

S U M M E R 2 0 1 2

FIELD BOTANISTS OF ONTARIO NEWSLETTER

VOLUME 24(2) ISBN: 1180-1417

Message from
the President ... 2

Sandbanks Park lichens ... 3

Botany in Moraviantown ... 4

New plant records in the
Credit Valley Watershed ... 7

Field Manual of Michigan
Flora, a review ... 10

Remembering Henry Kock
and Donald Britton ... 12

On FBO Constitution ... 12



President's Message

When I was thinking of writing this message, it occurred to me that it would be my last president's message. Little did I realize when I offered to assist in organizing the AGM in Alderville in 2006 because Alderville is close to home, that I would become vice president and president of this very fine organization

I have been involved in organizational work for over sixty years, in fields varying from athletics to horticulture and photography and now, in my old age, botany and nature. I have enjoyed them all and will not rate one organization over another because its like rating the grand masters of art on a scale of one to ten. It just doesn't work.

I believe that the FBO is a great organization for a number of reasons. Our members range from rank amateurs (like me) to experienced professional botanists. There is a spirit of friendship and a desire to help each other, which is very obvious on our field trips.

Our field trip leaders are first class people who lead, inform, and educate. I have never been on a bad field trip. Some trips have appealed to my interests more than others, BUT those that didn't appeal to my interests have expanded my horizons.

We have a fine Newsletter, thanks to the various editors who have served over the years. The content, style, and emphasis of each trip report is different which only serves to make reading them a real joy. In the last few years we have seen a number of articles not relating to trips, but I think that they have served to expand our readers' interest in the Newsletter.

I have had the opportunity of attending every AGM since the one in St. Thomas in 2002. Because of peoples' work schedules, attendance at AGMs fluctuates. But I always encourage our members to make an effort to attend an occasional AGM. They are an excellent event which I am sure you will enjoy.

The FBO is the fine organization it is because of the work of a very dedicated board. It is not large and the amount of work done by each member varies depending on his position. Obviously, the field trip committee and the editor have a fairly heavy workload, while other members' role may be to provide advice and wise council. It is my opinion that the FBO has a very capable board whose members work together in a cooperative and friendly manner. It makes working on the board a pleasure and rewarding.

It's been a great ride for me to work with this very fine organization.

I hope to see many of our members in Kingston.

Best wishes, Bill

On the cover:

From the top: Thames River and Spicebush (*Lindera benzoin*), from the Delaware on the Thames trip; photos by Mike McMurtry; Trekking through a sea of skunk cabbage (*Symplocarpus foetidus*) in a deciduous swamp (Delaware on the Thames trip); photo by Jane Bowles; *Graphis scripta* (lines) and Maple Dust (granular patch) lichens from the Sandbanks trip; photo by David Bree.

Sidebar artwork: Trumpet-creeper (*Campsis radicans*).

The standard source for scientific names and authorities of vascular plants is:

Newmaster, S.G., A. Lehela, P.W.C. Uhlig, S. McMurray and M.J. Oldham. 1998. Ontario Plant List. Ontario Ministry of Natural Resources, Ontario Forest Research Institute, Sault Ste. Marie, Ontario. Forest Research Information Paper No. 123, 550 pp. + appendices.

Membership forms can be found on the FBO website:

www.trentu.ca/fbo

Annual memberships are \$15.00 for individuals and \$18.00 for families.

Field Botanists of Ontario (FBO)

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

President

Bill Crowley
19 Burnham Blvd Port Hope ON L1A 4H5
fisheye@eagle.ca
(905) 885-2123

Vice President

Christopher Zoladeski
1220 Nathaniel Cres. Burlington ON L7S 2A6
chrizoladeski@savanta.ca
(905) 637-1760

Treasurer

Bill Draper
35 Hepburne St. Toronto ON M6H 1K1
william.draper@sympatico.ca
(416) 534-2892

Secretary

Nancy Falkenberg
42 Coco Avenue Richmond Hill ON L4S 2R5
falkenberg@rogers.com
(416) 457-8031

Past President

Sarah Mainguy
RR #3 Guelph ON N1H 6H9
mainrod@sympatico.ca
(519) 822-5221

Membership

Bill McIlveen
13200 Nassagaweya-Equesing Town Line RR1
Acton ON L7J 2L7
wmcilveen@sympatico.ca
(519) 853-3948

Field Trips

Leah Lefler
(519) 837-3429
and Sarah Mainguy (see Past President above)
fbo.trips@gmail.com

Acting Newsletter Editor

Christopher Zoladeski (see Vice President above)

Associate Editor

Michael J. Oldham, Natural Heritage
Information Centre
MNR PO Box 7000 Peterborough ON K9L 1C8
michael.oldham@ontario.ca
(705) 755-2160

Contributing Editor

W.D. McIlveen (see Membership above)

Website

Melinda Thompson
plantgirl2002@hotmail.com

Directors

Mike McMurtry
michael.mcmurtry@sympatico.ca
(705) 748-5353
748-5353

Dan Westerhof

dwesterhof@beaconenviro.com
(519) 362-8595

Field Trip Reports

In Sandbanks Park with a Lichen Doctor

22 October 2011

David Bree

Eight members of the club met at Sandbanks Provincial Park on October 22 to discover the world of lichens. The outing was hosted by FBO member and Sandbanks' Park Naturalist, Yvette Bree, and led by Troy McMullin. Troy, who is at the University of Guelph, was just 11 days from submitting the final version of his Ph.D. thesis on his lichen work and it didn't take long to realize he is a true lichen enthusiast.

