The Blazing Star

Fall 2005, Volume 6, Issue 4

Newsletter of the North American Native Plant Society

Native Plant to Know

Eastern Redbud

(Cercis canadensis)

by Tom Atkinson

My first brush with the genus *Cercis* occurred in early April 1984 on a business trip to California that included a three-day nature tour of the Sierra Nevadas with my aunt and uncle. Scrambling around the foothills we discovered many delights including California buckeye (*Aesculus californica*), Whipple's yucca (*Yucca whipplei*), manzanita (*Arctostaphylus manzanita*) and California poppy (*Eschscholzia californica*), the state flower. Looking across the foothills, we could see patches of a delicate purple-red. As we drove closer, these distant smudges became western redbuds, *Cercis californica*, lovely in full flower. Knowing they would not be hardy back east, I vowed to get seed from our eastern redbud, *Cercis canadensis*, that fall. I returned to Toronto much-pleased with my discovery. And it was the only business trip, ever, from which I arrived home completely relaxed.

Cercis canadensis is a small deciduous shrub-like tree (up to eight metres or 26 feet high). Its mauve-pink, pea-shaped flowers bloom in spring on bare branches, before the lovely heart-shaped leaves (up to 13 centimetres or five inches wide) have a chance to emerge. The bark is smooth grey with reddish streaks when the tree is young. In time, the flaky bark becomes a cinnamon colour, almost like Pacific madrone (*Arbutus menziesii*). Fall leaf colour is mid-yellow, quite bright and lively. Flat, reddish-brown pods hanging in clusters from the branches produce 10-12 shiny brown seeds per pod. These can be harvested any time after the seed pods turn dark brown, which means late fall through late winter.

My eastern redbud seeds were never scarified (the need to scarify is a myth perpetuated by otherwise reputable books), but rather shelled and outplanted

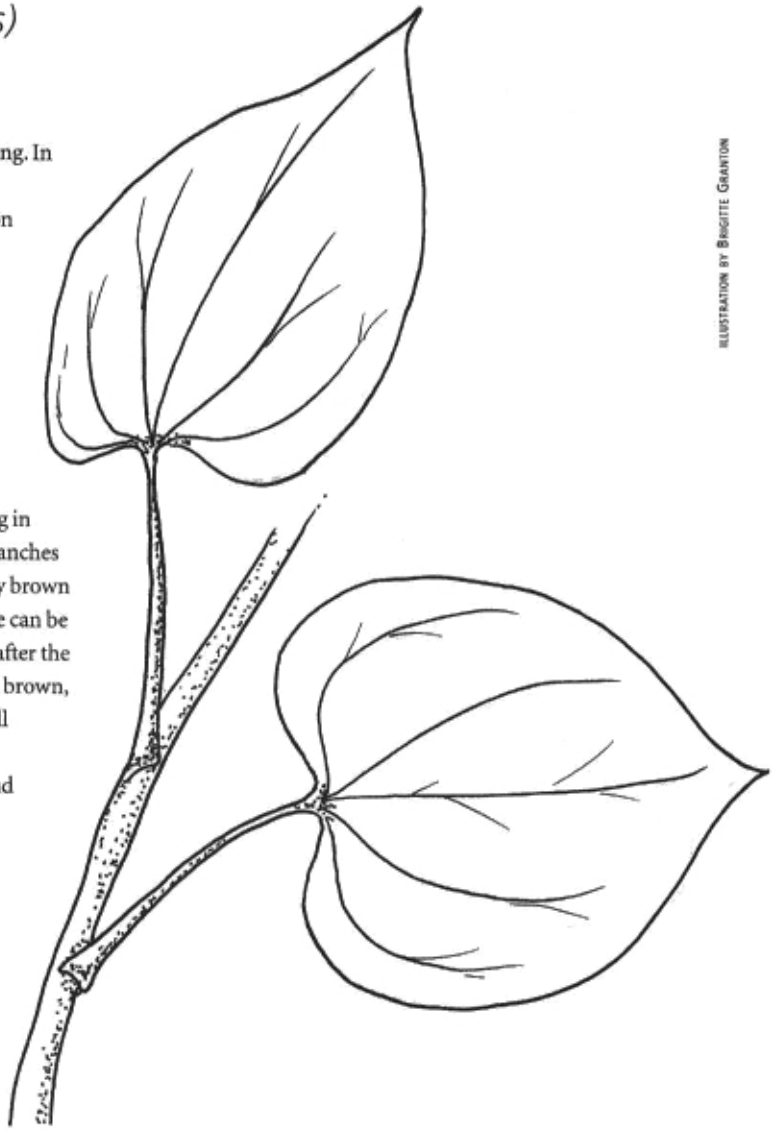

Illustration by Brigitte Granton

Continued on page 12

The *Blazing Star* is . . .

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A Letter from your President

In my last letter in the summer issue of the *Blazing Star*, I listed the strengths of NANPS and some of the weaknesses, and reported on two pending occasions when your Board planned to hold important discussions with you on the future of our organization.

These two meetings have now taken place and there were good discussions at both. Some of you were there and helped us reach some useful conclusions that will involve us in further serious decision-making.

So where do we find ourselves now?

Your board is larger by three new members: Eva D'Amico who served as a director a couple of years ago, Deb Dale, a former president, and Harold Smith, a long-time NANPS volunteer who also serves on the North Toronto Green Community board.

We are all landowners of a lovely, large and mature forest near the Lake Erie shore with a unique community of cucumber magnolias and lots of other native trees. We also own a piece of the Lake Huron shoreline on the west coast of the Bruce Peninsula, which because of its botanical and geomorphological properties invites our tender loving care.

We publish a superb quarterly journal, the *Blazing Star*, which you are reading right now and from which you are probably learning some useful stuff. We also have a few meetings and field trips each year providing wonderful educational and pleasure opportunities.

But we do need to think more about our future and how we should plan and organize it, and your Board is setting out to do this right now. With your help and support we are sure we can achieve this. Decisions to be made concern our membership numbers, our usual activities, and our contacts with other like-minded and plant-related organizations and movements. All this is related to promoting a greater sensitivity and enjoyment of our native vegetation.

Darcie McKelvey, NANPS Treasurer, has asked me to provide you with a rationale for our new membership fee of $20. The cost of publishing the *Blazing Star* has increased significantly. We try to operate our other activities such as the seed exchange and NANPS excursions on a break-even basis. However, we do have other expenses, such as insurance for the organization, a hefty rental fee for a storage locker where we keep our exhibit displays, expenses related to our web-site, exhibitor fees for Canada Blooms and other events, and speaker fees (AGM). Although our annual plant sale continues to be profitable, the expenses in connection with the sale have gone up so that our net profit from it has decreased year by year. In 2004 for the first time as far as our Treasurer knows, our expenses in the course of the year exceeded our revenues by $7,000. We need more income to maintain our current round of activities.

