

The Blazing Star



NEWSLETTER OF THE NORTH AMERICAN NATIVE PLANT SOCIETY

Native Plant to Know

Prairie Smoke (*Geum triflorum*)

by Emony Nicholls

The most delightful characteristic of prairie smoke (*Geum triflorum*) is its downy pink seed head that creates the effect of smoke rising on an early summer breeze. Growing 15-45 centimetres (six to 18 inches) tall, these little plants pack a visual punch throughout the year.

The petals of the small flower heads open only slightly and range in colour from red to orange. Obscuring the petals are the triangular maroon sepals, providing relief in mid-May for the colour-hungry native-plant gardener. On each stem there are two to four dainty drooping flowers with some reduced leaves at the base of the floral shoot. The hairy basal leaves are pinnately compound with the lateral leaves increasing in size towards the tip. In winter, the rosette of leaves turns a deep red at more northern latitudes but remains "ever-green" in warmer climates.

Clustered together in front of a perennial bed, the bobbing red flower heads provide a visually striking treat in the spring. With advancing years, the flowers will bloom more and spread well, but not aggressively.

As an early bloomer, prairie smoke provides vital nectar for insects emerging from hiberna-

tion. Mind you, small bees have their work cut out for them having to force their way into the tight blooms. Once pollinated, the flowers raise their drooping heads to the sky and allow their silky styles to elongate waiting for the wind to carry their seed away. When the flower goes to seed in mid-June it lends the beds a beautiful softened texture low to the ground, a lovely complement to taller plants.

Prairie smoke prefers sandy, well-drained soils and sunny conditions, but will also tolerate loamy wet soil and partial shade, and even more extreme conditions. Found across North America, these plants range from Eastern Ontario, south to Illinois, across the central prairies of Manitoba and South Dakota to California. They also extend north into Washington and

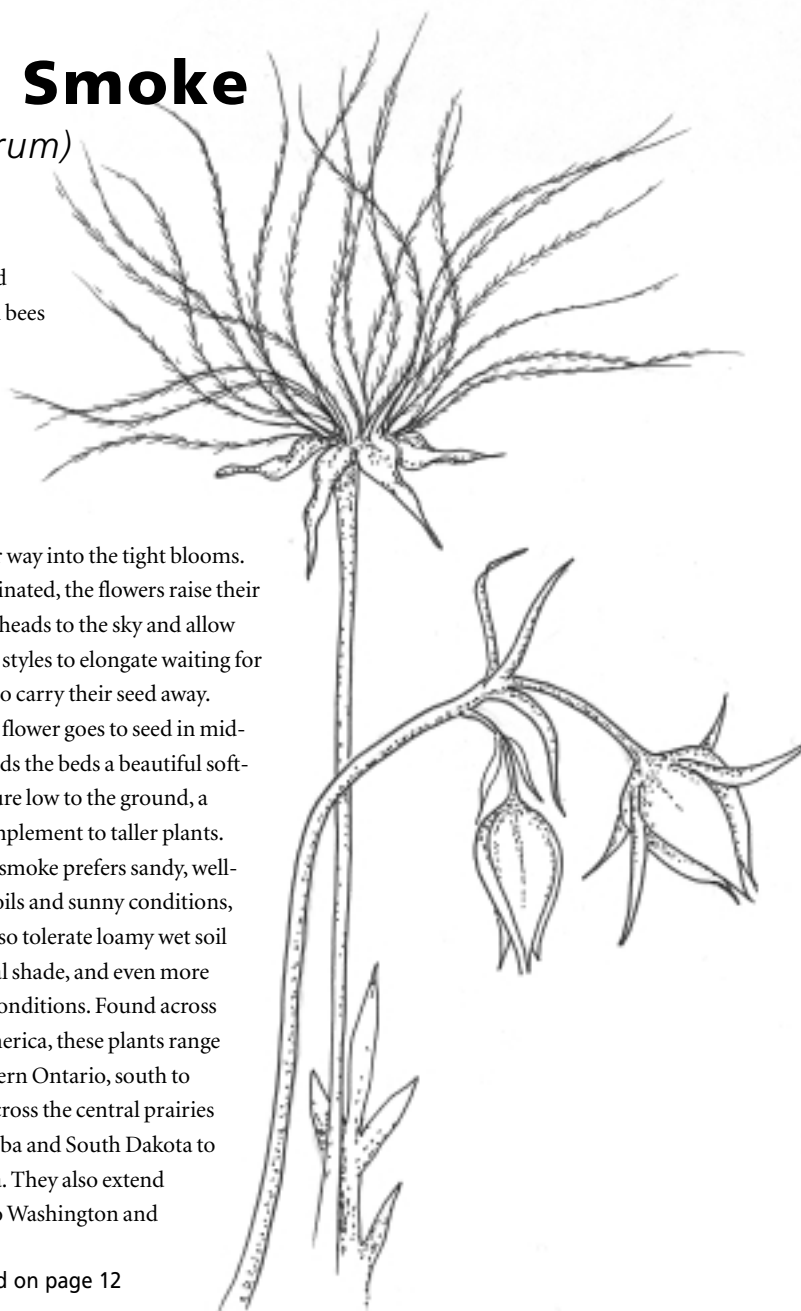


ILLUSTRATION BY BRIGITTE GRANTON

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The *Blazing Star* is . . .

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President's Letter

As President of the North American Native Plant Society, and on behalf of the Board of Directors, I am writing to you about the current condition of NANPS, and about what we might/should do to improve it.

What is the state of NANPS?

- We still have a successful annual Plant Sale.
- We produce a wonderful newsletter, the *Blazing Star*, which you have in your hands right now, and occasional helpful fact sheets.
- We have a field trip or two each year with excellent leaders.
- Our Seed Exchange is very popular.
- We attend numerous events such as Canada Blooms with our display where we trumpet the native plant gardening and conservation message.
- We own two significant properties -- Shining Tree Woods, and, on the northern end of the Bruce Peninsula, a relatively new acquisition, Zinkan Island Cove.
- And we have an Annual General Meeting that celebrates native plants and our organic linkages to them, with speakers and a good plant sale.

BUT,

Your Board of Directors is not at all

satisfied with our current condition.

- We are a small Board – too small – and we need more help and more members.
- We firmly believe that NANPS needs more STUFF happening: More meetings? More field trips? More publications? More participation by our members in making decisions? More committees working on more activities?

