



Since 1923

TORONTO FIELD NATURALIST

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Snowy Owl in Flight at Tommy Thompson Park, March 2018. Photo by Zunaid Khan

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PRESIDENT'S REPORT

When I was a young lad, an elementary school teacher once asked my class to predict what the year 2020 would look like. For me, that long-distant future was certain to be a time of world peace and lasting prosperity, where humanity flung itself from Mars Colony to Moon Base in fantastic interstellar craft as easily as we could hop from city to city on our own personal jetpacks. Despite wrestling with a certain amount of ennui and disappointment provoked by these recollections, I did manage to enjoy a wonderful holiday season. I hope the last two months have been a time of family, friends and general enjoyment for all of you as well.

2020 is already shaping up to be a good year for TFN. Thorough readers of the last newsletter may have noticed that our newest board members have already begun to enthusiastically energize some of our standing committees. Zunaid Khan, who now serves as Chair of Promotions & Outreach, is certain to bring renewed zest and attention to our online activities and participation in various events. Kayoko Smith is set to work with Jane Cluver and Margaret McRae on Walks & Outings, a facet of our organization that I'm sure will develop in meaningful and beneficial ways this year.

The TFN Archives will also be receiving some overdue attention over the next several months. While TFN has done an admirable job of keeping these materials organized and protected over the years, their true value to us and the broader community has never been fully unlocked. Most materials still exist only in hard copy, indexing has fallen behind and the general state of our archives is now largely out of step with contemporary research practices and methods. As a result, we have been increasingly unable to satisfy information requests that come our way from TFN

members, partner organizations and the public at large, at least with any convenience or promptness. Our call for volunteer archivists published in the December 2019 newsletter was a first step towards improving this situation. I'm pleased to say that response was more generous than anticipated! Our new Archives Committee will be hammering out an action plan over the next several weeks and we hope that practical efforts will take shape shortly thereafter. If you missed the call for volunteers and are interested in lending a hand, please contact archives@torontofieldnaturalists.org for more information.

With the conclusion of its inaugural three-year run, I'm pleased that it appears our Cottonwood Flats Monitoring Project will continue with the City's blessing. Similarly, now in its second year of broadcasting, our weekly radio segments on CJRU AM 1280, Toronto Nature Now, will continue in 2020. Our Action Committee is gearing up for some very promising efforts early in the year. Our Junior Naturalists program will build on its wonderful successes in 2019 and continue to offer Toronto's youth new and imaginative experiences in our natural world. And as if all this were not enough, our Lecture Committee members have once again outdone themselves by scheduling such wonderful speakers as Katie Thomas and Paul Zammit, and fascinating topics like dog-strangling vine and flying squirrels (the only creature that would give the honey badger a run for its proverbial money should I ever find myself in need of an emotional-support animal).

Personally, I'm truly excited about what this year has to offer, even if such offerings are devoid of jetpacks and moon bases.

Jason Ramsay-Brown
president@torontofieldnaturalists.org

TFN Board Nominations Invited

TFN is looking for people with initiative who are willing to devote time to working as members of the Board of Directors.

Please send your suggestions to the Chair of the Nominating Committee, c/o the TFN office (see contact info on page 14).

The Committee's report will be published in the May newsletter.

WHAT'S NEW ON TFN'S WEBSITE

Discover all this and more at <https://torontofieldnaturalists.org/for-members/>

- New parkette to protect Toronto's Great Red Oak
- The Connected Naturalist: Birbs, spiders on drugs, and other nature memes
- Plus: Notes from our latest Junior Naturalists events, opportunities to Take Action, and much more.

TFN OUTINGS

TFN events, conducted by unpaid volunteers, go rain or shine. Visitors and children accompanied by an adult are welcome. No pets please. TFN assumes no responsibility for injuries sustained by anyone participating in our activities. **Please thoroughly clean your footwear before each outing to avoid spreading invasive seeds.**

The Toronto Field Naturalists wish to acknowledge this land through which we walk. For thousands of years it has been the traditional land of the Wendat, the Seneca, and most recently, the Mississauga of the Credit River. Today it is still home to many Indigenous people from across Turtle Island and we are grateful to have the opportunity to be on this land.

If you are viewing online, consider printing this page for your convenience.

Thurs WEST TORONTO RAIL PATH – Heritage

Feb 6 **Leader: Linda McCaffrey.** Meet at Dundas West subway station. We will proceed south through the historic industrial neighbourhood to the west, intercept the rail line at Dundas and follow it to its end at Cariboo Ave. About six km mostly paved and flat. Walkers may exit at Lansdowne subway station or continue to Cariboo just north of Dupont. (Metrolinx is adding a new rail line to Kitchener, so in spring 2020 the West Toronto Rail Path will be closed for about 2 years. When reopened it will extend south of Queen St to Sudbury St near Trinity Bellwoods Park.)
10:00 am

Sat EARL BALES PARK AND THE WEST DON VALLEY – Nature Walk

Feb 8 **Leader: Stephen Smith.** Meet at the bus stop at the corner of Sheppard Ave W and Don River Blvd. We'll walk south along Earl Bales Trail looking at one of Toronto's best remaining large blocks of natural habitat including mature and regenerating forests and the storm-water pond built in 2011. Bring lunch and be prepared for moderate hills and icy trails. Walk will end about 2:30. Washrooms in the ski chalet at the end.
10:00 am

Thurs TADDLE CREEK – A Lost River

Feb 13 **Leader: Ed Freeman.** Meet at the ROM entrance on Bloor St. We will trace the route of Taddle Creek to the Distillery District. Be prepared for cold weather.
1:30 pm

