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FIELD BOTANISTS OF ONTARIO *NEWSLETTER*

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President's Message

As the leaves depart, we wrap up another successful season of diverse field trips. Thank you to all the volunteers that made this possible – the board members, trip leaders, report writers, and those that shared their enthusiasm and knowledge on field trips. This year's trips were led by Albert Garofalo, Amanda Tracey, Anton Reznicek, Bob Barnett, Dan Brunton, Ewa Bednarczuk, Gwyneth Govers, Holly Bickerton, Leanne Wallis, Natasha Gonsalves, Owen Clarkin, Roman Olszewski, Ron Myhr, Sarah Mainguy, Stephan Weber, Stephanie Muckle, Steve Varga, Walter Muma, and Will Van Hemessen.

The 2019 AGM weekend, organised by Tristan Knight, was a success. The evening events were held at the Grey Roots Museum and Archives in Owen Sound. Jennifer Doubt, from the Canadian Museum of Nature, was the keynote speaker and delivered an interesting presentation. The Goldie Award, our award recognizing individuals who have made a significant contribution to field botany in Ontario, was presented to Paul Catling. Our FBO Student Award was presented to Hanna Dorval, from Lakehead University in Thunder Bay, for her research on the lichens of Ouimet Canyon, where she discovered many Arctic disjuncts. Hanna presented a poster that highlighted her results.

Several board changes occurred at the AGM. Mike McMurtry stepped down after seven years of service as President (2013-2015), Past President (2016-2018) and Secretary (2019). Thank you Mike, for your important contributions. Jennifer Doubt has kindly moved from Director to fill the Secretary position. We also welcome two new Directors, Leanne Wallis and Will Van Hemessen. They have both been active members of the FBO for many years, regularly attending and leading field trips. Finally, it is with a heavy heart that I announce the passing of long time board member and friend to many, Bill Crowley. Bill was Vice President (2006-2009), President (2010-2012), Past President (2013-2015) and a Director (2016-2019). He will be missed.

This was our first year offering on-line registration for field trips and membership renewals and the transition went smoothly. We suspect that this is the reason for an increase to our membership over the last year. Our on-line presence is also increasing with 3371 Facebook followers and 193 on Instagram. It is nice to see our community grow.

Enjoy the fall colours,

Troy

On the cover: Top: Delightful landscapes of Bruce Peninsula. Photo: Andrew Dean. Bottom: Botany class with Steve Varga at Holland Marsh. Photo: George Bryant.

Sidebar artwork: Black Cherry (*Prunus serotina*)

Trip location maps generated using NatGeo Mapmaker software.

The suggested standard source for scientific and common names is the Database of Vascular Plants of Canada (VASCAN): (<http://data.canadensys.net/vscan/search>).

Field Botanists of Ontario website: www.trentu.ca/fbo

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Annual memberships are \$20.00 for individuals and \$25.00 for families. Membership forms can be found on the FBO website above.

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(FBO) is a non-profit organization founded in 1984 for those interested in botany and conservation in Ontario.

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Editor's Note

From top quality habitats and rare species to new flora introductions to plant guides on paper and internet, all this awaits you in this dense issue.

My old schoolmate and occasional travelling companion to Asia, Steve Varga, took hordes of people to his explorations in Holland Marsh - mystery trips no more and focused, but not exclusively, on his graminoids.

Then, juxtaposed are two reports: one on the European Jewelweed (*Impatiens parviflora*) that is beginning to establish in Ontario, and the other on the pure indigenous orchid Oval-leaved Ladies'-tresses (*Spiranthes ovalis* var. *erostellata*) in Elgin County.

Andrew Dean takes us to the familiar territory of Bruce Peninsula to explore its botanical highlights; we can never tire of the Bruce...

And for those interested in the northern flora of Quebec, (and Ontario), Mike Oldham reviews the recently published formidable resource that is *Flore Nordique du Québec et du Labrador*. This book, plus an intelligence piece on sedges from Wasyl Bakowsky, will make you a great botanist!

Enjoy the issue.

