FIELD BOTANISTS of ONTARIO Newsletter

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Grass Pink (*Calopogon tuberosus*) Credit: D. Bree.

President's Message

The question which came to my mind as I wrote this note on the third last day of 2009 was whether I should write about the rapidly fading old year or the coming new year.

Since 2009 marked the 25th anniversary of the Field Botanists of Ontario, I thought a few words about our past are in order. As a relatively new member I can't say a great deal about our past, but judging by the health of our organization today, I think that we should recognize the foresight, dedication and hard work of our founding members and their successors in making the FBO the vibrant organization it is today.

Our 25th anniversary celebration at the Royal Botanical Gardens in April was very successful. We had first-class speakers who presented a wide range of topics. We also had displays showing where we have been and some may have given a hint about where we are going. In addition, we had a typical appetizing FBO luncheon. It was well-attended and certainly the largest gathering of members since I joined the FBO. The opportunity to meet and talk with so many members at one meeting was an unsung success of the celebration.

I went on several rewarding field trips during the past year and I have heard favourable reports about those which I wasn't able to attend. I thought that the Orillia Annual General Meeting was up to our usual high standards and I am grateful to Sarah for taking over all the early organization of the AGM from me when I was sidelined by health issues for almost two months and unable to plan and organize the AGM.

Now, a few words about 2010. Carol and Jim have retired as Field Trip Coordinators after a successful tour of duty. We thank them for a job well done. Our new field trip coordinator, Leah Lefler, is working on the 2010 field trip program, and our vice president, Gord Mitchener, has started to plan the 2010 AGM. There is a possibility that in view of the success on our celebration the board will plan an indoor meeting (much smaller than the celebration) for the spring starting in 2010 or 2011.

In closing, I wish all FBO members a Happy New Year and good botanizing in 2010.

Bill Crowley
President

Standard source for most scientific names and authorities of vascular plants:

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/org/fbo. Annual memberships are $15.00 for individuals and $18.00 for families.

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FIELD BOTANISTS of ONTARIO Newsletter

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

Field Trip Reports

Treasures of Port Franks
September 20, 2008

On a warm early fall morning near Port Franks, Dorothy and John Tiedje led FBOers into an unusual tract of the Lambton County Heritage Forest, consisting of extensive oak woodland surrounding a 200 metre wetland. There are no roads or trails but by crashing through the woods we eventually descended into an open sedge fen which has a small channel of open water in the middle. This is a most unusual wetland—it is a basin with no apparent inflow or outflow, the water arising solely from ground seepage and rainfall. Michael Oldham of the Natural Heritage Information Centre, in a paper written March 11, 1997, concluded that the fen was a unique feature in south-western Ontario.

At the edge of the open fen we observed a number of plant species typical of a boreal forest: Bearberry (*Arctostaphylos uva-ursi*), Bunchberry (*Cornus canadensis*), Showy Lady's Slipper (*Cypripedium reginae*), Goldthread (*Coptis trifolia*), Wintergreen (*Gaultheria procumbens*), Large Cranberry (*Vaccinium macrocarpon*), and Twinflower (*Linnaea borealis*), this last reminding Dorothy of a minuscule lamp post with twin lamps. Here we noted a bizarre juxtaposition—Tulip Trees (*Liriodendron tulipifera*) growing amongst this whole mixture of northern plants including mature Eastern White Cedar (*Thuja occidentalis*). On the forest floor we observed Bristle-leaved Sedge (*Carex eburnea*) which, according to Jane Bowles, you often find growing under cedars.

We had an interesting discussion about the distinction between "bogs" and "fens". The soil and water here are too neutral to be a bog and the species diversity is too rich—bogs generally support twelve or fewer vascular plant species. Tamarack (*Larix laricina*) and Slender Sedge (*Carex lasiocarpa*) both present, are fen indicators while Brown Peat Moss (*Sphagnum fuscum*) which was absent grows only in bogs with high acid conditions.

