The Blazing Star

Summer 2014, Volume 15, Issue 3

A Publication of the North American Native Plant Society

Native Plant to Know

Spicebush

Lindera benzoin

by Mark Funk

No plant in the forest awakens my sense of smell quite like spicebush (*Lindera benzoin*). This aromatic, inconspicuous woodland-dweller exudes a spicy citrus aroma from its leaves, bark and flowers. Sometimes I register the presence of spicebush with my nose before I see it with my eyes!

Spicebush usually has either one solitary stem or a few zigzagging stems, and tends to take on an open and wide-spreading form in its natural shaded environment. Its bark is dotted with small white lenticels, like that of a young cherry (*Prunus* spp.) or alder (*Alnus* spp.). Like most of its relatives in the Laurel family (which includes supermarket classics avocado, bay leaf and cinnamon), it has alternately arranged leaves that are entire. Southern Ontario has few native woody plants with entire leaves and smooth margins like this. Others that come to mind are pawpaw (*Asimina triloba*), sassafras (*Sassafras albidum*) and cucumber magnolia (*Magnolia acuminata*).

Spicebush is one of three North American species in the genus *Lindera*. As with the other two, *L. benzoin* is found mostly in moist habitats, such as rich woodlands, shaded foot slopes, bottomlands and woodland seeps. Its range extends from Texas to Florida, north to Maine and southern Ontario, and west into Michigan. In my wanderings, I have seen spicebush associated more often with sandy or loam soils and less commonly with clay. A good example of this is at the North American Native Plant Society's Shining Tree Woods preserve, where spicebush is abundant on the sandy soil.

In the northeast, you may occasionally hear spicebush referred to as the "forsythia of the wild". The yellow flowers of spicebush emerge in late winter or early spring along its twigs and branches. Although these flowers are only about three millimetres (1/8 inch) wide, they are striking en masse, creating a visual effect similar to the golden forsythia varieties common to the horticultural trade. In fall, the leaves of spicebush turn to a warm yellow, creating a lovely contrast when paired with the orange or red leaves of serviceberry (*Amelanchier* spp.), maples (*Acer* spp.) or viburnums (*Viburnum* spp.).

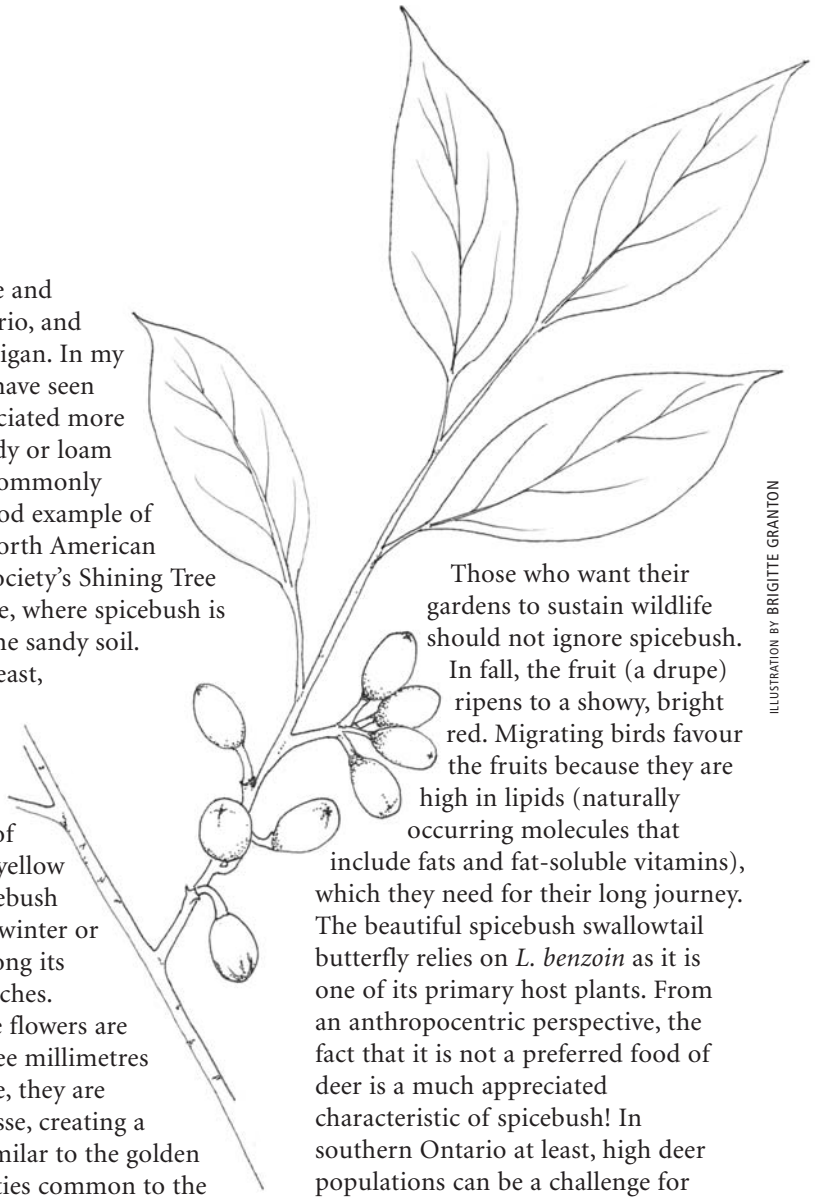

ILLUSTRATION BY BRIGITTE GRANTON

Those who want their gardens to sustain wildlife should not ignore spicebush. In fall, the fruit (a drupe) ripens to a showy, bright red. Migrating birds favour the fruits because they are high in lipids (naturally occurring molecules that include fats and fat-soluble vitamins), which they need for their long journey. The beautiful spicebush swallowtail butterfly relies on *L. benzoin* as it is one of its primary host plants. From an anthropocentric perspective, the fact that it is not a preferred food of deer is a much appreciated characteristic of spicebush! In southern Ontario at least, high deer populations can be a challenge for gardeners. Although some say that white-tailed deer will browse the twigs of spicebush, their voracious appetites seem to be focused on less fortunate woody species.

If you want your spicebush to

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The *Blazing Star* is . . .