Note: the Board of Directors hopes that all members receiving a renewal notice with this issue of the *Blazing Star* will act appropriately.

We all belong to a wonderful organization, which has always served our various interests very well. NANPS welcomes your energy and participation. I look forward to hearing from members, and to welcoming you to NANPS meetings and excursions.

Grif Cunningham

NANPS AGM Highlights

Noted botanist and NANPS Honourary Director Frederick W. Case Jr., whose "big joy is to take a trip through the woods" took AGM participants on a photographic tour of his favourite Great Lakes forests. Fred told us that in skunk cabbage (*Symplocarpus foetidus*) "the tissue in the hood (or spathe) increases its temperature very early in the spring and literally melts its way out of snowbanks". We discovered that many plants undergo a chemical change after flowering and become bitter to humans (but that rarely stops the deer). There are 38 species of *Trillium* in Canada and the United States, including the earliest and smallest bloomer, snow trillium (*Trillium nivale*).

Nurseryman Ken Parker of Sweet Grass Gardens taught us how to say hello and goodbye in Mohawk: "Sa-go" and "Oh-na" respectively. He mentioned that the berries of bearberry or kinnickinnick (*Arctostaphylos uva-ursi*) are edible but should really be left for the birds and the bears. *Tradescantia* (spiderwort) roots easily from a summer cutting. And the white elderberry (*Sambucus*) flower can be dipped in flour and fried up to make fritters.

For these fascinating tidbits and the whole wealth of information and entertainment that Fred and Ken provided, our heartfelt thanks.

Sowing the Seed

by Irene Fedun

"Fairies live here." That was my first thought on entering Mary Newel's garden. In parts wild, exuberant and sparkling, in parts orderly and well-tended, there's no doubt that this garden is much-loved.

Mary's mother, Ella, has been living here near Bayview and Eglinton in Toronto for over 50 years and gardening for just as long. Mary's late father, Desmond, who was from County Wicklow, the Garden of Ireland, made his contribution by tending the tomatoes. Ella comes from a long line of gardeners that can be traced back to the early 19th Century. Mary's great-great grandmother fell in love with the gardener from Kent County - known as the Garden of England.

Starting as it did with these Old World connections, the Newel garden combines many cultivars and plants originating in far-flung places. But it also has many wonderful native plants that, in number of species, far outstrip the pretty foreigners. Borrowing from the English country garden style (and an Irish cousin with a gorgeous garden), the Newels pack the plants in, leaving no room for weeds. They also take advantage of the bounty from their mature white ash (*Fraxinus americana*), the hackberry (*Celtis occidentalis*) at the back and the neighbours' silver maple (*Acer saccharinum*) and American elm (*Ulmus americana*). (The elm soldiers on even though its parent died of Dutch elm disease 40 years ago). The keys and leaves from these trees are simply deposited on the beds to decompose and feed the plants or are mown into a mulch for the grass. Mary's laissez-faire attitude minimizes work and rewards the Newels with unexpected delights.

Near the entrance to the backyard is a great St. John's wort (*Hypericum ascyron*) – a gift from the gods that Mary says "must have come in an aster pot or something". It fills in for the shooting star (*Dodecatheon meadia*) when it has died down. In the same bed a native mountain ash (*Sorbus* sp.) has had a good growth spurt this year and stands over two metres (seven feet) tall now. Last year it was laden with berries. "This year it decided: we're going to do growth rather than dividends," chuckles Mary. Further along, virgin's bower (*Clematis virginiana*) is planted by a trellis. It entwines its supple green branches with those of non-native clematis vines, providing "hairy residue

Continued on page 4

Continued from page 3

for the birds' nests" and screening the compost from view. At the end of the garage a downspout has been put to good use – red turtleheads from the southern U. S. (*Chelone lyoni*), fringed loosestrife (*Lysimachia ciliata*; grows in the Don Valley), swamp aster (*Aster puniceus*) and Michigan lilies (*Lilium michiganense*) all love the rain that gushes forth during storms. Mary and her Mum were especially excited about the lilies, which bloomed for the first time last year after being planted five years ago on Mother's Day. Rounding out this bed is a lovely tulip tree (*Liriodendron tulipifera*). This is its fourth year in the yard, and Mary hopes it will bloom next spring.

Beyond the garage the garden broadens out and comes into its full glory crowned by an umbrella magnolia (*Magnolia tripetala*) with open-arm branches and enormous, glove-like leaves. A native of the southern United States it is known to be hardy to USDA zone 5, but Mary remains anxious that another harsh winter may prove too much for it.

Some beautifully healthy *Lobelia cardinalis*, the stunning red cardinal flower, grow near the birdbath where the old water gets dumped on them every day. To prevent the raccoons and skunks from doing the dumping Mary has installed two birdbaths, a lower one for them and a taller one for the birds. Also in that bed are Canada anemones (*Anemone canadensis*) whose offspring are continually pulled up so that they don't get out of control, and some allegedly dry-loving plantain-leaved sedge (*Carex plantaginea*) that loves the moist conditions. Mary tried it in a dry area but it sulked.

The original woodland garden starts at the back of the yard. When Mary and her Mum first got into natives, they planted this shady area with goat's-beard (*Aruncus dioicus*), mayapples (*Podophyllum peltatum*), Jack-in-the-pulpits (*Arisaema atrorubens*), bloodroot (*Sanguinaria canadensis*) and white trilliums (*Trillium grandiflorum*) that finally flowered this year, offering up seven blooms. Other stalwarts are blue cohosh (*Caulophyllum thalictroides*), the sedges (*Carex* spp.), white snakeroot (*Eupatorium rugosum*) and lopseed (*Phryma leptostachya*) with its slender spikes of tiny lavender snapdragon flowers. Virginia bluebells (*Mertensia virginica*) and bright yellow wood poppy (*Stylophorum diphyllum*) make a beautiful pairing in spring. They're stunning with the eastern redbud (*Cercis canadensis*) as a backdrop.