At the edge of the open water we tallied Round-leaved Sundew (*Drosera rotundifolia*), Buckbean (*Menyanthes trifoliata*) Pitcher Plant (*Sarracenia purpurea*), Flat-leaved Bladderwort (*Utricularia intermedia)*, Marsh St. John's Wort (*Triadenum fraseri*), Hoary Willow (*Salix candida*), Rush Aster (*Symphyotrichum borealie*), White Beak-rush (*Rhynchospora alba*) and Small's Spike-rush (*Eleocharis smallii*). Every one of the above plants is rare or uncommon in Lambton County. We also noted another interesting juxtaposition—Marsh Cinquefoil (*Potentilla palustris*) growing right beside its sibling Shrubby Cinquefoil (*Potentilla fruticosa*).

Top: Round-leaved Sundew (*Drosera rotundifolia*); Middle: Buckbean (*Menyanthes trifoliata*); Bottom Pitcher Plant (*Sarracenia purpurea*). Credit: C. Hendrickson

After lunch, Lynn Dukelow escorted us to Richmond Park, an open meadow featuring many Huron shore plants. This is a Great Lakes meadow marsh and as such is globally imperiled (G1). As we descended into the meadow from sand dunes we spotted Long-leaved Reed Grass (*Calamovilfa longifolia*), Indian Grass (*Sorghastrum nutans*), Little Bluestem (*Schizachyrium scoparium*), some very large Sand Cherry (*Prunus pumila*), Cylindric Blazing Star (*Liatris cylindracea*) and Kalm's St. John's Wort (*Hypericum kalmianum*). Sadly Scotch Pines (*Pinus sylvestris*) are invading the dunes while Eastern White Cedar (*Thuja occidentalis*) is invading the meadow.

For wildflower enthusiasts, meadow marshes in September can be one of the most delightful environments to explore. Asters and goldenrods are at their best along with a variety of prairie and wetland flowers. Photographers had a field day with Fringed Gentian (*Gentianopsis crinita*), some with huge flowers, Brook Lobelia (*Lobelia kalmii*), Grass-of-Parnassus (*Parnassia glauca*) and, perhaps my favourite, goldenrod—the deep gold large-flowered Ohio Goldenrod (*Solidago ohiensis*). Pride of place went to Bluehearts (*Buchnera americana*) S1. There were about 150 plants flourishing, some still in flower. In Ontario, this species is found only in three sites, all in Lambton County—here, Ipperwash and the Pinery. Typical graminoids included Twig-rush (*Cladium mariscoides*), Timothy Satin-grass (*Muhlenbergia glomerata*), Switch Grass (*Panicum virgatum*), Baltic Rush (*Juncus balticus*), Soft stem Bulrush (*Scirpus validus*) and Capillary Beaked-rush (*Rhynchospora capillacea*). Other "graminoid-mimics" were Marsh Arrow-grass (*Triglochin palustre*), Seaside Arrow-grass *(Triglochin maritimum),* False Asphodel *(Tofieldia glutinosa*) and Lyre-leaved Rock Cress (*Arabis lyrata*).

Around the corner was a large pond—a blocked-off channel of Ausable River, now called Old Mouth Lake. The water was so warm I was tempted to doff most garments and enjoy my last swim of the year. Along the shore we noted a variety of emergents including Tall Cord Grass (*Spartina pectinata*), Chairmaker's Rush (*Scirpus pungens*), Acuminate Panic Grass (*Panicum acuminatum*), Soft Rush (*Juncus effusus*) and Purple Gerardia (*Agalinis paupercula*; synonym *A. purpurea* var. *paupercula)*. The highlight was Low Nut-rush (*Scleria verticillata*) S2. Only about 10 cm high and right at the water's edge, the white nutlets of this sedge were distinctive. It was great to have experts with us to identify some of these difficult species.

Late in the afternoon, we sojourned to a grove of Dwarf Hackberries (*Celtis tenuifolia*) at a different site also owned by Lambton County Heritage Forest. I had seen this rare plant at Point Pelee and Pelee Island where they are scraggly shoreline shrubs. But here some of the specimens were mid-sized trees, causing several of us to assume they were Northern Hackberry (*Celtis occidentalis*), a species not known to occur here. These larger individuals had ridged trunks and flattened branches, the result of an infection. The path was covered with nutlets, but these failed the Hackberry (aka Sugarberry) taste test of having a thin sweet coating and a solid core. Instead the interior was hollow with many struts-a Hackberry gall, not the fruit. On the way out, we noted a large stand of Late Goldenrod (*Solidago gigantea*). These plants were smooth as silk, a key feature for this triple-nerved leaf Goldenrod.

