



Minnesota Plant Press

The Minnesota Native Plant Society Newsletter

Volume 21 Number 2

Winter 2002

Monthly meetings

Minnesota Valley National Wildlife Refuge
Visitor Center, 3815 East 80th St.
Bloomington, MN 55425-1600
952-854-5900

6:30 p.m. — Building east door opens
6:30 p.m. — Refreshments,
information, Room A
7 – 9 p.m. — Program, society business
7:30 p.m. — Building door is locked
9:30 p.m. — Building closes

Programs

The MNPS meets the first Thursday in October, November, December, February, March, April, May and June. Check the Web page for additional program information.

Feb. 7: “Fire and Plants in the Boundary Waters Canoe Area Wilderness,” by Daren Carlson, DNR forest ecologist;
Plant of the Month: Reed canary grass, by Julia Bohnen of the University of Minnesota Landscape Arboretum.

March 7: “Dwarf Mistletoe;” Plant of the Month: Witch Hazel, both by Don Knutson, Biological Lab Services.

April 4: “The Gypsy Moth in Minnesota,” speaker to be announced;
Place of the Month: Katharine Ordway Natural History Study Area, by Janet Ebaugh.

May 2: “Gardening for Butterflies;” Plant of the Month: A butterfly host or nectaring species, both by Dean Hanson.

June 6
Speaker to be announced; **Plant Sale**

MNPS Web site

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

Buckthorn has become a pernicious invader

By Janet R. Larson, Consulting Arborist and Master Gardener
(Part 1)

About 150 years ago, a new immigrant was welcomed to North America by a few well-meaning people. This immigrant was seen as an attractive, problem-free addition to our nation that would enhance and beautify our gardens and landscape. But, over the decades, this immigrant would come to be seen as a pernicious invader and a threat to our natural ecosystems. The welcome immigrant-turned-invader is buckthorn.

After the primary loss of native plant habitat to development and agriculture, our native plants of the forest under-story are declining in many areas. Throughout Minnesota and 26 other states, common buckthorn has been quietly invading. The under-story species of our remnant woodlands and savannas, parks and woodlots, wetlands and fencerows, are not secure from this very successful competitor.

Buckthorn is an aggressive invasive species that has escaped from cultivation and has been thriving unchecked for decades. Buckthorn has insidiously reached a critical mass and now occupies the under-story of valuable woodlands all across Minnesota, especially near urban areas. Our native species — both woody and herbaceous — have all but disappeared from the lower canopies of the most severely infested areas. This is a problem.

The buckthorn conference: “The Buck Stops Here!” was held October 3, 2001, at the University of Minnesota Landscape Arboretum in Chanhassen. It was the first of its kind in Minnesota and was very well attended. Approximately 150 people learned about not one, but two species of buckthorn invaders: Common buckthorn (*Rhamnus cathartica*) and glossy buckthorn (*Frangula alnus* — formerly *Rhamnus frangula*), including Tallhedge, Columnar, and Fernleaf cultivars. Information on buckthorn’s, biology, history, range, and control was covered. Case studies were described for projects initiated by the city of Minneapolis, neighborhood groups, volunteer coordinators, and property owners.

The 2002 MNPS symposium, “Preserving and Restoring Native Wetland Flora,” will be Saturday, April 6, at the Arboretum. See details on page 5 of this issue.

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Tell us about your conservation issues

Do you know of a conservation issue affecting native plants in Minnesota that deserves more attention? Other members would like to know more about it. Some of us may get involved or write letters to the appropriate government officials or the press, informing them of our views. But we can't act unless we know what's going on out there in the rest of the state.

Let Ethan Perry know about any relevant issues (see contact information on this page), and they will be posted on the Conservation Committee page of the MNPS Web site (www.stolaf.edu/depts/biology/mnps/cc.html). You can visit the site anytime to see what other members have posted and how you can help our native plants.

Joint shrub order offered

Deborah Strohmeier will be ordering shrubs from the Outback Nursery this spring and have them delivered to her house. You may dovetail into her order. You would be responsible for the full price of your order and for picking them up from her house. Call Deb at 952-943-9743.

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.

The Minnesota Native Plant Society

The Minnesota Native Plant Society is a tax-exempt 501 (c)(3) organization as determined by the U.S. Internal Revenue Service.

