

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



Solidago

Newsletter of the Finger Lakes Native Plant Society

Volume 21, No. 1



April 2020

EDITORIAL

Looking Ahead to Spring!

by Robert Dirig

Dear Readers,



THIS ISSUE is arriving a month later than usual, due to my preoccupation with another project throughout the winter. An April date is actually fortuitous, as it parallels some welcome hints of spring in a beleaguered world.

The Western Hemisphere, and the whole planet, has recently come under siege by an aggressive microscopic pathogen — which is a new experience for most of us. This has necessitated a withdrawal from much that is familiar, as we stay indoors and isolate ourselves from others. An unfortunate corollary of this situation is the cancellation of public events that assemble people. Thus our Steering Committee has reluctantly been obliged to cancel our remaining calendar for the spring, including our evening programs and walks. We hope to reschedule the talks that were planned for March, April, and May in autumn 2020, or early in 2021. In the meantime, please check our website (www.flnps.org) from time to time to see if anything is scheduled in the coming months. We hope to resume a normal schedule in September, and I plan to produce another issue of *Solidago* in June.

Embedded in this nagging inconvenience is a *rare gift of time at home* for creative and personal pursuits, and a chance *just to rest* from the frenzy of modern life. Spring proceeds steadily outdoors, as days lengthen, new green leaves and flowers unfold, songbirds return from migration, the earliest butterfly hibernators fly in the woods, and the weather warms. It is important to get out regularly into the air and sunlight. One outdoor thing we can do safely is walk in fields, woods, and wetlands, and commune with the myriad wildings that are carrying on as usual. If we can't interact directly with other people, we can connect with the plants and other wild beings that surround us. Their regular phenology and charming society can be very healing.

We can watch as a flowers sprout, grow, bloom, and go to seed; as leaves unfold; and even chronicle the entire active cycle of a spring ephemeral, from earliest emergence through the dead leaves to withering at canopy closure. What insects are pollinating wildflowers? What is eating or dispersing their seeds? The intensity of our "other" life usually does not allow this level of focus and pause, even when we can snatch a little time to be outside; but the rewards of discovering these facts can be very satisfying, and may contribute new information. Indoor time can also be a gift, to work on creative projects, write, draw, read, re-energize our cooking, play more music, enjoy our families and pets, clean and organize corners that have somehow filled with clutter, and keep in touch by phone and email with friends and extended family. A forced interruption of this sort can also give us perspective on our regular routines and habits, and maybe help us learn to live a little less frenetically, more simply.

And while we are sequestered, perhaps some of you will write, photograph, or draw something botanical for *Solidago*? Many thanks to all for supporting our organization, and best wishes for Spring and Continuing Health!

— Bob

Painted Trillium
Trillium undulatum



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THE FINGER LAKES NATIVE PLANT SOCIETY STEERING COMMITTEE

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Krissy Boys: Native Plant Gardener

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WE WELCOME CONTRIBUTIONS THAT FEATURE WILD PLANTS OF THE FINGER LAKES REGION OF NEW YORK AND NEARBY. 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 **LOCAL FLORA** (plant lists or details of species from specific 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, meetings, workshops, and nurseries), **LETTERS** (commentaries and letters to the editor), **ESSAYS** (on botanical themes), **VERSE** (haiku, limericks, 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 and returned). We also can always use **FILLERS** (very short notes, small images, cartoons) for the last few inches of a column.



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FLNPS (founded in 1997) is dedicated to the promotion of our native flora. We sponsor talks, walks, and other activities related to conservation of native plants and their habitats. *Solidago* is published as a colorful online version, and a B&W paper version that is mailed. The online format is posted 3 months after publication. Please see www.flnps.org for details of membership, past *Solidago* issues, and updates about our programs.



Gorgeous clusters of Moss Phlox (*Phlox subulata*) decorate limy ledges in the Finger Lakes Region in early May. These were photographed on 6 May 2011 near Watkins Glen, Schuyler County, N.Y.

