Founded in 1997.
Logo art of Tall Goldenrod, *Solidago altissima*, by Nat Cleavitt, 2006.

Solidago

Newsletter of the
Finger Lakes Native Plant Society

Volume 14, No. 2 ~ July 2013

EDITORIAL

Skippers in Slippers!

by Robert Dirig

THE FIRST WILD ORCHIDS I EVER SAW were **Pink Lady-slippers** (*Cypripedium acaule*), which my family cherished in the Catskills. Later, my father showed me the **Larger Yellow Lady-slipper** (*C. parviflorum*, var. *pubescens*) along the Delaware River. But nowhere in that region did we find the other species that is pictured in all the guides — the great **Showy Lady-slipper** (*C. reginae*) that often grows in knee-high clumps, has leaves on its stems, and two or more gorgeous pink-and-white blooms per plant. I was in my thirties before I finally beheld this iconic wildflower near Ithaca, N.Y. More years passed, while I learned about its seepy fen habitats, with underlying marl that provided the damp limy situations required by this spectacular orchid.

In the early 1980s, I started to compile yearly records of butterfly nectaring, a field habit that continues to the present. In all that time I have never observed a butterfly feeding at any kind of lady-slipper; the closest I came was finding a male **Long Dash** (*Polites mystic*) resting on a Showy's flower at dusk (28 June 2000). Then on 21 June 2005, I noticed a dead male **Hobomok Skipper** (*Poanes hobomok*) trapped inside the lip of a Showy Lady-slipper at Cornell's Eames Memorial Preserve, and within an hour found another at McLean Bogs Preserve. Four days later, I checked again, and found a third Hobomok (*below*); plus a dead and a living **European Skipper** (*Thymelicus lineola*) (*continued* →)

Showy Lady-slippers (*Cypripedium reginae*)

at McLean Bogs Preserve (M) and Eames Memorial Bog (E)

Left: 21 June 2001. *Center:* Lip with dead Hobomok Skipper, 25 June 2005. *Right :* 26 June 2002.

♂ **Hobomok Skipper**
South Hill, Ithaca, N.Y., 19 May 2011.

♂ **Long Dash**
McLean Bogs Preserve , 11 June 2005.

♂ **European Skipper**
Caywood Point., FLNF, Seneca Co., 12 June 2011.

in two other flowers! With my curiosity fully aroused, I started watching for skippers in the flowers of this lady-slipper, finding more at three local fens in 2007, 2008, 2011, and 2012. Here are the totals since 2005:

Hobomok: 5 dead males, Eames (2005) & McLean (2005, 2007, 2008).

Long Dash: 3 males (two dead, one flew out when I tipped the lip), McLean (2007, 2008).

European Skipper: 25 males, 19 dead, the rest alive, McLean (2005, 2007, 2008) & Salt Road Fen (2011-2012).

The date span for all 33 records was 21-25 June (30 records), 30 June (2 records), and 5 July (1 record).

All trapped skippers were males, one skipper per flower. A few dead, trapped specimens were kept to document this behavior.

Showies bloom from the middle of June into early July, which coincides perfectly with the flights of these skippers (*see column at right*). I have recorded Hobomoks taking nectar at 44 species of flowers, Long Dashes at 28 kinds, and European Skippers at 92 different flowers! It is not surprising that the latter, especially, would seek nectar at Showy Lady-slippers.

The first articles about European Skippers becoming trapped in the pouches of Showy Lady-slippers in Ontario appeared in the lepidopterological literature 40-50 years ago (Arthur 1962, Catling 1974). In northern Michigan, Barrows (1983) found up to 24 European Skippers in one flower! More recent papers report trapped Long Dash (Argue 2012); and other skippers probing *C. reginae* flowers, but not entering the lip (Edens-Meier *et al.* 2010): Delaware Skipper (*Anatrytone logan* — which also occurs at McLean), Golden-banded Skipper (*Autochton cellus* — a rare southern species), and Silver-spotted Skipper (*Epargyreus clarus* — also resident around Ithaca). Great Spangled Fritillaries (*Speyeria cybele*) also probe Showy flowers. *As this orchid* ***LACKS NECTAR***, they may be drinking water from the lip (Edens-Meier *et al.* 2010), or attracted by (*continued →*)