Dues for regular members are \$12 per year; students and seniors, \$8; families, \$15; institutions, \$20; 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.

Minnesota Plant Press

The Minnesota Plant Press is the quarterly newsletter of the Minnesota Native Plant Society. Articles are welcomed. Write the editor, Gerry Drewry, at 24090 Northfield Blvd., Hampton, MN 55031. Her phone is 651-463-8006; fax, 651-463-7086; e-mail: gdrewry@infi.net.

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Educating the public about native plants

by Joel Dunnette, MNPS President

One of the stated purposes of MNPS is to educate the public about native plants. And boy, the public does need education! I find that most folks have little understanding about plants, much less native ones. When people hear that I burn my prairie, most ask how I seed it for the coming year — they don't know about herbaceous perennials — even though that is what they have in their own lawns. With so little understanding, it is easy to see why there is little public demand for conserving native plants.

So what does the public need to learn about native plants? And what is our role in teaching them? Keep in mind that most folks know very little; not much beyond that you mow lawns, trees grow for a long time, and farmers and gardeners grow crops and flowers and vegetables that you plant from seed each year.

When I talk to groups about prairie, most are surprised to hear and see the diversity and beauty of native prairie. They don't realize the number of different plants, the variation with habitat conditions, and the wide variety of ways of living that plants have.

The public's knowledge of native plants is much like a kindergartner's knowledge of higher math. We don't need to show them the beauty of trigonometry or calculus — they are just learning to count! So where do we start?

I feel that starting with the simple concept of native (or at least native pre-settlement) natural communities is one simple yet powerful concept. If a person understands this, and comes to value their continuing

'Think Native' program to focus on Bloomington gardens

by Deborah Strohmeier

We are pleased with the first year's results of the Think Native program. In brief, the intent of this program is to encourage the awareness and use of native plants. We assist homeowners with creating native plant gardens. A portion of those who participate may also receive a "grant" of native plants.

Think Native has a decentralized structure where project administrators take responsibility for overseeing a defined area. This program also has a designated fund (meaning administrative costs are borne by MNPS) for purchasing plants.

existence, then they can be motivated to take supportive actions. Their actions may be simple and not very well informed, but like a child learning that 5 is bigger than 2, it is a step on a learning path.

Seeing the tremendous diversity of a native plant community is another good starting point. Knowing the details of plant families is not needed to gain a sense of wonder and appreciation.

Seeing some real examples and having experiences is a mode that is more powerful than words or images. Personal experience is often the best teacher.

There are many people who in their hearts favor conservation. But they may lack the courage to stand alone in support of the natives. Sharing your convictions can bring support from surprising sources.

Helping people see and take these and similar steps is well within the ability of every MNPS member. I will do my part. How about you?

Plymouth Expo

The City of Plymouth Yard and Garden Expo will be held Saturday, April 6, from 9 a.m. to 2 p.m. at Plymouth Creek Center. For information, call Kris Hageman at 763-509-5506.

In 2001 we began a pilot program which Dave Crawford administered in the White Bear Lake area. We found the most difficult part of the program was getting the word out so that people would apply. We had roughly 10 applications and were able to award six grants of plants, each worth \$200. Congratulations to Peter and Diane Gits, Robin Villwock, Carole Buchanan, Eva Shipley, Deb Gardner, and Pat Dahlman.

Partly because of the unusually hot weather, the gardens were planted in the fall. Dave took "before" pictures and will be taking "after" pictures this next year.

In 2002, we will target the city of Bloomington, and Janet Larson will be our program administrator. Deborah will be putting program details and applications on the MNPS website. We encourage MNPS members to apply. Please spread the word we are now accepting applications.

Remember also that donations to this program are 100 percent tax deductible. We welcome feedback from any member. Further details may be obtained by contacting Deborah Strohmeier.

Buckthorn

Continued from page 1

Following are some conference highlights.

Common buckthorn, also called European buckthorn, grows in upland woods, parks, fencerows, yards, gardens, and waste places. It was first imported from Europe in the 1800s and was used primarily in hedge plantings, but it's been used in shelterbelts and wildlife plantings, too. The plants shear nicely, which can reduce flowering and fruiting. The species became a problem when homeowners quit shearing. Shrubs that have been allowed to grow naturally become small trees. Female plants produce vast quantities of black fruit that are transported through bird droppings. The result is what we now see in the woods and neighborhoods of 68 of Minnesota's 87 counties.

