

MINNESOTA PLANT PRESS

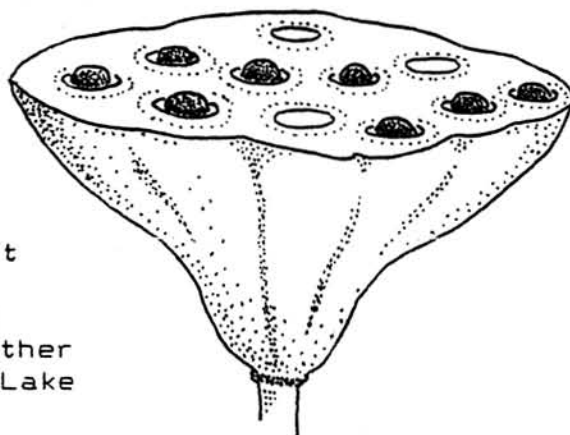
Vol. 8:2 NEWSLETTER OF MINNESOTA NATIVE PLANT SOCIETY Winter 88/89

American lotus-lily -- Nelumbo lutea

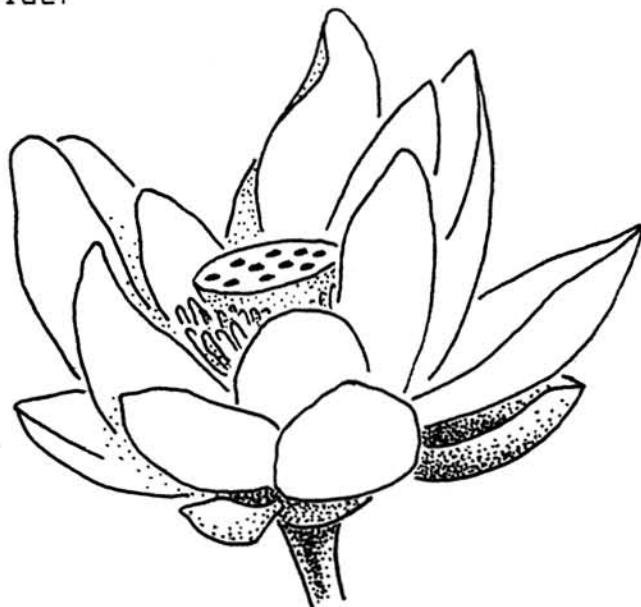
Of all our native aquatics, the lotus-lily (Nelumbo lutea) is probably best known from dried floral arrangements! Visit any craft shop and you're sure to find the dried (and often painted) remains of the fruits and floral receptacle.

Although not on the state rare plants list, lotus-lily is not very common in Minnesota -- occurring in the lower Minnesota River Valley and thence downstream along the lower Mississippi (and then southward and eastward). It was reported to occur in Lake Minnetonka, but I know of no recent sightings there. Intolerant of boat wakes, the plants are found in quiet bays and backwaters (a rather extensive population occurs on Snelling Lake in Fort Snelling State Park).

Often included in the water-lily family (Nymphaeaceae), many botanists now consider the genus distinct enough to be placed in its own family (Nelumbonaceae). Nelumbo is composed of only two species -- the yellow-flowered American lotus-lily (N. lutea) and the pink-flowered sacred lotus (N. nucifera) of Asia and Australia. The flowers are rather unusual in that the carpels are sunk into the spongy receptacle, which extends beyond the point of attachment of tepals and stamens. Easily recognized from a 65-mph vehicle, the large flowers and leaves are elevated a foot or so above the water surface during late summer.



AE
C



After pollination (by some sort of beetle) the receptacle, with the developing nuts, expands until nearly as broad as the original flower. The fruits eventually drop out to start the cycle again.

The Asian species is considered quite sacred to Buddhists and its seeds reportedly retain viability for 3000 years, under the proper conditions. The large flowers and subtle fragrance makes the genus a choice ornamental for water gardens and most of the plant (especially the rhizome) is edible. Our Minnesota populations, however, are so few in number that I wouldn't encourage raiding the populations for either use.