Chris Zoladeski

With Steve Varga amongst Holland Marsh graminoids

30 June, 2018

By George Bryant

Steve Varga has a love for Ontario's graminoids, for discoursing about them to a willing audience and a unique left-handed skill of drawing and writing upside down and backwards. All were in full display as he led FBO'ers into the depths of Holland Marsh

boardwalk which allowed access to a marsh and a small remnant sedge fen. Steve pointed out that sheet flows of groundwater maintained high quality fens in the Holland Marsh. In the past, Ducks Unlimited constructed two duck cells and dikes which restricted seepage thereby encouraging growth of marsh vegetation. As well, the Holland River with its high inputs from nutrient-rich agricultural run-off is ideal for cattails (*Typha*) which are intruding into the riverine fens.

We were reminded that this was a grass and sedge workshop. The best time for upland sedges was early June when Steve had led an earlier workshop; for wetland sedges it was now. Nothing else mattered although I was



wetland during the record-breaking heat of June 30, 2018. The property is Crown land managed by the MNR. Our first foray was into a deciduous swamp dominated by an intriguing mixture of Balsam Poplar (*Populus balsamifera*), Trembling Aspen (*P. tremuloides*), Green & Black Ash (*Fraxinus pennsylvanica*, *F. nigra*) and Silver Maple (*Acer saccharinum*). An old trail led to a

pleased to hear Yellow-throated Vireo, Scarlet Tanager and Rose-breasted Grosbeaks, all indicative of a pristine environment.

During the day we tallied about 15 grass species and about 25 sedges. Most participants were interested in learning about graminoid identifications generally, one in observing species new to that observer. In that regard, I was very much rewarded.



A botanical demonstration. Photo: G. Bryant.

Notwithstanding their universal abundance (S5), I had never previously encountered the following seven lifers: Fowl Meadow Grass (*Poa palustris*) identified by its very long ligule, Aquatic Sedge (*Carex aquatilis*), Prairie Sedge (*Carex prairea*), Creeping Sedge (*Carex chordorrhiza*), Retorse Sedge (*Carex retrorsa*), Burreed Sedge (*Carex sparganioides*) with its pattern of white-green veins on perigynia, and Crested Oval Sedge (*Carex cristatella*).

Along the way, Steve dropped various obiter dicta:

- Paleas do not preserve as well as lemmas

- Sedges have either two or three styles—this is the big division amongst sedges
 - “tails” are the terminal extensions on some rush (*Juncus*) seeds
 - “callus” are the long hairs at the base of the lemmas
 - Reed Canary Grass (*Phalaris arundinacea*) has an aggressive non-native element and a well-behaved native form—reminiscent of Common Reed (*Phragmites australis*)
 - Ligules as in grasses are single; auricles as in sedges are paired. A few grasses (e.g. *Bromus latiglumis*) have auricles
- We observed Silvery Sedge (*Carex canescens*). It is a “very beautiful sedge”. Fowl Manna Grass (*Glyceria striata*) already comes two-ranked, making it a perfect specimen for herbaria.

Orchard grass (*Dactylis glomerata*) which was abundant on the trail can look superficially like the even more abundant Reed Canary Grass, but the latter has wider leaves and a narrow-pointed inflorescence. Tussock Sedge (*Carex stricta*) forms tussocks, while similar-looking and often nearby Water Sedge simply spreads.

We had lunch on benches at the end of the aging boardwalk adjacent to a lookout tower and a view of cattails stretching to the horizon. Steve pointed out that the substrate was quaking, and the swamp water was cold, proof it originated underground. On the way out, we noted a small pool covered in our smallest flowering plants—Water-meal (*Wolffia* sp.). (I now discover we have two equally common species: *W. borealis* and *W. columbiana*.)

After the shade of the morning, we drove south a few kms to follow berms and enter the cattails, this time in full sun. Steve’s object was to prove that what looked like a cattail marsh was a fen underneath. With FBO’ers in full pursuit, Steve waded out into the cattail marsh to find treasures. Several sedges were introduced with the descriptor, “a real fen indicator”, viz. Twig-rush (*Cladium mariscoides*) which looks like a rush, Slender or Wire Sedge (*Carex lasiocarpa*), related to Woolly sedge (*Carex pellita*) but with narrow leaves. Natasha Gonsalves found, to me the most distinctive sedge, Creeping / Rope-root Sedge (*Carex chordorrhiza*) notable for its stoloniferous growth and clambering habit.

