

# The Blazing Star



A PUBLICATION OF THE NORTH AMERICAN NATIVE PLANT SOCIETY

## Native Plant to Know

# Licorice Fern

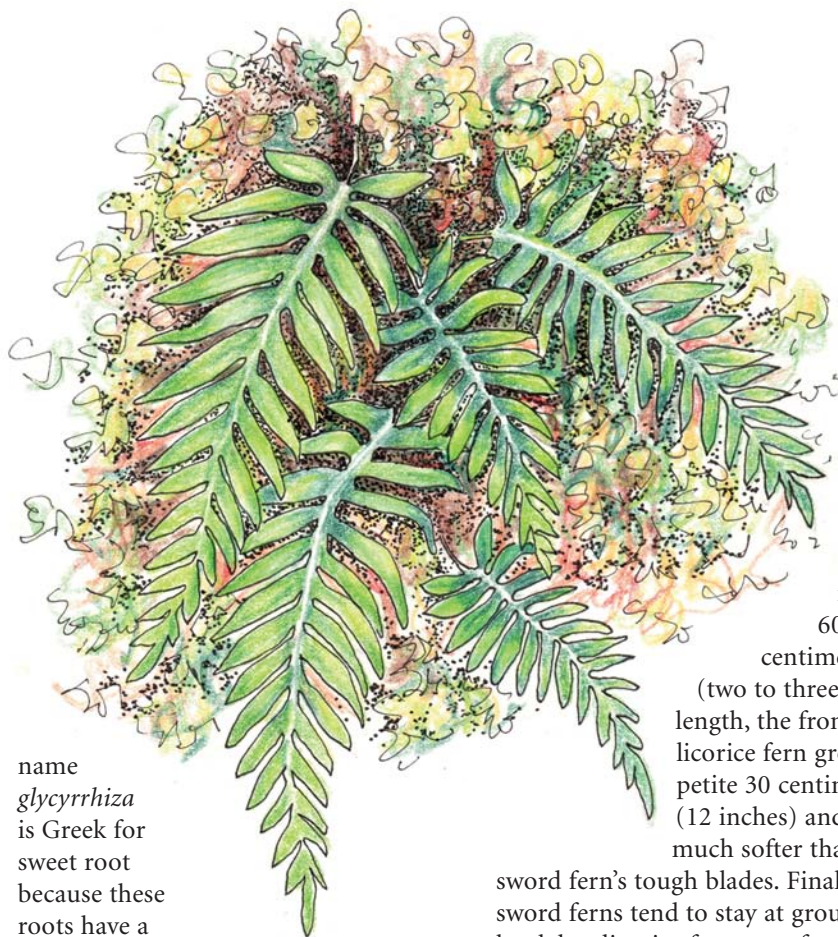
*Polypodium glycyrrhiza*

by Tammie Painter

One of my clearest memories as a kid stems from a forest stroll with my grandfather one spring. We trekked across his land on the Central Oregon Coast. It had been homesteaded by his mother and contained acres upon acres of old growth forest. I was convinced he knew every inch. At one point he plucked a fern from the crook of a tree, rinsed it in the nearby creek, handed me a piece and told me to chew it. Being from the city, where kids are told never to put strange plants in their mouths, I hesitated until he took the first bite. I took my chances and bit in, expecting the bland or bitter taste of a green vegetable. My eyes went wide with sweet surprise. I'd just had my first taste of licorice fern.

Licorice fern (*Polypodium glycyrrhiza*) is one of many fern species native to the western portion of North America and has a range from southern Alaska to Northern California. My grandfather's property was the perfect habitat for this plant: a wet, coastal forest at less than 700 metres (2,300 feet) in elevation.

Licorice fern lives up to both parts of its scientific name. *Polypodium*, meaning many feet, refers to the fern's growth habit of sending out many smaller roots (or feet) from a central reddish-brown rhizome. The genus



name *glycyrrhiza* is Greek for sweet root because these roots have a delicious taste reminiscent of licorice.

With its singly divided fronds, licorice fern might at first glance be mistaken for young sword fern (*Polystichum munitum*), but there are plenty of differences. Sword fern grows in circular clumps. While its fronds

can reach 60 to 90 centimetres

(two to three feet) in length, the fronds of licorice fern grow to a petite 30 centimetres (12 inches) and are much softer than

sword fern's tough blades. Finally, sword ferns tend to stay at ground level, but licorice fern can often be found growing in the crooks of tree limbs, on logs and on mossy rock faces.

Just like the licorice drops we find in the medicine aisle today, licorice fern

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ILLUSTRATION BY BRIGITTE GRANTON

## The *Blazing Star* is . . .

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## NANPS Directors in Action

The North American Native Plant Society is run by a passionate, dedicated board of directors – some volunteering their time for well over a decade. They work with native plants in their gardens, their jobs and their communities. Here are a few highlights of their community involvement, education and restoration work this summer.

Harold Smith and Donna Lang have been very involved with Faith and the Common Good, a multi-faith organization, on their Greening Sacred Spaces program. Thanks to a grant from TD Friends of the Environment, Harold and Donna helped create a native plant garden at Manor Road United Church in North Toronto. This was the second year of plantings, and the spectacular garden now has over 150 native shrubs and flowering plants. To help other groups wanting to do this work, Donna and former board member Miriam Henriques wrote the *Native Plant Gardening Guide: Tips for Native Plant Gardening for Your Faith Community*. Find it online at [faithcommongood.org/guides](http://faithcommongood.org/guides).

As part of her full-time job with the Toronto Botanical Garden, Colleen Cirillo attended the Cultivate Your Creative Nature horticultural conference in Southern California in June, organized by the American Public Gardens Association. Many of the presentations, workshops and tours focused on native plant protection, restoration and education. Highlights: a tour of Rancho Santa Ana Botanic Garden's native plant seed bank and nursery and a session devoted to The State Botanical Garden of Georgia's Certificate in Native Plants.

