



# Minnesota Plant Press

The Minnesota Native Plant Society  
Newsletter

Volume 19 Number 4

Summer 2000

## Upcoming Monthly Meetings

Minnesota Valley National Wildlife Refuge  
Visitor Center, 3815 East 80th Street  
Bloomington, MN 55425-1600  
612-335-2323

- |               |  |
|---------------|--|
| 6 - 6:30 p.m. | — Board meeting, Room B                |
| 6:30 - 7 p.m. | — Refreshments, information,<br>Room A |
| 7 - 9 p.m.    | — Program, Society Business            |
| 9 - 9:30 p.m. | — Socializing                          |
| 9:30 p.m.     | — Doors locked                         |

## Programs

Oct. 5

Next meeting.

## Tour of Iron Horse SNA set for Aug. 20

Joel Dunnette will lead a tour of Iron Horse Scientific and Natural Area Sunday, Aug. 20, in cooperation with Zumbro Valley Audubon Society.

Participants will explore the diversity of this mesic prairie remnant and hope to find hundreds of hungry Monarch butterflies feeding on *Liatris*, rattlesnake master and wild quinine. This 35-acre SNA is between, and protected by, two rail beds— source of the Iron Horse name.

Meet either at 2:30 p.m. at the Salem Town Hall, seven miles southwest of Rochester on Co. Rd. 25; or at 3 p.m. at the north end of the prairie, one mile east of Hwy. 56 on Twp. Rd. N, just south of Hayfield. RSVP to Joel, , or to Deb Anderson, . E-mail Deb at

## MNPS to offer grants for native plantings

by Deborah Strohmeier

As was mentioned in the spring newsletter, the Minnesota Native Plant Society is setting up a program to help encourage the awareness and use of native plants. It will provide grants of native plants to homeowners. The program, tentatively called "Think Native," will provide:

- Educational resources;
- Lists of native plant suppliers and landscapers;
- Lists of suggested plant species;
- Native plants.

In 2001 we will begin a pilot program. Volunteer administrators will be the core of the program. Each administrator will submit a proposal that defines his or her project. This proposal will follow MNPS Board guidelines and include such items as a definition of the project, scope and area. This approach is intended to enhance the efficiency of the program by making suitable, local accommodations possible. For instance, an area may be jointly sponsored by another organization.

A designated fund will be created for the Think Native Program. Starting this fall, anyone may donate money to it by stating that their funds are for the program. These funds will be solely for the purchase of native plants. The MNPS will provide basic support and cover administrative expenses. We welcome feedback from any member. Further details may be obtained by contacting Deborah Strohmeier or David Johnson.

## Gardeners, beware of state's endangered species law

by Nancy Sather

As a followup to last spring's symposium, members of the society may now be more aware of the the unanswered biological questions that underly the provisions of the Minnesota state endangered species law.

Please be aware that it is illegal to gather, take, buy or sell plants listed as endangered or threatened in the state of Minnesota. This requirement applies to the sale or purchase of endangered and threatened plants by nurseries located within the state to purchasers planting in the state.

Because some Minnesota wildflower nurseries also serve patrons in other states, they may carry plants on the Minnesota list. It is not

*Continued on page 3*

## MNPS Web Site

<http://www.stolaf.edu/depts/biology/mnps>

# Aspects and Opportunities

*by Joel Dunnette, MNPS president*

I see several different aspects of native plants that Minnesota Native Plant Society should keep in mind. In my opinion, MNPS can support each of these aspects, and can be a significant contributor in several.

- We need to enjoy native plants and share that enjoyment with others. This emotion is needed to drive our support of the other aspects.
- We need research so that we know what native plants and communities are most threatened, and so that we know how native plants work and interact with the world around them. And how to best conserve them.
- We need education so that our members, the general public, public agencies and private companies know why native plants and communities are valuable, and how to conserve and use them.
- We need conservation action so that the knowledge becomes useful. And native plants and communities not only survive, but expand.