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Editorial

In my opinion, the North American Native Plant Society's most under-utilized resource is its membership. With over 500 members across Canada and the United States (and even a few in Europe), NANPS has access to a treasure trove of knowledge about a broad spectrum of topics and issues related to the study, conservation, cultivation and restoration of native plants and native plant habitat.

More and more, NANPS is a go-to source for information on native plants from home gardeners, media, other non-profit organizations etc. "Could you direct me to someone who knows something about cultivating American ginseng?" "Which native wildflowers are the prettiest?" "Which native plants would work best in a raised bed in a community garden?" These are just a few of the inquiries we have received in the last few months.

Do we have a member knowledgeable about cultivating American ginseng (*Panax quinquefolius*)? I was embarrassed to admit that I did not know. I find it frustrating that I cannot access those of you who love sharing your knowledge and passion for native plants with others because we don't know what you know. You may have a lot of experience growing Kentucky coffee-tree (*Gymnocladus dioicus*) from seed. We would love to know that. Have you had success restoring a wetland on your property? We would love to know that too. You don't have to perceive yourself as an expert but if you feel you have helpful information or insights to offer, please let me know. Or contact *The Blazing Star* (editor@nanps.org) to have your tips published as part of our periodic *Lessons Learned* column.

I feel there is enormous potential for the North American Native Plant Society to act as one giant advisory board. I would love to put together a master list of topics that our members could offer advice to others about. Your commitment (at most) would amount to a handful of emails or phone calls per year, but you would be furthering the cause of native plant conservation and building NANPS reputation in our communities.

We have been busy applying for funding lately to move forward on a number of new initiatives and to expand our existing outreach. It is my hope that NANPS can continue to grow as an organization; having a volunteer advisory group of members would be a great first step.

What are your strengths? Please email me at pkelly@nanps.org or leave us a voice message at 416-631-4438. NANPS would love to know. Thank you.

Peter Kelly
Peter is NANPS executive director

OPEN GARDEN

Darcie McKelvey is graciously opening her garden in Caledon, Ontario to visitors. As Darcie says, "This is an opportunity to see a native plant garden and tell me about yours." She mentions one caveat: "There are honey bees living here, so reconsider if you are allergic to bees."

Date: September 7, 2014, 10 am – 4 pm.

Address: 16771 Albion Trail, Caledon (just south of Highway 9, about six kilometres west of Highway 400).

PHOTOGRAPH BY DARCIE MCKELVEY

NANPS EVENTS

SEPTEMBER 1, 2014 **Nomination Deadline for NANPS Awards**
Visit www.nanps.org for details.

SEPTEMBER 15, 2014 **Gardening: Planting the Seeds for Biodiversity**
Meaford Garden Club, 7pm
Meaford Hall (North Gallery), Meaford, Ontario
Presentation by NANPS former president Paul LaPorte

NOVEMBER 15, 2014 **NANPS ANNUAL GENERAL MEETING**
Noon – 4 p.m.
Canada Room, Markham Civic Centre, Markham, Ontario
Visit www.nanps.org for details.

For more information about NANPS Speakers Series and other events please visit www.nanps.org.

THE LOCAL SCOOP IS EVOLVING

The Local Scoop – NANPS e-newsletter – is bursting with native plant news, events and other growing topics. And, just as a garden eventually does, *The Local Scoop* needed pruning. With the approach of its sixth anniversary, the Scoop needed more sunlight to help it bloom.

Scoop Assist (the Plant Assessor) was consulted and concluded that, to facilitate new growth, the Scoop needed a new environment. Like a plant rescue, the Scoop was transplanted to WordPress (not PlantPress, the Scoop is pressing words instead of plants). And just as a plant is responsive to light levels, moisture regimes and soil types, so is the Scoop responsive to the needs of our readers, including the need to branch out and be seen on all your gadgets – from the smallest mobile pollinators to the biggest monitors.

It was a particularly harsh winter in 2014, but with lots of attentive care the Scoop has rooted and flowered. Take an excursion to the new website at thelocalscoop.org, featuring an updated calendar and a home page mini-calendar with the most recent updates at a glance. Stroll leisurely through the Art-Hives art gallery. Peer into the Scoop's own Pix and dig through the News Archive compost to review past newsletters. Wade through the Bog Blog, which is not about bogs, but written for those who may be in a fog about what native plants are and what the big deal is. And don't worry, the Scoop is still the native wild stock that it has always been and always will be – dedicated to the promotion of native plants while digging the dirt on invasive species and bad bylaws.

PHOTOGRAPH BY JANET HARRISON

Isabelle Smith with her copy of Pollinators of Native Plants

The Scoop launched a contest to celebrate its sixth anniversary, inviting "NANPS members in good planting" to enter by naming two six-petalled plants native to Ontario. The winner, Isabelle Smith, received a copy of the recently emerged *Pollinators of Native Plants* by Heather Holm.

If you are not receiving your free copy of *The Local Scoop* by email, go to thelocalscoop.org/subscribe/.

Charles Iscove (Scoop Assist) and Janet Harrison

NANPS MEMBERSHIP UPDATE FOR 2015

NANPS members have recently been given the option of receiving The Blazing Star by email (in full colour) or to continue receiving the black and white print version in the mail. We are still giving that option, but now we have to request an additional $5 a year with your 2015 membership application if you want the print version mailed to you. This is necessary to keep up with the increase in postage rates. If you elect to receive the print version, you can also receive the digital version. Please make sure you send us your email address regardless so we can send you The Local Scoop and keep you informed about upcoming events, workshops, etc. Thank you for your understanding and continued support.

NANPS NEEDS SEEDS

Have you ever thought about becoming a native plant seed donor for NANPS? We are so grateful to those good folks who keep our member-only seed exchange program stocked with native plant treasures (www.nanps.org/index.php/plant-sources/nanps-seedexchange). But we always need more donors. FYI, seed donors get first pick of the seeds and can order twice as many packets as seed buyers (up to 30 packets for donors). Although orders are on a first-come, first-served basis, seed donor orders always go the front of the line!

If you've never done it before and you're anxious about how to collect the seed visit www.nanps.org/index.php/plant-sources/159-seedcollection-reaping-what-you-sow. The seeds have to be collected properly in order to stay viable. A common error for beginners is not allowing the collected seed to sit a while and lose some of the moisture content so that it can be stored.

