



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

Solidago

Newsletter of the
Finger Lakes Native Plant Society

Volume 19, No. 4



December 2018

LOCAL FLORA

Liverworts of the Ithaca Area

by Julia Miller



A leafy liverwort



A thalloid liverwort

AS THE DAYS GET SHORTER AND THE FLOWERS FADE, I have started to focus on some tough little plants — liverworts! Liverworts are small spore-producing plants in the **Marchantiophyta**, a phylum that includes 5,000 to 10,000 species (1). Liverworts differ from flowering plants, as liverworts are *haploid* (having only one set of chromosomes), while flowering plants are *diploid* (having two sets of chromosomes). Liverworts do have diploid structures that grow from the main haploid plant. These diploid structures produce spores that are dispersed and grow into new (haploid) plants (2).

If you are trying to identify liverworts, it is important to know that there are two very different forms — the complex, vine-like **leafy liverworts** (Fig. 3) and the flat, flap-like **thalloid liverworts** (Figs. 8-9). These two forms look different, but both have liverwort characteristics, such as single-celled *rhizoids* (root-like hairs). Both leafy and thalloid liverworts can be confused with other spore-producing plants. Leafy liverworts can look like mosses, but mosses usually have a prominent *costa* (midrib) on their leaves. Mosses often have pointed leaves that are arranged around the stem, while liverworts usually have rounded leaves that are only on

two sides of the stem. Thalloid liverworts can be confused with *hornworts*, another group of spore-producing plants that have tall, stalkless spore capsules (1). The *Consortium of North American Bryophyte Herbaria's* database indicates that there have been over 30 liverwort species collected in Tompkins County, N. Y. (3). In the past few months, I have hiked through Buttermilk Falls State Park and Robert H. Treman State Park, and found ten species of liverworts (six leafy and four thalloid). I'll be providing brief descriptions and photos that should allow for the identification of these species in the field, if you have a good hand lens. A dissecting microscope is also useful to clearly see some of the features I'll describe. This information comes from a wonderful book by **Ralph Pope** called *Mosses, Liverworts, and Hornworts: A Field Guide to Common Bryophytes of the Northeast* (2016) (2).



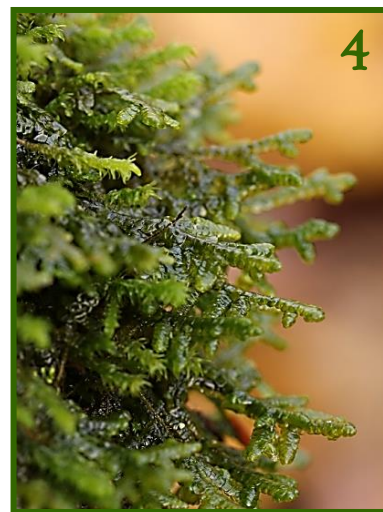
The **Greater Whipwort** (*Bazzania trilobata*, Lepidoziaceae) is a highly branched leafy liverwort with dark green leaves. The shiny leaves point downward and each leaf has three points. Small 'branchlets' form near the edge of main branches. This species is found on rich soil or rotting wood in shaded forests (Fig 1).



The **Variable-leaved Crestwort** (*Lophocolea heterophylla*, Lophocoleaceae) is a light green liverwort with leaves that have two points. This leafy liverwort is found growing on decaying wood. Many plants have beautiful leafy, fringed, sheath-like *perianths*, which protect the female reproductive organs and developing diploid parts (Fig 2).



The **Lesser Featherwort** (*Plagiochila porelloides*, Plagiochilaceae) is one of the few leafy liverworts with leaves that clearly extend down the stem (the botanical term is *decurrency*). The leaves are rounded with small teeth, and they curl up when dry. This species is found growing on rocks (Fig 3).



The **Wide-leaved Scalewort** (*Porella platyphylloidea*, Porellaceae) is even more branched than the Greater Whipwort. The leaves are *incubous*, which means that the older leaf lies on top of the newer leaf going up the stem. This leafy liverwort is found hanging off tree trunks and moist rocks (Fig 4).



The **Flat-leaved Scalewort** (*Radula complanata*, Radulaceae) is a small, bright green leafy liverwort with *incubous* leaves. This species often has round *gemmae* (vegetative structures that can break off and form new plants) along the edges of the leaves. This liverwort has flat, square perianths at the end of the branches. These perianths are usually larger than the leaves. This species is found on bark, rotten wood, and rock (Fig 5).



