



Minnesota Plant Press

Vol. 11:2 Newsletter Of The Minnesota Native Plant Society, Winter 1992

Upcoming Monthly Meetings

The Minnesota Native Plant Society holds monthly meetings from October through May, on the first Wednesday of each month, unless otherwise stated. Meetings are held in room 335 Borlaug Hall, St. Paul campus U of M. Meeting times: 7:30 - 9:00 PM.

- February - Minnesota's Native Orchids - Dianne Plunkett, Nature Photographer.
- March - The Minnesota Scientific and Natural Areas Program - Bob Bjupstrum.
- April - Minnesota Mosses - Jan Jansson.
- May - Photo Contest Slide Show and Plant Sale.

The Amateur Botanist: Fun Projects for Kids of All Ages

Char A. Bezanson

The Amateur Botanist is a series of articles that will be appearing on a more-or-less regular basis in the Minnesota Plant Press. In these articles I will introduce natural history projects that can be used by adults (teachers, parents, friends or neighbors) to participate with young people in discovering the living world around them. These ideas, with appropriate modification, might form the basis for a school science project, a scout activity, or a family outing. I assume that adults will use discretion and provide guidance to young people when collecting materials outdoors, observing applicable regulations on private property and in parks. I welcome your suggestions and feedback.

Inside

Announcements.....	2
Summaries of Monthly Speakers....	3
Board of Directors....	9

Forcing Branches

As trees and shrubs come out of dormancy in spring, sap begins to flow and buds begin to swell. To bring Spring on early, you can "force" twigs and branches into leaf or flower up to 6 weeks ahead of time. When cut, brought inside, and placed in water, twigs will continue to develop as they normally would, but faster. Because of the warmer temperature, branches will burst into leaf or flower in just a few weeks.

Forcing Branches continued on pg. 7

Editor's Note

Bob Jacobson

We still need newsletter articles. If you would like to submit an article for publication, please do so! Longer articles should be submitted on a 3 1/4 inch floppy disk, preferably Macintosh formatted, but I can translate DOS formatted disks too. Unformatted (text) files are the easiest to work with. I will type in shorter articles of one page or less myself. Illustrations, graphics, cartoons and even poetry are welcome as well. Articles can be sent to me at:

Bob Jacobson

Announcements

- **Membership Renewal** - In case you forgot, you can still renew your membership. There is a membership renewal form towards the end of the newsletter.
- **MNPS Annual Symposium** - The annual symposium will be held Saturday, April 11, 1992 from 9:00 AM - 2:00 PM at the Earle Brown Center on the University of Minnesota, St. Paul Campus. In this tenth year of our society, the symposium will examine the status of our rarest and most fragile native plants and their habitats, both in the wild and in our gardens. Topics to be discussed include:
 - The Minnesota landscape - an overview.
 - Sensitive and fragile Minnesota habitats, their status and prospects.
 - Politics and current legislative efforts on behalf of native plants.
 - Individual involvement in native plant preservation; such as gardening with rare plants, ethical issues in propagating and selling native plants, and individual restoration and conservation projects.

We will have displays by individuals and organizations, a coffee and snacks break, and time for lunch at the Student Center or elsewhere. The Earle Brown Center is conveniently located near parking and is quite comfortably furnished. The Student Center is two blocks away. Brochures with registration forms will be sent to all MNPS members, and will be available to non-members in various locations around the Twin Cities. Phone Ester McLaughlin for more information at

- **MNPS Education & Outreach Committee** - The Native Plant Societies' Education and Outreach Committee is now up and running with it's new chairperson, Diane Hilscher. This committee is responsible for new memberships and promoting new member involvement in the society. The committee members are involved in providing refreshments at monthly meetings (though any delectibles you'd like to bring on your own to share would be warmly received). We also are involved in the Societies' publicity, historical activities and outreach to schools. Diane would welcome all efforts to help with any of these education and outreach activities. Do you know of any good publications to go into announcements in the newsletter or symposium? Diane will be talking with early members to learn more of the societies' history. Give Diane a call if you'd like to share some insights. Diane can be reached at _____ days and evenings.