We will be having a special meeting to discuss these matters on September 20, 2005, in advance of our Annual General Meeting on October 15. Please give all this some thought. Plan on coming to the special meeting and the AGM. Send me your inspired ideas about how we can improve our performance. We need your help. We look forward to your input.

You can reach me via grifc@yorku.ca or by snailmail at: Grif Cunningham, 65 Albany Avenue, Toronto M5R 3C2.

NANPS special meeting:
Tuesday, September 20, 7 p.m.
Swansea Community Recreation Centre,
Rennie Room
95 Lavinia Avenue, Toronto
tel: 416-392-6796

Grif Cunningham

Don't Deadhead that Flower – if it's native!

For the past couple of years our seed exchange has received requests for native plant seeds from between 85 and 100 members. These requests are being met by only 25-30 donors.

Help us re-balance these numbers. Send in your native plant seeds from Ontario and parts beyond.

If you have woodland seeds but are uncertain as to how to store them, send them to our post office box now and we will take care of them.

Remember to collect no more than 10% of the seed of any wild native plants. If what you are collecting is scarce then err on the side of caution and take only a minuscule amount, or don't take any at all.

Send your seeds properly labeled with common name and Latin name (individual packets for each species) to NANPS Seed Exchange, Box 84, Station D, Etobicoke, ON M9A 4X1.

NANPS ANNUAL GENERAL MEETING

Saturday, October 15, 2005 - 1PM-5PM
Toronto Botanical Gardens
(formerly Civic Garden Centre)
777 Lawrence Avenue East (at Leslie)
Toronto

Distinguished botanist and NANPS Honourary Director Frederick W. Case, Jr., author of *Trilliums* (with his wife Roberta), *Orchids of the Western Great Lakes Region* and other noted books will be making a presentation entitled "A Great Lakes Wildflower Sampler". Recipient of many botanical awards, Fred also has an orchid named in his honour: *Spiranthes caseii*.

Ken Parker, co-owner of Sweet Grass Gardens, a native plant nursery on the Six Nations Reserve, will talk about gardening in all soil types as well as medicinal, culinary and spiritual uses of native flora. An engaging speaker, Ken is a landscape expert featured on The Gardening Gamble on W-network.

- election of 2005 board of directors - If you are unable to attend the AGM you may submit a written proxy to a member in attendance or a member of the executive prior to the meeting
- plant sale and seed exchange
- refreshments served

Sowing the Seed

by Clare Duffy

In September, 1956 I entered Grade One in a two-room schoolhouse in Holly, Ontario, just 80 kilometres (50 miles) north of Toronto. I lived with my grandmother on the farm her grandfather had settled. Although much of the farmland had been sold off, the family still owned a string of wooded areas and abandoned homesteads winding for miles along the course of a stream.

I grew up following my Granny and her friends through this silent aging landscape. We searched for morels (*Morchella* spp.) in the spring and puffballs (*Lycoperdon* spp.) in the fall. They pointed out the yellow lady's slippers (*Cypripedium calceolus*) that were achingly exquisite to a five-year-old's eyes, the pompous Jack-in-the-pulpits (*Arisaema atrorubens*), the *Ranunculus fascicularis* or buttercups so bright they'd reflect yellow off your chin. They also taught respect for the plants – none of these women would have dreamed of picking all the morels, much as their mouths watered for them, and I thought God himself would strike me dead if I picked a trillium (*Trillium* spp.).

When I was eight, we moved to the city and I remained without that close rapport with the country for over 30 years. Then I moved to a cottage on one of the Kawartha Lakes north of Peterborough. Located along the southern edge of the Canadian Shield, the last gasping stop of the glaciers, it is an area of drumlins and gentle pastoral beauty. My long narrow lot slopes westward down to the lake with mature white birches (*Betula papyrifera*) and a majestic sugar maple (*Acer saccharum*) gracing the lawn. Between the cottage and the lake are a dozen cedars (*Thuja occidentalis*) which the previous owner kept cleanly trimmed so they swayed like palm trees in the breeze.

Heaven, I thought, but I need a garden. I dug up the bit of level ground beside the cottage and happily started planting herb wheels, knot gardens... The shaded slope below it troubled me greatly, though. Would that persistent green stuff attempt to take over my new, weed-free and soon-to-be-pristine garden? Every spring I painstakingly tore up every bit of plant life that dared to emerge. My third spring saw me traveling for April and May. I returned to find the slope covered in

heart-shaped leaves with purple flowers. So this is what I had been trying to eradicate! Luckily, they knew they belonged there and had been more persistent than I. I rushed out to buy *Peterson's Field Guide to Wildflowers*. It was the common blue violet (*Viola papilionacea*).

A clump of grey furry leaves which I might previously have dug out I now realized grew into the tall yellow-flowered spikes of the alien common mullein (*Verbascum thapsus*) that Granny would steep for tea for a sore throat. A rather sinister-looking plant that had frightened me as a child turned out to be Indian pipe (*Monotropa uniflora*). I delighted in the goldenrods (*Solidago* spp.) and asters (*Aster* spp.) in the fields.

One spring I allowed the land to put out what it was meant to. A mass of wild strawberries (*Fragaria* sp.) flowered early. The eastern columbine (*Aquilegia canadensis*) moved in making itself at home in seemingly soil-less nooks and crannies. Dog violets (*Viola conspersa*) which I like to call Johnny-jump-ups danced through my garden. A few trilliums appeared. When I decided not to mow the upper sunny lawn so often I uncovered a field of orange and yellow hawkweeds (*Hieracium* spp.) – some probably native, some not.

My shoreline was protected by a line of round river rocks. The lawn was slowly collapsing into it. In previous years I had hacked down anything growing above grass level, and regularly waded along the shore gathering the washed-in lake weeds, putting them in a wheelbarrow, then a trailer, then off to the township dump. Now I let them be. They gradually decomposed between the rocks and have formed soil.

A clump of bulrushes (*Scirpus expansus*), broken off in a storm, floated across the lake and lodged in a small inlet. They now form a lovely colony where the mallard ducks bring

their young ones to teach them Feeding 101. I've planted a red osier dogwood (*Cornus stolonifera*) near the rushes. Sleepy catchfly (*Silene antirrhina*) has settled in. On top of foot-tall stalks perch tiny, white, star-like flowers bursting out of much larger bladder-like pods. If something evil from outer space were to invade, I could imagine this being their vehicle. In late summer, tall lacy plants dangle delicate, spurred orange flowers – jewelweed (*Impatiens capensis*). Two types of mint plants scent the air: wild mint (*Mentha arvensis*) with its pale lavender flowers clustered along downy stems, and the alien catnip (*Nepeta cataria*) which my cat is excessively fond of.