Sat ASHBRIDGE'S BAY – Birds, Trees and Effluvia

Feb 15 **Leader: Bob Kortright.** Meet at the southwest corner of Coxwell Ave and Lake Shore Blvd E for a circular walk around the perimeter of Ashbridge's Bay Park and past Coatsworth Cut viewing ducks and gulls against the backdrop of Toronto's main sewage treatment plant. Walk will end at Tim Hortons near the Woodbine bus loop. Mostly paved surfaces, flat with some gentle slopes. Washrooms at the end. Bring binoculars. Check the forecast for Toronto Island. It is windier along the lakeshore.
10:00 am

Sun LOWER DON LANDS – Natural and Human Heritage

Feb 16 **Leader: John Wilson, Lost Rivers.** Meet at Eastern Ave and Cherry St, the site of Lucie and Thornton Blackburn's home (a touchstone for heritage in Black History Month). We will observe the impacts of brownfield redevelopment and infrastructure planning on natural and cultural heritage resources in the rapidly-changing Lower Don Lands. A linear walk dictated by weather conditions. A joint outing with Toronto Green Community.
2:00 pm

Thurs LOWER DON TRAIL TO CORKTOWN COMMON AND DISTILLERY – Nature Walk

Feb 20 **Leader: Vivienne Denton.** Meet at Broadview subway station for a linear walk on mostly paved surfaces, flat with some gentle slopes and stairs. We will walk down the Don River trail from the footbridge at Riverdale Park to Corktown Common observing nature in winter; then to the Distillery District where we can warm up with coffee. Washrooms at the end. Bring icers if needed.
10:00 am

FOR ENJOYMENT OF WINTER OUTINGS



Long underwear

Warm hat

TTC Ride Guide

Layered clothing

Mittens over gloves

Snack

Waterproof boots

Binoculars

Thermos for hot drink

Thick socks

Camera

Sunglasses

Icers to prevent falls

- Sat
Feb 22
10:00 am **VALLEY TRAIL WALK – Nature Walk**
Leader: Linda McCaffrey. Meet at the eastbound bus stop at Kingston Rd and Old Kingston Rd for a circular walk along a new accessible trail (allegedly maintained throughout the winter) connecting the University of Toronto athletic fields in the valley with the Scarborough campus along Military Trail. The Valley Trail winds through woodlands along the steep eastern slope with excellent viewing platforms. There are historic dwellings along the way and deer in the woods. An early exit can be made at the bus circle on campus. No washrooms.
- Thurs
Feb 27
10:00 am **COLONEL SAMUEL SMITH PARK – Birds**
Leader: Anne Powell. Meet at Lake Shore Blvd West and Kipling Ave for a 2-hr circular walk on mostly paved surfaces to view winter waterfowl. Bring binoculars. Washrooms at beginning of walk.
- Sat
Feb 29
10:00 am **SCARBOROUGH BLUFFS – Nature Walk**
Leader: Charles Bruce-Thompson. Meet on the south side of Kingston Rd at Chine Dr for a 2-hr walk around upper Scarborough Bluffs to Midland Ravine, ending at Midland Ave and Kingston Rd (about 500 metres from the starting point). Some muddy or icy trails. No washrooms.

Share your favourite walk photos on social media, hashtag #TFNWalk.

NATURE IMAGES SHOW

Saturday, February 1, 2020 from 1:30 to 4 pm. Auditorium, S Walter Stewart Library

170 Memorial Park Ave at Durant Ave (one block north of Mortimer or one block south of Cosburn, 1 block west of Coxwell). Coxwell bus to Mortimer or Cosburn Avenues.

Refreshments donated by members will be served. Members may display their nature artwork on tables for us to view during the coffee break.

TFN photographers!

Inspire others with your images of landscapes and biodiversity!

Rules for participating:

- Must be a TFN member.
- Bring up to 25 digital images on a USB Flash Drive or CD.
- Bring large resolution images (minimum 1024 pixels on long edge).
- Focus on Ontario with nature subjects (plants, animals, landscapes).
- Arrive at least 15 minutes early so your images can be transferred for projection.
- Be prepared to introduce your images or provide a scripted introduction to be read by a volunteer.

COMING EVENTS

Royal Ontario Museum (<https://www.rom.on.ca/en/exhibitions-galleries/exhibitions>)

- Nov 16 to Mar 22: Bloodsuckers: Legends to Leeches
- Nov 23 to Mar 29: Wildlife Photographer of the Year

Toronto Public Library, Yorkville Branch (<https://tplbirds.in.winter>)

Thurs, Feb 20, 6:30-8 pm. **Birds in Winter.** Speaker: Monika Croydon, avid birder and member of Toronto Ornithological Club. Learn how to help birds in winter by providing feeders and creating bird-friendly gardens as well as supporting conservation and research as Citizen Scientists. No registration required.

Toronto Entomologists' Assoc (www.ontarioinsects.org)

Sat, Feb 29, 1:15pm. Room 206 Victoria College, UofT. **Syrphidae – Flower Flies.** Speakers: Jeff Skevington and Michelle Locke, authors of *Field Guide to the Flower Flies of Northeastern North America.*

LECTURE REPORT

Blood, Bait and Bacteria: Evolution of Feeding in Leeches

December 1, 2019

Sebastien Kvist, Curator of Invertebrates, Dept. of Natural History, Royal Ontario Museum and Assistant Professor of Ecology & Evolutionary Biology, University of Toronto

Sebastien Kvist gave a fascinating talk about research relating to these strange creatures.