Adam Mohamed and Tyler Doré are working with the David Suzuki Foundation's Community Canoe Project, a network of pollinator-friendly gardens created out of old canoes and placed above ground along the lost rivers of Toronto. Since 2013, almost two dozen canoes have been planted around the Greater Toronto Area. The NANPS team is conducting inventories of the plants in each canoe (the canoes were planted with native species, but a few non-native plants have found their way in). The team is creating a spreadsheet to track the gardens and the plants, and discussing ideas on how to involve more citizen scientists in the project. For more information on the Community Canoe Project as well as the Butterflyway and Homegrown Habitat projects, visit [davidsuzuki.org/take-action/act-locally/butterflyway/?nabe=5392362493968384:1](http://davidsuzuki.org/take-action/act-locally/butterflyway/?nabe=5392362493968384:1). These citizen-led projects create habitat corridors for butterflies, bees and other pollinators in neighbourhoods across Canada. They are a great way to get involved with native plants in your community.

To find out more about what NANPS directors have been up to, watch for upcoming issues of *The Blazing Star* and follow NANPS on Facebook: [facebook.com/nativeplant](https://www.facebook.com/nativeplant), Twitter: [@tnanps](https://twitter.com/tnanps) and Instagram: [instagram.com/nativeplant\\_society/](https://www.instagram.com/nativeplant_society/).

To learn about botanical gardens and their growing role in conservation, attend Dr. David Galbraith's talk "Botanical Gardens and Conservation in the 21st Century" at the Toronto Botanical Garden on Thursday, November 22. Visit [torontobotanicalgarden.ca/events/botanical-gardens-and-conservation-in-the-21st-century](http://torontobotanicalgarden.ca/events/botanical-gardens-and-conservation-in-the-21st-century).

*Danielle Tassie*  
NANPS Communications  
Coordinator



Volunteers Janet Gregor (on the left) and Susan Hensley at NANPS 2018 plant sale at the Toronto Botanical Garden

PHOTOGRAPH BY CHARLES ISCOVE

## NATIVE PLANT EVENTS

### EDIBLE WILD BERRIES: ICONIC CANADIAN FOOD

September 27, 2018, 7:30 – 9:00 p.m.  
Toronto Botanical Garden  
777 Lawrence Avenue East, Toronto

Ethnobotanist Nancy Turner will explore the cultural significance of wild berries and their traditional harvesting and processing techniques. She will demonstrate how berries can be propagated in home gardens.

Nancy is Professor Emeritus and 2015 Pierre Elliott Trudeau Fellow in the School of Environmental Studies, University of Victoria, Victoria, British Columbia. Her research focuses on traditional knowledge and land and resource management systems of Indigenous People of western Canada.

The doors to Floral Hall, where the talk will be held, open at 6:30. The event is co-hosted by the Toronto Botanical Garden and NANPS. It is free for TBG and NANPS members. For tickets and more information, visit [eventbrite.ca/e/edible-wild-berries-iconic-canadian-food-tickets-46800384209](http://eventbrite.ca/e/edible-wild-berries-iconic-canadian-food-tickets-46800384209).



PHOTOGRAPH BY LINDA READ

Blueberries (*Vaccinium* sp.)

### NANPS 2018 AGM AND SOCIAL

Saturday, October 27, 2018, 9 a.m. – 3:30 p.m.  
Toronto Botanical Garden

One of the day's highlights will be a guided hike through nearby Wilket Creek, led by Alan Colley of Toronto Aboriginal EcoTours. This year we are partnering with Ontario Nature and opening up the day as an Ontario Nature Regional Meeting.

## In Memoriam: Darcie McKelvey

It was with sadness that the North American Native Plant Society learned of the passing this spring of Darcie McKelvey, a long-time advocate for the conservation of native plants and habitats. Darcie served on the board of directors, contributed numerous articles and photographs to this publication and performed other valuable volunteer services.



Darcie (on the right), with her sister Diane McKelvey, took an unforgettable trip to California in November 2017 to view the oldest, largest and tallest trees. They saw the bristlecone pines (*Pinus* spp.) near Bishop, the sequoias (*Sequoiadendron giganteum*) in Yosemite (where this picture was taken) and the redwoods (members of the subfamily *Sequoioideae* within the family *Cupressaceae*) near San Francisco.

Darcie practised law in Toronto for many years and became a member of the regulatory board that reviews the appeals to decisions made by the College of Physicians and Surgeons and other health disciplinary bodies.

Having long dreamed about owning a property outside Toronto, Darcie relocated to a wooded acreage near Caledon, Ontario over a decade ago. This became her haven where her native plant and tree gardens thrived. She also developed interests in beekeeping and birdwatching. She was deeply concerned about climate change, urbanization and other threats to native flora, spending countless hours educating herself and others on these issues.

As a practising Buddhist, Darcie combined a love for nature with compassion and kindness to others. She is dearly missed.

# Eco printing with native plants

by Wendy Feldberg

As an artist and gardener in Ottawa, I have always looked to nature for inspiration. My basic art process has been to lay down layers of marks on textiles or paper with pigment, print or stitch that express my response to nature. For the last few years I have worked directly with plant material that I grow or forage as sources of pigment and content for my art. Using a process known as eco printing, I capture multi-coloured prints from plant parts by extracting their natural dye pigments directly onto cloth or paper.

These days I use mostly North American native plants, although I continue experimenting with European heritage favourites and occasionally Euro trouble-makers such as *Frangula alnus* (alder buckthorn). I grow several native plants which produce colours similar to the ones that informed dye practices among early settlers and First Nations in North America.