----- Nita Cholewa

MNPS NEWS ****

Upcoming meetings

General meetings are held the first Wednesday of each month on the **UM St. Paul campus, 335 Borlaug Hall**. Meetings start at **7:30 pm** and are open to the public. Board meetings are held in the St. Paul Student Center Cafeteria, at **6:00 pm**, on the same evenings as the general program and are open to all MNPS members.

- 4 Jan - Margaret Kohring** (The Nature Conservancy)
"Glacial Relict Plants" -- What do algal, coastal plain, cordilleran, and arctic disjunct plants have in common? They are all affected by glaciers and have fascinating life histories. Hear how these unusual plants are distributed and how they survive in Minnesota.
- 1 Feb - Gerald Ownbey** (UM Dept. of Botany - Prof. Emeritis)
"Cultivated Native Trees and Shrubs for the Home"
- 1 Mar - Tom Morley** (UM Dept. of Botany - Prof. Emeritis)
"Update on the Minnesota Dwarf Trout Lily"
- 5 Apr - Barbara Delaney** (botanist, Cedar Creek NHA)
"Mosses of Minnesota"
- 3 May - Audrey Engels** (retired amateur botanist)
"River plants of central Minnesota"
Summer field trip discussion
Annual plant exchange

Carpooling is encouraged. Please consult last year's Directory (issued with Vol.7:3 Supplement) for members near you.

Help Advertise MNPS

MNPS would like to place regular advertisements of its monthly meetings in "Minnesota Monthly" (Minn. Public Radio's monthly magazine). You can help. If you are a member of MPR, please consider contributing your two lines of advertising space per year (all MPR members are allotted two free lines) to our Society by sending your name and MPR membership number to: MNPS, Dept. of Botany, 220 Bio Sci, Univ. of Minn., St. Paul, MN, 55108. Thank you.

1989 MNPS Symposium

Wetland restoration will be the topic of the second annual symposium, tentatively scheduled for Saturday, 1 April 1989. The symposium will include speakers on restoration of marshes, calcareous fens, prairie potholes, and peatlands. A special mailing in late winter will provide further details. Volunteers are needed to help with advance arrangements and to organize registration, demonstrations and refreshments on the day of the event. To volunteer, contact Nancy Sather at
or .

Notice of Board member replacement

Harriet Mason, Director-at-Large and Chairman of the Conservation Legislation Committee, will be leaving in January to spend the next year in Japan. Mary Risdall, long-time member and gardening and conservation enthusiast, has been appointed to replace Harriet as Director until her return.

Nominations for Board of Directors

Elections for new Directors will take place at the March (Annual) Meeting. Directors whose terms expire this summer are Steve Eggers, Welby Smith, and May Wright. The following people have been nominated for the new slate:

- Cole Burrell -- Curator of the native plant gardens at the UM Landscape Arboretum, previously of the National Arboretum
- Ellen Fuge -- Natural Resource Specialist with the DNR's Natural Heritage Program
- Nancy Sather -- Botanist with the DNR's Natural Heritage Program, previously Botanist with The Nature Conservancy; 1989 MNPS Symposium Coordinator

If you do not plan on attending the March meeting, please send in the absentee ballot, located at the end of this newsletter, voicing your opinion.

Donations to the lawsuit fund

This past September/October, we asked you to consider making a donation, along with your membership renewal, to help pay the remaining legal fees. These donations exceeded \$800 -- thanks very much to all of you for your support. Special thanks go to Don Lawrence, Harriet Mason, Tom Morley, Nancy Sather and Welby Smith, who made substantial donations.

