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

Solidago

Newsletter of the
Finger Lakes Native Plant Society

Volume 17, No. 4 ☙❧ December 2016

Local Flora

Velvet Foot Fungus

or

Winter Mushroom

(*Flammulina velutipes*)

growing on bark in Robert H. Treman State Park in Ithaca, Tompkins County, New York. Photographed on 7 November 2015 by ***Julia Miller***.

☙❧

Identified by ***Kathie T. Hodge***, who wrote: "Believe it or not, this mushroom, when cultivated in low light, is the long-stemmed, pale ENOKI MUSHROOM you find in the supermarket. It fruits in late fall here." ***Steve Daniel***, who also identified it from Julia's photo, called it "a lovely late-season agaric." ***G. F. Atkinson***, in his 1901 book on *Mushrooms, Edible, Poisonous, Etc.*, pp. 92-93, wrote: "This is very common in woods or groves during the autumn, on dead limbs or trunks, or from dead places in living ones. The plants are very viscid, and the stem, except in young plants, is velvety … with dark hairs." Cap diameter is up to 2 in. [Fungi were still considered to be "plants" In Atkinson's era. He called this *Collybia velutipes*.]

Solidago

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Finger Lakes Native Plant Society

Volume 17, No. 4 **December 2016**

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Published quarterly at Ithaca, New York, USA.

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

Contents

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

Deadline for the March 2017 issue is February 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), and **Plant Profiles** (on specific local plants). We also occasionally publish **Appreciations** (memorials to local botanists and naturalists), **Reviews** (of books, talks, workshops, nur- series), **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(3), page 4] was of **HUMPED BLADDERWORT (*Utricularia gibba*)**. This species, like other bladderworts, is an aquatic, carnivorous plant that captures and digests prey in tiny traps or bladders. The Humped Bladderwort can be seen submerged in ponds and lakes, but when it grows in those conditions, it rarely flowers. On the other hand, when it grows on floating peaty mats in or on the edges of ponds and lakes, it flowers in abundance. This species is quite rare locally, but not too far away it becomes rather common. I knew this would be a challenging puzzle, but for such a beauty, I couldn't resist. Thanks to all who entered the contest, and congratulations to the winners:

Betsy Darlington, **Susanne Lorbeer**, **Rosemarie Parker**, and **Dan Segal**.

THIS ISSUE'S MYSTERY PLANT IS SHOWN ABOVE. It is another locally rare species, which is more common to the south. ***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 photograph was taken by David Werier on 5 July 2016 in Passaic County, N.J.

Letters

Bob,

The other day at a seepy area by a private pond, I estimated about 600 [plants of *Spiranthes cernua*] in maybe a 20-yard radius. Ever see so many?

Norm Trigoboff
Dryden, N.Y., 14 September 2016

[*I never counted the big mass in the ditch when I was a kid, but I doubt there were 600 plants there. That many sounds like quite a sight! — Bob*]

Seaside Goldenrod, photographed at Watkins Glen, Schuyler Co., N.Y., on 15 Sept. 2014, where naturalized on roadsides near Seneca Lake.

Hi Folks,

Have you noticed all the **Seaside Goldenrod (*Solidago sempervirens*)** along the roadsides this year? There is particularly a lot in the median of Route 13, between Triphammer and Warren Roads [in Lansing, N.Y.].

Do you think we are using too much road salt?

F. Robert Wesley
Ithaca., N.Y., 27 September 2016

Dear Bob,

Thank you for sending the updated plant list for our [**FLNPS Abbott Loop Ramble**] to Thatcher's Pinnacles on Saturday [24 Sept. 2016]. What an amazing variety of plants we saw along the way as a result of your expertise of plants. We never would have been able to identify 125 species. When Michael saw your list, he said "it's so beyond anything I would have remembered from [the walk]."

With the enthusiasm, knowledge of plants, Torben [Russo]'s directions, and your keen eye and instruction on plants, we covered a lot of territory, and were treated to a fun day of botanizing.

Our thanks to you both,
Nancy Richards & **Michael E. Lynch**
Ithaca, N.Y., 26 Sept. 2016

▲"I was so excited to stumble on this mushroom, ***Rhodotus palmatus***, on 13 November 2016, at Powder Mills Park outside of Rochester, N.Y. It is a stunner, and rarely seen. I'd never found it before, though for years I'd seen images in field guides, and hoped to. It was growing on a dead Sugar Maple (*Acer saccharum*)." The pink caps are ¾ to 2 inches in diameter. — ***Steve Daniel***

Thank You!

MANY THANKS to all who have contributed to *Solidago* in 2016! I am grateful for the enthusiastic response to my request for contributions. This issue represents two milestones — our first mushroom cover, and our longest issue to date. There is a strong ***fungal theme***, with beautiful photographs of autumn mushrooms (one common, one rare), both basidiomycetes, on pages 1 & 4; and an ascomycete emphasis at the end (pp. 20-22). Another thread involves the ***history of land clearing and use, and preserve management***, with articles focusing on invasive Japanese Stilt Grass in the Finger Lakes Region and Pennsylvania, restoration of the Albany Pine Bush Preserve, improving the function of ancestral fields, and the history and ecology of Catskill stone fences. I hope you will enjoy the variety of articles and illustrations.

For **Volume 17, No. 4**, we thank **WRITERS** Steve Daniel, Robert Dirig, Harold ("Hal") W. Gardner, Mary Gilliland, Kathie Hodge, Ken Hull, Brittany Lagaly, Rick Lightbody, Rosemarie Parker, Nancy Richards & Michael Lynch, Akiva Silver, Charles R. Smith, Norm Trigoboff, David Werier, & F. Robert Wesley, whose contributions make this issue special. **ILLUSTRATIONS** were loaned by Julia Miller (p. 1), David Werier (p. 3, *left*), Steve Daniel (p. 4), Brittany Lagaly & Anna Salter (pp. 5-7), Norm Trigoboff (p. 9), Charles R. Smith (p. 10), Akiva Silver (p. 13-14), Howard H. Lyon, *CUP* (p. 21, Fig. 8), Richard P. Korf (p. 22), and Robert Dirig [pp. 3 (*right*), 5 (**B**), 6 (**E**), 8, 11-12, 15-21, & 22 (*inking, coloring, & design*)]. ***Fungal drawings*** on pp. 20-21 originally appeared in *Mycotaxon* 7(3), p. 480 in 1978 (Fig. 2); and vol. 40, pp. 4, 92, 105, 313, 411, & 431, in 1991 (Figs. 3-7, 10-12). ***The colored banner*** on p. 22: In 1980, when I arranged and inked Dick Korf's pencil sketches of *Urceolella hamulata* [*Mycotaxon* 10(2), p. 505], I was struck by the resemblance of the paraphysis tips and marginal hairs to elf caps! In 2008, with Dick's permission, I colored the art and used it as a Holiday card for the Cornell Plant Pathology Herbrium. It is reused here in his memory. **CALENDAR ITEMS** were organized by Rosemarie Parker.

SPECIAL THANKS to Steve Daniel, John V. Freudenstein, Kathie T. Hodge, Scott LaGreca, Torben Russo, Anna M. Stalter, David Werier, & F. Robert Wesley for technical assistance with botanical and mycological details. **LAYOUT & DESIGN** by the Editor. **PROOFREADING** by Krissy Boys, Jesse Hoffman, Scott LaGreca, Rosemarie Parker, Torben Russo, David Werier, & F. Robert Wesley. **PRINTING** by Gnomon Copy, Ithaca, N. Y. **MAILING** by Rosemarie Parker & Susanne Lorbeer.

BEST WISHES
to FLNPS members
(and all others in our
reading audience)
for pleasant Holidays
and a botanically exciting
New Year!

—Robert Dirig

Ken Hull has announced the availability of a facsimile of **Willard Nelson Clute's *Flora of the Upper Susquehanna and Its Tributaries***, which was originally published in 1898 at Binghamton, N.Y., by Willard N. Clute & Co. (xix + 142 pp.). This scarce classic covers the vascular plants of the Susquehanna River drainage, lying between the upper Delaware and Ohio River watersheds. It includes Otsego, Chenango, Cortland, Broome, Tioga, Chemung, and Steuben Counties, N.Y.; portions of Delaware, Madison, Schuyler, and Allegany Counties, N.Y.; and, parts of Wayne, Susquehanna, Bradford, and Tioga Counties in adjacent Pennsylvania. This area is contiguous with that covered by Dudley's *Cayuga Flora* (1886) and Wiegand & Eames' (1926) *Flora of the Cayuga Lake Basin*. The book may be purchased as a hardbound facsimile of the original that was curated for quality, @ U.S. $26.98, postpaid, from ***BookDepository.com*** in London, England. Ken is "very pleased" with his copy.

Poet's Corner

Motherwort

As forest green leaves reverse in wind
dusty silver undersides' veins bulge.

Embryonic rings of spurred seeds
halt hand's slide at intervals
along the tall four-sided stalk.

Leonurus cardiaca has a robin
sherwood shine, a slightly darker slightly
danker nature than its fellow weeds.

Minute orchids top the taloned
seedcrowns — frillpink visors.

Whence the fomentative power
— plucked, bruised, steeped —
to break fever, lift childbirth cramp.

— *Mary Gilliland*

First published in *Stand* 14, 4 (212)
[University of Leeds, U.K.] in 2016

INVASIVE SPECIES

Managing *Microstegium* in the Six Mile Creek Watershed

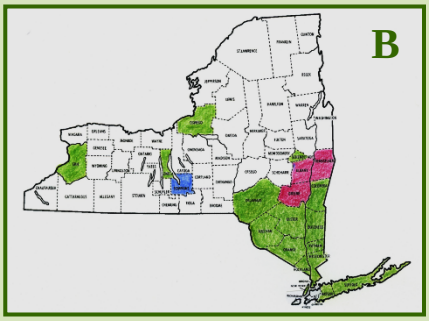
by **Brittany Lagaly**, Project Steward

***Microstegium vimineum*, commonly known as Japanese Stilt Grass** (**A**), is an invasive annual grass native to southeastern Asia. Stilt Grass was introduced into North America through its use as packing material for porcelain. The first populations discovered in the United States were recorded in Tennessee in 1919. Stilt Grass is now known to occur in twenty-four states, from Massachusetts west to Missouri, and south to Florida and Texas. As of 2011, the most recent date for which statistics are available, seventeen counties in New York have reported Stilt Grass infestations (**B**).