The workshop had ended. Looking over the sea of cattails, Steve spoke evocatively about the possibility of permanently removing the dikes which would then permit a steady flow of groundwater and starve the cattails! He then mused about a quixotic pursuit of an orchid not seen for decades. At times the gusts of hot air were like a blast furnace, driving some of the older participants back onto the berm and the refuge of auto air conditioning. Many of the stalwarts carried on. We thanked Steve Varga and wished them all *bon chance*. ❁

Holland Marsh Crown Land, with...

26 August, 2018

By Agneta Szabo

On August 26, 2018, Steve Varga led a mystery tour within the Holland Marsh Crown Lands, York County. Steve is a Management Biologist specialized in botany, wetland biology, and Areas of Natural and Scientific Interest (ANSI) at the Ministry of Natural Resources and Forestry (MNRF), Aurora District. This field trip had a dual purpose of botanizing as well as helping the MNRF manage this critical provincially significant wetland by assembling a detailed plant list.

The Holland Marsh valley was formed by sub-glacial floodwaters under the Wisconsin Ice Sheet. With the retreat of the ice sheet, this poorly drained, wide valley accumulated dead vegetation over thousands of years, creating a thick layer of organic peats fed by groundwater from the surrounding hills. Holland Marsh was once the largest wetland in southern Ontario, but today only 41% of the wetland remains, with the rest converted to market gardens.



Hoary Willow (*Salix candida*). Photo: A. Szabo.

The Holland Marsh Crown Lands support a variety of vegetation communities including swamps, marshes, and provincially rare sedge fens. It is also home to several rare and endangered flora and fauna species. During our field trip, we visited a Silver Maple (*Acer saccharinum*) swamp, a black/green ash (*Fraxinus nigra*/*F. pennsylvanica*) swamp, a cattail (*Typha*) marsh, and a Wire Sedge

(*Carex lasiocarpa*) fen. This FBO trip and an earlier one in July found 236 vascular plant species. Some of the interesting ones seen during our trip include:

- Native shrubs in the deciduous swamps: Alder-leaved Buckthorn (*Endotropis alnifolia* = *Rhamnus alnifolia*), Highbush Cranberry (*Viburnum opulus* ssp. *trilobum*), and Smooth Gooseberry (*Ribes hirtellum*)
- Fen indicators in the sedge fens: Common Bog Arrow-grass (*Triglochin maritima*), Marsh Muhly (*Muhlenbergia glomerata*), Rush Aster (*Symphyotrichum boreale*), Hoary Willow (*Salix candida*), Loesel's Twayblade (*Liparis loeselii*), and Marsh Bellflower (*Campanula aparinoides*)
- Southern grasses near their northern limits in the deciduous swamps: Eastern Riverbank Wildrye (*Elymus riparius*) and Stout Wood Reedgrass (*Cinna arundinacea*)
- Aquatic vegetation in the open water: Giant Burreed (*Sparganium eurycarpum*) and Northern Watermeal (*Wolffia borealis*)
- Ontario Aster (*Symphyotrichum ontarionis*), a regionally rare, hairy aster similar to the common Calico Aster (*S. lateriflorum*) in a deciduous swamp

• Swamp Dodder (*Cuscuta gronovii*), an orange parasitic plant with white flowers on Spotted Jewelweed (*Impatiens capensis*)

Despite its significance and protected status, Holland Marsh continues to be altered and its sensitive vegetation communities are changing as a result. For example, an influx of nutrients has resulted in the colonization of the sedge fen we visited by cattails. Small changes add up, and studies have shown that the loss of wetlands, including Holland Marsh, have caused persistent impacts on the natural, social, and economic environments. Holland Marsh is a poster child for wetland loss in southern Ontario,

and it should serve as a lesson and a reminder of the importance of wetland conservation. You can help curb wetland loss by not buying peat moss, which is harvested from peat wetlands, many of which are provincially significant. To enrich your garden soil or to fill your indoor pots, a great alternative to peat moss is to get leaf compost from your local municipality. ✨



Swamp Dodder (*Cuscuta gronovii*). Photo: A. Szabo.

Then a few weeks later I was walking along Etobicoke Creek in Brampton and again I noticed many yellow-flowered, “*Impatiens*-like” plants growing in the riparian areas. Immediately they reminded me of the *Impatiens* plants that I had seen in Europe. Could they be the same species? Why had I not noticed this species before in Ontario? The plants were noticeably different from, though still similar to, other native *Impatiens* many naturalists are familiar with, such as Pale Jewelweed (*Impatiens pallida*) or Spotted Jewelweed (*Impatiens capensis*). So I took some photos.

