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

Solidago

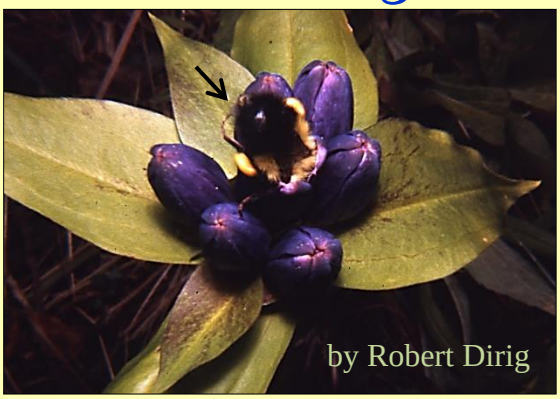
Newsletter of the
Finger Lakes Native Plant Society

Volume 14, No. 3 ~ October 2013

EDITORIAL

Closed Gentians (*Gentiana clausa*), Catskills, N. Y., 15 Sept. 1974 & 25-26 Sept. 1996.

Bluebottles, Fringes, & Bumbling Bees ~
Gentians in the Finger Lakes



AMONG THE AUTUMN WILDFLOWERS that mantle Finger Lakes landscapes with golden and violet splendor, none are more gorgeous than the Gentians. Their stately blue, purple, and lavender blooms appear in late August and early September, and last until frost. Finding a generous clump in a wet old field, along a roadside ditch, or at the edge of a woodland is one of the delights of this season.

The **CLOSED**, **BOTTLE**, or **BLUEBOTTLE GENTIAN** (*Gentiana clausa*) is quite scarce in the Finger Lakes Region, but can spread in large masses when found. Its royal blue flowers splay in pretty, loose bouquets, nestled in a whorl of glossy emerald leaves. Blooms may also be borne with the lower leaf pairs along the 1- to 2-foot-high stems (*bottom left*). As the days shorten, the foliage gradually purples (*see page 3*), providing a color-coordinated setting for its darkening flowers.

Are Closed Gentians really closed? The inch-high corolla (consisting of fused petals) is tightly gathered, but a gentle tug will open the top, revealing its boldly striped, white-and-purple interior, with five lavender filaments supporting white anthers that surround the smooth green pistil. One wonders at the secrecy of such a striking bloom: If it is so snugly shut, how do pollinators gain access?

Puzzles of this sort can often be solved by patient observation. One bright September day, I sat along a well-worn footpath through a wet old field, seeking an answer. Several clumps of Closed Gentians grew in easy view, while I waited, camera in hand, for a pollinator. A few moments later, a black-and-gold bumblebee buzzed up and landed heavily on the leaf platform surrounding an inflorescence, then butted its stout way inside a flower. I snapped pictures of its abdomen and hindlegs sticking out of the blossom (*arrows, above and bottom left*), and watched it withdraw and buzz on to another plant to repeat the rite. (*Text continues on page 2*)

Greater Fringed Gentian (*Gentianopsis crinita*)
top two, Catskills, N.Y., 29 Sept. 1973; *below*, Cornell's Fringed Gentian Preserve, Ithaca, N. Y., 21 Sept. 2007.

(*continued from page 1*) The bee's hairy body became powdered with pollen while it drank nectar deep inside the first blossom, and some grains likely transferred to the stigma of the second as it entered. The mystery had been solved, even documented on film, in just half an hour! Bees are strongly attracted to the blue and purple band of the spectrum. Is it any wonder that bumblebees pollinate gentians, our bluest flowers?

Common habitats for Closed Gentians include marshy lake shores, old fields, and road banks with a sunny exposure, where they sedately bask in the warmth of autumn afternoons.

W. R. Dudley reported three other "closed" gentians in his *Cayuga Flora* (1886, p. 63). A regional specimen identified as the **SOAPWORT GENTIAN** (*Gentiana saponaria*) turned out to be *G. clausa* (Wiegand & Eames 1926, p. 342). **FRINGED-TOPPED BOTTLE GENTIAN** (*Gentiana andrewsii)* is scarce in our area (Wiegand & Eames 1926, p. 342). Its flowers are slightly larger than *G. clausa*'s, and differ in fine details of the corolla's margin. The **NARROW-LEAVED GENTIAN** (*G. linearis*) was recorded in 1827 at Junius (Dudley 1886: p. 63), but has not been seen again in the Finger Lakes. This boreal species has slender, glossy, paired leaves, and occurs in montane habitats (*see page 3*).