We started the day inside the park office boardroom, which was festooned with a number of interesting specimens Troy had brought. After a quick introduction to the park by Yvette, Troy gave us his Lichenology 101 course. Being a bit of a lichen

the lichens shown were familiar to me, such as *Parmelia sulcata* (Hammered Shield Lichen), which is the weed of the lichen world, growing everywhere, and *Flavoparmelia caperata* (Common Greenshield Lichen), which Troy calls the 40 kilometre/hour lichen 'cause you can ID it driving down the highway at 40. (Personally, I expect he can do so at higher speeds but he is promoting safe IDing.) Some of the common lichens shown I did not know – the whole group of “stubble lichens” I had never even heard of before. These just look like little hairs sticking up through woody substrate with the thallus beneath the surface, more fungi-like than lichen-like.

Also shown was the potential prize of this trip, *Teloschistes chrysophthalmus* (Golden-eye), a globally rare species collected by Macoun over a hundred years ago and thought extirpated from Ontario until its rediscovery at Sandbanks in 1994. Being quite familiar with Sandbanks, and even having looked at lichens here in the past, I was surprised to hear that a rare lichen was to be found in the Park. The factor, of course, is air quality. As Troy pointed out, lichens ‘eat’ air and the more pollutants in the air,



For Troy McMullin, sermon is followed by veneration. Photo: D. Bree.

enthusiast myself, some of this was a review but much was new. It was interesting to learn that the classic idea that lichens are a symbiotic organism consisting of two species, an alga to produce food and a fungus to supply the housing, was being discussed in current lichen taxonomic circles. The reality seems to be that the system is probably much more complex than that and the question of how to define a species is under hot discussion now.

After discussing the biology and terminology of lichens, we reviewed some lichen species, some of which were exotics, but most of which we could expect to see later in the day. Some of

the fewer the lichens on the ground (or on trees, rock, etc.). I have always thought Sandbanks rather lacking in lichens, being down-wind from the industrial heartland of North America.

Troy, of course, soon showed us the diversity that was possible. After his talk and a quick look at the specimens (Do you know as many as 30% of species fluoresce? Troy had a grey lichen that glowed bright yellow in his black box – cool!) we adjourned outside the office. Here, on two isolated trees in the parking lot, Troy quickly came up with 11 species. These included the two mentioned above plus other common species such as the orange-



Lichen species number on the tree trunk: eleven. Photo: D. Bree.

yellow *Candelaria concolor*, and the brown *Melanelixia subaurifera*, aptly named as Abraded Camouflage Lichen for it is a brown lichen on a brown branch that typically has little flakes of the thallus falling off revealing white tissue beneath. But no Golden-eye. For that, we would have to head to West Point in the Park.

Grabbing our lunches, we car-pooled to West Point on the shores of Lake Ontario to have a quick look at lichens along an old rail fence before eating lunch in the shelter of some trees. We then walked to the point, examining lichens on the way. At the end of the point on a large isolated oak, amid the furrowed bark, were two quarter-sized patches of bright yellow lichen, the Golden-eye! We all gathered around to admire and photograph this rare treasure. One I had unknowingly walked by dozens of times in the last 25 years! An examination of other trees in the area revealed no other specimens. This was indeed a rare, isolated and seemingly vulnerable station for this species!

Yvette asked about the possibility of transplanting the lichen in the event that this exposed tree were ever damaged by lake storms. Troy says that lichens can be transplanted, just staple them on another tree BUT the actual micro-conditions needed for a species survival and growth could be very precise and difficult if not impossible to determine. A closer look at the two patches showed that though they were separated by about 3 feet they faced the same way, on exactly the same edge of a bark furrow, the same distance down the furrows trough. What other conditions could we not see? Transplantation would be chancy

at best. We have to hope the old oak has many years left in it and the lichen may one day spread itself to other locations.

After admiring the Golden-eye, we continued back to the parking lot looking at the shoreline rock for another uncommon rock-loving species. While unsuccessful on that search, Troy did comment that a few of the species we saw on the point were not found in the Guelph area and seem to be specific to this near-Lake Ontario region. Being a resident here, that comment piqued my interest. Troy said he would have to make a collection on the next day (for which he had a park permit) for later analysis and to be sure of his identification of these unfamiliar species. This area also yielded one of my favourite lichens on a maple, Script Lichen (*Graphis scriptus*). I like it because it looks just like its scientific name – pencil scribbles. A small patch was found next to the more common Maple Dust (*Lecanora thysanophora*).

We finished off by driving back to the Outlet side of Sandbanks Park and walking the Cedar Sands Trail which, true to its name, is a path deep in the shade of a cedar forest near the sand dunes. Even in this seemingly lichen-unfriendly environment, we found a few species: splashes of green *Lepraria* sp. on the base of the cedars and two different stubble lichens. I was particularly interested in seeing these, having just learned of their existence. A hand lens was definitely an asset to see the tiny spikes sticking out of the dead cedar trunk.

A very interesting day was had by all and I thank Troy for sharing his knowledge so close to his thesis deadline and Yvette for guiding us around Sandbanks. I look forward to seeing what Troy may discover from the collections he made – I'll just have to wait until after that thesis thing. 🍄

Delaware on the Thames

27 May 2012

Mike McMurtry

Our rendezvous was on the morning of May 27, 2012, at the library near the banks of the Thames River at Moraviantown. We met other FBO members, our trip leaders Jane Bowles and Darren Jacobs, and members of the Moravian of the Thames (Delaware Nation) community. It is an historic site for the Delaware people and for all Canadians - it was where the War of 1812 was fought and the great native American leader Tecumseh fell.