For the most part I let what springs up remain, although there have been a few less welcome guests. Wild raspberry shoots (*Rubus* sp.) have appeared, though the closest plants I have seen are hundreds of yards away. The lovely twining hedge bindweeds (*Convolvulus sepium*) over-extended their welcome as they threatened to strangle everything in their path. And it was a painful day when I identified the alien stinging nettle (*Urtica dioica*).

Much as I cherish the native plants that have allowed me to co-exist in their space, I have no plans to abolish my imported favourites. Who can deny my Dutch daffodils the pleasure of naturalizing in the lawn? Or my multinational poppies (Californian, Icelandic, Himalayan) uniting in spontaneous gatherings every year? Canada has a reputation for welcoming those from other lands. My garden will become a living monument to this ethic.

Clare Duffy writes short literary fiction and (under an assumed name) crime stories. She is on the executive of the Lakefield Horticultural Society and is currently setting up a program to get more youth involved in gardening.

Letters to the Editor

I have long admired butternuts (*Juglans cinerea*) and have the pleasure of working on a property that has several large ones – right in the middle of Toronto. I also know one butternut near a tributary of the Don River in a low-lying area of the city. Many of these trees go unidentified.

I have planted a cucumber magnolia (*Magnolia acuminata*) in Thornbury, Ontario, quite near Georgian Bay. Last seen it was growing well and flowering. Hardy? I think so, although the bay's mitigating effect helps in this microclimate.

- Catherine Siddall, Toronto, Ontario

Great White Oak

by *Madeleine McDowell*

David Orsini and I share a particular passion – for a tree. It’s a white oak (*Quercus alba*) in the west end of Toronto, in a backyard on the southwest corner of Jane and Weatherell Streets. I describe the tree as over 260 years old. David, a landscape architect, says it’s 300 years old. Neither of us argues the point. It is a beautiful and impressive tree.

Toronto has other white oaks of this age, but what makes this one so special is its location on the Toronto Carrying Place. A portage

trail along the Humber River used by aboriginal peoples to traverse the distance between Lake Ontario and Lake Simcoe, the Carrying Place was a link in the major North American trade route that stretched from the Gulf of Mexico to the north shore of Lake Superior. The Weatherell Street white oak is a living witness to people and events that are a part of the history of Canada.

The oak was a sapling when the French built their second trading fort, Fort Toronto, in 1749 at the foot of the portage on which the tree stands. It was part of the forest canopy by

1764 when Alexander Henry passed by with a group of Mississaugas on their way to Fort Niagara. It was a maturing tree when fur trader Benjamin Frobisher traveled through the area recommending in a 1784 report that the Northwest Company use the Carrying Place as the preferred route to the West.

The feet of the war party dispatched by General Brock in 1812 to capture Fort Mackinac trod over the roots of this tree. In 1828, the massive oak witnessed the passage of Peter Jones, the Chief of the Mississaugas, and his people on their way to a meeting with Inspector General Jacques Baby further north on his estate.

This magnificent oak was into its third century when little David Orsini passed by each day on his way to school. Entranced by this tree, David began collecting its acorns and propagating them. The last time the tree produced acorns was in 1998, so its offspring are now seven years old and looking for a new home in the neighbourhood. The continuation of a local gene pool with a pedigree of three centuries is both remarkable and essential to the integrity of the area’s natural history.

In the spring of 1997 this white oak was one of 150 oak trees along the Toronto Carrying Place, all over 125 years old, that were proclaimed by Metropolitan Toronto as an ancient oak grove and named in honour of Tuhbananequay, daughter of Wabanosay, Chief of the Mississaugas at the time of the Toronto Purchase. (Tuhbananequay was Peter Jones’ mother.) Naming of the grove (which included black oaks, *Quercus velutina*, some red oaks, *Quercus rubra*, and hybrids of the two) was done with the permission of the Mississaugas of the New Credit First Nation who conducted the dedication ceremony. They planted a bur oak (*Quercus macrocarpa*) as a symbol of regeneration. Since then a number of oak trees of different species have been planted in front yards, while there has been a loss of about 10% of the ancient oaks of Tuhbananequay due to drought, pest infestation and urban stress. This is of grave concern since the preservation and perpetuation of its live trees are essential to maintaining the status of the Humber as a Canadian Heritage River.

For this reason, I have attempted to have the great white oak designated under the Ontario Heritage Act. The City of Toronto has so far refused to consider designation since the tree is not fully owned by them (it straddles the property line between city road allowance and private property). Still, if advised to do so by



David Orsini's white oak nursery

PHOTOGRAPH COURTESY DAVID ORSINI

PHOTOGRAPH COURTESY DAVID ORSINI



The great white oak at Jane and Weatherell Streets in Toronto.

the Toronto Preservation Board upon the recommendation of the local preservation panel, City Council may be persuaded to pass the designation.

Although designation does not guarantee preservation, it does give the tree a measure of exposure it would not otherwise receive. It would be a good first step.

The tree, whose trunk shows to be at least 1.2 metres (four feet) in diameter at breast height, appears very healthy. The new owner of the property on which it lives is fascinated by its story and determined to aid in its preservation. In the meantime, David Orsini tends the saplings that he will outplant locally to carry on the lineage of the great white oak.

Madeleine McDowell is Chair of the Humber Heritage Committee. This article was adapted from one which appeared on the Ontario Urban Forest Council website.

Heritage Tree Designation

Torontonians are urged to contact their local councillor in writing, by phone, fax or e-mail to push for the designation of the white oak at 37 Weatherell Street. With the Private Tree Bylaw now in place in the amalgamated city of Toronto, the city's privately owned trees (including backyard trees) are better protected. But this protection is dependent in large part upon the participation of concerned citizens who report any attempts to have trees 30 centimetres (one foot) in diameter at 1.4 metres (4 -1/2 feet) above the ground removed.

Under the Ontario Heritage Act, designation is done by the municipality upon the advice of the local architectural conservation advisory committee. The tree (or grove of trees) should be of outstanding significance to the local or provincial heritage. This may be determined by its historical associations (as in the case of the white oak) or based upon its presence in the local historical gene pool. An example of this is the tiny cedars (*Thuja occidentalis*) that grow on the Niagara Escarpment which are over 900 years old.

