

A Note from the President

Discovery is the first word I wanted you to read. In this newsletter you'll read a report about the Club's Big Tree program and how the largest trees in our state are being discovered and documented and about a surprise discovery of *Rhexia virginica*. Read Nate Martineau's (GLC member and 2019 Botanists Big Year winner) article and share in the discovery process that he embarked on last year. It's the dormant season in the Great Lakes, so to get a botanical fix, maybe you will want to explore an online herbarium for exciting historical discoveries. You'll find a list of herbaria in the Great Lakes region in the following pages.

Now, not all discoveries are welcomed. This year was hard for many of us, tragic for some of us, and we all found ourselves in a new situation that we still haven't found our way out of yet. The grief can be painful, and I want to recognize any sort of loss you've had to face. With help we can discover ways to continue, but there are some holes that can't be filled, and my heart goes out to you.

Isolated and disrupted from normalcy, in some ways we were forced to discover new ways to be and do. More people saw nature as vital—the local land conservancy I work for saw 3-5 times more visits to our nature preserves. Creativity and innovation are abounding—have you discovered more webinars to learn from like I have? And awareness—of how we are all connected—of how Black people are instrumental in the botany space (thanks #BlackBotanistsWeek), and that it is necessary to acknowledge how white our circles are and how much diversity, equity, and inclusion work there is yet to do.

That's enough looking back; more than ever we want to look forward. We want to bounce forward. To seeing the membership grow again, to being able to foray together again and visit with our friends across the border, and to making new discoveries. Discovery is not finite; and despite disappearing biodiversity, discovery opportunities are not dwindling. Live in that abundance!

--Submitted by Derek Shiels, President

Michigan's Big Tree Report

The website of the Michigan Botanical Club includes a unit of particular popularity with members and the general public. It is the Michigan Big Tree Program. In each state an agency or organization maintains an official register of the biggest trees of each species in their state. In Michigan it is our club. Ted Reuschel, a retired MDNR forester, is the current statewide program coordinator. Along with over 40 other volunteer certifiers distributed statewide, they evaluate new nominations, and at 10-year intervals, update data on big trees listed previously. Nearly 600 trees are currently listed as active. <http://www.michbotclub.org/registry>

The size factors taken into consideration for ranking scores are girth in inches, plus height in

feet, plus one quarter (1/4) of the average crown spread in feet.

Obviously then, each species of tree on the register has a state champion, a goal which is sought by those who continue to nominate new trees. However, the national organization, American Forests, also maintains a register of the largest trees of each species in the nation. At one time, several decades ago, Michigan had 53 national champions listed there! Over time, other states stepped up their searches and found larger ones. Also, over time, since national champions require 10-year updates, some of Michigan's big trees fell off our list for lack of attention. Last year we had only one left, a white willow in Ingham county (*Salix alba*).

Michigan Botanical Club – Great Lakes Chapter End of Year Newsletter – 2020

But we are surging ahead, and in the last year, some 60 new tree nominations have been made. We've also updated some of the previous ones. As a result, this year we are submitting at least four new nominees for national champion status. They are a trembling aspen in Chippewa county (*Populus tremuloides*), an ironwood in Wash-tenaw county (*Ostrya virginiana*), a red pine in Gogebic county (*Pinus resinosa*), and a black

walnut in Kalamazoo County (*Juglans nigra*)
Photos of these trees are displayed below.

We still have need for additional big tree certifiers in certain areas, particularly the thumb, southeast Michigan, and southwest Michigan. If you are interested in becoming a tree certifier, please contact Ted: Reuschel: tbreusch@comcast.net

-- Submitted by Ted Reuschel, October 2020



Trembling aspen (*Populus tremuloides*), Chippewa County



Ironwood (*Ostrya virginiana*), Washtenaw County



Red pine (*Pinus resinosa*), Gogebic County.



Black walnut (*Juglans nigra*), Kalamazoo County

New Discovery of *Rhexia virginica*!