Microstegium is a shallow-rooted, moisture-loving annual, and a prolific seed producer. As a relatively broad-leaved grass with prominent nodes, Stilt Grass bears a superficial resemblance to bamboo, though its identity is most easily verified by the shiny silver midrib that adorns each leaf (**A**). It does bear some resemblance to native White Cut Grass (*Leersia virginica*), but *Microstegium* is smooth to the touch, whereas *Leersia* feels quite rough, due to its characteristically hairy nodes.

Pulling Stilt Grass in late summer or early fall, before the plants have begun to flower, is a very effective form of management that leaves the native community intact. However, while the shallow annual root system of *Microstegium* (**C**) is easily liberated from the soil, successful eradication of Stilt Grass from the seed bank is not as readily accomplished. This is because *Microstegium* seeds (**D**) can remain viable in the soil for seven to ten years. Any successful effort to exterminate Stilt Grass from a site must involve long-term management.

***Microstegium* was first reported in Tompkins County, New York, during the summer of 2004**, when it was discovered growing along the second reservoir of the **Six Mile Creek Natural Area in Ithaca** (**E**), in close proximity to populations of three native, State-listed, threatened and endangered species of *Poa* and *Carex*. Volunteers from the Finger Lakes Native Plant Society (FLNPS), Cornell University, and the Ithaca community came together to pull Stilt Grass that was threatening this sensitive habitat, every September from 2005 to 2011. During the fall of 2010, two sections of a Cornell Horticulture class expended at least forty person-hours removing Stilt Grass from the area; in 2011 they were joined by eight FLNPS and community volunteers, who attempted to remove every plant in the vicinity. Unfortunately, efforts to eradicate this population since then have been limited and sporadic. Due to this species' long seed bank residency, the population, though beaten back significantly, still remains a threat to critical and sensitive native habitat.

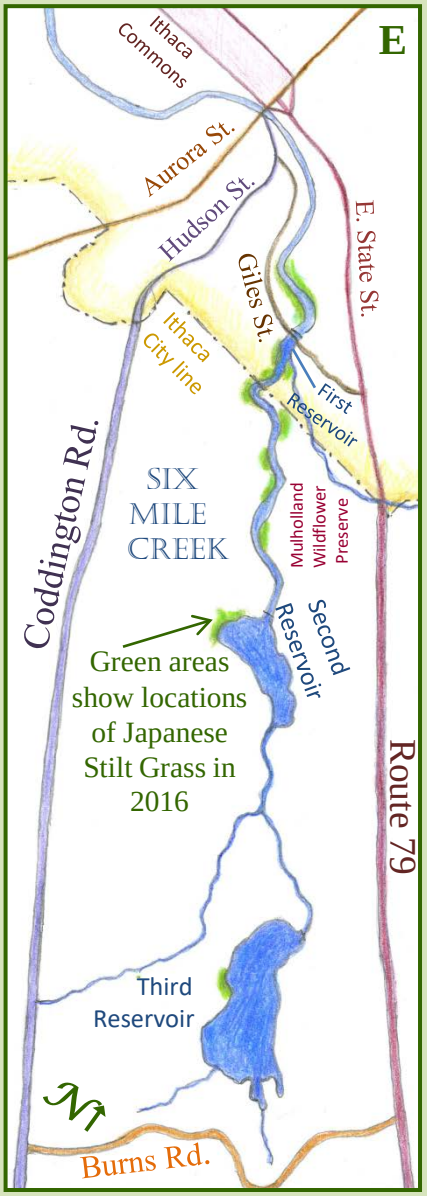


(A) Japanese Stilt Grass has silvery midribs. **(B)** *Distribution of Japanese Stilt Grass in New York*: ***Green*** counties are areas of known occurrence in 2011. ***Red*** counties were added from the NYFA online Flora Atlas on 1 December 2016. Tompkins County, the site of Six Mile Creek, is shown in ***blue***. **(C)** The stilt-like roots. **(D)** The seeds in autumn.

Efforts to control Stilt Grass in Six Mile Creek were renewed with vigor in autumn 2016, thanks to New York State Department of Environmental Conservation funding, obtained through a grant administered by the Finger Lakes Partnerships for Regional Invasive Species Management (PRISM). This grant was obtained by **Jeanne Grace**, ***Ithaca City Forester***, and **Anna Stalter**, ***Co-Chair of the Ithaca Natural Areas Commission***, who both have been working to eradicate Stilt Grass in the Natural Area for years.

Removal of *Microstegium* through hand-pulling was only one aspect of the project. In order to gain a better understanding of the character and extent of the Six Mile Creek population, a comprehensive survey of the Creek was undertaken from the Third Reservoir north to the Second and First Reservoirs, and beyond (**E**). Occurrences of *Microstegium* were mapped using **ArcGIS software**, which also allowed us to record several key site characteristics, including habitat type; native, invasive, and tree species present; canopy density; understory density; and density of the invasive. Unfortunately, this survey revealed an invasion that was much more extensive than had been expected. While the known population along the Second Reservoir appears to have been greatly diminished through years of volunteer effort, many new populations were found growing along the Creek as it winds its way north through the Mulholland Wildflower Preserve (see map, **E**). A survey of the Third Reservoir by kayak (**F**) also found two small populations occurring there.

Volunteer pulls were held on September 10th and 17th, 2016. The first event focused on eradicating a large patch of *Microstegium* growing in the Wildflower Preserve between the main trail and the Creek. We prioritized this area due to the high traffic it receives, as Stilt Grass seeds are commonly spread on the feet of animals, including humans. It was a cold, rainy morning, but six volunteers braved the weather and managed to pull the entire patch in 3 hours, for a total of 18 person-hours expended. The second volunteer pull on September 17th brought nicer weather, and with it a larger group of volunteers; eleven people each volunteered 3 hours for a total of 33 person-hours. This effort focused on removing the population at the Second Reservoir that threatens the habitat of several endangered plant species. Happily, we can report that all Stilt Grass in the affected area was removed that day, thanks in no small part to the enthusiastic effort of a group of six Friends of Recreation, Conservation, and Environmental Stewardship (FORCES) volunteers from Wells College (**G**).



(E) Graphic summary of electronic images, showing locations of Six Mile Creek, the three Reservoirs, and landmark streets and roads. Green shading shows the locations of Japanese Stilt Grass in 2016. **(F)** Surveying the Third Reservoir by kayak in 2016. **(G)** Five FORCES volunteers from Wells College, with their harvest.

A vigorous *Microstegium* plant was found in flower that day, so the decision was made to hire one of our volunteers to ramp up removal efforts. In total, 120 paid hours were spent pulling patches of Stilt Grass along Six Mile Creek. All Stilt Grass occurring between the Second and First Reservoirs was removed (except for a few especially extensive patches that were not able to be pulled in time), along with all mapped Stilt Grass north of the First Reservoir, and both populations found at the Third Reservoir. Due to a limited budget and time frame, patches occurring along human and deer trails and waterways were prioritized, in order to limit seed dispersal and the subsequent colonization of new areas.

Hand-weeding is a fairly innocent removal method, but it does result in disturbed soil and a bare understory, a site condition that lends itself quite well to colonization by additional invasives (**H-I**). Furthermore, we found that research on the effects of Stilt Grass on native plant communities shows that native seed recruitment is a major limiting factor to post-removal site recovery. Therefore, as part of our restoration effort, we collected and broadcast seed from populations of native species occurring in the Wildflower Preserve, including Boneset (*Eupatorium perfoliatum*), milkweed (*Asclepias* sp.), Rye Grass (*Elymus* sp.), Herb Robert (*Geranium robertianum*), Joe Pye Weed (*Eutrochium* sp.), Avens (*Geum* sp.), Jumpseed or Virginia Knotweed (*Persicaria virginiana*), Forget-me-not (*Myosotis* sp.), and several native Asteraceae [*i.e.*, Woodland Sunflower (*Helianthus divaricatus*) and a small white aster (*Eurybia divaricata* or *Symphyotrichum* sp.).

(H-I) Results of the Stilt Grass Pull on September 10th 2016, *before* and *after* several volunteers cleared this area.

(J) A sign and brush station for cleaning footwear when entering and leaving this area. It also illustrates and provides information on Stilt Grass and other invasive plants in the Preserve.

***Photos** A, C, & F-J with this article by Brittany Lagaly and Anna Stalter. **Graphics** (B & E) by the Editor, based on material provided.*

Finally, to help educate the community about Stilt Grass and other invasives, and limit the spread of populations in the Natural Area to other sites, we are currently working to install boot-brush stations at two different entry points to the Preserve. A large illustrated sign (**J**, *see page 7*) installed above each boot-brush apparatus will feature Japanese Stilt Grass, as well as information on identification and ecological impact of Black and Pale Swallow-worts (*Cynanchum louiseae* and *C. rossicum*, respectively); Garlic Mustard (*Alliaria petiolata*); and Japanese, Giant, and Bohemian Knotweeds (*Reynoutria japonica*, *R. sachalinensis*, and their hybrid *R.* ×*bohemica*, respectively).

During our survey, we noted populations of several other invasives that were exploding throughout the Natural Area. Of particular concern are Asian Bittersweet (*Celastrus orbiculatus*) and Japanese Knotweed; the former is rapidly killing mature trees and saplings, and the latter is overtaking diverse riparian plant communities along the banks and sand bars of Six Mile Creek. Without active management of the Natural Area, it seems likely that the biodiversity of this special place will continue to be heavily impacted by aggressive alien invaders. We hope that funding can be secured to ensure that these efforts are able to continue — as they must, if we are to attain any level of success in preserving this unique area.

Knight's Plume Moss

(*Ptilium crista-castrensis*)

is among the native botanical delights of cool swamps, where it grows in masses on shaded fallen logs. This clump was photographed in a boreal wetland near Dryden, Tompkins County, New York, in June 2010.