After introductions, Marilyn Huff spoke to us about the history of the Delaware Nation and Glen Jacobs spoke about Delaware cultural traditions and language. The Delaware people moved in 1792, accompanied by a Moravian missionary, from what is now

the eastern United States to a site on the opposite side of the Thames from the current settlement. They hoped to avoid the mistreatment and hostilities they experienced further south. During the war of 1812 the Delaware formed an alliance with the British. Tecumseh, who led a tribal confederacy against the

Our walk began in a large block of deciduous forest and swamp to the south of our meeting place. There are no trails through the property and it is quite undisturbed. A GPS unit was very useful in orienting ourselves and choosing a route. The songs of Ovenbird, Eastern Wood Pewee, Red-eyed Vireo and Scarlet



Rich deciduous forest. Photo: M. McMurtry.

American forces, was killed in the Battle of the Thames in 1813 and buried nearby. The Delaware settlement was destroyed by the American troops following the battle, but it was re-established across the river at the current site in 1815. The Muncee-Delaware First Nation people established another community further upstream on the Thames.

We reviewed a plant species list for the area produced by Ian MacDonald in 1986 for the Kent-Elgin Natural Areas Survey. Our hosts are in the process of compiling information on the species of plants and animals found on their land and are concerned about the potential for misuse of information on some species, so we agreed to share our notes and photos with them and not distribute these further without their permission.

The Moravian of the Thames lands cover approximately 1200 hectares (3000 acres) and include extensive forests and wetlands.

Tanager greeted us as well as the plants that are characteristic of moist Carolinian forests: Running Strawberry (*Euonymus obovatus*), Witch Hazel (*Hamamelis virginiana*), Spicebush (*Lindera benzoin*), Wild Geranium (*Geranium maculatum*) and Sassafras (*Sassafras albidum*).

Oil obtained from steam distillation of Sassafras root bark was once used extensively as a fragrance in perfumes and soaps and was the primary flavouring in root beer. Its use is now banned in Canada and the United States, however, as it has been discovered that it causes liver damage and various types of cancer in animals. Another plant common on the property and sometimes used for medicinal purposes is Wild Sarsaparilla (*Aralia nudicaulis*). It is typically used in the place of another plant called Sarsaparilla, or *Smilax ornata*, a plant not found in Ontario. *Smilax ornata* has medicinal uses and was used to make a drink apparently popular with cowboys in the old West.

Running Strawberry, Wild Geranium and Wild Phlox (*Phlox divaricata*) were all in flower. Spicebush had finished flowering, but we caught whiffs of the appealing fragrance of the leaves, especially after the rain that fell later in the day. (It's too bad our newsletter can't accommodate scratch and sniff technology.) The canopy of the forest was dominated by Sugar Maple (*Acer saccharum*), American Beech (*Fagus grandifolia*), Red Oak (*Quercus rubra*), White Ash (*Fraxinus americana*) and Shagbark Hickory (*Carya ovata*). Ironwood (*Ostrya virginiana*) and Blue Beach (*Carpinus caroliniana*) were common in the sub-canopy, but the latter was suffering from some kind of infestation as the leaves were shrivelled and some individuals were dead. Black Maple (*Acer nigrum*), with its velvety-textured leaves was also observed. The ground layer included Horsetweed (*Coryza canadensis*), Poke Milkweed (*Asclepias exaltata*), Mayapple (*Podophyllum peltatum*), Horse Balm (*Collinsonia canadensis*), Wild Ginger (*Asarum canadense*), Virginia Waterleaf (*Hydrophyllum virginianum*) and, new for the list, Spikenard (*Aralia racemosa*).

Large vines of Virginia Creeper (*Parthenocissus inserta*), Riverbank Grape (*Vitis riparia*) and Poison Ivy (*Toxicodendron radicans*) were growing on many trees. Where we could observe it, the soil appeared to be fine sand, but given how moist the forest appeared, there was likely an underlying layer of clay.

In wetter areas, the canopy transitioned to Freeman's Maple (*Acer x freemanii*), Black Ash (*Fraxinus nigra*) and American Elm (*Ulmus americana*). Skunk Cabbage (*Symplocarpus foetidus*) and Marsh Marigold (*Caltha palustris*) were abundant in the herb layer. The many vernal pools were productive breeding habitat for amphibians, of which we saw Gray Treefrog, Wood Frog and American Toad.

The forest was a treasure trove of ferns: Sensitive fern (*Onoclea sensibilis*), Ostrich Fern (*Matteuccia struthiopteris*), Silvery Glade Fern (*Deparia acrostichoides*) (named for the light-coloured sori which give the fronds a silvery sheen), Christmas Fern (*Polystichum acrostichoides*), Lady Fern (*Athyrium filix-femina*), Interrupted Fern (*Osmunda claytoniana*), Cinnamon Fern (*Osmundastrum cinnamomeum*), New York Fern (*Thelypteris novaboracensis*), Bracken Fern (*Pteridium aquilinum*), and more.

As we wound our way through the forest, the sky darkened and thunder sounded. Eventually the rain started and soaked those of us without raincoats. Thankfully, the air was warm, so no harm was done.

We identified several sedges during our walk, among them Inflated Sedge (*Carex intumescens*), Peduncled Sedge (*Carex pedunculata*), Pennsylvania Sedge (*Carex pennsylvanica*), White Bear Sedge (*Carex albursina*), Plantain-leaved Sedge (*Carex plantaginea*),



Evidence of Emerald Ash Borer. Photo: M. McMurtry.

Hairy Wood Sedge (*Carex hirtifolia*), Rosy Sedge (*Carex rosea*) and Wood's Sedge (*Carex woodii*). The latter sedge is superficially like a large Pennsylvania Sedge, but it can be distinguished in part by the larger size and red striped culm. One of the sedges, initially thought to be Woodland Sedge (*Carex blanda*), was later keyed out using the new Field Manual of Michigan Flora by Voss and Reznicek, and found to be Few-nerved Sedge (*Carex leptonevia*). The latter species is distinct among the Laxiflorae, having only 2-3 distinct veins on the perigynia.