Each of us can contribute to one or more of these aspects, in personal and public ways. And each of us should contribute, in the ways that we can. Every positive contribution, no matter how small, counts!

Opportunities are everywhere. They come in all sizes. You can enjoy and help others enjoy native plants by sharing what you know, and by organizing field trips. Everyone of us has knowledge and enthusiasm that others would love to share. You can read up on native plants, talk with more experienced persons, get some experience in your yard or in the many public sites that are looking for observers and volunteers. And when you share that knowledge with friends and neighbors, we all benefit. By planting natives in your yard or helping with neighborhood or public projects you can advance the conservation cause.

There is a rising tide of interest in native plants, and of action to use and conserve natives. It is a wonderful time to be involved. Join in!

If you want suggestions of ways you can participate, whether large or small, please contact me or other board members. I am sure we can find something that will fit you.

**The Minnesota Native Plant Society**

**Minnesota Plant Press**

Gerry Drewry, editor

The Minnesota Native Plant Society is a tax-exempt 501 (c)(3) organization as determined by the U.S. Internal Revenue Service. Contact the society by e-mail at: [mnp@altavista.net](mailto:mnp@altavista.net). Dues for regular members are \$12 per year; for students and seniors, \$8; for families, \$15; for institutions, \$20; and for donors, \$25. All dues include a newsletter subscription. Four issues are published each year. Make checks out to: Minnesota Native Plant Society; mail them to: Minnesota Native Plant Society, 220 Biological Sciences Center, 1445 Gortner Ave., St. Paul, MN 55108.

## **MNPS Board of Directors**

**President:** Joel Dunnette,

**Vice-President:** open

**Treasurer:** David Johnson,

**Secretary:** Deborah Strohmeier,

Virginia Card,

Meredith Cornett,

Linda Huhn,

Harriet Mason,

Ethan Perry,

Nancy Sather,

Gerry Drewry, ex-officio; address above.

## **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 and ecosystems.
6. Preservation of special 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.

# Research is providing 'how-to' clues about white pine regeneration

by Mary Hoff

*(Written for the Minnesota Department of Natural Resources, Division of Forestry Publication, "Roots," May, 2000. Reprinted with permission.)*

What mix of environmental conditions best favors white pine regeneration after forest disturbance? If there is such a thing as a secret formula for giving white pine the best possible chance of regenerating in the wake of fire or logging, Scott Weyenberg knows right where it is: Buried deep within the volumes of data he collected over four months last summer in northeastern Minnesota.

Scott, a graduate student working with Lee Frelich and Peter Reich in the University of Minnesota's College of Natural Resources, is the proud owner of one of the world's largest collections of information on site conditions associated with white pine seedlings and saplings growing on formerly logged or burned forest sites. His hope is that the information will yield valuable insights that can be used to guide forest managers as they work to restore white pine populations under various conditions in the northern part of the state.

"These data could help managers tailor practices to specific sites," he says. "This information may be beneficial in determining the usefulness of management practices such as prescribed burning or silvicultural systems."

## Research plots

To try to get a handle on what conditions are most favorable for growing new white pine, Weyenberg established 2,000 research plots along transects extending out from stands of white pine on 30 burned sites and 30 logged sites on the Superior National Forest. Over more than a hundred days in the woods (during which time, he notes, it rained a

total of 25 inches) he recorded the numbers of white pine seedlings and saplings on each plot, as well as detailed information about the conditions under which they were growing: type of disturbance, type of substrate, slope, aspect, position, ground cover, shrub cover, sapling competition, soil characteristics, site physiography, and total basal area of seed trees.