Please also see images of and facts about the smaller **STIFF GENTIAN** on page 3. →

The famous **GREATER FRINGED GENTIAN** (*Gentianopsis crinita*) is our final member of this group. Its dazzling 2-inch-high, vase-shaped blue flowers have four deeply fringed lobes that expand horizontally in bright sunshine (*top*). The plants may reach 3 feet tall, bear large numbers of flowers, and like a limy soil. These charming but capricious plants appear on damp road banks, profusely in some seasons, scarcely at all in others. This is explained by their biennial life cycle and numerous, very fine seeds that are easily wind-scattered. Unfortunately, their roadside habitats are often mowed in summer, decapitating the growing gentians, and stunting their September-October glory. This gentian is so rare that I have only seen it in about a dozen places during a lifetime of field experience in the Northeast. It is a precious part of our wildflower heritage that should be safeguarded wherever it grows.

Left: **Closed Gentians (*Gentiana clausa*)** with purpled foliage, Catskills, N.Y., 10 Sept. 2000.

Right: **Narrow-leaved Gentians (*G. linearis*)** on Whiteface Mountain in the Adirondacks, 18 Aug. 2005.

The **STIFF GENTIAN** (*Gentianella quinquefolia*) is the smallest regional gentian, with slender lavender flowers quite unlike the "bottle" varieties. I have seen the 8- to 22-inch-high plants most often in loose groups on damp, sloping, sunny road banks in mid-September. Locally, they spread in large masses on Connecticut Hill.

Stiff Gentians from Connecticut Hill, N.Y., 17 Sept. 2012 (*left*); and with paler flowers, from the southern Catskills, N.Y., 8 Sept. 1996 (*above*).

REFERENCES

DUDLEY, W. R., 1886, *The Cayuga Flora*, Bulletin of the Cornell University (Science), vol. II, xxxii + 133 + v pp., 2 maps.

WIEGAND, K. M., & A. J. EAMES, 1926, *The Flora of the Cayuga Lake Basin, New York, Vascular Plants*, Cornell University Agricultural Experiment Station Memoir 92, 491 pp., fold-out map.

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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! TO OUR CONTRIBUTORS: Writers as credited above. **Calendar** items by Rosemarie Parker, Anna Stalter, & David Werier. **Illustrations** on pages 1-3, 5-7, & 9-10 by Robert Dirig; on page 5 by David Werier & Scott LaGreca; on page 8 by Kent Loeffler. **Layout & design** by the Editor. **Proofreading** by Rosemarie, Anna, & Scott. **Printing** by Gnomon Copy, Ithaca, N.Y. **Mailing** by Rosemarie & Susanne Lorbeer.

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

Deadline for the December 2013 issue is November 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. Colored images in the online version will be converted into black and white before printing paper copies for mailing.

Name That Plant Contest

The photo from the last issue's Name That Plant Contest [*Solidago* 14(2), page 5] was of **Carrion Flower (*Smilax herbacea*)**. The common name comes from the foul-smelling flowers, which are believed to attract pollinators. This species is dioecious, with separate staminate (male) and pistillate (female) plants. The photo was of a pistillate plant. Thanks to all those who entered the contest, and congratulations to contest winners: **Sara Brown, Betsy Darlington, Robert Dirig, Susanne Lorbeer**, and **Rosemarie Parker**.

This issue's mystery plant is shown above. I have again picked a more challenging puzzle, but don't throw up your hands, give it a try. Feel free to use field guides, the Internet, etc. This species is fairly rare in central New York, and is primarily restricted to the margins of some of the largest rivers. The petals are pure yellow. Notice the way they twist at the tips. 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** (*Nakita@lightlink.com*).

The photo was taken by David Werier on 31 July 2013 in Broome Co., New York, on the banks of the Susquehanna River.

A Super-Sassafras Leaf (*Sassafras albidum*) from The Nature Conservancy's Lizard Tail Preserve near Goshen, Cape May Co., N. J., growing on a small tree that bore several unusual leaves, 8 October 2007.

The vibrant lavender fall foliage of **Maple-leaved Viburnum (*Viburnum acerifolium*)** has become a rare sight, due to browsing by deer. Photographed on the north shore of Beebe Lake, Cornell University, Ithaca, N.Y., 16 Oct. 1996.