EDITORIAL

Looking Ahead to Spring! (Robert Dirig) • 1

COLUMNS, NOTES, & MISCELLANY

Front Matter & Contents • 2

Name That Plant Contest (David Werier) • 3-4

Letters (Julia Miller, Stanley Scharf) • 3-4

Solstice Celebration: Wild Foods Contest Winners
(David Werier, Tim Larkin & Susan Larkin) • 5

Thank You! (Robert Dirig) • 6

Plant Trivia/Answers (Norm Trigoboff) • 8/9

Winterberry (Ken Hull) • 9

BOOK & MOVIE REVIEWS

Wake Up, Woods, by Gillian Harris, Michael Homoya, &
Shane Gibson (Katharine Newkirk & Ellen Jacquart) • 6

Wildflowers of the Adirondacks, by D. J. Leopold &
L. J. Musselman (Rosemarie Parker & Robert Dirig) • 7

Fantastic Fungi, by Gin Mistry • 8

PHOTO GALLERY

Some Hints of Spring in the Finger Lakes
(Robert Dirig) • 10

*Please send *Solidago*
contributions & correspondence
to Robert Dirig, Editor, at
editorofsolidago@gmail.com

**Deadline for the June 2020
issue is May 15th !**

NAME THAT PLANT CONTEST

The photo from last issue's *NAME THAT PLANT CONTEST* [*Solidago* 20(4), p. 3] was of **INDIAN PIPE** (*Monotropa uniflora*). The image was of a winter remnant, and thus looked a bit different than it does in summer. Indian Pipe is a flowering plant that lacks chlorophyll and therefore the ability to photosynthesize and make food. People used to think that Indian Pipe derived its nutrition from decaying organic material, and thus was termed a saprophyte. We now know this to be false: Instead, it gets its nutrition by parasitizing a fungus, a relationship called *myco-heterotrophy*. The fungus in turn is in a mutualistic symbiotic relationship with a tree (*i.e.*, the fungus and tree exchange nutrients, minerals, and water in a fashion that benefits both species). So Indian Pipe is also indirectly parasitizing the tree.

Betsy Crispell wrote that last summer she had found "two stands of this plant that really caught [her] eye, not only because of the striking black edges, but because of the pink and purple parts inside it" (below).



Indeed, Indian Pipe is known to occasionally have black flecking, and sometimes to have hues of pink. Still, I do not know if it is known what causes these black flecks, and the color variation may prove to be indicative of cryptic species that have yet to be recognized. Nice observing Betsy! And thanks to all who entered the contest, and congratulations to the winners: **Betsy Crispell**, **Bob Dirig**, **Susanne Lorbeer**, and **Rosemarie Parker**. (Continues on next page ►)

LETTERS

Hello Bob,

I enjoyed the article "Hunting the Elusive Bloom" by Rosemarie Parker and Susanne Lorbeer in the December 2019 issue of *Solidago*. The article describes finding blooming **Downy Yellow False Foxglove** (*Aureolaria virginica*, *Orobanchaceae*), which is a plant I would love to see! This summer I saw a close relative, the **Fern-leaved False Foxglove** (*Aureolaria pedicularia*) at Watkins Glen State Park (below). This is the first time I had seen a member of the genus *Aureolaria*. You can identify the Fern-leaved False Foxglove by its fern-like leaves and fuzzy flowers. Thanks for the great article, and I hope you enjoy this *Aureolaria* species!



I like searching the *Consortium of North American Bryophyte Herbaria* database for bryophytes (mosses and liverworts) in the Ithaca area. I found a record by **NORM TRIGOBOFF** of **Crescent-cup Liverwort** (*Lunularia cruciata*, *Lunulariaceae*) on Cornell's campus, on the north side of Sage Chapel. The record was from 1999, but I thought there could be a chance that it still grew there. And since I am a student at Cornell, I am often in that area of campus. Last week I visited the spot and found a few little patches of Crescent-cup Liverworts! I turned the corner to the east side of the chapel, and found large patches of liverworts. This species is easily identified by its crescent-shaped *gemmae cups* (see photo). Gemmae cups are full of *gemmae*, little green propagules (dots) that are dispersed by water to form new liverworts. I was very happy to find so many still growing by Sage Chapel.



Thank you,
Julia Miller

School of Integrative Plant Science — Plant Biology,
Cornell University, Ithaca, New York, 29 Feb. 2020

LETTERS

Hi Robert,

Autumn 2019: I have travelled the same route through Cayuga Heights (Ithaca, N.Y.) a hundred thousand times over the past thirty years, but last week I went *one block farther* than usual, and *voilà!* I was astonished to see an **American Chestnut (*Castanea dentata*)** tree at a residence, adjacent to a sidewalk. Yesterday, I stopped and collected some leaves. The tree is 4-5 inches in diameter, and is *loaded* with chestnut burrs in doubles and triples.