The **Grove Earwort** (*Scapania nemorea*, Scapaniaceae) is another small, light green leafy liverwort. This species has toothed leaves that end in brown *gemmae* clusters. This species is found on rocks near seeps or along streams (Fig 6).



The **Forked Veilwort** (*Metzgeria furcata*, Metzgeriaceae,) is a highly branched light green liverwort that has distinct midribs on the thalli. This liverwort grows as thick mats on wet limestone cliffs. There are tiny hairs that grow singly along the edge of the thalli (Fig 7).



The **Snakeskin Liverwort** (*Conocephalum salebrosum*, Conocephalaceae) has thick, light green thalli. The long thalli have polygon-like cells with a single pore per cell. This thalloid liverwort is aromatic when crushed (to my nose, it smells spicy and floral). The Snakeskin Liverwort is found by seeps or in wet ravines (Fig 8).

REFERENCES:

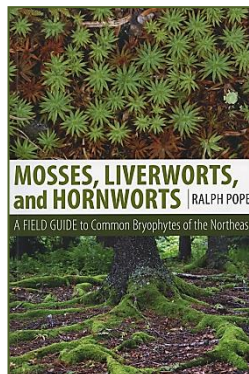
(1) Janice Glime. *Bryophyte Ecology*
E-book:

<https://digitalcommons.mtu.edu/bryophyte-ecology/>

(2) Ralph Pope. *Mosses, Liverworts, and Hornworts: A Field Guide to Common Bryophytes of the Northeast*. Comstock Publishing Associates (2016).

(3) Consortium of North American Bryophyte Herbaria:

<http://bryophyteportal.org/portal/>



One of the most common liverworts in our area is the **Umbrella Liverwort** (*Marchantia polymorpha*, Marchantiaceae). This liverwort has dark green thalli that usually grow in overlapping clusters. This thalloid liverwort also has polygon-like cells with a single pore per cell. Umbrella Liverwort usually has gemma cups, which are small cup-like structures filled with cell packets that can create new plants. This species is found on wet, disturbed sites such as fertilized lawns (Fig 9).



The **Small Mushroom-headed Liverwort** (*Reboulia hemisphaerica*, Aytoniaceae) has thick green thalli with dark margins. This species does not have visible cells or pores. This thalloid liverwort generates diploid parts near the end of the thalli. It is usually found on wet calcareous rocks (Fig 10).

If you would like to learn more about the liverworts of the Ithaca area, Ralph Pope's book (2) and the Consortium of North American Bryophyte Herbaria's database (3) are great resources. If you are interested in learning about the biology, ecology, and taxonomy of liverworts, mosses, and hornworts, Janice Glime's *Bryophyte Ecology* e-book is recommended (1).

THE FINGER LAKES NATIVE PLANT SOCIETY STEERING COMMITTEE

Audrey Bowe: Secretary, Membership

Krissy Boys: Native Plant Gardener

Robert Dirig: Newsletter Editor*

Meena Haribal: Publicity

David Keifer: Treasurer

Rick Lightbody: At Large

Susanne Lorbeer: At Large

Carri Marschner: At Large

Gin Mistry: At Large (Meetings & Mailings,

Anna Stalter: President, Outings & Education Chair

Robert Wesley: At Large



ADDITIONAL NEWSLETTER STAFF

Rosemarie Parker: Webmaster & Assistant Newsletter Editor info@flnps.org

David Werier: Newsletter Editor Emeritus

Please Contribute to *Solidago*

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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Published quarterly at Ithaca, New York, USA.

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.

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"I was excited to find some **Rose Moss (*Rhodobryum ontariense*, Bryaceae)** in the Robert H. Treman State Park. This is the only moss in our area that has flower-like secondary stems. It has quickly become one of my favorite species of moss." — Julia Miller

LOCAL FLORA

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

Deadline for the March 2019 issue is February 15th!