Grasses also did not escape our attention. One of the most common was the large and handsome Grove Meadow Grass (*Poa alsodes*). We also noticed Bottlebrush Grass (*Hystrix patula*), Kentucky Bluegrass (*Poa pratensis*), Bearded Shorthusk (*Brachelytrum erectum*) and Nodding Fescue (*Festuca subverticillata*).

Many of the ash trees in the forest showed signs of Emerald Ash Borer, with the bark flaking away in places.

Ontario Ministry of Natural Resources Forest Health Specialist, Patrick Hodge, informed me later that the flaking is caused by woodpeckers which remove the top layer of bark so they can then feed on the ash borer larvae underneath.

As we emerged from the forest, we encountered a patch of land that had been used for agriculture and was now old field/early successional forest with such species as Indian Hemp (*Apocynum cannabinum*), Wild Carrot (*Daucus carota*), Pussy Willow (*Salix discolor*), Slender Willow (*Salix petiolaris*), Trembling Aspen (*Populus tremuloides*), Large-toothed Aspen (*Populus grandidentata*), and a

hawkweed that was keyed out to be Yellow Hawkweed (*Hieracium cespitosum*). The new Voss and Reznicek publication also proved useful for keying out this specimen from a group that is often problematic. The invasive Japanese Barberry (*Berberis thunbergii*) was also common near the edge. An unseen warbler sang the Blue-winged Warbler song (both Blue-winged and Golden-winged Warblers can sing this song) and we heard Yellow Warbler, Common Yellowthroat, Catbird, House Wren and Song Sparrow.

After the walk we enjoyed the sunshine out in the open and Marilyn showed us her garden of Sweet Grass (*Anthoxanthum* sp.) and Sage (*Artemisia* sp.) to be used for ceremonial purposes – we didn't check the species.

We would like to thank our leaders, Jane and Darren, for sharing their knowledge with us, and the Moravian of the Thames community for welcoming us to their home place. The interest and appreciation of the group for our shared natural and cultural heritage were inspiring. 🌟

Botanical roots

New and interesting plant records from the Credit Valley Watershed and Region of Peel Natural Areas Inventory Project

**Charles Cecile
and**

**Dawn Renfrew (Credit Valley Conservation,
Coordinator, Natural Areas Inventory Project)**

Credit Valley Conservation, in partnership with the Halton/North Peel Naturalist Club, the South Peel Naturalists Club, Toronto and Region Conservation Authority and the Region of Peel, has been conducting an ongoing Natural Areas Inventory Project (NAI) throughout the Credit River watershed and Region of Peel (<http://www.creditvalleyca.ca/NAI/index.htm>).

Interesting botanical results from surveys done in 2008 and 2009 were previously reported in this newsletter (FBO Newsletter Vol. 22(2), Summer/Fall 2010). During the 2010 and 2011 field seasons, 34 additional natural areas were surveyed as part of the NAI. As in previous years, vascular plant species lists were compiled for each area. Several new and interesting records were documented and are reported in the following text.

The Credit River watershed is located along the western edge of the Greater Toronto Area (GTA) and includes parts of the Region of Peel, Region of Halton, Wellington County and Dufferin County. As these areas are facing tremendous development pressures, it is imperative to know and understand the existing natural heritage system in order to protect key natural areas and maintain a healthy natural environment for all.

The NAI is compiling existing records and collecting new natural heritage data for the Credit watershed and its municipal partners, resulting in an accessible single source of this information. Species distribution and status in the study area are also being documented, including invasive and exotic taxa. This information will then be available in a municipal and watershed context. It will support further education of the public, stewardship initiatives, protection and sound ecosystem management to ensure long-term community health. Many of the properties inventoried are privately owned. The cooperation of landowners in granting permission for access for the survey work is greatly appreciated.

The following list includes new and some of the more interesting vascular plant species that were documented during 2010 and 2011. The status of these species was determined using: the Credit Valley Conservation 2010 & 2011 Field Data List of Flora Species Confirmed in the CVC Watershed, Toronto and Region Conservation Authority Ecological Land Classification Database 2011, Distribution and Status of the Vascular Plants of the Greater Toronto Area by Varga et al. (2000), The Vascular Plant Flora of Peel County by Jocelyn Webber (1984), The Vascular Plant Flora of the Region of Peel and the Credit River Watershed by Jeff Kaiser (2001), The Vascular Plants of Halton Region by Crins et al. (2006), The Flora of Wellington County by Richard Frank & Allan Anderson (2009), Natural Heritage Information Centre - OMNR website and Flora of North America North of Mexico website (1993+). The species are listed in alphabetical order.

Antennaria howellii ssp. *canadensis* (Howell's Pussy-toes)

Found in 2010 on the Alton Grange property just east of the village of Alton, this pussy-toes sub-species grows in many different habitat types including disturbed gravelly openings in thick cedar stands. It is a new sub-species for the watershed and Peel Region.

Asplenium scolopendrium var. *americanum* (Hart's-tongue Fern)

Re-located in 2010 in the Inglewood Slope forest, west of the village of Inglewood in Peel Region, this provincially rare fern may have last been documented at this location in 1958. A new location for Hart's-tongue Fern was discovered in 2011 near the Silver Creek Conservation Area in Halton Region. This relatively large population of more than 20 plants is the third known location for the species in Halton Region. Hart's-tongue Fern is a "Species At Risk" in Ontario and in Canada with a status of "Special Concern" in both jurisdictions. It is rare in the watershed and in the GTA.