After monitoring wetlands in Gladwin County this August, Susan Klimas and I stumbled across a population of *Rhexia virginica* (meadow-beauty) right before sunset. The bright yellow anthers used to lure in bumblebees for buzz pollination made it jump out even in a dusky forest. *Rhexia virginica* is a coastal plain disjunct and listed as a special concern species in Michigan. It's occurrence on the Tawas Lakeplain represents a new record for Gladwin County, and a range extension north from Wayne County. This also adds to the scattered occurrences of Coastal Plains disjuncts in the Lake Erie-Lake St. Clair region. It was found under *Pinus banksiana* (jack pine) and *Pinus strobus* (white pine) on flat, poorly drained lake-plain sand with a thin *Sphagnum* (moss) layer and ericaceous shrubs. Other new Gladwin County records from the monitoring site include *Good-ya-ya pubescens* (downy rattlesnake plantain), *Lysimachia quadrifolia* (whorled loosestrife), *Cinna arundinacea* (wood reed grass), *Dichanthelium lindheimeri* (panic grass), *Juncus canadensis* (Canadian rush), *Viola blanda* (sweet white violet), *Galium asprellum* (rough bedstraw),

Agrostis perennans (autumn bent), and *Muhlenbergia mexicana* (leafy satin grass).

-Submitted by Liana May, GLC Vice President



Q & A with Nate Martineau on his 2019 Botanists' Big Year Win

How far did you travel? Did you cover the whole state? Were there some areas you didn't get to?

I did cover almost the whole state, so distance traveled varied every weekend! Lansing was my home base during the summer, and sometimes I'd just spend a day intensely exploring places like Rose Lake Wildlife Research Area or Maple River State Game Area, both quick drives from home. Most of the time, though, I'd do weekend-long adventures to places like Berrien County or the Mackinac Straits. These weekend forays during the summer, especially those in the southern Lower Peninsula, were what netted me a great majority of the plant species I tallied. I would have ended up largely missing out on the UP, but I ended up taking a couple of days off work so I could lead a couple of outings for the Michigan Botanical Club foray in Marquette. 2019 was also my last year at Northern Michigan University, so I was in Marquette again starting at the end of August. Before settling in there for my senior year I did a week-long camping trip through the central and western UP and cleaned up most of the northern species I'd been missing. My biggest missed area was the Keweenaw Peninsula - I never touched it.

Were you generally alone or did you often botanize with other people? Can you share about both experiences?

I was usually alone, and sometimes doing this in the southern Lower Peninsula while sleeping in my car felt a bit sketchy. Mostly it was incredibly rejuvenating, though, to explore wild places and find rare plants all by myself after a week of hard work as a camp counselor. Sometimes family members would come along for shorter trips, and more occasionally I'd get out into the field with other botanists. As much as I like botanizing alone, it is always nice to tap into other peoples' knowledge or have my confidence curbed a bit!

Can you tell us a little more about how you prepared for a foray and how you planned

everything out? Were you searching for specific species or were you just visiting neat areas and finding whatever was there?

I did both, but I planned trips out with an obsessive attention to detail. I used herbarium records (the specimen search tool on Michigan Flora Online is invaluable for this) and aerial imagery to determine exactly which sites I would visit and in which order - and at each site, which GPS coordinates I would visit and in which order. I'd often depart from these plans somewhat, but they gave me a great framework to work with and saved a ton of time once I was out in the field.

Did you often find species you weren't searching for and conversely did you usually find a species you were looking for?

When I was looking for a specific species, I usually found it. Finding unexpected surprises was a constant. I don't think there was a single weekend when this didn't happen multiple times.

What were some highlights?

There were so many highlights. They were usually the high-quality habitats I visited, rather than individual plant species: old-growth hemlock forests in Sylvania Wilderness; giant clay slumps along the Ontonagon River; beautiful swamps, savannas, and coastal plain marshes in Allegan State Game Area; a fallow farm field in Monroe County with an incredible diversity of lakeplain prairie species. I really enjoyed these places that spoke so strongly about the natural heritage of our state. There were certain species that really stood out, though. I finally got to see a funny little fern, *Ophioglossum pusillum* (northern adder's tongue), which I'd been trying to locate for years. Finding the very rare few-flowered nut-rush (*Scleria paucifolia*) in a Wayne County prairie was thrilling. But undoubtedly the highlight of the entire year was finding the first state record of Hooker's bugseed (*Corispermum hookeri*) at Grand Sable Dunes.

Can you describe your botanical skills and experience prior to 2019 and then post 2019? What did this Big Year challenge mean to you?