New members this fall

Please welcome our new members: Judy Biederman (St. Paul); Laura Chandler and Gary Findell (Edina); Chase & Sue Cornelius (Excelsior); Carol J. Dorff (Minneapolis); Linda Fritschel & Jim Kiehne (Minneapolis); Mary Hahn (Sacramento, CA); Bob and Barb Hill (Minnetonka); Alice Johnson and Edgar Paulton (St. Paul); Sally Jorgensen (Minneapolis); Tom Logeland (Burnsville); Mr. & Mrs. Malmquist (Minneapolis); Lowell Newby, Peggy Mathes, and Vicki Lundmark (Richfield); Ray Newman (Grand Rapids); Dennis Nordholm (Minneapolis); Joe O'Brien (UM campus); Anna Pidgeon

(Owatonna); Richard and Jean Porter (St. Paul); Doug Pratt (Scandia); Janice Robidoux (Fridley); Martin Rykel and Kelly Meyer (Roseville); Trudi Schaefer (Hager City, WI); Leona & Jerald Shannon (St. Paul); Sarah Sutcliff (Minneapolis); Ted Tonkinson (Plymouth); Karen Van Norman (St. Paul); Sarah Vest (St. Paul); Elizabeth Walton (Minneapolis); John Wild (Minneapolis); and the Missouri Botanical Garden (St. Louis).

FROM THE UM HERBARIUM ****

Flora of North America

The Missouri Botanical Garden in collaboration with several other institutions recently reinitiated the Flora of North America Project. Vascular plants of the U.S. and Canada (the Mexican flora is too imperfectly known as yet) will be considered in an attempt to provide a comprehensive conspectus and database of the region's flora. The Flora is scheduled to appear in 12 volumes to be published over the next 13 years. A major endeavor but one that will be a major resource on North American plants! The project has received substantial initial monetary support and now has numerous experts who will be contributing treatments for various taxa (including Anita Cholewa - Sisyrinchium and Gerald Ownbey - Argemone).

Volunteers

A couple of years ago, a volunteer program was initiated in the U of M Herbarium to help with some of the day-to-day activities (such as mounting and filing of specimens) or occasional special projects. If you would like to become a "Friend of the Herbarium" please contact Anita Cholewa if interested in vascular plants; Dave McLaughlin if interested in fungi; Cliff Wetmore if interested in lichens.

Past and present volunteers who deserve a big thanks for their time are Ron Bendixen, Ellen Fuge, Mike Heinz, Charlotte Menzel, Mary Risdall, Jean Stevens, Carol Stoops, and May Wright.

---- Nita Cholewa

NATIVE PLANT NOTES ****

Leland Hughes, of Warroad, reports that eelgrass (Valisneria americana) was more prolific than usual this past year in Lake of the Woods. He also noted that, in spite of the drought, there were many boreal forest orchids blooming.

The drought also made it easier to see some of the more uncommon bog and aquatic plants. Audrey Engels and I found the sundew Drosera intermedia, white beak-rush Rhynchospora alba, slender liverwort Riccia fluitans, floating bur-reed Sparganium fluctuans, and the bladderwort Utricularia gibba at Savanna Portage State Park.

---- Nita Cholewa

THE DRIFTLESS AREA OF MINNESOTA *****

Travelling through the region of southeastern Minnesota known as the "Driftless Area," one observes readily that the lay of the land here is different from much of the state. It has a different feel with its prominent bluffs, meandering streams and steep-sided river valleys that give way to large expanses of flat farmland to the west.

What makes this area so different? The answer lies in its geological history. Millions of years ago, much of the region that is now Minnesota was covered by a warm inland sea. When the sea retreated, it left behind a very thick layer of sediment, which over time became dolomitic limestone. Much later, over 10,000 years ago, the last lobes of the continental ice sheets retreated to the north. As they melted, they dropped their load of glacial drift, the collection of soil, sand and rock the glaciers had carried southward. This covered the limestone and left large regions of rolling hills. Although there had been several glacial advancements, none had ever crossed over the southeastern corner of Minnesota. This is evidenced by the absence of glacial drift deposits, the sculpted topography, and the presence of the ancient limestone immediately beneath the soil and in cliff outcroppings. Adjoining sections of southwestern Wisconsin, northern Illinois and Iowa also share this geological background.