Eco printing, also known as eco dyeing or contact printing, is a contemporary art application of natural dye traditions. The basic pigment extraction process is straightforward. To achieve a print, the plant material is enclosed tightly inside a rolled-up or folded textile that

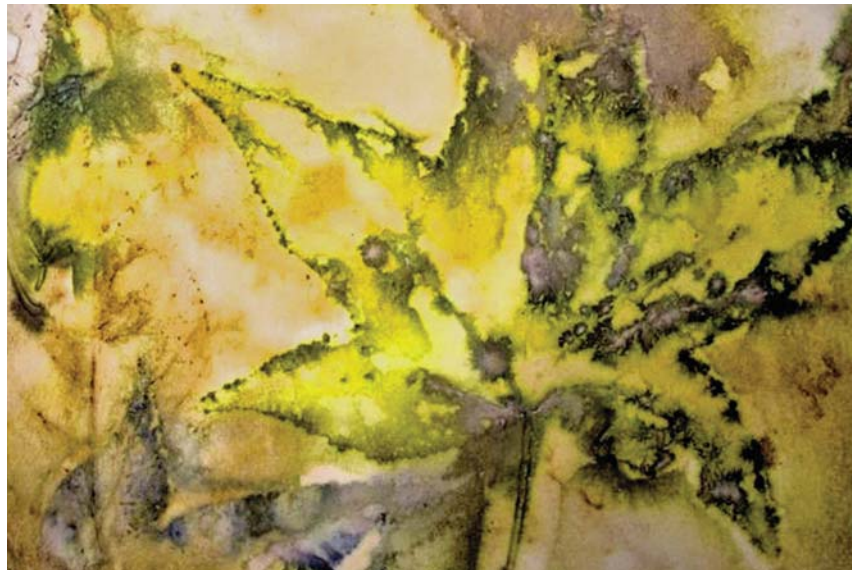
has been pre-soaked in an alum mordant to aid dye take-up. The plants may also be layered between alum-mordanted sheets of watercolour or other paper. The textile bundle or paper stack is then steamed or simmered in water for an hour. Bits of

dyeing refers more directly to the chemical bonding between pigment and fibre, and eco printing describes pigment activity on the surface of the substrate, the results of the process are the same. Even a first-time effort can produce spectacular prints!

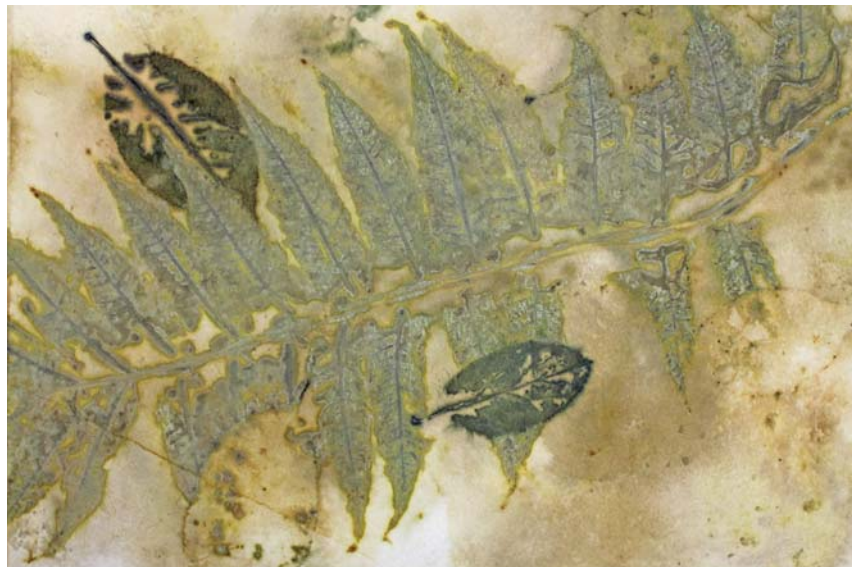
Eco printing has rapidly evolved as a technique practiced internationally by artists, thanks to preserved knowledge of folk traditions, academic reports, internet information exchange, books, magazines and personal experimentation. Eco printing appeals not only to artists and gardeners but to anyone who embraces ecologically friendly values and practices, including respect for the natural environment; knowledge, appropriate collection and interesting use of native and bioregional plants; the use of natural fibres in place of synthetics; recycling of materials, especially textiles; avoidance of toxic chemical mordants; and the recovery and sharing of traditional/historical plant uses.

Some striking visual features of the eco print are its

disrupted natural patterning and its surprise colouration. The same leaf, for example, can print different colours and forms from its upper and lower surfaces and along its margins



*Sweet gum fall leaf*



*Rhus typhina with Prunus cistena*

rusted metal can be printed with the plants for the interesting chemical reactions they trigger, contributing to colour fastness and the creation of new colours and forms. While eco

and veins, all with seasonal colour variations. While some plants print dramatically realistic shapes, others display camouflage-like overlaps and fragmented, multi-coloured abstract forms. But neither type of print will necessarily show the same colour as the plant that grows in nature. The green leaves and yellow blooms of *Coreopsis verticillata*, for example, print bright red almost photographically. Eco print colours, like traditional dye colours, vary with plant part, season, mordant, dye assistant, heat applied, processing methods, etc., options which may be profitably exploited. Eco printed plants can also yield colours unavailable in a traditional dye pot. In fact, some dye plant pigments reveal themselves only by eco printing (e.g., light purple and pink among dominant yellows from walnut leaves). All plant parts may print either the same colour (e.g., red-oranges from *Coreopsis verticillata*) or different colours from various plant parts (e.g., yellow from *Solidago* flowers and green from leaves). The same flower (e.g., any blue iris) may eco-print several analogous colours: purples, blue, blue-green, not just the



Berries of *Aronia melanocarpa*, leaves of *Baptisia australis* and the whole plant of *Coreopsis verticillata* (plus a little mystery leaf)



Oak and chokecherry

historic iris green of the Renaissance paint palette.