Sara Fern Fitzsimmons of the **American Chestnut Foundation** at the Penn State Forest Resources Lab in University Park, Pennsylvania, wrote: "Two of the samples you sent in are, indeed, American Chestnut! Thanks for finding and sending the information! The cluster of small saplings (and nearby half-dead tree) on Fall Creek Drive are the classic American type.... Looks like this one is producing filled fruit! I know **Allen Nichols** would be very interested in getting seeds from this tree, if that's possible. It would be a great addition to the N.Y. germplasm ion. The third street tree with yellow tape is a Sawtooth Oak [*Quercus acutissima*]. It has fooled many for a Japanese Chestnut [*Castanea crenata*]! [<http://www.invasiveplantalas.org/subject.html?sub=10086>]. The giveaway for it and other oaks are the terminal buds. On oak species, the terminal buds end in three, and have many bud scales. Chestnuts, however, have a single terminal bud with only two outer bud scales."

After I sent in leaf samples, an owner on Fall Creek Drive took me to what is most certainly another classic American Chestnut *tree*, not sapling, growing on the very edge of Fall Creek gorge, ca. 20 feet from the "suspension bridge" to Cornell. That I could discover something totally new at my age rejuvenated some "stem or parenchyma cells" in my brain.

This past autumn saw a bonanza of **Red Oak (*Quercus rubra*)** "mast," to the point of endangering pedestrians. Acorns can be a menace, just like marbles or ball bearings underfoot. This bonanza of acorns was up and down the East Coast! It takes two to three years for an oak tree to produce mature acorns. This was a widespread bonanza year.

At some point last autumn, I took up the "cudgel" to collect a lot of this Red Oak bonanza and distribute it far and wide. I discovered one Red Oak tree on Hudson St., across the street from the South Hill Elementary School, which produced astonishingly big acorns, compared with other large specimens of Red Oak trees around Ithaca and the Cornell campus. However, when I weighed ten of these big acorns, the combined weight was the same as the ordinary sized acorns.

Red Oak is much better adapted to calamitous climate change (the latest carbon dioxide reading on Feb. 4, 2020 was a whopping 413.66 ppm on the Keeling Curve) than, say, Sugar Maple (*Acer saccharum*). However, Cor-

nell Professor **Bernd Blossey** has shown that Red Oak seedlings are a "marker" for destructive deer browsing [<https://onlinelibrary.wiley.com/doi/full/10.1002/ece3.5729>].

On **February 4, 2020**, I was on hands and knees, collecting acorns from under two massive Red Oaks at Sunset Park in Cayuga Heights, when a car stopped and a woman yelled out to me "What are you finding with your 'metal detector'?" I didn't answer, so she yelled out the question again. This time I raised my hand with an acorn, yelling back, *acorn*, and then dropped my arm. As I loaded the last of about 30 pounds of acorns in the rear of my car, a cop approached asking what I was doing. I said, "picking acorns," to which he said that's okay, but wanted my name anyway. The woman in the car had called Cayuga Heights police to say that I had thrown "dirt" at her.

Sincerely,
Stanley Scharf, Ithaca, N.Y.
February 7, 2020

✂

NAME THAT PLANT CONTEST

(Continued from previous page)

This issue's mystery plant is shown below.



Hints and suggestions are often provided to contest participants who try. Common and/or scientific names are acceptable, and more than one guess is allowed. Please submit your answers to **David Werier** at

Nakita @lightlink.com

The photographs were taken by David Werier. The upper left plant was taken in Tompkins Co., N.Y., on May 2, 2007, while the flowers and lower left plant were taken in Passaic Co., N.J., on May 5 and 27, 2015, respectively.

✂



2019 SOLSTICE CELEBRATION

**Congratulations to our winners of the
annual Wild Foods Contest!
Their recipes follow.**

Garlic Fried Wild Rice (Savory Category) by **David Werier**

Cook wild rice. Fry onions in olive oil, adding salt, pepper, tumeric, and dried rosemary. When the onions are about done, add the wild rice and lots of chopped garlic. Add more oil if necessary, and continue to fry until the garlic is cooked. Serve hot.



Maple Black Walnut Pie (Sweet Category) by **Tim Larkin** (sent by **Susan Larkin**) (Tim used one recipe for the crust and another for the filling.)