Bromus pubescens (Hairy Brome)

Found in 2011 in the Silver Creek Conservation Area, Hairy Brome is a relatively uncommon woodland grass that is a new species for the watershed. It is considered rare in the GTA.

Callitriche palustris (Marsh Water-starwort)

Found in 2011 near the hamlet of Silver Creek, a large colony of Marsh Water-starwort was found growing in a vernal pool within a maple forest. This is the third record for Halton Region. It is rare in the watershed and the GTA.

Carex foenea (sedge)

Found in 2010 near Mono Mills in the Town of Caledon, this sedge is new for the watershed and for Peel Region.

Carex lasiocarpa (sedge)

Found in 2011 near the Silver Creek Conservation Area, this wetland sedge is a new species for Halton Region and is rare in the watershed and the GTA.

Carex laxiculmis var. *copulata* (sedge)

Found in 2011 in the Silver Creek Conservation Area and in the Terra Cotta Conservation Area, this variety of sedge is new for Halton Region. It is also rare in the watershed and the GTA.

Carex schweinitzii (sedge)

Found in 2011 in a large wetland forest near Hillsburgh in the Town of Erin, this sedge is generally found growing in cold springs and seepage areas. It is provincially rare and may be a new species for Wellington County. It is also considered rare in the watershed and the GTA.

Carex tetanica (sedge)

Found in 2010 in the Upper Credit Conservation Area in the town of Caledon, this sedge grows in low marshy or boggy ground, often in marly places. It is a new species for the watershed and for Peel Region and is considered rare in the GTA.

Celtis occidentalis (Hackberry)

Found in 2011 near the Silver Creek Conservation Area, Hackberry is a tree that has a variable though generally more southern distribution in Ontario. As a natural occurrence, it is a new species for the watershed. It is rare in Halton Region and the GTA.

Cladium mariscoides (Twig Rush)

Found in 2010 near Ballinafad in the Town of Erin, Twig Rush grows in fens, bogs and marshy lakeshores. It is a new species for the watershed and is considered rare in the GTA.

Cypripedium acaule (Pink Lady's-slipper)

Found in 2010 just southeast of Orangeville in the Town of Caledon and in 2011 in a large wetland forest near Hillsburgh in the Town of Erin, Pink Lady's-slipper grows in moderately acidic to neutral wetland habitats. It is rare in the watershed, Peel Region,

Wellington County and the GTA.

Elymus villosus (Slender Wild-rye)

Found in 2011 near the Silver Creek Conservation Area, Slender Wild-rye is found in scattered localities across southern Ontario in dry thickets and open woodlands. It is a new species for Halton Region and is rare in the watershed and the GTA.

Eriophorum gracile (Slender Cotton-grass)

Found in 2010 near Ballinafad in the Town of Erin, Slender Cotton-grass grows in fens and bogs. It is a new species for the watershed and is rare in Wellington County and the GTA.

Goodyera pubescens (Downy Rattlesnake-plantain)

Found in 2010 just southeast of Orangeville in the Town of Caledon, Downy Rattlesnake-plantain is found in many kinds of woodlands including coniferous and mixed woodlands. It is a new species for the watershed, the third record for Peel Region and is rare in the GTA.

Juncus brevicaudatus (Narrow-panicked Rush)

Found in 2010 near Ballinafad in the Town of Erin, this rush species grows in many types of wetlands including fens. It is widely distributed across Ontario and Quebec to the Maritimes. This is the second

record for this species in Wellington County and is rare in the watershed and the GTA.

Milium effusum (Wood Millet)

Found in 2010 on the Alton Grange property just east of Alton, Wood Millet was a new species for the watershed. It was also found in 2011 in the Silver Creek Conservation Area, the Terra Cotta Conservation Area and the Inglewood Slope forest. This woodland grass is considered to be rare in Peel Region and in the GTA.

Muhlenbergia glomerata (Wild Timothy)

Found in 2011 near the Silver Creek Conservation Area, Wild Timothy is a wetland grass that is considered a fen indicator although it also grows in marshy and swampy places and boggy meadows. This is the third record for the species in Halton Region. Wild Timothy is rare in the watershed and in the GTA.



Muhlenbergia glomerata. Photo: C. Cecile.

Oenothera perennis (Small Sundrops)

Found in 2010 near Mono Mills in the Town of Caledon, Small Sundrops is a member of the evening-primrose family. This is the second record for this species in the watershed and Peel Region and is considered rare in the GTA.

Poa saltuensis ssp. *saluensis* (Two-rayed Poa)

Found in 2011 near the village of Silver Creek, in the Terra Cotta Conservation Area and in the Silver Creek Conservation Area, Two-rayed Poa is a native perennial woodland grass. It is a new species for Halton Region and is rare in the watershed and in the GTA.

Salix candida (Hoary Willow)

Found in 2011 near the Silver Creek Conservation Area, Hoary Willow grows in a variety of wetlands especially in calcareous areas and is widely distributed in Ontario. It is a potentially new species for Halton Region and is rare in the watershed and in the GTA.

Solidago rigida (Stiff-leaved Goldenrod)

Found in 2010 in south Mississauga along the banks of the Credit River, Stiff-leaved Goldenrod is a species of dry, prairie-like habitats that can sometimes spread into disturbed areas. It is provincially rare with a more southwestern distribution in Ontario. This is a new species for the watershed and Peel Region and is rare in the GTA.

Spiranthes romanzoffiana (Hooded Lady's-tresses)

Found in 2010 just southeast of Orangeville in the Town of Caledon, Hooded Lady's-tresses is a mid-summer blooming orchid with very fragrant flowers. This is the second record for the watershed and a new species for Peel Region. It is also rare in the GTA.