A serviceberry (*Amelanchier* sp.), whose berries ripen gradually over the summer, and whose leaves go "screaming orange" in the fall, is much loved by birds. Around the pagoda dogwood (*Cornus florida*), columbines (*Aquilegia canadensis*) beloved of hummingbirds, late-flowering zigzag goldenrod (*Solidago flexicaulis*), a spicebush (*Lindera benzoin*), diminutive bulbet ferns (*Cystopteris bulbifera*), broad-leaved waterleaf (*Hydrophyllum canadense*) and sensitive ferns (*Onoclea sensibilis*) find a home. The ferns would not survive here without spot watering and Ella's ingenious invention. She took five-centimetre (two-inch) diameter PVC pipe, cut it into 25-centimetre (10-inch) lengths with openings at either end and installed each piece (with the surface of the pipe just showing above the ground) near any plant that especially needed moisture during heat waves. In dry periods when there is no effort made to water the entire garden the individual moisture-loving plants can be looked after by filling their pipes with water. A tea kettle will do the job.

Mary lets things come and be identified before she decides to move or yank them. If something pleases her, especially if it flowers prolifically, then it matters little if it's rampant. *Rudbeckia triloba* or thin-leaved coneflower is a case in point. The pretty yellow flowers appear all over the garden in summer. The moisture-loving, but adaptable, great blue lobelia (*Lobelia syphilitica*) also pops up everywhere.

Many shrubs and small trees share the backyard with the perennials, some in supposed holding beds that may turn into permanent beds if Mary doesn't get around to moving things. Kentucky coffeetree (*Gymnocladus dioicus*) and hophornbeam (*Ostrya virginiana*) have settled in quite nicely here. At the very back fragrant sumac (*Rhus aromatica*) jostles with chokecherry (*Prunus virginiana*) and black chokeberry (*Aronia melanocarpa*), "a bright spot of orange in the fall". The effect is pleasing, not at all crowded. And much appreciated by the wildlife. (The skunks aerate the lawn to show their appreciation.)

A dry bed on the north side of the fence has become an experiment in what can survive and even do well in extreme conditions: an American bladdernut (*Staphylea trifolia*), an understorey shrub that grows well in shade, thimbleweed (*Anemone virginiana*), wild geranium (*Geranium maculatum*), perfoliate bellwort (*Uvularia perfoliata*), early meadow-rue (*Thalictrum dioicum*), columbine , purple-flowering raspberry (*Rubus odoratus*) and New York ferns (*Thelypteris noveboracensis*) that withstand the heat amazingly well. Ninebark (*Physocarpus opulifolius*) and nannyberry (*Viburnum lentago*) have been planted against the day when the non-native spirea gives up the ghost.

A baby pawpaw (*Asimina triloba*), a rarity in Canada sometimes planted for its fleshy fruit, is nestled among non-native shrubs and perennials in a very sheltered spot near the garage. Nearby is the starry false Solomon's seal (*Smilacina stellata*), a wonderful plant for dry shade that is well-suited to this area where shrubs suck up most of the moisture.

Under the eastern downspout from the garage is a prolific patch of jewelweed (*Impatiens capensis*) that Mary has to keep in check. One of the last to bloom, the sweet-scented American bugbane (*Cimicifuga americana*) grows here too, along with the spring ephemerals Dutchman's-breeches (*Dicentra cucullaria*) and shooting star.

The small front yard presents a gardening challenge: a mature Norway maple (*Acer platanoides*) in combination with a slope. Mary just keeps digging out the hardiest, most prolific plants from the backyard and trying them here. So far, the most successful have been asters, zigzag, blue-stemmed and Canada goldenrod (*Solidago* spp.) and Virginia waterleaf (*Hydrophyllum virginianum*). Anything that's invasive in the backyard barely holds its own here. Delicate harebells (*Campanula rotundifolia*) always have a bloom or two. Virginia creeper (*Parthenocissus quinquefolia*) has been allowed to run its course and it's starting to cover the slope. "I look forward to the fall and seeing this on fire," says Mary. She also moved a Carolina rose (*Rosa carolina*) underneath the maple. Here it thrives. A recently planted staghorn sumac (*Rhus typhina*) provided the desired autumn effect this year.

In the fall, the yard is at least a foot thick with leaves. Mary piled compost on top of them last year. It all breaks down surprisingly quickly, too fast perhaps. With the mulch gone, Mary finds she has to water the front yard or just about everything will die in Toronto's increasingly hot summers. Still, maintenance remains minimal. "Sometimes people treat their garden like it's an extension of their living room. You're outside, for heaven's sake," says Mary. She mostly leaves the garden to Mother Nature, adding new and exciting plants as the whim catches her. No wonder it's magical.

Irene Fedun is the editor of the Blazing Star. *Mary Newel drew the garden illustration.*

Tallgrass Prairie Conference Highlights

by Darcie McKelvey

Prescribed burns was the big topic of conversation at the 4th Tallgrass Prairie Conference held in September in Brantford, Ontario. Of the 60-odd attendees a significant number were laypeople as contrasted with the commercial nursery operators, Ministry of Natural Resources staff and Stewardship Council members. A sure sign that a "grass-roots" movement is in full swing. Registrants chose between workshops on restoring old prairies or creating new ones (my choice).

Mathis Natvik of Orford Ridges Nursery focused on using seeds to create prairies. He stressed that site evaluation is a critical part of the process. He advised talking to local experts regarding species selection to ascertain which plants grew in the area historically. Before choosing a seed mix, research the documented seed lists maintained by conservation boards and parks. If you have a dry sandy soil, look to the Pinery Provincial Park, Rondeau Provincial Park or High Park in Toronto for what to plant. For mesic tallgrass prairies, study the species in the Ojibway and Dutton prairies. Try to mimic the natural areas close to your site.

Evaluate the soil and its drainage. Remove catch basins. Research the history of herbicide use. Mathis noted that the most difficult fields to convert are those where European cool-season grasses reign, as they contain chemicals that suppress native plant germination. Use of glyphosate-based herbicides in the spring and fall (for the first couple of years) may be necessary on large sites where there is persistent perennial cover of non-native grasses such as smooth brome, Kentucky bluegrass, quackgrass and others. Repeated tilling over an entire season will exhaust the weed-seed banks. The use of black cloth mulching or geotextile fabric for an entire year can be effective on smaller sites.

Before sowing, till lightly to promote moisture wicking to the surface; this enhances germination. In the first year, mow the grass to an average height of 20 centimetres (eight inches). Use plugs for both rare and slow-to-mature species such as compass plant (*Silphium perfoliatum*) and pale purple coneflower (*Echinacea pallida*).