NAME THAT PLANT CONTEST

The photo from last issue's *NAME THAT PLANT CONTEST* [Solidago 19(3), page 4] was of **POKE** or **FOREST MILKWEED** (*Asclepias exaltata*). Poke Milkweed, a relative of the more familiar Common Milkweed (*Asclepias syriaca*), is much less frequent than that species, and generally grows in small isolated patches, often in or on the edges of forests. Thanks to all those who entered the contest, and congratulations to contest winners: *Betsy Darlington, Bob Dirig, Dayna Jorgenson, Susanne Lorbeer, Ashley Miller, and Robert Wesley.*



This issue's mystery plant is shown above. It may help remind us that spring is never too far away! The species is not very common locally, often forms large patches, and is always a delight to find. 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 [redacted]

The photographs were taken by David Werier on 28 April 2018 in Livingston County, N.Y. (background image and close-up of stem) and 30 April 2006 in Schuyler County, N.Y. (close-up of basal leaves).



LETTERS

Hi Bob,

Solidago [19(3)] is beautiful. The “humor” contribution on Clam Shrimp is entertaining; also the bit about butterflies (a letter to the editor). The fern trip and Jam Pond trip look amazing! I wish I’d gone.... I enjoyed the Hemlock article. The field guide to goldenrods is incredible! What a gorgeous contribution. We have some goldenrods here, but not much; I see them sometimes on the roadside, but they don’t dominate like they do up north. They are *just* beginning to bloom here.... Your 1996 photo from Beebe Lake takes the breath.

Scott LaGreca

Durham, N.C., email of 15 Oct. 2018



LOCAL FLORA



Yellow Ladies' Tresses, *Spiranthes ochroleuca*, in the Finger Lakes Region — Continued



In the previous issue [Solidago 19(3)], on page 18, we presented **Julia Miller's** photographs of this orchid that constituted a new plant record from Schuyler Co., N.Y. These images from a dry hilltop near Ithaca, submitted by **Norm Trigoboff**, are a new record for adjacent Tompkins Co., N.Y., according to the distribution map for *Spiranthes ochroleuca* in Tom Nelson & Eric Lamont's 2012 guide to the *Orchids of New England & New York* (Kollath+Stensaas Publishing, Duluth, Minn., pp. 136-137)!

Norm shared this message from **Mike Hough**, sent 15 October 2018: “I was at this site this year and can confirm these are indeed *ochroleuca*.... David Werier was the first to find them, and he showed them to Matt Young.” It is nice to see new records coming in from such a well-studied region. Congratulations!



LOCAL FLORA

Blue Ground
Cedar

*Diphasiastrum
tristachyum* [BGC]



HTC



HTC



BGC

Hickey's Tree Clubmoss

Dendrolycopodium hickeyi [HTC]



A gorgeous assemblage of two uncommon lycophytes, growing with Trailing Arbutus (*Epigaea repens*) [TA], on an open hilltop near Ithaca, N.Y., on 4 Nov. 2017.

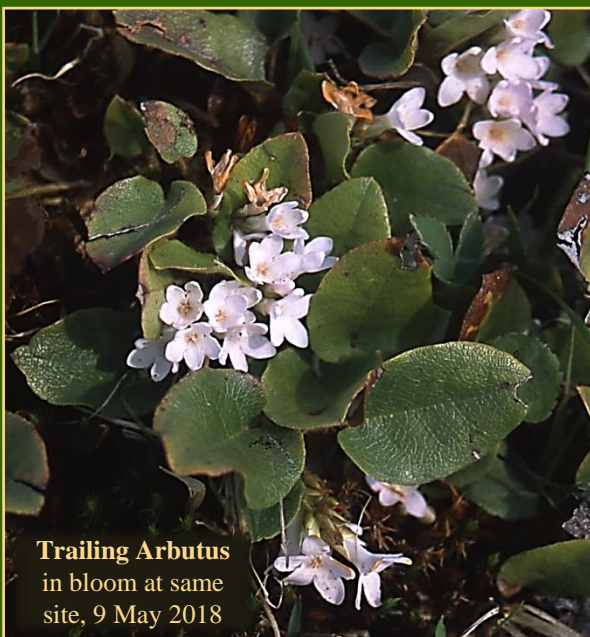
Photos copyright © 2018 by Robert Dirig.



HTC

TA

BGC



Trailing Arbutus
in bloom at same
site, 9 May 2018

Show pictures or artwork, read a poem, ask a burning question, or explain your latest plant-related theory or discovery. This event provides an opportunity to share your "phyto" stuff (tangible and otherwise) with fellow members....

Members' Night Needs You!

The annual **FLNPS Members' Night**, begun in 2015, has proven popular. Attendees have enjoyed the variety of presentations and a chance to learn about their fellow members' interests and talents. (See the link on our website for reviews of prior Members' Nights.) So we'll do it again on **January 16th, 2019**. 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. You can make a presentation or bring interesting objects for the exhibit table.