Email seeds@nanps.org if you have questions.

Starting with Seeds

by Vivienne Denton

Each year, I look forward to the fall issue of *The Blazing Star* with the latest NANPS Seed Exchange list tucked safely inside. I'm anxious to see if any NANPS member has donated seeds from indigenous plants regionally suitable for the soil and climatic conditions of my garden… that I don't already have. I also look for seeds in the Seedex from plants which I do have in my garden, but which are not generating enough seeds to grow into new plants that will extend my plot. Often I suspect I have not placed my plants in suitable conditions but I don't want to risk transplanting them, so it's nice to have the chance for a second try.

I have been cultivating a native plant garden for 20 years. I've moved twice during that time and this is my third garden. Each has had different growing conditions and different problems, even though all have been in the same Toronto neighbourhood. It all started when my husband and I decided to get rid of our lawn and our lawnmower. I had no idea how I would fill the space but, by good fortune, I happened to be living on the same street as Jim Hodgins, co-founder of the Canadian Wildflower Society, later renamed the North American Native Plant Society. I was entranced by the quiet beauty of his front garden and delighted to realize that all the plants were wildflowers and other plants native to the region.

I decided this was the way to go but how, as a city dweller, could I find wild plants without plundering natural areas? I began by pulling wildflowers from the roadsides – mostly asters (from *Symphyotrichum* and other genuses) and goldenrods (*Solidago* spp.). In spring, I dug over the remainder of the lawn and sprinkled a large packet of seeds I had bought labelled "Wildflowers". (These were, of course, not native to anywhere in particular – a mix of cultivars and species from Europe, North America and other places.) As the season progressed, not much happened in this first attempt at a wildflower garden, until sturdy little plants began to pop up everywhere. I watched the seedlings hopefully, trying to identify the plant, always hoping for a spectacular burst of prairie bloom. Finally, when the plants were waist high and beginning to display a most unspectacular flower, I had to admit that although I had grown a native wildflower, *Erigeron canadensis*, the end result of my efforts might better be described as a front yard full of horseweed.

A short while later, I was able to catch Jim Hodgins tending his garden. I asked him how he obtained his native plants without robbing the wild. He gave lots of great advice. I returned home with plant cuttings and copies of *Wildflower* magazine, and I promptly joined the Canadian Wildflower Society. Ever since then, I have found the annual plant sale, the Seedex and the native plant supplier advertisements in the newsletter to be invaluable resources. Over the years, my original aims broadened. Now I see my garden as a small way to give back to the Earth and the creatures we share it with.

For me, seeds are an important part of this process. By tending and growing seeds, I learn more about a plant than I can by simply planting a pot. The new seeds I get each year from the seed exchange or from swaps with friends broaden my knowledge base.

Cold stratification, a process whereby gardeners pre-treat seeds to simulate the freeze/thaw conditions that a seed would undergo under normal winter conditions, is necessary for most seeds harvested in the fall. In anticipation of the arrival of my seeds from the Seedex, I keep some pots and potting soil indoors. Once seeded, the pots go outside where the seeds get the benefit of frost and weathering action, conditions that soften the hard seed coat and allow the embryo to emerge when it warms up in spring.

Each fall, I harvest seeds from my garden, some to give away and some for myself. As the seeds mature, I

Photograph by Vivienne Denton

Zigzag goldenrod and hairy beardtongue thriving in a shady spot in May

Photograph by Vivienne Denton

The shade garden where heart-leaved aster, zigzag goldenrod, white snakeroot, bottlebrush grass and blue-stemmed goldenrod stand out in the snow.

bring them inside to dry on flat trays for about a week. Then I store them, each species in its own carefully labelled envelope, ready to share or plant. I plant the seeds I harvest from my own garden before the soil freezes, usually around the end of October. I sprinkle them either in pots or directly on the soil in a prepared area in my garden. Squirrels like to dig in unprotected pots of seeds left on my patio so I use garden netting to cover whole flats of seeds. For individual larger pots, the plastic net bags that onions and oranges are packaged in at the supermarket make excellent protective covers: they just slip over the pot like a sleeve.

I have found that some seeds – especially plants that flower in spring and early summer – do better when planted directly into the garden. And it's easier than storing them through the summer. Butterfly milkweed (*Asclepias tuberosa*) is one such plant. It is fussy about transplanting. In my two former gardens, I transplanted and carefully tended this orange-flowered milkweed but always had poor results. Luckily, my current garden soil and sun conditions are just right; when I sprinkle the seeds directly onto the garden it grows like a weed in the dry sandy soil in a sunny south-facing spot.

I enjoy experimenting with seed growing. Some plants grow much more easily from a root cutting, but it is still fascinating to plant a pot of seeds each year, watch the delicate sprouts grow and plant them out in various places to see where they'll do best. When I find the right niche, I watch with satisfaction the transformation from the small and frail plantlets of the first year to sturdy perennials that last for many years and often need stringent cutting back to keep them in check!

New seeds provide surprises. The tall bellflower (*Campanula americana*) seeds I once ordered from NANPS are an example. I should have paid more attention to the name. In the first year, I transplanted the delightful rosettes of this biennial along my crazy paving path. They made a pretty border. The next year they rose to their full height of two-thirds of a metre (two feet) and more; they were more like a small hedge!

In a city garden, other less desirable surprises pop up. I am surrounded by gardens filled with cultivars of the native strains I am carefully cultivating in my garden; some cross-pollination naturally occurs. American columbine (*Aquilegia canadensis*) will not seed true if cross-pollinated with European columbine (*Aquilegia* spp.) cultivars. Unfortunately, there are gardens in my immediate neighbourhood with cultivated columbines. I weed out any of my columbines that do not have the native yellow and reddish-orange flower so my plants look true to form, but they may be hiding some European genes. For that reason, I do not send my columbines to the seed exchange or give them to friends. I have suspicions about my black-eyed Susans (*Rudbeckia hirta*) as there are several neighbourhood gardens with plants that look like the cultivars. I suspect there are other natives which are likely to cross- pollinate in the city. This is something to look out for when sharing seeds.