Many thanks to John, Dorothy and Henry Tiedje, Lynn Dukelow and Nikki May for their meticulous preparation and enthusiastic leadership to some of the botanical treasures of Lambton County. Thanks also to Mike Oldham, Jane Bowles and Dorothy Tiedje for correcting some errors and updating the nomenclature.

George Bryant

The Falls Property

June 21, 2008

Bruce and Ann Falls warmly welcomed us to their 175 acre retreat southwest of Bancroft in northern Peterborough County, on the southern part of the Canadian Shield. The bedrock is metamorphic and includes layers of marble, which may help to explain the diversity of the flora. The property is composed of mixed forest cover, wetlands, hills, and bottomland of the Crowe River, which frequently floods in spring.

Irish immigrants came to this part of Ontario to settle in the new country. This particular property was farmed until 1918 so there has been plenty of time for the forest to re-grow. Tamaracks (*Larix laricina*) in particular are old and falling down. Forty years ago Bruce and Ann Falls obtained this property and built a cabin in this area of great diversity. Dr. Falls has an extensive herbarium of the 400 plant species found of their property. Sixty species of birds have been seen in the breeding season.

Bill Crins and Donald Sutherland were the leaders for this outing. We started the day walking along a wooded trail that once had been a logging road. Ferns were the main focus of the day and we saw twenty-eight species. The highlight for me was to find the Daisy-leaf Moonwort (*Botrychium matricariifolium)*. I was amazed that anyone could have noticed it as it was so tiny. We also found Cut-leaved Grape Fern (*Botrychium dissectum)* and one of its variations, var. *obliquum)*, which has less divided leaves. The more familiar Rattlesnake Fern (*Botrychium virginianum),* was the easiest for me to identify.

All the *Osmundas* were found: Cinnamon Fern (*O. cinnamomea*), Interrupted Fern (*O. claytoniana*) and Royal Fern (*O. regalis* var. *spectabilis*) as well as Ostrich Fern (*Matteuccia struthiopteris* var. *pensylvanica*). As I am a rank amateur it is always good for me to see the really familiar ferns. Four members of the *Dryopteris* genus were seen: Spinulose Wood Fern (*D. carthusiana*), Crested Wood Fern (*D. cristata*), Evergreen Wood Fern (*D. intermedia*) and Marginal Wood Fern (*D. marginalis*), and two of the *Cystopteris* genus: Bulblet Bladder Fern (*C. bulbifera*) and Brittle Fern (*C. fragilis*). Clubmoss (*Lycopodium* sp.) was frequently found including one covered with a slime mould.

The find of the day was the Braun's Holly Fern (*Polystichum*

braunii). It is in the same genus as Christmas Fern (*Polystichum acrostichoides).* This was found on the neighbour's bottomland. This is a rare occurrence for Southern Ontario but there may be others. Dr. Falls has counted 100 plants and there may be more. It is typically found north of Lake Superior.

Carex was also highlighted. My favourite was Golden-fruited Sedge (*Carex aurea)*. The perigynia are pale green when young and turn pumpkin orange in the fall like tiny soccer balls. Bladder Sedge (*Carex intumescens)*, and Graceful Sedge (*Carex gracillima)*, were both seen on a moist trail in the forest. Bladder Sedge has a looser head and a more broad leaf. Drooping Wood Sedge *(Carex arctata)* was identified; the staminate spikelet has male flowers only, in contrast with the Graceful Sedge (*Carex gracillima)* which has female flowers at the top, as well as male flowers below.

On the forest trail in a mixed forest area we saw Fibrous Rooted Sedge (*Carex communis)* and Peck's Sedge (*Carex peckii)*; these sedges are similar but the inflorescence of Peck's Sedge (*C. peckii)* is markedly more crowded and the leaves are narrower.

In the wetland area we noted Fringed Sedge (*Carex crinita)*, Tuckerman's Sedge (*Carex tuckermanii)* and Inflated Sedge *(Carex vesicaria)*. Tussock Sedge (*Carex stricta)* was also in the marshy area. The sheaths at the base of the stem are red and fibrillose.

