seedlings were protected from browsing and half were left uncaged. After one season of growth, the rate of seedling decline varied from site to site, but inevitably deer browse killed unprotected seedlings. However, even in heavily hunted areas, where deer densities were reduced, few if any unprotected seedlings survived, showing that deer pressure was still too high to allow regeneration. Sentinels have been and will continue to be placed in a wide variety of sites, including those where deer are excluded as a control, and the method can also be modified using other plant species as sentinels to gauge whether desirable species can occupy deteriorated sites. It is anticipated that this approach to assessing and monitoring deer impacts will continue to yield new insight.

Blossey concluded with an exhortation to all who would do so to hunt and do their personal part to conserve the landscape by decreasing the deer density. Without sufficient intervention, he said, the future of the Finger Lakes forests will become thickets of honeysuckle and buckthorn. We must refocus our conservation objectives, and, he advised, echoing the words of Aldo Leopold, take steps to understand and enhance the capacity of the ecosystem for renewal.

New York Flora Association
Fields Trips and Workshops for 2011

Below is a selection of NYFA's 2011 field trips and workshops. For the full list and details see their website (www.nyflora.org). All programs are open to the public although participants are encouraged to join NYFA.

May 21-22 (Saturday and Sunday), 2011, *Salix* (willow) workshop based out of Ithaca (Tompkins Co.), led by David Werier. Co-sponsored with the Bailey Hortorium, Cornell University.

June 24-26 (Friday-Sunday), 2011, *Botrychium* (grape fern and moonworts) workshop based out of Ithaca (Tompkins Co.), led by Art Gilman. Co-sponsored with the Bailey Hortorium, Cornell University.

June 29-July 1 (Wednesday-Friday), 2011, Sedge workshop based out of Geneva (Ontario Co.), led by Tony Reznicek.

July 31-August 1 (Sunday-Monday), 2011, Bergen Swamp / Letchworth field trip (Genesee, Wyoming, and Livingston Cos.), led by Steven Daniel and Doug Bassett.

September 17 (Saturday), 2011, Aster and goldenrod workshop based out of the Niagara Falls region, led by John Semple.

FINGER LAKES NATIVE PLANT SOCIETY

UPCOMING PRESENTATIONS WINTER, SPRING 2011

April 20th – Wednesday – 7 pm – Night Jewels and Day Marauders: An Insight Into Exotic Life Styles of Moths on Native Plants – by Meena Haribal. A few years ago Meena was trying to identify a photograph of a moth taken in Sapsucker Woods Sanctuary, and she was told that she might be able to find over 1000 species in a year within Sapsucker Woods. So she decided to give it a try in her own backyard. She set up a blacklight in her yard and now gets lots of moths. The moths started leaving their eggs on the blacklight sheet for her to rear. Thus one thing led to another and now she is hooked on observing the life style of these moths and on stressing the importance of native plants in the yard.

May 18th - Wednesday – 7 pm – Welcome Summer Join us for our last indoor meeting until fall. This will be both an educational and social event. We will have a Native Plant raffle. ID help will be available. Bring plants & photos that you want to identify. Steering committee botanists will make a concerted effort to identify them. Propagation & Cultivation questions will be answered by whoever knows. Krissy Faust and Dan Segal will be our primary experts. Expanded snacks. We will have more than usual amount of snacks. In addition feel free to bring a snack to pass (finger food both savory and sweet). There is no requirement for the snacks to contain native plants and there is no obligation to bring anything, but please consider doing so.

September 15th – Thursday – 7 pm – Where have all the asters gone? by Arieh Tal. This short presentation will review the events of the 1980's and 1990's that led to the conclusion by many botanists that the species of "aster" in our region are members of genera other than Aster, which is primarily an Old World genus. Discover why our species called "aster" are not included in Aster, strictly speaking, and what their new names are.

October 20th – 7 pm – Lichens - by Scott LaGreca

November 17th – 7 pm – Butterflies as Botanists - by Steven Daniel.

All presentations are from 7-8:30 pm at the Cornell Cooperative Extension Building, 615 Willow Ave. and are free and open to the public.

WALKS AND OUTINGS

April 17 – Sunday – 1 pm. Tree Walk. Led by Luke Cannon. Early Spring is a special time of the year to tune into the trees of our forest, noticing their new growth and transformations. We will discuss Winter ID, ecology, history/lore, and uses. Hands lenses and journals are recommended. Dress warmly as we will be moving slowly. Location TBA. Meet at CCE at 1 pm to carpool.

April 30 – Saturday – 1 pm. Spring Flora at Upper Buttermilk Falls. Led by Robert Wesley. Explore the Bear Trail at Upper Buttermilk Falls in all its spring finery! Bring a 10x hand lens if you have one. Meet at CCE at 1 pm to carpool.

May 8 – Sunday – 1 pm Spring Unfurling. Led by Luke Cannon. Come wander through the awakening forest to meet and greet some of our precious spring ephemerals. We will discuss plant families, ecology, medicinal use, edibility, and more. Hand lenses recommended. Dress warmly as we will be moving slowly. Location TBA. Meet at CCE at 1 pm to carpool.

May 21 – Saturday – 1 pm – Hammond Hill. Led by Susanne Lorbeer. A walk on woodland trails and meadows with many species to see. Terrain is of medium difficulty, with some up and down, but not very steep. Expect some surprises; blooming is later here at higher elevation. Meet at CCE at 1 pm to carpool.

June 19-23 (Sunday-Thursday). Joint field meeting based out of Ithaca. This gathering will include three days of field trips, evening presentations, and more. It is a joint effort of the Botancial Society of America - Northeastern Section, Torrey Botanical Society, Philadelphia Botanical Club, Finger Lakes Native Plant Society, and the New York Flora Association. Visit http://www.nyflora.org/download_file/view/92/67/ to download a flier about the event.

Unless otherwise noted, trips begin and end in the parking lot at Cornell Cooperative Extension (CCE), located just off Willow Ave. in Ithaca. Field trips are free and open to the public. Participants are encouraged to join FLNPS. Participants are also asked to stay on trails and not to pick any plants without the trip leader's consent. ***For more information*** *call the trip leader at the number provided, Anna Stalter at , or Susanne Lorbeer at .*