Leeches are ubiquitous. They have been found in every country where we have looked for them and in every body of water including the oceans of Antarctica, from the tops of mountains to the bottom of oceans, in fresh water, marine and terrestrial habitats. Ontario is home to a great variety of leeches and, for some species, has the largest concentration in the world.

There are about 700 species of leeches and they come in all sizes – some less than 1 cm and some really large, such as the Amazonian *Haementaria ghilianii* which can grow up to 450 mm long and 100 mm wide. Over the 250-300 million years that leeches have existed, they have evolved with three different feeding habits: those that feed on body fluids of mainly fresh water invertebrates or snails; those that swallow their prey whole, eating other leeches, earthworms and small crustaceans; and those that feed on blood.

When they start to feed, these bloodsuckers arch their necks to create a muscular vacuum causing suction that pulls the blood into their bodies to be stored in crop-like structures. They only need the red blood cells; everything else gets pushed across their skin, making it wet. They can consume up to ten times their body weight in blood, and can go up to year without feeding. They tend to feed predominantly on the blood of vertebrates which is low in vitamin B, a nutrient essential to the leech. So they have specialized structures in their bodies housing bacterial symbionts that create the needed B vitamins. For reasons unknown, the bacteria found in some leeches are similar to those in plants. Researchers compared the tree of life of the leech with that of the bacteria and were surprised to find no evidence of co-evolution.

Researchers use two methods for collecting leeches. One is to enclose a piece of liver in a folded aluminum plate and toss it into the water. This attracts mainly leeches that

take whole prey rather than blood feeders. The second method is to put on shorts and wade into the water.

Leeches have long been used for medicinal purposes – in medieval times to treat any condition that created an imbalance in the four humors (blood, phlegm, yellow bile and black bile). They have also found their way into science-based medicine. The strong blood thinners in leech saliva are used for micro-surgery applications where it is necessary that blood not coagulate. The first human dialysis was made possible by the use of leech blood thinners in 1921.

The evolution of leeches is being studied in an effort to determine whether the ancestral leech was blood-feeding. A graduate student in Sebastien's lab created an evolutionary tree identifying 320 leech species (40% of leech diversity). Researchers then mapped the different times that blood feeding evolved and determined that this



had either been gained on nine occasions or, more likely, lost on eight occasions. In a separate study they looked for traces of blood thinners in the saliva of non-blood-feeding leeches, and discovered that the genome of a leech which evolved early contained six different blood thinners. They also found the same blood thinner in different

parts of the tree, indicating a common ancestor.

Researchers have recently discovered a new species in Quebec which is cryptic (i.e. it looks like a leech already documented but its DNA tells a different story).

Sebastien touched on the subject of leeches as bait. Bait shops in Ontario sell only non-blood feeding leeches that swallow their prey whole. Hence, they cannot travel with their host and populate different ponds. This fact enabled researchers to ascertain if fishermen were illegally taking bait leeches across provincial borders. They sequenced 250 leeches from Quebec to BC and found hardly any overlap so, for the most part, fishermen are following the rules.

Zunaid Khan

To learn more about leeches, be sure to check out the ROM exhibit which continues until March 22.

There is also a descriptive audio tour on ROM's website; <https://www.rom.on.ca/en/exhibitions-galleries/exhibitions/bloodsuckers-legends-to-leeches>

TREE OF THE MONTH: TAMARACK (*Larix laricina*)

Walking outdoors at this time of year you might encounter tamarack – our only native deciduous conifer and one of just 3% of deciduous conifer species worldwide. Tamarack is the only larch species, out of ten in total, that is native to eastern North America, though European and Japanese larches and their hybrids are commonly cultivated here. Larches, in general, are trees of high latitude and high elevation forests, and tamarack fits this mould as one of the dominant trees of our boreal forests. Around Toronto, it is most prominent on boggy ground, typically a colder microhabitat than that of surrounding lands.

Tamarack is a member of the pine family. It shares with the pine genus foliage organized into long and short shoots, though the short shoots of the two genera are quite different in character. The fascicles of our pines are minimalist short shoots that produce only a single flush of two, three or five needles in their lifetime and are shed intact after some two to five years. The short shoots of larches (like those of ginkgo trees) live for many years, flushing and shedding a new tuft of leaves at their growing tips each year. The pom-pom tufts of fresh needles are so densely crowded that their leaf bases (and subsequent attachment scars) are crammed together with no space between. This gives rise to the characteristic stubby knobs that first begin on second year long shoots from a bud in the axil of a previous year's leaf scar. Going back year by year along the long shoot, the spurs become longer with each growth increment away from the tip, only dying when they become reproductive or too shaded, or if their supporting long shoot matures into a major limb and cuts them off with thickening bark.

As we look out on the bare trees that surround us at this frozen time of year, it is easy to assume that deciduousness evolved to preserve leaves against these conditions. The needles of evergreen conifers such as pines and spruces are heavily protected against water loss during the winter, but the same protections significantly reduce photosynthesis during the growing season. As a result, deciduous trees, including tamarack and all our hardwood trees, are generally faster-growing than our evergreen conifers even though they only dress themselves in leaves for half the year.

While deciduousness thus serves an important function in our climate, it actually evolved under rather different circumstances. It arose among the forest trees growing in the high arctic 50 million years ago, during the much warmer Eocene epoch when mild winters were essentially frost-free. Just as today, however, winter north of the Arctic Circle was one of perpetual night. It has been hypothesized that, under these conditions, deciduousness evolved to prevent respiration (a year-round process when winter temperatures are moderate) from damaging the leaves while they were not able to photosynthesize. These ancient forests contained the conifers dawn redwood (their ecological dominant), bald cypress and larch and a variety of familiar hardwoods all of which are deciduous today, even those that live in less frosty mild temperate climates. This is one of many possible examples of a trait that evolved under one set of conditions later proving equally (or even more) useful under others – a circumstance that has been referred to as exaptation.

