Perfectly Coordinated ~
Wild Lupines and Karner Blues in New York
by Robert Dirig

ILD LUPINES AND KARNER BLUES are esthetically and ecologically coordinated in wonderful ways! This endangered butterfly has intertwined its life cycle with the seasonality of Wild Lupine (*Lupinus perennis*), its only larval foodplant (7, p. 2). Understanding their interaction helps us safeguard both the plant and the butterfly.

In New York, Wild Lupine sprouts from extensive perennial rhizomes in mid-April (4), sending its purplish leaves upward through the sand. Five or more flowering stalks originate from one rhizome, producing a clumped habit (18, p. 3). Plants grow rapidly over the next month (2), with inflorescence buds appearing from May 7-13, and full bloom attained by May 20 in most years (3). Flowering lasts through mid-June, when seed pods develop (5). Late in June, the pods forcibly dehisce, throwing the seeds (5, inset) 3-7 ft. from the plant. Lupine seeds remain on or in the sand, and optimally germinate when scored or scorched (6).

**Karner Blues** (*Lycaeides samuelis*, male 1, female 2) closely associate with **Wild Lupines** (2-5), which bloom when the first brood flies, in May and June. New plants appear in the spring, growing until frost (6).
Leaves and seed-bearing stems rapidly blacken and die down by early August, except for new seedlings (6, p. 1) that persist until frost. From early autumn through the following April, the plant exists as resting seeds, and thick subterranean rhizomes that may penetrate more than 6 ft. into the sand. New leaves sprout the following April, reinitiating the annual cycle (4).

Fig. 7 illustrates how the annual cycle of the Karner Blue merges with Wild Lupine’s yearly pattern. Overwinted eggs hatch late in April, and the minuscule (1-mm-long) larvae must crawl to new Lupine leaves before beginning to feed (8) — the advantage of occurring within solid stands of the foodplant is obvious. The caterpillars mature by late May (9) and pupate (10), with first brood adults (1-2, 11-13) on the wing from about May 20 through June 10. Eggs laid by first brood females hatch in about a week, the larvae feeding through the beginning of July, then pupating to produce second brood adults from mid-July to early August. Wild Lupine dies down by the end of July, so second brood females lay eggs on or near the foodplant’s seed pods or dead stalks, but these are loosely attached, and may drop onto the sand, where they overwinter, hatching the following April, after Wild Lupine sprouts. *This synchrony is highly specialized, with active periods of both plant and butterfly occupying only four months of the year.*

Wild Lupine is sparsely distributed in New York, usually growing in sandy soils (17, p. 3). It occurs along the Lake Ontario Plain, in the Finger Lakes, in the Mohawk and Hudson River drainages, and on Long Island. Its wider range is from Minnesota to Maine, and south and west along the Atlantic coast and Gulf States to Texas (19, p. 3).
The Karner Blue originally occupied the northern edge of Wild Lupine’s range (19), but natural populations are now largely restricted to New York, Michigan, and Wisconsin, with reintroductions in a few areas.

Wild Lupine’s gorgeous blue flowers (a few plants have pink or white blooms) are attractive to many potential pollinators in New York. Honey Bees (Apis mellifera), Bumble Bees (Bombus spp.), and Carpenter Bees (Xylocopa americana) feed at the flowers. Lepidopterans that I have watched taking nectar at Wild Lupine include the Hummingbird Clearwing (Hemaris thysbe), Hobomok Skipper (Poanes hobomok), Cobweb Skipper (Hesperia metea), Silver-spotted Skipper (Erynnis juvenalis, E. icelus), Common Roadside Skipper (Amblyscirtes vialis), Black & Tiger Swallowtails (Papilio polyxenes, P. glaucus), Clouded & Orange Sulphurs (Colias philodice, C. eurytheme), Cabbage White (Pieris rapae), Frosted Elfin (Callophrys irus), and Karner Blues. [Feeding at the flowers does not guarantee pollination.] Other butterflies with larvae that feed on Wild Lupine include Frosted Elfin, Eastern Tailed Blue (Cupido comyntas), and Persius & Wild Indigo Duskywings (Erynnis persius, E. baptisiae).

