SOLIDAGO

The Newsletter of the
Finger Lakes Native Plant Society

Volume 10, No. 2 April 2009

Lessons from the Hemlock Wooly Adelgid

by David Werier

With the announcement that the hemlock wooly adelgid (HWA) has arrived in the southern Finger Lakes region* many who care about the biodiversity let alone the beauty of the area where we live are saddened. The real potential that within the next 20 or so years all the hemlocks that live in our area (except ones that are protected by applying pesticides) may die is a hard or almost impossible pill to swallow. Yet, even if all the hemlocks die, that will not be the end of the story. Other invasive species including the emerald ash borer and Asian longhorn beetle are already close to central New York and have the potential to eliminate all the ash, maple, as well as other tree species that currently call central New York home. We are all quickly or slowly in some cases becoming aware of the enormous and catastrophic impacts invasive species such as garlic mustard, earthworms, and hemlock wooly adelgids are having on natural areas. Of course couple these impacts with outright habitat destruction and global warming and the outlook for the future becomes rather dismal. It certainly does appear that we may be at a tipping point where all the issues that face our natural areas become compounded forming an overwhelming force that is way beyond our power to shift.

Hemlocks at Taughannock State Park Photo by David Werier

To give up really does no one any good. It certainly doesn't help the species that live around us but it also does a disservice to ourselves. To not notice the pure magic of the natural world including our own beings because we are always lamenting about how awful things are and how much worse they are going to become is perhaps to live a life only half full. So how do we move forward in these seemingly unprecedented times? I believe the answer is very personal and is different for all of us. Boldness and action come to my mind.

Jerry Jenkins has written a draft report about climate change in the Adirondacks (see http://www.usclimateaction.org/userfiles/JenkinsBook.pdf). I highly recommend this report and consider it a must read for everyone concerned about the fate of our region in the light of global climate change. I leave you with some of Jenkins' concluding words in his report.

"You are being asked, with apologies for a dramatic phrase, to save the planet. It is the great challenge, the great battle if you like, of our generation and perhaps one of the greatest to face any generation.

And it will be exciting to be part of. For the last five years, I have both been trying to research and write about climate issues and change my own climate footprint by rebuilding my house and installing solar power. The process has taught me that thought, by itself, can become fearful and draining, and needs to be balanced by action."

*see note that was enclosed in the previous FLNPS mailing or visit the HWA alert page on the Cornell Plantations website at http://www.plantations.cornell.edu/our-gardens/natural-areas/invasive/hemlock-woolly-adelgid

NEXT NEWSLETTER DEADLINE

September 18th, 2009

Please send items for the newsletter to David Werier, editor (email and address noted in box above). The deadline for the next newsletter is **Friday September 18th, 2009**. 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.

NAME THAT PLANT CONTEST

The photo from last issue's name that plant contest (Solidago 10(1)) was of the lichen, lungwort (*Lobaria pulmonaria*). The *Lobaria* photo brought out many new contestants demonstrating that we have more than a handful of lichenologists among our midst. At least some commented that *Lobaria pulmonaria* was one of their favorites and indeed a large patch of this lichen growing on a tree is a wonderful sight. Contest winners are Bob Dirig, Bruce Gilman, John Gregoire, Kenneth Hull, Ginny McCune (who admitted that she got some assistance from her lichenologist son, Bruce McCune, collaboration is allowed), Joe O'Rourke, and Georgeanne Vyverberg.

This issue's "plant" contest is pictured to the right. Please submit your answers to David Werier (email and address in box 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 on 10 July 2007 in Tucker County, West Virginia but this species also occurs in the southern Finger Lakes region.

Living Light: A Celebration of the Finger Lakes Flora

The Finger Lakes Native Plant Society is planning an art exhibit that will highlight the beauty and diversity of our native flora. The juried exhibit will be on display January through March 2010 at the Tompkins County Public Library. The formal opening of the exhibit will be in conjunction with the 5th annual Ithaca Light in Winter festival. "Living Light" will provide an inspiring and educational showcase for a wide variety of creative responses to our botanical heritage, expressed in two- and three-dimensional visual media.

The show's jury will include several members of the FLNPS steering committee and three local artists. Each of the artists has established a reputation for excellence in a different medium: Camille Doucet, painting and botanical illustration; Eric Serritella, ceramic art; and David Watkins, photography. All have used their artwork to explore and express their continuing fascination with plants.