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Fresh mature and post-dispersal seed cones at the tips of short shoots of tamarack (Bruce Peninsula, June 2019).
Photo: Ron Dengler



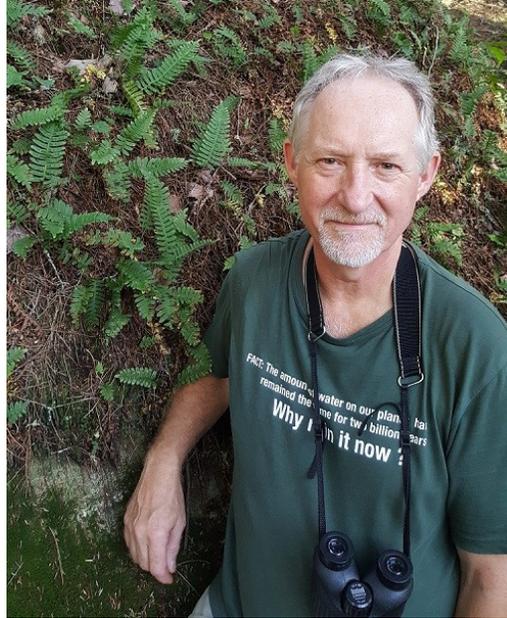
Long and short shoots with leaves of tamarack in fall colour (Algonquin Park, October 2019). Photo: Ron Dengler

VOLUNTEER PROFILE: STEPHEN SMITH

Stephen Smith grew up in the west end of Toronto and spent much of his childhood playing in the Humber River Valley. Environmentally minded even in his youth, Stephen began cleaning up garbage in the valley before organized clean-up initiatives were a common occurrence. His uncle was a big influence in his life. Stephen recalls, “He would teach me about hunting and fishing and all the things we liked to do up north at our cottage.”

After high school, Stephen studied forestry. His work took him all over Ontario before he returned to Toronto to start his own business over 25 years ago. His company, Urban Forest Associates Inc., focuses largely on forestry, ecological restoration and environmental stewardship in Toronto ravines, continuing the trajectory he started as a child when he was building forts in the river valley.

Stephen first became involved with TFN in the early 1990s, joining specifically to attend walks. Stephen says “I like to go to places I don’t know very well and get to know them that way. It’s a great way to learn and to make new friends.” In fact it was on a TFN walk that Stephen first got to know his wife.



Given his extensive knowledge about nature in the city, Stephen was asked to lead walks shortly after joining TFN. For over 25 years now, he has been a frequent walk leader, teaching us about winter plant identification, forest succession and ecological restoration among other topics. Stephen also regularly advises TFN on ecological restoration matters, including planting butternuts at TFN’s Jim Baillie Nature Reserve.

Stephen is heavily involved in other initiatives throughout the city. He was a part of the *Task Force to Bring Back the Don* working group that initiated the restoration work at Cottonwood Flats, now being monitored under the TFN’s Cottonwood Flats Monitoring Project (CFMP). Stephen also leads walks for other organizations, including High Park and the Museum of Contemporary Art. What’s more, he is one of the authors of *Trees, Shrubs & Vines of Toronto: A Guide to Their*

Remarkable World for the City of Toronto Biodiversity Series (available through the Toronto Public Library).

Even with all the other fantastic initiatives he is involved with, Stephen always finds time for TFN. He states affectionately, “TFN is a bit like family. I’ve known many of the members for many, many years now. It’s just part of our lives.”

Agneta Szabo

The bare twigs of dormant tamarack also highlight the otherwise modest seed cones, like tiny, almost spherical spruce cones, only 1-2 cm long. Despite the underwhelming mature state of tamarack seed cones, I urge you to take a look at the trees as the new crop of fresh green needles is emerging in the spring. At that time, pollen and seed cones emerge individually from the tips of some short shoots. Pay special attention to the diaphanous seed cones as they prepare for pollination. They are simply beautiful in the sunshine, with lovely pastel colours, and are visually dominated by the bracts that later become hidden behind the seed scales as the latter enlarge along with their pair of maturing seeds.

James Eckenwalder



European larch seed cone at pollination. Photo: James Eckenwalder

EXTRACTS FROM OUTINGS LEADERS' REPORTS

Ontario Place, Nov 2. Leader: Maxwell Matchim. Rain and wind soon subsided and we were greeted with a lovely autumn day. We reflected on the history of Ontario Place, sharing wonderful memories of visits there while it was in operation. We had hoped to see the wintering ducks the site is known for, but only observed one Bufflehead. We were delighted to see a Red-tailed Hawk and two Cooper's Hawks. The uncertain future of Ontario Place was a recurring point of discussion. With Doug Ford's plans for a casino seemingly dead in the water, it remains to be seen what will happen to this iconic Toronto site. As proposals are brought forward, we must be diligent as involved citizens, working to ensure that it continues to serve the needs of wildlife and the people of Ontario.



Dark-eyed Junco, Bluffers Park, February 2013.

Photo: Ken Sproule

Old Mill to Roncesvalles, Nov 7. Leader: Edward Freeman. Walking along the Humber we observed the height of Hurricane Hazel's floodwaters and learned why the Humber is where it is today. Three Turkey Vultures circled above, kinglets darted about, and we saw Canada Geese, gulls, robins, a Dark-eyed Junco, and ducks

including Mallards, Bufflehead and scaup. Much history is preserved in plaques and monuments along this route, informing us of early inhabitants, historic events and famous people.