This butterfly’s story is tied to Vladimir Nabokov, the famous author and lepidopterist, who described it from the Albany Pine Bush in 1943. Historically, millions of this butterfly flew in solid masses of Wild Lupine that extended over many acres near Albany. Al Frederick wrote (in 1973) that Karner Blues “were so abundant in the sand plains west of Albany between the city line and Karner [a railway stop between Albany and Schenectady] that I’ve often taken as many as 30 or more in one swing of the net. They just swarmed in the fields of Blue Lupine. But starting in the [19]30’s the city spread outward and the entire area was bulldozed....” Conservation efforts began in 1973, when the fledgling Xerces Society became involved in its preservation, and soon after, N.Y.S. and Federal agencies had declared it endangered. It is now very well studied, and the most famous of Nabokov’s butterflies. The best places to see living adults in N.Y. are at the Albany Pine Bush Preserve or in Saratoga County.

This color-coordinated plant and butterfly continue their delicate dance in Nabokov’s “sandy and flowery little paradise,” with the cobalt blue Helderberg ridge and the paler blue Catskill high peaks to the south, glimpsed from the top of a windswept dune under a deep blue sky.

For Further Information


Please Contribute to Solidago

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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), and Plant Profiles (on specific local plants). We also occasionally publish Appreciations (memorials to local botanists and naturalists), Reviews (of books, talks, workshops, nurseries), Letters (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 last issue’s NAME THAT PLANT CONTEST [Solidago 17(1), page 5] was of Maple-leaved Viburnum (*Viburnum acerifolium*). This acidic forest understory species is one of two viburnums with three-lobed leaves that grow in central New York. The other, Highbush-Cranberry (*Viburnum opulus*), generally occurs in wetter, often less shaded habitats. Thanks to all those who entered the contest, and congratulations to the winners: Betsy Darlington, Bob Dirig, Ken Hull, Susanne Lorbeer, Rosemarie Parker, Debby Shanahan, and Charlie Smith.

**Letters**

Dear Bob,

I would like to contribute photos to the upcoming *Solidago*. I didn’t find this species in the Finger Lakes Region, but they can be found around the area.* I was hiking in the Minnewaska State Park, outside of New Paltz, N. Y., going down towards the river, which was surrounded by large slabs of rock. On one slab, I saw a little grassy hill covered with Common Bluets (*Houstonia caerulea*)! There were hundreds in a meter by meter patch.

**Julia Miller**

email of 30 April 2016

Here’s a little haiku to go with the sap drinkers: Eastern Commas and a Mourning Cloak, feeding on sap from a wound in a Hop Hornbeam (*Ostrya virginiana*), St. Lawrence State Park, N. Y., 30 April 2016. **Steve Daniel, email of 30 April 2016.**

The wounded tree ooze sap feeding butterflies

— Steve Daniel

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**Swamp Rose** (*Rosa palustris*) blooms during July in shrubby calcareous wetlands in the Finger Lakes Region.
How lovely, the two cordate leaves, fuzzy and veined, sunbathing on the forest floor in early spring.

What a surprise, the flower-tube under dead leaves, with three deep purple calyx-lobes and white-marked throat.

How delicate, the spicy smell of leaf and stem, suggestive of store ginger-root, but not as sharp.

How soon the leaves grow reniform; the flowers die and wither in the summer shade until next spring.

— Robert Dirig, 8-9 May 1989

Wild Ginger Begins
by Matthew Dirig (2/3 life size), April 19th 1980 (left); and in early bloom on April 22nd 1980, with cordate (heart-shaped) spring leaves (right).

Asarum canadense

Local Flora

A Special Delight of Spring Woodlands

Two very different styles visually describe this wonderful plant. Those on the bottom are literal scientific portrayals, while the one on the left is a stylized motif, inspired by William Morris’ Victorian designs for botanical wallpaper. The poem blends scientific details with artistic language to characterize the plant.
There must have been 10 million of us
covered with slime
so thick we turned the field
wet brown,
ten million or more of us
growing tiny legs and toes and lungs,
leaving tails and gills behind
so we could breathe,
ten million leaping bodies
on top of the muck and blades of grass
that edged the pond—
until the hoof of a horse came down
and killed 10,000, and a dog’s paw
ripped the flesh of 5,000 more, and a man’s foot
squashed 7,000 more—
until a child’s hand picked me up
and we peered into each other’s eyes
to see what the other was,
and then gently put me down again
and I saw in the places
where the horse and the dog and the man
had stepped, the field had become a pasture again
where I could grow new skin
The New York Flora Association has proclaimed Fringed Milkwort (*Polygaloides paucifolia*) to be the 2016 Wildflower of the Year! Watch for its lovely magenta blooms in May and early June. This plant was photographed at South Hill in Ithaca on 9 May 1998 by the Editor.