Eco printing is a kind of alchemy, as much art as science. Many factors, often in mysterious interaction, influence the final print: the age of the dye plant, plant growing conditions, fibre of the print substrate (cellulose or protein), choice of mordant (e.g., alum, iron), choice of dye assistants for changing print colours (e.g., rusted metals, baking soda, a copper pot), dye

processing temperatures, etc. Because eco printed surfaces can be only partly manipulated, never predicted entirely, I embrace the variety and spontaneity, often printing a textile or paper two or three times, using the same or different plants and processes in order to create complex surfaces. Like a garden, an eco print is always new.

While the challenge of juggling variables is a large part of the pleasure in eco printing, other personal benefits abound. It is creative activity that involves me in slow processes that are deliberate, thoughtful, meditative, kinetic, engaging body, mind and spirit in harmonious cycles: researching dye traditions and plants; growing plants from seed; gathering in due season; drying or freezing plants for use in the winter studio; stitching the printed cloth or making artists' books with the printed paper; enjoying plant fragrance in January when snow covers the dye plants.

Colours produced by native plants for eco printing

- The late-season berries of *Aronia melanocarpa* (black chokeberry) and *Cornus alternifolia* (pagoda dogwood), smooched onto the substrate, offer dark blues.
- Squished berries from *Sambucus*

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*canadensis* (common elder) give purple-blues and the leaves give various hues of green.

- The gentle blues said to come from various parts of *Baptisia tinctoria* (yellow wild indigo) and *B. australis* (false blue indigo) have eluded me so far, but leaves from the latter have given me an arresting acid yellow-green.
- When printed with splashes of iron

(*Coreopsis lanceolata*) offer a similar orange, but mainly from the blooms.

- *Bidens* spp., which go by many common names including tickseed and are related to *Coreopsis* spp., also provide red-orange.
- The roots of *Sanguinaria canadensis* (bloodroot), when pounded to paste or grated onto paper or textile, deliver a strong red.

- *Liquidambar styraciflua* (sweet gum): many shades of yellow and green. The leaves also give oranges and light and dark browns in the fall.
- The leaves of *Prunus serotina* (and others of the same genus) make dark and light teal-green prints.
- Staghorn sumac provides bright yellows early in the season and darker greens when brushed with iron liquor.
- Blooms of the native *Solidago* species (goldenrod) offer orange and orangey-yellow (with greens from the leaves) throughout the seasons.
- *Prunus virginiana* (chokecherry) gives spectacular “darks” without assistance from iron.
- The fall leaves of *Alnus incana* (alder) and sugar maple give light and dark browns.
- Green shells of black walnut fruits, broken up, give tans and light browns.



ECO PRINT AND PHOTOGRAPH © WENDY FELDBERG

The red pigments from *Coreopsis verticillata* were extracted onto paper using a steam method

liquor (rusty nails soaked in vinegar) near-blues or blue-blacks print from the tannin-rich leaves of *Acer saccharum* (sugar maple) and *Rhus typhina* (staghorn sumac). You can also selectively brush the paper or textile post-printing with iron liquor.

- Blue iris petals (*Iris versicolor*) print diffuse and dreamy green, turquoise and purple.
- *Coreopsis verticillata* (whorled tickseed): the whole plant (leaves, stems, blooms and roots) supplies a powerful red-orange and near-photographic prints. Other species such as lance-leaved coreopsis

- *Monarda didyma* (bee balm) blooms make a strongly pink, diffuse print.
- The crumbled fall fruits of staghorn sumac give reddish or dark pink prints.
- *Cotinus obovatus* (American smokebush) offers yellow from the heartwood when ground up like sawdust. The leaves print a range of colours (even smokey blues!) throughout the year but especially in fall.
- *Juglans nigra* (black walnut): fall leaves produce beautiful dark yellows and sometimes lavender-pinks.

## How To Eco Print on Paper

The supplies and equipment should be dedicated to this activity. Work outside or in a well-ventilated area.

- Alum as a mordant to fix the plant pigments on the paper.
- A thrift-store turkey roaster (or similar) fitted with a rack and a lid for steaming. Raise the rack with short jelly jars or other heat proof items two to three inches (50 to 75 millimetres) high.
- Heat source: kitchen stove or portable electric or gas burner
- Tongs, gloves, notebook, etc.
- Watercolour paper (90 pound or 243 gsm) or other papers (several sheets)
- Iron liquor (optional). Soak metal bits (nails, tin can lids, etc.) in equal parts 5% vinegar and water in a glass jar for two weeks.

N.B. Alum acetate is available from

Maiwa in Vancouver or G&S Dye in Toronto. Food-grade potassium aluminum sulfate can be found at Bulk Barn.

## Procedures

1. Fold the sheets or cut them to fit the rack, making two to four smaller sets or one large one.
2. Mordant the papers by soaking them overnight (or at least two hours) in water and two

iron liquor (optional).

6. Stack up the papers with plants in about six layers. You can print one or both sides of the paper so lay out the plants accordingly.
7. Enclose each stack between two sheets of cardboard.
8. Wrap string tightly around the stack and place on the rack.
9. Weigh the stack(s) down with bricks or some other heavy object.

down or the next day (peeking allowed). The colour may intensify with a longer rest-time.

14. Record dates, substrates used, mordants, plants, extraction method, results obtained, etc.

Eco printing is an imaginative and exploratory approach to the heritage art of natural dyeing which can offer gardeners or naturalists intriguing ways to experience native plants. Sometimes, in my little world, when I



ECO PRINT AND PHOTOGRAPH © WENDY FELDBERG

Artist's book: BOTANICA

3. Lay out papers on a flat surface.
4. Gather plant material. Cover 50% of the surface of a sheet of paper with leaves, stems, seed heads, blooms and/or roots. Vary placement by the size, shapes and desired print colours of the plants.
5. Include rusty nails or tin can lids splashed with white vinegar or

10. Fill the pot with two inches of water. Keep it topped-up and covered.
11. Bring the water to a bubbling simmer and steam for about an hour or until colour shows through distinctly. The papers colour up as the pigments are gradually released.
12. Turn the stacks over every 20 minutes.
13. Unwrap the stacks after they cool

am anxious about what lies around life's next corner, eco printing offers enjoyable uncertainty, letting me carry out "senseless acts of beauty" magically rendered in the grace of an exquisite print.