Dead or dying trees will not be designated. The Weston, Ontario cucumber magnolia (*Magnolia acuminata*) that's over 130 years old (one of a pair until recently) is not a candidate for designation. Although it's a rare Carolinian species, the tree is not healthy. Weatherell Street's white oak is healthy, ancient, genetically valuable and of great historical significance. Having it designated as a heritage tree will heighten public awareness of conservation and history.



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The Wild Rose and its Pollinators

by Jim Dyer and Victoria MacPhail

Wild roses (*Rosa* spp.) are being studied as a potential commercial source of rose hips, the fruit that develops from rose flowers. A close relative of strawberries and apples, rose hips are little, berry-like, red fruit with a high vitamin C content, as well as several other vitamins, antioxidants, and nutrients. Commercial production of rose hips for pharmaceutical and preserve companies, as well as wineries, could provide a new source of income for farmers, particularly in the Maritimes. The Atlantic Canada Network on Bioactive Compounds is the organization responsible for developing this concept, with help from the Atlantic Innovation Fund. An important part of this investigation is being carried out in the Department of Environmental Biology at the University of Guelph in Guelph, Ontario where research into the pollination biology of wild roses is currently underway. A large part of the field component for this project is taking place at Rock Chapel, a nature reserve operated by the Royal Botanical Gardens near Dundas, Ontario.

Wild roses are preferable to ornamental roses for the purposes of cultivation for human consumption. This may seem surprising given the size of most domestic roses compared to the delicate and modest wild roses. However, garden roses need special care and expensive inputs whereas wild roses are well-adapted to Canadian environmental conditions. As well, people consuming parts of these flowers are likely to be interested in how they're grown. A product grown without pesticides will probably enjoy better market value.

One of the production questions involves how roses achieve pollination, which is needed in order for the hips to form. With wild roses, it isn't presently known whether they are capable of self-pollination (ovules can be fertilized with pollen from the same flower) or if they are self-sterile (pollen must be transported to other flowers to form fruit). In rare cases fruit can form without pollination, and this unlikely possibility will also be checked in the study. If the work at Rock Chapel indicates that wild roses need cross-pollination, insect pollinators become critical. In fact this issue is so important that part of the study involves depriving the flowers of natural cross-pollination. This involves bagging selected flowers to keep insect pollinators away.

Recent experience has revealed that the introduction of honeybees is not always the best solution for crop pollination. There are many specific cases where local native bees are better suited. Decreased reliance on honeybees as pollinators is not a new concept, as illustrated by the blueberry (*Vaccinium* spp.) industry in eastern Canada. The transition from a wild harvest to a systematic cultivation of blueberries has been going on since the late 1800's. The crucial role played by several

of mites, and moving them around to pollinate various farmers' crops tends to spread these infections. Wild or native bees are not affected by these mites. Second, since the honeybee is an introduced species, any regional increase in their numbers puts extra competitive pressure on native bees. Since it is important to know what the local pollinator agents are, a big part of this wild rose study is to observe the insects that frequent wild rose patches. Following the example of blueberry



PHOTOGRAPH COURTESY JIM DYER

Along with assorted native bees, syrphid, or flower, flies are also effective pollinators of many wild flowers, largely because of their great numbers.

dozen species of wild bees is now generally recognized. In fact, it is becoming more evident that relying on honeybees for pollination services has a number of problems. First, their hives are vulnerable to infections by two types

cultivation in eastern Canada, a beneficial side effect of commercial production of wild rose hips might well be the incentive to thoroughly catalogue the native bees and other pollinating insects that are associated with wild roses.

The wild rose flower is easily recognized by its five pink (or, more rarely, white) petals and its flat, open shape. Flowers having a radial or bowl shape allow insect visitors easy access to their anthers. This accessibility means that wild roses are generalists compared to more specialized flowers which allow only insects of the right shape and size to penetrate the narrow, tubular or closed corollas in order to retrieve pollen. Wild roses attract a variety of pollinators, including many small to medium bees and a variety of beetles and syrphid flies. The domestication of roses has produced a very differently shaped flower. A hybrid rose is more tubular and has more than five petals.

The prominence and accessibility of the anthers of wild roses to foragers is an adaptation likely driven by necessity since the lifespan of any given flower is short (often only a few days). The wild rose does not offer its visitors any nectar. Instead, the insects must forage for pollen. This may limit the number of insect species that forage this plant to those that rely primarily on pollen. It may also mean that many insects that take pollen from wild roses would need access to other floral sources to obtain nectar, a factor that must be considered before large monocultures of roses are planted.

The wild rose hips initiative comes at a time when there is a growing concern that many



A sweat bee

PHOTOGRAPH COURTESY JIM DYER

pollinating insects are under threat and not well enough understood. In Canada the link between the scientists who have been researching pollinating insects for decades and the emerging need for more public awareness and involvement is being filled by the Environmental Monitoring and Assessment Network Coordinating Office (EMAN-CO), a part of Environment Canada.

To facilitate this link, EMAN-CO is developing a nation-wide pollinator watch program (based upon last year's pilot project in

Waterloo) whereby volunteer observers will receive guidance on how to observe and report on pollinating insects that they would encounter in their backyards or local parks and trails, sites where the wild rose might be present.

While the wild rose project, like the blueberry industry, provides motivation for more scientific study of wild insect pollinators, the potential for commercial rose hip production demonstrates that these insects are not just another component of nature that needs our protection. They contribute significantly to our economic prosperity. Our dependence on insect pollinators extends to most crop types and is shared by virtually all natural ecosystems.

Web Links: <http://www.upei.ca/acnbc/>
<http://www.springvalleyroses.com/inthegarden/roserecipes.html>
<http://www.eman-rese.ca>

Jim Dyer is an environmental consultant on climate change and biodiversity issues in agriculture who lives in Cambridge, Ontario. Victoria MacPhail is a graduate student in Environmental Biology at the University of Guelph who is conducting field research on wild rose reproduction factors and insect visitors.

Bogs Tour

by Tom Atkinson

On July 9th, NANPS organized an outing to some wonderful boggy sites near Guelph, Ontario. We were joined by members of the Waterloo-Wellington Wildflower Society. Our leader was Allan Anderson, former director of the Canadian Wildflower Society (which later became the North American Native Plant Society.) Allan is both field naturalist and propagator. He is renowned in the latter category for his native terrestrial orchids. These he grows from seed, no mean feat when you consider that most of us, insofar as these orchids are concerned, grow them to extinction.