## Collecting the data

Scott believes that buried in the mass of information he has collected are powerful clues to what kinds of conditions are most conducive to white pine regeneration. As he wades his way through the data in the months to come, he hopes to unearth young white pines' "secrets to success" and translate them into concrete recommendations for managing disturbed forests in a way that **maximizes their potential to produce tomorrow's tall pines.**

Until last month, the toughest challenge Weyenberg had encountered in his research probably was trying to calculate basal area and volume of a stand full of mature white pines that had been transformed into a jumble of downed trees by last summer's July 4 blowdown. Now, however, the task has turned to something he considers even more grueling: sitting at a desk conducting detailed statistical analyses of all of the data he has collected. "I like the field component," he says. "What I don't like is this part. It's a lot more taxing than hiking three miles through the woods in the rain."

## Trends

Though Scott is only beginning to get a good look at the data, he already is seeing some interesting trends. Preliminary results ("the key word here is 'preliminary,'" he says) suggest that seedlings tend to be more abundant on burned plots than on logged plots. However, the same

pattern does not seem to hold true for saplings. On young sites, saplings seemed more prevalent on logged plots than on burned ones — a finding he suspects has to do with the existence of advance regeneration, which tends to be left behind after logging but destroyed by fire. Interestingly, however, he sees no significant difference between sapling populations on burned and logged plots when he looks at older sites, — a result he attributes to the higher prevalence of competing vegetation after logging than after fire.

## Years to come

What remains buried in the data is what Scott believes will be some valuable information about the relationship between specific growing conditions and regeneration success. On some of the experimental plots, the number of seedlings did not fall off exponentially with distance from seed source, as is the general rule for tree regeneration. Why not? Scott suspects it has to do with some of the environmental characteristics he measured, such as substrate or soil type. His next goal is to find out just what those influential characteristics are and derive from them specific recommendations for management of white pine regeneration — for example, the proper number of seed trees to leave, the value of using herbicide to decrease competition, and the types of substrate that promote effective white pine regeneration.

## Ramsey County planting natives in its parks

Prairie restoration specialists are planting 74 acres of parkland in Ramsey County this year. The long-term goal of the parks department is to grow prairie plants on 10 percent of the park system's 6,000 acres. Native species now grow on 2 percent of the parkland.



## Plant laws

*Continued from page 1*

technically illegal for them to sell plants that are progeny of non-Minnesota stock to people outside the state of Minnesota.

If a Minnesota customer, whether an individual or a unit of government, purchases plants on the Minnesota list, that purchase is in violation of the Minnesota endangered species law. It is not enough to assume that if a plant on the Minnesota endangered and threatened list is in a nursery catalog it is OK to purchase it. Please beware of making such illegal purchases by cross-checking the catalogs of Minnesota nurseries with a copy of the state endangered species list.

You can get a copy of the list by contacting the Department of Natural Resources, Division of Ecological Services, DNR Box 25, 500 Lafayette Road, St. Paul, MN 55155. At the same time you might want to inquire about a newly-released handbook on prairie restoration prepared by the Scientific and Natural Areas Program.

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### **Linda Huhn joins MNPS board**

New board member Linda Huhn is an avid gardener and uses as many native plants as possible. She likes to photograph butterflies, which led her to adding *Echinacea*, *Liatris*, goldenrod and Culver's root to her garden.

Linda joined The Nature Conservancy in the early '80s. "Going on TNC field trips introduced me to beautiful areas of Minnesota, and I became very interested in learning all the native plants in our state," she said.

She joined the MNPS in 1989 and served as secretary from the spring of 1994 through the summer of 1995. "I have always enjoyed my membership. MNPS people are my kind of people. I have learned so

## Joel Dunnette is new president of the MNPS

The Minnesota Native Plant Society Board of Directors held its quarterly meeting June 3 at Gerry Drewry's home. The board members elected Joel Dunnette president and Deb Strohmeier secretary. David Johnson will continue to serve as treasurer. The vice-president position is still open.

Three members retired from the board. They are Catherine Reed, David Johnson and Roy Robison.

Cynthia Lane resigned. She is now working in Coral Gables, Fla., at Fairchild Tropical Garden's research center as a plant conservation ecologist.