Letters

A message from *Cliff Brake*:

Not all our local ferns are winter-hardy like me! For example, the leaves of the Sensitive Fern (*Onoclea sensibilis*) rapidly senesce after the first frost of the season. Talk about "fair-weather fronds!" — as told to Scott LaGreca

WILD GARDENING

The Cost of Moss

by Akiva Silver

MANY OF US ARE AWARE OF THE HORRORS OF INDUSTRIAL AGRICULTURE. We have seen the videos of animals crowded into meat or egg factories, never seeing the sun or feeling the ground. We have heard about the intensive use of herbicides, pesticides, and synthetic fertilizers polluting waterways and depleting soils.

People have reacted to these practices by choosing alternatives. Local food movements, organic farms, and sustainable agriculture are all becoming more and more common. When will the horticultural field catch on? When we ask it to.

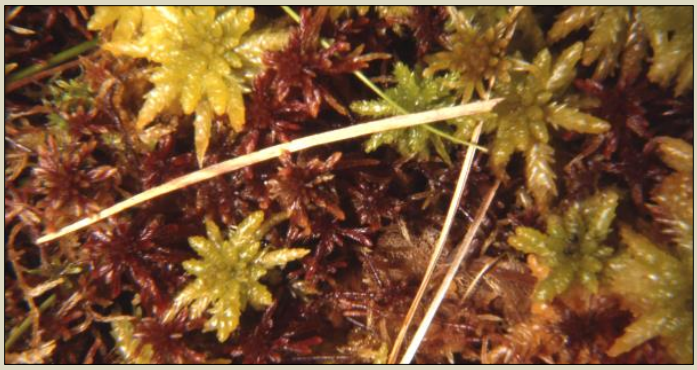
There are many degrading environmental practices that the nursery and landscape industries use. I believe the worst one, by far, is using peat moss. This seemingly harmless product is found in just about any garden center, and virtually in every bag of organic potting soil.

PEAT MOSS IS A GREAT SOIL CONDITIONER. It improves soil structure by increasing water retention and drainage at the same time. It is light and easy to handle. Conveniently, it comes in large plastic-wrapped cubes for about $15. It can transform a clay soil into one that drains and is full of organic matter. Peat can turn a poor site into one that is favorable to everything from tomatoes to laurels. But where does this wonderful substance come from? What is the true cost of the moss, beyond the $15?

Under wetland conditions, where oxygen is low, peat is formed by decaying plant matter. It takes a long time. Peat moss builds up at the rate of about one millimeter per year. Peat moss can form in several types of wetland habitats, including bogs, fens, pocosins, and peat swamp forests.

These areas are home to many unique plants, including carnivorous pitcher plants and sundews, wild blueberries and cranberries, Labrador Tea, sphagnum mosses, Tamarack trees, and many others. North American peat bogs are generally found in the Canadian wilderness, in areas that people seldom inhabit. Our horticultural peat moss comes from places that are home to moose, black bears, wolves, ermines, and other northern dwellers.

SO, HOW IS THE MOSS TAKEN FROM THESE PLACES? I wondered about this, and wanted to believe that it wasn't so bad, because I was hoping to use peat moss in my potting mix. I decided to look at information put out by the industry, rather than by environmental groups. The industry, alone, convinced me never to buy peat moss or any bag of mix that contained it, by simply describing their process of extraction.



Peat Mosses (Sphagnum *spp.*) *on the mat of Bog A at McLean Bogs Preserve, 16 July 1973.*

Typical peat harvests take place on plots of 200 or more acres in the Canadian wilderness. First the land is cleared of all trees and plants. Next the land is drained to dry out the moss. Canals or ditches are dug around the entire area. Once it is dry and the surface cleared off, a giant vacuum begins sucking up the dry peat one thin layer at a time. To describe this machine is almost impossible; it looks like a weird spaceship patrolling the moon. If you "google" *peat harvest images*, you will see what I am talking about.

The harvesting can take years, depending on how deep the layer of peat is. After they are done, reclamation begins. This primarily involves blocking up the drainage canals and letting things slowly return. Some companies may do more, or less. And in a few thousand years, a peat bog will return.

The industry claims this process is sustainable, and I agree with them. There is actually enough peatland in Canada that we could keep doing this and not run out of space. However, I don't think sustainability always matters. We can do lots of terrible sustainable things. The government could wrongly imprison one person every day out of the whole country, and we would not run out of people. That doesn't make it right.

It is sustainable to completely scrape off an ecosystem and put it into neatly wrapped packages for sale at Agway, but is it really what we want to do?

As gardeners, our goal is often to make the world more beautiful, one yard or farm at a time. How can we make the world any more beautiful, if we are destroying one place to improve another? This is, after all, one world.