**Thank You!**

Volume 17, No. 2 marks the end of four years, and sixteen issues, as Editor. Although it takes much time and effort, I have very much enjoyed producing Solidago, and I look forward to a fifth year. I am grateful for the many contributions and continuing support that we have received. Due to scientific content in our issues, we have recently been asked to post Solidago on the Biodiversity Heritage Library at Harvard University, a consortium of major natural history museums, botanical libraries, and research institutions that cooperate to digitize and make accessible the legacy biodiversity literature.

For Volume 17, No. 2, we thank WRITERS Steve Daniel, Robert Dirig, Mary Gilliland, David Keifer, Julia Miller, Rosemarie Parker, Charles R. Smith, Anna Stalter, Arieh Tal, Thelma Turner, David Werier, & Geoff Wisner, whose contributions make this issue special. ILLUSTRATIONS were loaned by Steve Daniel, Julia Miller, & David Werier (p. 5); Matthew Dirig (p. 6); Arieh Tal (p. 9); and Robert Dirig [pp. 1-4, 5 (bottom left), 6, 8, & 11-12]. Jo Brewer took the photo of the Karner Blue chrysalis (p. 2, No. 10). The drawing of the American Toad’s life stages (p. 7), by C. W. Furlong, originally appeared in the Cornell Rural School Leaflet, Vol. 10, No. 1, p. 91, in Sept. 1916. CALENDAR ITEMS were organized by Rosemarie Parker & Anna Stalter. LAYOUT & DESIGN by the Editor; PROOFREADING by Rosemarie Parker; PRINTING by Gnomon Copy, Ithaca, N. Y.; and MAILING by Rosemarie Parker & Susanne Lorbeer. I especially appreciate the support of Carolyn Klass, Scott LaGreca, Torben Russo, & Thelma Turner while preparing this issue.

BEST WISHES to FLNPS members (and all others in our reading audience) for joyous revels with the continuing pageant of summer flora!

— Robert Dirig

Marsh Bellflower (*Campanula aparinoides*) is a wetland treasure of fens and limy shores, blooming in July and August in the Finger Lakes Region.

### Poet’s Corner

**Dog Day Harvestfly**

by Mary Gilliland

Clamped upon ribbed ridges where shell cracked a central seam the full-grown harvestfly emerges aqua lighter blue than anywhere in nature, two three-inch wings spread not yet for flying drying.

To the brown shell of a nymph that grubbed on root juices three years whose empty feet will grip the cohosh leaf until the next great wind clings the origin of faerie.

To a dull mound with emptied legs.

When peach juices and blackberry run down the chin and a dozen ears of corn tassel market sacks we see them parked on flagstones or outgreening the grass, black back and eyes, clear wings with emerald hems, and the red shoes of creatures who have longed to dance, whose feet will never cross church threshold, whose bread of life is air. In an hour the spread wings will shutter the great body hardening before the rain, vibrant vulnerable blue a sere cicada drone.

*Originally published in Stone Canoe Online (2012)*

Reviewed by Arieh Tal

Several generations of naturalists, wildflower hobbyists, and environmental practitioners have trusted Lawrence's Wildflower Guide and Peterson's and McKenny's A Field Guide to Wildflowers, to teach them about wildflowers of the northeastern United States. During those years, botanical science has made enormous progress in understanding evolutionary relationships between species, thanks in part to the development of powerful genetic, analytical methods. Consequently, research findings since the 1960s have resulted in the need for many changes to scientific names of plant species, genera, and even families; and a significant proportion of the plant names used today in scientific literature no longer correspond to the names used in our venerable, aging, user-friendly field guides.

To address the needs for an updated wildflower guide, the New England Wild Flower Society (NEWFS) commissioned Ted Elliman to write Wildflowers of New England. Elliman's new guide incorporates some of the best features of our two older, user-friendly field guides, using full-color photographs (rather than drawings) to portray the inflorescences of 1100 wildflowers and small flowering shrubs of New England. Three species are described on each page of the manual, with a photo, a brief paragraph describing important field characteristics, flowering periods, habitats, and both scientific and common names.

Elliman's field guide employs a non-dichotomous key, based on both floral and vegetative (mainly leaf) characteristics. Like the Peterson and McKenny guide, the entry point for the logic is based on flower color. The user is next asked to decide how many petals the flowers have, and whether they are radially or bilaterally symmetrical. Following that, one must determine whether the plant's leaves are toothed, lobed, divided, or none of those (i.e., simple and/or entire), and whether they are arranged in alternate, opposite, or whorled order, or are primarily basal. According to the results, one is directed to a given page or range of pages, containing descriptions and images of corresponding species.