New (first-year) board members are Meredith Cornett, Ethan Perry and Esther McLaughlin. Second-year members are Harriet Mason, Nancy Sather and Deb Strohmeier. Third-year members are Virginia Card, Joel Dunnette and Linda Huhn, who was appointed to serve the last year of Cynthia Lane's term.

Most of the committee positions for 2000 - 2001 were filled, but several volunteers are needed. The committee chairs are as follows.

**Program and Lecture Committee:** monthly program, Virginia Card; seed exchange, Dave Crawford; plant sale, Dave Crawford and Gerry Drewry; audiovisual, Dave Crawford and Joel Dunnette; refreshments and clean-up, Meredith Cornett and rotating board members.

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much about plants and Minnesota ecosystems and look forward to continuing my education in that respect, and especially to the experience of serving on the board."

Linda is a freelance event photographer and sells some nature photographs. She is a native of New Ulm, has degrees in English and journalism, and lives in Minneapolis.

**Education and Outreach Committee:** Harriet Mason, chair; web page and listserv manager, Charles Umbanhowar; technical inquiries and display board, Deborah Strohmeier.

**Membership Committee:** David Johnson and Diane Hilscher, chairs; roster and mailing labels, David Johnson; new member inquiries and packets, Diane Hilscher; membership table, Ruth Phipps and David Johnson.

**Publications Committee:** newsletter editor, Gerry Drewry; brochure and stationery, Roy Robison; wildflower guide, open; newsletter mailing, Chuck and Ellen Peck.

**Conservation Committee:** Ethan Perry.

Symposium, open.

Field Trips, Deb Anderson.

Name Tags, Ruth Phipps

Mail Pickup and Distribution, Ethan Perry.

Historian, open.

Postcards, open.

Keeper of the Key, Dave Crawford.

### **Landscaping assistance project**

The board discussed the new landscaping assistance program, which is to start in 2001. They approved \$500 for administration of the program. Fundraising for money to purchase plants will start this fall. Deborah Strohmeier is chair of the project. She is assisted by Dave Crawford, who will administer the program in the White Bear Lake area, and Shelley Shreffler, of the St. Paul Neighborhood Energy Consortium. Details of the program are still being worked out. Deb will talk about it at the October meeting.

Treasurer David Johnson reported that the symposium was attended by 210 people and had a net profit of \$838.88, not counting new memberships or sales of the wildflower guide.

## Hop hornbeam

by Charles Umbanhowar

*Ostrya virginiana* is a small tree, a member of the birch family, and it is common to many of the forests of Minnesota. It is most often called hop hornbeam, but goes by a variety of other common names including leverwood, deerwood, and ironwood. Ironwood is an especially confusing common name because it is also applied to *Carpinus caroliniana*, which is also a member of the birch family.

Hop hornbeam is distributed throughout much of northeastern North America, extending west to Minnesota. It grows in dry oak forests as well as more moist forests like the Big Woods that are now dominated by sugar maple and basswood. Hop hornbeam grows to a height of 20 - 30 feet and rarely makes it into the canopy. It can also be found growing in oak savannas, and it is possible to see dense stands of hop hornbeam growing as the canopy dominant on what are apparently abandoned pastures. It is highly shade tolerant and grows slowly, even under conditions of high light.

In addition to its short stature, hop hornbeam can be recognized based on (a) multiple trunks, (b) a thin, brown, scaly or shaggy bark that flakes easily when rubbed, (c) horizontal branches that end in fine twigs and alternate leaves and buds.

The leaves are thin and held horizontally. They are sharply pointed, have several prominent veins, and are finely toothed. Male and female flowers are born in separate catkins (pendulous clusters of flowers), and the female catkins have an inflated bract (i.e. modified leaf) that encloses the fruits.

The female catkins resemble the flowering clusters of hops used to bitter beer — hence the "hop" of hop hornbeam. But there is no relationship between hops and hop hornbeam other than the name; beer made with the female catkins is likely to have a very nasty flavor.

## Is buckthorn reducing numbers of songbirds?

The proliferation of exotic shrubs such as buckthorn and honeysuckle may be contributing to the declining populations of some songbirds.