Japanese Stilt Grass:
A Serious Pest

by **Harold ("Hal") W. Gardner**

At my place in Pennsylvania, **Japanese Stilt Grass** (*Microstegium vimineum*), *a.k.a.* Nepalese Brown-top, was first noted along roadways, undoubtedly from seed spread by roadside mowers. Stilt Grass was definitely spread by roadside mowers at the **Box Huckleberry Natural Area in Perry County, Pennsylvania** (**1**). It seems plausible that roadside mowing of Stilt Grass before seed set would help, but perhaps remains untested. At my place, Stilt Grass next spread into my woodland along an electrical right-of-way. Patches of Stilt Grass kept appearing throughout the woodland to the point of being hopeless. At Catoctin Mountain Park in Thurmont, Maryland, ***a grass-specific herbicide, Sethoxydim E Pro,**** was applied at half dose (0.75%) (**2**). They applied herbicide on 11-14 July, then again on 11-14 September. Because the seed is viable for three years, the treatment must continue annually for some time. Non-target natives were claimed to be unaffected. Interestingly, deer avoid eating Stilt Grass (of course). Also, deer avoid the aliens, Garlic Mustard (*Alliaria petiolata*), Honeysuckle (*Lonicera* spp.), and Privet (*Ligustrum* sp.).

I managed to keep Stilt Grass out of my prairie along a roadside by using a lawn mower with debris being thrown into the road — except where, at the termination with another road, a small patch of Stilt Grass appeared in the wet-mesic prairie. Two other patches of Stilt Grass appeared in the fully sunlit prairie fairly far removed from the woodland Stilt Grass and roads. This was solved satisfactorily by ***glyphosate treatment,**** followed by sowing with the aggressive natives, Common Wild Bergamot (*Monarda fistulosa*) and Gray-headed Prairie Coneflower (*Ratibida pinnata*), in dry mesic soil (not completely successful, but much improved). Establishing these native perennials requires two to five years. Rather than the hopeless task of uprooting the remaining Stilt Grass, I rely on the natives to keep it in check. In wet-mesic soil, the glyphosate treatment was avoided, but the area was sowed with aggressive and tall natives, Ohio Spiderwort (*Tradescantia ohiensis*), *Silphium* sp., Sunflowers (*Helianthus* sp.), Sweet Coneflower (*Rudbeckia subtomentosa*), and Pale Dock (*Rumex altissimus*), which appeared to give a satisfactory result.

REFERENCES

1. Gardner, H. W. 2016. Seed Dispersal by Roadside Mowers. *Natural Areas Journal* 36: 102-104.

2. Frey, M., & J. P. Schmit. 2015. Suppressing Japanese Stiltgrass (*Microstegium vimineum*) with the Grass-Specific Herbicide Sethoxydim. *Natural Areas Journal* 35: 585-589.

[*Finger Lakes Native Plant Society neither endorses nor discourages pesticide use.]

REVIEW

The 40th A. LeRoy Andrews Foray, 2016

by **Norm Trigoboff**

This year's Andrews Foray, a late September weekend of collecting bryophytes and lichens, and fraternizing with the competition, was in Canada, a few miles north of the New York-Vermont border. The wild settings, narrowly focused, hand-lens-carrying attendees, and the grand scenery contrasting with the minute target plants, give these Forays a dream-like aspect. This year, French Canadian language and culture — wine with dinner, hot dogs for breakfast — magnified the effect. I got a lift to the Foray from ***Dick Andrus***, an authority on *Sphagnum*. When we arrived, I opened his truck door and hit a parked car. I worried that I'd have to pay damages, or at least beg forgiveness. The next morning, I saw the driver, and confessed. He said, in a French Canadian accent, how happy that made him. He sensed my disbelief, grabbed my arm, and pulled me around to look at a dent in his car that had been made some time ago by a lichenologist who happened to be standing there. He said that he thinks of her when he sees the dent, and now he will treasure the new red mark on his car door, and think of Andrus. That afternoon, the *Sphagnum* group bushwhacked back to their vehicles, after a meander through some damp woods. They cut across a lawn to save time. This was a pretty rural area. I feared a confrontation. Someone more familiar with French Canadian culture pointed out the real problem: We had limited time to get back for dinner, and couldn't afford to get invited in for coffee and donuts.

Please see this website for more photos and a video:
https://drive.google.com/drive/folders/0B9yZmHxFSEDmUU9XQjhsb1EwN1k?usp=sharing

A group of bryologists and lichenlogists at the 40th Annual A. LeRoy Andrews Foray in Quebec, working on the day's treasures in a temporary lab. *Photo from Norm Trigoboff.*

Reviews

An Illuminated Hand Lens for the Field Botanist Who Has Everything

by **Charles R. Smith**

At some point in the past, botanists discovered that a jeweler's loupe, or hand lens, was a useful tool for magnifying and viewing parts of a plant in the field. Earlier this year, searching the internet for a replacement for my vintage hand lens (purchased for about $5 when I was an undergraduate), I came across a tool new to me — an illuminated hand lens. I've always found a hand lens a bit awkward to use, but no longer.

My search took me to *amazon.com*, and an item listed as **"SE MJ37801L Professional Quality 10× Triplet Loupe, LED-Illuminated, 21mm."** Its list price was $30, but *amazon.com* offered it for $17.17, plus shipping and handling. The price included batteries, a leather case, and a "key" for opening the battery compartment (which also can be opened with the edge of a coin). I ordered one last spring and have used it ever since. The illuminated hand lens is about twice the size of the typical 10× triplet and requires three LR927 button batteries for power. The objective lens of the loupe (the lens closest to the object you are viewing) is 21 mm in diameter, and is surrounded by a ring of 6 LED bulbs, enclosed within a diffuser, for uniform, shadowless illumination. A small, slider switch at the base of the loupe turns the LEDs off and on.

I've used the lens successfully for viewing the details of plant structure, and have found it very helpful. It's especially good for illuminating, magnifying, and viewing fern sori. If you collect stamps or coins, I'm sure the hand lens would be useful for viewing those subjects, as well. It has proved durable, and its larger size is not awkward for me to use. Opened, the magnifier is 3¼ inches long by 1 inch deep, and the housing for the lenses and batteries is metal, not plastic. It weighs a bit less than 2 ounces. There is a place at one end for attaching a lanyard (not included). Though larger and heavier than the typical 10× hand lens, I find having the LED illumination worth the extra size and weight. I only have to remember to turn off the illumination when I'm not using the lens. After six months of use, the batteries still are working and the hand lens has proved durable. Note: The hand lens also works just like any other, if you don't turn on the LEDs or the batteries fail during a field trip.

If you go to *amazon.com*, enter the search string "MJ37801L" (without the quotes), and you can go directly to the web page describing the hand lens and its price. Read carefully; there also are lenses of the same kind, with the same item number, selling for more than $50 — *Caveat emptor*!

Left to right: **Leather case, battery compartment "key," three button batteries, and hand lens.**

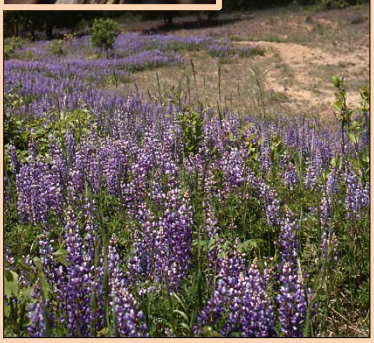
Restoration of the Albany Pine Bush Preserve - A Summary of a FLNPS Presentation by Jesse Hoffman on October 19, 2016

by **Rosemarie Parker**
(with input from several other attendees)

The Albany Pine Bush is one of only about twenty rare, inland pine barrens communities in the world, and probably the best example. Despite this, the aerial photos show a very tenuous conservation situation, with the Preserve surrounded on all sides by dense development, including private inholdings, and the NYS Thruway heading right down the middle. The Preserve has an area of over 3300 acres of inland pine-and-oak scrub, on sandy soil deposited by the Mohawk River — no rocks, just pure fine sand, blown into low dune structures by westerly winds. (Jesse had a great visual of the dunes on a contour map.) The major plant communities are forests, thickets, and barrens, although the primary species are the same in each, differing by density. These are **Pitch Pine** (*Pinus rigida*, **4**), two species of shrubby oaks (**Scrub Oak**, *Quercus ilicifolia*, and **Dwarf Chestnut Oak**, *Q. prinoides*), and fabaceous species that are able to fix nitrogen and adapt to disturbance, such as **Wild Lupine** (*Lupinus perennis*, **2-3**)*; also **New Jersey Tea** (*Ceanothus ameri-canus*), a rhamnaceous shrub with deep, nodulated roots, and **Horse Mint** (*Monarda punctata*), which produces tons of dust-like seeds for rapid opportunistic expansion.

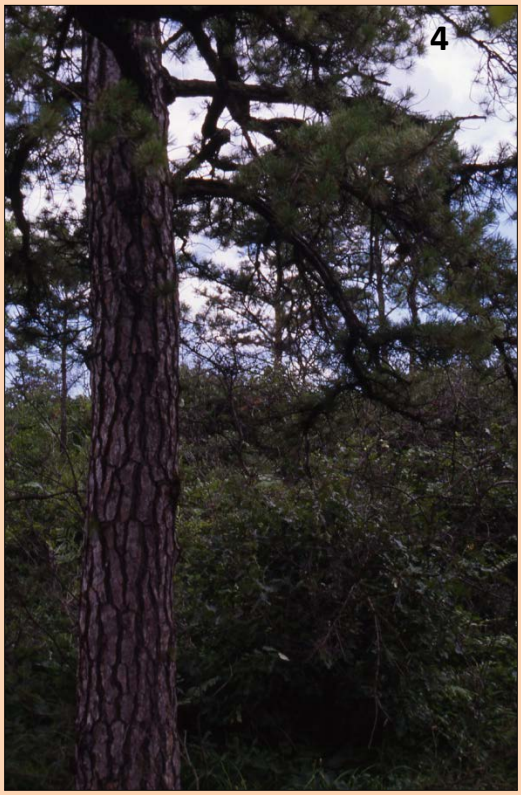
Barrens, like many of our other fascinating and unique ecosystems, are a stage of succession that persists when disturbances are fairly frequent. It could be flood, landslides, or frequent fires, but without the disturbance, the longer-lived species will eventually out-compete the others, canopies will close, and species will shift. For the Albany Pine Bush, the species of key concern is the federally endangered **Karner Blue Butterfly** (*Lycaeides samuelis*, **1**)*, which depends on Wild Lupine for larval hosting, while the Lupine depends on open areas to survive. Years of fire suppression endangered the continued ex-

*See *Solidago* 17(2), June 2016, pp. 1-3, for more images and details.


istence of the pine barrens (7), with the land shifting to more pine forest and oak thicket (5), less grass and forbs. Maintaining this rare community requires incredibly intense labor and technology, but at this point the community wouldn't exist at all without hands-on, science-based management by a lot of dedicated staff and volunteers.