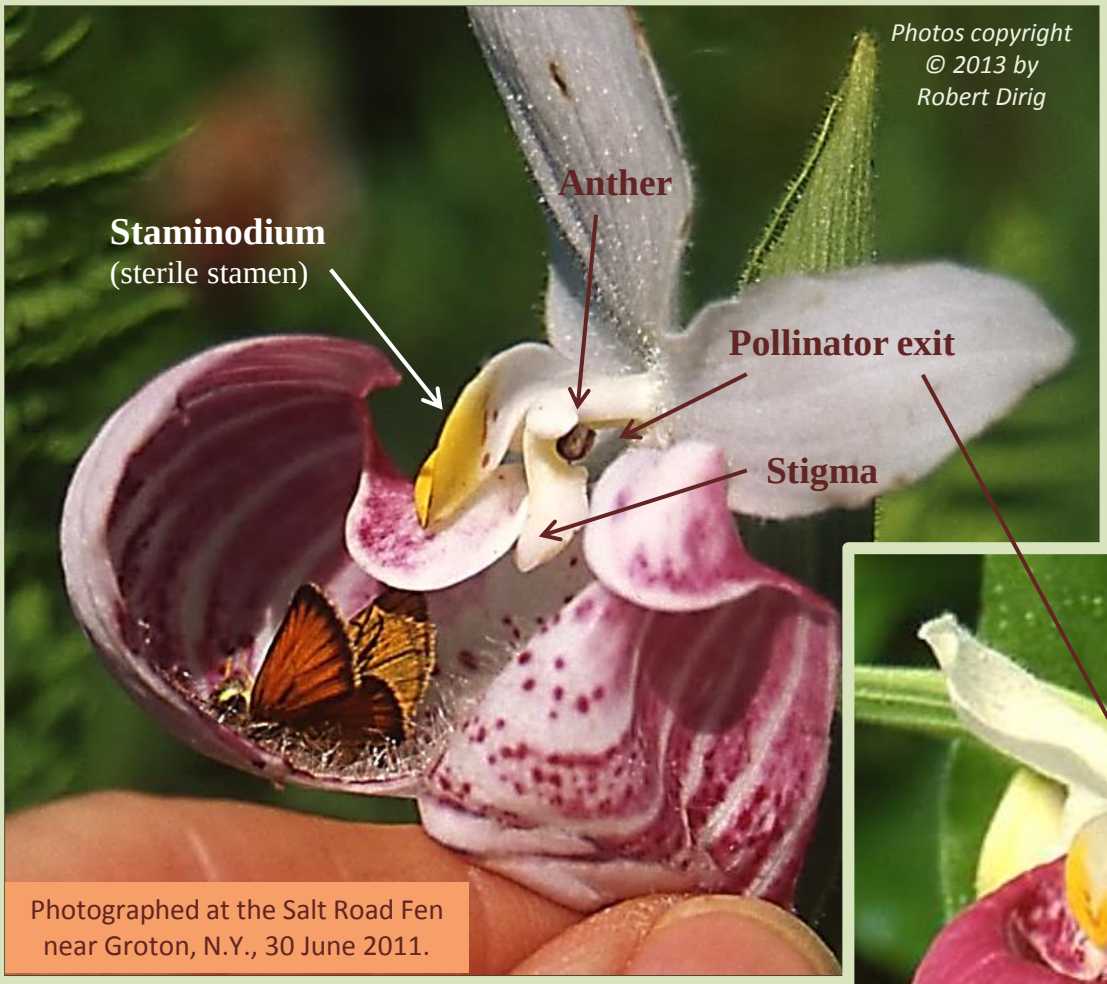
A "white" Showy Lady-slipper (forma *albolabium*) at Eames, 3 July 2006.

The Skippers

Hobomok Skippers (*Poanes hobomok*) fly once a year, from 25 May to 4 July at McLean. Males are yellowish-orange with dark brown borders above. The more common form of the females is similar, but the other form ('pocahontas') is dark brown with white spots. Both sexes have a lovely flush of lilac along the wing margins below. They are forest-edge butterflies that may occur around the margins of fens. Their larvae feed on grasses. This is apparently the first record of their being trapped in Showy Lady-slipper flowers.

Long Dashes (*Polites mystic*) are regular residents in fens, where their caterpillars eat grasses and sedges. Their favorite nectar flowers are Blue Flags (*Iris versicolor*), which bloom at the same time as Showies. They fly a bit later than Hobomoks, from 10 June to 23 July at McLean. Males are orange with dark borders and a black "dash" across the forewing on top; females are darker with orange and yellow flecks above. They are about the same size as Hobomoks. This skipper was also reported trapped in Showy's flowers by C. L. Argue (2012).

European Skippers (*Thymelicus lineola*), a slightly smaller tawny species, became naturalized in Ontario in ca. 1910, and have spread throughout the Northeast, reaching the Finger Lakes Region between 1966 and 1971. The single annual flight occurs from 8 June to 25 July at McLean. Females lay strings of eggs on grasses, especially Timothy (*Pheum pratense*), which is also naturalized from Europe, and a desirable component of hayfields. The eggs overwinter, the larvae hatching in spring, feeding on tender Timothy blades, pupating, and producing a new brood of adults. *The eggs remain on grasses in bales of hay*, and these skippers may have been widely dispersed in this way, as adults sometimes swarm by the thousands in hayfields in early summer. They nectar at a wide spectrum of flowers, and are the most commonly reported skipper that becomes trapped in Showy Lady-slipper blooms, sometimes with many in each lip.