Glossy buckthorn and its cultivars have been used as upland landscape shrubs; they thrive primarily in moist and wet soils. This species has spread through wetland areas and adjacent woods wherever there is a nearby seed source. In heavily infested areas, both common and glossy buckthorn will grow together in upland and lowland habitats. We observed this along the Bog Board Walk and the Green Heron Arboretum trails. Eighty years ago, Minneapolis school teacher and botanist Eloise Butler wrote about the invasiveness of glossy buckthorn in her wildflower preserve.

Banned from nursery trade

2001 was the first year that glossy buckthorn and its cultivars could no longer be sold in Minnesota. The Minnesota Department of Agriculture placed common buckthorn on the "Restricted Noxious Weed List" in 1999 and included glossy buckthorn effective Jan. 1, 2001. Common buckthorn hasn't been sold since the 1930s, when research proved it was the alternate host of oat crown rust. However, birds continue to spread it

through their droppings. On the other hand, glossy buckthorn has been sold in numbers as high as 60,000 per year from wholesalers in Minnesota and Wisconsin for the last 30 years.

Why it is so successful

- No predators eat the twigs or seedlings;
- Longer growing season than our natives, up to 58 days longer;
- Fibrous root system with mycorrhizal benefits;
- Grows in many habitats due to its tolerance of a wide range of soil and light conditions;
- Rapid growth rate;
- Vigorous re-sprouting after being cut, up to 6 feet in one season;
- Copious fruit and seed producer;
- Glossy buckthorn produces flowers and fruit from June through September on good sites (4 months!);
- Seeds are spread by birds;
- Seeds remains viable up to six years in the soil;
- High seed germination rate.

Why buckthorn is bad

- It out-competes our native plants for light, moisture, and nutrients; allelopathic chemicals are said to be in the fruit and leaves, inhibiting germination and growth of natives.
- Its fruits are not a preferred food source for birds, but they are eaten when other foods have diminished. With native fruit-bearing plants on the decline, there's not much else to eat.
- Its fruits are messy and a laxative for birds; they stain cars, decks, concrete.
- Nesting birds are more prone to predation in the lower canopy of buckthorns, so bird nesting success rate is lower.
- It creates a nearly impenetrable thicket, and dark under-story with no herb-layer.
- It has no fall color; leaves remain green until November.
- It is an alternate host for crop pests: soybean aphid and crown rust fungus of oats.
- It causes a safety concern for park users in urban woodlands, because visibility is severely

reduced. (However, some property owners like the privacy buckthorn provides.)

- If left uncontrolled, it will turn native woodlands into near-monocultures
- It is expensive and time-consuming to remove once it reaches a critical mass.
- After removal of adults, a ground cover of seedlings can emerge from the large seed bank in the soil; therefore, a long-term commitment is needed with eradication efforts.
- Its hard, dense wood dulls saw blades and is tiring to haul.
- Thorns on twig ends make handling dangerous.
- The spread of the species threatens the future of our woodlands and wetlands.

One good feature

Buckthorn is a beautiful golden-orange to yellow and brown, dense wood with a nice grain. Wood workers make beautiful carvings from this wood. Carvings and turnings were on display at the conference. We hope an industry will emerge that will utilize this species.

Control or reduction?

Where buckthorn has not completely infested an area, control is a reality. Where it has created a near-monoculture throughout a sizable area, reduction might be a better reality than control. A single stem of buckthorn cut down to the ground, and not chemically treated, will re-sprout from the stump and grow many new stems up to 6 feet in a single season.

Time to apply

For larger buckthorn control projects, some type of chemical treatment is the best control method. It is important NOT to treat during the spring-flush growth period. This is a time when the plant is using its stored energy reserves to grow, from the break of dormancy in late March until about June 1.

[Part 2 of this report, in the next issue, will discuss buckthorn control in more detail.]

Wetlands are symposium topic

Mark your calendars now for the 2002 MNPS Symposium, "Preserving and Restoring Native Wetland Flora," to be held at the University of Minnesota Arboretum in Chanhassan Saturday, April 6, from 8:45 a.m. to 3:30 p.m. Registration will open in the Arboretum auditorium at 8:15 a.m.

