

Minnesota Plant Press

The Minnesota Native Plant Society Newsletter

Volume 29 Number 2

Spring 2010

Monthly meetings Thompson Park Center/Dakota

Lodge
Thompson County Park
360 Butler Ave. E.,
West St. Paul, MN 55118

Programs

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 p.m. — Social period 7 – 9 p.m. — Program, Society business

May 6: "Gardening for Butterflies with Native Plants in Minnesota," by Pat Thomas, wildlife garden educator and photographer. Plant-of-the-Month: Asclepias incarnata (swamp milkweed).

June 3: "Reconstructing Native Plant Communities in Minnesota; Seed Mixes. New **Planting** Guidelines and Design Tools," by Dan Shaw, Minnesota Board of Water and Soil Resources; and Kenneth Graeve, MnDOT Office of Environmental Services. Plant**of-the-Month:** Bromus ciliatus (fringed brome). Plant Sale: following meeting. All attendees may participate. For details, see article on page 5.

MNNPS website

For information about Society field trips, meetings and events, check the website: www.mnnps.org

Searching for the rare green dragon

by Derek Anderson

The mention of dragons often conjures up images of giant lizard-like animals flying, breathing fire and tormenting some kingdom. Usually, these mythical creatures capture a fair maiden and, in storybook fashion, there is a chivalrous knight willing to venture into the darkest depths to save her.

Did you know that there are dragons living in Minnesota? Luckily, these dragons are not nearly as dangerous as those well-known mythical creatures. These dragons happen to be plants.

Green dragon (*Arisaema dracontium*) is a member of the arum family. You may be more familiar with a relative, the common jack-in-the-pulpit (*Arisaema triphyllum*). The common name of green dragon possibly comes from the deeply divided leaves resembling a dragon's claw or

perhaps by the tongue-like spathe that grows out beyond the spadix in the inflorescence.

This plant typically grows to heights between one and three feet and is flowering in May and June. It is found in the wet forests located along rivers. Until recently, it was thought that this plant was only

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Green dragon (Arisaema dracontium), photo by Derek Anderson.

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Watch for new display and brochure

by Elizabeth Heck

The Minnesota Native Plant Society has a new display to be used at various events throughout the year. It highlights our mission and the opportunities offered by the Society and also features Minnesota's state flower, the showy lady's slipper, *Cypripedium reginae*.

The display will help engage those who may not be aware of the Society and encourage growth in our membership. It is designed to be retractable for easy carrying, setup and storage. Look for it at our

North American Prairie Conference is Aug. 1 - 5

The 22nd North American Prairie Conference will be Aug. 1 – 5 in Cedar Falls, Iowa, and surrounding areas. Its theme is "Restoring a National Treasure." For current information, go to the website: http://napc2010.org

monthly meetings.

To further educate the public about Society activities, the Membership Brochure has been updated. The brochure is designed to print on any home or office printer for nominal printing costs, allowing board members and officers to print when needed, and allowing downloads from the website for anyone to print and share.

Sand dunes are fascinating

This year's annual Society symposium, "Sand Dunes of Minnesota and Beyond," was held March 27 at the University of Minnesota's Bell Museum. It took an in-depth look at the unique sand dune communities which host many endemic and specialized species and increasingly rare plants.

Speakers described how inland and shoreland sand dunes were formed; the different shapes of dunes; the plants, birds, mammals, reptiles and amphibians that live on dunes in Minnesota, Wisconsin and Upper Michigan; and the management and restoration of dunes. 133 people attended the all-day event. It also included exhibits by a variety of firms and organizations. A highlight of this year's event was a showing of a portion of the film *Sand Country Wildlife* by well-known naturalist Walter Breckenridge. (See our president's column on page 7.)



Presenters Dr. Walter Loope (left) and Dr. Kerry Keen discuss dune research during a break in the program. Photo by Angela Hanson.