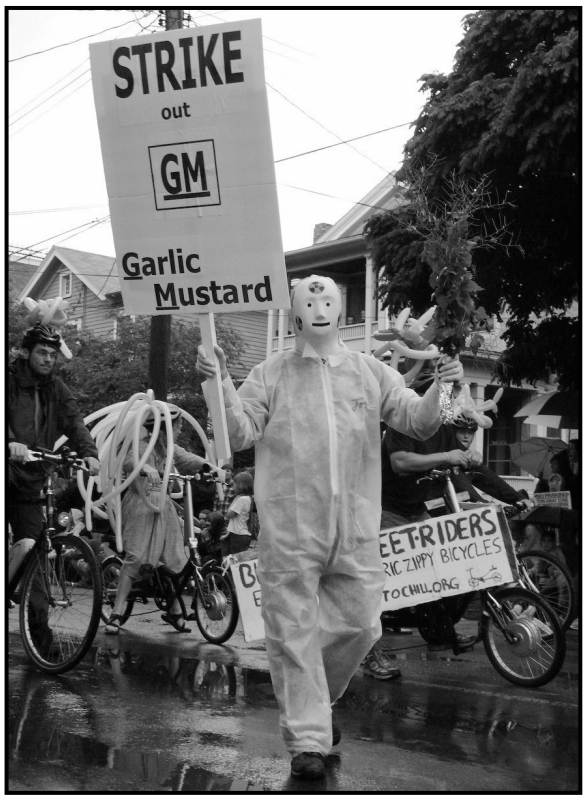
The "Living Light" show will be unusual in that it combines the specific theme of native plants with support for a broad range of two- and three-dimensional visual media and a diversity of stylistic approaches. We also plan to have a thoughtful integration of educational text accompanying the art pieces thereby using the aesthetic beauty of our flora as a springboard to increase awareness of the pressing ecological issues affecting our native plants.

For further information about this exhibit visit www.flnps.org/artshow, where we will continue to provide updates on exhibit particulars and submission criteria. Those without internet access may call 257-4853 to get on a mailing list for future exhibit information. We encourage our members to consider submitting their works of art. May this opportunity serve as an added incentive to make time for enjoying and appreciating our native flora!

FLNPS Marches On!

by Anna Stalter

FLNPS participates in as many community events as our willing volunteers can spare time for. Events in 2008 included Ithaca Earth Day, Cayuga Nature Center's Maple Fest, and for the first time, the Ithaca Festival parade. Members and friends (including one canine) came dressed as a tree, spore-dispersing Moss Maiden, and G(arlic) M(ustard) Man. They waved paper flowers, leaves, and fern fronds, held our bright yellow banner high, and despite the rain, had a wonderful time. Bystanders cheered for native plants, and booed at the sight of GM Man, who carried a sheaf of the invasive weed we all love to hate. We hope to increase our ranks in 2009, so if you have a plant costume or appropriate prop that you'd like to lend or wear/carry yourself, please let us know! This year's Ithaca Festival returns to the traditional last week in May and the parade will take place on Thursday evening, May 28. Please contact Anna [redacted] if you'd like to participate.



Indigo Bush

by Stanley Scharf

In the spring and fall I spend a lot of time fishing the southern end of Cayuga Lake from shore or in the water. For many years, I blindly noticed what seemed like a scrubby woody shrub growing from Esty Point to Hog's Hole that I simply took to be an invasive without giving it any thought. Then one day, the retaining wall in my backyard collapsed and I decided, instead of rebuilding, to plant vegetation. The site is very wet.

I had the opportunity in November 2006, to buy trees from the then fledgling Dryden, NY branch of RPM Ecosystems. The trees had been grown in Elsberry, Missouri and I got to buy them at wholesale prices, I would guess because the growing season had ended. I bought seven shrubs and trees. I asked the woman who was assisting me, what is indigo bush, she replied something like, it is a very nice plant. I bought it and planted it along with buttonbush, silky dogwood, and alder in the wet soil above the collapsed concrete wall.

Indigo bush, *Amorpha fruticosa* (also called desert false indigo and false indigo) flowered the next summer and is now over five feet tall. While the flowers of the indigo bush plants I had seen along the shores of Cayuga Lake never grabbed my attention, my plant's flowers which are 6-8 mm (0.2-0.3 inches) long, in erect elongated clusters (racemes), and intense purple, indigo, and gold, really caught my attention. The corolla is a simple petal wrapped around perhaps 10 stamens and the style. A regal flower indeed. It has been said that the original source of seeds for RPM Ecosystems was a collection given to the Missouri nursery by our own Liberty Hyde Bailey.