Old Fashioned Flaky Pie Dough

INGREDIENTS

8 ounces all-purpose **flour** (1 2/3 cups; 225g), plus more for dusting. (I use 50% all-purpose, 50% pastry flour.)
1/2 ounce **sugar** (1 tablespoon; 15g)
1 teaspoon (4g) Diamond Crystal **kosher salt** [for table salt, use half as much by volume or use the same weight]
8 ounces **unsalted butter** (2 sticks; 225g), cold
4 ounces cold tap **water** (½ cup; 115g)

DIRECTIONS

Tim recommends following this link to watch the video: <https://www.seriousseats.com/recipes/2016/06/old-fashioned-flaky-pie-dough-recipe.html>

1. For the Dough (this makes enough dough for **two pies**): Whisk flour, sugar, and salt together in a medium bowl. Cut butter into ½ -inch cubes (this size is important, as smaller pieces will melt too fast) and toss with flour mixture to break up the pieces. With your fingertips, smash each cube flat — that's it! No rubbing or cutting. Stir in water, then knead dough against the sides of the bowl until it comes together in a shaggy ball. Dough temperature should register between 65° and 70°F (18° and 21°C); if not, refrigerate briefly before rolling and folding (see note in video link).

2. Make the Layers: On a generously floured work surface, roll dough into a roughly 10×15-inch rectangle.

Fold the 10-inch sides to the center, then close the newly formed packet like a book. Fold in half once more, bringing the short sides together to create a thick block. Divide in half with a sharp knife or bench scraper. Dough temperature should still be somewhere between 65° and 70°F (18° and 21°C); if not, refrigerate briefly before proceeding (see note in video link).

3. For Single-Crusted Pies: Using as much flour as needed, roll one piece into a 14-inch circle and drape across a 9-inch pie plate; it will be super easy to lift by hand. Dust off excess flour with a pastry brush, using it to nestle dough into the very corners of the pan. With scissors or kitchen shears, trim the edge so that it overhangs by 1¼ inches all around. Fold overhang over itself to create a thick border that sits atop the rim of the pan. Crimp or shape crust as desired. Wrap with plastic and refrigerate at least 2 hours and up to overnight. *Save the remaining dough for another pie.*

Filling: (This makes enough filling for one pie.)

INGREDIENTS

3 large **eggs**
1½ cups (16½ ounces) Grade B pure **maple syrup**
2 tablespoons (1 ounce) **butter**, melted and cooled to lukewarm
1 teaspoon **vanilla**
½ teaspoon **maple flavor** (optional)
1/4 teaspoon **salt**
1 heaping cup (4 ounces) **toasted black walnut pieces**

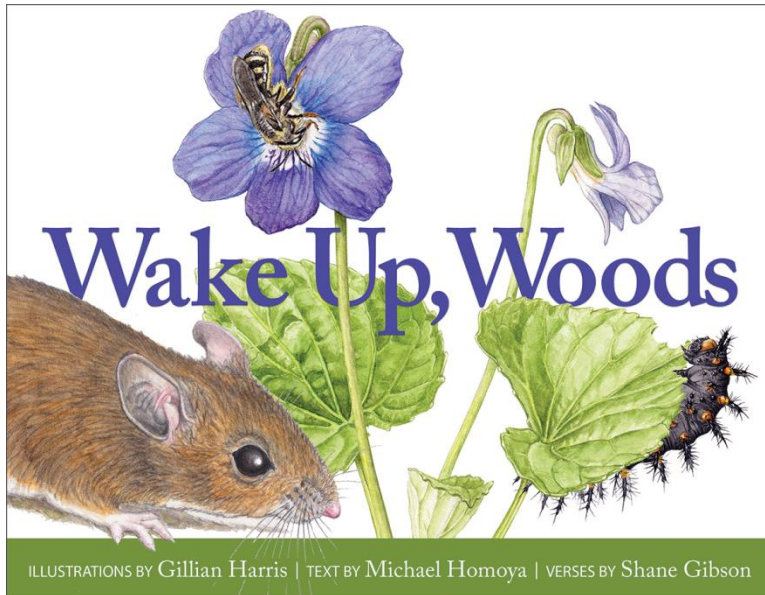
DIRECTIONS

1. If not already toasted: Toast the Black Walnuts: Preheat oven to 300°F (149°C). Spread a single layer of black walnuts on a cookie sheet. Bake in oven for 10 minutes. Stir nuts, then bake for an additional 10-15 minutes.

2. Filling: In a large bowl, beat the eggs until well-combined, then add the maple syrup in a slow stream, beating all the time. Stir in the melted butter, vanilla, and salt, then the walnuts. Pour the filling into the prepared crust.