- **Checklist of Common Plants Found In Itasca State Park** - This six page brochure by Anita F. Cholewa (UM Herbarium) and Gerald B. Ownbey (UM Prof. Emeritus) is available through the MNPS or from the DNR. The checklist lists the common plants found within the park by scientific and common name based on the habitat-type they are found in.
- **Minnesota Native Plant Society Plant-of-the-Month** - The Plant-of-the-month is a new feature of monthly plant society meetings instituted at the suggestion of members. The purpose is to increase the recognition and appreciation of specific native and naturalized plants. Members are encouraged to volunteer to present a Plant of the Month at a monthly meeting. In order to volunteer, contact a Program Committee member (1991-92: Char Bezanson, or at meetings) and get on the schedule. Selected plants may be significant because of their rarity, beauty, medicinal qualities, botanical or historical interest, cultural characteristics, or ubiquity: anything that makes the plant interesting to you. Presentations should be 5-10 minutes long and will be made immediately before the scheduled speaker during monthly meetings. They might include some or all of the following:
 - photographs or slides of the plant
 - live or pressed specimens
 - natural history of the plant
 - native habitat
 - horticultural uses; propagation
 - medicinal or historical uses
 Brush up on your botanical trivia and think about presenting your favorite native plant soon!
- **Suburban Prairies** - An informal, half day, meeting for all interested in the greater metro area prairies will be held Friday, March 20th, 1992 from 1:00-5:00 PM in the refuge, Hodson Hall, St. Paul Campus of the U of M. Sites include Parks, SNAs, Nature Centers and other areas with prairie plants. Undisturbed, restored and reconstructed prairies are included. For more information call or write: Dr. Catherine Reed, Entomology Dept. Rm 219 Hodson Hall, University of Minnesota, St. Paul, MN 55108. Phone:
- **Landscape Design Series** - This is a course being offered in the spring on creating your own landscape plan for the home. It is being offered by Diane Hilscher and Christine McGinnis, both professional landscape architects. There is a course fee and class size is limited. For more information call Diane Hilscher at

Summary of Guest Presentations at the MNPS General Meetings

November - Our speaker in November was Charles Umbanhowar, an Assistant Professor of Biology at St. Olaf College. Charles spoke about the impacts of disturbance and patch formation on the composition of prairies, based on examples from his dissertation research at the Nature Conservancy's S.H. Ordway Memorial Prairie in northcentral South Dakota. Charles began by talking about the diversity of native prairie and how as many as 20-30 or more plant species can be found in an area of one square yard.

Ant mounds, badger mounds, bison wallows (circular depressions created by rolling bison), and dry prairie marshes are some of the common types of patches (openings of bare soil) found in prairie and are probably important in maintaining species diversity in prairies. Ant and earthen mounds are smaller but generally more abundant than wallows and dry prairie marshes.

Ant mounds are dominated by perennial, vegetatively reproducing grasses, while earthen mounds tend to be dominated both by perennial vegetatively reproducing forbs and, to a much lesser extent, grasses. Bison wallows and dry prairie marshes are dominated by annuals and, in contrast to the mounds, many of the species found in wallows and dry prairie marshes are not found in the area around patches. Charles concluded by noting that a lack of good records makes it difficult to discuss the historical importance of patches and other disturbances in prairie, or their use in managing prairies today.

Charles majored in biology at Carleton College and graduated in 1985. He was a graduate student in the Department of Botany at the University of Wisconsin-Madison and completed his Ph.D. in 1989 under the supervision of Ed Beals. He spent a year with the ND Natural Heritage Inventory in Bismarck, ND and is currently teaching at St. Olaf College. His research interests are diverse and have included prairie and oak savanna restoration, the biology of *Platanthera praeclara* (the western prairie fringed orchid), re-analysis of the Wisconsin prairie continuum and computerization of the data that form the basis for Curtis' Vegetation of Wisconsin.