Small's Creek, Nov 9. Leader: Linda McCaffrey. It was a bracing walk tracing the course of the creek from its headwaters at East Lynn Park to Small's Pond at what is now Orchard Park. Once a large, clear pond suitable for bathing, fishing, boating and ice cutting, it was filled in 1935 having been polluted by the early mills along its feeder streams, then industries along its banks. Historically, ice cutting was an important source of winter income for seasonally-employed brick-makers in Leslieville.

Pine Hills Cemetery, Nov 12. Leader: Charles Bruce-Thompson.

Due to intense, unseasonable cold, we stayed for only an hour. We noticed katsura, pin oak and dawn redwood trees and saw a few birds including Red-tailed Hawks, Turkey Vultures, Northern Cardinals, Downy Woodpeckers, Mourning Doves and a Dark-eyed Junco.

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Help Protect Toronto's Great Red Oak

Many TFN members will be familiar with the magnificent 250-year-old red oak on Coral Gable Dr, one of the oldest trees in Toronto and recognized as a heritage tree under Forests Ontario's Heritage Tree Program. The City is currently raising funds to purchase the property and convert it into a parkette in order to protect this amazing tree.

For more information and details on how to help, please see: <https://torontofieldnaturalists.org/2020-red-oak>

TORONTO WILDFLOWERS: TRUE SOLOMON'S SEAL



Polygonatum comes from the Greek *poly* (many) and *gony* (knee) and is a reference to the jointed rhizome characteristic of this genus. The TFN recorded *Polygonatum pubescens* (hairy true Solomon's seal) as locally uncommon and *P. biflorum* (smooth true Solomon's seal) as locally rare. I have not seen *P. biflorum*, only confirmed by the TFN in the East Don area and High Park. *P. pubescens* was recorded in almost all watersheds from Centennial Park, Etobicoke, to the Rouge, in High Park and the Upper Gerrard Ravine, but it is not common anywhere. Up to 90 cm tall, it has 7 to 13 mm long greenish-yellow nodding flowers hanging from leaf axils, unlike false Solomon's seal which has flowers in terminal clusters. To distinguish between the *Polygonatum* species, look for fine hairs (hence *pubescens*) on veins on the leaf underside, versus the hairless leaves of *P. biflorum*.

Unless you are very enthused about classification, you may prefer to skip the following paragraph!

The Solomon's seals, both true (genus *Polygonatum*) and false (genus *Maianthemum*), were included in the Liliaceae (lily family) in the TFN's *Vascular Plants of Metropolitan Toronto* (1994, 2nd ed.), in the Ruscaceae (butcher's-broom family) in *The ROM Field Guide to Wildflowers of Ontario* (2004), in the Convallariaceae (lily-of-the-valley family) in *Flowering Plant Families of the World* (V. H. Heywood, R. K. Brummitt, A. A. Culham, and O. Seberg, 2007 ed.), and in the Asparagaceae (asparagus family) in the Database of Vascular Plants of Canada (VASCAN). The US Department of Agriculture Plants Database (USDA) still assigns these genera to the Liliaceae! Species belonging to both *Polygonatum* and *Maianthemum* occur in Eurasia as well as North America.

In Ontario, *P. pubescens* occurs from the Georgian Bay ecoregion to the U.S. border and west and northwest of Lake Superior. Its full range is from Ontario to Nova Scotia and the eastern third of the U.S. (USDA). *P. biflorum*, according to *The ROM Field Guide*, is only found in dry sandy forests south of the Canadian Shield. It occurs from Manitoba to Quebec and in the eastern two thirds of the U.S. (USDA).

It takes a keen eye and careful examination to distinguish between our two local species. If you find *P. biflorum*, please send the TFN the location and an image.

Article and photo by Peter Money

SOLOMON'S SEAL, DAVID'S STAR, AND MANY KNEES

The Canadian Oxford Dictionary (2008) gives two definitions for Solomon's seal, one a figure like the Star of David, the other any plants belonging to the genus *Polygonatum*. In a separate entry, the Star of David was stated to consist of two interlaced equilateral triangles, together forming a 6-sided star. How are members of the plant genus related to that star-like figure?

According to Wikipedia, the historic David was King of Israel c.1002-970 BCE; King Solomon was his son and successor (c.970-931 BCE). This provides a link between the Star of David and the Seal of Solomon, making the reasonable assumption that King Solomon incorporated his father's emblem in his seal. The 6-pointed version of the Star of David that we now have dates from medieval times (14th century CE). Previous versions of the seal were believed, in medieval times, to be like ancient royal seals. This provides a link to *Polygonatum* (many [*poly*] knees [*gony*]) as medieval herbalists and magicians saw depressions on the roots of these species, the knees (*gony*), that they likened to royal seals.

A plant linked to Solomon's seal was of great value to herbalists as it could be prescribed for almost any medical condition. The seal (on his signet ring) was believed to give Solomon the power to command demons, to speak with animals, and to perform magic, all aims of medieval magicians. In early medieval times, when ill, a magician might be a better choice than a herbalist, incantations being relatively harmless which was not necessarily the case for herbs.

PHOTOGRAPHY TIPS – ETHICAL BIRD PHOTOGRAPHY

I've seen many instances of photographers on the trails doing things to get a shot which result in unnecessary stress to birds, so I thought it would be worthwhile to share some tips on ethical bird photography.

The first and most important component of bird photography should be sincere respect for the birds and their environment. The well-being of the birds and their habitat must take precedence over needs of the photographer to get the shot.