To understand what is meant by “symmetry,” think of trying to draw an imaginary line through the center of the flower. Would the left half of the flower be exactly like the right half, and how many different ways of drawing the imaginary line through the center of the flower would yield the same result? If you can divide the flower into two equal halves in only one plane, then you have "bilateral symmetry." If you can divide the flower into two equal halves in many planes, then you have “radial symmetry.” Flowers of species in the mint, orchid, and violet families exemplify “bilateral symmetry,” whereas flowers of species in the rose, mustard, and composite families exemplify “radial symmetry.” (See examples below.)
The Elliman guide also features a brief tutorial on plant morphology, a glossary of technical terms, and an excellent survey of landscape and natural community types, to help us associate the plants we find with their preferred habitats. The level of technical knowledge required is about the same as that of the two older field guides it replaces. The index at the back of the book is very comprehensive. For convenience, it also lists most of the older or former common and scientific plant names, and refers you to the new names.

Like its predecessors, the new guide is vastly easier to use, and to tote, than more comprehensive and technically exacting field manuals, but it describes only about a third of the species one could potentially find in the field. So, one must refer to other sources if identification was unsuccessful. The other major advantage of the new wildflower guide is that the plant names are the same as those you will find in Haines’ *Flora Novae Angliae* and on the GoBotany website.

How well does this new guide to New England’s wildflowers cover the wildflowers found in New York? To answer that question, I made a list of the species included in the book’s index. Ninety-seven percent of the species listed are also found in New York State, according to the New York Flora Atlas (NYFA) website. The scientific names of only 3% of the listed species differ from those on the NYFA website.


4 http://gobotany.newenglandwild.org/


Reviewed by Charles R. Smith

This field guide covers a region south and west of New York State, including all of Kentucky, Tennessee, and West Virginia, and parts of the adjoining thirteen states, encompassing the Appalachian Mountains, from central Pennsylvania to northern Georgia. While not specific to New York and the Northeast, I estimate the overlap with northeastern species to be more than 80 percent, because of many northeastern species occurring at high elevations in the Appalachians, and many southern species reaching the northern limits of their range in New York. I have used this guide in the Great Smoky Mountains National Park for the past five years, and on a road trip through western Pennsylvania, Ohio, Kentucky, Tennessee, and Virginia in Spring 2015.

The book has 800 color photos, includes illustrated non-technical keys to genera for 12 larger families (e.g. Apiaceae, Asteraceae, Orchidaceae), and has an illustrated glossary. Some colorful woody plants (e.g. Ericaceae) are included, as well, along with a few of the more distinctive rushes, sedges, and grasses (only 14 species). More than 1250 species and varieties of monocots and dicots are described. A simple, picture key to 300 representative species, based on flower color, with thumbnail photos of each species, is found at the beginning of the guide. Family sequence, and many scientific and English names, follow Gleason and Cronquist’s (1991), *Manual of Vascular Plants of Northeastern United States and Adjacent Canada* (2nd ed).

A typical species account includes a color photograph of the plant, English and scientific names, general description (leaves, flowers, fruits), where found (habitats and geographic distribution), flowering period, and notes. Information about the meanings of scientific names (etymologies), and known medicinal uses of some plants, typically by American Indian tribes, is often included in the notes. Other, related species, found in the region covered by the guide, but not described therein, also are listed. The book includes a bibliography of over 128 references and nine helpful web sites.

For use in the field, this guide is a bit larger and heavier than the field guides by Newcomb or Peterson & McKinney, though it covers a comparable number of species, and its taxonomic nomenclature is more current. Still, it certainly is more compact than *Gray’s Manual*. For my use, this book largely has replaced my other field guides.

I especially like having keys for many of the larger, sometimes more difficult families, and the illustrated glossary. Both of these features make the book relatively easy to use. I also have appreciated the inclusion of most Appalachian endemics (e.g., *Rugelia modestulis, Solidago roanensis*). Given my own interests, however, I was a bit disappointed to find only nine goldenrods described in the guide, when we have at least a dozen or so here in the Cayuga Lake Basin alone. On the other hand, this guide has a brief, but helpful description of the differences between Blue Cohosh (*Caulophyllum thalictroides*) and Giant Blue Cohosh (*C. giganteum*).

If your future travels take you to the region covered by this guide, especially the Appalachian Mountains, I enthusiastically recommend you add this book to your collection of field guides. Here in New York, it is an excellent complement to the other popular field guides we typically use.