Left: A fresh ♂ **European Skipper** that was trapped inside the lip of a **Showy Lady-slipper**, where it perished (*cut-away view*).

Below: An intact flower, showing the **pollinator exit** over the anther (*circle*). There is another one (not visible here) on the other side of the staminodium.

its pinkish flower color and sweet fragrance.

After finding trapped skippers, my immediate questions were ***how did this happen, and why?*** This orchid's flowers are designed to trap insects and force them to exit by a route that will effect pollination (*see labeled photographs above and right*). Candidates enter through the large hole in the top of the lip and follow purple stripes and dots to two exits at the lip's base, on either side of the staminodium. This forces them to rub against the stigma, leaving any pollen they carry, and also against an anther, picking up more. This seems a simple and efficient strategy — if the insect is the right size. Known pollinators are syrphid flies (including *Syrphus torvus*), leaf-cutter bees (*Megachile melanophaea* & *M. centuncularis*), other small bees, and a scarab (*Trichiotinus assimilis*) (Argue 2012, Edens-Meier *et al.* 2010). The exit holes measure about 6.5 mm in length and 3.4 mm in width (Edens-Meier *et al.* 2010). The large wings of these skippers, which are 13-15 mm long and 6-9 mm wide, are much too large to pass through the exits. Once they enter this beautiful prison, the skippers apparently cannot surmount the rim of the entry hole, thus perishing from starvation or drowning in rainwater that collects inside.

Barrows (1983) also recorded finding European Skippers trapped in the blooms of *Cypripedium parviflorum*. I have not seen this happen in the Finger Lakes, perhaps due to asynchrony of blooms and skippers, or local scarcity of this orchid. (*See more photos on page 10.*)

References Cited

Argue, C. L. 2012. 4. Section Obtusipetala. *Cypripedium reginae* Walter (Showy Lady's-Slipper), 13 pp., in *The Pollination Biology of North American Orchids, Vol. 1, North of Florida and Mexico*. ISBN 978-1-4614-0592-4 (Online).

Arthur, A. P. 1962. Adults of the European Skipper, *Thymelicus lineola* (Lepidoptera: Hesperiidae) Trapped in the Flowers of Showy Lady's Slipper Orchid. *Proc. Ent. Soc. Ontario* 92: 190-191.

Barrows, E. M. 1983. *Cypripedium* Flowers Entrap Adult *Thymelicus* (Lepidoptera: Herspeiidae) in Northern Michigan. *Journal of the Lepidopterists' Soc.* 37(4): 265-268.

Catling, P. M. 1974, March 7. A Butterfly-trapping Orchid. *Newsletter of the Michigan Ent. Soc.* 19(1): 1, 3.

Edens-Meier, R., M. Arduser, E. Westhus, & P. Bernhardt. 2010. Pollination Ecology of *Cypripedium reginae* Walter (Orchidaceae): Size Matters. *Telopea* 13(1-2): 14 pp.

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To receive a colored version when *Solidago* is published, please ask Rosemarie Parker to join our e-mail distribution list. The colored version will also be posted on our website (*www.flnps.org*) after the next issue is produced.

Contents

THANK YOU!

SPECIAL THANKS TO OUR CONTRIBUTORS: Writers as credited above. **Calendar** items by Rosemarie Parker, Charles R. Smith, & Susanne Lorbeer. **Illustrations** on pages 1-3 & 9 by R. Dirig; on page 5 by David Werier; on page 10 by Arland Hotchkiss & David J. Taft. **Layout & design** by the Editor. **Proofreading** by Rosemarie, John Freudenstein, & Scott LaGreca. **Printing** by Gnomon Copy, Ithaca, N.Y. **Mailing** by Rosemarie & Susanne.

Please send *Solidago* contributions & correspondence to Robert Dirig, Editor, P. O. Box 891, Ithaca, NY 14851-0891,

Deadline for the October 2013 issue is September 15th.

Please Contribute to *Solidago*

WE WELCOME CONTRIBUTIONS THAT FEATURE WILD PLANTS OF THE FINGER LAKES REGION OF N.Y. We include cryptogams (bryophytes, lichens, fungi, and algae) as "flora," and recognize that green plants provide habitats and substrates for these and many animals, especially insects. We are interested in zoological associations as long as plants are an integral part of the story.