Photograph by Vivienne Denton

Vivienne's seed nursery pots get a little sun in early March

For me, one of the important benefits of creating a wildflower garden is attracting wildlife and

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providing food for birds, butterflies and bees. I like to watch goldfinches perch and sway on tall seed-bearing stems. In early winter, juncos peck at seeds that have fallen to the ground. My pearly everlasting (*Anaphalis margaritacea*) attracts American painted lady butterflies. Note that if you want to provide a home for these beauties you have to share your plants with their leaf-chewing caterpillars and accept the mess they can make of the young flower shoots. I find a certain charm in the sharp round bites the leafcutter bees make in showy tick trefoil (*Desmodium canadense*) – they're like naughty children taking bites out of cookies. Asters, particularly the common New England aster (*Symphyotrichum novae-angliae*), provide nectar and pollen for numerous pollinators when in flower, while the seed heads are food for the birds.

Seed heads look lovely in the snow so I don't clip the perennials back to the ground in the fall. The seeds of blue vervain (*Verbena hastata*) and white vervain (*Verbena urticifolia*) are as pretty as the flowers. I am also fond of ironweed (*Vernonia novaeboracensis*) seed heads, and the tall candelabras of giant hyssop (*Agastache foeniculum*). I have developed a technique for easing milkweed seeds (*Asclepias* spp.) from the pods once they brown, popping the pods with my fingers and then sliding out the seeds. I leave the pods to dry on the plant providing winter interest in the garden.

I like to deadhead the more prolific of my plants. I keep at least one Canada goldenrod (*Solidago canadensis*) among the New England asters in a far corner of the garden, but I get rid of the seed heads as soon as decently possible. Even so, plenty of new seedlings pop up the next year. I have hardy perennials (asters, black-eyed Susans, vervains and others) along the outside of the fence of my corner lot, but in deference to my neighbours and passersby whose idea of a city garden is more orderly, I deadhead these as the seeds begin to mature. This keeps them flowering longer and looking less rangy. I save some of these early picked seeds since they will still be viable for producing new plants. I leave a few neatly trimmed seed heads along the fence to advertise their winter beauty to the neighbourhood.

Sometimes I wonder if all the effort of turning my garden into a natural haven is worth it; future owners might dig it under and plant a lawn. But the seeds will do their bit even if that happens. Zigzag goldenrods (*Solidago flexicaulis*) do well in Toronto's shaded ravines. Over the years I have watched as seeds from the few plants under my Norway maple (*Acer platanoides*) populate the bare areas under maples in the back gardens of my neighbours. When neighbours admire my street-side flowers, I suggest they take a handful of the seeds when they mature, and many do. One summer, my lance-leaved coreopsis (*Coreopsis lanceolata*) produced a spectacular display. The following year, *Coreopsis lanceolata* suddenly became fashionable in the front gardens all along my street. Once I watched in delight as a man pretended to admire a seed head in my front garden. Recognizing the routine as one of my own, I smiled to myself as I saw him surreptitiously pick some seeds. With the glee of a guerilla gardener, I watch my native flowers spread themselves throughout the neighbourhood.

It's a sobering thought that the seeds from your garden are a legacy you leave behind long after you have moved on.

Vivienne Denton regularly donates seeds to the NANPS Seed Exchange.

Garry Oak Ecosystem Restoration

by Brenda Costanzo and Chris Junck

Along the east coast of southern Vancouver Island remnants of Garry oak meadows come alive with common camas (*Camassia quamash*) from mid-April to mid-May. The fields of violet-blue inflorescences interspersed with the yellow flowers of western buttercup (*Ranunculus occidentalis*) and spring gold (*Lomatium utriculatum*) are an amazing sight.

The Garry oak (*Quercus garryana*) ecosystems share their endangered status with the Carolinian forests of southern Ontario. Today, in British Columbia, Garry oak (the only oak native to the province) and associated ecosystems (GOEs) cover less than 10% of their original range, with less than 5% in natural condition. Their loss has been attributed to land development (agriculture and urbanization), invasive species, fire suppression, trampling and lack of adequate land management. The ecosystems are highly fragmented now and only small remnants exist southern Vancouver Island. In 1999, a grassroots group called the Garry Oak Ecosystems Recovery Team (GOERT) began to coordinate activities for the protection and restoration of this unique assemblage of plants and animals.

Garry oak and associated ecosystems occur in Canada only in British Columbia, along the southeastern coast of Vancouver Island, the southern Gulf Islands and two small areas in the Fraser Valley. South of the border, where Garry oak is known as white oak, these ecosystems are found from Washington and Oregon to southern California. They are composed of a diverse range of vegetation types with associated animal species.

Photograph by Brenda Costanzo

A Garry oak meadow

The Mediterranean-type climate prevalent on the southeast coast of Vancouver Island and southern Gulf Islands provides a unique set of temperature and moisture conditions which these plants are adapted to. This climate is typified by generally dry summers with a drought period in July until mid-October followed by mild wet winters. The majority of the forbs are either winter annuals that germinate in the fall or bulbous herbaceous perennials that survive the drought underground.

Garry oak ecosystems are hotspots of biological diversity. More than 690 plant species, 7 amphibians, 7 reptiles, 104 birds, 33 mammals and more than 800 insects and mites have been identified in B.C.'s GOEs. Rarities include the sharp-tailed snake and vesper sparrow. When GOERT began its work, 61 plants (59 vascular plants and two mosses) were listed as Species at Risk (SAR) either by the province or by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). Now these ecosystems are among Canada's most threatened with over 100 at-risk species.

In British Columbia, Garry oak ecosystems occur within the coastal Douglas-fir biogeoclimatic zone and vary in vegetation types from oak woodlands to nearly treeless open meadows with a few scattered oaks. The understorey vegetation of GOEs is a mixture of grasses, forbs and shrubs that are uncommon to other ecosystems in Canada. Oak woodlands have deep soils and large oak trees. After many of the oak trees were cut down, these areas were used for agriculture for 150 years. In habitats

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that have shallower soils, such as those occurring on steeper slopes and punctuated by rocky outcrops, the Garry oaks are stunted and shrubby. Both Douglas-fir and Garry oak communities have decreased by 90% since European settlement.