Spirodela polyrrhiza (Greater Duckweed)

Found in 2010 near Acton and in 2011 in the Silver Creek Conservation Area, both in the Town of Halton Hills, Greater Duckweed may be found growing with Lesser Duckweed and the tiny watermeals. It is rare in the watershed and in Halton Region.

Symphotrichum boreale (Bog Aster)

Found in 2011 near the Silver Creek Conservation Area, Bog Aster grows in marshes, fens and bogs throughout Ontario. This is the fourth record for the species in Halton Region and is rare in the watershed and in the GTA.

Symphotrichum ciliolatum (Ciliolate Aster)

Found in 2010 near Mono Mills in the Town of Caledon and in the Lorne Park area of Mississauga, Ciliolate Aster has a widespread northern distribution reaching its southern range limit in southern Ontario. It is a new species for the watershed and is rare in Peel Region and in the GTA.

Several non-native vascular plant species were recorded during surveys that are noteworthy. These are:

Listera ovata (European Common Twayblade)

Found in 2010 at two locations previously reported (FBO Newsletter V. 23/1), this Eurasian species was a new species for the watershed, Peel Region and the GTA. In 2011, another location was found in a large wetland forest near Hillsburgh in the Town of Erin. This is the third known location for this species in the watershed and in Wellington County and the sixth known location in Ontario.

Myosotis arvensis (Garden Forget-me-not)

Found in 2010 near the hamlets of Melville and Belfountain, both in the Town of Caledon, Garden Forget-me-not is a Eurasian species that escapes from cultivation into weedy and disturbed places. It is a new species for the watershed and Peel Region.

Veronica chamaedrys (Germander Speedwell)

Found in 2010 in Forks of the Credit Provincial Park, Germander Speedwell is another Eurasian species that is sometimes cultivated and escapes into disturbed areas as well as deciduous woods. It is a new species for the watershed and Peel Region.

Voucher specimens and documenting photographs for many of these records are deposited at the Royal Botanical Gardens herbarium (HAM) in Burlington. Corrections and/or additions to the above species accounts would be much appreciated.

Botanists and field naturalists are encouraged to submit any personal records of significant plant species from the watershed to Credit Valley Conservation to be included in their database (contact Dawn Renfrew: drenfrew@creditvalleyca.ca). Also, information on significant birds, mammals, reptiles, amphibians, and other natural heritage features noted in the watershed would be appreciated.

The NAI will continue to document the natural heritage of the Credit Valley watershed in the coming seasons. As complete an understanding as possible of the native flora and other natural heritage features will help ensure their long term protection and conservation.

Acknowledgements

Natalie Iwanycki, curator at the Royal Botanical Gardens herbarium (HAM) provided helpful comments and suggestions and confirmed several species identifications.

References

Credit Valley Conservation. 2010 & 2011 Field Data List of Flora Species Confirmed in the CVC Watershed, Microsoft Word File format. CVC, Mississauga, ON.

Crins, W.J., W.D. McIlveen, A.G. Goodban & P.G. O'Hara, 2006. The Vascular Plants of Halton Region, Ontario; in Halton Natural Areas Inventory: Volume 2 Species Checklists, Halton/North Peel Naturalists' Club, Conservation Halton, South Peel Naturalists' Club, Region of Halton & Hamilton Naturalists' Club.

Flora of North America Editorial Committee, eds. 1993+. Flora of North America North of Mexico. 14+ vols. New York and Oxford. Website available at: <http://www.fna.org/>

Frank, Richard & Allan Anderson, 2009. The Flora of Wellington County. Wellington County Historical Society, Fergus, ON. 145 pp.

Kaiser, Jeff. 2001. The Vascular Plant Flora of the Region of Peel and the Credit River Watershed. Prepared for: Credit Valley Conservation, the Regional Municipality of Peel, Toronto and Region Conservation Authority.

Natural Heritage Information Centre, Ontario Ministry of Natural Resources, Peterborough, ON Website: <http://nhic.mnr.gov.on.ca/>.

Toronto and Region Conservation Authority. 2011 Ecological Land Classification Database. GIS File format, Toronto, ON.

Varga, S., D. Leadbeater, J. Webber, J. Kaiser, B. Crins, J. Kamstra, D. Banville, E. Ashley, G. Miller, C. Kingsley, C. Jacobsen, K. Mewa, L. Tebby, E. Mosley, & E. Zajc, 2000. Distribution and Status of the Vascular Plants of the Greater Toronto Area. Ont. Min. of Natural Resources, Aurora District.

Webber, Jocelyn. 1984. The Vascular Plant Flora of Peel County, Ontario. Botany Press, Toronto. Ontario.

Book review: "Field Manual of Michigan Flora"

Michael J. Oldham

If you are a beginning Ontario field botanist ready to move beyond a wildflower guide, the first botanical manual you should purchase is the "Field Manual of Michigan Flora". If you are a more experienced field botanist with a book shelf or two of botanical guides including Voss's "Michigan Flora", you should still buy this book.