The Falls property was a rich treasure trove for field botanists. There were deep woods with a stream winding through as well as cliffs with their unique habitat. I was pleased to see Spear Wild Licorice *(Galium lanceolatum)*. A couple of interesting fungi were seen. Eyelash Fungus, *Scutellinia scutellata* on a decaying log, tiny red discs with black "eyelashes" along the rim, and Dead Man's Fingers, *Xylaria polymorpha*

Our leaders Bill Crins and Doug Sutherland were very knowledgeable and shared their time and skills. We ended the day with the knowledge that there were many more plants to be seen and identified. We had experienced a wonderful day of botanical treasures. It would be wonderful to see the Falls property in another season as there were so many species of flowering plants yet to be seen.

Many thanks to Bill Draper for his notes and descriptions of the plants. Many thanks as well to Bruce and Ann Falls for graciously sharing their rich habitat.

Mary Marsh

Torrance Barrens

The Torrance Barrens Conservation Reserve, located southeast of Bala in the Township of Muskoka Lakes, offers hikers a landscape of exposed bedrock, various wetlands, small lakes and savanna-like oak openings. The Barrens remote location, open skyline and smooth granite surface also make it an ideal location for star gazing. The area of 1,906 hectares became protected first as a conservation reserve in 1997 and later as the world's first dark sky reserve in 2000 for astronomy.

On the 13th September, 2009 15 participants arrived at Torrance Barrens for a fieldtrip led by George Bryant to observe the flora that call this interesting place home. The day began gray and overcast but quickly cleared up as we arrived at the parking lot. According to George, Torrance Barrens is the best place in Ontario to view Atlantic Coastal Plain species, fall colours and just about everything else. We had five observation goals for the trip: Atlantic Coastal Plain species, Goldenrods, Asters, fauna and the fall colours of plants in the Barrens. Our trip was broken up into three segments: a trip into the Barrens west of Muskoka Road 13; a "forced march" along the northern trail of Torrance Barrens; then after lunch another march along the Barren's southern trail.

George began by giving an overview of events that have shaped the Barrens. Scour from glaciers and outflow from Lake Algonquin exposed bedrock throughout. More recently, logging for White Pine (*Pinus strobus*) in the 1920s deforested the area, while the brush piles that ensued led to forest fires that destroyed the region's soil. Gypsy Moths (*Lymantria dispar*) struck the region in the 1980s, killing many oaks (*Quercus* spp.) and creating standing dead trees along the trails. Presently, human activities are putting pressure on the Barrens again. Poaching of reptiles, especially snakes, is a growing problem and we came across several large rocks that looked as though they had been lifted up.

With a better understanding of the Barrens in our minds, we set out to explore the area for ourselves. Our first discoveries occurred as we crossed the road from the parking lot. George pointed out the tiny pink flowers of Branching Centaury (*Centaurium pulchellum*) growing beside the road amongst the yellow, flat-topped flower heads of Grass-leaved Goldenrod (*Euthamia graminifolia*), one-sided plumes of Gray-stemmed Goldenrod (*Solidago nemoralis* ssp. *nemoralis*) and pale-violet flowers of Purple-stem Aster (*Symphyotrichum puniceum* var. *puniceum*). Crossing the road, we came across the orchid Case's Ladies'-tresses (*Spiranthes casei*). George explained that Case's Ladies'-tresses differ from the more common Nodding Ladies'-tresses (*S. cernua*) by flowering earlier in the year with a spike of cream coloured flowers (rather than white flowers) that are half as small.

We left the road and walked along bedrock, passing clumps of Poverty Oat Grass (*Danthonia spicata*), Caribou Moss, Pin Cherry (*Prunus pensylvanica*), Common Juniper (*Juniperus communis*) and Red and White Oak (*Quercus rubra* and *Q. alba*).

... cont'd on p. 9

Lunch at the bridge on the Black River. Credit: A. Barbour

Exploring "The Land Between" with Dale Leadbeater

Our day began at Cooper's Falls, a settlement where one can practically stand with one foot in Simcoe County, the second in the Municipality of Muskoka, and a third (if that were possible) in the City of Kawartha Lakes. Nine FBO members and one guest met at the bell cairn on the Black River at 9am, where we learned that Emma and Thomas Cooper from England had been the main protagonists of this settlement. They and others had been given land locally in the mid 1800s on condition that they clear it for farming within a specified time limit. Little did they know that they were settling in the "Land Between", which conferred on them a great deal of barren habitat once the trees were gone, and a short growing season to boot. Some descendants of those early, hardworking pioneers still inhabit the area, and to their credit, a few of them still farm. Dale showed us maps of the City of Kawartha Lakes, explained about the geology and variety of habitats, and informed us that our destination would be locations in the City of Kawartha Lakes in the extreme northwest section of the Queen Elizabeth II Wildlands Park, one of the largest reserves in Ontario. Our trip would serve two purposes: to give participants a chance to experience a great fall day of "free" botanizing in "The Land Between" one of Ontario's biological hotspots; and to record plant species for the Kawartha Field Naturalists' project called CKL Flora (*see sidebar*).