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Green Dragon

(Continued from page 1)

found in the floodplain forests along the Mississippi River. However, in 2008, Derek Anderson found a few plants on a tributary of the Cedar River in western Mower County. That same year, Paul Bockenstedt, a contractor, found a few plants on the Blue Earth River in western Faribault County. Derek and Fred Harris checked into additional locations in 2009 and found dragons in more locations on the Blue Earth, Cedar, North Fork Zumbro, and Straight rivers and Dodge Center Creek.

As a result of these finds, we would like to more thoroughly search these and additional sites in 2010 to get a better handle of how extensive the plants are in southern Minnesota.

Are you interested in venturing into the dark depths of the green dragon's lair? All are welcome, but this may not be an adventure for the faint of heart. Typically the habitat is damp and may require crossing small streams, rivers, and/or backwater channels. Mosquitoes are usually present, and the stinging wood nettle is plentiful.

If you are interested in this adventure, please contact Derek Anderson at Derek.Anderson@state.mn.us

Would you like to be an editor?

We are looking for a member who would like to be a back-up editor or take over the position of producing the *Minnesota Plant Press*. As with all of the Society's positions, this is a volunteer job. The quarterly newsletter is currently produced with Adobe's InDesign program. For additional information, e-mail Gerry Drewry at gdrewry@frontiernet.net or call 651-463-8006

Conservation Corner

by Beth Nixon

This is spring wildflower season and also legislative season. It is a good time to reflect on rules and regulations that might enhance the MNNPS mission and conservation of native plants across Minnesota.

One of the most important pieces of legislation in a long time started a couple of years ago with the constitutional amendment for dedicated outdoor heritage funding for the next 25 years. Its projects can go far to conserve and restore native plants and habitats. It will be up to all of us to revisit this issue each session an appropriations bill is crafted in the House and Senate. It is important that the language in future appropriations bills continues to reflect the importance of native plants as the cornerstone of restoration projects. The place to speak on behalf of this will continue for the foreseeable future to be the Lessard Outdoor Heritage Council, early in the legislative session.

This session's bill contains the following language for project requirements: "to the extent possible, a person conducting restoration with money appropriated in this section must plant vegetation or sow seed only of ecotypes native to Minnesota, and preferably of the local ecotype, using a high diversity of species originating from as close to the restoration site as possible, and protect existing native prairies, grasslands, forests, wetlands, and other aquatic systems from genetic contamination." While this language appears to quite deliberately have the intent of restoring lands across Minnesota with native plants, it could be made stronger by deleting the first clause, "to the extent possible."

Besides speaking at Lessard Council meetings in the winter (which can be hard to do during the middle of the work day), it is never too soon for MNNPS members and others to contact their representatives and ask them to consider making the language more explicit during the next writing of the appropriations bill by deleting this clause.

The implications of requiring use of native seed or plant material are significant. Creating a certain and steady market for native seed through the Lessard appropriations ought to allow for expansion of the volume produced by suppliers. This in turn can finally bring the volume to levels needed to support native seed supply for other programs, such as roadside prairies and federal conservation programs, and reduce the use of nonnative introduced species for grassland cover (which can still be commonly used and introduce a bio-stressor to nearby high quality plant communities).

For other conservation issues of merit to the MNNPS, visit the Society Blog from the homepage of the website.

Out-of-print books have been reprinted

Books about native plants, published by the University of Minnesota Press, that have been out of print are again available. They include:

- Ferns and Fern Allies of Minnesota, by C. O. Rosendahl and F. K. Butters;
- A Flora of Northeastern Minnesota, by O. Lakela;
- *Minnesota's Endangered Fauna and Flora*, by B. A. Coffin and L. Pfannmuller;
- Trees and Shrubs of the Upper Midwest, by C. O. Rosendahl; and
- Vascular Plants of Minnesota: A Checklist and Atlas, by G. B. Ownbey and T. Morley.

For a complete list of titles, see Minnesota Archive Editions at http://www.upress.umn.edu/html/backinprint.html

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Benefits of blowdown in St. Croix State Park

by Gretchen Heaser, area resource specialist, State Parks and Trails, DNR. This is a summary of her talk at the Dec. 3, 2009, MNNPS meeting.