Our first site was a very wet (keep in mind that we were in the throes of a prolonged drought) cedar swamp. There were native slipper orchids (*Cypripedium reginae*), Labrador tea (*Ledum groenlandicum*),

clintonia (*Clintonia borealis*), bunchberry (*Cornus canadensis*), goldthread (*Coptis groenlandica*), sundew (*Drosera rotundifolia*), huckleberry (*Gaylussacia baccata*), mosses, all packed in among mature cedars, all reminiscent of more northern landscapes.

We walked through a disturbed site, then tall grasses and native clematis (*Clematis virginiana*) to the headwaters of a local creek. Near the limpid pool that marked its beginning were grass pink orchids (*Calopogon tuberosus*). These were in flower and quite lovely.

The third location that morning was a marly fen, quite open. The plant highlights were tall white bog orchid (*Platanthera dilatata*) and pitcher plant (*Sarracenia purpurea*), common but captivating.

After a well-shaded lunch, we set off on a very hot trek across an old field with prickly

ash (*Zanthoxylum americanum*) and a corner of a dry cedar forest to the site of an old limestone quarry. There we saw deep, oh-so-inviting swimming holes, a limestone alvar, and Loesel's twayblade orchids (*Liparis loeselii*) and leaves of nodding ladies tresses (*Spiranthes romanzoffiana*). The orchids were short, at best 15 centimetres (six inches). From books, it is difficult to get the true feeling for many orchids; field study is, therefore, so gratifying.

We trekked back, exhausted, but exhilarated. This was a marvellous outing, with sites you can only dream of. Allan was a leader who shared what he knew gladly with any and all, and for that we thank him immensely. Speaking personally, I'd love to go back, and almost daily think of the marvels that we saw that day.

Tom Atkinson is a native plant propagator, lover of trees, orchids and cats.

New & Noted

Butterflies and Butterfly Gardening in the Pacific Northwest

By Mary Kate Woodward
North Vancouver: Whitecap, 2005
ISBN 1-55285-707-7
Paperback, \$19.95, 104 pages

There's something butterfly-like about this book, appropriately enough: it's small, compact, beautiful, colourful, and it flits from subject to subject, alighting briefly on important points, then moving to the next area of interest. While there's not a great deal of in-depth gardening detail about specific plants, there's a lot of general information that will get any Pacific Northwest gardener well on the way to creating butterfly habitat.

Some of this book's admirably practical advice rarely gets a mention in most butterfly gardening books. For example, the author suggests that you survey the neighbourhood to discover which larval host plants are present nearby (there's a thorough list); this way, you can concentrate your gardening efforts on host plants missing from your neighbourhood and increase the probability of attracting a greater variety of butterflies. So sensible!

Along with the general principles of butterfly habitat enhancement, there are charts listing more than 100 trees, shrubs, vines and herbaceous plants that provide food for butterflies in their larval and adult stages. The information in these charts is limited—for example, only genus names are included, not specific epithets, and there is no mention of flower colour or growing requirements such as sun or shade, soil preference, moisture requirements, etc. A gardener would need to do more research on plants' needs before incorporating them into a design.

Where this book really shines is in the photography. The "Gallery of Butterflies" section includes photographs of the pupa, larva and adult forms of dozens of butterflies. This

alone will convince readers that attracting these creatures will bring the garden alive.



The Golden Spruce: A True Story of Myth, Madness and Greed

By John Vaillant
Toronto: Alfred A. Knopf, 2005
ISBN 0-676-97645-X
Hardcover, \$35 CND, 256 pages

This may be the story of one tree, but it is also the story of a forest, a culture, the culture of forestry and, like the expanding rings of the tree at the story's centre, just about every important issue of our times: the imbalance of power between Natives and non-Natives, the collision between resource-hungry lifestyles and nature's limits, the unknowable forces at work in the planet and the mysteries of human motivation. The extreme pleasure of reading this book is that the author takes what is really a very simple story—deranged man chops down sacred tree in Haida Gwaii (the Queen Charlotte Islands)—and finds every conceivable connection, braiding all these colourful threads together into a richly satisfying narrative that is at once natural history and cultural history, and all of it pressingly current.

The Sitka spruce at the centre of the story is a 300-year-old, 50-metre-tall (55 yards), luminously golden anomaly that existed against incalculable odds. Chlorotic, asexual, and infertile, the golden spruce glowed in its coastal rainforest home for centuries, until a man on a misguided mad mission, Grant Hadwin, chainsawed his way through its trunk. Hadwin's violent act was a protest against the destruction caused by old-growth logging practices.

The author, John Vaillant, paints a most credible portrait of Hadwin's deranged character, and he puts it in the context of our own

culture's voracious destructiveness in relation to the old-growth forests of the Pacific Northwest. Hadwin emerges as a madman on a mission, but we are all implicated too.

However, this book is anything but a heckling rant. Vaillant brings the history of West Coast logging alive in a way that defies easy demonization. The reader is nudged towards sympathy and admiration for the men who toiled in the rainforest at the turn of the 20th century, with such evocative writing as: "West Coast logging... was not so much tree-cutting as it was a kind of terrestrial whaling: determined, poorly paid men working in remote areas were using temperamental machinery and simple hand tools to subdue enormous, often unpredictable creatures that could squash them like bugs."

Likewise, only a reader made of stone could not feel at least some small measure of grudging respect for Hadwin's skill as an outdoorsman, despite the horrifying outlet to which that skill was finally directed. The stories that Vaillant tells of Hadwin's feats of survival (such as kayaking at night in the notorious Hecate Strait in a February storm, with winds of 50 kilometres (30 miles) an hour, minus 20 Celsius (-4 F) temperatures, and breaking waves more than three metres (10 feet) high, wearing a rain slicker and dishwashing gloves—and surviving) rank up there with the best of adventure literature.

As a writer about nature, Vaillant also ranks with the best. When he says, "it could be argued that trees represent aspiration and ambition in their purest form," you just want to sit back, savour, and offer thanks for an author who gives voice to one tree, a whole forest, a damaged man, and a damaged culture.

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

Donations to STW Restoration

A heartfelt thank you to all NANPS members who contributed to the restoration of Shining Tree Woods in Norfolk County, Ontario under NANPS new STW Fund. Donations recently made by the following individuals will enable the planting of cucumber magnolias (*Magnolia acuminata*), the signature tree of this precious parcel of old-growth Carolinian forest. The trees were grown from seed

collected in the forest by current and former directors of NANPS.