The leaves of indigo bush are 4-12 inches long, pinnately compound, and long petioled with 13-25 dull green leaflets marked with resinous dots. It flowers May – June, is a multi-stemmed woody shrub, and grows anywhere from 5-17' tall. A closely related species, leadplant, *Amorpha canescens*, is native to the upland prairies of the western states where it is also called prairie shoestring.

Indigo Bush – *Amorpha fruticosa*

Illustration by Walter L. Graham

Reprinted from Holmgren, N.H. 1998. Illustrated Companion to Gleason and Cronquist's Manual. The New York Botanical Garden, Bronx, NY. P. 283.

Editors Note: Although the exact native range of indigo bush (*Amorpha fruticosa*) is not completely clear it is clearly not native in central New York. It is cultivated and naturalizes beyond its native range as in central New York. Outside of its native range some consider it to be invasive or potentially invasive (e.g. Connecticut and Washington) and in central New York although still somewhat local in distribution it does appear to have the potential to become an invasive species in our area. Therefore, this is a species to keep an eye on and perhaps avoid cultivating in central New York.

One More Thing to Watch Out For

by Norm Trigoboff

This past summer in the parks and suburbs of Toronto, Canada, I saw lots of unfamiliar medium size, reddish brown ants that kind of looked and moved like they belonged to the genus *Myrmica.* I collected some. I figured here was a recently introduced species exploding into new territory. Nope. This ant, *Myrmica rubra*, often has many queens in a colony and each colony occupies many nest sites. And it's omnivorous. These features may produce thousands of ants per square meter and a serious creep factor if you're trying to pass out sandwiches at a picnic. Forget about honeybees, where each hive usually has one queen and lives in one cavity. Ants play by other rules.

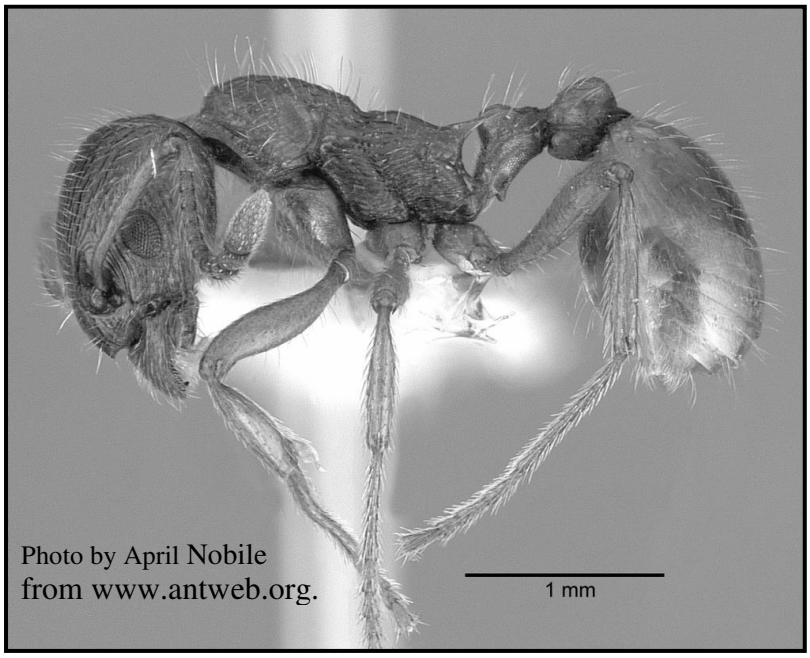
Myrmica rubra, the red ant, or European fire ant, comes from Eurasia, where it's often abundant, but not a pest. In 1908, W. M. Wheeler, one of the big names in myrmecology, noticed it in Massachusetts. It has since spread to Canada, several northeastern states including New York, and as far south as Washington D. C. It's still absent from Central New York, I think. Its distribution is spotty because in North America it lacks its normal mating flights. No one knows why. It spreads short distances through colony division and long distances by being transported by man's activities.

Myrmica rubra is mild mannered in its home range, but here it never backs down. It stands and fights. It stings people and pets. Often. And it's painful. It sometimes produces severe allergic reactions, such as anaphylactic shock. The experts all say "painful sting." When you or I say painful sting, it's one thing, but when entomologists use the phrase, it's time to get out of Dodge. (By the way, don't confuse *M. rubra* with *Solenopsis invicta*, the red imported fire ant, or simply the fire ant, which is from South America and now occupies most of the southern United States. *Solenopsis invicta* is known for its very painful sting.)

