



Minnesota Plant Press

The Minnesota Native Plant Society
Newsletter

Volume 14, No. 2

Winter 1995

Upcoming Monthly Meetings

Minnesota Valley National Wildlife Refuge
Visitor Center, 3815 East 80th Street

Bloomington, MN 55425-1600 612-335-2323

5:30-6:30 PM—Board Meeting, Room B
6:30-7 PM—Social Meeting, Room A
7-8:45 PM—Regular Meeting, Auditorium
9 PM—Doors close sharply at 9 PM.

January 4, 1995—Bettina Darveaux, UM Plant Biology, *Benefits of Growing Native Prairie Grasses*; POM: prairie drop-seed (*Sporobolus heterolepis*) by Dean Hansen.

February 1—Renay Leone, Minnesota Land Trust, *Minnesota Land Trust: Preserving Native Landscapes*; POM: partridge-pea (*Cassia fasciculata*) by Douglas Owens-Pike.

March 1—Stan Tekiela, author, *Eatable Mushrooms: Gearing Up for Morels*; introduction to field trips; annual meeting and election of Board Members.

April 5—Steve Eggers, ecologist, *Minnesota Prairie Preserves: A Photographic Journal*; POM: reed-canary-grass (*Phalaris arundinacea*) by Charles Umbanhower.

May 3—Plant Photography Contest, Minnesota Nature Photography Club; Annual Plant Sale.

*POM = Plant-of-the-Month

•To pool rides to the **Minnesota Valley National Wildlife Refuge**, please call—*well in advance*—Grace Gray who will coordinate pooling

•For **Winter Weather Emergency**, contact Diane Hilscher, or her answering phone message to find out if the **Center** is open or not.

Biodiversity, habitat destruction and the extinction debt

by David Tilman

Ever since Darwin, Wallace, and other naturalists began cataloging biological diversity, ecologists have wondered why the earth harbored such a rich array of species. This became known as the “paradox of diversity” because available theory predicted there would be no more coexisting species than there were resources limiting them. Our research in the savannas and grasslands of the Cedar Creek Natural History Area in east-central Minnesota has shown that nitrogen, water, and light are the only resources limiting plants. Three limiting resources, however, could not explain the long-term coexistence of more than 250 native plant species in a grassland field.

Our research, begun in 1982, revealed that the abundance of native prairie plants was also limited by their ability to disperse. Moreover, we found a tradeoff between the ability of a species to compete for soil nitrogen versus the species' ability to disperse. Specifically, the best competitors for nitrogen were such native bunchgrasses as little bluestem and big bluestem, which allocated 75% to 85% of their growth to roots. On these low nitrogen soils, however, they only allocated a fourth to a half percent of their growth to seed, and were slow to invade fields and spread across them. In contrast, another species such as native bent grass was a poor competitor (35% to root) but an excellent disperser (30% to seed). Other grasses and forbs had intermediate tradeoff values. (*continued on page 2, column 2 Biodiversity...*)

This is an abstract of a talk given for the MNPS by David Tilman, University of Minnesota, at the meeting on 5 October 1994.

Is MNPS worth supporting?

"One makes a living by what one gets. One makes a life by what one gives", so wrote Dr. Raymond P. Shafer, President of Allegheny College. Institutions and organizations succeed to the extent that its members believe in them and give of their time and talents. That 72 to 110 have attended meetings this past fall attests to the interest in MNPS and its programs. But we also need participation in the activities of the Society to do more than go to meetings, interesting as they are.

For example, we need service on your Board. The Board of Directors has listed some expectations from prospective board members:

- Serve a 3-year term
- Attend at least 8 of 10 scheduled board meetings
- Participate in making the symposium a success
- Accept at least one of the following responsibilities: 1) board officer, 2) chair or serve as a liaison for one of the following committees: membership, program, symposium, field trip, newsletter, conservation, publication, outreach, and finance, 3) schedule, maintain and store display board, or 4) monitor other organization's conservation efforts and legislation.