For six years, Christopher Whelan, avian ecologist at the Illinois Natural History Survey, and Kenneth Schmidt, a researcher at the University of Memphis, collected data on 585 American robin and wood thrush nests in the Morton Arboretum near Chicago. They discovered that birds that nested in exotic honeysuckle and buckthorn were almost never successful. Their nests were destroyed or raided by predators before the young birds had fledged.

Whelan and Schmidt attributed these failures to the exotic shrubs. Honeysuckle has replaced most of the native arrowwood, and buckthorn has crowded out the hawthorn. Honeysuckles have strong branches that encourage birds to build nests lower than normal, within easy reach of

raccoons and other marauders. The branches are strong enough to support the weight of the predators. Buckthorn does not have the protective thorns found on hawthorns, the researchers said.

When the birds had a choice between native and exotic shrubs, they often chose to build their nests in the exotic shrubs, which leaf out earlier. In the six years of the study, the number of robins nesting in honeysuckle increased from 5 percent to more than 30 percent. Wood thrushes chose exotic shrubs about half of the time. Almost all of these nests failed. When a robin's nest in an exotic shrub was destroyed, the robin usually built its next nest in a native tree. But a wood thrush whose nest was destroyed would continue to build nests in the exotic shrubs.

Is this a problem in other parts of the country? "If exotics have invaded to the same extent throughout their whole geographical range as they have in Chicago and the Midwest, and if birds are using them the way they're using them around here, my guess is it's a big problem," Whelan said.

The study was published in the December issue of *Conservation Biology*. Wesley Hochachka, assistant director of bird population studies at the Cornell Laboratory of Ornithology, was skeptical, but said that the idea merits further study, according to the Associated Press report.

Scott Robinson, head of the University of Illinois Department of Ecology, Ethnology and Evolution, said that the study may boost efforts to restore native plants. "Some people always assumed that if birds were nesting in a habitat, it must be good habitat," he said. "But some habitats are inappropriate."

(Information is from an Associated Press report Jan. 20, 2000.)

### Wildflower guide sale

The "Guide to Spring Wildflowers in the Twin Cities Area" booklet is on sale to members and businesses who will resell it for \$3 a copy, if they purchase a minimum of 10 copies. The regular price is \$5 each. For more information, contact MNPS Treasurer David Johnson at \_\_\_\_\_ or \_\_\_\_\_

The word hornbeam comes from the old English and refers to the very dense nature of the wood and its use in construction or as posts. The finer twigs of hop hornbeam were used to make baskets, and the inner bark was boiled and used to cure fever and a range of other conditions.

(This is an abstract of a Plant-of-the-Month Talk.)



# Debunking common tree myths

by Kent Honl,

Tree myths are widespread and have caused irreparable damage to many trees. Each myth has its own implications for the well-being of trees. An understanding of tree biology helps to debunk the myths.

Four of the most common myths are:

- Trees are big and tough;
- Depth of root growth equals height of crown;
- Trees should be thinned to prevent storm damage; and
- Tree wounds need to be treated with paints or sealers.

## Myth 1

**Trees are big and tough; nothing can injure them.**

Trees are massive creatures that appear more or less static and unchanging. In fact, they are easily destroyed by carelessness and are mutilated by well-intentioned people. Trees often die slowly — we don't see the effect right away.

**Fact: Trees are energy-capturing systems.**

Leaves collect energy from the sun. The tree stores sugars in its woody tissue — its branches, trunk and roots. The roots hold up the tree, collect water and minerals, and store energy. There is a finely tuned balance between the leaves and roots.

Tree activity varies according to the season. During winter dormancy, energy storage is high. Spring leaf expansion is the season with the lowest stored energy. Summer is energy storage time. In the fall, roots grow and the tree prepares for dormancy.

When the system works properly, the tree collects more energy than it uses to survive — to grow, defend itself, set seed, etc. There are many ways to disrupt this system, as we see as we look at the next myths.