The varied topography and limestone parent material of the soil have created unique plant habitats that are not found in other parts of the state. Lack of glaciation has allowed the continued presence of species that are considered disjuncts, their continuous range of distribution being much farther south and east or, in some cases, farther north or west.

A mixed oak woods occupies dry ridge tops and steep sloping valleys that face north and east in the area. Pignut and shell-bark hickories (Carya cordiformis, C. ovata), plums and cherries (Prunus spp.), birches (Betula spp.), butternut and black walnut (Juglans cinerea, J. nigra), and hawthornes (Crataegus spp.) are also found here. On steeper slopes that face south or west, "bluff" or "goat prairies" can be found. The prairies' thin soils and dry conditions support xeric prairie grasses and other plants. Wild indigo (Baptisia bracteata var. glabrescens), narrow-leaved milkweed (Asclepias stenophylla), Illinois tick-trefoil (Desmodium illinoense), valerian (Valeriana edulis ssp. ciliata) and white lady's slipper (Cypripedium candidum) are some of the unusual species found here.

At the foot of slopes and in valley bottoms where the soil is deeper and water more available, a recovering maple-basswood forest is present. Here witch hazel (Hamamelis virginiana), golden seal (Hydrastis canadensis), squirrel-corn (Dicentra canadensis), black snake root (Sanicula trifoliata), and Short's aster (Aster shortii) are plants of special interest, as their occurrence in this area represents the north and west extremes of

their ranges.

North- and east-facing limestone and sandstone outcroppings form cliffs that are shady and constantly moist, due to seeping water. This precarious habitat is home to such disjuncts and relicts as montia (Montia chamissoi), jewelled shooting star (Dodecatheon amethystinum), and reniform sullivantia (Sullivantia renifolia). Cold air flowing from caves and fissures at the bottom of steep north-facing limestone bluffs creates a habitat that supports other unusual plants. Among the species found in these cold air drainages are moschatel (Adoxa moschatellina), golden saxifrage (Chrysoplenium iowense) and Wolf's junegrass (Poa wolfii).

Many of the rivers in the region are subject to periodic flooding and subsequently support flood-tolerant species of trees and ground flora. Glade mallow (Napaea dioica), snowy campion (Silene nivea), three-lobed coneflower (Rudbeckia triloba), and button bush (Cephalanthus occidentalis) are examples.

This collection of unusual plants makes the Driftless Area a botanical "hot spot," an area well worth visiting. Be cautious, however, as many of the plants that occur in the Driftless Area are included on the state list of rare species, with classifications ranging from special concern to endangered.

For further reading:

- Coffin, B. & L. Pfannmuller, eds. 1988. Minnesota's endangered flora and fauna. Minneapolis: Univ. of Minnesota Press, 473pp.
 - Curtis, J. T. 1959. The vegetation of Wisconsin. Madison: Univ. of Wisconsin Press, 657pp.
 - Hartley, T. G. 1966. The flora of the "Driftless Area." Univ. of Iowa Studies in Nat. Hist. 21(1):1-174.
 - Ojakangas, R. W. & C. L. Matsch. 1982. Minnesota geology. Minneapolis: Univ. of Minnesota Press, 255pp.
 - Waters, T. F. 1977. The streams and rivers of Minnesota. Minneapolis: Univ. of Minnesota Press, 373pp.
- Nancy Kleven

LEGISLATION AND CONSERVATION: THE WILDFLOWER TASK FORCE *****

The Minnesota Roadside Wildflower Task Force was formed in 1987 by Lieutenant Governor Marlene Johnson to develop a wildflower roadside policy that is in Minnesota's best interest, both now and in the future. This was prompted by renewed interest in wildflowers, the interest of MINNESOTA BEAUTIFUL, and by the designation of the Twin Cities as the host for the 1990 Olympic Festival. The Task Force members represented several state agencies, private organizations, and citizens of Minnesota. MNPS was also represented.