We have approximately 400 members in MNPS who represent a good cross section of plant interests and, to be sure, many are already active and busy in their own careers in these fields. It is difficult for many to take on additional responsibilities. But if one of us does not do it, then who will?

We, on the Board, ask each of you to take another look at your schedule and interests, and see if there is time and dedication to give to one of these activities, at least for a term. The more of us that participate in the Society, the more each of us will benefit from the Society's existence.

Life is more than living. The Board President, Becky Schirber, would be delighted to have you call and tell her that you are interested in one of the committees or the Board. Think about it as a New Year's resolution!

Biodiversity..., continued from page 1

When we built this tradeoff into a mathematic theory, we found that an almost unlimited number of plant species were predicted to coexist. Additional field tests have also supported the theory, and studies in other habitats suggest that this may be a major factor enabling numerous plant species to coexist in nature.

We next used this solution to the paradox of diversity to predict how habitat fragmentation and destruction might affect native ecological communities. We found that the best competitors were more threatened than poor competitors with extinction by habitat destruction. Moreover, we found a 50 to 500 year time delay between habitat destruction and such extinction. Thus, recent habitat destruction has created an "extinction debt." Based on the amount of habitat destruction that has occurred worldwide, the extinction debt now is from 100,000 to 300,000 species. This means that from 100,000 to 300,000 of the world's best competitors are now threatened with extinction. However, the 50 to 500 year time delay means that many of these can be rescued if habitats are restored.

Our other research has asked if the loss of biodiversity matters. Our 13-year study of 207 permanent grassland plots has shown that the more plant species there are in the plot, the more stable their productivity. Biodiversity thus helped minimize the effects of climatic variation, including drought, on the functioning of our grassland ecosystems. In total, our research has uncovered how it is that high diversity is maintained in prairie, the importance of that diversity for the long-term stability of prairie ecosystems, and the possible effects of loss of habitat on the diversity of the remaining fragments of the prairie. Efforts to preserve and restore prairie and other native plant communities can thus provide an important safeguard of our region's biological diversity.

The Minnesota Native Plant Society

Minnesota Plant Press

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Membership dues are \$10 per year for regular members and includes subscription to the newsletter; dues for students and seniors are \$8, for family \$12, for institutions \$20, and donors \$25. Checks can be made out to: Minnesota Native Plant Society, and sent to: Minnesota Native Plant Society, 220 Biological Sciences Center, 1445 Gortner Avenue, St. Paul, MN 55108.

Four issues are published each year.

MNPS Board of Directors

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Effects of site on forest ecology

by James B. Calkins

ALL plant species have evolved to fit into specific niches in the environment. Plants do not exist as isolated individuals; they are integral parts of a broader ecosystem and are found in ephemeral communities of plants with similar site requirements. Plant performance on a particular site depends on interactions between the genetic potential of the plants and their environment.

Environmental factors.—Environmental factors involved in plant establishment and subsequent performance include temperature (air and soil), light (photoperiod, quality, and quantity), moisture, mineral nutrition (fertility, availability, uptake), and gas exchange (O_2 and CO_2 in air and soil). These plant growth factors are mediated by specific site attributes including geography (aspect/slope), exposure (sun, wind), soil characteristics (parent material, structure, fertility, pH, soluble salt concentrations, porosity, water-holding capacity, aeration, compaction, surface condition, beneficial and harmful macro- and micro-organism populations), elevation, latitude, drainage, precipitation, microclimate, and the presence or absence of fire.

Biotic factors.—Plant-to-plant and plant-to-animal interactions (competition and symbiosis) also play an integral role in plant establishment and performance. Competition for available resources (not necessarily unfavorable), predation or parasitism, mutual associations (symbiotic, seed dispersal, and pollination relations), allelopathy, human activity involving habitat management vs. destruction (barrier creation or fragmentation, drainage modification, erosion enhancement, fire prevention, logging practices, farming practices, species diversity reduction, pollution, and exotic species introduction) are

factors that mediate performance and survival of plants.