I finished 2019 with much more refined botanical skills than when I started it. At the beginning of the year I could identify most genera in Michigan by sight, and I knew a majority of Michigan's native plants thanks to a similar experience in 2018. 2019 was different because of a greater focus on finding areas with interesting aerial imagery and thoroughly exploring them, instead of chasing down herbarium records (although I did do both). Because of this I made far more

interesting finds myself than I had the year prior. I also started collecting some of these interesting finds, and partly as a result of that I became much more interested in the ecology and geology of the places where I was finding these plants. My experiences botanizing now are so enriched by this - by trying to understand and interpret the processes that drive plant biology and diversity - that it's impossible to really describe. I feel like a truly competent botanist and naturalist now.

-Submitted by Derek Shiels and Nate Martineau



Herbaria of the Great Lakes Region

In a broad sense, an herbarium is a repository of the world's flora. It is a link to the recent history of plant life on earth. A year ago, GLC arranged a field trip to the Michigan State University Herbarium in Lansing, Mi. It was an eye-opening experience. The wealth of information gleaned from one plant sheet was impressive. The plant label alone contained a detailed history of collection date, location, habitat, soil, collector and most important, identity to genus and species. In some cases, adjacent plants were collected at the same time giving a visual sense of the plant community. Cryptic, hand-written labels provided a unique look at penmanship and period-dated vernacular. And then there is the actual plant specimen – roots, stem, leaves, flowers, pollen, seeds, and all the extras (insects, spiderwebs, soil, miscellaneous debris, and of course, DNA). Herbaria are truly an extraordinary treasure trove of information. From a research standpoint, this data is an invaluable resource in the study of biodiversity and environmental impact, as well as endangered and invasive

species. Today's imaging and database technology makes access to this information much more available.

A quick search on Google shows that there are over 74 herbaria in the Great Lakes region! Michigan has 20, Illinois 14, Indiana 10, Ohio 10, Wisconsin 8, Minnesota 6, and Ontario 6. Most are of limited size, less than 100,000 specimens; but some larger institutions, such as the Field Museum Herbarium in Chicago, contain over 2.5 million plants. A list of Great Lakes herbaria with the number of plants in their collections is shown in the following table. Several of the larger herbaria provide virtual access of their holdings. For a complete listing of North American herbaria with links to websites, visit:

https://en.wikipedia.org/wiki/List_of_herbaria_in_North_America#United_States

Feel free to explore and discover!

--Submitted by Irene Eiseman

Herbaria of the Great Lakes Region

STATE OF MICHIGAN		
University of Michigan Herbarium	<u>Ann Arbor</u>	1,700,000*
Michigan State University Herbarium	East Lansing	560,000
Billington Herbarium	Bloomfield Hills	57,905
Central Michigan University Herbarium	Mount Pleasant	26,000
Eastern Michigan University Herbarium	Ypsilanti	25,000
Alma College Herbarium	Alma	15,000
Andrews University Herbarium	Berrien Springs	12,000
Michigan Technological University Herbarium	Houghton	11,710
Albion College Herbarium	Albion	10,000
Adrian College Herbarium	Adrian	8,150
Hope College Herbarium	Holland	7,500
Kellogg Biological Station Herbarium	Hickory Corners	7,079
Northern Michigan University Herbarium	Marquette	6,000
Aquinas College Herbarium	Grand Rapids	5,500
Grand Valley State University Herbarium	Allendale	3,500
Grand Rapids Junior College Herbarium	Grand Rapids	2,537
Isle Royale National Park Herbarium	Houghton	2,200
Olivet College Herbarium	Olivet	1,500
Muskegon Community College Herbarium	Muskegon	600
Houghton Lake Wildlife Research Station Herbarium	Houghton Lake Heights	500
STATE OF ILLINOIS		
Field Museum Herbarium	Chicago	2,650,000
University of Illinois Herbarium	Champaign	640,000
Illinois Natural History Survey Herbarium	Champaign	277,000
Southern Illinois University Herbarium	Carbondale	250,000
Morton Arboretum Herbarium	Lisle	180,000
Illinois State Museum Herbarium	Springfield	114,000
National Center for Agricultural Utilization Research, USDA/ARS ARS Culture Collection	Peoria	80,000
Stover-Ebinger Herbarium	Charleston	77,000
Illinois State University Herbarium	Normal	60,000
Chicago Academy of Sciences Herbarium	Chicago	30,000
Southern Illinois University Hepatic Herbarium	Carbondale	27,000
Knox College Herbarium	Galesburg	25,000
Northern Illinois University Herbarium	DeKalb	22,000
Nancy Poole Rich Herbarium	Glencoe	10,500
STATE OF INDIANA		
Indiana University Herbarium	Bloomington	140,000
Arthur Herbarium	West Lafayette	101,000
Friesner Herbarium	Indianapolis	100,000
Kriebel Herbarium	West Lafayette	75,000
Ball State University Herbarium	Muncie	17,000
Earlham College Herbarium	Richmond	15,000
Huntington University Herbarium	Huntington	12,000