This symposium is co-sponsored by MNPS and the Arboretum. In the morning, there will be two excellent speakers. Dr. Susan Galatowitsch, a professor of landscape ecology at the University of Minnesota, will address restoring native wetland flora within agricultural and urban wetlands. Julia Bohnen, who has worked with Dr. Galatowitsch since the inception of the Spring Peeper Meadow restoration project, will discuss the project history, process, and site-specific design solutions for restoring a diverse native wetland community to the meadow.

Topics of afternoon workshops are how to use taxonomic keys for beginning wetland plant identification; advanced wetland plant identification; how to use the DNR's new Lakescaping CD to select plants for lakeshore restorations; and guided tours of Spring Peeper Meadow. Each attendee may participate in two workshops. You may also explore the Arboretum on your own.

The cost is \$35 for members of MNPS and the Arboretum and \$45 for non-members. The fee includes gate admission, continental breakfast, lunch and handouts. Non-members may join either group at the time of registration. Members of both organizations will receive a brochure in a separate mailing. Register soon, as space is limited.

Potential exhibitors or co-sponsors should contact Shirley Mah Kooyman at 952-443-1516, or e-mail her at shirley@arboretum.umn.edu.

Rough-seeded fameflower

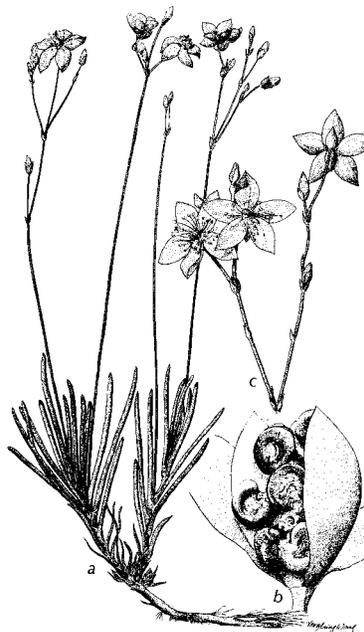
by Hannah Dunevitz, Regional Plant Ecologist, Natural Heritage Program, Minnesota DNR. Abstract of plant-of-the-month talk Dec. 6, 2001.

At first glance, the rough-seeded fameflower (*Talinum rugospermum*), a little eight-inch-tall plant, seems an unlikely candidate for the name fameflower. It is not particularly spectacular or well-known. Its name derives from the curious feature of its precise but short blooming time. Flowers are open only between 3 and

generally found in sand prairie and sand savanna native plant communities, but it also occurs occasionally on rock outcrops. Fred Harris, a plant ecologist with the Minnesota DNR, found in his studies of the physiology of *Talinum* that it can survive in these environments in part because of its specialized photosynthetic pathways. When there is sufficient moisture, it uses C3 photosynthesis, in which stomata are open and carbon dioxide can flow freely into the plant. Under very dry conditions, however, *Talinum* switches to a specialized version of CAM photosynthesis, in which stomata stay closed and oxygen and carbon dioxide circulate within the plant. The succulent leaves of the plant also help by storing moisture, just as those of cacti do.

Rough-seeded fameflower is a member of the purslane family (*Portulacaceae*), along with better known species such as Garden purslane and Spring beauty. The flowers of *Talinum rugospermum* are about one centimeter across, have five roseate petals, two sepals, a three-lobed style, 12 to 25 stamens, and rough, finely wrinkled seeds. They bloom in July and August, sometimes twice in any given season. Plants have short, narrow, succulent leaves and taproots.

Talinum rugospermum is a state-endangered species in Minnesota, and is rare throughout most of its range. It occurs only in the United States, in the Midwest, in Texas and Louisiana. In Minnesota, 24 occurrences have been documented, all within 10 sites in the east-central and southeastern parts of the state. Sand prairie and savanna habitats include Kellogg-Weaver Dunes Scientific and Natural Area, Whitewater Wildlife Management Area, and Cannon River Wilderness Park, Rice County. In these places, vegetation is sparse and the sand is continually shifting. The species also occurs in very small populations on basalt and sandstone outcrops.



Drawing by Vera Ming Wong in "Minnesota Endangered Flora and Fauna," reprinted with permission. © 1988, State of Minnesota, Department of Natural Resources.