Knowledge of site factors important.—As stewards of the environment and promoters of native plants, we must be cognizant of these genetic and environmental factors that affect plant establishment and performance. To culture and subsequently establish native plants in the landscape, growers and landscape design and installation personnel must understand the special requirements for each plant, including plant tolerance (light, pH, moisture), and specific site requirements. We must understand that most landscapes have been so extensively disturbed that they can no longer be considered native sites and will not support previously grown native species without substantial modification. Many of our most adaptable native species such as *Acer saccharinum*, *A. negundo*, *Populus deltoides*, and *Salix nigra* are scorned by the public, even individuals with a special interest in native species. This bias must be discouraged because these are the core species adapted to our environment and are an integral part of native ecosystems.

Difficulties in propagating native species.—The main reasons why many unusual native species are unavailable in the nursery trade are that they are difficult to propagate and culture especially in containers, and they are difficult to transplant and establish in a landscape setting. Most plants available in the nursery trade are tolerant of a broad range of environmental conditions and they are easy to propagate, culture, and transplant. Such plants are economical to produce and suffer relatively few losses once transplanted to the landscape. Perhaps the main factor that determines the ability of a plant to survive on disturbed sites is the capacity to survive on

compacted soil, which essentially is soil low in oxygen. Many of our difficult-to-grow native species are intolerant of the compacted, low oxygen soils, and hot, dry conditions that are common in home landscapes and other disturbed sites. Protection of the soil surface with an organic mulch that protects soil from further compaction, increases soil organic matter content, maintains soil moisture, moderates soil temperature, and reduces root and crown injury associated with weed and turf management is perhaps the most beneficial cultural practice employed to promote plant survival. Culture of many of our native species requires a better understanding of their cultural requirements and the development of production systems that meet these needs. Consumers must also be educated about site modifications required prior to planting and the cultural requirements thereafter for successful establishment and long term performance.

Planting the right plant in the right place.—We should always remember that the majority of problems associated with plants, both native and exotic, in the landscape can be traced to planting the wrong plant in the wrong place. By learning the particulars of our sites and being aware of the special site requirements of each species that we are attempting to establish and grow, we can avoid many problems associated with establishment and long term survival and performance of landscape plant materials.

This is a summary of a talk given by James Calkins of the University of Minnesota Department of Horticultural Science, to the Minnesota Native Plant Society meeting, 2 November 1994.

Briefs from the Board

•It was announced that 110 people attended the October meeting, 82 the November meeting, and 72 the December meeting. John and Jackie Buffalow were thanked for their contributions in arranging for the refreshments at these meetings!

•The Board is discussing the establishment of a Finance Committee and an Outreach Committee. Finding personnel for these committees is a problem. The Board is seeking volunteers for Society activities.

•Plans for the spring symposium are underway. The topic is expected to be *Coniferous Forests—Wet and Dry*. Don Knutson will adapt this theme to the speakers and topics selected. Esther McLaughlin has agreed to serve as Facilities Chair. Several sites are being considered.

•Esther McLaughlin has been appointed by the Board to fill the membership on the Board vacated by Mark Leoschke. Esther had served previously as the Symposium Facilities Chair.

•Diane Hilscher agreed to serve as the Winter Weather Emergency Contact to handle calls as to holding of regular meetings during inclement weather (see box on page 1).

•Arden Aanestad agreed to serve as chair of the Nominations Committee. Arden had five nominees for three positions for the 1995-1996 Board.

•Video taping of regular meetings is not practical and will not be done.

•Meetings must end by 8:45 PM to enable departure of all attendees by the 9 PM closing hour. Plant-of-the-Month speakers will be limited to 10 minutes.