We can use a wide spectrum of material in a variety of writing styles. Our regular columns include the NAME THAT PLANT CONTEST (identifying a mystery plant from images), LOCAL FLORA (plant lists from special sites), OUTINGS (reports of FLNPS-sponsored excursions), PRESSING CONCERNS (news from regional herbaria), and PLANT PROFILES (on specific local plants). We also occasionally publish APPRECIATIONS (memorials to local botanists and naturalists), CHARISMATIC PLANTS (stories about formative early encounters with flora), REVIEWS (of books, talks, workshops, nurseries), FEEDBACK (commentaries and letters to the editor), ESSAYS (on botanical themes), VERSE (haiku, sonnets, and poems of less formal structure), ART (botanical illustrations, plant designs, pencil sketches, decorations), and PHOTOGRAPHS (stand-alone images, photo essays, and full-page composite plates, or originals that can be scanned & returned). We also can always use FILLERS (very short notes, small images, cartoons) for the last few inches of a column. **At present we operate in a black-and-white universe**, so contributors need to plan illustrations for this format.

Name That Plant Contest

The photo from last issue's Name That Plant Contest [*Solidago* 14(1), page 3] was of the white form of the **Pink Lady-slipper (*Cypripedium acaule*)**; in other words, the "white" Pink Lady-slipper. This form is common in some regions, but not in central New York. A few folks were curious if the white-flowered variant of this species is given a distinct name and if so at what rank. These days, most botanists recognize this variant at the rank of forma (*i.e.* form), as forma *albiflorum*. This rank is often not included in regional floras, as it is simply considered a minor variant. Ken Hull wrote to me that in central New York he had found one individual of this form in Chenango Valley State Park several years ago (right on the trail), but had not seen it since. [*Ed. Note: Also see page 2* (*"white"* C. reginae) *and the letter at the right.* →]

Thanks to all those who entered the contest, and congratulations to contest winners: **Sara Brown, Betsy Darlington, John Gregoire, Sue Gregoire, Alice Grow, Ken Hull**, and **Susanne Lorbeer**.

This issue's mystery plant is shown above. I realize this plant will be a bit more challenging to identify, but see if you can figure it out. It is not a very common species in central New York, but is also not that rare. Populations are often small, and many times the plants don't flower or only flower sparsely. The one hint I will give is to notice the fly on top of the inflorescence. Additional hints and suggestions are often provided to contest participants who try. Common and/or scientific names are acceptable. More than one guess is allowed.

Please submit your answers to **David Werier**

The photo was taken by David Werier on 1 June 2013 in Schuyler Co., N.Y.

Letters

To the Editor:

Rosemarie Parker's article on "The Great (White) Blue Lobelia" brought back memories from many years ago. My professional career has been with Corning Glass Works as a research scientist. We built our home in Gang Mills in anticipation of the Glass Works moving their laboratory to a hill overlooking the valley, having already built their Process Research Center. When the laboratory did indeed open, I was able to walk up through the woods to the lab. At the top of the hill there was a small grove of *Tsuga canadensis*. Among this grove was a colony of several dozen *Cypripedium acaule*. In this colony was a white form. I wrote to Cornell, only to learn that the forma *albiflorum* was not uncommon. Later I learned from other sources that it was more common in northern habitats. On field trips in Connecticut and Massachusetts, I did see colonies that had several white forms.

Bill Plummer
Painted Post, N.Y., 6 March 2013

Hi Bob,

I enjoyed your editorial on twigs! I can't wait to go up the road and take a closer look at my neighbor's Catalpa to see whorled buds. I have been enjoying American Beech buds and many others this week. I hope to get to see Bitternut Hickory someday soon. You have me so intrigued. But I will start with my Ash and work my way through your suggestions.

Colleen Wolpert
Apalachin, N.Y., 18 March 2013

Good morning Bob,

Thanks for the paper copy of *Solidago*. This issue, like the last, has the qualities of an exemplary newsletter: variety of information, photos (loved the one of "mosses ornamenting a discarded tire"), drawings, and even a map to support information; upcoming talks and events, letters to the editor, and a most interesting article on blue and white lobelias.

P.S.: I forgot to let you know how much I enjoyed your article on twigs and scars — top-rate drawing, article, and meaning for me. There's something "Grail-like" about wounds and scars. In literature and life, the wounds give us lessons in compassion, the scars lessons in endurance. I'll never look at a twig again without noticing its scars.

Thelma Turner
Ithaca, N.Y., 22 March 2013

Ithaca Native Landscape Symposium

reviewed by Gin Mistry

MANY OF US ARE OBSESSED WITH NATIVE PLANTS. Unfortunately their uniqueness and beauty are constantly threatened by human population growth, land development, agriculture, and invading alien plants.

On March 1, 2013, I attended the 5th annual Native Landscapes Symposium. This was a two-day series of presentations on the theme of natural environments and threats to them. The Symposium, held at Cinemapolis in Ithaca, N.Y., was sponsored by **Dan Segal**, owner of The Plantsmen Nursery, and **Rick Manning**, Landscape Architect.