On July 11, 2008, straight-line winds blew through Pine County, affecting more than 420 acres of forest in Saint Croix State Park. Although the blowdown left thousands of mangled and uprooted trees, it displayed the perfect opportunity to restore some of Minnesota's rarest ecological communities.

Pine barrens and oak savannas are listed as critically imperiled in the state and are imperiled globally. These ecological communities depend on frequent disturbances, such as fire, to maintain the open, unshaded ground layer and to allow the sun-loving prairie species to thrive.

Historically, St. Croix State Park contained more than 3,000 acres of jack pine barrens and oak savanna habitats. Now only 70 acres remain. The St. Croix State Park Unit Resource Plan, established for the park in spring of 2008, set goals to restore 900 acres of these habitats by 2017. The blowdown presented the park with an opportunity to jumpstart this restoration.

St. Croix initiated a commercial timber sale in the fall and winter of 2008 that harvested and salvaged the 420 blowdown acres and an additional 250 adjacent acres that were outlined in the plan. The timber sale was the first step in the restoration effort to selectively remove the downed timber and prepare the area for prescribed fire. The harvest was completed by December 15, 2008, and prescribed burning was carried out in the southern extent of the sale area in the spring of 2009. Additional prescribed burns are scheduled for the 2010 field season



Jack pine savanna in St. Croix State Park. Photo by Gretchen Heaser, courtesy of Minnesota DNR.

Vegetative responses already observed in the restoration area have varied from alum root, prairie phlox, hoary and hairy puccoon, veiny pea, spreading dogbane, frostweed/rock rose, wood lily, butterfly milkweed, low bindweed, pale vetchling, big and little bluestems and other grasses, and prairie forbs.

MNNPS welcomes new members

The Society gives a warm welcome to 33 new members who joined during the first quarter of 2010.

Listed alphabetically, they are: Caleb Ashling, Minneapolis; Bruce Beese, St. Paul; Tiffany Blackwell, Prior Lake; Rosanne Busch, Lonsdale; Monika Chandler, Falcon Heights; James Crants, Minneapolis; Heather Cusick, Minneapolis; Tracev Dickinson, St. Paul: Dr. William E. Faber, Brainerd; Valerie Galajda, Minneapolis; Jennifer Gillen, Minneapolis: Lisa Gilliland, Hugo; Matthew Graeve, Little Falls; Melissa Hansen, Golden Valley; Bill Hogseth, Menomonie, Wis.; Theresa Klaman, Lino Lakes; Jeanne LaBore, Minneapolis; Beth Landahl, Minneapolis; Doug Livingston, Brainerd; Walter Loope, Munsing, Mich.; Don Luce, Minneapolis; Onen Sheila and Markeson, Bemidji; Nora and Scott McPherson, Hopkins: Keir Morse, Lindstrom; Gordon Murdock, Minneapolis; Bob Neal, White Bear Lake; Anna Peschel, St. Paul; Imke Schmitt, Minneapolis; Schweinfurter, Redwood Molly Falls: Christopher Smith, St. Paul; Carol Strojny, St. Paul; Connie Taillon, Stillwater;

Wright-Peterson,

Virginia

Rochester.

Looking at lichens

by Imke Schmitt, Ph.D., assistant professor, plant biology, University of Minnesota. This is a summary of her presentation at the Feb. 4, 2010, MNNPS meeting.

Lichens are ubiquitous elements in all ecosystems. They can grow on various substrates such as rock, bark, soil, or man-made surfaces including abandoned cars, walls, and metal signposts. Whatever material the lichen grows on, it has to be in the same place for a long period of time. Lichens are very slow growing and need substrates that are not changing much over time (trees in old growth forests, graveyard stones, old walls). If that condition is fulfilled, lichens can grow almost anywhere, from saltwater spray zones, to the tropical rain forest, to central Antarctica, where they live submerged in rock.