•A new location for MNPS display at the State Fair is being sought.

Ptelea trifoliata is not native to Minnesota

Wafer-ash or hop-tree (*Ptelea trifoliata*) included in the list of native species at the November meeting of MNPS is native to North America but *not* Minnesota. It has been planted here and arrived also by naturalizing itself on its own in river valleys, probably coming from the south. It is an attractive, shade-tolerant shrub.

As program chair, I will be cautioning speakers to be careful in identifying a plant as native to the state as of the time of the land survey of the 1890s.—*Diane Hilscher*

DNR Forestry service is free

The service that DNR Forestry provides callers is free. One can call Alan Olson (see summary on page 6) at 442-2317 for the counties that he serves (south Hennepin, Carver, and Scott) or the general DNR Forestry number 772-7925 to contact the other two foresters who serve the seven-county metropolitan region.

MNPS Display Board Use

All members are welcome to show our display board at events, museums, and schools, if an attendant is present or it is safely displayed. This 3 by 5 foot, 2-sided board holds information on the Society, native plants, and stewardship. Call Don Knutson if you want to use it.

Publications available from Minnesota Extension Service

Home, yard and garden publications are available from the Minnesota Extension Service. They are also available from county extension offices. Order a listing of publications from Distribution Center, 20 Coffey Hall, 1420 Eckles Ave., University of Minnesota, St. Paul, MN 55108-6069.

America's 500th National Wildlife Service refuge established in West Virginia

On 27 October 1994, the US Fish and Wildlife Service celebrated its 500th refuge at Canaan Valley, West Virginia. The Refuge System spans 92 million acres of lands and waters in the United States.

The Minnesota Valley Wildlife Refuge is one of only four national *urban* refuges, and extends 34 miles along the Minnesota River. More than 300 species of plants and wildlife are protected by this Refuge. For more information, call 612-335-2323. To become a Refuge Volunteer, call 612-854-5900.

Symposium on backyard butterflies is set for May 6 at Lowry Nature Center

The Minnesota Native Plant Society and Hennepin Parks will co-sponsor a public symposium on *Attracting Butterflies to Your Backyard*. This symposium is planned for Saturday, 6 May 1995, from 8:30 AM to 3:30 PM, at the Lowry Nature Center in Carver Park Reserve, Victoria.

This symposium will feature presentations and hands-on activities. Topics will include: 1) selecting native plants and landscape designs to attract butterflies, 2) building butterfly feeders, and 3) identifying common butterflies (and their ecology). For details, call 476-4663.—*Rob Buffler, Hennepin Parks*

Seed exchange successful reports May Wright

About 100 seed packets were exchanged at the October meeting of the MNPS. These represented more than 75 species of mostly native seeds from different parts of the state—from bogs to woodlands and prairies.

Pests and diseases of native hardwood trees in the metro region

by Alan E. Olson

The metropolitan region of the Twin Cities is divided into three landscape regions: Big Woods, Oak Savanna, and Sand Plains. Each region has unique vegetative cover types and soil types. What they all have in common, however, is a number of insect and disease problems that are found during most growing seasons.

The disease problems that come to mind for most people are Dutch elm disease and oak wilt. Although Dutch elm disease is still found in the Twin Cities, it is not the epidemic that it was in the 70s and early 80s. Oak wilt is a major problem in Anoka County and in a few other places in the region. There is headway being made in slowing down the spread by use of the vibratory plow.

There are, unfortunately, other problems in the Twin City area, such as *Verticillium* wilt, gypsy moth, anthracnose, ash yellows, and forest tent caterpillar.

Although it is not directly an insect or disease problem, construction damage to trees contributes to the severity of problems caused by diseases or insects. Finally, there is the issue of planting vegetative materials that are not hardy in this area—this is also a source of stress and decline in plant materials that can be misdiagnosed as a disease or insect problem.