As a native of Skaneateles in the Finger Lakes, I am pleased to announce my new book *Thoreau’s Wildflowers*, published in March 2016 by Yale University Press. It is a generous collection of Thoreau’s writings on the flowering plants of Concord, Massachusetts, arranged by day of the year, and accompanied by more than 200 drawings by the celebrated illustrator Barry Moser. The book illuminates not only Thoreau’s ecological insights and botanical expertise, but his belief in nature’s correspondence with the human soul. *Open Letters Journal* said, “This lovely new volume ... almost immediately announces itself as a requisite addition to any shelf of Thoreau books.” — Geoff Wisner
Like the chrysalis
of a golden-crowned monarch
with wings stuck fast to its sides,
my body’s too small
to hold all that I want.

It comes and it goes,
arriving only in symbols,
whir of Ezekiel’s wheel,
soft breath of a hummingbird,
the whisper
I barely hear,

“Why do you remain
in this valley of false delights
flirting with truth
when the journey
of 2,000 miles
lies before you,
your wings
soaring into the clouds,
your feet
not once walking on land?”

The voice of Thunder
from over the hills
pounds in my ears,

“You need to
be what you want:
wind beneath your wings,
feathers iridescent with color,
sweet beat of your heart
like that of a dove
after the excitement of flight.”

It comes and it goes
like the tropical bird
in my head
yearning to be free.

7-18-12 thelma

Finger Lakes Native Plant Society

2016 Summer Calendar

THEME IN BLUE

Azures (Celastrina sp.) and Water Forget-Me-Not (Myosotis scorpioides), 17 June 1970. Pen-and-ink drawing (1975), colored for this issue. Open female (left), nectaring males (left & right center), and open male (right).

Although this is a naturalized European plant, it lends great beauty and grace to gentle waterways, and “earns its keep” by providing nectar to thirty-two species of wetland butterflies.

June 19 — Sunday — 1:00 p.m. Lime Hollow Walk.
Join Robert Wesley for a walk in the varied habitats of Lime Hollow. A rich woods, acid bog, and marl ponds are home to a wide diversity of plant life. Meet at the Cornell Cooperative Extension (CCE) center at 615 Willow Ave. in Ithaca, N.Y., at 1:00 p.m. to carpool, or at 1:45 p.m. at the parking area on Gracie Road.

July 16 — Saturday — 1:00 p.m. Moss Walk at the Lindsay Parsons Biodiversity Preserve, led by Norm TrigoBoff.
Learn to identify wetland bryophytes. Bring boots, otter repellent, and a 10 x hand lens if you have them. Meet at CCE at 1:00 p.m. to carpool, or at the parking area at the preserve in West Danby at 1:30 pm.

Please watch our website (flnps.org) for further details and other announcements. Happy summer!

FLNPS Is Now on Facebook

Since its inception in 1997, the Finger Lakes Native Plant Society has endeavored to provide its members with information and news about the flora of our region. The means by which we do that has changed over the years. Our newsletter Solidago is now produced in full color and delivered via e-mail. Our website (flnps.org) features enhanced content and important announcements. In the spirit of keeping current and reaching out to members and interested parties, far and wide, the “Finger Lakes Native Plant Society” now has a Facebook page! Would you like to share a striking photo of fall foliage, or do you need help identifying a composite growing in your yard? Ask your FLNPS Facebook friends!

We hope members will enjoy using this social platform for instant sharing of content with countless others with an interest in Finger Lakes flora. “Like us” on Facebook!

Other Botanical Events

July 16 — Saturday — 9:00 a.m. to 2:00 p.m. Dryden Open Gate Garden and Art Tour, $5 per person.
This is a walking tour through the historic district of Dryden Village, starting from the Municipal Parking Lot on George St., Dryden, N.Y. Walk or ride the free shuttle to each garden. Maps will be available. The gardens incorporate some native plants in these urban spaces. Money raised from this tour is used to maintain Dryden Village parks, public spaces, and especially the Monarch and Butterfly Garden next to the Jim Schug Trail at Main Street. Contact Dryden Beautification (Facebook or webpage).

June 26, July 17, & August 21: The Leatherstocking Botanical Society will conduct field trips this summer, just east of the Finger Lakes, in Chenango, Otsego, & Herkimer Counties, N.Y. (See details on the FLNPS website).

The Finger Lakes Land Trust (fllt.org/events/) and Cayuga Trails Club (http://cayugatrailsclub.org/events/) also sponsor outdoor events in the summer. Please see their websites for details.

The 2016 Upper Delaware BioBlitz will be held June 24-25 at the Ten Mile River Boy Scout Camp in Tusten Town, Sullivan Co., N.Y. Teams of scientists and amateur naturalists will converge on the site to conduct a 24-hour biological survey. For more information, see:

https://www.facebook.com/UpperDelawareBioBlitz
http://www.upperdelawarebioblitz.com/