Several of the talks dealt with sobering, sometimes depressing challenges to our natural environment, such as overpopulation of deer, impacts of gas drilling, and climate change. (Implied, but not directly addressed, was the problem of unsustainable human population growth, as the world's most invasive species continues its aggressive spread and destruction of natural environments.) Other talks delighted us with photos of butterflies and flowers, and news of programs meant to heal our environments.

DON LEOPOLD from Syracuse University, the first speaker, presented "A Sampler of Native Plants." We were treated to wonderful photographs of flowering native plants suitable for home gardens. The plants were organized according to their site requirements. For example, for wet areas, Mr. Leopold suggested Royal Fern (*Osmunda regalis*), Cardinal Flower (*Lobelia cardinalis*), and Buttonbush (C*ephalanthus occidentalis*), among others. Hay-scented Fern (*Dennstaedtia punctilobula*), Wild Lupine (*Lupinus perennis*), and Smooth Sumac (*Rhus glabra*) would do well in dry sites. He had suggestions for acidic and alkaline areas, for sunny and shady spots. Plants which would do well anywhere include Switch Grass (*Panicum virgatum*), Ninebark (*Physocarpus opulifolius*), and Red Maple (*Acer rubrum*). There are plants for wildlife, plants for eating, and a very few plants that are deer-proof (ferns). This talk was a delight for gardeners and landscapers.

TOM RAWINSKI, from the USDA Forest Service, gave a sobering presentation on the overabundance of White-tailed Deer (*Odocoileus virginianus*), which are destroying our forests and natural areas. He mentioned two places which I care about personally: **McGowan's Woods** in Ithaca, which is near my home, and the **Blue Hills**, south of Boston, where sixty years ago I first experienced the "wild woods." Both areas have been destroyed by deer browsing. We need to get serious to solve this problem now, most efficiently by expanded hunting of deer.

ANDY COLE, an ecologist from Penn State, tackled the topic of gas drilling and its effects on the environment. The impacts of building roads, pipelines, and pads are considerable: Increased truck traffic results in noise, dust, pollution, and worsening road conditions. Clearing of forests leads to destruction of native plants, and an increase in invasive species (including deer). Forest fragmentation affects habitat for birds, mammals, turtles, salamanders, frogs and fish. The damage caused by the inevitable contaminated water runoff and spills threatens our rivers, creeks, and water supplies. Some strategies which gas companies should employ include consolidation of construction, keeping large areas of forest intact (decreasing fragmentation), and keeping development away from streams and ecologically sensitive areas. However it is done, gas drilling will have a huge impact on our natural environment.

Landscape Architect **JOY KUEBLER** explained the LEEDS and SITES programs. LEEDS (Leadership in Energy and Environmental Design) encourages "green" building: using local, recycled materials; using materials manufactured organically; designing buildings for deconstruction or reuse; and making use of green roofs, solar power, and permeable pavement. The SITES (Sustainable Sites Initiative) program encourages smart use of the land surrounding buildings: managing storm water, limiting soil compaction, and protecting and restoring trees, plants and wetlands. These commendable voluntary programs are sponsored by three agencies: The American Society of Landscape Architects, The Lady Bird Johnson Wildflower Center, and the United States Botanic Garden.

CARL SCHWARTZ from the U. S. Fish and Wildlife Agency, spoke about restoring eroding stream beds. He pointed out that the outside edge of a meander (curve) gets washed away. To stabilize this bank, Mr. Schwartz suggests piling logs — locked together, then covered with root wads, dirt, and plants. The logs, besides stabilizing the bank, also provide habitat for fish and wildlife. Plants used to restore and stabilize both banks of a stream include Little Bluestem (*Schizachyrium scoparium*), Silky Dogwood (*Cornus amomum*), Red-stemmed Dogwood (*C. sericea*), Black Willow (*Salix nigra*), Sycamore (*Platanus occidentalis*), Red Maple (*Acer rubrum*), and Silver Maple (*A. saccharinum*). I found this an interesting presentation on a topic I had not considered before.

The birds and plants at Montezuma Wetlands were discussed by **CHRIS LAJEWSKI**, education manager at the Audubon Center in Savannah, N.Y. He described the 50,000 acres of Montezuma as a haven for many bird species. Habitat, including forests, grasslands, and farms, as well as wetlands, support huge numbers of migrating waterfowl. Three declining bird species — the Bald Eagle, Short-eared Owl, and Sandhill Crane — have recently increased their

numbers using Montezuma as a refuge. Efforts to increase grasslands and remove the alien Black Swallowwort (*Cynanchum louiseae*) are underway at Montezuma. These wetlands and the Audubon center provide good resources for education, bird watching, hiking, and recreation.