Once carpooling had been established we drove east on Black River Road, skirting the winding river. The shoreline was often sandy, then granite bedrock would appear, reminding us of the extremely varied habitats in this area. As we drove, Dale pointed out Royal Fern (*Osmunda regalis* var. *spectabilis)* on the river side of the road and almost directly opposite on the other side of the road, the signature species of the Ontario barrens: Common Juniper (*Juniperus communis*), with Canada Yew (*Taxus canadensis*) visible as well.

At our first destination, we admired the Black River and its sandy banks while Dale told us about the huge population of First Nations peoples who lived in North America when the Europeans first arrived in the 14th century: over 40 million! These numbers were decimated by Hepatitis A and Smallpox. In this area, the First Nations had been cultivating the land, from the 12th to the 14th

centuries, using fire to clear it. Fire was good for hunting game and for maintaining their herbal and sacred plants. But because the land was so sandy with very little soil, the First Nations people would clear, stay for a few years and then move on. It also meant that when the European settlers came, they saw secondary growth of trees instead of first growth.

On that cue, we went to look at some trees. Large cathedral-like maples dominated a swamp that, now, in early September, was merely damp under our boots. Dale told us about the theory that the dear late Henry Kock, formerly known as "Mr. Arboretum", from University of Guelph had: that there are no native Silver Maples (*Acer saccharinum*) in Ontario. Some time ago, Henry, who was always paying attention to the habitats that trees preferred, noticed that so-called "Silver Maples" were growing in the lowlands as well as in much dryer uplands along with Red Oaks (*Quercus rubra)* and White Ash (*Fraxinus americana*). Since the Silver Maples were tolerating both habitats, Kock decided to look at them more closely. He began to notice that the ones up on dry land were slightly different from the ones down in the lowlands; and they were NOT Silver Maples. What Kock theorized was that Silver and Red Maples hybridized sometime while the glaciers covered Southern Ontario. The Red Maple (*Acer rubrum*) and this very prolific hybrid followed the glaciers back into Ontario, but the Silver Maples never came naturally. In modern times, true Silver Maples have been imported from Ohio and liberally planted; so Henry felt that Silver Maples are not native to Ontario at all.

Now the hybrid, named Freeman's Maple (*Acer x freemanii*) has tremendously high plasticity. It can look very much like Red Maple and then in other places it can look very much like Silver Maple. The difference is seen, however in the keys. "Comparison of the fruit size in the Red/Silver maples is the best way to distinguish Freeman's Maple from the two species." (Kock 2008) [1] The keys of Freeman's are intermediate between the small keys of Red Maple, and the large, woody keys of Silver Maple. Also, the keys of Silver Maple are straight, whereas the keys of Freeman's Maple are curved. Standing in the vernal pond far away from any part of civilization, Henry would have agreed that we were surrounded by Freeman's Maples. To be absolutely positive, purists might insist on a return in the spring to look at the keys. I'm game! Are you?

Where Dale goes, so goes her soil auger, since soil composition is such a key factor in determining the plant life of a habitat. Brian Barbour wielded the auger with expertise and laid out the soil for all of us to see and feel. Descriptions were noted and measurements were taken of A and B horizons. A GPS reading was taken and ground cover, shrub and canopy layers were noted. With botanists, that's not as easy as it sounds! Discussion ensued as to whether the St. John's-wort species *(Hypericum* sp.*)* was really Fraser's St. John's-wort *(Triadenum fraseri)* – it was decided that the plant in question *was T. fraseri*. With that, the botanists were let loose to explore and identify! These are some of the species they found and some of the identification tidbits: Black Ash (*Fraxinus nigra*), a swamp species that can also be used in basket-making; Swamp Candles (*Lysimachia terrestris)* have little wings in leaf axils; Northern Willow-herb *(Epilobium ciliatum* spp*. glandulosum)* has white hairs on its seeds; Northern Water Horehound (*Lycopus uniflorus*), Speckled Alder (*Alnus incana* ssp*. rugosa*), Water Avens (*Geum rivale*), and Northern Blue-Flag (*Iris versicolor)*.