3. Bake the pie at 375°F (190°C) for 40-45 minutes, until it's somewhat puffed, bubbling, and a knife inserted in the center comes out clean. The crust will be a deep, golden brown. Remove the pie from the oven, and let it cool at least 30 minutes before serving (the filling will sink as it cools; that's OK). Serve with a gilding of whipped cream or vanilla ice cream, if desired. **Yield: 10 servings.**

BOOK REVIEW



Wake Up, Woods, with illustrations by
Gillian Harris, text by Michael Homoya,
and verses by Shane Gibson
Rubber Ducky Press, Indianapolis, 2019

Reviewed by Katherine Newkirk

Like the forest understory this book explores, *Wake Up, Woods* is richly layered. Though loosely aimed at early elementary kids, the book will entice all ages along its several paths. Each stunningly illustrated two-page spread features understory bloomers along with associated visitors, a four-line verse, and a paragraph of botanical information.

Many a preschooler will keep turning pages in search of critters such as the Field Mouse, Six-spotted Tiger Beetle, and Marbled Orbweaver. Illustrator Gillian Harris brings out the energy and “personalities” of both flora and fauna in exquisite biological detail. More than 50 illustrated species are listed with their common names and Latin binomials in an appendix.

Young readers will enjoy sounding out the rhymes by poet Shane Gibson, while their adults may smile at his humor. Christmas Fern, for example: A fiddlehead / No strings attached / Unfurled beauty / Spring's here at last. I found an occasional rhythm or rhyme challenging, and also wondered what will happen when young readers bump into words like *sepal*, *whorl*, and *proboscis*. Luckily, a glossary explains 26 specialized terms.

Nature lovers of all ages will enjoy the illustrations, and I predict many will learn new things about relationships among understory species, thanks to botanical text by Mike Homoya. For example, “After bloodroot goes to seed, elaiosomes (food bodies) that are attached to the seeds attract ants, which carry the seeds to their nests underground. Some ants carry them as far as forty feet away from the plant!”

Wake Up, Woods is dedicated to “all children who find delight in the awakening woods,” but I suggest that *Wake Up, Woods* will delight and inspire nature lovers of all ages. I hope it finds its way into laps and libraries everywhere.

KATHERINE NEWKIRK is co-editor of the *Indiana Native Plant Society Journal*.

Dear fellow native plant enthusiasts,

Wake Up, Woods is a picture book about our native spring plants. While it was written with children in mind, it has appeal for all ages. *Wake Up, Woods* showcases the splendor of the eastern North American woodlands through true-to-life illustrations that depict plants, such as Green Dragon and Bloodroot, along with the insects, birds, and mammals that have specialized roles in the plant's reproduction. Sponsored by many supporters of our Society, *Wake Up, Woods* is being enthusiastically received by our members. I am attaching a book review written by the co-editor of our *INPS Journal* and an image of the cover, in hopes that you can share it with your members. Thank you for sharing our enthusiasm about this new publication!

Ellen Jacquart

President, Indiana Native Plant Society
7 February 2020



Thank You! MANY THANKS to all who have contributed to the **Volume 21, No. 1** issue of *Solidago*. We thank the **WRITERS** (listed in CONTENTS). **ILLUSTRATIONS** were loaned by Betsy Crispell [p. 3], Kenneth Hull [p. 9], Ellen Jacquart [p. 6], Donald J. Leopold [p. 7], Julia Miller [p. 3], Norm Trigoboff [p. 8], David Werier [p. 4], & Robert Dirig [pp. 1-2 & 10]. The banner on p. 5 was tinted and adapted from a drawing in *The Transformations (or Metamorphoses) of Insects*, 3rd edition, by P. Martin Duncan, 1882. **LAYOUT and DESIGN** by the Editor. **PROOFREADING** by Rosemarie Parker. **ONLINE POSTING** by Audrey Bowe & Rosemarie Parker. Special thanks to Audrey Bowe, Peter Fraissinet, Adrianna Hirtler, Teresa Iturriaga, Rosemarie Parker, Torben Russo, and Anna Stalter for help with the December 2019 issue, which was accomplished during a computer crash.

Best Wishes to FLNPS members (and all others in our reading audience) for joyous revels with the spring flora!

— Robert Dirig

BOOK REVIEW

Wildflowers of the Adirondacks

by Donald J. Leopold and Lytton John Musselman

NEWLY PUBLISHED BY JOHNS HOPKINS PRESS, this field guide is very clear about its intended audience. It does not have keys; it covers the “most striking” and the “frequently overlooked” flowers (>300), and it avoids “botanical jargon.” It is clearly aimed at the hiker who wants to know what that interesting flower is, and not someone who will worry if there are other species in the same genus that might be a possible match, given more options. It covers herbaceous flowers and a few low-growing woody plants. Best of all, FLNPS member **Mike Hough** is listed in the acknowledgements.