## Myth 2.

**Depth of root growth equals the height of the tree's crown.**

Very few species of trees have deep taproot systems. Most trees have almost all roots within three feet of the soil surface. Many have roots just below (12 inches) the surface of the soil.

**Fact: Roots grow in air spaces between soil particles and need oxygen to survive.**

Roots live in association with other organisms — mycorrhizae. It is very easy to compact soil and destroy roots. Problems are associated with planting depth and methods. Effects of grade change may take years to show up. Prevention is the best approach with construction damage. It is better to remove a tree in the beginning than to try to save it when it has been irreparably damaged. Fertilization and regeneration help salvageable trees. Root problems can show up as crown dieback, because the system has been disrupted.

## Myth 3

**Trees should be pruned to prevent storm damage.**

Tree branches do not break because they form a "sail" in high winds. Leaves can fold and curl out of the way; branches flex and accommodate. Branches break because of weak attachment, decay and poor tree health.

**Fact: Pruning harms trees**

Pruning removes wood needed to capture and store energy in leaves and wood. Thinning forces regrowth of weakly attached branches that will become more hazardous than before. Thinning to let more light through to the grass will do the same thing — cause tree stress. Proper pruning dosage is limited to deadwood, stubs, weakly attached branches, and correction of structural problems.

## Myth 4

**Tree wounds need paints or sealers to aid 'healing.'**

This actually contains two myths.

1. Trees "heal" their wounds the way we do: and

2. Trees need help from people to do this.

**Fact: Trees seal wounds (build walls around them).**

Healing means to replace damaged tissue with new tissue. Trees seal their wounds by building walls around them and adding new tissue over them. Trees prevent the advance of decay with internal barriers. Contact of oxygen on the wound is necessary to start this process; paints prevent this from happening.

The branch collar is a built-in protection zone within tree branches. Improper pruning cuts remove the branch collar and allow decay to advance in the tree. It is best to use the natural defenses of the tree and get out of the way.

*(This is a summary of a talk by Kent Honl, Rainbow Treecare Arborist)*

## Nitrogen overuse reduces diversity

As nitrogen fertilizer is applied over a period of time, progressively fewer species of plants survive. The rate of this decline levels off at 40 to 70 percent. Surviving species are most often the less desirable, non-native ones, such as quack grass.

These are some of the conclusions that University of Minnesota Ecologist David Tilman has reached after analyzing plants in 207 research plots for almost 20 years. Tilman announced his conclusions Feb. 20 at the annual meeting of the American Association for the Advancement of Science in Washington, D.C.

To get world food production to double over the past 35 years, farmers have had to use seven times as much nitrogen as they used to, effectively doubling the amount that already comes in from the atmosphere, Tilman said. He expects three to four times more nitrogen to be used by 2050 than is used today. Solutions include more efficient use of nitrogen, such as timing fertilizer applications, and removing more of it from sewage.

# The story of Seminary Fen

by Fred Harris,

"Seminary Fen" consists of a complex of wetlands on deep peat deposits within the valley of the Glacial River Warren in the eastern end of Carver County. Its name comes from its close proximity to the former site of the Assumption Seminary. It contains an outstanding example of a calcareous fen, which is Minnesota's rarest wetland type.

Calcareous seepage fens may be defined as peat-accumulating wetlands formed in areas of upwelling, mineral-rich (mainly calcium and magnesium bicarbonates) groundwater. They form on shallow slopes where groundwater emerges from permeable, calcareous material such as coarse, calcareous glacial drift. Peat accumulation occurs as a result of slow decomposition rates from low temperatures and anaerobic conditions.

As upwelling groundwater reaches the surface of the wetland, its hydrostatic pressure is released, causing the outgassing of dissolved carbon dioxide and the precipitation of carbonate minerals. As a result, calcareous fens contain relatively high mineral concentrations (above 30 mg/l. calcium) and high pH (ranging from 6.8 to 8.5). Seminary Fen occurs on top of a sandy/gravelly outwash terrace. Groundwater feeding the fen flows through the bluffs forming the north side of the valley. These bluffs consist of calcareous glacial till.