For four decades Ontario botanists have relied on Edward Voss's "Michigan Flora" (University of Michigan Press; 1972, 1985, 1996) to accurately identify southern and central Ontario vascular plants (excluding ferns and fern allies). Although "Michigan Flora" is a technical botanical manual, it is more accessible to the amateur than many floras and the keys are excellent and work well for most of Ontario (except

the far north). Voss teamed up with Ontario's own Tony Reznicek to produce this one-volume update to the three-volume "Michigan Flora". (Unfortunately the senior author, Ed Voss, a pioneer and leader in Great Lakes region botany, passed away just three days before the "Field Manual" was published.) Users of the "Field Manual" will notice a similar look and feel as the "Michigan Flora", though there are a few differences. The keys and species accounts are similarly useful and the Michigan distribution maps by county are a good indication of whether a species is likely to be widespread in southern Ontario or localized and whether it is likely to have a more southern or northern distribution. Almost all southern Ontario plants are included in the "Field Manual" and several of the species which occur in southern Ontario but not Michigan are mentioned in the text. Unlike "Michigan Flora", species are arranged alphabetically within genera, genera are arranged alphabetically within families, and families are arranged alphabetically with major groups (Gymnosperms, Monocots, and Dicots). Personally I find that this ordering makes it easier to find a species, genus, or family of interest rather than a strictly phylogenetic arrangement. There are no illustrations in the "Field Manual" and the maps are smaller. At 7 X 10 inches, the 990 pages in the hard-cover "Field Manual" are about an inch longer and wider than those in "Michigan Flora", and the "Field Manual" is about 1½ inches thick, making it easy to fit into a backpack (the three volumes of "Michigan Flora" are collectively about 4¼ inches thick).

Field botanists already owning "Michigan Flora" may wonder whether they also need the "Field Manual". There are several reasons why the answer is "yes". About 10% of the species in the "Field Manual" (254 species) are not included in "Michigan Flora". Perhaps not surprisingly, 80% of the additions are aliens. The distribution maps have been significantly updated through the examination of more than 44,000 Michigan herbarium specimens. Another important reason for owning the "Field Manual" is the many changes to taxonomy and nomenclature. The relatively recent use of molecular genetic techniques to better understand plant relationships has resulted in numerous changes at the family, genus, and species level. Users will see many name changes and some may be frustrated at having to learn new names. However these names better reflect relationships and are the names that will be used in future floras and botanical publications. Not only have many species names changed, but family level taxonomy is also quite different. Family level taxonomy mostly follows the Angiosperm Phylogeny Group (as of fall 2008; see <http://www.mobot.org/mobot/research/apweb/>). A useful appendix in the "Field Manual" provides a list of Michigan genera whose family assignments have changed from the "Michigan Flora". Another useful resource for the Ontario field botanist is the Michigan Flora Online webpage (<http://www.michiganflora.net/>).

At only \$25 U.S. the "Field Manual" is an excellent bargain, as was "Michigan Flora". It can be ordered from the University of Michigan Press, though shipping costs are cheaper if ordered from Amazon.com.

Once the “Field Manual of Michigan Flora” arrived in the mail I could scarcely put it down (nice to dream of summer botanizing on a snowy late February day!). As I’ve been flipping through it, I’ve jotted down a few things that struck me as interesting, new nomenclature or taxonomy (some of which agrees with the Flora of North America (FNA), some doesn’t), etc.