Lichens are successful in colonizing diverse niches in extreme habitats because they consist of two or more symbiotic partners that aid each other in survival. The main body of the lichen is made up of a fungus, which is using a special form of nutrition — it houses microorganisms that can use the sunlight to produce sugars through photosynthesis. The sugars serve as food source for the fungus. The photosynthetic microorganisms single-celled green algae cyanobacteria. This mutual symbiosis makes the lichen, which is more precisely called "lichenized fungus," nutritionally independent of the substrate it lives on.

A second property makes lichenforming fungi well adapted to extreme environments — when conditions are unfavorable, e.g. during draught or extreme UV exposure, the lichen body dries out and all metabolic activities stop. In this condition, the lichen is very resilient to environmental stress. When conditions improve, e.g. when water vapor is available, the lichen immediately begins to be metabolically active again.

Lichen-forming fungi very sensitive to certain human influences. For example, lichens are very sensitive to sulfur dioxide, the chemical responsible for acid rain. Changes in pH value caused by the presence of this substance can kill the entire lichen flora of a region. Human activities that cause changes in microclimate, nutrient supply, and availability of permanent structures for attachment, such as agriculture and logging, are also threatening the lichen flora. Since lichens react to such influences more quickly than vascular plants, they have been used extensively as biological indicators.

Many lichens produce so-called lichen substances that give them a vivid color or strong unpleasant taste. Because of the presence of these natural products (secondary metabolites), lichens have a variety of traditional and present day uses. They can be used for dyeing wool and cloth; they are used as ingredients of perfumes, or medicines. Animals, such as reindeer, eat lichens to survive the winter, and birds use lichens as nesting materials.

Research on lichen systematics involves collecting, identifying and herbarium data-basing specimens, followed by molecular analysis. We sequence and compare fragments of the DNA of the fungal partner to understand how lichen-forming fungi are related to one another and how they fit into the fungal tree of life. We know now that the lichen lifestyle evolved many times independently during fungal evolution. Identifying lichens often requires information about the chemical composition of the specimen. Simple tests to identify lichen compounds are socalled spot tests, where a droplet of reagent, e.g. bleach, is added to the specimen and causes a color change of the fungal mycelium. Some compounds fluoresce and can be visualized under a UV lamp. In the lab, we use thin layer or high pressure chromatography to analyze lichen compounds.

It is not easy to say whether the relationship between the fungal partner and the photosynthetic partner in the lichen symbiosis is one of mutual benefit. The fungal partner has been described as the dominant partner in the relationship, because it controls the morphology of the lichen body, suppresses sexual reproduction in the algal partners, and uses structures found also in parasitic fungi (haustoria) to extract sugars from its photosynthetic partner. Also, most lichen fungi are not known to occur as free-living species, whereas the algal partners thrive well without their fungal symbiont. For these reasons, the lichen symbiosis has been described as "controlled parasitism." However, looking at the lichen symbiosis from an ecological standpoint, it is clear that neither of the two partners can survive without the other in the types of habitat they occur in. Thus most lichenologists today agree that a lichen is a mutualistic symbiosis.

Plant sale: June 3

Our annual native plant sale will be held on the patio outside Dakota Lodge at the end of our June meeting. We encourage all who attend to bring their own native plants to the sale. Those who donate plants will get the first choices.

Bring labeled, potted plants by 6 p.m. so volunteers have time to price them and set up the area. Only native plants from Minnesota can be included. No cultivars (horticultural selection) of native plants should be brought (e.g. 'Goldstrum' blackeyed Susan). Plants should be from your own property, or other private property (with that owner's permission); not from public property. Dig your plants two to four weeks before the sale. To volunteer, contact Ken Arndt at karndt@ccesinc.com or 651-249-7080.

Register now for a field trip

by Ken Arndt

The MNNPS has planned field trips for spring and summer. A few more trips are in the planning stages for late summer and fall. You can register for any of the field trips by visiting our website (www.mnnps. org) and going to the field trip page or by attending one of our monthly meetings, where sign-up sheets are out for the members. Information will be posted on the website as details become available.