The more participation we have, the more fun this evening will be. If you would like to do a presentation (or a mini poster presentation at the exhibit table), please contact **Audrey Bowe** by **January 6th, 2019**, with the following information:

- * Presentation topic and format
- * Any technical support needed (e.g., video projector, microphone, etc.)
- * Estimated presentation length (can be anywhere from 2 – 20 minutes)
- * Any preference for your position in the evening's sequence (earlier vs. later)
- * Your email address and phone number
- * Any questions, or information you think is important.

Exhibit Table: Please consider bringing interesting plant-related items to be included on the exhibit table. Items may be arts and crafts, peculiar seed pods, cartoons, etc. For self-explanatory displays, there's no need to let us know in advance, unless your item is bigger than a breadbox, or can't sit on a tabletop. (If so, contact **Gin Mistry** at [redacted] But please come ten or fifteen minutes before 7:00 p.m., to make sure your item gets set up the way you want it. You may wish to include a small card with your name and perhaps an identification or brief explanation of the item. If you'd like to do something more like a scientific poster presentation (where you actively explain details to the exhibit viewers), we welcome that at the exhibit table too. In that case, please let both Audrey and Gin know of your plans as early as possible, and no later than the January 6th deadline mentioned above.

We look forward to seeing you at the fifth annual Members' Night. Help us make it as fun and fascinating as the first four!



FLNPS CALENDAR, WINTER 2018 - 2019

Wednesday ~ December 19th ~ 7:00 p.m.
Solstice Gathering.

Please see the separate notice on the next page, and check our website† for details closer to the time.

Wednesday ~ January 16th ~ 7:00 p.m.
Members' Night.

See details in the left column of this page.

Wednesday ~ February 20th ~ 7:00 p.m.
David Werier will talk about his "Catalogue of the Vascular Plants of New York State."

Other evening programs are scheduled for
March 20, April 17, & May 15.

FLNPS evening Talks, the Solstice Gathering, and Members' Night are held at the Unitarian Church Annex (second floor; enter on East Buffalo St.) in Ithaca, N.Y.

An elevator is available.

†*Please check our website (flnps.org.) for updates and details.*

We appreciate suggestions for speakers or topics, walks, outings, and rambles.



Thank You!

MANY THANKS to all who contributed to *Solidago*, Volume 19, No. 4. We thank **WRITERS** Mike Hough, Scott LaGreca, Julia Miller, Rosemarie Parker, Norm Trigoboff, David Werier, & Robert Dirig. **ILLUSTRATIONS** were loaned by Julia Miller [pp. 1-4, 8]; Norm Trigoboff [p. 5], David Werier [p. 5]; & Robert Dirig [p. 6-7]. **CALENDAR ITEMS** were organized by Rosemarie Parker. **LAYOUT and DESIGN** by the Editor. **PROOFREADING** by Rosemarie Parker. **PRINTING** of paper copies by Gnomon Copy, Ithaca, N.Y. **ONLINE POSTING** by Audrey Bowe & Rosemarie Parker. And **MAILING** by Gin Mistry.

BEST WISHES to FLNPS members (and all others in our reading audience) for joyous Holidays and a New Year filled with charismatic interactions with wild plants and places!

— Robert Dirig

Finger Lakes Native Plant Society



"I am enjoying that **Common Witch Hazel** (*Hamamelis virginiana*, Hamamelidaceae) flowers so late in the season. The yellow flowers really brighten up the landscape!" -- Julia Miller, Nov. 2018

Please Join Us for the FLNPS 2018 Solstice Gathering!

by Rosemarie Parker, on behalf of the FLNPS Steering Committee

Wednesday, December 19, 2018 — 7:00 to 9:30 p.m.

Unitarian Church Annex, 208 E. Buffalo St., Ithaca, N.Y.

[2nd floor, entrance on E. Buffalo St. An elevator is available.]

Our annual Solstice Gathering is fun and friendly.

Please come and enjoy the plants and plant-loving people!

Our annual **Seed Exchange** is part of the festivities. A list of seeds we already have will be included with the December mailing. Please get in touch with Rosemarie Parker at info@flnps.org 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.

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 again 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 Rosemarie is the person to contact if you want to volunteer for either.

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.