This is an abstract of a talk given by Alan Olson of DNR Forestry to the MNPS at its meeting on 7 December 1994.

Publications available from the Minnesota Extension Service

(see address on page 4)

FO-6135: Protecting trees from construction damage (\$4)

MI-5898: Ash yellows in Minnesota (\$1)

MI-3174: Oak wilt in Minnesota (free)

MI-3265: Dutch elm disease (free)

Three new members of the MNPS Board of Directors will be elected at the March 1 annual meeting

Three new members will be elected from the five candidates whose biographical sketches appear below.

Gerry Drewry. Gerry is interested in native plants and has been a member of MNPS for 6 years. She is a public relations consultant and journalist and operates a small farm. Through the federal Conservation Reserve Program, she planted one field with switch grass, one with bluestem, one with switch and Indian grasses, and another with trees. Gerry has prairie and woodland wildflowers near the house and a 2.5-acre restored prairie. She also has special interests in plants in her boggy 12-acre natural area that the DNR lists as a wet meadow. Gerry lives in Hampton, Minnesota.

Hildegard Graber. Hildegard's training was in Germany and Austria. She enjoys her own wildflower garden, rock garden, and perennial border plants—all developed over the last 30 years. She was an assistant professor in the University of Minnesota's Department of Psychiatry and she was employed for 9 years at the Boynton Health Service. Hildegard currently is a part-time consultant to the Department of Human Services for Ramsey County. She has been living in Newport since 1955.

Thor Kommedahl. Thor is a professor emeritus of the University of Minnesota's Department of Plant Pathology. He has taught courses in agricultural botany, plant science, and plant pathology, either in the College of Agriculture or the College of Biological Sciences. In addition to writing technical journal articles, and editing several books and journals, he has authored a book on *Pesky Plants*, and coauthored one on *Scientific Style and Format*. He currently serves as editor of *Minnesota Plant Press*. Thor lives in Falcon Heights.

Douglas Owens-Pike. Douglas is a native of the midwest and has degrees from the University of Wisconsin—Green Bay (plant ecology) and the University of Washington—Seattle (forestry). He started *Evergreen EnergyScapes* in 1989 which is a company engaged in landscaping for reduced energy use with native plants that require low maintenance. He provides full landscape service including designing and construction. Douglas was a registered lobbyist for the Wilderness Society in Washington, DC. He lives in Minneapolis.

Charles Umbanhower. Charles was born in Chicago but has lived in Syracuse, New York; Pocatillo, Idaho; and Northfield, Minnesota. He is a graduate of Carleton College and the University of Wisconsin (with a doctorate in botany). Charles has taught biology at St. Olaf College for 4 years. He is interested in the ecology of prairies and their disturbance, technology of fire in the Great Plains, restoration of prairies and oak savannas, and has surveyed wetlands in Rice County. His residence is in Northfield.

These candidates for the three board positions are expected to follow the guidelines listed in the editorial on page 2, column 1 of this issue. The candidates will be introduced at an upcoming regular meeting of the MNPS. You will have an opportunity to question them about their qualifications at that time before you vote.

Joe-Pye-Weed.—The “Joe-Pye-Weeds” commonly found in Minnesota (*Eupatorium maculatum* and *E. purpureum*) are pink to purple-flowered members of the family Asteraceae (Compositae)—the daisy or sunflower family. They are generally found in wet meadows and shallow marshes, and bloom in late summer. Other common *Eupatorium* species are *E. perfoliatum* (boneset or thoroughwort) and *E. rugosum* (white snakeroot), both of which have white flowers. All of these species are known to have medicinal or poisonous effects on humans; they are among the most pharmacologically active herbs, and many records of their use appear in the literature.