The choice of peat moss is ours. We can easily live without it, and our gardens can thrive without it. I have successfully established blueberries, rhododendrons, and laurels, without any peat moss — numerous times. It is cheaper, feels better, and the plants don't care either way,

so long as they have good soil to spread roots into.

PEAT MOSS ALTERNATIVES ARE ABUNDANT, and easily found locally, often for free. Old wood chips are my personal favorite. These come from arborists grinding up branches. Good wood chips contain twigs, buds, leaves, bark, and wood. As they age, they turn dark brown and become filled with either worm castings or mycelium. They are free from most municipalities, or cheaply delivered by arborists. Some people worry about adding all that carbon to the soil, saying that it will rob all the nitrogen. If this is a concern, then simply add nitrogen from an organic fertilizer (there are lots to choose from).

Other peat alternatives that I have successfully used include leaf mold, compost, and rotten wood. Bags of leaves are left out every fall as if they were garbage. I collect as many of these as I can. After two seasons, a pile of leaves makes an outstanding compost, unsurpassed in texture.

The potting mixes we use at Twisted Tree Farm are made with aged wood chips and compost as primary ingredients. We have started everything from vegetable seeds to oak trees, with no adverse effects. Some people advise sterilizing potting mixes, but I prefer not to. I like a living soil, not a clean dead one. Besides, any plant that needs sterile soil can never live in the garden anyway.

Every gardener can make their own compost or purchase it locally. There is no reason to strip the North Woods. The world is full of tough environmental issues, but peat moss is an easy one. We really don't need it.

AKIVA SILVER owns and operates **Twisted Tree Farm**, a homestead and nursery specializing in unusual useful plants and alternative tree crops. Visit *www.twisted-tree.net* for more information.

Coastal Peatlands of Washington County, Maine, lie in the fog zone along the Atlantic. Their mats are rich tapestries of rare boreal plants with associated animals (**A**), including Swamp Pinks (*Arethusa bulbosa*, **B**), Crowberry Blues (*Lycaeides idas empetri*, **C**), and Bog Coppers (*Lycaena epixanthe*, **D**). At Quoddy Head State Park, across the bay from New Brunswick, 8- to 12-ft.-thick slabs of peat erode onto the beach (**E**). Commercial peat mining also occurs in at least one of these wetlands along the Maine coast (**F**). [Photos copyright © 2013 by Robert Dirig.]

OUTINGS

A Fascinating Fungal Find on a Hammond Hill Hop Hornbeam

We found this tiny fungus growing along the branches of a Hop Hornbeam (Ostrya virginiana). As we passed through a shady grove of these small trees in the forest, I was momentarily distracted by what looked like tiny flowers on some low-hanging branches overhead. Though I pressed on to catch up with the group, the person behind me stopped and asked aloud, "What's this?" Piqued by AUDREY BOWE's interest, I stepped back and proffered my hand lens for a closer look. Spaced every inch or so along two mostly leafless branches, RICK LIGHTBODY observed that the individual clumps were easily dislodged from the twig we were examining. Peering through the lens, we were astonished to realize that these slim coral-like projections were a fungal growth of some sort. The 4-inch-diameter tree had many other leafy, unaffected branches, and looked otherwise healthy. I collected a small twig and brought it to KATHIE HODGE for identification. Imagine my surprise to learn that each discrete clump grew out of the exoskeleton of a scale insect host, colonized some months before, when a spore of Ophiocordyceps clavulata landed on its back! Thanks AUDREY, RICK, KATHIE, and KENT for helping to share this fascinating find with FLNPS members! – *Anna Stalter*

"Bug Sputnik"

Ophiocordyceps clavulata (Schwein.) Petch

This tiny parasitoidal ascomycete was found during the walk led by CHARLES R. SMITH at the Finger Lakes Land Trust's **Roy H. Park Preserve** off Irish Settlement Road near Dryden, N.Y., on 24 August 2013. The scale insect is unidentified. A voucher specimen will be deposited at Cornell's Plant Pathology Herbarium (CUP). A check of the Atkinson Local Collection in that museum (courtesy of SCOTT LAGRECA) disclosed other Finger Lakes specimens of this fungus that were filed under an earlier name, "*Cordyceps clavulata*": from Eames "Bog" (Mud Creek Swamp) in 1905 (plant host of the scale insect not recorded); and Coy Glen, on Mountain Maple (*Acer spicatum*), collected in 1895. The scale was identified at that time as *Lecanium haemisphericum*.