December - Plant-of-the-Month: Bonnie Harper-Lore. Bonnie described the native prairie plant, *Liatris pycnostachya* (blazing star). She also related the interesting story of how an enterprising student of horticulture in Minnesota smuggled this plant into Israel where it is now grown as a popular flower of the florists trade. Others in the MNPS audience commented on how sensitive *Liatris* is to rain-borne herbicides and that it is most attractive to Monarch butterflies and therefore a prime choice for a butterfly garden plant.

The main speaker of the evening was Dr. Dave Wedin who titled his talk "Conserving Grassland Biological Diversity: Reflections from Europe and the Midwest". He related his experiences from a European conference on grassland management and conservation where two stereotypes were shattered; 1) that all grasslands in Europe are managed and anthropogenically established, and 2) that there is an equilibrium between plant communities and civilization in Europe.

Dr. Wedin believes that the loss of biodiversity is just as great in Europe as it is here. Conservationists in Europe are struggling to maintain small remnants of natural communities just as we are in the Midwest. He listed three main questions to be addressed when considering the differences between the existing remnants and the "ancient" or "original" communities on both continents; 1) Why the ecological system or vegetative community faces threats, 2) What does research show maintained these communities, and 3) How can we restore the community?

Four European remnant vegetative communities were used as examples to explore the application of these questions. The Holland hay meadow, an ancient grassland type was established and maintained by archaic agricultural methods. This community was adapted to unique human disturbance and the integrity of its animal and plant populations is threatened since the abandonment of these practices.

The chalk grassland community was maintained by sheep grazing and seed dispersal for a millennium. There were several causes for the demise of these grasslands of low productivity. In the 1870's sheep raising declined. The lands were converted to crops around 1910-20. The post-WWII use of chemical fertilizers contributed to the intense eutrophication of these areas. The previous use of chemicals has made recovery of these lands difficult.

Eutrophication of grasslands played a role in the loss of the forb component in the wet meadow community type. Originally hayed and grazed, they were species rich. The application of high levels of chemical fertilizers has resulted in serious environmental consequences including the pollution of ground water. Scottish Highland cattle, the modern analogue of the ancient dairy

cattle which originally grazed and maintained these areas, have been introduced to reestablish the disturbance regime required by this grassland community.

The ancient practice of harvesting sod created and maintained the unique vegetative communities called heathlands. Loss of this practice has resulted in the degradation of these communities by the encroachment of woody species.

The problems faced by these plant communities in Europe are not that different from those of the Midwest's Tallgrass Prairie. What remains are small patches of an ancient ecosystem. Degradation is due to chemical agricultural practices and major changes in basic ecosystem functions such as hydrology and nutrient cycling.

Dr. Wedin concluded that we cannot protect these remnants simply by putting up a fence. The changes in the environment must be addressed. Restoration of ancient regimes or mechanisms may not be enough or the right answer to protecting and restoring these communities. In Europe, it is recognized that what goes on in agriculture will determine what happens to the remnant grasslands. There they are simultaneously addressing the questions of agricultural productivity and the need to preserve the habitat of rare species. This is not the case here, according to Dr. Wedin, where sustainable agriculture researchers and conservationists are not working together.

January - Plant-of-the-Month: Clarence Lehman. This year's first Plant-of-the-Month was *Aesclepias incarnata* (swamp or marsh milkweed). Clarence gave a delightful review of this plant's habitat, phenology and attributes. It's fragrance reminds Clarence of vanilla popcorn balls (and he likes the name "marsh" rather than "swamp" milkweed because it reminds him of marshmallows). Yum! (Actually the young pods and leaves of some milkweeds can be eaten after the bitter stomach cramping latex is leached out. They don't taste like popcorn balls or marshmallows, though. E.F. note) A good explanation of this plant's unique pollination mechanism was presented accompanied by helpful illustrations. Those clever plants!