After looking at the resources I could find, I decided that the plants were *Impatiens parviflora*, Small Balsam or Small-flower Touch-me-not. The European and Mediterranean Plant Protection Organization

(see EPPO website) has a great fact sheet on this species, and some of the following morphological features mentioned therein are useful in distinguishing this species of *Impatiens* from others, like Spotted Jewelweed and Pale Touch-me-not:

Impatiens parviflora - a new flora introduction to Ontario

By Dan Schuurman

In 2017 I visited the Netherlands for the first time and there I noticed a yellow flowering “*Impatiens*-like” plant growing like a monoculture in some moist woods. Having never ventured outside of North America before, I mused, “It looks like some kind of smaller European cousin of our native Ontario *Impatiens* species.” I did not bother to identify the plant.



Small flower with reddish dots inside and straight spur. Photo: D. Schuurman.



July flowers held upright, with some fruit maturing. Photo: D. Schuurman.



Impatiens parviflora monoculture in floodplain understory. Photo: D. Schuurman.

- flowers are held upright (not hanging)
- relatively smaller yellow flowers (10-15mm) with a straight spur
- more leaf serrations (40-70 per leaf)
- sharper leaf serrations
- height usually <60cm but up to 150cm

Impatiens parviflora originates from the mountainous areas of central Asia (EPPO website). Some of the countries in this range include Afghanistan, Russia, Mongolia, Kazakhstan and Turkmenistan (EPPO website). In the 1800s it was brought to European gardens, perhaps because of its lively and entertaining seed dispersal mechanism. It is estimated that each plant normally produces about 1000 to 2000 seeds, though in ideal circumstance it may produce as many as 10 000! (EPPO website). This no doubt has helped it spread so that today it is well established in many moist habitats (beyond gardens) throughout much of Europe (EPPO website; EOL Website). It appears that the lowland habitats of the Netherlands have a high density of observation. In North America, the distribution seems to be “localized” and temperate, but nonetheless it is present in numerous jurisdictions such as Nova Scotia, PEI, New Brunswick, Quebec (Montreal), BC, Wisconsin,



A few native *Impatiens capensis* plants competing with the “newcomer” contingent. Photo: D. Schuurman.

any more plants in the lowlands. I still wonder if a few seeds have been washed downstream by an intense urban runoff event, and managed to sprout in some downstream riparian sites. Based on my limited casual biking travels, it does not seem to be in adjacent Brampton watersheds yet. On the other hand, it is no surprise that in 2018 an observer with iNaturalist spotted the species in the Don River watershed (an invasive hotspot) of central Toronto (iNaturalist website).

I can only speculate why the species has popped up in Brampton, Canada’s ninth largest and sixth fastest growing municipality in recent years (Wikipedia Website). The city has many Asian and

Washington and Oregon (EOL website; iNaturalist website; EPPO website).

From my casual observation, this species is rather well established (see photos above in many lowland sites of the Etobicoke Creek Valley in Brampton, over a distance of about 5 km. My sense is that it grows well in moist lowland valley habitats, including those in which Spotted Jewelweed can be found. In 2018 I biked in the Etobicoke Creek valley south of Brampton, but I did not see

European immigrants as well as disturbance-prone urban floodplains that can get very flushed during periods of high runoff, and many sites are susceptible to invasive plant colonization. Maybe with such imports unintentionally there has come *Impatiens parviflora*. ✱

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iNaturalist Website https://www.inaturalist.org/observations?taxon_name=Impatiens%20parviflora

Oval-leaved Ladies'-tresses (*Spiranthes ovalis* var. *erostellata*) *discovered in Elgin County*

By Don Campbell, Phoebe Campbell and Will Van Hemessen

In a discussion with Will Van Hemessen on an FBO field trip in early August, he remarked that there were Great Plains Ladies'-tresses (*Spiranthes magnicamporum*) at a site along Catfish Creek in Elgin County and later gave directions that were good enough to get to the orchids. The timing given was the second weekend of September. So on September 9, 2018, Phoebe and I went down to the site in central Elgin late in the afternoon and followed the directions to the area Will had described until we found *S. magnicamporum* on the edge of the trail. We were at a small floodplain clearing that was perhaps 100 m by 60 m in area and within this location we counted about 185 blooming *S. magnicamporum* stems. The clearing contained a variety of other rare species such as Blue Ash



Spiranthes magnicamporum, Elgin Co., 2018.
Photo: D. Campbell.