KENT LOEFFLER's wonderful photographs (*left*), shared by KATHIE HODGE, are "focus-stacked from over 25 individual images." – *Ed.*

STATUS REPORT

Invasive Stilt Grass at Six Mile Creek

by Anna Stalter

JAPANESE STILT GRASS [*Microstegium vimineum* (Trin.) Camus], an invasive annual grass, has long been problematic in southeastern New York, and was first reported from the Six Mile Creek Natural Area in 2004. Now known from at least two other locations in Ithaca, as well as at Montezuma National Wildlife Refuge in Cayuga County, the species is presumably spreading throughout central and western parts of the state.

Every September since 2005, volunteers from FLNPS, Cornell University, and the Ithaca community have gathered to pull Stilt Grass from an area near the second reservoir at Six Mile Creek. At least 40 person-hours were expended in 2010, and again in 2011, when, each fall, two sections of Frank Rossi's Horticulture 1101 class at Cornell joined the effort. Also in 2011, a weekend pull attracted eight more community and FLNPS volunteers, who attempted to remove every plant in the vicinity.

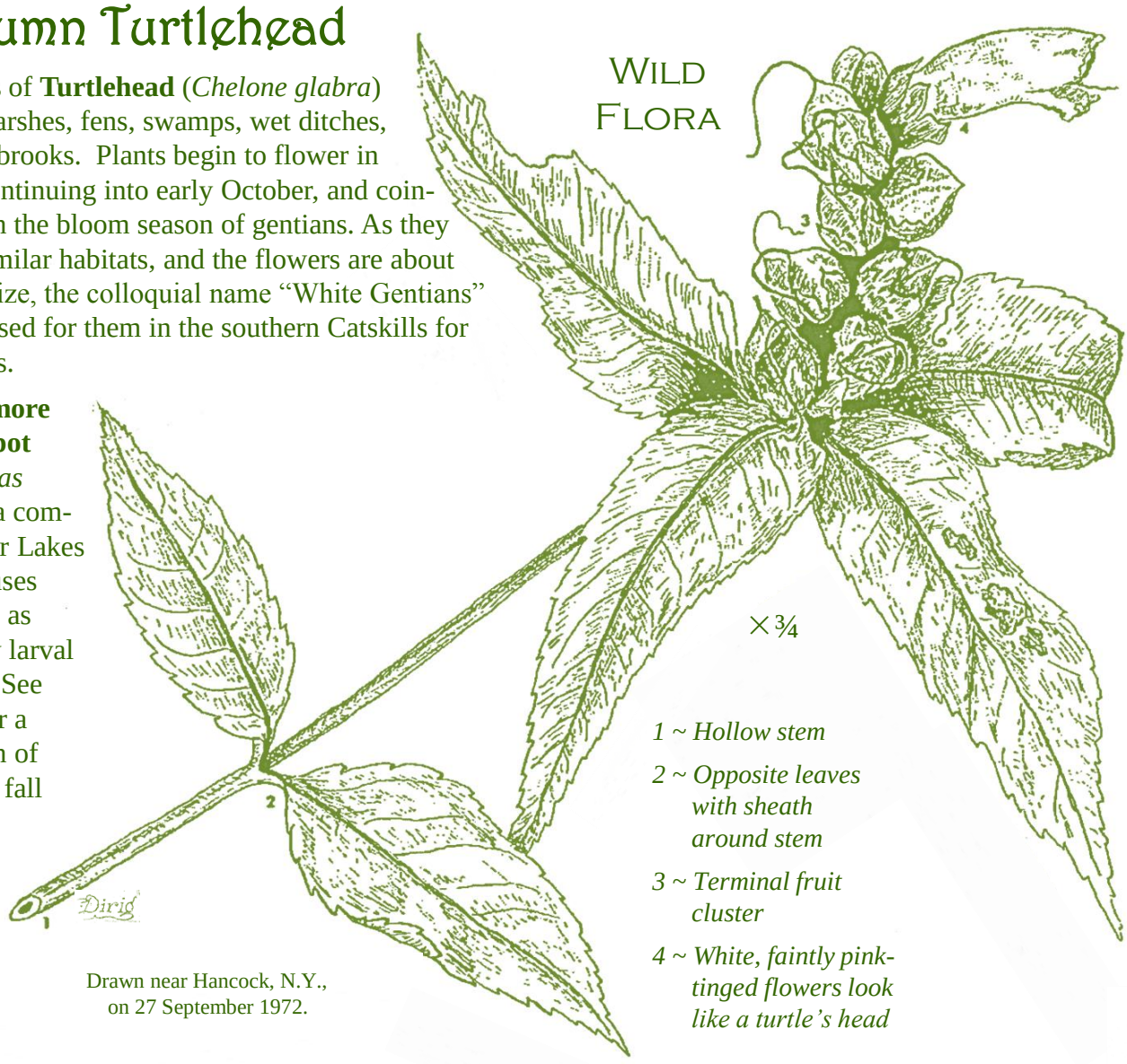
Though this continuous activity has been very effective, the species is still hanging on. Three volunteers visited the site recently, collecting nearly two garbage bags full of the weed in a couple of hours. Another trip is planned for the week of Sept. 16, focusing on the upslope areas where Stilt Grass threatens the habitat of two state-listed rare sedges and one rare grass. Thanks to everyone who has helped in the effort to eradicate this species from the natural area! Stay tuned for more updates.