For many years now, prescribed fires have been a critical part of Preserve management practices (8-9). There is a legal limit of 50 acres that can be burned each day, to help make sure the workers can adequately control the burn. But the goal is to burn 200 acres per year in a 5- to 10-year rotation for any given site. Fire can *maintain* the ecosystem (6-7), but cannot return the degraded portions of the site to a habitat suitable for the endangered species that are the responsibility of Preserve management. A "Viability Assessment Project" (available on the Albany Pine Bush website) indicated that the best habitat for sustaining barrens would be roughly 30% forest/70% barrens and thickets, just about the opposite of the recent status. And the forest cannot be too dense, as native pine barrens species are not very shade-tolerant. Thus the labor-intensive restoration efforts.



Habitat degradation at the Albany Pine Bush is due to ***invasive species***, largely because of too many edges; ***ecological generalists***, such as White Pine (*Pinus strobus*), aspens/cottonwoods (*Populus* spp.), and Red Maple (*Acer rubrum*); and, to a certain extent, the ***need to convert forest habitat to barrens***, even if it means removing regionally native species to reduce density.

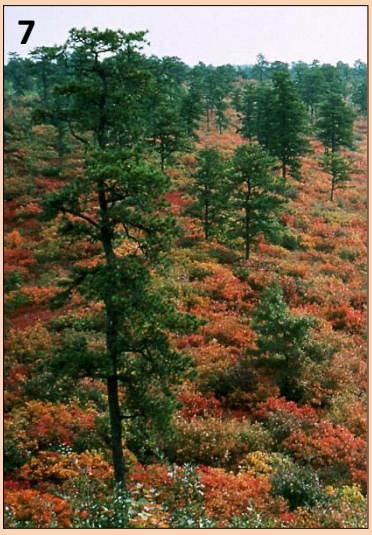
Some tree species can simply be cut, and that has been done. But some, *e.g.*, clonal species like aspen, will simply re-grow innumerable shoots. Volunteers girdle the trunks instead. For some undesirable species, cutting of small-diameter trunks and stems is followed by the application of herbicide to the stump. For some larger trees, holes drilled every eight inches around the base of the trunk are filled with a systemic herbicide, which quickly kills the tree. And for Black Locust (*Robinia pseudoacacia*)†, conventional logging has been followed by "root grubbing," all with heavy equipment. Because of the sand, soil compression by this equipment is not the concern it would be around Ithaca! Heavy brush-hog mowers can be used between fires to keep the thickets in check (10-11).

† **See *Solidago* 16(4), December 2015, pp. 1-4, for further information on this tree, which is now considered a *Regulated Invasive Plant* in New York.**

Historical Images of the Albany Pine Bush

(1) Male Karner Blue (Saratoga, 31 May 2003). (2) Natural clump of Wild Lupine in the Pine Bush (5 June 1997). (3) Wild Lupine (June 1980, photo by John F. Cryan). (4) A mature Pitch Pine (*Pinus rigida*), the signature canopy tree of the barrens (20 July 1996). (5) View from a dune summit in the Pine Bush, looking south. The brighter blue on the horizon is the Helderbergs (a limestone ridge), with fainter blue peaks of the Catskills in the distance (23 Aug. 2003). (6) A natural burn (13-14 April 1973). (7) Natural regeneration in the burn scar (2-3 Oct. 1976, photo by John F. Cryan). [Photos 1-2, 4-6 copyright © 2016 by Robert Dirig.]





All this clearing is followed by a very ambitious program of ***local ecotype*** seed propagation. Seeds of various desirable plant species are gathered each year, for drying and cleaning, and then sown onto strategic portions of the Preserve the following year. Seeds are collected by seasonal workers, day laborers, volunteers, and professional staff. Collected seed material is processed at a special USDA facility in Big Flats, N.Y. (near Elmira). Jesse stated that they had tried planting plugs (often considered a faster method for some species), but found the very fast drainage and the large areas involved meant insufficient water for "settling in." Seed works.

The Albany Pine Bush processes enormous quantities of Wild Lupine seed, which has only a 7- to 10-day window for seed collection in mid-June, as the seeds are expelled vigorously, once dry. But many other species are also used by the Karner Blue during its life cycle — establishing biodiverse grass and forb openings is the goal. This year they will be planting 78 acres, the most ever!

I admit to a bit of concern about the methods used in the Preserve. Many FLNPS members are hesitant to use herbicides at all, and bulldozers seem anathema. However, when faced with the *scale* of restoration required here, it is really hard to see how the desired results would be obtained without such major efforts. Like many public conservation areas, these lands are not really "natural" (maybe only the western U.S. wilderness areas approach that). So a choice is made to aim for a certain result, be that ecological or historical or aesthetic. Managing for that goal is always a balance of time *vs.* money, hopefully guided by good science. In the Pine Bush, an "adaptive management" process is used, where the techniques and results are continually assessed and revised as new information comes in.

And the result? The methods used to create and maintain more open space within the Pine Bush Preserve, as well as efforts to disseminate Wild Lupine seed, have resulted in a very large increase in the local population of Karner Blues. The Preserve has recently exceeded the safety level for Karner Blue restoration, having increased from fewer than 1,000 to over 18,000 individuals in 15 years. (Other N.Y. locations have not been so successful, and we have still not met the statewide goal.) Many species of state and global concern make the Albany Pine Bush their home.

I wish you could have been there to see the wonderful slides and videos Jesse presented! A picture is worth a thousand words, and I wish you could see the pictures of before (*meh!*), during (*OMG!!*), and after (*WOW*) restoration work (Jesse's were similar to **10-11**). But here are some comments from attendees that can give you a feel:

◆ **"I was impressed at the levels of confidence that Jesse expressed about habitat restoration techniques, but of course these are based upon science, and the photos say it all. It must really take nerves of steel to burn, slash, and bulldoze this area."**

◆ **"I was astonished by the variety of land management strategies used in the Pine Bush Preserve — burning, cutting, re-planting, etc. — and the pictures of the work isn't pretty the first year, but the next year shows the results in full growth."**

◆ **"It would be a great late spring field trip destination for FLNPS to see rare plants, birds, and butterflies, all at the same time."** (Hmmm, yeah!)

See more at *http://www.albanypinebush.org*.

Active Management at the Albany Pine Bush Preserve

(**8**) Prescribed burn scar (16 May 1999). (**9**) Recovery of the vegetation in the same burned area (4 Sept. 1999). (**10**) Brush-hogged tract of Pine Bush (5 Oct. 1996). (**11**) Rejuvenation of the cut area (20 July 1997). [Photos copyright © 2016 by Robert Dirig.]

Wild Gardening

Uneven Ground

by Akiva Silver

There are hills everywhere in upstate New York, but the ground upon them is flat. The fields on our hillsides are easily mowed and grazed. They were smoothed out a long time ago, when they were first cleared and plowed. It did not always look like neat rolling hills here.

Ancient hardwood forests created a ground so uneven, textured, and three dimensional, that it resembled mogul ski runs. These types of forest floors still exist today on the steepest hillsides that have been woods for centuries. Walking in an old forest hereabouts is more like climbing up and down pits and mounds of soil than strolling down a trail. The topography is so intricate that one hillside is actually made up of thousands of micro hills and valleys.

This micro-topography is created when large trees topple over. A giant root mass is lifted into the air, and as it breaks down, it turns into a mound. The place where the root ball used to be is a pit. Pits and mounds, pillows and cradles, don't sound like much. But they are. What pits and mounds do has far-reaching, powerful consequences.

Before I explain exactly why I love the pits and mounds of old forests, let's take a look at a smoothed-out hillside (with or without trees). The ground is easy to walk on and drive on, it's easy to get machinery in and out, but other than the convenience of access, I cannot see any other benefits. Runoff of rainwater and nutrients is constant, and can be especially severe when the ground is frozen and there is no snow cover. Streams downhill fill up faster than they can handle, eroding their banks, and sometimes flooding.

The soil on my farm is classified as *volusia*. It is a dense clay. In the spring, fall, and winter, the soil is saturated. "Muddy" is probably the best word to describe the soil on our hill for most of the year. During a dry summer, it can be as hard as concrete. Under these anaerobic conditions, trees languish. They grow very slowly, if at all, and they usually have much shorter life spans compared to trees grown in well drained soils.

How did a soil like this once support the massive trees that became the beams of my family's old farmhouse and the collapsed barn nearby? How do volusian soils support the healthy forests all around my fields?

Most of the top soil was lost when the early European settlers first farmed here. They plowed the hillsides to grow annual grains like buckwheat and barley. Gravity and rain took care of everything from there.

When I first began planting trees here, I assumed that by adding compost, topsoil, or mulch, I could improve the soil and bring patches of it back to its former greatness. I would dig a hole, add copious amounts of compost, and apply lots of mulch on top. After a single year, this spot would be exactly the same soil as all the soil surrounding it — wet and muddy. More compost, more mulch, yielded the same results. What was I missing?

A typical pit and mound in the woods created by an uprooted tree. The consequences of this event are a raised bed, a vernal pool, and increased biodiversity.

The answer is air. As springs bubble from deep within our hillside, the water runs through the soil and completely fills all available pores and capillaries. There is not enough oxygen in a saturated soil for roots to breath, or for certain microbial life to flourish. In some places the soil is so wet that it smells anaerobic, and has a grey-blue color. Adding compost might work if I added huge amounts, but sooner or later, the anaerobic conditions would triumph over my soil amendments.