In the woods of central New York, two of the dominant ants are *Aphenogaster picea* (actually a complex of species), which forages above ground, and *Lasius nearcticus*, which tends root aphids and coccids underground. Because their lifestyles differ they may nest side by side and hardly notice each other. If you lift a rock in the woods and find the nest of a dark ant next to one of a smaller, pale yellow ant, you've probably found *Aphenogaster* and *Lasius*. *Myrmica rubra* would, I expect, steal much territory from both of these, as well as many other ants. Other ecological effects, especially long term ones, are harder to foresee. By the way, if you want to see one of the insects that *Lasius* tends, turn over rocks when the spring wildflowers bloom. Among the ants will be lethargic, dull, white, disk-shaped aphids.

Though the genus *Myrmica* is distinctive under a scope and only seven species of Myrmica live in New York State, ID to species is tough, unless you have access to a reference collection, or build your own. The keys talk about the tiny bends, flanges, and bumps on the antennae, features better communicated with sculpture than words.

Myrmica rubra sometimes travels with fill, mulch, and potted plants. If you garden, please help protect your yard and the rest of central New York. If ants sting you and they are 3.5 to 5 mm. long, roughly the reddish brown of a red tail hawk's tail, and especially if they inhabit recently acquired soil, catch the critters in a zip-lock bag and get them identified. If it's M. rubra, you can eliminate the colony with insecticide or poisoned bait. Or, considering that painful sting, you can call an exterminator.



Myrmica rubra – fire ant

References:

Coovert, G.A. 2005. The Ants of Ohio. Bulletin of the Ohio Biological Survey New Series. Vol 15, New Series, #2.

Klotz, J., L. Hansen, R. Pospischil, and M. Rust. 2008. Urban Ants of North America and Europe: Identification, Biology and Management. Cornell University Press, Ithaca, NY.

Myrmica rubra on the Featured Species website. http://creatures.ifas.ufl.edu/urban/ants/Myrmica_ruba.htm

Myrmica rubra on the Global Invasive Species website. http://www.issg.org/database/species/ecology.asp?si=1014&fr=1&sts=

Water Bears

by Stanley Scharf

In the last issue of Solidago, Vol.10, No.1, February 2009, Nat Cleavitt states, in her article Moving North: "This balance is based on the fact that many mosses accomplish the majority of their photosynthesis and growth in the colder months when light levels are lower and evaporation occurs more slowly. In hotter months the plants most often are dormant in a dried state with the leaves curled and the gemmae hidden."

I found this statement very interesting, never having heard it before, and I started to wonder whether tardigrades could have co-evolved with mosses. I don't have the answer to that question. However, they are very fascinating creatures. Their cylindrical bodies, stumpy legs and tiny claws have earned them the nicknames of "water bears" and "moss piglets." These tiny invertebrates, less than 1 millimeter long, are known for their virtual indestructibility on earth, for being the toughest animal on earth, and in their dry state have survived the vacuum of space.

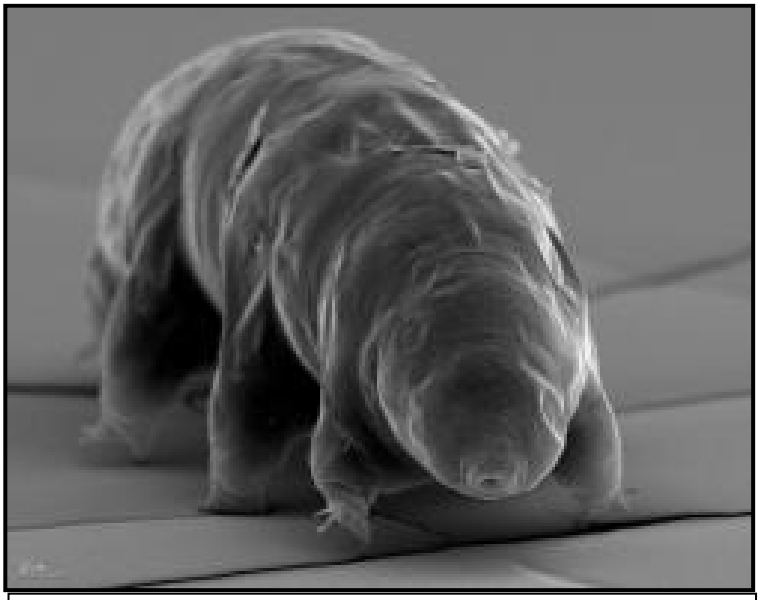
Tardigrades are a small phylum of 840 species of minute animals (200-500 um in length) that live in mosses, lichens, and freshwater or even marine habitats. The various species feed on fungal mycelia, algae, rotifers, nematodes, and on each other. Tardigrades have been placed as the closest, extant relatives of arthropods.