The evenings' main presentation was given by Lisa Mueller from the Minnesota Department of Agriculture's (MDA) Endangered Species Program. It is Lisa's job to work with public agencies and private land owners to develop management plans and strategies that will serve to protect Federally listed plants and animals from pesticide application damage or destruction.

Lisa's presentation, entitled "Endangered Resources: Our Challenge for the Future" addressed the status, threats and protection efforts for Federally listed plants and animals in Minnesota. After an introduction about the number of plants, animals and invertebrates threatened around the world, the worldwide increased rate of extinction and the importance of biological diversity, the talk focused on Minnesota's rare and endangered species. A species threatened with extinction throughout all or a significant portion of its range is categorized as Endangered. A species is listed as Threatened if it is likely to become endangered in the foreseeable future throughout all or a significant portion of its range.

There are ten Federally listed species in Minnesota, four plants, two clams, three birds and one mammal. The official status of *Lespedeza leptostachya* (prairie bush clover) is State Endangered and Federally Threatened. It is found in seven Minnesota counties and only in four Midwestern states. *Platanthera praeclara* (western prairie fringed orchid) is also State Endangered and Federally Threatened. It is found in nine Minnesota counties and seven states. The largest population in the world is in the Red River Valley of the northwest part of our state. A very special plant is *Erythronium propullans* (dwarf trout lily). It is endemic to Minnesota (it doesn't exist anywhere else in the world!) and is only found in two counties at that! It's not too surprising

that it's State and Federally Endangered. A newly Federally listed plant is *Sedum integrifolium* (Leedy's roseroot). This State Endangered plant is found in two of Minnesota's SE counties. The only other locations for this plant are in New York state.

The three birds that are Federally listed and found in Minnesota are the Piping Plover (State and Federally Endangered), the peregrine falcon (State and Federally Endangered) and the bald eagle (State Threatened and Federally Endangered). Loss of habitat and the detrimental effects of pesticides (esp. DDT) have caused serious declines in these species both in and outside of the United states. The winged maple leaf mussel and Higgins eye pearly mussel are the Federally listed clam species found in Minnesota rivers. Dams that alter river dynamics, urban and agricultural runoff degrading water quality and the negative impact of exotic species such as the zebra mussel have contributed to the decline of these and other mollusks. It is important to note that it is illegal to collect living or dead shells of any mussel from the St. Croix or Namekagon Rivers in Minnesota and Wisconsin.

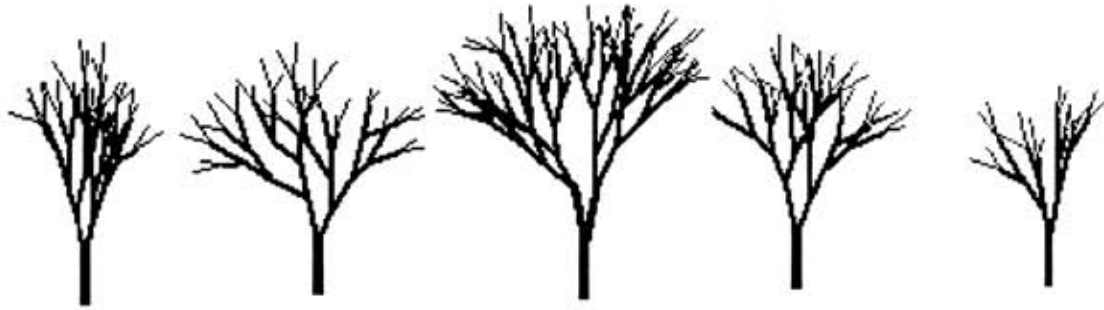
The State and Federally Threatened status of the timber wolf in Minnesota is a controversial issue. This mammal is Federally Endangered in the other 47 of the lower 48 states. There are estimated to be 1750 individuals in Minnesota ranking second to the greater populations in Alaska. Lisa noted that the number of Federally listed species grows every year. It is now recognized that protection at an ecosystem level will be more effective than continuing to focus at the species level which is in effect addressing the symptoms rather than the causes of extinction.