Based on well studies at Savage Fen a few miles downstream, the major aquifers supporting the fen are probably in the bedrock underlying the till, principally the Prairie du Chien (dolomite) and Jordan Sandstone formations.

Today, Seminary Fen consists of a mosaic of wetland types with several areas of calcareous seepage fens corresponding to points of greatest groundwater upwelling.

The other wetland communities include shrub swamp, wet meadow, emergent marsh, and cattail marsh.

Assumption Creek, a natural trout stream, flows along the edge of the main body of the wetland. The building site is on top of a ridge of gravelly outwash at the south edge of the outwash terrace. Below the terrace to the south are more wetlands and small areas of fen.

The calcareous fens in the site occur on shallow mounds of peat and are dominated by short-statured graminoids, such as sterile sedge (*Carex sterilis*), prairie sedge (*Carex prairea*), three square (*Scirpus pungens*), and marsh muhly (*Muhlenbergia glomerata*). Peat deposits are greater than 12 feet deep, indicating that the deepest peat layers in the fen are 8000+ years old and started forming soon after the glacial river subsided.

The fen contains a rich diversity of very rare plant species, several of which are found in Minnesota only in fens.

These plants include the small white lady's slipper (*Cypripedium candidum*), sterile sedge (*Carex sterilis*), beaked spike-rush (*Eleocharis rostellata*), twig-rush (*Cladium mariscoides*), edible valerian (*Valeriana edulis* ssp *ciliata*), whorled nut-rush (*Scleria verticillata*), and hair-like beak-rush (*Rhynchospora capillacea*). The *Cladium*, *Eleocharis*, and *Scleria* are species of Atlantic coastal salt marshes; the latter two are disjunct in Minnesota. *Eleocharis rostellata* was first discovered in the state in 1980. Other characteristic plants in the fens include *Gentianopsis procera*, *Parnassia glauca*, *Salix candida*, and *Lobelia kalmii*.

By law, calcareous fens "may not be drained, or otherwise altered or degraded." Calcareous fens are the only native plant communities to have such a high level of protection in the state. In spite of this, it will be difficult to protect Seminary Fen in the rapidly developing cities of Chaska and Chanhassen. The most critical factor will be to maintain the aquifers that supply groundwater to

# Plant Lore

by Thor Kommedahl

## What is a yew?

The American yew, sometimes called ground hemlock, is *Taxus canadensis*, a low evergreen shrub sometimes classified with conifers.

## Is it a conifer?

No, you can tell a yew from other flat-needled evergreens by its lack of cones and its cuplike red fruits each containing a single seed; fruits look like berries, each called an aril.

## Where do yews grow?

Yews grow in woodlands and forests of northern and southeastern Minnesota, as well as in other northern states and Canada.

## How did it get its name?

*Taxus* is Latin for yew which means bow, as it once was the traditional wood for archers' bows.

## What is yew used for?

It is a popular ornamental foundation planting on north sides of houses and buildings. But other species are used also such as *T. cuspidata* and *T. baccata*.

## Does it have medicinal uses?

Yes, American Indians used minute amounts of leaf tea for a variety of ailments. *Taxol*, isolated from *T. brevicola*, a western species, is used to treat breast and ovarian cancer.

## What about poisons?

The alkaloid *taxine* is present in yews and is poisonous to humans and livestock. Ingesting as few as 50 needles has been fatal. The red fruit is non-toxic, but the seed within is very poisonous. Two orangutans in Como Zoo died recently (7-2-00) from ingesting pruned yew branches. The toxin causes cardiac and respiratory failure. In days of yore, yew sap was used by the Celts to produce poisonous arrows.

the fen. The DNR is currently negotiating to purchase a major portion of the site.

(This is an abstract of a talk by Fred Harris, plant ecologist, DNR.)

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