Spiranthes ovalis var. *erostellata*: inflorescence and basal leaves, Elgin Co., 2018.
Photo: D. Campbell.





The field where *S. ovalis* var. *erostellata* was found, Elgin Co., 2018.

Photo: W. Van Hemessen.

(*Fraxinus quadrangulata*) and Soft-hairy False Gromwell (*Lithospermum parviflorum*). The clearing also had species typical of sandy, open habitats in this region, such as Gray Goldenrod (*Solidago nemoralis*), Wirestem Muhly (*Muhlenbergia frondosa*), tick-trefoils (*Desmodium* spp.), Indian Grass (*Sorghastrum nutans*) and pussytoes (*Antennaria* sp.). Dominant species in the clearing were Poison Ivy (*Toxicodendron radicans*), which covered about 40% of the ground, and *M. frondosa* and other grasses. Despite its floodplain situation, the soil in the clearing consisted of coarse sand which probably dries out in the summer. We suspect that dry summer conditions inhibit the growth of woody vegetation and maintain the clearing.

I had stopped to photograph some of the *S. magnicamporum* near the path and Phoebe had gone into the field to see the real show of this species when she exclaimed that there was something really different and for me to come and see! It was a very delicate and small *Spiranthes* orchid that we had never seen before. We found 15 blooming stems of this new orchid in the field in various places. Its character was singular rather than colonial and the closest distance we observed was generally about 50 cm between plants. As we were leaving, we found two plants on the path and measured them. The total height of the tallest plant was about 25 cm and the inflorescence was 3.5 cm long. Individual flowers were no more than 0.5 cm in length and there were between 10 and 25 flowers per stem. There was one basal leaf measuring 3 cm by 1 cm and a second leaf 5 cm above that that measured about 1.2 cm in length. There were other small bracts that clasped the stem between the top-most leaf and the inflorescence. There was one stem that had flowers

senesced and the ovaries were quite large for the size of the plant: 0.5 cm long and 0.3 cm wide.

With no identification known to us, I requested help from Will Van Hemessen, Michael Oldham and Bob Curry. Will was back immediately with the probable identification of *S. ovalis* var. *erostellata* which was confirmed by Mike Oldham later in the week. Will was so keen that he and I went back to the site on Monday, September 10, 2018, in rain, and two plants on the path were collected, one to be sent to the Natural Heritage Information Centre (NHIC) herbarium in Peterborough and the other to the Canadian Museum of Nature (CAN) herbarium in Gatineau, Quebec. On September 15, 2018, Phoebe and I, along with Eric and Rita Bauer, found 25 blooming stems.

Mike Oldham indicated that this is the fifth or sixth report of *S. ovalis* var. *erostellata* in Ontario. The only other populations are located on Walpole Island in Lambton County, and several locations in Essex County. Our Elgin population therefore represents a notable range extension for this species in Ontario. ✱

Botany on the Bruce

27 August, 2016

By Andrew Dean

Many southern Ontario botanists will report that the Bruce Peninsula is among their favourite areas. Our leader for the day, Walter Muma, has explored many of the dark and dusty corners of





Small Fringed Gentian in bloom. Photo: A. Dean.



Houghton's Goldenrod in bloom. Photo: A. Dean.



Round-leaved Ragwort basal leaves. Photo: A. Dean.

the Bruce, and has an impressive knowledge of its flora. If you want to know where to find Robert's Fern (*Gymnocarpium robertianum*) or Trail-plant (*Adenocaulon bicolor*), Walter will surely know.