Rob Buchanan of the Rural Lambton Stewardship Network (RLSN) spoke of his experiences with larger restorations. In the last year, there have been 20-30 tallgrass prairie (TGP) projects in Lambton County covering 80 hectares (200 acres). These include roadside plantings, farm drains and ditches, restoration of remnants, utility corridors and landfill sites, and planting of buffers and filter strips.

Roadside plantings create excellent nesting, brooding, foraging and winter cover for ground-nesting birds. Studies in the mid-western US have shown that driving down an average highway we pass an active nest every four to eight seconds. Nesting species include small mammals, upland game, grassland-dependent birds and waterfowl. In Minnesota, it is estimated that 25-50% of all successful nests come from two percent of the land that is composed of roadside right-of-ways. Despite the successes of nesting on roadsides, studies have shown no apparent increases in road kill of wildlife.

PHOTOGRAPH COURTESY P.A. WOODLIFFE

Tallgrass prairie, Ojibway Provincial Park

Tallgrass prairie also acts as a living snow fence, reducing drifting and winter maintenance costs for roadside managers. Also due to the deep rooting structure, TGP (once established) is able to outcompete noxious weeds and filter salt, sediments and nutrients running off roadsides before they enter lakes, rivers and streams. Roadsides, drains, and landfill plantings are not tallgrass prairie restoration in the pure sense but they do provide critical habitat and staging areas for migrating waterfowl, raptors and butterflies, and create wildlife corridors. This year on one of RLSN's sites that was seeded 10 years ago rare dickcissels where found nesting and endangered Henslow's sparrows were sighted, an exciting example of how TGP plantings increase biodiversity.

Rob suggested using a no-till drill specifically designed for tallgrass prairie seed (10 kilograms of seed per hectare or 10 pounds per acre). Seed/soil contact is critical. Where clay is involved, plant as shallowly as possible. Rob recommended a depth of six millimeters (1/4 inch) for planting in sand. Another way of distributing seed is to broadcast it, but this uses twice the amount of seed as does the no-till drill. It is best to prepare the ground first and to follow up the broadcast by pushing something over the soil to ensure a good seed/soil contact. A third way of starting the seeds is to use hydro-mulching (which works well on slopes), mixing mulch and seeds and using a high-pressure pump to spray seed over an area. Canada wild rye (*Elymus canadensis*) and Virginia wild rye (*Elymus virginicus*) are good grasses for this mix because they establish roots quickly and in cool weather (unlike most prairie grasses that require warmer temperatures to grow).

Dave Reid from the Norfolk Land Stewardship Network and Paul Gagnon from the Long Point Region Conservation Authority told us about ongoing projects in Norfolk County. A new program called ALUS rewards farmers with financial incentives or tax rebates to deliver ecological services to society. On a demonstration plot, a farmer with Texas longhorn cattle agreed to switch a three-hectare (eight-acre) field to tallgrass prairie. In only four months the native grasses had progressed extremely well. Next spring, the farmer intends to burn the field. How cattle grazing will affect the tallgrass prairie remains to be seen.

Darcie McKelvey is a NANPS board member.

Manitoulin's Sand Dune Beaches

by Vida Bain

Well-known for its unusual alvar (limestone pavement) geology and accompanying flora, Manitoulin Island on Lake Huron is also notable for its lovely sand dune beaches. The dune beaches, on the south side of the island, comprise three dunes and the two dune slacks or interdunes between them (also known as sloughs or damp hollows).

Manitoulin, the largest freshwater island in the world, slopes gently from north to south. In spring, the melt-water gradually migrates to the southern shore, through creeks and rivulets, and also through underground passages. Snow melt in the immediate area and spring rains join the incoming melt water to create a large runoff on the southern shores, and a high water table in April and May. Until it can drain, much of this water collects in the second dune slack, then slowly drains through the sands, and through "springs" on the shore side of the dune, creating little rivulets. There may be as much as 30 centimetres (one foot) of water in the interdune for much of the spring. This creates a unique environment for plants that like wet feet in the spring and lots of warm sun.

In early April, the first flower to greet us is the bird's eye primrose (*Primula mistassinica*). This tiny primrose has slightly notched leaves in a small rosette that emerges very early in the spring. A candelabra of five to six flowers rises above the leaves. The flowers that charm us for several weeks are lilac-coloured with a bright yellow centre. They are followed by small but bursting seed capsules. The leaves last through the summer and do not disappear until snow covers the ground.

In May, common arrowgrass (*Triglochin maritima*) rises from the sandy soil. It displays tiny white snowflakes all along the tall stalk. These are followed by hard seed capsules spiralling around the stem. False asphodel (*Tofieldia glutinosa*) offers a sticky head of tiny white globes on a short plant. Not blooming yet, but showing promise, are the common northern blue flag (*Iris versicolor*) and wood lily (*Lilium philadelphicum*).

In early June, the irises and lilies emerge in a beautiful palette of blue and orange, and continue through most of the month and sometimes into July. Indian paintbrush (*Castilleja coccinea*) shows itself along the dryer edges of the interdune, a mist of yellow, orange and red among many varieties of violets (*Viola* spp.). Twinflower's (*Linnaea borealis*) pair of pink bells is enchanting to find in the shady margins of the hollow. The bells seem to dance above the creeping leaves. Swamp candles (*Lysimachia terrestris*) adds a touch of bright yellow in shadier spots.

From mid-June to mid-July, orchids reign in the drying dune slack. Yellow lady's slipper (*Cypripedium calceolus*) blooms in two varieties: *pubescens* and *parviflorum*. The former is much larger with yellow-green twisted petals. The latter is very small with purple petals. A large stand of showy lady's slipper (*C. reginae*) is outstanding. Several stalks rise at least one metre (three feet) and 20-30 blooms can be seen for up to two weeks unless the deer spot them first. I surround this stand with prickly dead spruce boughs to discourage the deer as much as possible.

Bog candles (*Platanthera dilatata*) flowers on long stalks in the shadier parts of the slough, if it can escape the deer, and purple meadowrue (*Thalictrum dasycarpum*) adds a ferny aura to the shade. Kalm's lobelia (*Lobelia kalmii*) is found frequently along with other plants in the dune slack. It is very slender, about 15-20 centimetres (six-eight inches) tall and blooms most of the summer.

Two yellow-flowering shrubs come out in early summer: shrubby cinquefoil (*Potentilla fruticosa*), a low-growing bush with long-blooming potential, and Kalm's St. John's–wort (*Hypericum kalmianum*) with its bright flowers.