The conclusion of Lisa's beautifully illustrated presentation briefly described the way Minnesota's Endangered Species Program works with landowners to develop and implement pesticide management plans for specific sites, buffering and protecting the rare plants and animals that live here. She emphasized that these are voluntary protection agreements. The understanding and cooperation of individuals has led to 18 signed agreements of the 125 private landowners who have lands which support Federally listed species.

February - Plant-of-the-Month: by Welby Smith. Our main speaker will be Dianne Plunkett. She will speak on Minnesota's native orchids. Dianne has photographed 36 of Minnesota's 43 native orchids. She will speak on where to observe them, how to photograph them, where to purchase them and how to cultivate the more tolerant varieties. Her photographs which were taken throughout the Great Lakes region include flowers, buds, foliage and seed pods.

Dianne is the former president of the Minnesota Nature Photography Club, was the first Chair of the Minnesota International Exhibition of Botanical Photography whose slides are exhibited in the Nature Division of the Photographic Society of America. Professionally, Dianne is an attorney specializing in intellectual property and computer law.

Editors Note: Thank you Char Bezanson and Ellen Fuge for putting together these summaries.



The procedure for forcing branches is simple. About 6 weeks before the tree or shrub would normally flower, cut a 12- to 24- inch section of branch. For early-flowering shrubs and trees, the time to do this would be in late January or early February; later-flowering shrubs and trees should be cut in late February or March. For immediate forcing, scrape with a knife or scissors along a 3-inch length of bark at the bottom of the cutting and place in lukewarm water for a day. Then move the cutting to a container of cool water and place it at cool room temperature in indirect light. Mist with water several times a week if the room air is dry. Change the water and cut an inch or so from the end of the stems each week, if you can. Once the buds open, move the cuttings to a sunny location for good leaf color.

You might have a number of objectives in mind when forcing branches. If you are mainly interested in bringing Springtime inside a bit early, you may want to force showy early-flowering cultivated shrubs such as azalea, forsythia, mulberry, flowering almond, or redbud; these shrubs flower before the leaves emerge. Many native shrubs and trees also flower early, and can be cut in February: Juneberry (*Amelanchier* sp.), birches, hazelnut, elms, maples, plums, ashes, sumac, and of course pussy willows. Apples, crabapples, cherries, elderberry, mountain ash, honeylocust, and even buckthorn (if you haven't ripped this noxious invader out already!) can be cut a bit later.

Part of the fun, whether you know what a branch is or not, is to study each twig in some detail. If you have a copy of a winter twig key, you can identify the twigs, using a hand lens and the twig's characteristics including leaf scars, bud scales, leaf (scar) arrangement, bark, etc. If you've never taken the time to look closely at a twig before, you'll be amazed at the differences between them. You might notice that buds are always found above a leaf scar, and you can check your houseplants to see if buds, flowers and branches are always found in the axils of leaves. You can also tell how old a twig is by counting the scars of the overwintering bud formed each autumn. A winter key will have illustrations of these twig characteristics, and others.

Watching the twigs develop and seeing leaves and flowers emerge is also amazing. Many children are not even aware that trees flower- they've just never thought about it. (Children with pollen allergies may be the exception here!) Twigs and buds can be dissected using a hatpin and a single-edged razor blade or an Exacto knife. How do buds from different kinds of twigs differ? How do buds on the same twig differ? Can you tell which will produce leaves and which flowers? You can also perform experiments with your twigs: try placing containers of twigs at different temperatures, or under different light conditions. Do you have to use the same kind of twigs for this experiment? Why or why not?