Autumn Turtlehead

WILD FLORA

Clumps of **Turtlehead** (*Chelone glabra*) grow in marshes, fens, swamps, wet ditches, and along brooks. Plants begin to flower in August, continuing into early October, and coinciding with the bloom season of gentians. As they grow in similar habitats, and the flowers are about the same size, the colloquial name "White Gentians" has been used for them in the southern Catskills for many years.

The **Baltimore Checkerspot** (*Euphydryas phaeton*), a common Finger Lakes butterfly, uses Turtlehead as its primary larval foodplant. See page 10 for a photograph of this lovely fall flower.



×¾

1 ~ Hollow stem

2 ~ Opposite leaves with sheath around stem

3 ~ Terminal fruit cluster

4 ~ White, faintly pink-tinged flowers look like a turtle's head

Drawn near Hancock, N.Y., on 27 September 1972.

Finger Lakes Native Plant Society

Upcoming Autumn 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 trip leader's consent.* ***For more information****, please call trip leaders at numbers provided, Anna Stalter or Susanne Lorbeer . You may also check the FLNPS website* (www.flnps.org) *for updates.*

October 12th (Saturday), raindate Oct. 13th: Tree Identification and Inventory at Six Mile Creek, led by Anna Stalter, 9:00 a.m. to noon.

Learn how to identify trees using bark and bud characters, and participate in an effort to document the tree species in the Six Mile Creek Natural Area. Meet in the Mulholland Wildflower Preserve parking lot, just off Giles St. at 9:00 a.m. Contact Anna for more information. *Co-sponsored by the Friends of Six Mile Creek.*

October 26th (Saturday), raindate November 2nd): Annual Seed Collection Outing, led by Krissy Boys, 1:00 p.m. *ff*.

Learn how to collect seeds of late-flowering native plants while gathering seeds for Cornell Plantations and the FLNPS seed exchange. Collecting equipment will be provided. Location TBA. Meet at CCE at 1:00 p.m. to carpool. For more information, and to be sure you are notified of any weather-related changes, please contact Krissy ( ) or Rosemarie ( ).

Upcoming Talks

FLNPS talks are held on the third Wednesday of the month at the Unitarian Church Annex (second floor) in Ithaca, N.Y., beginning at 7:00 p.m*. Please watch the FLNPS website (www.flnps.org) for updates.*

October 16th: (Topic to be announced), by **Ron Raguso**, Cornell University.

November 20th: Plant Rarities at West Point: A 200-year Overview, including Details from Intensive Surveys in 2011, by **David Werier**, Field Botanist.

West Point in the Hudson Highlands of Orange and Putnam Counties, N.Y., encompasses ca. 6400 hectares of wild land, and is surrounded by additional large tracts of undeveloped parkland. The area supports a wide diversity of habitats, including inter-tidal marshes along the Hudson River, open rocky grasslands and woodlands, forested hillsides, numerous natural and artificial lakes, peatlands, swamps, and vernal pools. This relatively pristine and diverse site, which is close to the NYC metropolitan area, is home, at least historically, to 51 rare plant taxa. This presentation will focus on rare plants of the West Point Military Academy (WP), and review the past 200 years of rare plant explorations at WP, including intensive surveys conducted in 2011 (which added some new species to the list of WP flora).

December 18th: FLNPS Solstice Celebration (location to be announced).

January 15th 2014: **Moths & Moth Gardening**, by **Jason Dombroskie**, Cornell University Insect Collection.

February 19th: **Milkweeds**, by **Anurag Agrawal**, Cornell University.

Turtlehead (*Chelone glabra*), Ithaca, N.Y., 19 Sept. 1996 (R. Dirig). *See page 9.*