Late August brings the fringed gentians (*Gentianopsis virgata*). These four-petalled beauties are mostly biennial, as they seem to change locations regularly. We also see some bottle gentians (*Gentiana andrewsii*) of the deep blue pleated-bud shape. Bumblebees are the only insects strong enough to force their way into the flowers in their search for nectar. As they repeat the exercise with each bottle gentian, the plants are pollinated. A third gentian, the spurred variety (*Halenia deflexa*), prefers the shady parts of the edge of the dune slack.

It is always exciting when the cardinal flowers (*Lobelia cardinalis*) begin to bloom. If the year has been a damp one, one whole end of the interdune is filled with these beauties, most red, with one or two pink here and there for added excitement. They last for about two weeks, enticing us all to bring out our cameras.

By now it is September, and the pitcher plants (*Sarracenia purpurea*) are sending up bloom stalks and making seed pods. The flowers are every bit as odd as the pitcher-shaped leaves at the bottom of the plant. Everywhere in the slough, grass of Parnassus (*Parnassia glauca*) is blooming. It has pale green thick leaves at the base, and a bright white flower. Goldenrods (*Solidago* spp.), and

Photograph courtesy Vida Bain

An exquisite stand of showy lady's slippers on Manitoulin Island.

asters (*Aster* spp.) of different colours add sparkle to the dunes. Just about the last thing we see before leaving for the winter might be a stand of tall blue lettuce (*Lactuca biennis*) whose fuzzy blue blooms flop over on the long stalk.

Fall rains then refill the second interdune. Freezing weather turns its bottom into a long frozen canal. Deer browse the leftover stalks and seeds, and seek shelter in the cedars at the sides. Lady's slipper stalks collapse and release their seeds into the ground or onto the ice. Chipmunks and squirrels have departed with their collection of fruits and seeds. Winter is here.

Vida Bain is an amateur "flower-stalker" on Manitoulin Island in the summer. The rest of the year she is an archivist with the Puslinch Historical Society.

How To Grow Wildflowers From Seed

DATE: JANUARY 14, 2006
TIME: 1:00 P.M. – 2:30 P.M.
LOCATION: NORTH YORK CENTRAL LIBRARY, 5120 YONGE STREET, MEETING ROOM 1

Join us for NANPS first-ever seed workshop. Darcie McKelvey will give detailed instructions on how she grows woodland, prairie and wetland plants, with tips on how to research germination patterns, how to clean seeds, how to stratify, and different planting mediums for different species.

Our expert panel will be available to answer questions and provide detail about growing shrubs, trees and vines.

The workshop is free to NANPS members.

Seed requesters who let us know they are coming will (likely) be able to pick up their seeds at the workshop.

Please RSVP if you intend to come: seeds@nanps.org.

Seed Exchange

Enclosed with this issue is the list of seeds currently available. Please ensure that you have your order in for this batch of seeds by January 10th. Our intent is to mail out seeds by the end of January so that members can stratify those that need a cold winter to inspire germination.

A list of seeds left over from the January mailout will be published in the winter issue of the ***Blazing Star*** for distribution by early April.

Note: There are limited quantities of seed from some species. First come, first served. Where seed quantities are limited, all donors will be served first in the order that their requests are received. You can choose up to 30 packets of seeds.

Downspout Gardening

by Deb Dale

I confess falling victim to a bit of garden envy. My front yard consists of dry, generally sandy soil in full, frequently very hot, afternoon sun. My backyard is shady and dry. Lots of scope for planting dry meadow plants in the front, woodland in the back but still I regretted not having anywhere suitable for the spectacular flora of the bog: pitcher-plant (*Sarracenia purpurea*), orchids, marsh-marigold (*Caltha palustris*)...

I remember being astonished at the lushness of Trish Murphy's (NANPS former Vice-President) garden when I first visited her Etobicoke, Ontario home in the middle of a long summer drought. The garden at the edge of her backyard deck was particularly verdant, full of blue flag iris (*Iris versicolor*), cardinal flower (*Lobelia cardinalis*), foamflower (*Tiarella cordifolia*), swamp milkweed (*Asclepias incarnata*) and other gorgeous, moisture-loving natives. Suspecting surreptitious use of the garden hose, I was amazed to discover that this patch of greenery was fed entirely by rainfall collected from her rooftop.

How could a downspout garden exist so far from the house walls...and where was the downspout? It turned out that it had been run under the deck, the outlet hidden among rocks and plants at the back of the garden.

Continued on page 8

PHOTOGRAPH COURTESY ROB HEPWORTH

Queen of the prairie (Filipendula rubra)

Continued from page 7

Inspired, I decided to disconnect the last downspout from my own roof. Since it ran straight into the driveway with no plot of soil within reach, I had left it connected. Trish's ingenious solution was to cut my downspout off midway up the wall of my two-storey

PHOTOGRAPH COURTESY DEB DALE

Deb Dale's north-side downspout

house and run it, in a neatly constructed wooden box, across my driveway, over top of my car and into the garden on the far side. A downspout trellis! Although I have yet to dig out the matching bog to receive the rainfall, the trellis spout does keep several red osier dogwoods (*Cornus stolonifera*) happy in what would otherwise be parched conditions.

Thanks to Trish and an almost-willing nephew, I already had a beautiful bog garden next to the downspout on the north side of my house. Constructing a bog to receive rainwater from this downspout had proved laborious. That part of my garden is heavy clay, interspersed with rocks and other builders' detritus. After several hours of effort, including battling with a large rock impersonating the Canadian Shield, we had dug a hole five metres (15 feet) long, one metre (three feet) wide and one metre deep. Like many a gardener who has built a pond, I now wish we had made it larger. There are just so many fascinating native plants that could be happily housed there with a bit more space!

The bottom of the pit was sloped slightly away from the house foundation to lead any residual water out to the rest of the garden. Lining the pit with a piece of old pool cover (plastic sheeting will do, but this was available), we poked several holes near the bottom and refilled it with a mixture of the original soil, peat moss, and pine needles. We used simply what was at hand. Luckily, many bog plants enjoy a slightly acidic environment that the moss and needles would help to provide. No rain was forecast, so the garden hose provided the initial shot of moisture.

Trish had brought a variety of plants…Jack-in-the-pulpit (*Arisaema atrorubens*), turtlehead (*Chelone glabra*), boneset (*Eupatorium perfoliatum*), spotted Joe-pye-weed (*Eupatorium maculatum*)… many culled from her own yard. Over the years I've added my own picks: the delicate swamp rose (*Rosa palustris*), majestic queen of the prairie (*Filipendula rubra*), a now rather enormous buttonbush (*Cephalanthus occidentalis*) and tons of ferns…

Although the edges of my bog blend seamlessly with the rest of the garden, there is a dichotomy of conditions. The remainder of my front garden is subjected to full afternoon sun compounded by dry sandy soil. While the plants fronting the sidewalk wilt on hot sunny afternoons, the garden behind them remains fresh and luscious throughout the summer.