Jackie Campbell
Frank Fohr
Anne Goodbody
Jim Hodgins
Bob Kennedy
Catherine Siddall
Julianne Williams

A special thanks to an anonymous donor whose contribution will add 20 of those extraordinary trees to the Woods.

It's not too late to contribute. Donations of \$20.00 per tree (tax creditable in Canada) can still be sent with cheques made out to the North American Native Plant Society. Mail to NANPS STW Fund, Box 84, Station D, Etobicoke, ON M9A 4X1. Donors will receive a beautiful pewter NANPS logo pin.

Ontario Web Flora Launch

by Steve Newmaster

The OAC Herbarium at the Biodiversity Institute of Ontario, University of Guelph, Guelph, Ontario has recently moved into a new space and is generating a critical mass of botanical activity. The research team, dubbed the Floristic Diversity Research Group (FDRG), consists of a dozen researchers from undergraduates to post doctoral students and research associates working on biodiversity projects. This includes the anthropogenic impacts on plant diversity, ethnobotany, floristics (the study of plant distribution) and taxonomy, including traditional morphology and state-of-the-art molecular techniques. The most recent work includes several taxonomic treatments in the *Flora of North America* (Oxford University Press) and the launching of the Flora Ontario Integrated Botanical Information System (FOIBIS).

FOIBIS (phase 1) is now accessible on the

Internet (<http://www.uoguelph.ca/foibis>) and will be updated regularly with the most current botanical nomenclature as published in peer-reviewed journals and *Floras* (works showing plants from specific geographic areas). Phase 1 includes more than 4,800 species (native & established alien species), including vascular plants, bryophytes and lichens that grow in the province of Ontario. The following information is provided for each species: division, class, order, family, genus, and species nomenclature; scientific synonyms; common English & French names; rarity status and more. Phase 2 will include detailed information such as species description, habitat, distribution maps (county, eco-district), ethnobotanical information and DNA barcodes. Species descriptions and a multi-access key (Polyclavis), are currently being developed for the Flora Ontario, and will be available on the website as an identification tool. FOIBIS will also be broken into

county floras within Ontario, with interactive websites to submit new county records and vouchers to the OAC Herbarium. The needs of today's researchers, botanists, foresters, ecologists, biologists, naturalists and others will determine the types of information included in future versions. The Flora Ontario will be published as a hard copy in two volumes: cryptogams (spore-producing plants including ferns, mosses and hepatics) and phanerogams (seed-producing plants).

The Floristic Diversity Research Group is currently working on both local and international projects. One research team is investigating the impacts of forest management on biodiversity in northern Ontario. More specifically, they are conducting research on the establishment of exotic species and the loss of native species from forest communities.

Dr. Steven Newmaster is the Director of the OAC Herbarium and the Floristic Diversity Research Group at the University of Guelph.

Stormwater Project

by Deb Dale

NANPS has received a small grant under the City of Toronto/Toronto Regional Conservation Authority's "Community Program for Stormwater Management" (CPSWM) to rehabilitate a section of grassed-over swale in the City's east end.

This program is intended to improve stormwater quality and to rehabilitate natural features.

In addition to introducing the neighbourhood to a beautiful array of moisture-loving natives by planting the swale, NANPS will be holding a series of Community meetings to show area residents how to incorporate native plants in their own yards including special sessions on constructing downspout gardens. Details will appear on a new page of our website, www.nanps.org, shortly.

How can you help? The more plants placed by this project, the better will be the end results. If you have extra seedlings or garden transplants to donate, please contact NANPS via email or telephone as soon as possible with a list of what you will have available so that we can include in them in our plan. All plants must be locally native, naturally! Our goal is to "raise" at least 200 plants from our membership. Please keep watch for a list of "plant

pledges" on the web Message Board and remember to send in your pledge!

The first planting date is scheduled for Saturday October 1, 2005 at 10 a.m., raindate Sunday October 2, 2005 10 a.m., on Sheppard Avenue just west of Morningside Avenue. Please bring gloves, handtools, and narrow (transplant) spades and dress appropriately to the weather.

Twenty Section Captains to take charge of three metre by three metre (10 foot by 10 foot) plots are needed. They will design the sections and work with volunteer planters. All are welcome.

Have any stories, tips or traps to share about your own downspout gardens or just native plants in general? Post them on NANPS online Message Board. More importantly, come to the Community meetings. The local residents could use your encouragement in embarking on their journey into the mysterious world of native plants.

Photos of your own downspout/bog gardening projects are also gladly accepted for use in the newsletter or future mailings about community projects.

Rehabilitation projects scored high on NANPS last membership survey, so we're very excited by this venture. If you're interested in assisting with this or future rehabilitation



PHOTOGRAPH COURTESY DEB DALE

The site of NANPS stormwater planting

projects or with the Community meetings, if you have plants to contribute to the stormwater planting, if you would like to be a section captain or if you have stories, tips or photos to share please contact nanps@nanps.org.

Remember to watch the website for updates on the Community meetings and planting schedule!

Deb Dale is NANPS former President who can be reached at nanps@nanps.org.

The Natural History of Nodding Pogonia

by P. Allen Woodliffe

To many wildflower enthusiasts orchids have a special aura about them. They are an indicator of wild and exotic places, as some of the most spectacular ones used in the horticultural industry are native to relatively untouched tropical rainforests. They are often beautiful, although to the casual eye some of Ontario's orchids are the least impressive of the wildflower community. Orchids often grow in some of the wildest and most pristine parts of our landscape. They are unpredictable, growing in profusion one year and being next to impossible to find the next. To the naturalist, the allure of an orchid increases with its rarity.

Nodding pogonia (*Triphora trianthophora*), also known as three-bird's orchid, is a delicate and elusive native orchid that, in Canada, is currently known from a single location: Rondeau Provincial Park. Rondeau is Ontario's second oldest provincial park, established in 1894. It encompasses 3,254 hectares (8,040 acres) of Great Lakes shoreline and dune, black oak savanna, pine-oak forest, beech-maple forest, soft maple swamp and slough, cattail marsh and shallow water bay. Its size and diversity of habitats support approximately 860 taxa of vascular plants of which almost 80% are native.