DAN SEGAL, owner of the Plantsmen Nursery, discussed the similarities between the big businesses of Agriculture and Horticulture. Both industries rely heavily on mass-produced, mechanized production, using large amounts of fertilizers and pesticides. Both industries grow crops as monocultures and have very little biodiversity in their products. Mr. Segal pointed out that there is a growing backlash against the agricultural industry, as more and more people are demanding organic, local, and biodiverse foods. He wondered why there is no similar backlash against the horticultural industry, suggesting that we, as consumers, demand local, native, organically grown plants. The demand would help preserve and conserve biodiversity, would decrease the spread of alien plants, increase the numbers of native pollinators, and encourage the enjoyment and appreciation of our local native environments.

JONATHAN COMSTOCK, from Cornell's Horticulture Department, discussed the affects of climate change on native plants. All areas of the Earth are warming as a result of an increase in carbon dioxide, nitrous oxide, and methane. In general, dry areas will become drier, wet areas wetter. Predictions for the Northeast are:

- an increase in temperature (4° to 8°F.) that will result in a longer growing season, heat stress, and increased water needs for plants;
- a decrease in snow cover, which may mean insect pests will overwinter and increase;
- an increase in rain in winter and spring with some very heavy rainfalls; and
- a rise in sea level along the coast.

For plants, this means that climate zones are shifting and plants are migrating north. We can expect to see new species in our area (such as Kudzu, *Pueraria montana*) and an increase in weeds (Poison Ivy, *Toxicodendron radicans*), alien invasives, and insects. Our maple-beech-birch forest will be replaced by oaks and hickories. Forests will be stressed, and will show an increase in diseases, invasive plants, and insects. Mr. Comstock suggested that at our own homes we use organic fertilizers, plant trees, decrease tillage, mow less, and decrease our use of fossil fuels. Climate change will have huge impacts worldwide, and we need to address this issue with intelligence and determination.

After hearing about climate change we were all delighted to welcome **JANET ALLEN** and her amazing photographs of Monarch Butterflies (*Danaus plexippus*). But all is not well with these beautiful insects. Besides climate change, which is altering their overwintering grounds in Mexico, Monarchs are in danger because of habitat loss, with increasing growth of suburbs and agricultural areas; herbicides reducing milkweed (*Asclepias* spp.), their host plants; plus roadside mowing and clearing, which also destroys milkweed plants. Ms. Allen described the "Monarch Waystation Program," which encourages people to plant milkweeds in our backyards. In our area she suggested we plant Common Milkweed (*Asclepias syriaca*), Swamp Milkweed (*A. incarnata*), Butterflyweed (*A. tuberosa*), and Poke Milkweed (*A. exaltata*). Without a major effort to create and conserve habitats for Monarchs, their numbers will continue to decline.

AMY SAMUELS from Onondaga County explained that their county has an ambitious program to clean up Onondaga Lake, one of the most polluted lakes in the country. The plan includes eliminating toxic runoff from industrial sites, improving aging sewer systems in Syracuse, and intercepting storm water runoff. The program aims to catch 95 percent of runoff by 2018. This will be possible through the use of rain gardens, tree planting, water collection systems, green roofs, and the use of porous pavement throughout the city. This was an interesting and inspiring presentation.

RICK MANNING, Landscape Architect, brought the Symposium to a close with his talk on the early use of native plants in German gardens. During the formal Victorian Era, using informal, wild native plants was a novel idea. Mr. Manning discussed gardens and landscape architects who brought these new ideas to German landscapes between 1870 and 1940.

This Symposium brought many new ideas and interesting programs to the participants. Those of us attending are now inspired to plant milkweeds and rain gardens, and understand more fully the many problems facing our beautiful natural environments. Hopefully, we will work together to tackle the serious problems facing our Earth.

Deer and Invasives

lecture notes by Rosemarie Parker

LAST WINTER I HEARD TWO TALKS that clarified the relative importance of invasives in my mind. Both emphasized the need for forests to regenerate, and the detrimental role White-tailed Deer play in that process.

In February, Cornell's **BERND BLOSSEY** gave a talk at the Laboratory of Ornithology on invasive organisms and deer as stresses on regional landscapes. Bernd and group members have spoken to FLNPS and written in *Solidago* on his lab's studies of individual invasives [Purple Loosestrife,

(*Lythrum salicaria*), Phragmites (*Phragmites australis*), and Garlic Mustard (*Alliaria petiolata*)], affected critters (salamanders), and deer. This talk looked at the way invasive plants, invasive worms, and deer interact — he hopes to clarify and quantify these interactions. Key points:

- In eastern forests, earthworms effectively *compact* the soil, they don't aerate it as they do in agriculture and gardens. (You can feel good spongy forest soil where no earthworms have arrived.)
- Worms tend to "pelletize" soil, and in hilly areas contribute to erosion and reduced water absorption.
- Garlic Mustard (GM) follows worms. He offers a reward for anyone finding GM without worms. *Microstegium* and Japanese Barberry (*Berberis thunbergii*) also become invasive after worm introduction.
- In aquatic systems, both native and non-native plants can support amphibian development. Secondary effects like decomposition products, or concentration of chemicals produced by the plants, will shift populations. The big problem is when a plant is so vigorous that it produces a near monoculture.
- In terrestrial systems, invasive plants have an effect, but probably not as much as we used to think. Many natives will grow alongside invasives, and studies have shown that many will germinate and grow underneath GM. In one study by **Vicki Nuzzo**, the introduction of GM did not significantly reduce the extent of native plants, but the elimination of deer a few years later greatly increased the natives (and the GM). Geraniums (*Geranium* sp.) and trilliums (*Trillium* spp.) grow with GM, and trillium can handle worms. Salamanders can't.
- There is no baseline for "acceptable" deer density. He cites 2-3 deer/sq. mile in the Adirondacks, and a Native American reservation in Wisconsin with year-round hunting leading to "well under 10 deer/sq. mile" and healthy forests. But the number will vary with location.
- Multiple stressors affect forest ecosystem health, but unless the deer population is *significantly* reduced, fighting invasive plants or worms will not be enough. He advised eating deer.

AT THE ITHACA NATIVE LANDSCAPE SYMPOSIUM in March, **THOMAS RAWINSKI**, a USDA forester based in New Hampshire, spoke about deer. It was a discouraging look at the effects of too many deer in the landscape. Downsides include: more than half of Pennsylvania's forests are unable to regenerate, due to deer browsing of seedlings; the same in almost a third of NewYork's forests; and increasing amounts ("thousands of acres") in Massachusetts. "Cascading ecological effects" include birds, amphibians, etc., that rely on the forest ecosystem. "Ecological slums" and forests with "crumbing infrastructures" are evocative terms he used.

What I found most useful in his talk was a list of **how to tell if a forest has too many deer**. Mostly it is looking for the presence/absence of highly palatable food *versus* the less-browsed plants. Thus, a forest has too many deer when you see:

- A fern monoculture on the forest floor (I always thought those were lovely!);
- Holes where deer grubbed out the roots of Indian Cucumber Root (*Medeola virginiana*);
- Trees cut by Beavers (*Castor canadensis*) can't regenerate;
- Sarsaparilla (*Aralia nudicaulis*) growing only on inaccessible ledges;
- Inaccessible ledges have great diversity compared to other ground;
- The "nice stuff" is under the branches of blown-down trees or inside fire tower fences;
- Little or no Poison Ivy (deer love it!!!);
- Odd-looking junipers (*Juniperus* sp.) — deer browse them at the base, producing a "popsicle" effect);
- Extremely lush Hellebore (*Veratrum viride*) or White Snakeroot (*Ageratina altissima*), both low-preference foods; and
- Signs of herbivory on low-preference species like White Pine (*Pinus strobus*), Beech sprouts (*Fagus grandifolia*), and Cinnamon Fern (*Osmunda cinnamomea*).

A forest doesn't have too many deer if you see blooming Hobblebush (*Viburnum lantanoides*) or Maple-leaved Viburnum (*V. acerifolium*). (One or two blooms are not enough.)

LIKE BERND, RAWINSKI ADVOCATES HUMAN PREDATION to bring deer populations to levels consistent with healthy forests. But he cites studies showing that traditional hunting will not be sufficient — that wildlife management agencies will have to adopt alternate methods to rebalance what people have unbalanced.

NEW BOOK

Robert M. Beck's new book, ***The Journey at Malloryville Bog: Commitment, Teamwork and Tenacity in Defense of Land and Nature*** (2013, 345 pp.), is now available in either print or e-book format from *amazon.com*. In the book, Bob describes the fifteen-year effort to preserve the Malloryville Bog, eventually leading to the establishment of The Nature Conservancy's **O. D. von Engeln Preserve** at Malloryville. It is a captivating account of all the hard work and perseverance required to create this local Preserve that so many of us visit and appreciate today.

— Contributed by Charles R. Smith

Winning Recipe
from the 2012 FLNPS Solstice Party
by Sandy Podulka & Bill Podulka

Butternut Squash with Cranberry-Apple Quinoa

[Adapted from a recipe using Acorn Squash at *http://www.wholefoodsmarket.com/recipe/acorn-squash-cranberry-apple-quinoa*]

Ingredients

1 cup rainbow quinoa, rinsed
1 cup orange juice
2 cups apple juice or cider
1½ teaspoons ground cinnamon
¾ teaspoon ground allspice
½ teaspoon ground nutmeg
¾ teaspoon salt
½ teaspoon pepper
1 medium butternut squash
5 tablespoons butter, divided
1 large onion, diced
1 large carrot, diced
2 celery ribs, diced
¾ cup dried cranberries
¾ cup dried apples, diced
3 tablespoons maple syrup
¾ cup sliced almonds, toasted

Cooking Directions

Toast the quinoa in a dry, heavy-bottomed pot for about 3 minutes. Add orange juice, apple juice, cinnamon, allspice, nutmeg, salt, and pepper. Simmer, covered, for 25 minutes.