An enormous storm (the residue of Hurricane Katrina) hit southern Ontario on August 19th. Parking lots, streets and basements were flooded in many areas of the city. Several creeks were washed out by the rushing waters, undermining and collapsing a couple of heavily traveled roadways. Rushing home after the worst had passed, I feared what I might find, but the downspout garden had weathered the storm. The only damage was bent grass at the far edge of the bog, indicating where water had overflowed before soaking into another part of my front yard meadow. And, thank goodness, my basement was dry!

Now I have to get around to digging out the trellis bog so I can add more of my favourite plants. It may be cheating a bit to create an artificial environment… but I'm sure that somewhere in the surrounding neighbourhood there was once a wetland and I'd like to think that I am responding to that void.

Deb Dale is a former president of the North American Native Plant Society.

Street Stormwater Planting

With funding from the Community Program for Storm Water Management (CPSWM) jointly sponsored by the Toronto and Region Conservation Authority and the City of Toronto, the North American Native Plant Society held a series of three public meetings, "Downspouts & Native Plants…Discover the Connection", in September/October on the construction of downspout gardens. The brochure produced for these meetings and delivered to the neighbouring community has been included with this issue of the ***Blazing Star***. Perhaps it will inspire more native plant enthusiasts to construct a downspout garden and lessen the impact of storm sewer flow on local waterways.

Many thanks to the 14 NANPS members who joined me in planting a 30-metre by six-metre (100-foot by 20-foot) stormwater garden along the north side of Sheppard Avenue (west of Morningside Avenue) in Scarborough, Ontario on October 1st. Special thanks to Grif Cunningham, Greg Hagan, Natalie Helferty, Rolf Hertling, Carol Howlett, Howard Meadd and Merle Young who donated plants to the project. Feel free to drop by and admire the flowers anytime, perhaps clearing a weed or scrap of trash as you do so.

Deb Dale

PHOTOGRAPH COURTESY DEB DALE

Volunteers at NANPS stormwater planting

The Sunflower Forest: Ecological Restoration and the New Communion with Nature
By William R. Jordan III
Berkeley: University of California Press, 2003
256 pages, hardcover, $27.50US, ISBN 0-520-23320-4

Redemption and ritual. Communion and congregation. These are words normally associated with religion, but in his book *The Sunflower Forest*, Bill Jordan uses such terminology in connection with restoration ecology.

Bill Jordan is one of restoration ecology's most eloquent theorists; at the same time, he has critiqued the movement's most basic assumptions and forced the kind of hard introspection that leads to progressive changes in practice and theory. As the founding editor of the journal *Ecological Restoration*, he is well known for his insightful essays that draw on everything from science to poetry to build on his often surprising and always challenging ideas.

In *The Sunflower Forest*, Jordan argues for a new environmental paradigm based on restoration. It's a provocative book—one that embraces restoration as a performing art, one that doesn't shy away from discussions of ritual, sacrifice, and even talk of being partners in creation.

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A Landowner's Guide to Tallgrass Prairie and Savanna Management in Ontario
By Cathy Quinlan
Ridgetown, Ontario: Tallgrass Ontario, 2005
47 pages, softcover, ISBN 0-9736739-0-7

The intended audience for this publication—Ontario landowners whose properties contain tallgrass prairie or savanna—is small but hugely significant. These landowners are responsible for the rare remnants of prairie and savanna that are not protected in parks or otherwise cared for by public agencies. Thus, the stewardship activities of private individuals can help conserve rare pieces of Ontario's natural heritage.

A Landowner's Guide to Tallgrass Prairie and Savanna Management in Ontario, published by Tallgrass Ontario, is the companion guide to Environment Canada's 2000 publication on establishing prairies in Ontario, *Planting the Seed*. Written by Cathy Quinlan, the guide describes several management and restoration techniques, from fire, livestock grazing, mowing, and haying through to controlling invasives, interseeding, planting, and restoring natural drainage to a site. As is often the case with introductory guides, and perhaps mainly as a function of its limited length (just 47 pages), the guide doesn't provide a great deal of detail. Rather, it covers all the bases with enough information to point landowners in the appropriate direction, and offers many leads for further investigation.

I have a few minor quibbles. The discussion of herbicide use as a control for invasives would have been more useful if it had included information and suggestions for those landowners who live in communities that have banned or severely limited the cosmetic use of pesticides (for example, do any of these municipalities exempt restoration from pesticide restrictions and, if yes, how cumbersome is the exemption process?). As well, the typos and, at times, very awkward phrasing are distracting. However, the publication as a whole is crucial reading and useful guidance for any landowner in Ontario in the enviable position of having a piece of prairie to steward and manage.

Reviews by Lorraine Johnson, a former president and long-time Board Member of the North American Native Plant Society.

❁

Orchids of Manitoba: A Field Guide
By Doris Ames et al
Winnipeg: Native Orchid Conservation Inc., 2005
160 pages, paperback, $17.95
ISBN 0-9734864-0-6

This concise book is authored by eight modest - in fact, almost invisible - but highly knowledgeable orchid lovers who let Manitoba's native orchids in all their beauty sell themselves. All these orchids are terrestrial, which will come as no surprise when one considers that except perhaps for coastal British Columbia, these herbaceous plants must withdraw their energy to their roots in order to live again next spring.

There are 36 different species of orchids, plus two varieties in two of the species, for a total of 38 orchids in Manitoba alone. This is a remarkable number. When we consider native plants, do we enthusiasts ever see or think about orchids? They are uncommon to rare in most cases. And we humans are at fault for this condition not only in Manitoba, but throughout the world. There is a chilling photo in the book; the caption reads "A hole where a moccasin-flower once grew". Digging any wild plant without permission is not to be done, ever. Even if you have permission, digging an orchid must be considered carefully. They can be killed so easily. And for some, like the moccasin-flower (*Cypripedium acaule*) digging is tantamount to a death sentence. The book is very informative on this score.

Orchids of Manitoba has an excellent introduction, usually followed by two pages on each orchid species. The left-hand page is devoted to photographs of the orchids – leaves, stem, flower, sometimes seed capsules. The right-hand page is a description under Origin of the Name (a nice touch), Abundance, Habitat, Flowering Time, Description, Aids to Identification, and Comments. There is a range map as well. The photos are excellent, and will help the field naturalist to identify a plant as an orchid. If it is in flower, many of the species can then be picked out. Keep in mind that some orchids are quite small (10 centimetres or four inches high). In such cases, flowers can be tiny, so even experts can be uncertain as to species.