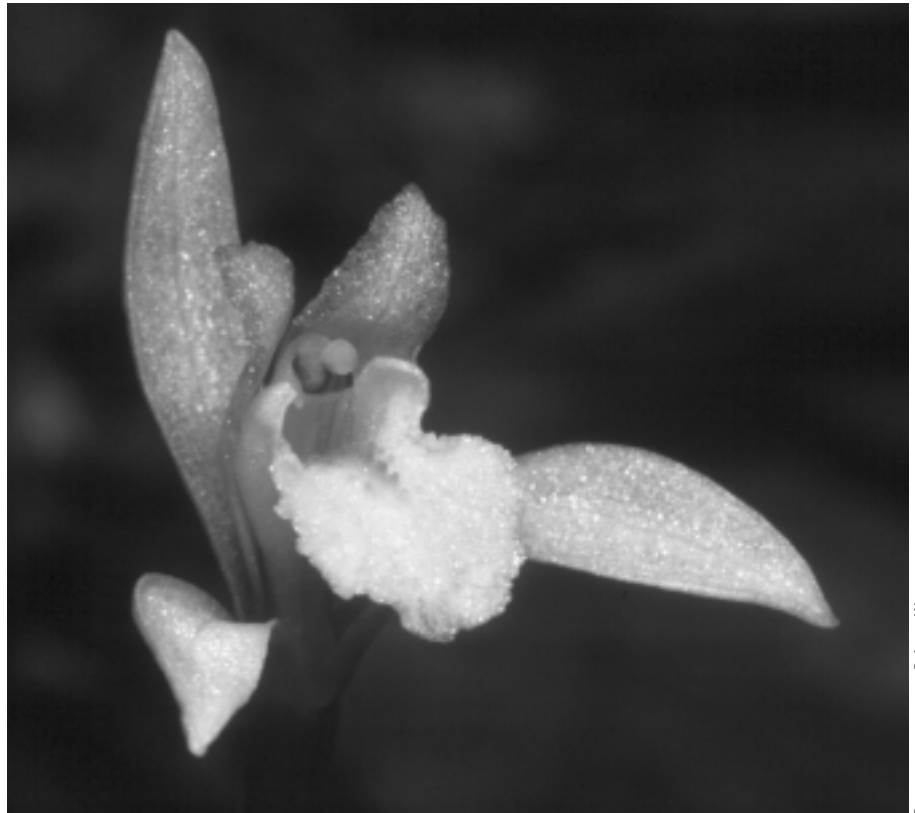
There are five members of the *Triphora* genus in Canada and the United States, but *T. trianthophora* is the only one found outside Florida. All of the North American species of *Triphora* exhibit the peculiar characteristic of thermoperiodicity to describe the flowering procedure, explained later in this article. All of them can be abundant one year and practically absent the next.

Nodding pogonia was first recorded for Canada by C. H. Zavitz, district forester with the former Department of Lands and Forests, in 1950. It was found in a small privately owned woodlot in southeastern Essex County, between the small towns of Wheatley and Leamington. Because the future of this woodlot was in question, several small clumps were transplanted to Rondeau in 1956 and John E. Pearce Provincial Park, farther east along the Lake Erie shoreline. These populations were noted flowering for several years but each eventually died out. However in 1966, this species was discovered in Rondeau about one kilometre (six-tenths of a mile) from the nearest transplant site, much to the delight of the

park naturalist staff there. It is uncertain whether this discovery was an indirect result of the transplant or not, but, at any rate, nodding pogonia is established at Rondeau.

Nodding pogonia grows in well-developed soils of deciduous forests where there is a rich, deep leaf litter. It is a diminutive perennial herb with a fleshy, greenish-purple stem that begins to appear above the leaf litter in late July. It typically grows six-10 centimetres (two-four inches) tall, but on rare occasions can reach 30 centimetres (one foot). There are one to three leaves, each of which are small, round, alternate and clasping, scattered from

develop to a certain stage and then seem to go on hold. A cold-weather front passing through causes a greater-than-average drop in nighttime temperature. Early in the morning of the second day following this temperature drop the flowers that were on hold begin to open. The number of flowers per stem ranges from one to seven, although seldom do more than two open at one time. When three open simultaneously on the same plant, it is a pretty picture indeed. The flowers are upright with three sepals up to 15 millimetres (half an inch) long each. They appear mostly as waxy white but some spectacular ones may show a pre-



Nodding pogonia

PHOTOGRAPH COURTESY P. ALLEN WOODLIFFE

about midway up the stem to the base of the pedicel or flower stalk. When not in flower this plant is almost invisible.

The challenge of finding nodding pogonia in flower increases its allure. It flowers synchronously with other individuals since it relies on temperature to trigger the onset of flowering. Beginning in August, night-time temperatures start to cool down. The flower buds of a population of nodding pogonias

dominance of magenta colouration.

This temperature dependence, or thermoperiodicity, is not common among flowering plants. However, when a species is not abundant in the first place, this gives it an advantage: a maximum number of flowers are open and ready for pollination when pollinators are present.

Once these orchids are pollinated by a variety of small bees they begin to close up

and droop. On occasion, unpollinated flowers may remain open for a second day. In the meantime, the next set of flower buds develop to a certain point, waiting for a cooler-than-usual night, and the process repeats itself. (The earliest I have seen nodding pogonia in flower is July 30 and the latest is September 27. However, the normal range is between August 6 to September 1, with the peak of flowering between August 14-18.) The flowers remain drooped and the sepals wither and drop, leaving only the developing seed capsule. After



PHOTOGRAPH COURTESY P. ALLEN WOODLIFFE

A clump of *Triphora trianthophora*

several weeks the capsule is fully developed and it returns to an upright position where it begins to split open. The thousands of tiny seeds are released by any slight movement such as a breeze or a small mammal brushing

against the plant.

Triphora trianthophora does not have roots in the traditional sense. It is saprophytic (living on decayed organic matter) and spends most of its underground life in a tuberous condition, deriving its nourishment from the mycorrhizal association present in the tissues of the tuber. The tubers are always found in deep (7.5-10 centimetres or three to four inches), moist leaf mould or rotten wood, never in mineral soil. This substrate is critical; a reduction in depth or moisture may be a significant factor in the species' fluctuating numbers. A mild but untimely summer drought could cause a minor drop in numbers. A lengthy or more severe drought may eliminate flowering altogether.