The day began at Black Creek Provincial Park south of Stokes Bay on the lakeside. We spent the morning exploring a diversity of habitats including sandy coniferous forest, meadow and shallow water marshes. Along the trailsides and adjacent habitats in the conifer woods species encounters included Smooth Aster (*Symphyotrichum laeve*), Smooth Rose (*Rosa blanda*), Hairy Goldenrod (*Solidago hispida*), Canada Wild Rye (*Elymus canadensis*), Little Bluestem (*Schizachyrium scoparium*), Buffalo Berry (*Shepherdia canadensis*), Spurred Gentian (*Halenia deflexa*), Large-leaved Aster (*Eurybia macrophylla*), Ebony Sedge (*Carex eburnea*), Northern Hawkweed (*Hieracium umbellatum*), Cow-wheat (*Melampyrum lineare*), Menzies' Rattlesnake Plantain (*Goodyear oblongifolia*), Wood Lily (*Lilium philadelphicum*), and Fairy Flax (*Linum catharticum*). According to Michigan Flora Online, *L. catharticum* is a unique non-native in that it is often found with high quality calciphiles such as Dwarf Lake Iris (*Iris lacustris*) and Crawe's Sedge (*Carex crawei*).

Calciphiles were not uncommon in the wetter habitats, and included Yellow Sedge (*Carex flava*), Sticky False Asphodel (*Triantha glutinosa*), Glaucous White Lettuce (*Nabalus racemosus*), Chestnut Sedge (*Carex castanea*), Hair-like Sedge (*Carex capillaris*), Small Fringed Gentian (*Gentianopsis virgata*), Pale Spiked Lobelia (*Lobelia spicata*), and Kalm's St. John's-wort (*Hypericum kalmianum*). Along the wetland edges some of the notables were Sweet Grass (*Anthoxanthum hirtum*), Silverweed (*Potentilla anserina*), and Small-flowered Agalinis (*Agalinis purpurea* var. *parviflora*). Discussion ensued around what species of *Agalinis* we were looking at as there was some confusion over the taxonomy of the genus. In fact, *A. paupercula* is not recognized as a species in Michigan Flora and it is mentioned in the notes for Purple False

Foxglove (*Agalinis purpurea* var. *purpurea*). *A. paupercula*, or *A. purpurea* var. *parviflora*, has petals 10-20mm long, whereas *A. purpurea* var. *purpurea* has petals 20-38mm long; the latter is also only known from far southwestern Ontario with a provincial ranking of S1. Other species of *Agalinis* found on the Bruce Peninsula are Gattinger's *Agalinis* (*A. gattingeri*) and Slender-leaved *Agalinis* (*A. tenuifolia*). On our way back to the parking lot after lunch, a small patch of Round-leaved Ragwort (*Packera obovata*) was spotted, a provincially rare species (S3), but not uncommon on the Bruce.

After lunch there was a pilgrimage to a location in the northern part of the peninsula, part of a provincial nature reserve and Area of Natural and Scientific Interest (ANSI), to visit an alvar.

The remainder of the day was spent exploring spectacular alvar habitats, characterized in *Alvars of the Bruce Peninsula* (Jalava 2008) as Dry-Fresh Little Bluestem (/Northern Dropseed) Open Alvar Meadow (ELC code ALO1-3). The margins of a nearby shallow water wetland were also perused, with vegetation characteristic of rich fen. However, as noted by Jalava (2008), it is often challenging to separate open alvars and bedrock-based graminoid fens. The alvars at this locale are remarkable in that it is the only known location for Houghton's Goldenrod (*Solidago houghtonii*) on the Bruce Peninsula. This globally (G3) and provincially rare (S2, Threatened) Great Lakes endemic also occurs on Manitoulin Island, and for many trip attendees it was their first time seeing this species. Houghton's Goldenrod was growing amongst abundant Ohio Goldenrod (*Solidago ohioensis*), the two species being superficially quite similar – Houghton's Goldenrod is generally distinguished from Ohio Goldenrod by its smaller leaves and larger flower heads. Other notable plants, many of which are calciphiles, included Upland White Goldenrod (*Solidago ptarmicoides*), Richardson's Sedge (*Carex richardsonii*), Creeping Juniper (*Juniperus horizontalis*), False Pennyroyal (*Trichostema brachiatum*), Bulrush Sedge (*Carex scirpoidea* ssp. *convoluta*), Shrubby Cinquefoil (*Dasiphora fruticosa*), Bog Birch (*Betula pumila*), Twig-rush (*Cladium mariscoides*) with its distinctive circular clasping leaves, Flat-stemmed Spike-rush (*Eleocharis compressa*), White Camas (*Anticlea elegans*), Capillary Beak-rush (*Rhynchospora capillacea*), Bog Goldenrod (*Solidago uliginosa*), Sweet Gale (*Myrica gale*), Alder-leaved Buckthorn (*Rhamnus alnifolia*), Pitcher-plant (*Sarracenia purpurea*), Four-flowered Loosestrife (*Lysimachia quadriflora*), Mermaid-weed (*Proserpinaca palustris*), and Common Bog Arrow-grass (*Triglochin maritima*). What a lovely way to end the day.