The book comes with an index, glossary, bibliography, and a chart for flowering times for the orchids, as found in this wonderful province of Canada. I read it cover to cover and recommend it to all orchid lovers.

Visit the web site at http//www.nativeorchid.org to obtain a copy.

Review by Tom Atkinson, a former NANPS president and a self-proclaimed lover of native plants, cats, raccoons, and orchids. He lives, botanizes, and gardens in central Toronto.

The Needs of Seeds: Sowing

by Natalie Helferty

> *'Hear! Behold, the sower went out to sow. And as he sowed, some seed fell by the wayside, and the birds came and ate it up. And other seeds fell upon rocky ground, where it has not much earth; and it sprang up at once because it had no depth of earth; but when the sun rose it was scorched, and because it had no root, it withered away. And other seed fell among thorns; and the thorns grew up and choked it, and it yielded no fruit. And other seed fell upon good ground, and yielded fruit that grew up, made increase and produced, one thirty, another sixty, and another a hundred fold.' Then he said, 'He who has ears to hear, let him hear.'* Mark 4:2

It is no coincidence that Jesus uses seeds to illustrate his lesson about valuing his teachings in this passage from the Bible, since a seed in ideal conditions will in all likelihood flourish.

A seed is an embryo ready and waiting to enter the 'womb' of the soil. All seeds, no matter how they are dispersed, must make contact with soil in order to germinate and grow. Even aquatic plants need an anchor; they must be able to withdraw essential minerals from the bottom muck.

Each plant species evolves under unique conditions, called a niche. The niche isn't just the place where the plant grows, but also the abiotic (non-living, e.g., moisture, sun) and biotic (living, e.g., mycorrhizal fungi) conditions that both nurture the plant and keep its growth in check by selective pressures, such as disease and herbivory (being eaten by animals).

As for its place, a seed often needs the same conditions its parent plant needs, but it doesn't always grow best near its parent, or even near its own kind. Like the young of animals, seeds prefer to move away from their parents so as not to compete with them for resources, and so they don't end up cross-breeding with their siblings or mom or pop! The 'mooches' of the world also don't survive long. By living too close they can suck their parents' resources dry as they grow, so killing off their genetic lineage.

Seeds can be transported by ants, they can be collected, eaten and then defecated out by birds or rodents, they can attach themselves to mammal fur and be deposited far away, or they can be moved by wind or water. Since plants are reliant on dispersal for gene flow and a seed may or may not survive where it's dropped, plants produce many seeds in order to 'beat the odds' of survival.

Photograph courtesy Ron Hepworth

Wild ginger (Asarum canadense) seeds are dispersed by ants which relish the elaiosome (oil storage cells) on the seeds.

Soil conditions are usually the same for the parent and its seed—from porous, like rock or sand, to almost impermeable, like silt and clay. The type of soil, along with elevation, orientation of slope, aspect, frost pockets and other microhabitat factors, dictates the amount of soil moisture that the plant receives via the roots.

Finer sediments (clays) hold water at the surface, slowing drainage. Clay soils that dry out can bake and crack open allowing water to drain quickly often resulting in desert-like conditions. This can occur where water-taking is too high due to aquifer pumping (with wells or irrigation). Clay that is deposited deeper in soil can be compressed and so will hold water for a long time enabling survival of roots at the surface through dry periods. Clay that is compressed will not easily rebound. Only mechanical disturbance and re-suspension in water and subsequent resettling on the bottom of a lake or river will bring the elasticity of clay back again.

If you are planting seeds in clay, be sure the clay won't dry out. A light top-dressing or lots of moisture and shade is often needed. Seeds can be lost in the cracks of dry clay soils, so don't be surprised if germination is low under

these conditions. Clay is plentiful and is great for growing due to its ability to retain moisture. Also the fine composition of clay allows for plentiful nutrient uptake via roots, but becomes a curse if the soil is mistreated. This is usually the case in newer urban developments, especially when the organic topsoil is removed exposing the clay to the elements. Soil conditioning (by top-dressing with compost and watering) is often needed.

Sand is coarser than clay. Plants that do well in sand need to have their seeds sown in well-drained conditions or the seeds will rot. Sandy soils do not have as much water-holding capacity as clay when exposed to the sun. A light top dressing of slightly damp (not wet) compost, after a thorough watering of the soil after sowing, will retain enough moisture so that watering will only be necessary during prolonged droughts. Springtime rains and melted snow are often enough to kick-start seed germination.

Loam is a mesic mixture of sand, clay, silt and organic content. This is the garden soil that most gardeners aim to achieve. A seed grown in loam usually does fairly well, unless it is a desert species or aquatic species that requires submerging. Yes, desert plants need full water saturation of their seeds to germinate, which mimics the annual flooding to which they are accustomed.

A seed sown in water can germinate, as in hydroponics, but as the rootlet develops, contact with soil is needed. This allows the seedling to start absorbing nutrients from the soil that are necessary for its survival. Fine root hairs are the means of absorbing these nutrients that go beyond the PKN content (phosphorus, potassium, nitrogen) of most commercially produced fertilizers. Nature is far more diverse in what it delivers and what it requires, so soils that contain a variety of vitamins and minerals for the plants are needed. That is why compost is best for topdressing soil.

Mycorrhizal fungi also exist in most soils in a symbiotic relationship, penetrating the fine root hairs to provide soil nutrients to the plant in exchange for sugars made through photosynthesis by the plant. A very delicate balance of give-and-take exists in healthy soil ecosystems beneath the greenery that most people identify as 'the plant'. As a seed germinates, adjacent plants that are supplying sugars to the soil's mycorrhizal fungi will inadvertently assist their neighbours in that the fungi also penetrate the adjacent growing seedling roots. Fungi can produce spores to propagate themselves, but the fungi use roots to survive. In nature, as nutrients are depleted from the soil with uptake by plants, the fungi can assist the plants in 'squeezing' the last of the nutrients out of the soil. Many plants that are found in forests, the climax of succession, will only thrive in the presence of these fungi. (Hint: If your woodland plants don't grow very fast or propagate on their own by seed, try inoculating your garden with some forest soil. A little goes a long way.)