While examining an elm, Bill Draper exclaimed: Slippery Elm (*Ulmus rubra*)! We gathered around Bill and he turned the leaf over, pointing out that when more than two of the side veins are branched, it is not White Elm (*Ulmus americana*), or Rock Elm (*Ulmus thomasii*), but Red Elm or Slippery Elm (*Ulmus rubra*). Another identifying feature is the colour of the layer close to the cambium, which was cut into very carefully to verify identification. White Elm has a diagnostic "oreo cookie" layering of dark, white, dark. Sarah Mainguy called it a layer cake where the middle layer is vanilla, hence the name "white" elm. (Stop thinking about lunch.) This tree had layering that had a dark centre. Also, the inner bark was mucilaginous, hence the common name "slippery" elm. Someone else mentioned that if you strip off the bark and soak it, then pound it, it can be used to make baskets. We learned quite a bit about this uncommon tree for Canada that Farrar[2] has a range far to the south of where we stood.

What sedge is this? Awl-fruited Sedge (*Carex stipata)* or the rare Smooth-sheathed Sedge (*Carex laevivaginata)*? Sarah explained to check the clasping sheath – if the sheath is wrinkly, it is *stipata*, if smooth, then *laevivaginata*. This one was wrinkly, and was soft below the floret, so *C. stipata* it is. Other graminoids discovered included Fringed Sedge (*Carex crinita)*, Tuckerman's Sedge (*Carex tuckermanii*) with its diagnostic notch on the achene; Bladder Sedge (*Carex intumescens*); Drooping Wood Sedge (*Carex arctata*); Filiform Rush (*Juncus filiformis*); Fowl Manna Grass (*Glyceria striata*), whose foliage is palatable to cattle, sheep, and horses, but is largely ignored by White-Tailed Deer; Canada Blue-joint (*Calamagrostis canadensis*), so valued as

Bill Draper demonstrates the difference between Red and White Elm (Ulmus rubra and U. americana). Credit: Anne Barbour

City of Kawartha Lakes (CKL) Flora

CKL Flora is a 5-year project that has been undertaken by the Kawartha Field Naturalists to identify the plants that grow or have been known to grow, in the City of Kawartha Lakes. Our goal is to publish the results as an annotated list and, eventually, a Plant-finder's Guide to the City of Kawartha Lakes.

Mike Oldham was the catalyst for our project when he made a presentation to the KFNC and told members that very little plant work in the way of exploration of habitats and collecting of specimens had been done in our City of Kawartha Lakes, formerly the County of Victoria; any effort put forth in this regard would be highly beneficial.

The data collected will form a base of information about the plants in each of the former townships of Victoria County. The surveys will concentrate on a balance of habitats in each township.

This baseline study will make it possible to measure possible changes in the local plant communities as a result of pressures such as introduced species, climate change and population growth.

The survey work will be supplemented by the collection and pressing of plant specimens to be housed at the Royal Ontario Museum Herbarium (TRT).

Paul Nichol, a biologist in Lindsay and owner of the computer database company, Ecosystems, will be setting up our database.

Existing records are scattered, but have begun to come in from Mike Oldham, Wasyl Bakowsky, and Burke Korol, Central Zone Ecologist for Ontario Parks.

A preliminary season of field work was carried out in 2008, where over a dozen outings to public and private properties resulted in inventories. That volunteer work allowed us to make a presentation to the Victoria Stewardship Council. Subsequently, the Council decided "to support this community project that will enhance stewardship of the City of Kawartha Lakes landscape and provide a base of information to build on in the future[1]" . A trial semester working with Sir Sanford Fleming College's Credit-for-Product program was ventured and may be pursued again in the future. The Credit-for-Product program teams up groups of students for a semester with an organization, business, government agency, etc. in order to give students hands-on experience in producing a practical product. For CKL Flora, this could be the production of maps, or fieldwork involving plants and soil samples.