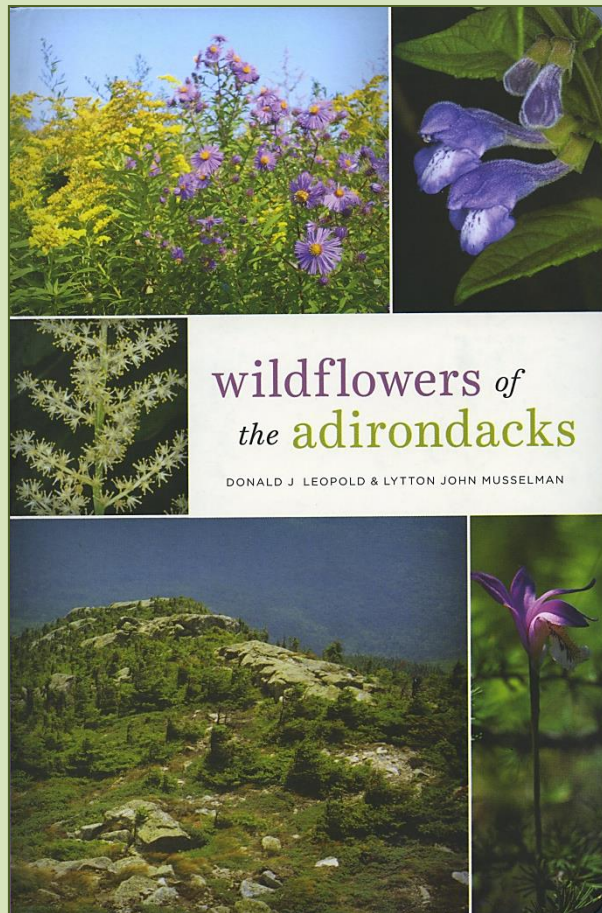
A good drawing is only matched by several good photos showing identification features. That said, the trend is clearly toward photos, and this book is filled with lovely ones. Introductory chapters cover plant communities, with landscape images and plant lists. The species accounts usually have a flower closeup, without much, if any, leaf showing nor any indication of scale. (*Geranium robertianum* looks larger than *G. maculatum*.) The non-botanical descriptions of the leaves and stem are too general for much discrimination. And sometimes the description is not very helpful, e.g. *Crepis capillaris* does not give any height data, and the photo does not show leaves or stems, but the text notes a similarity in appearance and habitats to hawkweeds. On the other hand, the difference in *Actaea pachypoda* vs. *Actaea rubra* pedicels is well described. Notes on interesting aspects, cultivation, and edible or toxic nature are included for most species.

The species are arranged by flower color, the best way to organize a flower guide for the non-botanically inclined. Within the color, I *think* the organization is alphabetical by scientific name. This has the unfortunate effect of separating species that look very similar, e.g. *Eurybia divaricata* is not adjacent to *Oclemena acuminata* or *Symphyotrichum*. Luckily, the last two *are* adjacent, since the only way to find your plant is to page through the flower color. (Too bad they did not use the flower shape/petal number arrangement of the old Peterson's Guide!)

For a fair evaluation, I asked someone who fits the intended audience for feedback. Here is what he said: “It is well bound and attractively put together. The photos are nice, but I am not sure how well they would work, since only one stage of flowering is shown, and the description is not very specific. I like the color arrangement, but it does limit the usefulness to flowering time. This guide would not be great if you really wanted to nail down the genus and species, but would be good to get an idea of what you see. The ideal would be to add a key [!?”

Clearly, keys are a contentious issue, but overall this is a useful guide if you only want to take one book on your hike.

