



Minnesota Plant Press

The Minnesota Native Plant Society Newsletter

www.mnnps.org

Volume 33 Number 1

Winter

Monthly meetings

Thompson Park Center/Dakota
Lodge
Thompson County Park
1200 Stassen Lane
West St. Paul, MN 55118

The Minnesota Native Plant Society meets the first Thursday in October, November, December, February, March, April, May, and June.

Check at www.mnnps.org for more program information.

6:30 p.m. - Social period

7-9 p.m. - Program, Society business

March 6: Commercial Logging: a Tool in the Barrens Restoration Toolbox? by Gretchen Miller, Minnesota Department of Natural Resources.

March 22: Annual Symposium at the Bell Museum of Natural History

April 3: Mimicry in Orchid flowers by Dr. Brian O'Brien, Gustavus Adolphus College, Dept. of Chemistry.

Purple meadow-rue (*Thalictrum revolutum*) in Minnesota

by Lynden B. Gerdes, Botanist, Minnesota Biological Survey, MN DNR

In 1914, during the months of July, August and September, Ned Huff was working in the woods of northern Lake County. He was not a logger, but a botanist cataloging the early flora of Minnesota. During this time period, Professor Ned Huff (respectfully referred to as Ned from this point forward) collected approximately 250 plant specimens from the North Kawishiwi and South Kawishiwi River area. On July 6, 1914, he made the first collection of purple meadow-rue (*Thalictrum revolutum*) in Minnesota. Typical of the time period, specific information relative to the plant's location and associated habitat was vague. We were basically provided the date, the river's name and "swamp" for the habitat description. Such brevity of detail presents an added challenge to botanists attempting to relocate a historic plant discovery.

It appears that purple meadow-rue was not collected again in the state until June 24, 2008, when it was observed by Minnesota Biological Survey (MBS) staff growing along a small, open canopied stream in the Boundary Waters Canoe Area Wilderness (BWCAW) in St. Louis County. The species was growing with tall meadow-rue (*Thalictrum dasycarpum*), a commonly occurring plant in the area. Both species pretty much appear identical and it is not until careful observations are made with a hand lens that one might detect tiny, stalked glands on the undersides of the leaves and portions of the inflorescence. These glands are present on purple meadow-rue and absent on tall meadow-rue. Follow-up work back at the lab using a microscope with higher magnification and good side lighting aids in observing the glands and provides more confidence in species identification.

On June 18, 2012 a return trip was made to the North Kawishiwi River in pursuit of Ned's long lost purple meadow-rue. Heavy storms were in the forecast and the skies were dark and threatening as my partner and I began our paddle into the wilderness. There was nothing leisurely about our paddling and portaging as we had our sights set on a campsite that would provide us our perceived botanical vantage in the days ahead. Upon reaching the campsite, the tents and tarps went up quickly and, as if on cue, the storm let loose. Our first day of botanizing was spent hunkered beneath the tarp observing the forest and all its flora toss in the wind and soak itself

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MNNPS Board of Directors

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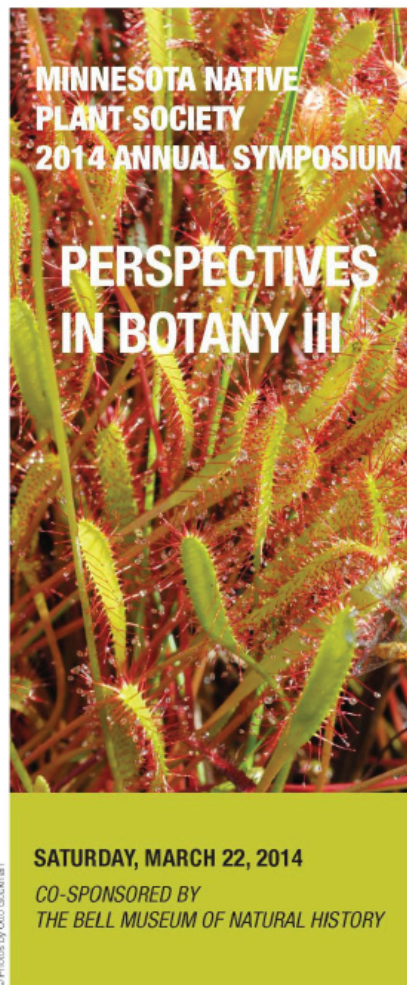
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Angela Anderson: board member, angela.anderson@mnnps.org



Registration for the annual symposium ends on March 20, 2014. Be sure to sign up and not miss the event.