*Of sturdy Orkney heritage and with gardening in her blood, Wendy Feldberg, a retired ESL prof, is a fibre and book artist in Ottawa, Ontario. For a complete bibliography and more information visit [www.wendyfe.wordpress.com](http://www.wendyfe.wordpress.com).*

# A Haven for Birds

by Vicki Soon-Ai Low

In my 10 years as a bird rescue volunteer for the Fatal Light Awareness Program (FLAP) Canada, I have collected more dead and dying birds—victims of window collisions—than I can properly recall. But a few stand out, in particular a Wilson’s snipe that I found in early November 2007, at the very end of my first season of patrols at a mirrored office complex in Scarborough, Ontario. The snipe’s long sturdy bill, first to hit the side of the building, must have snapped its slender neck right back as the rest of its stocky wader’s body barrelled forward in the impact. The extent of the internal injuries caused was clear—the bird bled at both ends, bill and anus. Shocked to find it at my feet, my eyes flew up to the splotch of blood left on the all-glass façade, some two stories up. It offered a perfect reflection of the sunny, cloud-studded morning sky.

With new and more enlightened management at the office complex, those deadly window panes are now covered with grids of visual markers that warn migrating birds of the presence of a solid surface. As a result, bird-building collisions are way down—the painful days when scores of kinglets would hit and fall seem thankfully to be in the past. But all across the city—indeed, all across the planet—windows continue to kill and injure birds. It is estimated that, in North America alone, up to a billion birds annually are killed flying into windows, attracted by the reflection of a tree or the open sky.

The bird-safety measures that FLAP recommends to homeowners and building managers—about which,

more below—all seek to mitigate the problem of bird-building collisions. How can we make our windows visible to birds so they do not fly into them at top speed? At what distance from our buildings should we plant trees and shrubs so birds do not mistakenly perceive their reflection as a continuous part of the landscape they are moving through? In trying to make my own yard a safe one for avian visitors, I was for years so focused on addressing its negative features that I forgot to think about what birds’ positive needs might be.

Then I heard a story on National Public Radio about how the Audubon

documenting bird deaths and supporting FLAP’s advocacy for bird-friendly building practices, I could also turn my yard into habitat where birds could spend a few days resting and feeding before continuing north or south.

Prior to this realization, my gardening efforts had lacked an organizing principle. But in reading about how to garden for birds, I learned of the central place that native plants must play in any such effort. Still, it was a steep learning curve for a person who had allowed lily of the valley (*Convallaria majalis*) to colonize most of her yard. To help get my



*Canada anemone (Anemone canadensis)*

PHOTOGRAPH BY VICKI SOON-AI LOW

Society in Baltimore was recruiting immigrant women to plant habitat gardens to serve as rest stops for migratory birds. Many of these women were from countries further south where these birds overwintered, so they already felt a bond with many of the species and were eager to help them on their way. It finally dawned on me that, in addition to

bearings, I reached out to Janet Harrison of the North American Native Plant Society, who kindly gave me a tour of ZooWoods, a landscaping project at the University of Toronto that attempts to recreate the beech–maple ecosystem that had existed on the site prior to urbanization. Established in 1994, ZooWoods features an astonishing diversity of



native trees, shrubs, and flowering plants, packed densely into a small plot wedged between department buildings. Janet pointed out the layered growth in ZooWoods—trees tower above shrubs, which in turn shelter forbs and sedges. The layering, she told me, is key to creating a robust, biodiverse, and self-supporting environment that not only attracts, but sustains all kinds of organisms,

nutritious, especially for nesting birds and their young. I was astonished to learn from Tallamy's book that native plants support 35 times more caterpillar biomass than non-native plants. If we want to save birds and prevent their populations from falling even further, supporting insect life is crucial.

To that end, I have pulled out aliens that weren't thriving and, in stages,

to add to the top layer, settling on a common hackberry (*Celtis occidentalis*). I am coldly eyeing the aging Norway maple (*Acer platanoides*) in the front yard and the dreadful, leaning Manitoba maple (*Acer negundo*) in the back, making a shortlist of more ecologically useful trees that will go in their place in coming years.

In the meantime, if my yard is to attract avian visitors, I have to make it safe for them. The strategies outlined at the website [birdsafeca.org](http://birdsafeca.org) are a great help. Having seen at first hand the difference that visual cues can make in reducing bird strikes, I applied a 5 x 5 centimetre (2 x 2 inch) grid of white dots to the outside of my most hit-prone windows. I opted for a commercially available product, though string and opaque sticky tape would have done just as well. Although we used to remove our window screens in the winter, we now leave in place the ones that are mounted on the outside, as they provide not only a visible barrier to the glass but also some degree of cushioning, should a bird fly into the window nonetheless.

Birdfeeders and birdbaths should be placed at a distance of a half-metre (less than two feet) from any window. This way, a bird taking off from a feeder or bath cannot build up enough speed to injure itself in a collision. If the birds in one's yard are too shy to get that close, there are aesthetically pleasing exterior window hangings that look opaque from outside but are see-through from inside, turning one's kitchen window into a hide from which to watch birds.

I nearly fainted one day in early summer when I saw an American goldfinch land on the stem of my flowering bee balm (*Monarda didyma*). I am hoping he will come back next year, perhaps bringing some friends, when my paleleaf sunflower (*Helianthus strumosus*) goes to seed. It may be some years before my trumpet vine (*Campsis radicans*) covers the



PHOTOGRAPH BY VICKI SOON-AI LOW

Frontyard border with zigzag goldenrod (*Solidago flexicaulis*) and candle anemone (*Anemone cylindrica*). Zigzag goldenrod is unstoppable, even in the driest dry shade. It self seeds like crazy.

including the insect life that our birds love to eat.