At some of the remaining oak woodland sites, arbutus (*Arbutus menziesii*) and Douglas-fir (*Pseudotsuga menziesii*) trees also occur. Partially due to lack of fire, Douglas-fir will eventually replace *Quercus garryana* in the moister woodland sites. Within the associated Garry oak ecosystems there may be few oaks or none at all. These associated Garry oak ecosystems are found within habitats commonly described as coastal bluffs, maritime meadows, vernal pools and seeps, rock outcrops and Douglas-fir plant communities. As these sites have parent materials and environmental characteristics similar to those found in Garry oak ecosystems, the plant species are also similar.

Some of the more charismatic rare plant species found in GOEs are the sunflower-like arrow-leaf balsamroot (*Balsamorhiza deltoidea*), the violet bell-shaped lily known as Howell's triteleia (*Triteleia howellii*), a hemiparasitic yellow paint brush (*Castilleja levisecta*) and a large parsley family member, coastal chocolate-tips (*Lomatium dissectum*).

Photograph by Brenda Costanzo

Triteleia howellii

Photograph by Brenda Costanzo

Camassia quamash

GOERT has produced many excellent reference materials including best management practices, a Garry oak gardener's handbook, a restoration guide, and manuals on Species at Risk (SAR) and invasive species found in GOEs. All are available at www.goert.ca. Working with its many partners, the GOER team has drafted 17 recovery plans for 39 SAR as required by the federal Species at Risk Act (SARA).

An important part of Goert's work has been taking inventory and monitoring of the species at risk in key Garry oak areas and associated vegetation communities. The data collected was used for the development of recovery strategies under SARA. GOERT provides technical advice to landowners to help them protect and restore GOEs and the at-risk species on their property.

RESTORATION CHALLENGES

The practice of restoration has undergone changes in the past few years in response to climate change and ongoing discussions of what constitutes ecological restoration. Questions asked include: What is a novel ecosystem? What is a target

ecosystem? Should we accept the presence of some invasive species? What are the goals of restoration in today's rapidly changing world?

Garry oak ecosystem processes were influenced by both fire and digging of camas bulbs by First Nations peoples. However, for the past 150 years, these disturbance regimes have been absent. Reinitiating them or finding a replacement type of regime is difficult, particularly since lighting fires is subject to local by-law restrictions. The influence of a long period of human occupation and fire suppression in the region has made it challenging to determine the effects of climate change on this ecosystem.

Invasive species, in particular plants, exert a high degree of stress on sensitive ecosystems, especially when exacerbated by fragmentation, changes in herbivory and disturbance regimes. GOEs have been invaded by many non-natives including shrubs such as Scotch broom (*Cytisus scoparius*) which was brought to Vancouver Island in the 1850's, gorse (*Ulex europeaus*), English hawthorn (*Crataegus monogyna*) and spurge laurel (*Daphne laureola*), forbs such as English ivy (*Hedera helix*), hairy cat's ear (*Hypochaeris radicata*), Himalayan blackberry (*Rubus armeniacus*) and oxeye daisy (*Leucanthemum vulgare*), and agronomic grasses that were used for forage. Developing mechanical methods for the removal of these plants while limiting the use of herbicides has been challenging.

Photograph by Chris Junck

Volunteer work party at Harling Point

Photograph by Chris Junck

Bear's foot sanicle at Harling Point

A Sample GOE Restoration Site

Harling Point in the District of Oak Bay includes municipal land and a privately owned national historic site known as the Chinese Cemetery. It boasts seven rare plant species, five of which are assessed by the COSEWIC as Endangered or Threatened. They

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include the colourfully named bear's-foot sanicle (*Sanicula arctopoides*), bearded owl-clover (*Triphysaria versicolor*), coast microseris (*Microseris bigelovii*), Macoun's meadow-foam (*Limnanthes macounii*) and Victoria's owl-clover (*Castilleja victoriae*). Threats to their survival are many and varied: invasive native shrubs such as snowberry (*Symphoricarpos albus*) and roses (*Rosa* spp.) and non-natives such as Scotch broom, gorse and others, trampling by people and dogs, bank erosion from informal paths and wave action, herbivory and soil disturbance by Canada geese.

Many community volunteers are helping to control the invasive plants by participating in stewardship work parties. Last year, we noted a significant improvement. GOERT recently developed a management plan that prescribes invasive management, native plantings and monitoring. It also recommends fencing, signage and community outreach to reduce human/dog impacts. However, the plan has not been fully implemented yet due to lack of funding. The Capital Regional District and B.C. government recently rolled out a Canada goose management and public outreach program which may have positive effects at Harling Point.

Future protection of GOEs will be informed by the identification of priority sites developed by GOERT that can be used in establishing a network of protected areas representing the full diversity of Garry oak and associated ecosystems. GOERT has mapped 25 priority sites so far and is working with local governments to provide current data on GOEs to be used in updating their Official Community Plans.

GOERT will partner on research opportunities with universities to push conservation of Garry oak ecosystems into the next decade.

Brenda Costanzo has a M.Sc. in biology and has worked with GOERT since 1999 on rare plants. She provides advice on the restoration and management of Garry oak and associated ecosystems. Since joining GOERT in 2002, Chris Junck has helped people to better understand, protect and restore the Garry oak habitat on the land they own or manage.

In Memoriam: Farley Mowat

Farley McGill Mowat OC, Canadian author, environmentalist and activist, died last May, just days before his 93rd birthday. He wrote over 40 books which sold more than 17 million copies in 52 languages. Three of his books became popular movies: Never Cry Wolf, The Snow Walker and A Whale for the Killing. He received many accolades throughout his life including the Governor General's Award for *Lost in the Barrens*, The Leacock Medal of Humour for *The Boat Who Wouldn't Float*, The Order of Canada in 1981 and a lifetime achievement award from The International Fund for Animal Welfare in 2003. He was a lifelong lover of the natural world.

Farley Mowat was also an honorary director of The North American Native Plant Society. I recruited him in the early days of the organization (when it was called the Canadian Wildflower Society). We were proud to have his name on our masthead as few Canadians have done more to protect our environment than Farley. I met him at the opening of Sir Oliver Mowat Collegiate in Toronto (he was the Ontario premier's great grandnephew). His first words after I introduced him to the audience were, "My father just gave me a note to remind me to keep my legs crossed since I'm wearing a kilt tonight." Classic Farley.