The Task Force was called to recommend ways in which the state can preserve existing native wildflower populations, restore native wildflowers where appropriate, and educate the public

about native wildflowers along Minnesota's roadsides.

Discussion on preservation centered on the lack of identification of existing native areas and the fact that of those known to exist many have already disappeared. The following recommendations were made:

1. Complete the survey of native vegetation along state highways and adjacent railroad rights-of-way in 1989. A similar survey should be initiated in 1989 along county and township roads.
2. Designate and sign roadside rights-of-way throughout the state, where highest quality native vegetation is/has been identified, as "Wildflower Routes." These routes should be identified on the state highway map and incorporated into the Office of Tourism's "Mini Tours."
3. Coordinate planning and environmental review efforts between agencies and organizations with similar and compatible interests in right-of-way acquisition and management. This should include incorporating right-of-way vegetation data into MN/DNR's statewide long distance trail plans (an LCMR funded project '89/90).
4. Environmental Impact Statements and Assessments should specifically address significant and/or rare plant communities before highway/railroad/utility construction projects are designed.
5. Develop a policy that allows for an active and timely mechanism to coordinate the review and intervention in railroad abandonment proceedings between MN/DOT, MN/DNR, and others. This review should include assessment for preservation of significant plant communities.
6. Develop right-of-way management policy guidelines and plans in cooperation with highway departments, railroad companies, public utilities, and the DNR's Roadsides for Wildlife Program. Guidelines should include signing to reduce mowing and herbicide spraying, and techniques such as prescribed burns that would enhance native vegetation.

Restoration of native wildflowers also received a good deal of discussion. There is great interest in restoring native plants to areas where they have been eliminated, and many agencies (such as DNR's Section of Wildlife) are planting hundreds of acres to "natives." Many people do not yet understand that a species has many locally adapted, often distinct, varieties and ecotypes. The local variety of species A may or may not be the same genotype as the variety of species A found in another part of its range. The problem is that there is not enough commercially available seed of local varieties for the huge demand; the seed available for purchase is native to Nebraska, South Dakota, or other areas farther away. This introduction of non-native genotypes may eventually dilute our own strains, which are well adapted to the local conditions. The following recommendations were made:

1. Provide funding (i.e., low-interest loans) and technical assistance to Minnesota native seed growers immediately.

2. Establish a public/private sector committee, including the MN Dept. of Agriculture, to define Minnesota wildflower seed certification by 1990.
3. Establish an interagency plant database to inventory, restore and record existing and planted wildflowers.
4. Support a Midwest native plant regional office sponsored by the National Wildflower Research Center and the University of Minnesota.

We all agreed that education is absolutely necessary. The Task Force further recommended:

1. Establish immediately a Wildflower Council, a public/private sector partnership to promote awareness and oversee the work of private and public organizations.
2. Create a wildflower awards program through MINNESOTA BEAUTIFUL to reward public and private accomplishments to begin in 1990.
3. Launch a wildflower awareness campaign based on educational material defined by an interagency effort to begin as soon as possible.

---- Harriet Mason

1989 BELL MUSEUM NATURAL HISTORY CONFERENCE *****

The Bell Museum of Natural History (UM campus, Minneapolis) will be offering a one day Prairie Conference on **Saturday, 4 March 1989** -- "Prairies: From the Past into the Future - Minnesota's View Through the Tall Grass." This is the 3rd annual natural history conference.

The morning session will include talks by drs. Ed Cushing, John Tester and James Macklovic, and Thomas Sullivan. The morning plenary session will deal with the tall grass prairie over its entire range. The afternoon sessions will cover the topics of Prairie Flora and Fauna, Prairie Management, and Human Aspects on the Prairie. These talks will be focused on Minnesota. There will also be a poster session highlighting prairie related projects and organizations in Minnesota. The cost of the conference will be \$20.00, which includes a prairie related lunch. Registration materials will be mailed in the near future.