There is no known use of this species by aboriginal cultures, and its current-day horticultural values are limited, given the species' diminutive size and limited flowering period. It is difficult to propagate most orchid species under artificial conditions, and nodding pogonia is no exception. Allan Anderson, retired from the Department of Botany, University of Guelph, did have some success germinating it in the lab. However, growing the seedlings to the point of establishing them in suitable substrate has yet to be accomplished. In the 1950s and '60s there was only minimal success (at best) in transplant attempts of naturally occurring clumps, presumably due to the lack of appropriate mycorrhizal associations.

Numbers of this species have declined in recent years. The Essex County population has not been observed since 1985 in spite of several surveys. The Rondeau populations have fluctuated from a high of almost 1,500 stems in 1986 to only a few dozen in recent years.

Some significant droughts since 1988 may have been a factor. Also, there has been evidence of browsing by the large white-tailed deer population at Rondeau. Since the mid-1990s a deer reduction program has been in effect and the herbaceous and woody vegetation of Rondeau overall has improved significantly. It remains to be seen whether the numbers of nodding pogonia respond favourably. However, due to this species' noticeable decline and limited overall distribution, it was designated as Endangered under Ontario's *Endangered Species Act* in 2003.

One other factor may be influencing the decline in nodding pogonia numbers—earthworms. Earthworms are members of the *Lumbricidae* and *Sparganophilidae* families and, of the approximately 20 species known from Ontario, only two are native, and those have extremely limited distribution. Of course earthworms are well-known for their ability to convert leaf litter into smaller elements of organic matter and it is possible that they are having an influence on the amount of leaf mould, and therefore critical habitat, for *Triphora trianthophora*.

Nodding pogonia will probably continue to be limited in its horticultural and backyard gardening uses. Certainly its status of Endangered will limit opportunities for those uses without careful and thorough evaluation of any such proposals. Still it remains a fascinating and elusive native plant of Ontario.

P. Allen Woodliffe was park naturalist at Rondeau Provincial Park from 1973-1986 and conducted nodding pogonia surveys there. Since 1986 Allen has been District Ecologist for the Chatham and Aylmer districts of the Ontario Ministry of Natural Resources.

Calendar of Events

September 14-16, 2005
TEXAS PLANT CONSERVATION CONFERENCE
Lady Bird Johnson Wildflower Center
Austin, Texas
Visit www.wildflower2.org for details.

September 20, 2005
NANPS MEMBERS' MEETING
7 pm
Swansea Town Hall
Toronto, Ontario
Discuss the future of NANPS and participate in workshops on seed preservation and other native plant topics. Voice mail: 416-631-4438 or e-mail nanps@nanps.org.

September 21, 2005
FUTURE OF THE CARDEN ALVAR NATURAL
HERITAGE CONFERENCE
Kirkfield, Ontario
Visit www.couchconservancy.ca
or call 705-326-1620.

September 21-22, 2005
ONTARIO TALLGRASS PRAIRIE
& SAVANNA FORUM:
Old Prairies & New Prairies
Brantford, Ontario
For more info e-mail
bluestem@execulink.com.

October 15, 2005
NANPS ANNUAL GENERAL MEETING
1pm to 5pm
Toronto Botanical Gardens
Toronto, Ontario
E-mail nanps@nanps.org for details.

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

Continued from page 1

British Columbia, east of the Cascade Range. An adaptable species, *Geum triflorum* has even been documented on the mountains of Utah!

Although it's commonly found on short-grass prairies, prairie smoke has adapted to the rare and difficult conditions of alvars. Alvars are limestone pavements scraped clean of almost all soil by ice, wind and water action to leave a black stone pavement of open terrain. A patchwork community of wildflowers, mosses, lichens, grasses, shrubs and even a few ancient stunted trees softens this landscape of extremes. Alvars are found primarily near the Great Lakes in North America and the Baltic region of northern Europe. They were formed by warm tropical seas more than 370 million years ago.

In alvars, *Geum triflorum* survives parts of the year in waterlogged depressions or baking in the intense summer sun and freezing in the winter with little insulation from the thin calcareous soil. Other flowers found growing in alvars include Indian paintbrush (*Castilleja coccinea*), lance-leaved coreopsis (*Coreopsis lanceolata*), balsam ragwort (*Senecio pauperculus*), harebell (*Campanula rotundifolia*), early saxifrage (*Saxifraga virginensis*), false pennyroyal (*Isanthus brachiatus*) and the rarest of them all, lakeside daisy (*Hymenoxys herbacea*). These ecosystems are also home to Ontario's endangered loggerhead shrike as well as a myriad of other birds and creatures from frogs and snails to butterflies and snakes.

Sadly, many alvars are under threat or already damaged by a number of factors. Development is a culprit. Recreational vehicle enthusiasts also enjoy the open terrain, and the disturbed areas they leave behind provide an opening for invasive species. Likewise, wildflower collectors damage this delicate environment. As a result, *Geum triflorum* is classified as uncommon in Ontario, threatened in Michigan and rare or extirpated in New York where it is on the eastern edge of its range and, therefore, more vulnerable.

Growing prairie smoke from seed is easy. Plant the seed as soon as it's ready (early to mid-summer) and it will bloom the following spring. The seed also stores moderately well, up to two years, although this is not ideal. It is better to either plant *Geum triflorum* unstratified in the fall or treat it with a cold, moist stratification for the spring. There is no need

to remove the trailing plume. The plant also colonizes by rhizome and can be divided in the fall or early spring.

Various First Nations Peoples used prairie smoke for medicinal purposes. The Blood Indians and Blackfoot used to dry the roots, then brew a tea tonic for sore eyes, snowblindness, sore gums, chapped nipples from nursing, sore throats and even split lips. It was fed to horses as a general tonic; it was also used to treat sores and encourage the horses to gain weight. Apparently, the crushed seeds exuded a wonderful perfume!

The genus name of *Geum* is an old one said to have been used by Pliny the Elder (23-70AD) and simply meant plant.

Triflorum means 'three-flowered' in Latin. Other common names for prairie smoke include purple avens, prairie avens, old man's whiskers (for obvious reasons), torchflower or maidenhair. Geums are part of the *Rosaceae* or rose family that includes over 3,000 species, from *Spiraeas* to *Fragarias* (strawberries).

Enjoy this lovely little plant and, if you have the opportunity, search out an alvar and learn something about this fascinating ecosystem.

Emony Nicholls is the owner of Wild Ginger Native Plant Nursery (www.wildginger.ca). She is constantly humbled by the amount she still has to learn about ecology, wild plants and propagation.

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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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