During a walk in the woods, I realized the best way to get air into the soil. It is hard to describe the beauty of New York's Southern Tier. Steep hillsides covered in trees and pastures make up this idyllic landscape. It resembles Hobbit country. This is the northern edge of the Appalachians. During my walk, I entered a mature stand of Sugar Maple (*Acer saccharum*). The pits and mounds were so plentiful that there was almost no place that was not a pit or mound. Many of the mounds were taller than I am, and some of the pits equally deep.

I have spent a lot of time looking at the ground in these types of forests. Trees are almost always growing out of the mounds. The pits fill with water and snow for large parts of the year, but dry up in summer. This system is truly remarkable: It is a network of raised beds and vernal pools.

The raised beds allow drainage to occur. It keeps the crown of tree roots safe from saturation by raising them above the water table. The soil in these mounds is always crumbly, wonderful stuff. And the pits — the pits! — are more than just water storage vessels. They slow water down, giving it nowhere to go except to gently infiltrate the soil. They are not deep enough to hold water year round. This seasonality is a big part of what makes them so exceptional.

A pond that holds water 12 months of the year will inevitably become colonized with fish. I did not understand how this could happen, until an old friend told me that birds' legs will carry fish eggs from one body of water to another.

A pond or pool that dries up every summer will not support fish, which can be a great thing from an ecological perspective. I love fish, raise them in my ponds, and have gone fishing my whole life. The thing about fish is that they

love to eat. Fish will decimate populations of amphibians and invertebrates in a small pool. The biological diversity of a vernal (seasonal) pool is very high, in the absence of fish.

These are the places where salamanders, toads, frogs, and a myriad of insects will lay their eggs and complete life cycles. The forest I was walking through contained thousands of vernal pools in just a few acres.

It also contained thousands of huge mounds that were growing big trees. Trees like Red Oak (*Quercus rubra*), which could never grow in the wet field adjacent to this forest. The adjacent field is the same soil series as the forest, *volusia*, muddy. The difference is the uneven ground.

With this observation of forest soils, I got to work destroying my fields. They no longer have the smoothed-out surface of a hayfield. I began making my own pits and mounds. I started out with a rototiller; I have since moved on to front loaders and plows, but also use a shovel and pick in areas too steep for machines. Without any compost or soil amendments, the trees I planted grew 10 times or 100 times faster than trees I planted into flat ground. The trees I planted in the flat ground never grew more than a couple of inches, but the mounded trees have been very vigorous for the last four years. Many chestnuts (*Castanea* sp.) have been putting on over 2-3 feet a year. Chestnuts require excellent drainage to thrive. The field they are growing in has been a wet field with a very high clay content. The trees often have large foot-deep puddles next to their mounds. When I first began planting trees on this land, my neighbor declared "the only thing you can grow here is frogs!"

▸ Swale and Berm built along the contour line with a one bottom plow

◂ Fruit trees planted on a berm built along the contour of the hillside. Water can collect in front of the trees while the crown of the roots can spread into friable, well drained soil. This was dug with a front loader.

Since building pits and mounds, I have moved on to ***swales*** and ***berms***. These are built upon the same concept, but take it a step further. A swale is a ditch that is dug along the contour line. A normal ditch carries water downhill, but a swale catches the water and slows it down, holding it in place. The water sits and collects, and most of it slowly seeps into the ground. Building a berm instead of a mound allows me to plant many more trees. I can plant long rows of trees with their root crowns elevated above the water table, while they have near constant access to water at the same time.

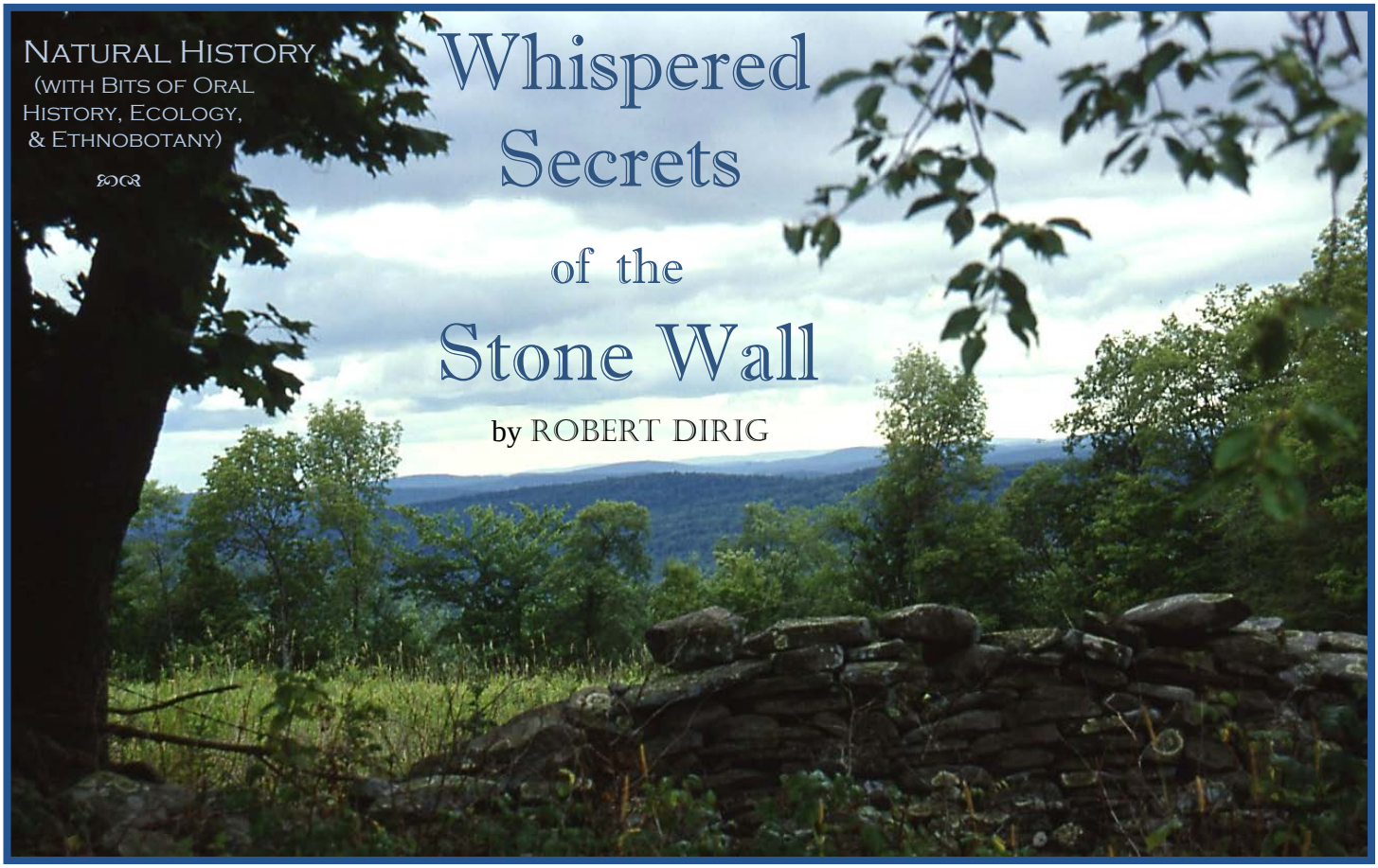
▴ Notice the water caught on the uphill side.

This is an exciting system because it allows me to grow all kinds of trees in a field that formerly could only support a few species. After just a few years, tree roots will extend beyond the mounds or berms. They will find the surrounding ground. This was a big concern of mine when I first started out. So far, I have not seen the trees slow down at this point, but rather they are speeding up as their root systems build strength. I believe this is due to two factors. The first is that their root crowns are the most important part needing drainage. The second is that the surrounding ground is not the same. The water table at the surface has been altered by numerous pits and swales. Water no longer runs unimpeded through the top foot of the soil. There are traps and sinks for it everywhere. The ground below the swales is not as wet as before.

I'm sure that there are many consequences of these types of earthworks that I am unaware of. Using the forest as my example, I believe that uneven ground fosters growth and biodiversity on many levels. I hope that numerous fungi, bacteria, insects, and amphibians are finding the little niche pockets that they need to thrive.

The way forest floors were created is an unbelievably complex and rich system. Automatic mulching in the fall, raised beds, and water storage are just a few benefits of this system. For those of us trying to grow trees in old, abused fields, uneven ground can give our trees the boost they sometimes need. ☙❧

Twisted Tree Farm, 279 Washburn Road, Spencer, NY 14883, U. S. A. ☎(607)589-7937. *ttfarm279@gmail.com*



NATURAL HISTORY
(WITH BITS OF ORAL HISTORY, ECOLOGY, & ETHNOBOTANY)

Whispered Secrets of the Stone Wall

by ROBERT DIRIG

STURDILY THEY STAND, these silent sentinels of the past, enduring, lovely, and very old. They are priceless artifacts of a special sort, built from the lifeblood of our ancestors, and hiding, behind their stony faces, tales that few can read and many have long forgotten.

In the 1840s and 1850s, when early European settlers reached southern Delaware and Sullivan Counties in the Catskill region of New York, they found a hilly, heavily forested landscape of spectacular vistas, with stony soils dumped there ages ago by the retreating glaciers. Soon after, the area was dotted with small farms run by essentially self-sufficient families.

Clearing fields for farming was an arduous task, because of the numerous, massive tree stumps that had to be grubbed or burned out, and the multitude of field stones that must be picked, hauled off on stone boats, and dumped in an out-of-the-way corner. It is staggering to contemplate the task of properly clearing even one small field in this area, 150 years ago.

The settlers were stalwart people, who of necessity used everything provided by the land to the fullest extent, and often with considerable ingenuity. Just as uses were found for the easily-hollowed twigs of ***Common Elderberry*** (*Sambucus nigra*, ssp. *canadensis*) and ***Staghorn Sumac*** (*Rhus typhina*) as spiles for tapping ***Sugar Maples*** (*Acer saccharum*) [1], so the rocks removed from the fields were put to good use. House, barn, and shed foundations were built of the rugged grey sandstone [2-3]. Linings for hand-dug wells were fashioned from the stones [4], as were low walls for keeping the soil out of cool, clear spring holes. Occasionally an entire building might be constructed from the abundant "waste" rock. And stone fences were used everywhere to separate field from field [5], define property lines, keep livestock off roads, and surround apple orchards, gardens, cultivated plots, and pastures. They were perhaps the most characteristic feature of early Catskill farms.