The phylum is mildly famous for the ability of some of its species to endure extreme conditions in a dormant, or cryptobiotic state including: years, probably even decades, of complete desiccation, springing back to life after rehydration; temperatures well above the boiling point of water and near absolute zero; X-ray intensities more than 100-fold the lethal dose for mammals; and pressures more than six times that known in the deepest oceanic trenches. Tardigrades by virtue of their above mentioned talents inhabit some of the harshest places on planet earth. Six species live in mosses and lichens in eastern Antarctica.

Fossils of tardigrades have been found in 90 MYO (Cretaceous) amber from the state of New Jersey. The structure of its preserved claws and mouthparts are virtually indistinguishable from living species. It is quite likely that the tardigrade phylum had its origin in the "Cambrian explosions."

Extreme morphological stasis, or bradytely is rare in evolution. Cryptobiosis, made possible by the conversion of ordinary glucose into high levels of the non-reducing disaccharide, trehalose, at the onset of desiccation provides this creature with an adaptive advantage in various environments; and thus slowing the rate of morphological change.

Tardigrades are remarkably durable animals that can remain viable in dormancy for such extended periods of time (cryptobiosis) as to challenge concepts on the longevity of individuals.



Water bears, similar to the one pictured here, were sent to low-Earth orbit in an ESA satellite (Courtesy: Ralph O Schill)

References:

Grimaldi, D. and M.S. Engel. 2005. Evolution of the Insects. Cambridge University Press, Cambridge, England.

The Woods Again

by Kenneth Hull

I must go out to the woods again
See the awakened forest floor
April's here, snow's nearly gone
Emerging signs of rebirth spring forth
Smell the rotting leaves and damp earth
Feel reassured that they will return
As they always have before

Hepatica, Spring Beauties
Dutchman's Breeches, Blood Root
Toothwort, Wild Oats and Trout Lilies
All unaware of the slender thread
Of existence, survival, resurrection
Unabashed beauty in spite of
Man's destructive urges

The weariness of winter rejuvenates
Both Nature and man's elusive spirit
Out to the woods again I must go
Even as I sit here by the fire
I know it's January still but
The deep woods smell so sweet

Local Events of Note

FLNPS members will be at these community events this spring. Stop by and say hello, buy some plants, or pull some weeds!

Volunteer Workday at Six Mile Creek - April 4, 10 am – 2 pm
Mulholland Wildflower Preserve at Six Mile Creek. Sponsored by Friends of Six Mile Creek

3rd Annual Earth Day Fair at Corning Community College - April 24, 11 am – 2 pm
Corning Community College, 1 Academic Drive, Corning

12th Annual Ithaca Earth Day - April 26, noon -5 pm
Farmer's Market Pavilion

Wildflower Appreciation Day - May 9, 10 am -2 pm
Mulholland Wildflower Preserve at Six Mile Creek. Sponsored by Friends of Six Mile Creek

Spring Flower and Plant Sale - May 16, 9 am – 1 pm
Ithaca High School

2009 Ithaca Festival Parade (we hope!) - **"Let the Sun Shine In!" - May 28, 6:30 pm**

Contact Anna Stalter with questions or if you want to join us!

Out of Town Workshops

Plant Photography Workshop, Inlet, New York

The Wonders of Wildflowers / June 11-14, 2009 / with Kathleen Clemons at the Adirondack Photography Institute, Inlet, NY. - Website: http://www.adkpi.org/workshops/2009/clemons_jun11.html - Phone number: 216 531-2155 - Email: workshops@adkpi.org

Isle Royale Botany Workshop

The Isle Royale & Keweenaw Parks Assoc. (IRKPA) is sponsoring its third Isle Royale Botany Workshop 15-20 June 2009. Experience four days in Lake Superior's Isle Royale National Park and learn to identify the diverse native plants of this incredible island! - Contact person: Jill Burkland - Phone: 906 482-7860 - Email: jburkland@irnha.org - Website: http://www.irnha.org/