Herbaria of the Great Lakes Region, continued

Indiana State University Herbarium	Terre Haute	10,000
Indiana University Southeast Herbarium	New Albany	5,000
Saint Meinrad College of Liberal Arts Herbarium	Saint Meinrad	2,000
STATE OF OHIO		
The Ohio State University Herbarium	Columbus	500,000
Carl F. Chuey Herbarium	Youngstown	115,000
Tom S. and Miwako K. Cooperrider Herbarium	Kent	76,000
Cleveland Museum of Natural History Herbarium	Cleveland	60,000
Ohio University Herbarium	Athens	46,000
Denison University Herbarium	Granville	26,000
Muskingum College Herbarium	New Concord	23,000
Jason Swallen Herbarium	Delaware	16,000
Bowling Green State University Herbarium	Bowling Green	14,000
Dayton Museum of Natural History Herbarium	Dayton	8,500
STATE OF WISCONSIN		
Wisconsin State Herbarium	Madison	1,100,000
Milwaukee Public Museum Herbarium	Milwaukee	250,000
Robert W. Freckmann Herbarium	Stevens Point	200,000
Forest Products Laboratory Herbarium	Madison	40,000
Steven Pearl Lathrop Herbarium	Beloit	18,000
Potato Introduction Station Herbarium	Sturgeon Bay	15,000
Carthage College Herbarium	Kenosha	13,000
Heraly MacDonald Herbarium	De Pere	10,000
STATE OF MINNESOTA		
St Cloud State University	St. Cloud	28,000
St. John's University/College of Saint Benedict Herbarium	Collegeville	28,000
Carleton College Herbarium	Northfield	20,000
Moorhead State University Herbarium	Moorhead	10,000
Darlene and William Radichel Herbarium	Mankato	4,000
Saint Mary's College Herbarium	Winona	2,650
PROVINCE OF ONTARIO, CANADA		
Agriculture and Agri-Food Canada, Vascular Plant Herbarium	Ottawa	1,335,000
Royal Ontario Museum	Toronto	860,000
National Herbarium of Canada, Canadian Museum of Nature	Ottawa	838,000
Fowler Herbarium, Queen's University	Kingston	142,000
Claude Garton Herbarium, Lakehead University	Thunder Bay	105,000
RBG Herbarium, Royal Botanical Gardens	Burlington	60,000
*Sorted by # of specimens within each State or Province. Source: https://en.wikipedia.org/wiki/List_of_herbaria_in_North_America#United_States		



Michigan Flora Photo Opportunity

GLC has teamed up with **Michigan Flora Online** to offer a unique opportunity for GLC members to contribute their photos to this renowned plant database. There are over 400 plant species that need photo updates, and you are invited to help. Initiated in August and ongoing, at least through 2021, we ask you to submit your high quality (in focus) photos to a project page set up in iNaturalist. Pay particular attention to unique plant features that might aid in identification. A list of genus and species of plants needing photos is listed on the iNaturalist project page under the Project List folder:

<https://www.inaturalist.org/projects/updating-photos-for-mich-herbarium>

All GLC members in the Great Lakes region can participate, however only plants that are known to grow outside of cultivation in Michigan may be entered. GPS location is not required or can be sequestered in user setup options. The best photos will be selected by Herbarium staff for inclusion in future flora updates. This is your chance to help complete the database and gain some botanical fame with photo credits. Thus far the two top photo contributors are Robert Routledge (59 species) and Patrick Deacon (29 species). Both members are from Ontario, Canada. There is plenty of time and many more plants species that need your photos, so please take a look at the list and plan for some scouting.