A tree limb which has fallen in a winter storm or winter prunings from fruit trees can be forced even if the branch is cut too early, as long as the branch is kept alive and in a dormant

condition. One way to keep branches alive and dormant is to wrap them in moist burlap or newspaper and put them in an unheated garage or under a pile of snow. Another is to put the end of the branch or tree limb in a wastebasket or box of moist sand, again placing the branch in a sheltered place; the main requirement is that the branch be kept cold, moist, and protected from drying winds. Then you can bring the branch inside and force it in February or March. Forcing branches is a good way to study trees and shrubs while you are anxiously awaiting warmer weather. Once you have studied the details of twigs inside, you will begin to notice them on walks outside as well. Extending the appreciation of trees and shrubs to the winter months is fun, and a natural for those of us who live in the north!

References:

- Teacher's Guide for Budding Twigs. 1970. Elementary Science Study, Webster Division, McGraw-Hill, New York.
- Morley, Thomas. 1975. Deciduous Trees of Minnesota: a Winter Key. Department of Botany, University of Minnesota, St. Paul, MN.
- Watts, M.T. and Watts, T. 1970. Winter Tree Finder. Berkeley, CA, Nature Study Guild.

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☐ Renewal ☐ New Member

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☐ Individual - \$10.00

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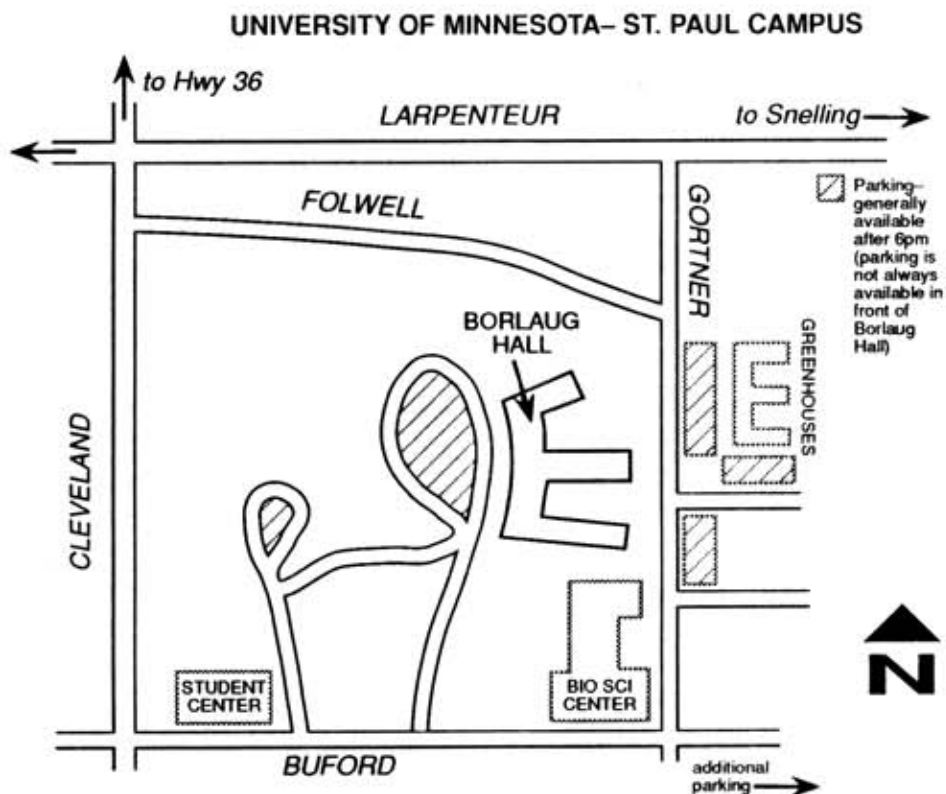
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