Natural History Weekends at High Pond Farm, Plymouth, New Hampshire

Weekend Workshops for amateur naturalists in botany, lichenology, bryology, geology, odonatology, herpetology, entomology, ornithology, ecology, and any other ology that strikes our fancy. Based out of Plymouth, New Hampshire

A few workshops of interest in 2009 include:
New England Forests, A Primer / July 24 - 26, 2009 / Garry Plunkett
An Introduction to the Common Bryophytes of New England / August 7 - 9, 2009 / Dorothy Allard
An Introduction to the Lichens of New England / September 11 - 13, 2009 / Scott LaGreca

Web site: http://www.highpondfarm.org/index.html - Email: info@highpondfarm.org - Phone number: 603 536-5667

FINGER LAKES NATIVE PLANT SOCIETY

UPCOMING PRESENTATIONS 2009

April 21 – Tuesday – 7 pm – Smelly Red Flowers by Robert Raguso (Cornell). Raguso and his collaborators' project is focused on red, early spring blooming flowers in the eastern North American flora. They are asking WHY they are red, why they all smell strangely (wet dog, rotting meat, fermenting sugar) and what that might mean about their reproductive biology. The project has identified trilliums, pawpaws, *Calycanthus* (sweet shrub) and star anise as plants sharing this floral syndrome, and the planned experiments address several alternative explanations for their unusual floral biology.

May 19 – Tuesday – 7 pm – Salt Marsh Restoration by Tony Eallonardo (SUNY ESF). Dr. Donald Leopold, also from SUNY ESF, is a co-author on all aspects of the research that Tony will be discussing.

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 SPRING 2009

April 18 – Saturday – 1 pm – Mosses, Liverworts, and Lichens. Led by Nat Cleavitt. Join Nat for an April promenade with the mosses, liverworts, and lichens at Cornell Natural Areas' Ringwood preserve. Please be prepared with rubber boots or otherwise water / mud proof foot gear and a hand lens. We tend to move slowly so please dress warmly and bring a snack. Latin will be spoken occasionally as most of these species have no common names. Meet at CCE at 1 pm to carpool; parking at the site is restricted.

April 26 - Sunday - 1 pm - Early Spring Wildflowers at Lick Brook. Led by Susanne Lorbeer. Meet at CCE at 1 pm to carpool. Contact Susanne for details: .

May 3 – Sunday – 1 pm – Spring Wildflowers at Upper Buttermilk State Park. Led by Susanne Lorbeer. Meet at CCE at 1 pm to carpool. Contact Susanne for details:

May 10 - Sunday – Upper Fillmore Glen. Led by Susanne Lorbeer. Meet at CCE at 1 pm to carpool. Contact Susanne for details: .

May 17 - Sunday – 1 pm – Wildflower Walk. Led by Melanie Kozlowski. Spring is here! Join FLNPS member and naturalist Melanie Kozlowski for a guided walk though one of our local natural areas on a springtime Sunday to see who is peeping out from underneath the leaf litter. Varied terrain. Meet at CCE at 1 pm to carpool.

May 23 – Saturday - 1 pm - Violet Walk. Led by David Werier. The Ithaca area is home to many different beautiful violet species. This outing will focus on the identification of these violet species (as well as violet hybrids). Be prepared for a focused and critical look at these spring flowering plants. Led by David Werier.
We will meet at Cornell Cooperative Extension and carpool to a site close by.

June 7 – Sunday- 1 pm - Spring Gorge Walk. Led by Melanie Kozlowski. What is that plant growing out of the gorge wall? What keeps the evergreen tree growing out of that steep hill from falling down? Here's a walk for all who are intrigued by the plant life of our area's gorges and adjoining woodlands. The geological forces that caused the Finger Lakes and surrounding gorges to form will also be explored. Plan on steep pathways and long flights of stairs. Meet at CCE at 1 pm to carpool.

June 20 – Saturday (raindate Sunday June 21) - 8 am - Birds and Butterflies in Robinson Hollow. Led by Meena Haribal. Meena's walks focus on things that fly, but always include the plants that co-occur with our native birds and butterflies in these habitats. Note that this walk begins earlier than is usual (meet at CCE at 8 am) with an expected return time of 2 pm. Bring rain gear, a butterfly net, binoculars, identification guides, some food and water, and wear good hiking shoes. Meet at CCE at 8 am to carpool. If you intend to drive, note that part of the road is seasonal (vehicles should have high ground clearance).

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