— Rosemarie Parker



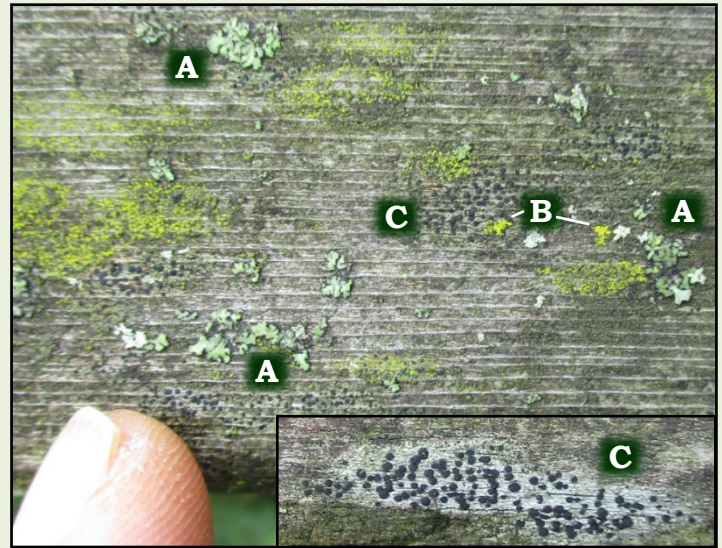
Leopold & Musselman's **Wildflowers of the Adirondacks** is beautifully produced, with accessible, informative text and gorgeous color photographs. The authors are veteran outdoor teachers who are practiced in book-making. As a teenager, I learned wildflowers (and trees, birds, and butterflies) by grabbing a field guide at odd moments, randomly opening it, and reading about whatever species were featured on a few pages. Over time, this technique worked very well to help me learn the group it featured. When this book came into my hands, I quickly skimmed through, then reverted to my early strategy over the next 3-4 weeks, by which time I had read the entire text. It is instantly informative wherever one begins. The images of flowers are wonderful close-ups, taken over many years of field work. (They would be more useful within a context of the whole plant.) It is intended for “residents and visitors to the Adirondacks and northeastern mountains, including backpackers, campers, photographers, birdwatchers, artists, wildlife professionals, citizen scientists, and wild food foragers.” / 348 pp., 300+ photos, @ \$24.95 — Robert Dirig

PLANT TRIVIA

by Norm Trigoboff

▼ Lichens (below) are good colonizers. A are young *foliose* (leafy) Parmeliaceae or Physciaceae. B is a miniature foliose species, *Candelaria concolor* (masses of yellow dots may be a younger stage of the same, or closely related species). C is a crustose lichen, which often require microscopy for identification. — Ed.

1. Is there a safe way tell if a farmer's electric fence is on?
2. How many kinds of trees were in the Garden of Eden story?
3. What is the most abundant photosynthetic organism?
4. Which plants produce something that reaches the speed of sound?
5. Can a plant produce something that moves faster than the speed of sound?
6. Which of these are introduced species? A) Tumbleweeds in westerns. B) Lombardy poplars in Italian movies. C) Mallards in movies that take place in New York State.
7. Which one of these has native cactus? A) Hawaii. B) England. C) New York State. D) Indonesia. E) Australia. F) Greenland.
8. Which two of these have no native conifer trees? [Let us exclude Creeping Juniper, which is a bit short of a tree, and Yew, whose fruit is bit short of a cone.] A) Hawaii. B) England. C) New York State. D) Indonesia. E) Australia. F) Greenland.
9. Which of these doesn't have cyanide? A) apple seeds. B) lima beans. C) cherry bark. D) New York State. E) rhubarb leaf blades.



10. The photos above show small, elongate patches of lichens on an old wooden bench. Why did they grow this way?

11. You can see Cornell's clock tower at least sometimes from some places in Stewart Park. What does this have to do with native plants?

12. The Common Dandelion (*Taraxacum officinale*) is pollinated by: A) wind. B) bees. C) beetles and flies. D) moths (at night). E) all of the above. F) none of the above. G) it self-pollinates. H) none of the above, it forms seed without pollination.

Please see the answers on page 9.

MOVIE REVIEW

Fantastic Fungi ~ by Gin Mistry

A few weeks ago, my husband and I saw this movie at Cinemapolis in Ithaca, N.Y. It is a stunningly beautiful movie! The mushrooms explode from the earth in all kinds of shapes, colors, and sizes. The bioluminescent fungi were dazzling. The time lapse photography, by *Louie Schwartzberg*, is amazing. The first half of the movie shows many different kinds of fungi, and has an interesting discussion of the vast underground networks of mycelium. These underground threads are everywhere, and are called "the digestive tract of the forest." Trees and other plants are able to communicate with each other, and to swap nutrients, through mycelia.

The many established uses of fungi were detailed: the production of beer, wine, cheese, and penicillin. It was stated that old growth forests should be protected and saved as national treasures.

Then things got a little weird. The second half of the movie talked about mind-altering mushrooms like "magic mushrooms" and the extract psilocybin. A long series of kaleidoscopic images appeared, mimicking what is experienced by users. One claim was that these mushrooms triggered the evolution of the human brain, spurring the development of imagination and intelligence. Other claims were that these "magic mushrooms" may be useful in treating depression and anxiety. New research is working on psilocybin and other fungi in the hopes of developing medicines, pesticides, pollution control, and more. But can "Turkey Tails" really cure cancer, and can "Lion's Mane" icicles stimulate nerves to regrow?