Where FBO Members Come In

Perhaps some of you have records (sight and/or collection) from our city/county. Digital records would be preferable, but records in any format would be most appreciated. Perhaps some of you know landowners in our city whom you could approach to inventory their land or ask if we could. Perhaps you would like to help us with inventories of properties, either private or public. A variety of habitats are available. Although our amateur botanists are eager to botanize, a trained eye recognizes so much more.

If you will be botanizing in our city, check our website www.kawarthafieldnaturalists.org under Projects, CKL Flora for the Inventory Sheet created by Dale Leadbeater. It can be saved and printed off when needed for the field or completed on the computer and emailed to us. It is fairly self-explanatory, but a manual is also in progress. Contact can be made through the website or directly to anne.barbour@bell.net or Dale_Leadbeater@aecom.com . Waiting to hear from you!

Happy botanizing,

Anne Barbour, Chairman,
CKL Flora Project
Kawartha Field Naturalists

[1] *Doug van Hemessen, Stewardship Co-ordinator, Victoria*

fodder grass that it is still called "beaver-hay" by local farmers. Together with the sedges, it grows in meadows too wet for cultivation, hence another common name: marsh-hay. Finding Virginia Wild Rye *(Elymus virginicus* var. *virginicus)* was somewhat of a surprise because it is often found around the Great Lakes.

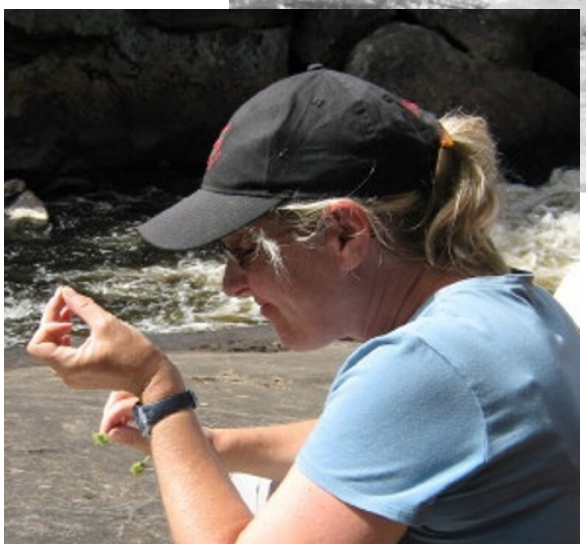
Moving to the upland deciduous forest, Bill pointed to Poison Ivy and said "Do you see what I see? It's not far up the tree, but it is climbing, with tendrils!" Who would have thought *Rhus radicans* ssp. *negundo* would be found so far north? A Beaked Hazel (*Corylus cornuta)* with next year's bud prompted the comment that it is one of the first things to bloom in the spring. The female flower is red.

Dewey's Sedge *(Carex deweyana)* and Long-stalked Sedge *(Carex pedunculata)* were noted. Leah handed me a lovely Graceful Sedge (*Carex gracillima*) which turned out to be Dale's favourite too. Fringed Brome *(Bromus ciliatus)* was examined with a hand lens for its soft hairs.

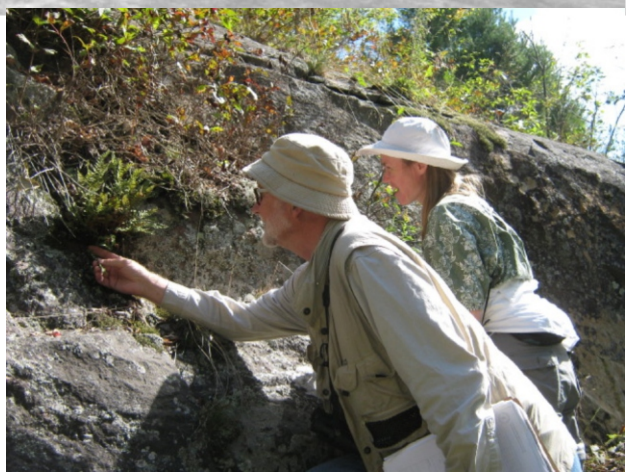
Both the Common Elderberry (*Sambucus canadensis*) and the Red-berried Elder (*Sambucus racemosa* spp. *pubens)* were found. Sarah explained that a good way to distinguish the two when there are no flowers or berries is by their pith colour: the former has white pith while the latter has brown pith. Downy Serviceberry (*Amelanchier arborea*) whose fruit "may be the best-kept secret in the woods" had no fruit – the critters beat us to them!