We all have so much to thank him for and, on behalf of our society, I say a heartfelt, "Thank you Farley."

James A. French
Founder and Honorary President of the North American Native Plant Society

Of Damsels and Dragons

by Evan Cantor

Bugs are not universally admired by the human animal. Bedeviled by buzzing mosquitoes, angry wasps, hungry yellow jackets, mindless gnats and biting black flies, Homo sapiens devotes much swatting, spraying and smacking to an endless army of six-legged creatures. Some bugs come in swarms and clouds, others bring pandemic and plague with them. Who celebrates the lowly cockroach, the dripping aphid, the malodorous stinkbug or my personal nemesis, the box-elder beetle?

Yet for all this, bugs have their devotees. Prehistoric humans likely depended on them for a reliable source of protein. The Egyptians made worship objects of scarab beetles. Tarantulas are sold as pets and nurseries provide ladybugs and praying mantis eggs to gardeners. As for me, you can tell my favourite bug by the number of jeweled representations I have bought my wife. Dragonflies are the winner, hands down.

The Odonata family includes over 5,000 species of dragonflies and their cousin, damselflies, distributed on every continent except frozen Antarctica. In North America alone, nearly 500 species go by many picturesque names: jewelwings, rubyspots, spreadwings, shadowdamsels, threadtails, dancers, bluets, sprites, petaltails, darners, ringtails, snaketails, sand dragons, cruisers, emeralds, pondhawks, skimmers, dashers, meadowhawks, clubtails, gliders and saddlebags. These descriptive names imply a great deal about Odonata's appearance and behaviour.

Damselflies share many characteristics with dragonflies but are mostly smaller. They hold their wings closer to their bodies when at rest and have a small space between their huge multifaceted eyes. Dragons' eyes actually touch one another. Their huge eyes see quite a lot. Imagine if your own eyes were half the size of your head! If you want to stalk a dragon or damsel for a closer look, come from behind, as that is the one direction in which they see poorly. Both types hover like hummingbirds and fly straight up and down like stealth fighters. Of course, they can do the requisite backwards and forwards swooping and cruising. They all feature various shades of iridescent colouring and large gossamer wings. Hence the many jewel-like references to their colours, as well as their wings and flight, in the pantheon of descriptive names.

PHOTOGRAPH BY HOWARD MEADD

*Female ebony jewelwing on pale touch-me-not (*Impatiens pallida*)*

Dragonflies and damsels are predators, mostly hunting other flying insects. Midges and mosquitoes are favoured but they sometimes take butterflies, moths and smaller dragonflies. The naiads (or nymphs) live in water until molting into full-grown dragons. They will eat almost any living thing smaller than themselves including massive numbers of mosquito wrigglers thus earning the nickname pondhawk. But they are not invincible in their realm. Dragonflies and damselflies are, in turn, prey for birds, spiders, frogs and larger dragons. In the larval stage, they are vulnerable to fish and amphibians. Yes, it is a cruel world, but Odonata thrives.

Since they begin life in an aquatic stage, they are often found near ponds, lakes, streams and wetlands. As adults, Odonata are fantastic flyers, among the fastest in the insect kingdom, so they are found far from water as well. Some researchers claim a top speed of nearly 100 kilometres an hour (60 miles per hour), but most reliable measurements place them between 30 to 50 kilometres an hour (20 to 35 miles per hour). Of the 300 species in North America, less than 20 are known to migrate seasonally.

As you might imagine, such prodigious flyers are capable of great migrations. One species, the wandering glider or globe skimmer (*Pantala flavescens*), considered to be the most widespread dragonfly on the planet, makes annual flights across the Indian Ocean; this is twice the

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distance of monarch butterfly migrations in North America. The most common migratory dragonflies on the Earth are the common green darner (*Anax junius*), the wandering glider, the spot-winged glider (*Pantala hymenaea*), black saddlebags (*Tramea lacerata*) and the variegated meadowhawk (*Sympetrum corruptum*). Although North American dragonfly migration was first documented in the 1880's, it remains a little understood phenomenon. Migratory cues, flight pathways and southern wintering grounds are all areas requiring exploration by researchers. This project has been undertaken by a three-nation collaborative (Canada, United States and Mexico), the Migratory Dragonfly Partnership. A large part of their mission is to preserve wetland environments from Central America to Canada, which benefits everybody, not just dragonflies.

Photograph © Carol L. Edwards

*Twelve-spotted skimmer on blazing star (*Liatris *sp.)*

Culturally, Odonata has represented a Manichean diversity. In Europe, dragonflies have been linked with evil, snakes, the devil and demonic possession. Romanian folklore points to the origin of the name "dragonfly" with a tale of the Devil turning the horse of St. George (of dragon fame) into a giant flying insect. The Romanian word for both devil and dragon is "drac" (Count Dracula, anyone?). It is thought that misguided English translations of the demonically possessed horse turned "devil fly" led to the coining of the word "dragon fly". Swedish folklore tells of the Devil using dragonflies to measure people's souls.

But in Japan, with 200 species on the islands, the dragonfly is a symbol of courage, strength and happiness. In North America, dragonflies appear in Hopi rock art, Zuni pottery and Puebloan jewelry. For some Native Americans, the dragonfly represented activity and speed. For the Navajo, living in the parched southwest, the dragonfly symbolized pure water, a precious commodity. No doubt the presence of dragonflies meant that water was somewhere nearby.

Either way, evil or benign, dragonflies don't bite or sting. It is wonderfully ironic that Johann Christian Fabricius gave us the identification Odonata in the 18th century, borrowing from the Greek for "toothed ones". Odonata have no teeth but they do possess powerful mandibles and, if you hold one's mouth against your skin, it will instinctively try to bite. It takes the biggest among them to produce even a little pinch. How big? The biggest of all Odonata are found in Central America and Australia, with wingspans up to 19 centimetres (seven inches) and bodies 10 centimetres (four inches) long. Fossilized Odonata have been found with wingspans up to 75 centimetres (30 inches) but these gargantuans are long gone from the earth.