While I was *oohing* and *aahing*, I kept hearing my scientist husband murmuring "That's bogus"; "No documentation for that."

So *Fantastic Fungi* is a beautiful and dazzling movie. It certainly deepened my appreciation of mushrooms! But it was maybe a little short on comprehensive scientific explanations.



WINTERBERRY

by Kenneth Hull

Winterberry holly, a tall shrub scattered about the countryside in swamps or wet areas, wears a coat of fire-engine red berries in December, before birds pick them off one by one, so that by January, berries can scarcely be found.

The vivid color is so bright in contrast to the brown landscape, it catches the eye of those of us who tour back roads looking for any sign of life among bare trees and dead vegetation.

If there were but a few berries, they could be easily missed, but thousands to be shared by discerning wildlife just before winter sets in for what seems forever, is such a sight as to bring tears of joy.

The good fortune of a snow cover makes for a perfect holiday picture to be treasured in the mind's eye for seasons to come, in hopes of seeing such a sight once again.

[*Ilex verticillata*, photo by the author]

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ANSWERS to PLANT TRIVIA on page 8:

1. I once told a fellow hiker that you can tell if an electric fence is on by touching it with a blade of grass. She thought the sign on the fence would be a safer clue. I replied that farmers often turn off the juice to save money. We stopped by a fence around an apple orchard. I've always had a certain delicacy toward high voltages, so I grabbed a long, thin blade of grass. My fingers tingled. My friend screamed and jumped. She had touched the fence with a path rush stalk a millimeter or two in diameter. We reviewed the term "blade." She tried again and found that the technique works fine if you know a blade from a stalk. [FLNPS does not encourage such experimentation!]
2. Many. "...every tree that is pleasant to the sight and good for food, the tree of life also in the midst of the garden, and the tree of knowledge of good and evil" (*Genesis* 2:9).
3. *Prochlorococcus*, a very abundant blue-green bacterium discovered about 40 years ago. It's about 1 micron long, and lives in low-nutrient parts of the oceans. If you guessed "something tiny that lives in the sea," give yourself half a point.
4. Sound travels the speed of sound. So the answer is many plants, as when twigs snap, leaves rustle, and so on.

5. The roots of a plant kept in a glass jar may break the glass. A crack in glass moves faster than the speed of sound (in air).
6. Tumbleweeds rolled in from central Asia. Lombardy poplars are rooted in Italy. Mallards puddle-jumped here from points far west of New York State. If you whined that Mallards are not plants, give yourself a bonus point.
7. New York State. Cacti are native to the Americas. *Opuntia humifusa*, the Eastern Prickly Pear, is native downstate.
8. England (which has Yew) and Greenland (which has Creeping Juniper).
9. Rhubarb leaf blades. Still, their oxalic acid crystals can ruin your day.
10. The patches are about the size and shape of the chew marks left by wasps. The lichens, which are pioneers, likely colonized the newly exposed wood. Perhaps the bacteria that coat old wood hinder lichen growth.
11. You can see the tower best in the winter when the trees have lost their leaves.
12. The Common Dandelion lacks pollination (and sex), yet still makes seeds. I have yet to hear a good reason for all that pollen they have.



◀ **Eastern Spring Beauty (*Claytonia virginica*)** on a limy ledge near Watkins Glen, N.Y., 9 April 2005, with early purpled foliage.

▶ **Carolina Spring Beauty (*Claytonia caroliniana*)** near Dryden, N.Y., 18 April 2005.



▶ **Striped Maple (*Acer pensylvanicum*)** in wet woodland, Shindagin Hollow, southern Tompkins County, N.Y., 19 May 2019.

Some Hints of Spring in the Finger Lakes



◀ **Squirrel Corn (*Dicentra canadensis*)**, 20 April 2012.



◀ **Yellow Trout Lily (*Erythronium americanum*)** on limy roadside near Watkins Glen, Schuyler Co., N.Y., 17 April 2016.

Photos © by Robert Dirig



▶ **Foamflower (*Tiarella cordifolia*)**, Shindagin Hollow, 11 May 2012.



◀ **Early Buttercup (*Ranunculus fascicularis*)** on limy slope near Watkins Glen, Schuyler Co., N.Y., 1 May 2012.