Use a telephoto lens and maintain enough distance to enable the subject to behave naturally. If you are able to use blinds, this is a great way to observe and photograph birds without disturbing them.

Never approach birds with the intention of making them fly. This disrupts their natural processes and forces them to expend energy unnecessarily. Watch for changes in posture. If you see these, back away.

Learn and abide by the rules and laws of the location you are in such as minimum distance for approaching wildlife.

Before sharing locations of specific birds with other photographers or birders, think carefully about the impact this may have on the birds and their habitats.

Remove GPS data from your images of rare or sensitive species such as owls.

Concern for the habitats of birds is essential. Avoid trampling sensitive vegetation and disturbing other wildlife.

Using bait or other lures to attract wildlife is totally unacceptable behaviour.

Nesting birds are particularly vulnerable. Keep a respectful distance and use a telephoto lens only. Avoid doing anything to draw the attention of predators to the nest.

Show respect for private and public property. Do not enter private property without permission. In public spaces such as parks, be aware of local regulations, hours and closed areas.

In group situations, be considerate of other photographers and birders observing the same bird. Remember, however, that large groups of people can be even more disturbing to the bird, so greater distance from the subject may be necessary.

At all times be respectful of nature and your surroundings.

Zunaid Khan



Great Backyard Bird Count February 14-17, 2020

The GBBC is an annual four-day event that engages birdwatchers of all ages across North America in counting birds to create a real-time snapshot of where the birds are.

Anyone can participate, from beginners to experts. You can count for as little as 15 minutes on a single day, or for as long as you like each day of the event. It's free, fun and easy, and it helps the birds! To register and obtain more information, see www.birdcount.org

UPCOMING JUNIOR NATURALISTS EVENTS

Children age 6-14 years and accompanied by an adult are invited to join TFN Junior Naturalists events. Hikes, games and activities will take place on the following Saturdays from 10 am to 12 noon. Dress warmly and bring binoculars, your curiosity and your sense of adventure. Junior Naturalists will receive an email with meet-up locations a few days prior to the event. To join, please email juniortfn@torontofieldnaturalists.org

February 8: We will visit the Toronto Wildlife Centre where each year thousands of wild animals are rescued, rehabilitated and released. We'll meet the Centre's ambassador animals and learn about the amazing work the staff does. We will also play some games in Downsview Park.

March 7: Explore the Humber Arboretum with us. Discover the trees of the Carolinian forest – the deciduous forest of southern Ontario. Winter is a season to notice the remarkable bark and unique buds and shapes of trees. It's also maple sugaring season! Let's learn how First Nations people related to this forest and how they made maple sugar.

JUNIOR NATURALISTS

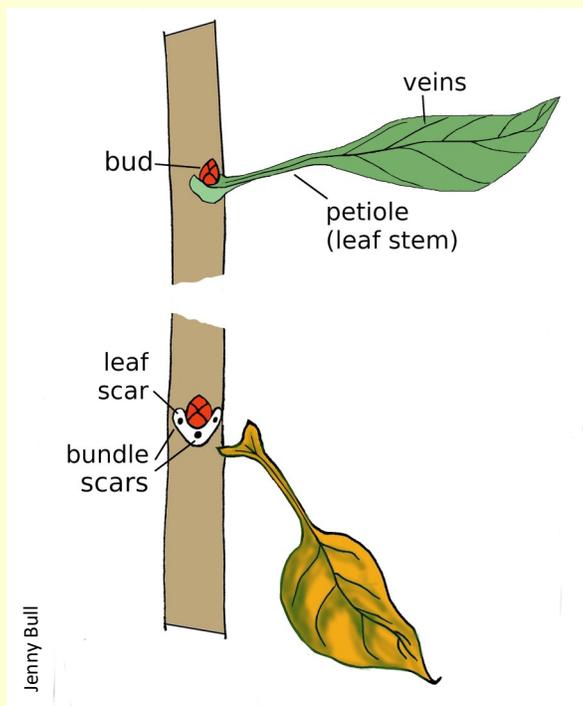
Trees Caught Off-guard

Every year as the days start to get colder and shorter in the fall, the broad-leaved trees and shrubs in our backyard drop their leaves. We rake them onto the garden and the next spring earthworms pull them underground. By the end of June, not a single one is left lying on the ground!

This year something strange happened. It was already Christmas and we noticed our apple tree still had dead, dry leaves hanging on the branches. Why were they still clinging to the tree? Why hadn't they fallen to the ground? In the forest some beech and oak trees will hang onto their leaves, but we had never seen our apple tree do this.



Chlorophyll is what makes leaves green and what they use to make sugar out of carbon dioxide from the air. When the days get shorter in the fall, leaves stop making chlorophyll. It starts to break down and travels down the veins of the leaf, through the leaf's little stem (petiole) and back into the tree. Next season the tree will be able to re-use those minerals! What a smart system - trees recycle !



When this happens, it is a signal to the whole tree that winter is coming. Some parts of the tree get hit really hard by this message. A layer of cells (the bricks that all living things are made of) right at the bottom of the leaf's petiole is suddenly bombarded by chemicals that punch holes in the cell walls and melt the glue between the cells. Eventually the cells are so weakened, the petiole breaks.

The cells that mark the spot where the leaf once hung are covered with fat to make sure no disease enters the tree at this spot. This is called the *leaf scar*. If you look very carefully, you can see the *bundle scars* or the spots where the veins of the leaf connected to the tubes in the trunk of the tree. This whole process is called *abscission*.