-submitted by Contact Project Managers: Irene Eiseman eisemani@gmail.com and Derek Shiels d.r.shiels@gmail.com



Platanthera blephariglottis (white fringed orchid) in fruit. (Photo by Liana May)



Betula alleghaniensis (yellow birch) bark. (Photo by Liana May)

New Instagram Account for the Great Lakes Chapter

We have set up an Instagram account for the Great Lakes Chapter to reach out to our surrounding community and share our love for native plants. Instagram is a smartphone app that allows people to view and share photos with a small caption. Since we have such a wonderful group of botanists and photographers, and we are spread out across the Great Lakes region, this seems like a nice way to engage with current and potential members using the digital media of today. We are off and running with two photos posted and 21 people following us!

Follow us @greatlakesbotany

<https://www.instagram.com/greatlakesbotany/>

We would like to welcome you to SHARE YOUR PHOTOS to the Great Lakes Chapter account (with credits and captions of course). Just send the photos with the scientific name, date, location (you can be vague), any additional caption, and how you would like to be credited to me (liananmay@gmail.com) with "GLC Photos" in the subject line.

-Submitted by Liana May, GLC Vice President

2021 MBC State Spring Foray Postponed

The Spring Foray at the UAW Black Lake Conference Center will be postponed until Memorial Day weekend of 2022. Stay tuned for news on other activities planned during 2021; we will update you as events unfold.

Tiny Little Miracles Abound During the Pandemic



Election of GLC Officers and Directors – Important Information!

At the GLC Board Meeting held November 24, 2020 by video conference, the following members were nominated to serve as the four officers and one Director-at-Large, starting 2021. They have all agreed to serve, if elected:

- President: Derek Shiels, incumbent
- Vice President: Liana May, incumbent
- Recording Secretary: Ginger Cawood, incumb.
- Treasurer: Emily Douglas, incumbent
- Director-at-Large: Carolyn Miller, incumbent

The terms are summarized in the table below.

Additional nominations will be accepted through December 31, 2020. If there are no further nominations, those nominated will be declared elected. Nominations should be submitted to Derek Shiels: d.r.shiels@gmail.com

Current Directors-at-Large, Irene Eiseman and Phyllis Higman are serving three-year terms .

Summary of Great Lakes Chapter Board Members (Effective January 2021)

President	Derek Shiels	2021-2022 (if elected)	d.r.shiels@gmail.com
Vice President	Liana May	2021-2022 (if elected)	liana.n.may@gmail.com
Secretary	Gin Cawood	2021-2022 (if elected)	gingercawood@icloud.com
Treasurer	Emily Douglas	2021-2022 (if elected)	emsuedouglas@gmail.com
Director-at-Large	Irene Eiseman	2019-2021	eisemani@gmail.com
Director-at-Large	Phyllis Higman	2020-2022	higmanp@michigan.gov
Director-at-Large	Carolyn Miller	2021-2023 (if elected)	miller94@msu.edu

MBC Great Lakes Chapter – Membership

As to be expected during a year of much uncertainty, our membership is smaller – we currently have a membership of 80, a decrease in 14 from last year. Our current membership includes two students and thirteen families, and we have representation from 11 states and from Canada:

State	#	State	#	State	#	State	#
Michigan	49	Illinois	1	Minnesota	2	Iowa	1
Wisconsin	12	Indiana	4	Ohio	1	Texas	1
Canada	4	Arizona	3	Pennsylvania	1	Virginia	1

Sustaining Members Recognition

The Great Lakes Chapter of the Michigan Botanical Club gratefully acknowledges the generous support of the following members who have provided additional funding through their memberships.