With thanks and appreciation to Walter for leading the outing, sharing his knowledge of the Bruce and the botanical treasures therein. ✱

“Flore Nordique du Québec et du Labrador”: book review

By Michael J. Oldham

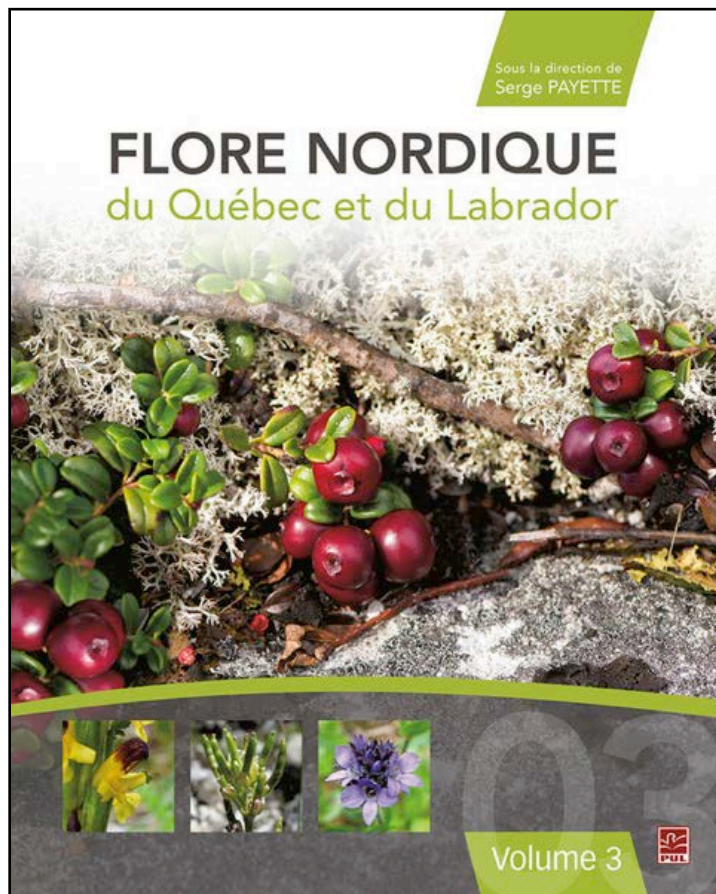
In early January I ordered myself a late Christmas present, the recently published Volume 3 of “Flore Nordique du Québec et du Labrador” (edited by Serge Payette, Michelle Garneau, and Kim Damboise). My copy arrived last week and as with the first two volumes, I am really enjoying Volume 3. Since this flora may be unfamiliar to many FBO members I thought I'd jot down a few reasons why you may, or may not, want to add these volumes to your botanical library.

“Flore Nordique du Québec et du Labrador” (from now on, *Flore Nordique*) covers that part of Québec and Labrador north of 54° North Latitude (it also includes some of the islands in Hudson Bay, like the Belcher Islands, that are politically part of Nunavut). Volume 1 was published by the Presses de l'Université Laval in 2013 and covers Lycophytes (ferns and fern allies), Gymnosperms, and Monocots other than grasses and sedges. Volume 2, published in 2015, covers 22 Dicot families, and Volume 3, published in 2018, covers another 23 Dicot families. See <https://www.pulaval.com/produit/flore-nordique-du-quebec-et-du-labrador-tome-3> for more information and instructions for ordering.

Each volume costs \$89.95 and by the time you add tax and shipping, you'll be paying \$101.80 per volume, probably enough to scare off many potential purchasers. However, these are attractive and sturdy hard-cover books with many excellent colour photos and illustrations and lots of useful information. The first three volumes are 553, 711, and 711 pages, respectively.

Another negative from the perspective of some FBO members may be the fact that *Flore Nordique* is almost entirely written in French. However, don't let that dissuade you since there are many reasons for someone with little knowledge of French (like me!) to buy this flora. Each species has a detailed botanical description and you will be surprised at how easy it is to read these since so many technical botanical terms are very similar in English and French. Not only that but there is a very nice glossary with the English word provided for each term defined and excellent labelled illustrations of plant parts. English common names are provided for most species and of course we use the same scientific names!