So why didn't this happen to our apple tree this year? We had a very deep cold snap in early

November. Scientists speculate that trees didn't have time to make all their preparations for winter. Some of us probably didn't have our winter coats and boots out when the cold and snow came in November. That is what happened to the trees - they got caught off-guard.

Anne Purvis

TORONTO RAVINES IN LITERATURE

In his National Post article of August 24, 2000, Robert Fulford described Toronto's ravines as "... its topographical signature ... the shared subconscious of the municipality, the places where much of the city's literature is born." Here, Fulford was both inspired and insightful. In almost every book set in this city, the great fingers of our ravines influence plot, pacing and point of view, foster subtext, decide and disrupt movement, forge vistas and backgrounds, and in many cases cast deep and intimate shadows across the very souls of theme and character.

In Anne Michaels' *Fugitive Pieces* our ravines parallel human recollection, memories forged and destroyed by experience in the same way trees grow and die. In Margaret Atwood's *Cat's Eye*, landmarks in Moore Park Ravine are the vassals of childhood and community, anchors in a tide of personal evolution. In *Amnesia* by Douglas Anthony Cooper, the Park Drive Reservation exists as an entity with soul and sentience, our culture's own self-criticism and insecurity made manifest, and a place that holds up a mirror to the unconscious and the unconscionable; the tangles of the land below contrasted against the tangles at the bottom of our

own souls. In all, our ravines are so often more than just way-markers, they are the uroboros* of our urban identity, on display in ways both subtle and gross.

Taken together, the ways specific ravines feature in our literature often illustrate communal sensibilities about these places and the perceived spirit of the surrounding neighbourhoods, for better or for worse. In works that lead readers to the Rosedale Ravine, whether it be in the magic realism of Claudia Dey or the horror-laced short stories of Gemma Files, their authors can't help but contrast the wealth and affluence presiding over the slopes above with the primitive wilds of the woods below, displaying a tension not only between the natural and the urban, but between the rich and the poor.

In books set in High Park we are shown a different Toronto, one of immigrants and art, the park's natural features eclipsed by our urbanity. In Carleton Wilson's *The Material Sublime*, the unfathomably precious black oak savannah is but a blur on the edge of his glasses as he approaches the human-constructed labyrinth north of Grenadier pond. In *Fifteen Dogs* by Andre Alexis, the park essentially serves as the entirety of the characters' world, yet the narrative is almost exclusively obsessed with inter-personal drama. For the near infinite variation of style and form these authors demonstrate, the locations shared among their works are painted with familiar colours and similar brushstrokes, reflecting reputations as often assumed as earned.

These books, of course, also reveal the authors' own personal and intimate relationships with these places. With



"These weekly explorations into the ravines were escapes to ideal landscapes; lakes and primeval forests so long gone they could never be taken away from us."

- Anne Michaels - *Fugitive Pieces*

Atwood, even when she's glorifying their beauty or tranquility, our ravines steadfastly remain the realms of lurking strangers with unknown motives. To Catherine Bush our ravines are living museums of forgotten histories, places where important things happened long ago that have since transformed to

myth. Each author's own relationship with these places is on display, and such exhibitions say as much about the authors as about the places themselves.

For the last three years I've done a series of TFN "literary walks," – wanders through a specific ravine where we discuss books that were set there. Reading passages from these works while standing in the exact place in which they are set is a remarkably intimate experience, made all the more enjoyable when shared. Doing so has come with much more than the expected benefits and thrills. It has also deepened my connections with many of my TFN friends. While discussing Maggie Helwig's *Girls Fall*

continued on next page

* A circular depiction of a snake or dragon swallowing its tail, symbolizing wholeness or infinity.

See <https://en.wikipedia.org/wiki/Ouroboros>

FOR READING

The Secret Life of Flies

by Erica McAlister,
Firefly Books, 2017

aspects of the natural world has gradually expanded: first birds, then the trees they inhabit, followed by forbs, bees, butterflies and so on, all the way down to slime molds. I have books on them all, but flies – the order Diptera – had escaped my attention. Until now, that is.

Erica McAlister's book *The Secret Life of Flies* reveals them as one of nature's marvels, occupying every conceivable niche on every continent including the Antarctic, and enjoying every diet imaginable including ant vomit and emulsion paint. The sheer multiplicity of fly behaviour, morphology and speciation is staggering – to me, anyway. Take just one family, Cecidomyiidae, the gall midge. There are estimated, admittedly by extrapolation, to be around 1.8 million species just in this family, a number that may exceed the total number of beetle species. And there are about 150 fly families! Some of their dietary preferences and parasitical behaviours are admittedly often gruesome to our sensibilities, but on the other hand they provide several indispensable services. Among other things, they dispose of waste of every sort and are the sole pollinators of the cocoa tree. No flies, no chocolate!

The author and journalist Clive James, when asked to name the books he considered most overrated, said "...magic realism. I can't stand it. I always found ordinary realism quite magic enough." The natural history of flies perfectly illustrates this observation. This readable and

I've found, over my years of TFN membership, that my interest in

gently humorous book will make you look at flies in a completely different light and pay them the respect they merit.

Charles Bruce-Thompson

A Trail Called Home: Tree Stories from the Golden Horseshoe

by Paul O'Hara
Dundurn Press, 2019

The author of this delightful book, a professional arborist, is clearly a knowledgeable naturalist and friend of trees. In an engaging easygoing style he reveals his personal background in the Greater Golden Horseshoe and his love of trees, his steadfast curiosity and his disappointment at the changes that development has brought.