Entomologist and native plant advocate Douglas Tallamy writes in *Bringing Nature Home* (2007) that 96% of terrestrial North American bird species feed insects to their young. Berries and seeds are great for a quick snack, especially during migration, but insect food is more

removed the lawn from my postage-stamp front yard. I have focused on planting up the lower levels of my layered ecosystem (such as it is), choosing fruiting and seeding shrubs, forbs, vines and sedges that might, as a bonus, play larval host to native pollinators. When our ash tree (*Fraxinus* sp.) succumbed to emerald ash borer, we had a rare opportunity

roof of our garden shed with enough reddish-orange blooms that a hummingbird notices, but in the meantime it already does my heart good to see, in my formerly lifeless front yard, the numbers of bees that crowd my stands of zigzag goldenrod (*Solidago flexicaulis*) and paniced aster (*Symphyotrichum lanceolatum*) in early fall. In late winter, I'm delighted by small flocks of dark-eyed juncos foraging among clumps of little bluestem (*Schizachyrium scoparium*).

In this post-natural world, even the smallest stepping stone we can offer to

birds as they complete their dangerous and arduous migrations is surely an ecological—if not an ethical—imperative. Just as important are the safety measures that we take to make our human-made environments less hazardous for our avian fellow beings. Still in its very early stages, my simple garden of natives remains a far cry from anything that may be termed habitat,

but I can only proceed with the faith that, if I plant it, they will come.

*Vicki Soon-Ai Low lives and gardens for insects and birds in Toronto, Ontario.*



*Hairy beardtongue (Penstemon hirsutus) in the prairie planting in the front yard.*



*Grey-headed coneflower (Ratibida pinnata) with visiting pollinators.*

PHOTOGRAPH BY VICKI SOON-AI LOW

PHOTOGRAPH BY VICKI SOON-AI LOW

**CANADIAN IMPRESSIONS by  
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# Botanizing on the Bruce Peninsula

by Bill Moses

Imagine the excitement of exploring new worlds. What will a rocket to Mars find on that planet and bring back to Earth? No doubt the same atmosphere of anticipation infected the early European explorers of North America.

the 19th century, several attempts were made to prepare comprehensive lists and descriptions of the flora of specific areas. Notable among them was *The North American Sylva; or, A description of the forest trees of the United States, Canada and Nova Scotia* by French botanist François André Michaux. My own little corner of

estimated depth of 600 metres (2,000 feet) 10,000 to 12,000 years ago. As the glacier retreated northward with a warming climate, plants moved in from the south. This may be why plants such as the hart's tongue fern (*Asplenium scolopendrium*) came to reside here.

The first organized scientific



PHOTOGRAPH BY BOB HOPE

Hart's tongue fern

Those early trips on our continent involved documenting what grew here and collecting unfamiliar plant and animal species. Explorers such as Lewis and Clark were given some training in botany, geology and related disciplines. They made exciting finds such as the bizarre-looking black greasewood (*Sarcobatus vermiculatus*) seen during their 1806 westward exploration of North America. Early in

southern Ontario, the Bruce Peninsula, remained unstudied until the mid-1800s.

The Bruce, as it's affectionately known, separates Lake Huron from Georgian Bay. It is part of the Niagara Escarpment World Biosphere Reserve, with large tracts of forest that include some of the oldest trees in eastern North America. The Wisconsin glacier covered this unique landform to an

attempt to survey the plants on the peninsula was made in 1874 by noted botanist John Macoun, of Irish descent, and geologist John Gibson, who was born in Bayfield, Ontario on the shores of Lake Huron. Gibson used his knowledge of geology to advance theories as to how the rare plants on the Bruce got there. He postulated that the peninsula's unique

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ecosystems were created by its exposure to strong winds, rain and snow from both the east and the west that buffeted and transformed the geological features. He believed that vegetation moved down from the north to populate colder areas on the Bruce in the swamps, bogs and cool crevices in the limestone. He challenged Charles Darwin's theory that plants moved north with the retreat of glaciers with his argument that the glaciers had disappeared so long ago as to have no effect on current-day plants.

In his career Macoun travelled all over Canada, collecting over 100,000 plant specimens, including over 1,000 that were previously unknown. He later authored the seven-volume *Catalogue of Canadian Plants*.

During the latter half of the 19th century, the study of plants was dominated by serious amateur botanists who were spurred on by correspondence with each other. On the Bruce Peninsula, the most famous was Jessie Roy, who lived at a property just north of Owen Sound that she and her husband called Royston Park. She moved to the area in 1863 and by 1871 was well enough known that, when she invited John Macoun to Royston Park, he eagerly accepted. Roy's legacy includes the many specimens she collected that are displayed in herbaria near and far. She is credited with discovering the male fern (*Dryopteris filix-mas*), the first record of this species in Canada. Other rare ferns she found were *Polystichum lonchitis* (northern holly fern), *Asplenium viride* (green spleenwort), *Phyllitis scolopendrium* var. *americana* (hart's tongue fern) and *Cryptogramma stelleri* (cliff-brake fern). One should not be fooled into thinking that she was only interested in ferns, although they were her favourite plants. She was instrumental in introducing the peninsula botanically at a time when most travel in the area would have been by water. The Bruce offers a formidable

challenge to approach from the east (an escarpment face and a rocky shore) or the west (shoals, with western winds blowing fiercely at times). Pioneers were not drawn to settle there because the soil was poor for farming.

In 1925, Professor A.P. Coleman of the Royal Ontario Museum presented his theory that the lack of glacier

coverage in some areas meant that pre-glacial era plants – relic species – were able to survive, populating isolated regions. He noted examples such as hart's tongue fern and bracken (*Pteridium* spp.) for which there was no other explanation for their geographical isolation. Professor M.L. Fernald took up the idea, suggesting that this may have happened on the



Northern holly fern (*Polystichum lonchitis*)



Individual large rocks left behind by glaciers become unique ecosystems determined by their shape and placement.