MNNPS Welcomes the following new members

The Society gives a warm welcome to the new members who joined during the third and fourth quarter of 2013. Listed alphabetically, they are:

Susan Abelson, St. Louis Park
John Almendinger, Grand Rapids
Angela Baker, Rushford
Donald Beck, Maple Grove
Genevieve Bolling, Minneapolis
Linda Bruemmer, St. Paul
Hugo Cota-Sanchez, Saskatoon, SK
Joe Gathman, St. Paul
John Hamer, Mound
Emmet Judziewicz, Stevens Pt, WI
Megan Keller, Arden Hills
Jeffrey Niblack, Fridley
Carol Olmon, White Bear Lake
Scott Seigfreid, North Mankato
Kathryn Swanson, Fridley
Mark Widrlechner, Ames, IA
Peter Wragg, St. Paul

New Lifetime Members

The Society has four new Lifetime members. Welcome and thank you to Jeanette H. Leete and Sean Hunt of White Bear Lake, MN. Past-President of MNNPS, Jason Husveth, who was our very first Lifetime member, has just honored long-time board member Ken Arndt and wife Erika Arndt with our very first “gift” Lifetime membership. Thank you Jason, and thanks also to the Arndts for many hours and years of service to our Society.

MNNPS questions?

Go to www.mnnps.org to see the news about field trips, meetings, and committees, and all issues of this newsletter since 1982.

Minnesota Native Plant Society's purpose

(Abbreviated from the bylaws)

This organization is exclusively organized and operated for educational and scientific purposes, including the following.

1. Conservation of all native plants.
2. Continuing education of all members in the plant sciences.
3. Education of the public regarding environmental protection of plant life.
4. Encouragement of research and publications on plants native to Minnesota.
5. Study of legislation on Minnesota flora, vegetation, ecosystems.
6. Preservation of native plants, plant communities, and scientific and natural areas.
7. Cooperation in programs concerned with the ecology of natural resources and scenic features.
8. Fellowship with all persons interested in native plants through meetings, lectures, workshops, and field trips.

Thalictrum revolutum contd.

in some 8 cm of rainfall.

In the days that followed, we approached every patch of meadow-rue we could find. No potential purple meadow-rue was going to evade our efforts. We soon were reminded just how common, the common tall meadow-rue actually was in the area. As we waded into each new patch of *Thalictrum*, we would swing up our hand lens and begin to look for those tiny glands. Find a plant, snip a leaf, stretch it out over your finger, find the best backlighting, and peering through the lens look for the glands. “I see flat hairs.” “These hairs are short.” “These ones are longer and many of the hairs are divided into segments.” “Are these glands?” After several days of intensely doing this it was as if we were standing in a field of poppies and not quite as confident of what all we were seeing. We would often share our leaves with one another and ask for second opinion. Yes, we were having fun in the bugs but maintaining focus and keeping an eye on the prize. We were determined and not going to let Ned down in our pursuits. In some sense, we wanted to find a purple meadow-rue and allow ourselves to be transported back in time those hundred years, to somehow stand there in the swamp with Ned and the long lost purple meadow-rue bridging time and space with a moment of euphoria.