Meanwhile, preheat the oven to 350°F. Cut the squash in half and place cut-side-down in a baking dish filled with ½ inch of water. Bake until just tender (not mushy). While the squash bakes, melt 3 tablespoons of butter and sauté the onion, carrot, and celery over medium heat for 8-10 minutes. Add sautéed vegetables to the simmering quinoa, along with dried cranberries and apples, and maple syrup.

Simmer this aromatic mixture for 10 more minutes, at which point the quinoa should be fully cooked and hold together like sticky rice. Remove from heat and stir in the sliced almonds.

When the baked squash is cool, peel and cut it into 3/4-inch cubes. Stir these into the spiced quinoa mixture, put everything in a casserole dish, and bake at 350°F. for 10-15 more minutes — long enough to heat through.

This recipe makes four servings. Enjoy!

Appreciations

John J. Chiment, well known local naturalist, geologist, teacher, and Renaissance man, died on September 16th 2012.

We note the passing of **Elfriede Abbe**, famed artist, sculptress, and printmaker, on December 31st 2012. Miss Abbe worked as an illustrator at Cornell University from 1942-1974, and had lived in Vermont after retiring.

Richard B. ("Dick") Root passed away on January 22nd 2013. He was a renowned Cornell scientist who studied the ecology of goldenrods and helped safeguard local natural areas.

Finger Lakes Land Trust

Our December 2009 issue of *Solidago* (Vol. 10, No. 4), which emphasized the influence of White-tailed Deer on native plants, was reprinted for distribution with *Afoot in the Field*, Vol. 4, Issue 1, newsletter of the Finger Lakes Land Trust, Winter/Spring 2013, which featured a similar theme.

Finger Lakes Native Plant Society

Upcoming Summer Walks

Unless otherwise noted, ***all FLNPS walks begin and end in the parking lot at Cornell Cooperative Extension (CCE), just off Willow Avenue in Ithaca, N.Y.*** *Field trips are free and open to the public. Participants are asked to stay on trails and not collect any plants without the leader's consent.* ***For more information****, please call Anna Stalter , Susanne Lorbeer , or check the FLNPS website* (www.flnps.org) *for updates.*

August 17th (Saturday): Walk at the Finger Lakes Land Trust's Roy H. Park Preserve, led by Charles R. Smith. Meet **9:00 a.m**. at CCE to carpool, or at the Preserve's new North parking lot on Irish Settlement Road at 9:30 a.m. (there are signs on the roadside).

This diverse, scenic, and inviting 217-acre preserve is a short drive from Ithaca (near Dryden), and features the rugged headwaters of Six-Mile Creek, rolling meadows, open wetlands, mixed hardwood forest, wet hemlock woods with sphagnum moss and liverworts, numerous vernal pools, a large beaver pond fringed with cattails, and a Great Blue Heron rookery. We'll concentrate on inventorying plants for the new, North section of the Park Preserve, along a tributary of Six Mile Creek, where there's very little documentation for any flora, butterflies, or birds. Anyone wishing to check the wetter areas of the Preserve should bring appropriate shoes or boots. We should be finished by 1 p.m. See *http://www.fllt.org/protected_lands/protected_lands1.php?id=42* for additional details about this wild area.

September 14th (Saturday): Walk at the Finger Lakes Land Trust's Roy H. Park Preserve, led by Susanne Lorbeer. Meet at **10:00 a.m**. at the Preserve's South parking area (*not* the new North lot near the boardwalk!) on Irish Settlement Road, south of Goodband Rd. We will focus on plant identification, especially fall wildflowers, including asters and goldenrods. The trip ends at noon. Co-sponsored by the FLLT.

FLNPS will resume its regular schedule of walks and talks on September 18th 2013. Have a good summer!
[Also see NYFA programs at *http://www.nyflora.org/field-trips-and-workshops/*.]

Admiring Showy Lady-slippers: *Left photo:* **Arthur J. Eames** (*left*) and **L. H. MacDaniels** in the "*Cypripedium* Bog" (sometimes called "Eames Memorial Preserve") in about 1963. Note the Poison Sumac (*Toxicodendron vernix*) between them in the background (photograph by Arland Hotchkiss). *Right photo:* **Robert Dirig** about to photograph a luxuriant clump at Eames on 29 June 2003 (photo by David J. Taft).