Field trips are just one of the benefits of being a member of our Society. Most trips have a limited number of registrants due to site-sensitive areas we will encounter. This year's field trips will take participants to several regions of the state, where you will see spring wildflowers of forests and wetlands; sand dune communities in Minnesota and Wisconsin; and many other unique plant communities.

Saturday, April 24, 10 a.m. to 1 p.m., join Scott Milburn, MNNPS president and senior botanist/ ecologist for Midwest Natural Resources: and Daniel Jones. MNNPS board member and senior ecologist for Barr Engineering, at Nerstrand-Big Woods State Park for a morning of hiking and plant identification. This fine example of "Big Woods" is home to many spring ephemerals, including bloodroot, trillium, hepatica, rue anemone and bellwort. Participants will also see the habitat where the federally endangered dwarf trout lily grows.

Saturday, May 15, 9 to 11 a.m., join Elizabeth Heck, MNNPS board member and Eloise Butler Wildflower Garden naturalist; and Shirley Mah Kooyman, MNNPS vice president and wild flower enthusiast, for a stroll through the

Eloise Butler Wildflower Garden, the oldest wildflower garden in the country. The 103-year-old garden is home to over 500 species of plants, all within 14 acres. We will visit the woodland and wetland areas and see many spring wildflowers, including lady's slipper orchids, hepatica, bloodroot, skunk cabbage, trilliums, baneberry, Virginia bluebells, bellwort, marsh marigold, false rue anemone, blue cohosh, and violets.

Saturday, May 22, 9 a.m. to 1 p.m., join Steve Eggers, senior ecologist for the St. Paul District Corps of Engineers, for a morning of wetland plant identification at Savage Fen Scientific and Natural Area in Savage, Minn. Savage Fen SNA is notable for its rare wetland plant community. A series of alkaline seeps and springs emerge from the base of a bluff formed of calcareous glacial deposits, which were left by the Des Moines lobe at the end of the Wisconsin Glacial period. This trip will take participants through a sedge-dominated fen, where you will be able to observe state-listed endangered, threatened and special concern species, including sterile sedge and white lady's-slipper orchids in bloom; and other showy fen species such as northern bog violet and shrubby cinquefoil.

Thursday, June 10, 6 to 8 p.m., join Karen Schik, Friends of the Mississippi River ecologist; Tom Lewanski, conservation director for FMR; and Dave Crawford, MNNPS member and "retired" DNR naturalist from Wild River State Park, for an evening of prairie plant identification at Hastings Sand Coulee SNA. This is a dry sand prairie of about 80 acres located just beyond the southern edge of Hastings. The largest of a few sand gravel prairies left in Dakota County, it is home to rare plants including James' polanisia (endangered) and sea-beach needle grass. This is a joint field trip with Friends of the Mississippi River and will be limited to 18 MNNPS members.

Sunday, June 13, 2 to 5 p.m., join Hannah Texler, DNR regional plant ecologist; and Virginia Blakesley, DNR SNA program staff, for an afternoon hike into Uncas Dunes SNA for a look at sand dune plant communities and the critters that call this place home. Uncas Dunes SNA is located within the Anoka Sandplain near Zimmerman and contains a relic dune field associated with Glacial Lake Grantsburg. Natural plant communities found here include oak savanna, oak forest, and wetland. The trip is a follow-up to this year's symposium on sand dune communities and will give participants a chance to see this place that was discussed during several of the talks.

Saturday, July 3, 4 to 6 p.m., join Barb Delaney, botanist and MNNPS member, for a hike into Wisconsin Sterling Barrens State Natural Area located south of Grantsburg, Wis., for another look at sand dune plant communities. Located in pitted outwash deposits laid down by glacial melt-water Wisconsin streams. Sterling Barrens State Natural Area contains a jack pine-Hill's oak dry forest interspersed with barrens openings and an extensive wetland of sedge meadow and shrub-carr. The gently rolling barrens openings are interspersed with prairie species. Several rare forbs are at or near their natural eastern range limit. Sterling Barrens is owned by the National Park Service and the Wisconsin DNR. The site was designated a State Natural Area in 1979 and expanded to include the St. Croix Scenic Riverway in 2002.