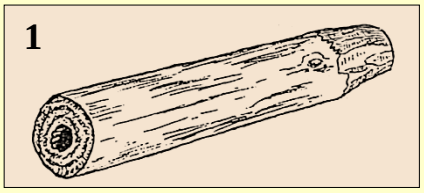
These stone walls were resilient structures, made to last by skilled builders. Sometimes yard-deep trenches were dug, and the three- or four-foot-wide walls begun at this depth, then built up to four or five feet above the surface of the ground. (This probably was mostly done with house foundations.) More often, when time or rocks were limited, less elaborate walls were placed on the ground surface itself, set upon a sturdy base of large stones. It required a certain knack to fit the irregular but usually planar sandstone pieces together, to make a neat, even, and solid “dry wall” (lacking mortar) that would not collapse under strain. People who were especially talented made stone fence building their profession, travelling from farm to farm, to erect new or repair old walls, as required. They were paid in cash, farm produce, or perhaps by work-trading. Sometimes families built their own walls, or participated in stone wall "bees" that were accompanied by much merriment.

In cases where the builders were particularly skilled, stone walls, or sections of them, persist today. However, many are just crumbled piles of rock, where frost-heaving over many decades has levelled them. Examples can be found of all the intermediate stages of decline. I continue to enjoy a particular section of a tall stone fence that is as sound today as it was when built — sometime between 1870 and 1900. Very neat and beautiful to look at, it is four feet wide at the base, tapering gradually to about a yard wide at the top, which is capped with large rocks to hold all the smaller ones firmly in place [6].

Today, the old stone fence builders are gone, and the walls they constructed are often objects of antique ornament, rather than utility. The common adoption of barbed wire after 1874 was a major factor contributing to the decline of the stone wall. It was immensely easier and less time-consuming to put up a wire fence. In time, corners or sections of the stone fences (which the wire ones often paralleled) fell into decay, and were not repaired. Today, what remains of them are reminders of a way of life that has passed.

The best source of information about stone walls is their own remnants. For the curious investigator, these are sometimes dangerous to walk on, but are often beautiful, and always interesting.

Perhaps their most obvious feature is the abundant wildlife associated with them. A familiar denizen is the beautifully-striped ***Eastern Chipmunk*** (*Tamias striatus*) [7], which finds the cracks between the stones a safe retreat and storehouse. ***Woodchucks*** (*Marmota monax*) sometimes hide the entrances to their underground burrows in a fallen rock pile, or beneath a basal stone along an old wall separating field from woodlot. Several types of ***snakes*** may also make their homes here. Turning over loose rocks along an old wall may reveal fuzzy, oval, yellowish-brown cocoons, or perhaps the chestnut-and-black "Banded Woolly Bear" caterpillar, of the ***Isabella Tiger Moth*** (*Pyrrharctia isabella*), along with various beetles and other insects that find the "caverns" between the stones a welcome hiding place.



1: A sumac spile.
2: Log cabin foundation.
3: Old barn foundation.
4: Stone-lined well.
5: Arching stone wall separating fields.

6: Wall capped with large stones for long-term stability.

7: Eastern Chipmunk.

8: Milbert's Tortoiseshell life history, beside a stone wall:
1 – mass of eggs, one enlarged; **2** – young larvae at top of foodplant, showing web; **3** – fully grown caterpillars; **4** – denuded, webbed Nettle stalk, a characteristic feeding sign; **5** – side view of chrysalis; **6** – dorsal view of chrysalis; **7** – courting pair of adults, smaller male behind female; **8** – female laying eggs, showing wing undersides; **9** – wasp parasitoids and their cocoons; **10** – larval foodplant, Stinging Nettle.

9: Grey Comma nectaring at Wild Basil (*Clinopodium vulgare*) in an adjacent meadow.

The most dramatic insects associated with stone fences are two exquisite nymphalid butterflies, the ***Milbert's Tortoiseshell*** (*Aglias milberti*) [8] and ***Grey Comma*** (*Polygonia progne*) [9]. The Tortoiseshells have a particular reason for frequenting stone fences: They hibernate as adults, tucked inside the wall, with wings folded together, exposing their well camouflaged undersurfaces that resemble a chip of rock or wood. Hollow trees, woodpiles, stone overhangs, and unheated buildings are other sites that may be chosen by both of these butterflies for hibernation, which begins in November, and continues through the following March. On the first bright spring days, the butterflies emerge to bask in warm rays of sunshine, and visit the sugar bush for a drink of maple sap, before returning to their hiding places.

Stone fences may be nearly buried under winter snowdrifts, but my grandparents watched ***Bobcats*** (*Lynx rufus*) use them as a convenient pathway at this season.

Autumn leaves falling in a colorful mosaic atop stone fences soon decay and sift down between the rocks. Over many years, a rich organic soil accumulates, which supports several kinds of plants. ***Prickly Gooseberry*** (*Ribes cynosbati*) bushes [10], with mace-like purple fruits, flourish here, or along crumbling house foundations, incidentally providing food for Grey Comma caterpillars. ***Red Currant*** bushes (*R. rubrum*) [11], a close relative, persist on crumbling stoneworks at old homesteads, amid brambles of ***Common Blackberry*** (*Rubus allegheniensis*) and ***American Red Raspberry*** (*R. idaeus*, ssp. *strigosus*). ***Stinging Nettles*** (*Urtica gracilis*) [8] may grow in large clumps along barn foundations, conveniently feeding Milbert's Tortoiseshell larvae. Here and there a ***Hop*** vine (*Humulus lupulus*) [12] lingers as a reminder of a once-flourishing Catskill crop.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Other organisms grow on the rocks themselves — emerald ***mosses***, forming a beautifully textured carpet; or a frosting of delicate lichens in shades of grey, green, and yellow [13]. ***Hammered Shield Lichen*** (*Parmelia sulcata*), ***Common Goldspeck Lichen*** (*Candelariella vitellina*), ***Sulphur Dust Lichen*** (*Psilolechia lucida*) [14], ***Rough Speckled Shield*** (*Punctelia rudecta*), and ***Boulder Lichens*** (genus *Xanthoparmelia*) [13, *arrows*] are among the most conspicuous species of Catskill stone fences.

On the edges of the wall, in the narrow spaces protected in earlier years from plow or scythe, seeds found a sheltered germination spot. Now the walls are often fringed with a hedge of large ***Sugar Maples***, ***Black Cherries*** (*Prunus serotina*), and ***White Ashes*** (*Fraxinus americana*) that grew from them. ***Choke Cherry*** bushes (*P. virginiana*), ***Staghorn Sumacs***, ***Hawthorns*** (*Crataegus* spp.), ***Sweet Briar*** (*Rosa rubiginosa*) [15], ***Wild Apples*** (*Malus pumila*), and vines of ***American Bittersweet*** (*Celastrus scandens*), ***Woodbine*** (*Parthenocissus inserta*), ***Poison Ivy*** (*Toxicodendron radicans*), and ***Frost Grape*** (*Vitis riparia*) constitute the fencerow in other places, providing nesting sites for songbirds, shelter for ***Eastern Cottontail Rabbits*** (*Sylvilagus floridanus*), and homes for other unseen animals.


12

Following a wall's course, one may come upon a forgotten scythe blade, a wooden wagon wheel with broken spokes, or an old horseshoe. Here and there, a short length of rust-weakened barbed wire can be found on the wall, among some weathering boards.

Farther on, a large boulder was built into the wall, its top still holding small stacks of stones that might have been table and chairs to children who once played house there.

Occasional openings in the walls show where farm wagons passed from field to field, or where livestock was driven from pastures to the farmyard. A mound of rich brown loam marks the spot where a large tree fell years ago, blocking a gateway.

What contemplative farm boy used to sit in the shade of that huge Sugar Maple, on the cool stones? Where is he now? I wonder how many stomach aches resulted from sneaking green apples in this decrepit orchard? Was it 80, 100, or 150 years ago that ox carts passed down this forgotten lane between the walls? Let's see where it leads.

Past the orchard, it enters a woodlot, where a newly bulldozed logging road crosses at right angles. The rudely knocked-down stone walls on either side seem a sacrilege to these venerable structures, which are often the last physical links to our pioneer forebears. How few minutes did it take one machine to scatter those stones that required so many hands and days to collect and place carefully, three or four generations ago?

10: Prickly Gooseberry
11: Red Currant
12: Hop vine on an old stone wall
13: A lichen-covered stone wall
14: Sulphur Dust Lichen
15: Sweet Briar Rose


14


15

The old road soon comes to sloping fields. A few steps beyond are the foundations of an old homestead. Worn bluestone sidewalk and steps leading up to the one on the right mark the house; the larger size and sturdier build of the other indicate the barn. Here is a spring, still neatly boxed with large, flat stones, and bordered with a fragrant mass of ***Peppermint*** (*Mentha ×piperita*). The water is still cool and good! A tangle of old-fashioned ***Cinnamon Roses*** (*Rosa cinnamomea*) [16] and a huge ***Lilac*** bush (*Syringa vulgaris*) near the house foundation still flourish in a garden that is no longer tended.

Standing among the ruins of the farmstead, I seem to hear murmured voices from the past all around me — children tumbling and laughing on the now-weedy lawn, a baby fussing, chickens cackling, and cowbells clanking; a horse swishing its tail as the farmer adjusts the harness that is now a rotting tangle of mildew-covered leather; the creak of a dumprake as the horse is hitched to it; and from somewhere, a snatch of an old hymn, sung by a teenaged girl to the rich strains of a treadle organ — all these sounds blended in a strange sort of harmony. Suddenly, the voices are gone. Only the birds are calling, and a breeze fluttering the leaves of the Lilac, and of a young ***Quaking Aspen*** (*Populus tremuloides*) growing out of the cellar hole. The rock walls and foundation seem no longer alive, yet brooding in a pregnant silence that holds a wonderful history of hopes and disappointments, of happiness and sorrow, of living and dying in days long past. For a moment, in imagination, the walls had hinted to me of those secrets that summer day . . . as they sometimes will whisper to those who will hear.

16: A Cinnamon Rose persists at the site of an old house.