It's easy to attract dragonflies to your garden. A diversity of shrubs and trees provide hiding places for them and a variety of blooming plants will attract the small pollinators that make up so much of their diet. Some suggested garden plants are black-eyed Susans (*Rudbeckia hirta*), milkweeds (*Asclepias* spp.) and Joe-Pye weed (*Eupatorium* spp.). Of course, if you maintain a generous variety of native plants in your gardens, you will attract the native pollinators typically found in your corner of the continent and local dragonflies will follow.

Installing a water garden is the first and fastest way to attract dragonflies but such gardens can also cultivate mosquitoes. If you can tolerate the mosquitoes, iridescent damsels and dragons will thank you.

Evan Cantor is a musician, artist and dragonfly-jewelry fan living in Boulder, Colorado. He considers himself lucky to have few mosquitoes in his gardens but plenty of iridescent blue damsels and dragons. To borrow from both Odonata and Nietzsche: life without courage, strength, happiness and pure water would be a mistake.

Our Magical Mystery Tour in Jefferson County Park, Iowa

by Stephen Johnson and Mary Stark

In early spring, Jefferson County Park – an open, understoried, but rapidly closing forest of 227 acres (91 hectares) near Fairfield, Iowa – appears fairly clear of invasive species, but, as the seasons advance, the park flora reveals itself to be almost as much Asian as North American. The native eastern redbud (*Cercis canadensis*) – one of the earliest flowering Midwestern trees – is being marginalized in the park by Amur honeysuckle (*Lonicera maackii*) while the native nannyberry (*Viburnum lentago*) shares the trailside with tartarian honeysuckle (*L. tartarica*). Wild gooseberry (*Ribes missouriense*) is being elbowed out by both Japanese barberry (*Berberis thunbergii*) and multi-floral rose (*Rosa multiflora*) while garlic mustard (*Alliaria petiolata*) quick steps through the understorey. Even the East Asian winter creeper (*Euonymus fortunei*) and Nanking cherry (*Prunus tomentosa*) make appearances. To us, the park is still magical, so we work to slow down the spread of garlic mustard and young Amur honeysuckle, the invasives that are most easily removed.

Photograph by Stephen Johnson

Collinsia verna, *a true blue obsession of 19th century naturalist Thomas Nuttall*

Perhaps one reason why the park is floristically dichotomous is its industrial history. From the late 19th century into the 1970s, trains traversed the region. The main trail into the park is the bed of one of the oldest rail lines in the area and an old railroad crossing sign welcomes walkers. Within the park are two or more abandoned railroad cars that provide risky adventure for local people of all ages. These old railroad cars toppled into a ravine and are only visible from the nature path during the winter when the deciduous trees and shrubs are leafless.

Was the appearance and spread of alien plants related to the railroads? How have the native plants managed to survive this onslaught? Were some of the native species introduced by settlers? These are questions yet to be answered. Following the railroad era of continuous disturbance, the area was set aside as a park. A county conservation board official told us that a Fairfield couple planted several species of wildflowers in the 1980s but no record has been found of the species planted or how they fared. This only adds to the mystery.

Despite the serious encroachment by alien plants, the park contains many native species commonly found elsewhere and several species we've either rarely seen or not seen at all in other natural areas in Iowa. One of the most attractive wildflowers is also the earliest. As its name suggests, snow trillium (*Trillium nivale*) emerges and extends its delicate white petals just as the soil around it is beginning to thaw. Snow trillium grows in a small area of the park at the base of oak trees and within sight of the abandoned box cars. This is the only population of snow trillium we have yet found in Iowa. The 200 square foot (20 square metre) area containing this trillium is under constant siege by itinerant, native wild gooseberry, but even more so by the relentless garlic mustard. The latter persistent biennial brings to mind a line from Shakespeare's Henry VI: "Now 'tis spring, and weeds are shallow-rooted; Suffer them now and they'll o'ergrow the garden/ And choke the herbs for want of husbandry." So, each time we visit the park we pull new garlic mustard rosettes from the site.

As snow trillium flowers begin to fade, more common spring flowers emerge. We have been monitoring a small clump of sharp-lobed liverleaf

Photograph by Stephen Johnson

Anemonella thalictroides, *charming, delicate harbinger of spring*

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(*Hepatica nobilis* var. *acuta*) in a very limited area by the trailside. This clump of less than 10 plants is interesting to us because at least two plants have flowers of a deep velvety purple. We have seen other populations of this liverleaf but nowhere else have plants shown us such a rich colour. On the other side of the trail just opposite the liverleaf is a population of bloodroot (*Sanguinaria canadensis*) covering a space of 40 square feet (four square metres). This cluster is so large that when the plants are in flower the area looks like it just received a coating of snow. However, the "snow" is flickering with the frenetic activity of andrenid bees. We have even observed the bees mating on the flowers.

Soon after Hepatica has faded, the bicoloured flowers of blue-eyed Mary (*Collinsia verna*) appear. Blue-eyed Mary is one of the only true-blue-flowered native plants in eastern North America. The colour could be achieved either by using a blue pigment called delphinidin or by placing the common purple- coloured phytochemical anthocyanin into a more neutral or basic cellular environment causing the chemical's normal purple colour to be blue. The famous 19th century plant explorer Thomas Nuttall was so fond of the plant that when he discovered that he had lost his original specimen he combed through four eastern states to find another. Sadly, he was unsuccessful.

Flowering simultaneously with *Collinsia* is the park's second trillium, which goes by the misnomer prairie trillium. This common name is misleading because *Trillium recurvatum* grows in open forests and not in open grasslands. Unlike the restricted snow trillium, *T. recurvatum* is widespread in the park.

Infrequent spring flora along the trail include miterwort (*Mitella diphylla*) with its tiny but finely dissected white flowers as precisely fashioned as snowflakes, and wild leek (*Allium tricoccum*) which is easier to see before it flowers when its wide leaves are still present. One of our favourite stories suggests that the area now known as Chicago was once a wet bottomland full of wild leek that the Menominee named Shi-Ka-Ko or "place that stinks."

Another early flower that appears here and only in one other park we visit is rue anemone (Anemonella thalictroides) with its crystalline watermelon-pink sepals. Often seen alongside it are the sporadic drooping petals of white fawn lily (Erythronium albidum) with a corolla that resembles the pointed and recurved lace hats of traditional North Holland (Volendam) women.