- *Carex viridistellata*, a newly described species similar to *C. cryptolepis* and occurring in rich fens, is mapped from six Lower Peninsula counties (and also occurs in Indiana and Ohio) but is not known from Ontario.
- *Cyperus engelmannii* and *C. odoratus* (*C. ferruginescens*) are both recognized at the species level in contrast to most recent floras which include *C. engelmannii* within *C. odoratus*; the two seem distinct in Ontario, as they are in Michigan.
- Michigan species traditionally included in the Liliaceae are divided among 11 families (Agavaceae, Alliaceae, Asparagaceae, Convallariaceae, Hemerocallidaceae, Hostiaceae, Hyacinthaceae, Liliaceae, Melanthiaceae, Smilacaceae, and Trilliaceae), with only *Erythronium* and *Lilium* remaining in Liliaceae.
- *Zigadenus glaucus* is called *Anticlea elegans* var. *glaucus*.
- *Malaxis paludosa* is called *Hammarbya paludosa* (not in Michigan but mentioned under *Malaxis*), *M. monophyllos* and *M. unifolia* remain in *Malaxis*.
- *Listera auriculata*, *convallarioides*, and *cordata* are all placed in the genus *Neottia* with the same specific epithets. *Listera australis* (not known from Michigan) is called *Neottia bifolia*.
- *Deschampsia flexuosa* is called *Avenella flexuosa*.
- The treatment of *Dichanthelium* differs considerably from that of the FNA treatment and looks like it will work better for Ontario *Dichanthelium*.
- *Trisetum melicoides* is called *Graphophorum melicoides*.
- *Hierochloa odorata* is called *H. hirta* (i.e. not included in *Athoxanthum* as *A. hirtum*, as done in FNA).
- *Panicum philadelphicum*, *gatingeri*, and *tuckermanii* are all recognized as species, in contrast to FNA, where the latter two are included in *P. philadelphicum*. The three seem quite distinct in Ontario both morphologically and ecologically.
- *Oryzopsis canadensis*, *pungens*, and *racemosa* are all placed in *Piptatherum*, with the same epithets; *O. asperifolia* remains in *Oryzopsis*.
- *Festuca arundinacea*, *gigantea*, and *pratensis* are placed in *Schedonorus*, with the same epithets.
- *Schizachyrium littorale* is not accepted even as a subspecies (contrary to FNA) with the comment that plants from Michigan may not be the same entity (which was described from the US East Coast).
- *Kochia scoparia* is called *Bassia scoparia*.
- *Nemophanthus mucronatus* is called *Ilex mucronata*.
- *Centaurea maculosa* is called *C. stoebe* ssp. *micranthos*.
- *Eupatorium maculatum* and *purpureum* are placed in *Eutrochium*.
- *Hieracium kalmii* and *H. umbellatum* are both recognized, contrary to FNA which includes *H. kalmii* in *H. umbellatum*.
- *Gnaphalium sylvaticum* is called *Omalotheca sylvatica*.
- *Leontodon autumnalis* is called *Scorzoneroides autumnalis*.
- *Solidago vossii* is a recently described goldenrod (by Jim Pringle and Pam Laureto) of moist swales in Jack Pine stands which is endemic to Michigan and was formerly included in *S. houghtonii*.
- *Symphotrichum firmum* is recognized as a species (included in *Aster* (*Symphotrichum*) *puniceus* in both Michigan Flora and Asters of Ontario).
- *Senecio congestus* is called *Tephroseris palustris*.
- *Hymenoxys herbacea* is called *Tetraneris herbacea*.
- *Onosmodium molle* is called *Lithospermum molle*.
- *Arabis lyrata* is called *Arabidopsis lyrata*.
- *Campanula americana* is called *Campanulastrum americanum*.
- *Helianthemum bicknellii* and *H. canadense* are placed in the genus *Crocianthemum* (same epithets).
- *Monotropa hypopithys* is called *Hypopithys monotropa*.
- *Ledum groenlandicum* is called *Rhododendron groenlandicum*.
- *Chamaesyce* is included in *Euphorbia*.
- *Euphorbia esula* does not occur in Michigan, all specimens are *E. virgata*.
- *Desmodium glutinosum* and *nudiflorum* are included in *Hylodesmum* (same epithets).
- *Lespedeza violacea* is called *L. frutescens* and most inconveniently, *L. intermedia* is now called *L. violacea*.
- *Acinos arvensis* and *Calamintha arkansana* are both placed in *Clinopodium*.
- *Epilobium angustifolium* is called *Chamerion angustifolium*.
- *Circaea lutetiana* is called *C. canadensis*.
- *Gaura biennis* and *G. longiflora* are treated as *Oenothera gaura* and *O. filiformis*, respectively.
- *Agalinis pauperula* is included in *A. purpurea* (as subsp. *parviflora*).
- *Corydalis sempervirens* is called *Capnoides sempervirens*.
- As in FNA, the genus *Polygonum* is split into *Bistorta* (*vivipara*), *Fallopia* (climbing/twining species like *cilinodis*, *convolvulus*, *scandens*, plus the large stout introduced *japonica* [= *Polygonum cuspidatum*] and *sachalinensis*), *Persicaria* (the smartweeds), and *Polygonum* (*aviculare* and relatives).
- *Dodecatheon* (none in Ontario) is included in *Primula*.
- *Cimicifuga* is included in *Actaea*.
- *Ranunculus* is divided into *Ceratocephala* (*testiculata*; not known from Michigan), *Coptidium* (*lapponicum*), *Ficaria* (*verna*; = *Ranunculus ficaria*), *Halerpestes* (*cymbalaria*), and *Ranunculus*.
- *Rhamnus frangula* is called *Frangula alnus*.
- *Potentilla* is divided into *Comarum* (*palustre*), *Dasiphora* (*fruticosa*), *Drymocallis* (*arguta*), *Sibbaldiopsis* (*tridentata*), and *Potentilla*.
- *Waldsteinia fragarioides* is called *Geum fragarioides*.
- *Duchesnia indica* is included in *Potentilla*.
- *Sanguisorba minor* is called *Poterium sanguisorba*.
- *Galium mollugo* is called *G. album*.
- *Saxifraga virginensis* and *S. pennsylvanica* are placed in *Micranthes* (same epithets).

As the three-volume “Michigan Flora” was, the one-volume “Field Manual of Michigan Flora” is the most useful book to identify vascular plants in southern and central Ontario. 🌱

Henry Kock: renowned naturalist of Guelph remembered in new species name

Victoria, B.C., artist Anne Hansen, who is well-known for her paintings of the black oystercatcher (a shorebird), has just purchased the scientific-naming rights of a newly discovered lichen, in honour of her late husband Henry Kock. He was a well-known horticulturist, who was dubbed "Mr. Arboretum" of the University of Guelph, where he worked for 20 years.

Mr. Kock died of brain cancer on December 25, 2005. He is remembered by gardeners, farmers, and naturalists for criss-crossing southern Ontario to give talks on habitat restoration, plant propagation and shelterbelt agriculture. He is the author of *Growing Trees from Seed* (Firefly Books Ltd., 2008). The book was finished by Kock's botanical colleagues Paul Aird, John Ambrose, and Gerald Waldron.

The species-naming rights were donated to Ancient Forest Alliance (www.ancientforestalliance.org) as a fundraiser by Trevor Goward, a lichen scientist at the University of British Columbia, who recently discovered what will now be called *Bryoria kockiana*.



Bloodroot, Elora Gorge, water soluble pastel, 2011. Patricia Murphy.



Asplenium scolopendrium (Hart's-tongue Fern). Photo: C. Cecile.

Donald Britton

Dr. Donald Britton, a long-time member of the Guelph Field Naturalists from near the beginning in the 1960s passed away on the 18th of May, 2012, at age 89. Dr. Britton was a strong supporter of the GFN, attended club meetings regularly and led many field outings, primarily looking for ferns.

Don Britton was a professor at the University of Guelph in the Botany and Genetics Department. His expertise was ferns and fern allies. He was the Canadian expert on the genus *Isoetes*. He co-authored the book *The Ferns and Fern Allies of Canada*, published in 1984. He mentored many of today's well known botanists. He was awarded the 2007 Goldie Award by the Field Botanists of Ontario for his outstanding contributions to botanical research. He was also a major contributor and driving force behind Flora of Wellington County. He was a botanist, scholar and gentleman.

FBO Constitution

A proposed revision to the FBO constitution will be published on our web site in the near future. It will be on the agenda for approval at the AGM.

If any member wishes to make comments or has questions prior to the AGM please email Bill Crowley at fisheye@eagle.ca