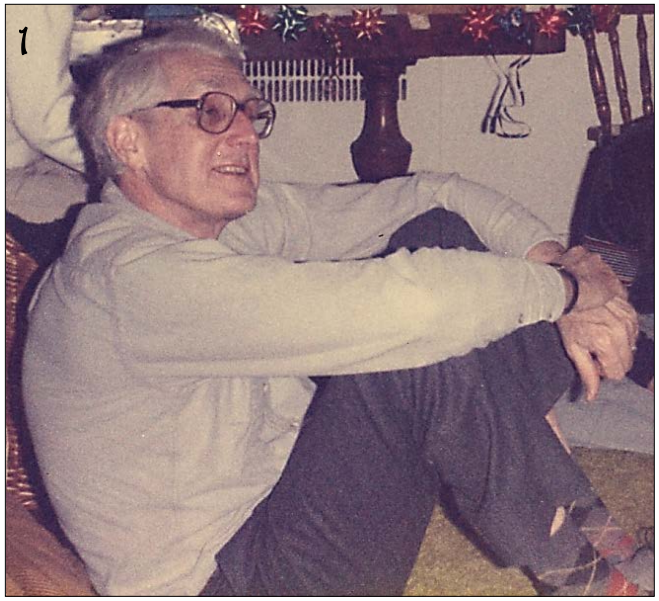
17: A magnificent stone fence is enhanced by snow.

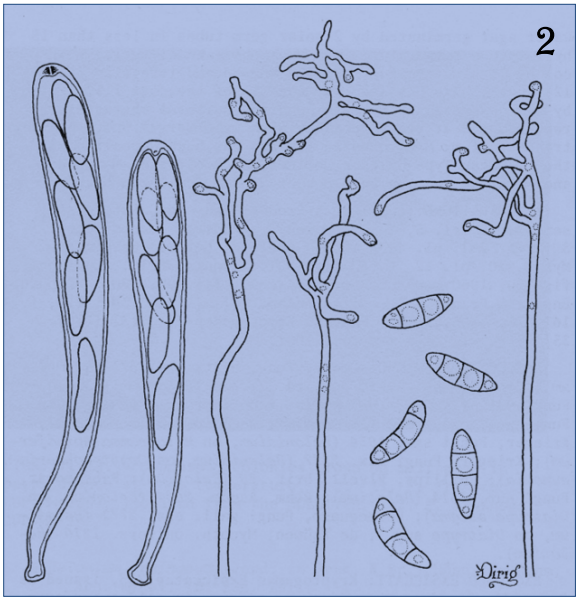
18: A stone wall along Rt. 357, north of Franklin, in northern Delaware County, N.Y., with stones placed diagonally on top

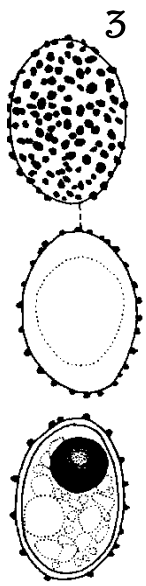
19: "They found a hilly, heavily forested landscape of spectacular vistas...."

By way of acknowledgement,
I dedicate this article to the following people, all now deceased, who helped me piece together the nearly-forgotten history of Catskill stone walls in the autumn of 1972: Catherine Peake Dirig, J. Francis Dirig, Marjorie E. Dirig, Mabelle Maxson, Ellis Maxson, George Nevin, Clarence Nevin, Ruth Anne Nevin, Silas Tompkins, Blanche Zurn, and especially Hannah Malloch Rosenstraus, a local historian, who read my manuscript and offered valuable suggestions.

A similar version of this article appeared in the Summer 1973 issue of *The Catskills* magazine, Volume 1, Number 3, on pages 49-53.

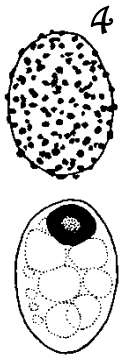






"The Charmed Circle of the Microscope"
An Appreciation of Richard P. Korf, 1925-2016

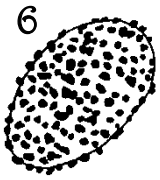
by Robert Dirig

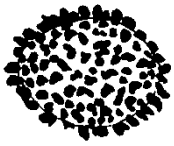


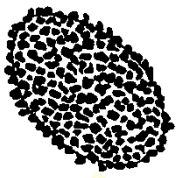
RICHARD P. KORF [**1**, **8**], legendary mycologist and scholar at Cornell University, passed away on 20 August 2016, at age 91. Known for his expertise on cup fungi, or "discomycetes" (an open-fruited subset of the Ascomycetes) [**9**], and for all the subtleties of fungal nomenclature, he helped and inspired thousands of people across the globe.

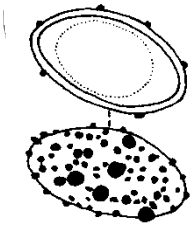
A native of New York, Dr. Korf studied at Cornell, earning a B.S. (1946) and a Ph.D. (1950) in mycology. He then worked as a professor in Cornell's Department of Plant Pathology from 1951-1992, publishing more than 400 papers on cup fungi and fungal nomenclature, teaching many courses, sponsoring 27 graduate students, collecting ca. 5000 fungal specimens (which he gifted to Cornell), and directing the Plant Pathology Herbarium, the fifth largest fungal museum in North America. He received the ***Distinguished Mycologist*** award from the Mycological Society of America in 1991, and the ***Ainsworth Medal*** for "extraordinary service to international mycology" in 2010.

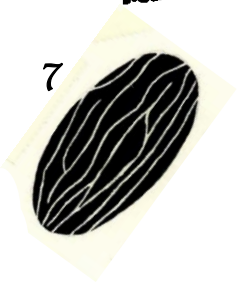
I met Dick in 1973, and in 1977 began a two-year collaboration as herbarium assistant and illustrator for his NSF-sponsored project on the *Discomycete Flora of Macaronesia* (the Canary Islands, Azores, Madeira, and Cape Verde Islands). With students and colleagues, Dick collected hundreds of discomycetes throughout this archipelago during three, month-long field trips in the mid-1970s. I helped organize the specimens, and drew 284 ink plates of fungal structures for use in his papers on various groups, including new species they discovered there [**2-7**, **10-12**]. From this experience, I learned the rudiments of herbarium practice and lichen identification that influenced my entire later career.











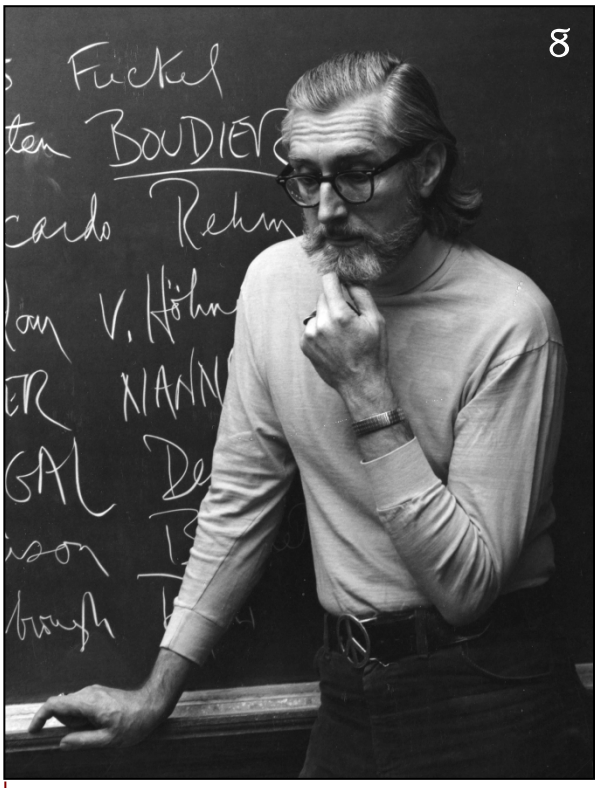
Note on the Illustrations: [**1**] **Dick Korf** at a party in Ithaca, 24 January 1985. [**2**] ***Polydesmia pruinosa*** (asci, ascospores, & paraphyses). Mature, ornamented ascospores, some with cross-sections, of [**3**] ***Scutellinia umbrarum***, [**4**] ***Scutellinia vitreola***, [**5**] ***Trichophaea variornata***, and [**6**] ***Ascobolus carbonarius***, were drawn in ink. [**7**] An ascospore of ***Ascobolus furfuraceus*** was rendered in scratchboard, showing the white "cracks" on its dark surface. Figs. 2-7 & 10-12 were drawn by Robert Dirig in 1979-1980, while assisting with Korf's NSF grant on the *Discomycete Flora of Macaronesia*.

discomycete structures — ***asci*** (the test-tube-like phials containing the spores), the ***ascospores*** themselves, and the ***paraphyses*** (sterile fungal threads among the asci) — which I arranged into plates for each species [**2**]. Dick had a strong artistic sense, and would frequently remark "Oh! How pretty!" when viewing spores and other apothecial structures for the first time. Because discomycetes are so small, they can only be appreciated under high magnification, a rarefied universe that few people enter. The enlarged images that decorate the margins of this and the previous page, and the design on page 22, only hint at the vast esthetic riches of this group of fungi.

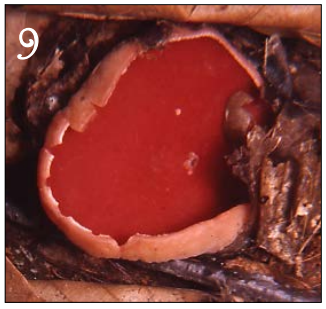
Dick had a strong interest in theater, and had acted since he was a student. (He also served as Chair of Cornell's Theater Arts Dept. in 1985-1986!) A story he told about collecting in Macaronesia illustrates his sense of drama and comedy: At a certain hotel, where they stayed for several days, he and his three mycological colleagues came out of their lodgings early each morning, and immediately, with eagerness, began to examine goat droppings on the lawn with hand lenses, looking for discomycetes. When they found one, they would exclaim joyously, and collect the dung into small brown paper bags, to dry as specimens, for later examination. The next day, and every day thereafter, while they were there, a crowd of local spectators appeared each morning on cue, to stare at the bizarre ritual. He chuckled in the telling, and said he never told anyone what they were doing.