With in-depth historical research, he takes us back to when trees were used as the directional road signs for indigenous trails and provides for us a map of the "Old Trail" along Lake Ontario from Queenston to the Rice Lake carrying place. I found the book in the library after I saw an ad in Ontario Nature magazine. It was one of the most enjoyable books I have read in a long time, as it blended my interests in history and nature while focusing on the historical context of our indigenous peoples.

Colour photos and an appendix of both native and non-native trees with his personal comments were a plus.

Melanie Milanich

TORONTO RAVINES IN LITERATURE *continued*

Down at the Brick Works, Richard Partington revealed that, some moons ago, he had been the author's babysitter. The pistol duel scene in Catherine Bush's *Rules of Engagement* unlocked familial lore from TFN's secretary-treasurer, Bob Kortright, whose stepmother was related to John Ridout, the 18-year-old man killed by Samuel Peters Jarvis in Toronto's last quasi-legal duel, fought on Bay Street at daybreak on July 12, 1817. Reading may be a solitary experience, but TFN walks are the opposite, and the combination of the two is something I am grateful to have enjoyed.

With several weeks of winter left to go, I encourage all of you to let the ice and wind chill tempt you to explore Toronto's ravines on the page as well as the trail. I

welcome any resulting reading recommendations via president@torontofieldnaturalists.org. I'm currently planning another literary walk for mid-June and am always on the hunt for new and interesting titles, especially those to which my fellow TFNers have a personal connection.

Meanwhile, if the topic of Toronto's ravines in literature is of interest to you, you may enjoy listening to episode 53 of "Toronto Nature Now", TFN's show on Ryerson Radio CJRU 1280 AM, available via SoundCloud here: <https://soundcloud.com/scopeatryerson/toronto-nature-now-ep-53-literary-walks?in=scopeatryerson/sets/toronto-nature-now>

Jason Ramsay-Brown

KEEPING IN TOUCH

I recently had a great view from a low bridge of our common dabbling duck, the mallard, diving in shallow water, an uncommon occurrence. One eclipse and four adult males were enthusiastically and repeatedly diving in about one and a half metres of water while the single female mosed around the shoreline.



Unlike the neat arc made by diving ducks, the dive starts with a tremendous splash as the duck gets underwater (photo 1). Vigorous swimming gets the duck to the bottom (2). Then suddenly it bobs up out of the water (3). Most dives resulted in the ducks carrying something in their bills. One appeared to have a piece of twig covered with zebra mussels, though it was hard to see for sure. Unfortunately the grey winter sky meant my photos weren't very good. Can anyone comment on mallards and mussels?

Jenny Bull



EXTRACTS *continued from page 8*

Birds, Humber Bay East, Nov 19. Leader: Anne Powell. Twenty-four species were observed. Most winter fowl species were present, generally in small numbers, though we saw numerous White-Winged Scoters.

Buffleheads and Hooded Mergansers were displaying. Highlights were Northern Mockingbird, Brown Creeper and a lone juvenile Double-crested Cormorant still hanging around.

Leslie Street Spit, Nov 30. Leader: Bob Kortright.

Among 15 kinds of wintering ducks we saw high numbers of White-winged Scoters. We also spotted a couple of Red-tailed Hawks, a crow, Great Blue Heron, a few woodpeckers, sparrows, goldfinches, cardinals and chickadees.

Birds, Colonel Sam Smith Park, Dec 3. Leader: Anne Powell. We observed 26 species including American Wigeon, Golden-Eye, Buffleheads, Long-tailed Ducks,

Red-breasted Mergansers and Red-necked Grebes. A highlight was seeing a raft of about 200 Greater Scaup.

Hastings Creek and the Devil's Hollow, Dec 7. Leader: Linda McCaffrey. Hastings Creek once cut a 90 feet-deep ravine south of the escarpment but was slowly filled

between 1910 and 1920 to permit residential development on lands formerly exploited for brick-making by the Russell family. Russell donated land subsequently developed as Greenwood Park. This civic improvement was delayed by Mayor Church, who feared that a park in a working class neighbourhood would encourage working men to loaf. The stump of the iconic maple tree at Maple Cottage appears to have been infested by carpenter ants. It was not this tree that inspired Alexander



White-winged scoter, Toronto Islands, February 2019. Photo: Ken Sproule

Muir to write *The Maple Leaf Forever* for Confederation in 1867, and he never lived in Maple Cottage which was built a few years later. Apparently, he was inspired by a maple he saw on Queen Street while strolling with another famous Leslieville resident, George Leslie.

Toronto Field Naturalists
2 – 2449 Yonge St.,
Toronto, Ontario, M4P 2E7

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TFN LECTUREVISITORS WELCOME

Sunday, February 2, 2:30 pm (Social, 2 pm)

Nature in the City

Katie Thomas, amateur naturalist and keen observer of urban wildlife, will present on the spectacular diversity of wildlife that visits her backyard in downtown Toronto.



Emmanuel College, Room 001, 75 Queen's Park Cres E. Just south of Museum subway station exit, east side of Queen's Park. Accessible entrance second door south on Queen's Park. Elevator inside to the right. Room 001 is one floor below street level. For information: call 416-593-2656 up to noon on the Friday preceding the lecture.

Share your thoughts about this lecture on social media, hashtag #TFNTalk

Upcoming lectures:

- | | | |
|-------|--|--|
| Mar 1 | Jeff Bowman, Trent University | Flying Squirrels |
| Apr 5 | Stuart Livingston, University of Toronto | Dog-Strangling Vine |
| May 3 | Paul Zammit, Toronto Botanical Garden | Rethinking Beauty: Inspiring Gardeners in a Changing World |