Blooms Day is May 15

Metro Blooms is sponsoring Blooms Day from 8:30 a.m. to 1 p.m. May 15 at Kenny Community School, 5720 Emerson Ave. S., Minneapolis. The group sponsors rain gardens and encourages urban native plantings. For more information, go to www. metroblooms.org

Plant Lore

by Thor Kommedahl

What is spring-beauty?

Spring-beauty, also called Virginia spring-beauty, is *Claytonia virginica*, and it has been included in the purslane family; now some include it in the *Montia* family (Montiaceae). It is called "Miskodeed" (an Indian name) in Longfellow's *The Song of Hiawatha*.

Saw the earliest flower of Springtime,

Saw the beauty of Spring-time, Saw the Miskodeed in blossom.

How did it get its names?

Its attractive spring flowers in large patches describe its name. The species is found westward into Minnesota. *Claytonia* is named for John Clayton (1694-1773), a naturalist in colonial Virginia.

What do the plants look like?

Spring-beauty is a low perennial plant with clusters (racemes) of five pink or whitish petals that are striped with dark pink veins. There are two sepals. It has a pair of grass-like, opposite leaves, each with a

President's column

by Scott Milburn

Spring has arrived a bit sooner than expected, but is very welcome. As we enter this season, we can reflect on recent highlights for the Society. We have just hosted another great symposium, looking at the Sand Dunes of

single central vein. Shoots grow from a corm. Seeds are enclosed in a three-valve capsule. The blooms are insect-pollinated (mostly bees and butterflies).

Where does the plant grow?

It is a native plant growing in rich woods and thickets in the eastern half of Minnesota, except the arrowhead. It is an early spring flower that is gone by midsummer.

Is it edible, medicinal, or poisonous?

It is edible. Native Americans and colonists ate the corms for food; the corm has a sweet, chestnut-like flavor. It is not medicinal or poisonous.

Has it any economic value?

Only in gardens or as ground cover; it is spectacular in large patches and may bloom for a month. Seeds mature in early summer and can be sown as soon as they ripen.

Minnesota and Beyond, at the Bell Museum. We had a great lineup of speakers. I would like to also point out the hard work and efforts of my fellow symposium committee members — Erika Rowe, Angela Hanson, Shirley Mah Kooyman, and Daniel Jones.

One addition to the symposium was the film Sand Country Wildlife by Walter Breckenridge. Walter served as Bell Museum director for nearly 25 years. During this time, he filmed a series documenting the natural history of Minnesota. Several of these films had been transferred to digital format. However, one still remaining on 16 mm film — Sand Country Wildlife — was pertinent to the symposium topic. We worked with Barbara Coffin of the Bell Museum, and our board approved donating \$1,300 of Society funds to transfer the film to digital format. We showed much of the film at the symposium and will show it again at a monthly meeting. This is one of the most important contributions we have made. The film not only documents a component of Minnesota's natural history, but also a great natural historian.

In other news, I thank Angela Hanson for her contributions to the Society. She has been actively involved and is a board member. She has been extremely generous with her time and efforts. Angela will soon be taking a job in Austin, Texas, and will be leaving the board. We will miss her.

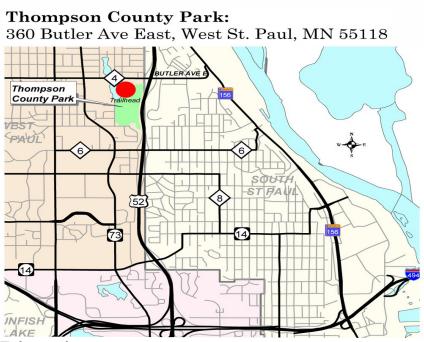
At a recent board meeting, the idea of paying for memberships and symposium registrations online was discussed. We now have a small group looking into the specifics. I can also announce that Daniel Jones was elected and Russ Schaffenberg re-elected to the board in March.



Spring-beauty (Claytonia virginica), photo by Shirley Mah Kooyman.

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

Spring 2010



Directions:

Take MN Hwy. 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.