The Joe-Pye-weeds are tall, robust plants that vary in height from about 2 to 6 feet. Because they bloom in late summer and are superficially similar to each other, they can be confused at a distance with several other tall, purple-flowered plants such as marsh milkweed (*Asclepias incarnata*) and several purple-flowered asters. On close inspection, however, they are quite distinctive. The leaves are whorled in 3s and 4s (*E. purpureum*) or in 4s and 5s. The stems are speckled or purplish. The flowers are composites but have only disk flowers and do not display the showy ray flowers typical of daisies and other composites. These composite flowers are found in somewhat large, closely packed inflorescences; although they can be pollinated by insects, they can also be pollinated by transfer from head to head as they are blown against each other by wind.

Eupatorium maculatum and *E. purpureum* have several common names. Joe Pye reputedly was an Indian healer who lived in colonial New England, and who used this herb to cure typhoid and other fevers. Another possible source of the name is *jopi*—an Indian word for typhoid so another name is *jopweed*. Other common names are king (or queen) of the meadow, gravelroot, kidneywort, purple

boneset, tall boneset, and purple thoroughwort, among others. Many of these names refer to its medicinal properties such as a remedy for renal problems, especially kidney stones, and fevers.

The name “boneset” applies mainly to the white-flowered *E. perfoliatum*, and refers to its use in treating dengue or “bone-break fever.” It was used also as a substitute for quinine in treating malaria. The Ojibway Indians used it as an aphrodisiac and the Potawatomi used it as a talisman to give luck when gambling. All these species were used as emetics, purgatives, diuretics, or tonics.

As a garden plant, Joe-Pye-weed is easy to culture. It makes an excellent tall border flower, especially when mixed with goldenrods and white asters, and will self-sow readily. Wildflower gardener and former US Senator George D. Aiken called Joe-Pye-weed “a good-natured lum-mox, willing to grow anywhere for anyone.” So if you have a sunny, wet spot and a bit of room, collect some seed and give it a try!

Environmental concerns

There are mountains in Attica which can now keep nothing but bees, but which were clothed, not so very long ago, with fine trees producing timber suitable for roofing the largest buildings, and roofs hewn from this timber are still in existence. There were also many lofty cultivated trees.

The annual supply of rainfall was not lost, as it is at present, through being allowed to flow over a denuded surface to the sea, but was received by the country, in all its abundance—stored in impervious potter's earth—and so was able to discharge the drainage of the heights into the hollows in the form of springs and rivers with an abundant volume and wide territorial distribution. The shrines that survive to the present day on the sites of extinct water supplies are evidence for the correctness of my present hypothesis.—Plato (427-347 BC): *Thanks to Tom Morley*

Botanical potpourri

GLEANINGS FROM NEWSLETTERS

Mentor Ranch, recently purchased in Minnesota by Nature Conservancy, was sold to the Minnesota DNR as an addition to the Dalea Wildlife Management Area in northwest Minnesota. It consists of 2,023 acres of unbroken prairie and includes tallgrass prairie on the shores of glacial Lake Agassiz. (*Nature Conservancy* 44[6]:33, 1994)

Purslane (*Portulaca oleracea*), a well-known garden pest, can be eaten: 1) as salad with a vinegar-type dressing, 2) boiled (10 minutes) and served with butter and salt, or 3) microwaved (4 minutes), minced in blender, mixed with egg and bread crumbs and baked. (*Indiana Native Plant and Wildflower Society* 1[3]:1, 1994)

Thomas Jefferson ranked botany “with the most valuable sciences” in a letter on the subject of a school of botany and a botanical garden for the University of Virginia. Benjamin Barton named the genus *Jeffersonia* for twinleaf in 1792 because of Jefferson's knowledge of natural history, according to Lucia Stanton, Director of Research at the Thomas Jefferson Memorial Foundation in Monticello. (*Virginia Native Plant Society Bulletin* 13[3], 1994)

In Itasca State Park in Minnesota, 126 diatom taxa representing 45 genera were reported by Mark B. Edlund of the University of Michigan. These diatoms were found in Chambers Creek. (*Journal of the Minnesota Academy of Science* 59: 10-21, 1994)

Plants introduced from 1870 to 1930 into the United States by way of the Great Lakes included *Alnus glutinosa*, *Salix alba*, *S. fragilis*, *S. purpurea*, and *Rhamnus frangula*, and imported for use as ornamentals, medicines, or supplies for basket weaving. (*BioScience* 44:666-676, 1994)

Letters...