In later years, I worked with Dick as Index Editor of *Mycotaxon*, an international journal he founded in 1974-1975 to expedite publication of research on the taxonomy and nomenclature of fungi and lichens. Many of the illustrations I prepared for him were published in this journal. Dick's attention to detail and sense of design were always evident in his production of the issues, and it has been a vital arena for mycological publishing ever since. Indexing twenty volumes helped me become familiar with fungus and lichen names. After working at Cornell's Bailey Hortorium Herbarium for 28 years, I moved to the Plant Pathology Herbarium in 2008 as Curator, remaining there until I retired. Dick was Director Emeritus, and kept an office at the Herbarium. Over the years, he had issued sets of *Discomycetes Exsiccati*, a special collection of his group that was distributed to about fifteen worldwide herbaria. I was honored to serve as Co-Editor of this important production, when we issued two new fascicles in 2009, publishing the documentation in *Mycotaxon*. Dick remained active until a few months before his passing. Having his support and friendship through the years was one of the great gifts of my career.

Dick's kindness, generosity, sophistication, charisma, commitment to peace, internationality of influence, and superlative science endeared him to many. While recently leafing through the fungal drawings I rendered almost forty years ago, I wondered how I found the discipline to sit there, day by day, doing such intricate representations, where a single line of ink often had to tell the whole story. Whatever challenges that entailed, I am grateful for the experience. And I still feel excitement over the loveliness of these small beings that live all around us, mostly unseen — over which Dick and I had marveled, while viewing them through the "charmed circle of the microscope." ☙❧

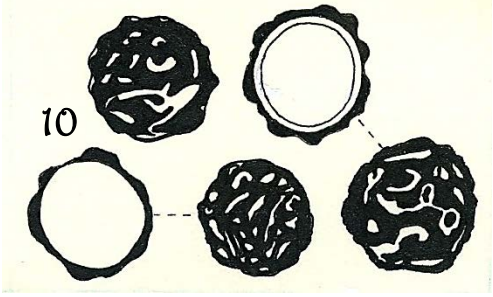


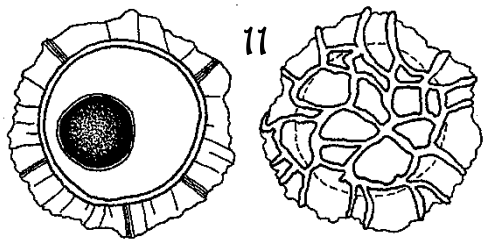
[**8**] The charismatic **Professor Korf**, teaching a mycology class at Cornell in March 1972. Note the "Peace" symbol on his belt. Photo by Howard H. Lyon, courtesy of the Cornell Plant Pathology Herbarium (*CUP-052456a*).

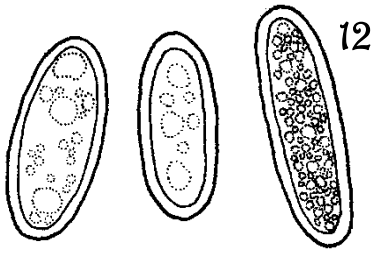


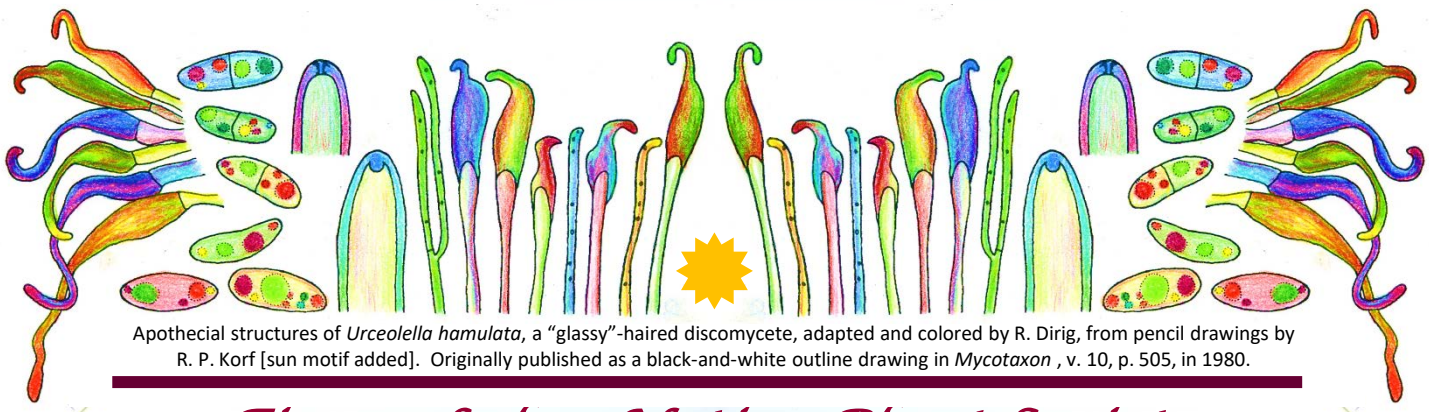
[**9**] **Dudley's Scarlet Cup** (*Sarcoscypha dudleyi*), a large, common, spring-fruiting discomycete of the Finger Lakes Region, 13 April 1974 (*R. Dirig F-5, in CUP*).
[**10**] ***Lamprospora dicranellae*** and [**11**] ***Ruhlandiella berolinensis***, showing ascospores and cross-sections, both from Macaronesia.
[**12**] ***Sarcoscypha macaronesica***, ascospores in cross-section, showing the oil drops (*guttules*). This new species was described by H. O. Baral & Korf from Macaronesia, based on specimens collected on his research trips.

FLNPS members and readers are invited to attend the **Richard P. Korf Memorial** on Sunday, December 18, 2016, from 2:00 to 4:00 p.m., in the Barnes Hall Auditorium at Cornell University in Ithaca, N.Y. At this Memorial, family and friends will speak in celebration of his exceptional life as a husband and father, peace activist, lover of theater, and as a scientist known internationally for his remarkable contributions to the study of fungi. Contact: *Kathie Hodge,* ***kh11@cornell.edu***









Apothecial structures of *Urceolella hamulata*, a "glassy"-haired discomycete, adapted and colored by R. Dirig, from pencil drawings by R. P. Korf [sun motif added]. Originally published as a black-and-white outline drawing in *Mycotaxon* , v. 10, p. 505, in 1980.

Finger Lakes Native Plant Society

Talks & Activities, Late Autumn 2016 ~ Winter 2017

2016 Solstice Gathering

Wed., Dec. 21st, 7:00-9:00 p.m., Unitarian Church Annex, East Buffalo Street, Ithaca, N.Y.

by Rosemarie Parker

It's time again to relax, as we share experiences and expertise. Please plan on attending and participating. We will be at our usual meeting location.

Our annual **Seed Exchange** is part of the festivities. A list of seeds we already have is included with this mailing. Please get in touch with ***Rosemarie Parker*** if you have seeds of native plants to offer, and want a photo included on our board. Remember, you can take seeds to plant, whether or not you bring any. Even if you have no more room in your garden, the Gathering is the perfect time to decide what you want to grow for FLNPS to sell at the Spring Plant Sale — many species require a cold, moist, stratification period before they will germinate.

The plants we use to decorate the room for the Gathering give us materials for an **Identify-the-Decorations "Quiz."** This is always fun, as well as educational, and we expect people to collaborate. You don't need to get any of the answers right to qualify for the **Door Prize Drawing**. It's always fun to have some new and different species for the quiz. This year, ***Arieh Tal*** is providing them.

Every year, ***Door Prizes are donated by members***. If you would like to contribute in this way, again, please tell me *early*, so we know how many to expect. We may save some for the January Members' Night!

To keep up our energy during all these activities, we ask everybody to bring some **Food With a Native Element**, and a prize is awarded to the creators of foods voted as favorites by the most participants. We'll have two prizes this year, one for sweet and one for savory dishes. You can think "outside the box" here. Besides the all-time popular blueberry, cranberry and apple dishes, there are many possible ingredients, from native plants like Black Walnuts, Butternuts, maple syrup, Elderberries, Wild Rice, mushrooms, quinoa, squash, peppers, corn, and potatoes (a Meso-American origin is okay). ***Creativity and truly local ingredients are appreciated.***

Finally, we always need help with **Set Up** and **Clean Up**, and I am the person to contact if you want to volunteer for either.

Our annual Solstice Gathering is fun and friendly. Please come and enjoy the plants and plant-loving people! ☙❧

2017 FLNPS Members' Night

Wed., Jan. 18th, 7:00 p.m., Unitarian Church Annex

by Rick Lightbody

The annual ***FLNPS Members' Night***, begun in 2015, has proven to be quite popular. Attendees have enjoyed the variety of presentations and the chance to learn more about their fellow members' interests and talents. So we'll do it again this coming January. And of course we'll need your help! If you like to take photos, paint, draw, write poetry (or read the poems of others), do needlepoint, sing and play music, tell stories, or do anything else with a plant-related theme that you think others might enjoy, please come and share your talents and enthusiasm with us. The more participation we have, the more fun this evening will be. **Rick Lightbody** will once again be coordinating the program and making sure there's time to fit everything in. Please let Rick know of your interest and intentions as soon as possible. If you expect your presentation to run longer than 5 minutes, please contact Rick by **December 31st**; if less than 5 minutes, by **January 9th**. If you don't wish to do a presentation (or even if you do), you can bring interesting, plant-related art, crafts, and found objects to be included on the exhibit table. For more details about Members' Night, for Rick's contact information, and for links to reviews of past Members' Nights, please see:

http://flnps.org/activities/937/members-night

The Ninth Annual Ithaca Native Landscape Symposium will be held on ***Friday March 10th and Saturday March 11th***, 2016.

Upcoming FLNPS Talks, 2017: Feb. 15: *Arieh Tal*, *Sunny-Space Gardening with Native Species: Finding the Right Plants for the Place*. **March 15: *Annise Dobson***, *Earthworms, Deer, and Understory Plants*. **April 19: *Antonio DiTommaso***, *Milkweed/Swallowwort* (details to come). **May 17: *Charles R. Smith***, *Blue Ridge Mountains: Ecology of Roan Mountain*.

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

☙❧