On June 23rd, in the mid-morning, we landed in our canoe along the shores of the river and got out to inspect another patch of meadow-rue. Leaf samples from the immediate shoreline all appeared to be within the range of hairiness of those sampled previously on our trip. As we looked closely at a leaf from a plant maybe 2.5 meters inland from the water line, there was some uncertainty about what we were observing. “These look different.” The bottom of the leaf had very short hairs that appeared to possibly have some swollen knobs or glands at their tips. But things were small and difficult to clearly see so no definitive identifications were derived. We collected a plant, made some notes about it, and later that day arranged it in our plant press mentally registering it as being suspect. From that time on during our trip, we never knew for sure if we had found *Thalictrum revolutum*. We did say though that other than the “one” we had in our press, we had not seen any other purple meadow-rue. As a result, there was no spontaneous celebrating, hooting or hollering that took place for finding our prized meadow-rue during our trip. What was ours was the genuine satisfaction that accompanies a day of good physical work in the wilderness, a diversity of specimens nicely arranged in the press, and time spent afield with a determined and kindred companion.

So, we ended that trip with some uncertainty, but a week later when the specimen was placed under the microscope those short swollen hairs appeared more clearly to be the stipitate glands we had been looking for.

We had indeed found our meadow-rue, even though we did not know for sure we had. I’m sure there are many possible morals to this story. There is likely as much or more to learn from those lessons than in the botanical discovery itself.



Pressed specimen of purple meadow-rue (~60 cm tall). Photos by Lynden B. Gerdes



Glandular lower (paler) leaf surface of purple meadow-rue.



Glands on the undersides of purple meadow-rue leaves.

Thalictrum revolutum contd.

As for Ned Huff, my partner and I carried a ledger of the plants that the professor had collected during his 1914 excursions. At times during our trip we would read his species list aloud and acknowledge those species as we moved about our day of exploration.

It provided both motivation and inspiration. We also read from his list one night after supper. It was at these times I felt our connection to Ned, a renewed passion for field botany, an appreciation and respect for time and ancestry, and hope that others will have the same opportunities to explore wild places in search of something as seemingly simple and yet beautiful as a flower. I understand that Ned was both a good botanist and noted educator on Minnesota plant life at the University (1906-1945). Seems to me we are still benefiting and learning from his many botanical contributions.

On July 13, 2012, MBS staff found another population of purple meadow-rue in the Bald Eagle Lake area of the BWCAW. Plants were growing in a black ash swamp along a small creek. Both the common tall meadow-rue and the purple meadow-rue were growing in close proximity to each other. This time we were able to detect the glands in the field and feel more confident in what we had found.

To my knowledge, these are the only documented locations of *Thalictrum revolutum* found in Minnesota with the exception of a collection from St. Louis County dated June 27, 1971. The voucher is located at the Bebb Herbarium - University of Oklahoma. The voucher (Siegler & Dusek DS 4511) provides few details but was collected from the Eveleth area near a lake. Its current status is unknown and future investigations seem warranted.

Neonicotinoids in Minnesota's Landscape

by Crystal Boyd, Entomologist, Minnesota Biological Survey, MN DNR

Neonicotinoids are a class of pesticides that is hard to pronounce but easy to find in recent news reports. Neonicotinoids were made available in the mid-1990s, and they were promoted as being safer for wildlife than other pesticides. Neonicotinoids can be applied as a spray, soil drench, seed treatment, or direct injection. It is estimated that 18 tons of neonicotinoids were used on Minnesota farms in 2009, and one additional ton was applied to other landscapes in the state.

Neonicotinoids are systemic pesticides: a plant will absorb the pesticide and transfer it throughout its tissues. This protects the plant from sap-sucking insects such as aphids and leaf-chewing insects such as beetles. It also affects bees, however, because the chemical compounds are transferred to the plant's nectar and pollen. Bees rely on these floral resources for nutrients.

To consider these effects, the Xerces Society for Invertebrate Conservation recently published the report "Are Neonicotinoids Killing Bees?" It distinguishes between products marketed for agricultural crops and those offered for ornamental landscapes. For example, it notes that "neonicotinoids can be applied in much greater concentrations in gardens than on farms, and with fewer restrictions. These products do not carry any warning about hazards to bees or other pollinators."

Neonicotinoids affect wildlife beyond bees, and researchers are



A common site in the prairie. This bumble bee is feeding on Rough blazing star (*Liatriis aspera*).