Will plants repel mosquitoes?

"I hear stories to the effect that there are no mosquitoes in the Seattle area. I also hear from time to time of certain farmsteads and other isolated areas in Minnesota where mosquitoes are not present. ... Could it be that such areas contain vegetation that is offensive to mosquitoes? Some people have reported that [mosquitoes] do not like basil plants. Others have mentioned ...scented geranium....If plants of a certain kind are known to chase [mosquitoes] away I would like to try planting some".—Andrew L. Freeman, Grand Forks, North Dakota

(B.T. Hunter [Gardening Without Poisons, Houghton Mifflin, 1964] reports that essential oils from some plants are effective against mosquitoes and their larvae. She reports that 100% kills were made from using oil of sandalwood, bayberry leaves, pumpkin seeds, and black mustard; 95% kills with oil of basil, garden sage, sweet basil, sweet marjoram, balm of Gilead, and caraway; 90% kills with oil of rosemary, cypress, and hydrangea. Lesser kills were obtained with oil of butternut, rhubarb, prickly ash, comfrey and others. W.H. Lewis and M.P.F. Elvin-Lewis [Medical Botany, Wiley, 1977] list 42 plant species that have been used as a source of insecticides. However, in all these examples, extracts are made from plants and the plants themselves were not reported to be mosquito repellent. A.D. Kinghorn [Toxic Plants, Columbia Press, 1977] reports that pyrethrum in dried flower heads of *Chrysanthemum cinerariaefolium* and *C. coccineum* are used in anti-mosquito preparations. I.N. Dobelis [Magic and Medicine of Plants, Readers Digest Assn.] reports that dried leaves of tansy repel insects. —ed).

Kudos from our hosts

"To wish you happy holidays and give thanks for your help in spreading the word about the Minnesota Valley National Wildlife Refuge, its wildlife management activities and public events. Your efforts are appreciated"—Joyce Dahlberg, Minnesota Valley National Wildlife Refuge, Bloomington.
(We enjoy the facilities and the association with personnel at the Center, and thank you for your comments—ed).

The History and Folklore of North American Wildflowers, by Timothy Coffey, published by Houghton Mifflin, Boston, 1993. 356 pages, \$14.95 paperback.

This book is on popular lore, social history, and practical uses of 700 species of wildflowers. It is not a book on plant identification; instead it tells about specific plants used as foods, medicines, cosmetics, poisons, dyes, or fibers, from pre-colonial times to the present.

Plant Lore

What is prickly-ash?

Prickly-ash is *Zanthoxylum americanum*. It is a member of the Rutaceae, the rue or citrus family. It is a large shrub that can be 8 to 20 feet tall, with thorny stems and aromatic bark and leaves.

What is the origin of the generic name?

The Greek word *xanthos* means yellow and *xylon* means wood, which refers to the color of the wood.

Where is prickly-ash found?

It is native from Quebec to North Dakota and south, in rocky woods and thickets, and is the only species in this family that is native to Minnesota.

How does the plant reproduce?

It reproduces by black and shiny seeds enclosed in brownish fruits; it also produces horizontal roots.

What are some distinguishing features?

Shrubs produce compound leaves with 2 to 5 pairs of leaflets, and an odd one. Leaves are somewhat thick and dotted with translucent glands. The yellowish green flowers occur in axillary clusters. Stout thorns occur in pairs at the bases of leaves.

Does it have any medicinal value?

Claims have been made that berries and bark can relieve rheumatism and toothaches, but these claims are not supported by research.



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