(MNPS will be presenting a display for this Conference. Members interested in helping assemble the display should contact an MNPS Board member [see last page of this newsletter]).

---- John Moriarty

UPCOMING EVENTS ELSEWHERE *****

UM Landscape Arboretum

Numerous events and classes have been scheduled for the upcoming year. A complete calendar may be obtained by calling or writing the Landscape Arboretum, P.O. Box 39, Chanhassen, MN, 55317; 612-443-2460. Some of the classes deal with native plants and

are listed here for your convenience (there is a charge for some of these, please contact the Arboretum for full information):

21 Jan - Plant Families: Understanding Basic
Taxonomy, 1-3 pm

15 Mar - Dormant Identification of Shrubs, 1-3 pm

20 & 27 Apr - Spring Woodland Wildflowers, 10-12 am

UM Research Explorations

The UM Continuing Education is again sponsoring this valuable and exciting program. Selected volunteers provide a tax-deductable contribution to the project of their choice and are exposed to the research in a hands-on experience. Some of this year's projects include:

Taking the "Wild" Out of Wild Rice -- August 1989,
UM Central Experiment Station, Grand Rapids MN
Manitoba Battles Mistletoe -- September 1989,
various locales in Manitoba

How Do Beetles Find Host Plants -- July 1989, Cedar
Creek Nat. His. Area, Bethel MN

Archaeological Origin of Wild Rice Harvesting -- June
1989, Itasca State Park

For information on these and other exciting projects, call

MN Nature Photography Club

Upcoming meetings include 13 January, "Wetland Plants and Plant Communities" by Steve Eggers. Meetings are held in the Central Community Center (Rm 22), Hwy 7 & Wooddale Ave. in St. Louis Park, on the 2nd Monday of every month; meetings start at 7pm.

Society for Ecological Restoration and Management

This recently formed, international society is sponsoring a symposium on restoration in national parks and the evaluation of restored ecological communities, 16-20 January 1989, in Oakland CA. For information contact the Society's headquarters, 1207 Seminole Hwy, Madison WI 53711, 608-263-7889.

MISCELLANEOUS NOTES ****

Caution Urged Gardeners

In the fall newsletter, May Wright compiled an extensive list of wildflower seed and plant sources. One section of May's list included "original source of material." The importance of this category needs some additional explanation.

Many wide-ranging plant species vary genetically throughout their range (different "genotypes"). The genetic differences may affect flowering times (e.g., plants at the southern end of the range flower earlier than at the northern end of the range), drought tolerance, tolerance of insect attacks or diseases, or other attributes. Over long periods of time these differences

might lead to the formation of new species and it is, therefore, important to attempt to preserve the natural diversity of genotypes.

Some wildflowers available for sale may represent genotypes other than what is found in Minnesota. These "foreign genotypes" may breed with the local genotypes, causing changes, desirable or undesirable, in the original genetic composition of our natives. It is important then, when buying wildflowers to try to use local seed sources but you can not necessarily tell a genotype just by looking at the outward appearance of a plant. This is why we insist on certain locality information when we have our seed and plant exchanges. If plant materials from non-local sources are used, then their origin should be recorded and noted. Caution should also be taken to keep "foreign" plants from escaping from gardens.

[Editor's note: refer to a previous article: "Preservation of genetic purity" by Douglas Wade, in the spring 1984 issue, for further discussion.]

---- John Moriarty

Conservation Organizations

Numerous organizations are strongly committed to conservation of wildflowers as part of our natural heritage. Many of these organizations have newsletters providing various kinds of information. While MNPS receives some of these newsletters and your editor occasionally quotes appropriate articles, it becomes impossible to keep you informed of all their activities. Therefore, the following list was compiled so you could write directly to some of these organizations if you so desired . . .