6 p.m. — and, as the saying goes, fame is fleeting. Other species of *Talinum* bloom at different times; the closely related but more easterly occurring *Talinum teretifolium* blooms between noon and 3 p.m. The reason for the specific blooming time of *Talinum* species is unknown, but it may be related to the habits of sweat bees, which appear to be the primary pollinators of this genus.

The rough-seeded fameflower is a succulent plant that occurs in harsh, very dry environments. It is

Three members nominated for positions on society's board

Members will fill three board positions at the March meeting. Biographies of those nominated at this time follow.

Don Knutson

Don Knutson is a former board member and past president of the Minnesota Native Plant Society. His professional work at Biological Lab Services concerns mold fungi. He performs mold-fungi analysis in buildings and tests manufactured products for susceptibility to fungal degradation.

Don is working on the natural history of black spruce dwarf mistletoe, with emphasis on seedling inoculations: "The idea is to have a 'forest' of infected spruce seedlings in pots so as to be able to study tree-mistletoe interactions as a function of host nutrition, day length and temperature and so on," he wrote. "Are mycorrhizal associates the same on infected and uninfected black spruce? Are sex ratios altered by environmental influences? Like most native plants, we know so little about this one that studies need necessarily to be concerned with basic biological information." Don will speak about this project at the March 7 MNPS meeting.

Jason Husveth

Jason Husveth has been a member of the Minnesota Native Plant Society since 1998 and a board member since the summer of 2001. He is responsible for organizing field trips for 2001-2002. He led a field trip to the Anoka Sand Plain and a winter botany workshop at the Wildlife Refuge in 2001. Jason assisted with producing and illustrating the 2001 MNPS symposium brochure, and has a more active role in planning this year's symposium. He has spoken at several meetings.

Jason moved to Minnesota in 1995 to pursue his master's degree at the University of Minnesota. His thesis

focused on land use and watershed urbanization impacts to Minnesota's native wetland flora and fauna. He holds a bachelor's degree in Environmental Planning and Design/Landscape Architecture from Rutgers University. He is self-employed as a landscape ecologist and botanist. As a board member, he is most interested in providing numerous opportunities for members to experience Minnesota's native flora in the field and to provide access for members to learn about the many native plant-related resources.

Douglas Mensing

Douglas Mensing is a senior ecologist and manager of the Twin Cities office of Applied Ecological Services, Inc. He has 10 years of field and research experience in ecological, biological, and environmental sciences.

Doug is a Professional Wetland Scientist (PWS) certified by the Society for Wetland Scientists and a volunteer supervisor for Great River Greening restoration events. He received a bachelor's degree in Environmental Science from Valparaiso University, Valparaiso, Ind., and a master's degree in Conservation Biology from the University of Minnesota. At Minnesota, his graduate research assistantship under Dr. Susan Galatowitsch focused on assessing wetland quality using ecological indicators. His independent research involved investigating the effects of human activities on the biodiversity of riparian wetlands and on spatio-temporal changes in wetland vegetation community patterns.

"I would be honored to represent this organization as a Board member in order to further the accomplishments of the Society," Doug wrote. "In particular, I would like to increase field trip opportunities and increase the MNPS's exposure through more outreach and educational activities."

New plants are appearing in Nebraska

Several plants are expanding their ranges in Nebraska, according to Bob Kaul, a friend of MNPS member Tom Morley. Kaul is plotting the movements of *Crepis tectorium* (narrow-leaved hawk's-beard), which is spreading southwestward from Iowa into northeastern Nebraska. Exotic woody plants that are expanding fast are *Rosa multiflora*, *Ailanthus altissima*, *Elaeagnus umbellata*, and *Lonicera maackii*. *Morus alba* and *Maclura pomifera* are already at "alarming levels." Tree-of-heaven is forming dense thickets and invading native prairies in the countryside.

"*Prunus serotina*, originally native here only near the Missouri River, has spread madly westward to the central counties," Kaul wrote. "Another native plant that's spread from riverside counties is the dreaded honeyvine, *Cynachum leave*, which is as bad as bindweed but grows much larger, climbing 30 feet into the trees. It's strangling soybeans and corn in the fields, and here in Lincoln it drapes shrubs and fences."

Conferences scheduled

Medicinal, aromatic plants

The PCA's Medicinal Plant Working Group will hold its first symposium, "Industrial Leadership for the Preservation of Medicinal and Aromatic Plants," Feb. 26 and 27 in Philadelphia, Penn. Information is available on the Web at: www.plantconservation.org/mpwgconference.