The genus Viola is as well-represented here as it is in freedom lawns. Here the blue violet (*V. pratincola*) and its woodland doppelganger *Viola sororia* (*sororia* meaning sisterly) rub shoulders with the not so common. Less common is the downy yellow violet (*V. pubescens*). Uncommon are cream violet (*V. striata*) found only in Jefferson County and neighbouring Van Buren County, and what appears to be a hybrid of Missouri violet (*Viola missouriensis*) and *V. soraria*.

Later-flowering herbs are rare under the ever-deepening shade cast by both native trees and invasive shrubs. Only careful observation reveals such hidden gems as whorled milkweed (*Asclepias quadrifolia*), miterwort, and green dragon (*Arisaema dracontium*). By contrast, the lavender trumpets of smooth ruellia (*Ruellia strepens*) are waiting beside the trail to be seen and admired. The showier flowers of ruellia disappear to be replaced by miniscule inflorescences such as the common pale pink-flowered pointed tick-trefoil (*Desmodium glutinosum*) and nearby, the similar, but unrelated, lopseed (*Phryma leptostachya*). Lopseed flowers are tiny, delicate, pink-tinged white trumpets, only about 1/16th inch (1.5 millimetres) long. Lopseed complements the Asian connection since it is also native to China – but only discovered in Taiwan in 2005.

Even more easily overlooked are the marble-white flowers of enchanter's nightshade (*Circaea lutetiana* ssp. *canadensis*). Although the plants are inconspicuous when in flower, if you hike in the woods when enchanter's nightshade is in fruit, you will remember it as the plant that knit your socks into knots. The fruit is burr-like, sticking to fur and clothing, a good zoochorous reproduction strategy.

PHOTOGRAPH BY STEPHEN JOHNSON

Silene stellata*, an indicator of good quality habitat*

The collection of canopy trees in the park is somewhat different from elsewhere in the state. Among the typical white oak (*Quercus alba*) and black oak (*Q. velutina*) found state-wide are three oaks of more southerly distribution. The most distinct is the

entire-leaved laurel oak (*Q. imbrecaria*). In climate science the presence of such entire-leaved species indicates a climate generally warmer than that found just 50 miles (80 kilometres) north as in Pella, Iowa. The other more southern oak species are the extremely long-peduncled swamp white oak (*Q. bicolor*) and pin oak (*Q. palustris*) that grow in a fairly straight band from Virginia to southeast Iowa.

The town of Fairfield is perhaps best-known as the site of the Maharishi International School of Management founded by Maharishi Mahesh Yogi in 1973. This brings to mind the encounter between this Vedic sage and the Beatles in 1967. Two of their songs, "Magical Mystery Tour" and "Strawberry Fields Forever," come to mind during our visits. The former aptly describes our tours of Jefferson County Park, while the latter popped into our heads when we saw a rare stolon of wild strawberry (*Fragaria virginiana*) on the trail. Magical indeed.

Stephen Johnson is fascinated by trilliums and other floral surprizes. Mary Stark is interested in the literary connections to plants.

New & Noted

Southern Bounty: How to Grow and Enjoy Southeastern Native Fruits and Nuts
by Trey Watson
Legg Creek Publishing
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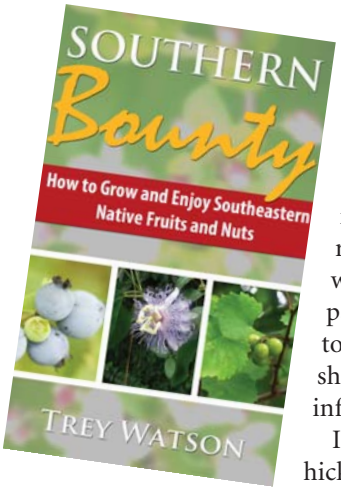

Southern Bounty is a small book written with love and devotion. Trey Watson is a Texas gardener who owns Legg Creek Farm LLC, a nursery specializing in native fruit-bearing plants for the southeastern U.S. His credentials include a degree in horticulture and a Masters in environmental science.

Apart from the chapters on soils and propagation, each chapter covers the natural habitat and background of one fruit or nut plant, placement of the tree or vine, care and maintenance once the specimen is in the ground, growth habit, propagation of the plant, and – the fun part – eating or "preserving your harvest." Colour photos of each plant as well as its flowers, fruits or nuts accompany each entry. Many of the trees and shrubs documented can be grown elsewhere in North America and other temperate climates.

This book is not for the outright beginner. However, if a person has started into native plants and is looking for some sage and simple advice, this book would serve them well. For example, where the soil requires more acidity for a particular plant, that requirement is stated clearly. Take it from one who has ignored that wisdom in the past and paid the price: heed it! Other plants are more tolerant of soil types, moisture regimen, sun or shade, and the reader will discover this information in the book.

I am partial to trees – big ones – such as the hickories (*Carya* spp.), walnut (*Juglans nigra*), and persimmon (*Diospyros virginiana*) included in the book. I was surprised to discover that what I've been telling people for many years about persimmon fruit is not quite correct: the fruit must undergo a frost before it is edible. Not so apparently, and thank you Trey for setting that record straight.

I commend this book to all lovers of native plants.

Review by Tom Atkinson
Tom is a self-proclaimed tree freak living in Toronto. For those with an eye to names, your challenge is to discover what his email ID refers to: asimina@sympatico.ca.

Continued from page 1 – **Spicebush**

produce fruit, you should plant at least two. Half a dozen is even better! Spicebush is dioecious, meaning that individuals will possess only male or female flowers, not both. Therefore, you will need a male and a female plant to ensure that one produces viable fruit (flower buds and flowers are necessary to determine the individual's sex). In my experience, spicebush will grow much better in a sheltered and partially shaded location than an exposed one. If it is planted in a good location you will be rewarded with growth of two-thirds of a metre (two feet) per year or more (even on clay)!

With its early spring flowers, bright berries, fall colour and unique fragrance, spicebush is striking in every season. If you venture into a deciduous forest of eastern North America don't be surprised to find your nose drawing you towards this delightful shrub.

Mark Funk works as a forestry specialist at the Grand River Conservation Authority in Cambridge, Ontario.

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