Continued on page 5

Neonicotinoids contd.

examining their relationship with aquatic invertebrates and birds.

The American Bird Conservancy summarized its stance in March 2013 by publishing “The Impact of the Nation’s Most Widely Used Insecticides on Birds.” This report states that “A single corn kernel coated with a neonicotinoid can kill a songbird. Even a tiny grain of wheat or canola treated with the oldest neonicotinoid, imidacloprid, can poison a bird.”

These impressive reports from national organizations have not gone unnoticed in Minnesota. In May 2013, the Minnesota Legislature passed H.F. 976 to require, in part, a report that includes the process and criteria that the commissioner of the Minnesota Department of Agriculture would use to perform a special review of neonicotinoids. This report is currently available on the MDA website, and a review of neonicotinoids has begun.

The recent pollinator legislation has also spurred a number of grant proposals about pollinators to the Legislative-Citizen Commission on Minnesota Resources (LCCMR). Vera Krischik, an Associate Professor in the Department of Entomology at the University of Minnesota, has proposed a grant titled “Protecting Bees by Understanding Systemic Insecticides.” In part, this grant would determine the amount of imidacloprid in native plants near crops treated with the insecticide. It would also measure the impacts of imidacloprid residue on the health of native bumblebee colonies. This work would fill large gaps in knowledge about the interactions between neonicotinoids and Minnesota’s native plants and pollinators. “Neonicotinoid” may remain difficult to pronounce, but the topic seems likely to appear in local news reports for some time to come.

President’s Column

by Scott A. Milburn

Symposium planning is almost complete with all of the speakers lined up and the brochure online. This year’s overall emphasis is similar to the past two years with talks on botany and ecology, since this seems to be a winning formula. The first program, presented by Mark White of The Nature Conservancy, will be on the issue of assisted migration which is a hot topic these days. This subject is gaining much attention, and it is important to evaluate the pros and cons of action and inaction. We are also fortunate to have two of the more prominent botanists from the Midwest presenting on their areas of expertise. Dr. Robert Freckmann of the University of Wisconsin Stevens Point will be sharing his expertise on the difficult but interesting Panic-grasses, and Dr. Harvey Ballard of Ohio University will be sharing his insights on violets. As happens to be the case, the subject of botany attracts all sorts of people including full-time musicians like Perry Scott. Perry is a longtime cellist with the Indianapolis Symphony Orchestra, but has an intense interest in botany and has been exploring the BWCA and Quetico for years. He will be sharing his stories and experiences through the years. We will be closing out the day with a talk on another hot topic, bees and their worrisome decline. The event will once again be held at the Bell Museum and catered by our friends at Trotter’s Café.

In other news, we will be having board elections at the March monthly meeting. We are looking for those with interest and time to run for the board. The perfect candidates are those with a commitment to maintain the direction of the Society as set forth by the founding members and an individual that has initiative. We are also looking to fill the position of program chair. The board is currently sharing duties on this role, but we are looking for one dedicated program chair. As a volunteer organization, we are only as strong as our volunteers and we need folks to step up and help maintain the Society.

Finally, I would also like to mention the passing of Winston W. Borden this past January. Mr. Borden had been a former state legislator, representing the Brainerd area. He had quite the colorful life and a supporter of progressive ideas. I am unaware if he was ever a member of the Society but there appears to be a connection. Winston requested that he wanted memorials to go the Society. That was a very honorable act.

Plant Lore

by Thor Kommedahl

What is sessile bellwort, or wild oats?

Sessile bellwort, also called wild oats, is *Uvularia sessilifolia*, in the lily family.

How did it get its names?

Uvularia is derived from uvula, which hangs from a person's palate in the throat, and denotes the hanging flower. *Sessilifolia* means that leaves have no petioles. The name "wild oats" is a mystery, and could mean resemblance to wild oats (*Avena fatua*) or refer to its being a hardy plant. Bell suggests resemblance to bell flower and wort indicates use as medicine.

What does the plant look like?