Many woodland flowers have their seeds dispersed by ants (e.g., wild ginger, *Asarum canadense*). The ants love the elaiosomes, a fatty waxy substance that they eat after carrying off the seed to their burrow, thus helping to propagate a new colony of plants. The wax cannot dry out or the ant won't eat it, so many woodland seeds are adapted to be sown immediately. Alternatively, they can be kept in a plastic bag of moist vermiculite in the fridge (cold moist stratification) thus ensuring that the seeds do not dry out. It is best to sow them into conditions that mimic the humus layer of the forest floor, like partially decomposed compost over damp sand that is covered with a layer of leaves.

Seeds with hard shells (e.g., bitternut hickory, *Cardia cordiformis*) must have the seed coat scarified (abraded mechanically and/or chemically) to weaken it before planting. For seeds with fleshy fruit (e.g., nannyberry, *Viburnum lentago*), remove the flesh and then abrade the seed lightly with sandpaper. Legumes can be soaked in hot water overnight. Water, winter frosts or passage through an animal's digestive tract are nature's ways of preparing seeds.

Sunlight is the other critical factor in seed germination. Too dark or cool a space will often delay germination indefinitely. Most seeds, even acorns, should be planted no more than two centimetres (one inch) deep allowing light and heat to penetrate. Some very small seeds (smaller than a grain of salt), such as wild columbine (*Aquilegia canadensis*), require full sunlight. They normally disperse onto bare rocks or the surface of the soil when in the wild. Most other seeds need filtered light so are sown just beneath a compost or soil layer to mimic a shaded forest (e.g., maple keys) or grassy meadow (e.g., milkweeds, *Asclepias* spp.).

Consider the natural growing conditions of the plant and how the seeds are normally dispersed. Mimic these conditions for best results. With a bit of luck, your sown seeds will grow to fruition.

Natalie Helferty is a terrestrial biologist out to 'save the world', one seed at a time — move over Johnny Appleseed! In the next issue of the Blazing Star she will discuss the collection of seeds.

NANPS is looking for a **volunteer to assist our Treasurer with book-keeping.** Applicant must have knowledge of Excel, a fax machine, and ability to receive and send e-mails with attachments. This role will involve an hour per week for January, February and May, and an hour per month for the other months. A good way for high school students to earn hours towards the 40 hours of community service needed to graduate. Interested? Please respond by e-mail to nanps@nanps.org.

Calendar of Events

January 21, 2006
10TH ANNUAL TOWARD HARMONY WITH NATURE CONFERENCE
Hosted by the Fox Valley Area Chapter of Wild Ones.
Oshkosh, WI
Call Karen at 920-987-5587 or e-mail Harmony@for-wild.org.

March 9-11, 2006
11TH XERISCAPE CONFERENCE:
Restoring our Waters:
Thinking Globally,
Acting Locally
Albuquerque, New Mexico
Contact scott@xeriscapemn.com

July 14-16, 2006
WILD ONES AGM/CONFERENCE
Napierville, Illinois
Contact Marie Herman at mrhenterprises.com for more information.

Continued from page 1

in a garden bed. In spring the seed germinated readily. By the end of the growing season some seedlings were whips almost a metre high (three feet)! For maybe two seasons, there was major dieback. Thereafter, the shrubs/trees grew well and were tip-bud hardy. My fastest-growing redbud bloomed no more than six years from seed, a precocious phenomenon we propagators truly appreciate.

When you plant seed outside, do so in a prepared garden bed. I suggest planting seeds in a row so that when you see similar-looking plants in spring you will be less tempted to shriek "killer weeds!" and rip them from the ground. Cover redbud seed with no more than five millimetres (1/2 inch) of soil. If you fear predation by squirrels, line the row on either side with something heavy such as bricks. The sprouting seeds will push up between the bricks, but "bushy tail" will be thwarted in his zeal to till your garden bed.

Cercis canadensis will grow in almost any soil but it needs to be moist. The soil can be somewhat acidic to somewhat alkaline – ours is clay loam of about pH 6.8, which is good for market garden crops. Drought will cause leaf loss early on in redbuds, but a wet foot is not acceptable either. As a woodland tree, *Cercis* is accustomed to being in the understorey or on the verge between woodland and pasture. It will grow in full sun to considerable shade. The leaf litter decomposes into mulch readily.

Cercis canadensis occurs naturally in eastern North American woodlands and forest openings from Mexico north to Connecticut and Michigan and as far west as Nebraska. In Canada it is probably native only to Pelee Island although this is uncertain since it has been naturalized in Ontario. It is hardy to Zone 4.

The redbud is sometimes called the Judas tree because, as legend would have it, Judas Iscariot, who is alleged to have betrayed Jesus, hung himself in remorse from a redbud, (*Cercis siliquastrum*, native to Israel). The tree is said to have blushed with shame and has remained pink ever since. That said, there is a white version called *C. siliquastrum alba* which also grows in the Middle East. We have a white one too, named whitebud or *C. canadensis alba*. In colonial times, "Canada" was French territory, west of the Appalachian Mountains. Thus the appellation (pun intended) *canadensis*.

Although *Cercis canadensis* is not native as far north as Toronto (or has not been for perhaps 10,000 years), it does well in this region. If you clump several redbuds together or crowd them, their posture will be upright and less spreading. Open-grown specimens spread considerably. However you grow them (and strictly native or not) I would highly recommend that you find a place for this charmer in your yard.

Tom Atkinson is a native plant propagator living in Toronto. His primary interests are in rare woody and herbaceous plants, indigenous, of course, and those that are found in southern Ontario down through the eastern mountains of the United States.

Special Events Listings

Native Plant Groups: advertise your events on the NANPS website. Send your information to nanps@nanps.org at least 8 weeks before your event, or post last-minute events directly onto the website Message Board http://www.nanps.org/board/frame.shtml.

Holiday Gift Ideas

A NANPS Membership makes a terrific Holiday gift! Or donate $20 to plant a tree in Shining Tree Woods and receive a pewter NANPS logo pin. Or if you just like to purchase a lovely pewter pin send $5 to NANPS, P.O. Box 84, Station D, Etobicoke, ON M9A 4X1. You can also make a donation to the North American Native Plant Society and have the tax credit sent to a friend.

JOIN NANPS

Your donations and membership dollars help NANPS to study, conserve, cultivate and restore North America's native flora. Members receive our quarterly newsletter, the *Blazing Star*, and are eligible for NANPS-sponsored excursions and the Seed Exchange. NANPS is a registered charitable organization (no. 130720824) founded in 1984. **Donations to the Society are tax-creditable in Canada. Tax receipts will be issued for donations of $20 or more.**

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