John P. Case	Robert A. Kahl	Bill and Mary Spiers
Irene and Tim Eiseman	Robert and Judy Kelly	Robert Tatina
Steven Garske	Lawrence Leitner	Laurie Yahr and Rich Kahl
Robert and Sheridan Haack	Linda Rehorst	
Phyllis Higman	Ruth E. Schmitter	



MBC-Great Lakes Chapter Treasurer’s Report, November 23, 2020

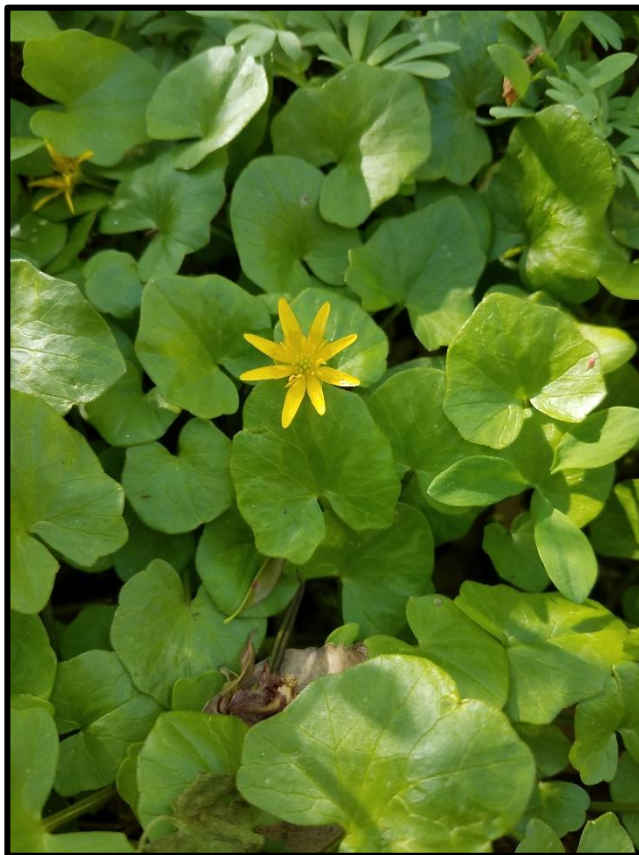
Balance carried forward from 2019:	\$4,659.89
Income:	
Membership Dues and Donations:	\$2,827.00
Total Income:	\$2,827.00
Expenses:	
State Membership Dues:	(\$881.00)
Great Lakes Botanist:	(\$1,542.00)
Newsletter Postage and Photocopying:	(\$80.22)
iNaturalist Winners Award:	(\$150.00)
Total Expenses:	(\$2,653.22)
Current Balance:	\$4,833.67

---Submitted by Emily Douglas, GLC Treasurer, November 23, 2020.

Name the Plant!



Blowing in the Wind --this is an early bloomer!



As Far as the Eye Can See—this is a spring invader!

Send your answers to these species and those on the next page to higmanp@michigan.gov by January 8, 2021 and I will announce the best, worst and funniest answers.

More Spring Miracles



2021 MBC – Great Lakes Chapter Dues

A New Year is here, and **it is time to pay your Chapter dues!** Dues remain at \$30, which includes MBC state membership, the Arisaema, The Great Lakes Botanist, and supporting Botanical research and Botany students in the Great Lakes. Here's hoping that we can adventure outside together once again in 2021!

Online Option for Membership Dues

As a reminder, we have an account through *Cheddar Up* which allows members to pay by credit card online. If one chooses this route, there's an easy membership form to fill out along with the membership/payment option. Just to note, *Cheddar Up* also charges a small convenience fee of 3.5% plus \$0.45 which comes out to \$1.50 if one is paying for the \$30.00

Individual Membership option. We'll send out a reminder email with the *Cheddar Up* link in January for 2021 dues. Of course, any member can still submit their yearly dues by filling out the form on the last page and mailing a check to Emily Douglas at the address noted on the form.

Michigan Botanical Club – Great Lakes Chapter 2021 Membership Dues

Name: _____

Address: _____

City: _____ State/Province _____

Zip code + 4-digit code _____ + _____

Telephone: _____ Email: _____

Do you prefer to receive the *Arisaema* newsletter in paper format? _____

Sustaining membership _____ \$50.00 (or more)

Individual membership _____ \$30.00

Family membership _____ \$40.00

Student membership _____ \$15.00 Name of University _____

US members make checks payable to: **Michigan Botanical Club - Great Lakes Chapter**

Or try the 'Cheddar Up' online payment option: <https://my.cheddarup.com/c/michigan-botanical-club-great-lakes-chapter>

Canadian members please send a check or money order in U.S. funds or try out 'Cheddar UP'.

Mail to:

Emily Douglas, Treasurer
MBC-Great Lakes Chapter
13420 S. Cedar Road
Cedar, MI 49621

Thank you for your continued support!