It is a perennial growing from rhizomes, and is up to 12 inches tall. Stems are forked above the middle. Only one creamy-yellow flower of six tepals appears per stem. A capsule contains two or more seeds. Leaves, one per node, are attached to stems without a petiole.

Where does it grow?

The species is native to eastern North America, in wet or dry soil, and in most woodland counties of Minnesota. It blooms April and May.

Is it edible or poisonous?

Edible. Cooked young shoots are eaten like asparagus. The roots are nutritious and extracts are used in diet drinks.

Have they any medicinal properties?

The Ojibwe and Potawatomi made tea from roots to treat backaches and alleviate sore muscles.. It was a folk medicine for sore throats and mouth sores, and has been used to treat diarrhea.

Is it a garden plant?

It can be propagated by division of rhizomes and grown in shady gardens.

And...

Henry David Thoreau, in 1852, wrote "The single modest-colored flower, gracefully drooping,...facing the ground...as if unworthy to face the heavens."



Sessile bellwort (*Uvularia sessilifolia*)



Sessile bellwort (*Uvularia sessilifolia*)

Field Trips 2014

by Ken Arndt

Spring cannot seem to arrive fast enough with this spell of extreme cold. However, this gives us all something to look forward to as things green up.

2014 will be another great year for attending a MNNPS field trip. At this point we are in the early stages of planning several field trips for the upcoming spring and summer seasons. As field trip dates and leaders become finalized we will be posting this information to the Society's website.

If you have never attended one of the Society's field trips then you are missing out. Going on a field trip is a great way to see the many different native plants and plant communities of Minnesota as well as meeting others who share a passion for native plants. Field trips are just one of the benefits of being a member of the Society, so consider joining and meeting others with similar interests.

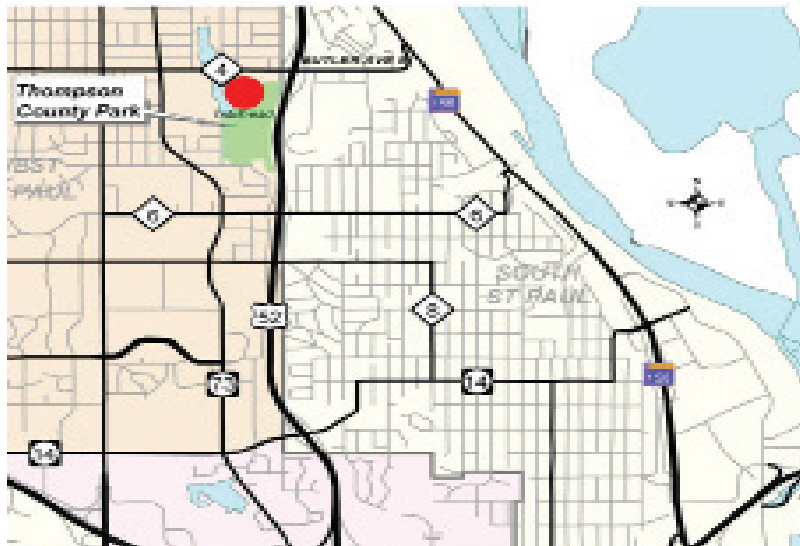
Once a field trip has become finalized you can register for it by visiting our website and going to the field trip page or by attending one of our monthly general meetings where sign-up sheets will be available. Most field trips will have a limited number of registrants due to site sensitive areas that are encountered so early registration is strongly encouraged.

If you or anyone you know is interested in leading a field trip or has suggestions as to where they would like to see the MNNPS lead a trip to, email me at ken.arndt@mnrinc.us. We are always looking for additional field trip leaders and co-leaders to take us into the many diverse regions of Minnesota.

Minnesota Native Plant Society
P.O. Box 20401
Bloomington, MN 55420

Winter 2014

Dakota Lodge, Thompson County Park
1200 Stassen Lane, West St. Paul, MN 55113



Directions:

Take Highway 52 to the Butler Ave. E. exit in West St. Paul.
Go west on Butler 0.2 mile to Stassen Lane.
Go south on Stassen Lane to Thompson County Park.