PHOTOGRAPH BY MARSHA COURTNEY

PHOTOGRAPH BY MARSHA COURTNEY

Bruce Peninsula. The unglaciated areas are known as nunataks, from Inuit nunataq, defined in Wikipedia as “an exposed, often rocky element of a ridge, mountain, or peak not covered with ice or snow with (or at the edge of) an ice field or glacier.”

P. V. Krotkov, a herbarium assistant at the University of Toronto in the 1930s, spent four summers on the Bruce to determine the “complete floristic composition of the peninsula.” His headquarters each summer moved from Tobermory to Stokes Bay, Lion’s Head and Dyer’s Bay. His job was to compile a complete list of plant species present and their distribution within the area. He also collected geological data to explain the composition of the vegetation. The results of his work provide an important historical record and a presumably accurate time-stamp of which plants existed on the peninsula at the time. This is significant when studying the effects of human activity and climate change over time.

Krotkov discounted the possibility of nunataks on the peninsula by showing that samples of soil, rocks and lake sediment were of the same composition, which would not be the case if there were unglaciated areas. He listed plants normally found in the north (boreal), east (Atlantic/Allegheny), west (prairie) and south (Mississippi Valley). The Bruce Peninsula tends to be central to these areas and that might explain why it is so botanically diverse. He also provided a list of nine species endemic to the Great Lakes region, including sand dune willow (*Salix cordata*) and dwarf lake iris (*Iris lacustris*).

The most recent botanist of note on the Bruce Peninsula was Joe Johnson, who spent over 40 years studying the area’s plants. He also examined old botanical records and made informed decisions about their accuracy. His efforts culminated in the 2015 publication of his book, *The Vascular Plants of the Bruce Peninsula, Ontario*.



PHOTOGRAPH BY MARSHA COURTNEY

*Crevice and caves emanate the coolness required by many plants (and enjoyed by hikers) on hot summer days.*

Botanist Michael Oldham of the Natural Heritage Information Centre said: “This book will be a benchmark against which future changes to the flora will be measured.”

Naturalists in this day and age do not have new worlds to discover. For fun, we can travel to new places to see plants we are unfamiliar with. I choose to limit my rambling to Grey and Bruce counties and try to see what is in front of me through the eyes of those who went before. This is my way of communicating with nature and I commend it to you.

*Bill Moses is retired and thus able to*

*devote time to pursuits of a botanical nature. The 175 plant species of Grey and Bruce counties provide enough excitement to keep him busy.*

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*Thank you!*



*Seedheads of ironweed (Vernonia sp.)*

PHOTOGRAPH BY DARGIE MCKELVEY

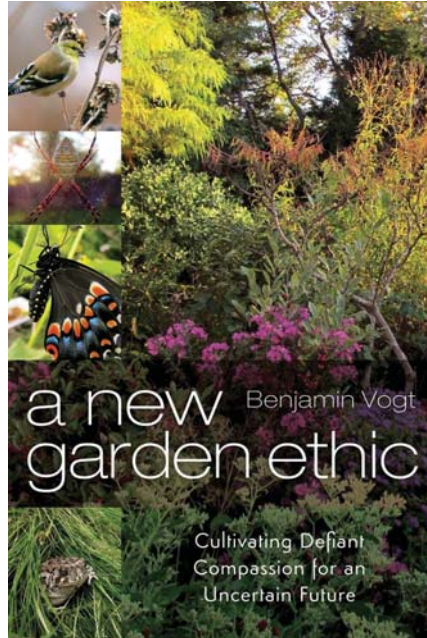
# New & Noted

## *A New Garden Ethic: Cultivating Defiant Compassion for an Uncertain Future*

By Benjamin Vogt  
2017, New Society Publishers, Gabriola Island, British Columbia  
ISBN 978-0-86571-855-5  
179 pages

*A New Garden Ethic*, by Nebraska-based writer and prairie garden designer Benjamin Vogt, is a book for our messy, complex, polarized times. Difficult to characterize, it engages with philosophy, ecology, gardening, psychology, religion, aesthetics, ethics, morality and so much more, exploring many of the hard questions about how to be in the world. Vogt argues that humans have altered the earth to the point that “the world is now a garden.” From this broad observation, he moves to our yards and landscapes: “It’s essential to rethink our gardens, to probe their meanings and expose how and why we make them, to question and hopefully invigorate the world we alter.” He offers radical prescriptions as to how we might achieve this: for example, “seeing all life as equal”; effecting “a change in our empathy and compassion”; seeing “the world through the eyes of another species”; “getting comfortable gardening with a viewpoint that is not entirely human”; gardening to “build ecosystems composed of essential native plants and designs that mimic the natural, wilder areas just beyond the garden fence.”

Vogt has a PhD in creative writing and it is a delight to read those sentences of his that are full of distilled, heart-stopping beauty and poetic but grounded clarity. Some of my favourites include: “I think it’s the absence I love most about nature—the way clouds and foxes and bees are given definition simply by passing through a wide-open moment.” Or, “It is time for daily



wildness to be our calling.” Or, “Sitting down among these tall grasses is a practice in making one’s self small.” Or, “When we touch the soil, we touch our ancestors and our children.” Or, “We are made of exploded stars.”