If you live and botanize in southern Ontario and seldom visit or botanize in boreal, subarctic or arctic regions of Canada, these volumes will probably not assist you too much with plant identification (get Voss and Reznicek's 2012 “Michigan Field Manual” instead!). If you botanize in northern Ontario, particularly in the Hudson Bay Lowland, or anywhere in sub-arctic or arctic Canada east of the Yukon, you will find *Flore Nordique* very useful for plant identification.



I have been fortunate to have had the opportunity to conduct botanical fieldwork in Ontario's Far North on several occasions and wish I could have had these books with me. The two identification manuals I relied on were Hulten's (1968) "Flora of Alaska and Neighboring Territories" and Porsild and Cody's (1980) "Vascular Plants of the Continental Northwest Territories". John Riley's (2003) "Flora of the Hudson Bay Lowland", while not an identification manual, was also very useful in indicating which species occurred in which parts of this vast region.

One of the best features of Flore Nordique is the copious and excellent colour photographs. These include photos of live plants in the field and photos of pressed specimens. While you might think that photos of pressed plants might not be too attractive or useful, these ones are both attractive and very useful. Many of the photos are close-ups of plant structures critical for identification. For example, I have struggled to separate the low-growing shrubs *Arctous* (formerly *Arctostaphylos*) *alpina* from *A. rubra*. The former has black fruit and the latter red fruit ... pretty easy if you have fruit! Without fruit one is left with characters like "leaves rugulose" vs. "leaves less rugulose" and "leaves ciliate, at least at base" and "leaves glabrous in margin" (many plants have slightly hairy leaf margins). The close-up photos in Flore Nordique make applying the ciliate leaf margin character very easy (*A. alpina* has distinct and fairly long (0.5 to 2 mm) cilia while *A. rubra* has small (< 0.5 mm) marginal hairs).

Another great feature is the detailed dot distribution maps. It is amazing how much botanical collecting has been done in remote northern areas of Québec and Labrador, much more so than in northern Ontario. Almost all species occurring in Ontario's Hudson Bay Lowland are included in Flore Nordique. There is also excellent information on habitat and ecology for each species as well as a comprehensive list of references for each family. Each family is written by a different author(s) and each family treatment begins with a description of the family followed by a key to genera, then treatments of the individual genera arranged alphabetically. Each genus treatment includes a key to species then individual species accounts including a botanical description, synonymy, sometimes notes on identification or taxonomy, and colour photos. At the end of each family is a separate "Distribution and Habitat" section for each species (all authored by Serge Payette) including a range map, followed by "References" for that family. Personally, I would have preferred the distribution and habitat information and range maps to be included with the species accounts rather than at the end of the family as I find myself constantly flipping back and forth between the two.

Flore Nordique is up-to-date in terms of taxonomy and nomenclature used and the names often agree with those used by the Database of Vascular Plants of Canada (VASCAN; <https://data.canadensys.net/vscan/search>), but not always. It is interesting to see some of the departures from the taxonomy used by VASCAN or the Flora of North America (FNA). For example, *Vaccinium gaultherioides* is accepted at the species level for what is sometimes recognized as a variety or subspecies of *V. uliginosum* or is often not recognized taxonomically at all (e.g. FNA). Flore Nordique maps both *V. gaultherioides* and *V. uliginosum* as widespread in northern Québec and looking at specimens in the NHIC herbarium from the Hudson Bay Lowland of Ontario it appears that we have both taxa in Ontario's Far North also.

In summary, I highly recommend Flore Nordique to anyone doing botanical fieldwork in or identifying plants from northern Canada or to anyone who just wants to add a really attractive and well-written Canadian flora to their library. Until you get as far west as northern British Columbia and the Yukon Territory, most of the plants in northern Canada, north of 54° North, will be included in Flore Nordique and this flora will have utility to botanists far beyond the boundaries of northern Québec and Labrador. ✱

News flash from NHIC's Wasyl Bakowsky:

Sedges of the Northern Forest field guide

"An amazing sedge ID guide, in pdf format, which you can load onto your smartphone or tablet and use in the field."

<http://northernforestatlas.org/2016/01/26/sedge-digital-atlas/>