Michigan wildflowers

The 15th annual Michigan Wildflower Conference will be March 3 and 4 at Michigan State University, East Lansing, Mich. Information is available at www.wildflowersmich.org.

Ephemeral wetlands

The EPA Region 5 Midwest Ephemeral Wetlands Conference will be in Chicago Feb. 20 and 21. Information is at www.epa.gov/R5water/ephemeralwetlands

Fighting Urban Sprawl

(Notes from MNPS talk Oct. 4, 2001 by Lee Ronning, President and CEO of 1000 Friends of Minnesota)

Minnesota is losing approximately 12,000 acres of farmland every year to urbanization. Nationwide, the loss is 1.5 to 2 million acres per year. This loss is especially ominous because urban-influenced counties produce 87 percent of our nation's fruit, 86 percent of our vegetables, 79 percent of our milk, 47 percent of our grain and 45 percent of our nation's meat products. Because of this urban sprawl, the U.S. will cease exporting food by 2025, according to David Pimentel of Cornell University. All of our food products will be needed to feed our own population.

Suburban sprawl in Minnesota is increasing faster than our population is growing. From 1992 to 1997, average annual population growth in the seven-county metro area was 1.4 percent; average annual increase in acres of land converted to urban uses was 5.3 percent. Statewide figures are similar.

1000 Friends of Minnesota is leading the Smart Growth campaign. This organization is seeking to bring together a network of diverse groups to stop urban sprawl and create smart regional patterns of development in the Twin Cities and throughout the state. "Smart Growth" accepts the fact that growth is happening, and attempts to find a balance between growth and other community values, such as environmental preservation and social equity. Smart Growth is collaborative in nature, and includes business partnerships.

Smart Growth tools available for protecting natural resources and agricultural lands include comprehensive planning, conservation zoning techniques, Right-to-Farm ordinances, tax incentives, agricultural economic development and farm transfer planning. Three incentive-based tools that are relatively new in Minnesota are conservation easements, purchased development rights and transfer of development credits.

Conservation easements are voluntary agreements that permanently restrict future development while retaining other property rights. The land remains in private ownership and on the tax rolls; no public access is required. The easements are held by a land trust or government agency to ensure long-term monitoring and protection. Purchased development rights are often established by units of government to provide a mechanism to pay for conservation easements. This incentive-based tool helps keep the agricultural economy viable. The land remains in private ownership and on the tax rolls. The Minnesota Legislature recently passed enabling legislation.

Transfer of development credits simultaneously protects open space while allowing more compact development in areas best suited for it. Development credits are purchased from "sending areas" and applied to "receiving areas," where greater density is allowed. The price is set by private markets.

In addition to its work with Smart Growth, 1000 Friends is working with the Green Corridor project in Chisago and Washington counties, the Farmland and Natural Areas project in Dakota County, the Department of Agriculture and the Department of Natural Resources.

Plant Lore

by Thor Kommedahl

What is Labrador tea?

Labrador tea is *Ledum groenlandicum* in the heath family. Recent DNA studies may lead to its being renamed a species of *Rhododendron*.

Why is it called by this name?

Ledum is an old Greek name for rockrose (*Cistus*) which produces a similar fragrance. Tea is brewed from dried leaves by the native peoples of Labrador and elsewhere. Thoreau in 1858 noted that "it has a rather agreeable fragrance, between turpentine and strawberries."

What kind of a plant is it?

It is a low northern shrub (1-3 feet) with leathery, evergreen leaves that have rolled edges and white or rusty hairs underneath. Twigs are also hairy. Small white flowers are seen in clusters in May-June or later. Leaves are fragrant when crushed.

Where is it found?

It grows in sphagnum bogs and other wet habitats usually in woods in Northeastern Minnesota (north of the tension zone) and elsewhere in subarctic Canada and in Greenland.

Is it edible, toxic, or medicinal?

Its use as food is limited to tea. Tea from leaves are rich in vitamin C. A toxic substance known as "ledol" occurs in European species but has not been reported for North American species. American Indians used the plant as a tonic, and to treat colds, arthritis, and headaches.

Are there other uses?

Leaves have been used to repel moths in clothes, and put in grain to repel mice. Decoctions kill lice and other insects, but plants are browsed by caribou and moose.

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