Along with the poetry of his discussion, though, the book sometimes resorts to data-barrages and is at times inaccurate in its presentation of science. For example, his use of the term “endemic” to mean indigenous to an area, rather than restricted to an area, is misleading. There are not “hundreds” of native

plant species endemic to Illinois (page 43), nor are there 450 species of native bees endemic to the mid-Atlantic and New England regions (page 41). This led me to wonder about other scientific ideas and data he presents to bolster his arguments. He often refers to alarming statistics that are worst-case scenarios without providing sources in the end notes, forcing the reader to trust that he is interpreting the scientists’ work accurately. In at least one instance that I am familiar with (Sheila Colla and Scott MacIvor’s paper “Questioning public perception, conservation policy, and recovery actions for honeybees in North America”), he misrepresents their work as a “study” that “definitively shows how honey bees outcompete native bees.” But their paper is not a study that definitively shows this; rather, it is an opinion piece that builds a convincing argument for caution and more research by citing studies done by other scientists and urges “redirecting public attention and policy away from domesticated honeybee management to evidence-based conservation management” of native pollinator biodiversity. In a book that liberally references scientific studies, careful and accurate summaries matter—particularly if one hopes to convince others and bring people on-side.

However, for readers who approach this book already open to the importance of gardening with native plants, there is much that will confirm and support their beliefs and experiences. Vogt’s descriptions of his own landscape and his encounters with nature are inspiring. And his statements about the need to connect our gardening efforts with larger ethical and moral questions are timely, thought-provoking and urgent. I find his philosophical leaps into discussions of democracy, freedom and



PHOTOGRAPH BY BENJAMIN VOGT

patriotism problematic: Do plants really have “inalienable rights,” as he asserts on page 58? Are there not real dangers in equating the fostering of a healthy, biodiverse land base with patriotism, as he does on page 77? Is it helpful to write that we need “wildness even more free to pursue its own happiness,” as he does on page 119? Even so, his book is full of brave, innovative and challenging ideas, and it is highly rewarding to engage with them (even in discomfort or perhaps disagreement). For example, his discussion of grief and mourning, in the context of environmental degradation, and his discussion of empathy and compassion, in the context of native plant gardening, are particularly interesting and propel familiar arguments into new territory.

Approach *A New Garden Ethic* prepared for a radical rethinking and revel in its many beautiful passages. Consider the references to scientific studies with some critical skepticism and as an invitation to search out primary sources. Argue with the book in places, rejoice in its clarity of purpose and intention, and come away with more questions and ideas to dig into and turn over in your mind, your heart and your garden.

**Review by Lorraine Johnson**

Lorraine is the author of numerous books on native plant gardening and environmental issues, including *Tending the Earth: A Gardener’s Manifesto*; *100 Easy-to-Grow Native Plants for Canadian Gardens*; and *City Farmer: Adventures in Urban Food Growing*.



PHOTOGRAPH BY BENJAMIN VOGT

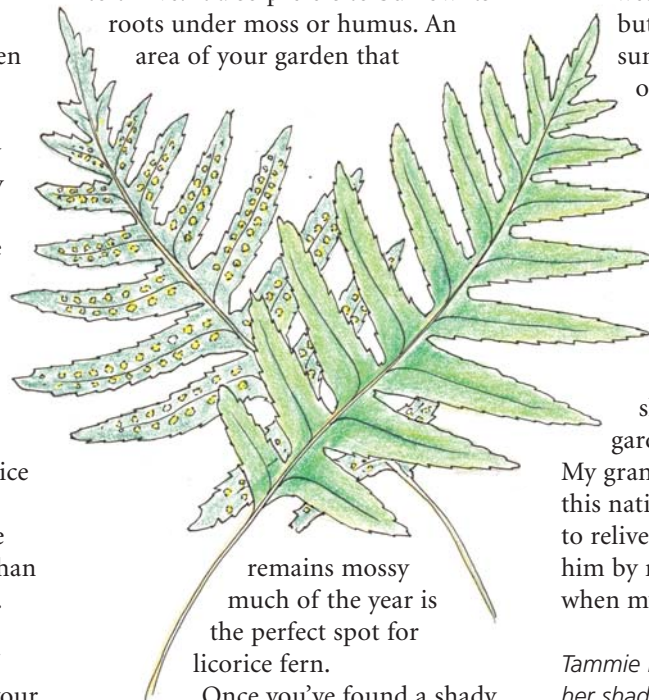
Continued from page 1 – **Licorice Fern**

was used by Native Americans to sooth sore throats, ease cold symptoms and alleviate coughs. In winter, it provided a tasty treat, when sweet foods such as berries were no longer available.

How sweet is licorice fern? As my eight-year-old self can tell you, very sweet. It was once believed that it owed its flavour to glycyrrhizin, the molecular component found in licorice root (*Glycyrrhiza glabra*). Licorice root is the sweet ingredient in naturally flavoured licorice candies. But researchers found that the tongue-twisting glycyrrhizin was missing from licorice fern. Instead, licorice fern owes its flavour to polypososide, a molecule measured to be 600 times sweeter than sucrose, and a few other flavonoids. Glycyrrhizin, by the way, can cause heart troubles in some people, so if you crave the taste of licorice, but your doctor has warned you away from your favourite candies, ask him or her about sampling licorice fern.

If growing licorice fern in your garden, keep in mind it needs rich,

acidic soil and moist, shady conditions to thrive. It also prefers to burrow its roots under moss or humus. An area of your garden that



remains mossy much of the year is the perfect spot for licorice fern.

Once you’ve found a shady place for this native plant, keep it moist until established. When it’s firmly taken root, licorice fern is drought tolerant. In its native habitat, summers are often dry with rains

starting up again in the fall. When dry weather sets in, the fern will fade, but don’t panic: licorice fern is summer deciduous, meaning once the wet weather returns, the plant will rehydrate, grow new fronds, and remain bright green through the winter. Licorice fern can tolerate some freezing weather, but it will not thrive in areas that experience harsh winters.

With plenty of moss and shade, my Pacific Northwest garden suits licorice fern perfectly. My grandfather is gone, but by adding this native to my collection I’ll be able to relive my childhood memories of him by nibbling pieces of the root when my sweet tooth strikes.

*Tammie Painter tends to native plants in her shady garden in Portland, Oregon. She is the author of Going Native: Small Steps to a Healthy Garden and the fantasy series The Osteria Chronicles.*

ILLUSTRATION BY BRIGITTE GRANTON



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