American Horticultural Society, P.O. Box 0105, Mt. Vernon
VA 22121

Center for Plant Conservation, Arnold Arboretum of Harvard
University, 125 Arborway, Jamaica Plain MA 02130

Friends of the Wild Flower Garden, Inc., Eloise Butler
Garden and Sanctuary, 5113 N. Bryant, Minneapolis
MN 55430

National Wildflower Research Center, 2600 FM 973 North,
Austin TX 78725

Operation Wildflower, National Council of State Garden
Clubs, 4401 Magnolia Ave., St. Louis MO 63110

Plant Conservation Project, Natural Resources Defense
Council, 1350 New York Ave NW, Washington, D.C. 20005

Thomas Jefferson Center for Historic Plants, Monticello,
P.O. Box 316, Charlottesville VA 22902

Traffic (USA), World Wildlife Fund - US, 1601 Connecticut
Ave NW, Washington, D.C. 20009.

Seeds Needed

The Seed Biology Laboratory in Ottawa, Ontario is in need of various kinds of seed for use in education and research by numerous people. If you would like to make a seed donation, please contact Nita Cholewa . The following seeds

are needed:

Cerastium vulgatum -- mouse-ear chickweed
Glechoma hederacea -- ground-ivy
Lappula redowskii -- western bluebur; stickseed
Malva neglecta -- common mallow; cheeses
Sonchus oleraceus -- field sow-thistle
Zygadenus elegans -- white camas; death camas

New Books

"Minnesota's Endangered Flora and Fauna." Barbara Coffin and Lee Pfannmuller, eds. Available from: Univ. of Minnesota Press, 2037 University Ave. SE, Minneapolis MN 55414. Price: \$49.50 hardcover; \$16.95 softcover.

"Adventures of a 'Wild' Plants Woman." Norma Phillips. Available from: Little Bridge Publications Co., 6700 Splithand Rd., Grand Rapids MN 55744. Price: \$12.95 softcover (plus tax and \$1.75 shipping).

"Atlas of the Rare Vascular Plants of Ontario," Vol. 4. Available from: Rare and Endangered Plants Project, Botany Division, National Museum of Natural Sciences, P.O. Box 3443, Station D, Ottawa, Ontario K1P 6P4.

NEWSLETTER DEADLINES ****

Items for the next newsletter must be received by 15 March. Articles, especially comments/observations of Minnesota plants, are welcome from anyone; the editor reserves the right to edit the items for grammar and clarity. Send items to Dr. Anita Cholewa, Dept. of Botany, University of Minnesota, St. Paul, MN 55108

MERRY CHRISTMAS AND HAPPY NEW YEAR

1989 MNPS ABSENTEE BALLOT

The following slate has been nominated to replace outgoing members of the MNPS Board of Directors (see earlier in this newsletter for background information on the candidates and a list of outgoing members). Board members serve three-year terms (September 1989 - September 1992).

	Yes	No
Cole Burrell	-----	-----
Ellen Fuge	-----	-----
Nancy Sather	-----	-----
write-in candidate	-----	
(candidates must have been a paid member for at least one year)		

Absentee ballots are valid only if signed by paid member:

Member's signature -----

Member's name and address:

1988/1989 MNPS Board of Directors

David McLaughlin, President (1990)
May Wright, Vice-president (1989)
Welby Smith, Secretary (1989)
Ruth Phipps, Treasurer (1989)
Steve Eggers, Director-at-large (1990)
Robin Fox, Director-at-large (1991)
John Moriarty, Director-at-large (1991)
Gerald Ownbey, Director-at-large (1991)
Mary Risdall, temp. Director-at-large (1990)

Minnesota Plant Press may be obtained through membership
in the Minnesota Native Plant Society.

Minnesota Native Plant Society
~~Dept. of Plant Biology~~
~~220 Biological Sciences Center~~
~~University of Minnesota~~
~~St. Paul, MN 55108~~