Ribes and *Rubus* – they will be the bane of me! Thanks to the

What little plant has caught Bill Draper's eye near the rapids? Credit: A. Barbour



Sarah Mainguy caught determining a *Carex*: is this perigynium broadly ellipsoid or not? Credit: A. Barbour



Bill Draper and Eleanor Thomson identifying Rusty Woodsia (*Woodsia ilvensis)*. Credit: A. Barbour

botanists, I can now recognize some differences: Wild Black Currant (*Ribes americanum)* has gold dots underneath the leaves, tends to have a squarish stem and has no prickles; Prickly Gooseberry (*Ribes cynosbati*) is well-named with 1 to 3 spines at the nodes; Swamp Red Currant (*Ribes triste*) has fat leaves that resemble Red Maple (*Acer rubrum*) leaves; Bristly Raspberry (*Rubus setosus*), whose canes do not root at the tip, has stems that are densely covered with fine bristles (which is what setose means!) while Wild Red Raspberry (*Rubus idaeus)*has leaflets that are long and pointy, almost featherlike, and bristles that are more hairlike.

There's a plumed goldenrod…is it possible to tell what it is? Sarah said to look for hairs at the base…yes! That means it is a Canada Goldenrod (*Solidago canadensis*).

Moving to the wet meadow, we found some asters. Calico Asters (*Symphyotrichum lateriflorum* var. *hirsuticaule)* were everywhere - we knew this because every time Bill saw one, he turned over a leaf. The reason for this exercise in repetitive strain injury was to find an Ontario Aster (*Symphyotrichum ontarionis* var. *ontarionis*). Bill told us that Calicos have hairs only on the mid-vein, whereas the entire underside of the Ontario is hairy.

Sarah explained about Swamp Aster (*Symphyotrichum puniceum* var. *firmum) vs*. New England Aster (*Symphyotrichum novae-angliae)*. They both have clasping leaves, but Swamp Asters are not as crowded and its flowers are a lighter shade of mauve. The stems of Swamp Aster are often purple-red, especially in the sun, but not when it's in the shade. We saw an example of both. Another difference: New England Aster has glands, so when you rub your hand over the stem it is very fragrant. Swamp Aster has no glands therefore it has no fragrance. Pointing to an aster with white

flowers, Sarah explained that Arrow-leaved Aster (*Symphyotrichum urophyllum*) is a very dense white aster that is not hairy.

Three Avens were found: Yellow Avens (*Geum aleppicum*), White Avens (*Geum canadense*), and the less common Rough Avens (*Geum laciniatum).* In a wetter part of the meadow, Arrow-leaved Tearthumb (*Polygonum sagittatum)*, Live Forever (*Sedum telephium)*, Marsh Purslane (*Ludwigia palustris),* and Large Cranberry (*Vaccinium macrocarpon*) were interesting discoveries.

Dale made sure that we had a gorgeous spot for lunch, at the bridge over Victoria Falls. Granite boulders provided our lunch table, and for those dedicated botanists, an identification site to continue their research. What could the plant be that has caught Bill's eye near the rapids? Don't fall in Bill! Up the bank, others rested in the shade at the intersection of the Ganaraska Trail, where numerous hikers were coming out, some after a two day hike.

Our group took the southern trail after lunch, but only as far as our time would allow. Being well aware of the pace of botanists, Dale gave the order that no one could be distracted and stop until we got to the marsh. So off we hiked at a brisk pace, botanists calling out their sightings that I recorded, often having to race to catch up.

We were hiking through a mixed forest and did break Dale's rule once. As she marched along, Eleanor Thomson was rattling off names, one of which was Nodding Trillium (*Trillium cernuum*) and I shouted "Nodding Trillium! Where? I've never seen one before!" So she retraced her steps and found again the plant that, even in September, had the recurved peduncle with seed pod bent down below the leaves. Dale checked Mike Oldham's list of Victoria County flora, and *Trillium cernuum* was NOT listed! Thanks to the FBO, a new plant for the City of Kawartha Lakes had just been found!

Once at the marsh, some of the plants we saw included Three-way Sedge (*Dulichium arundinaceum)*, Sweet Gale (*Myrica gale*), Winterberry *(Ilex verticillata), Fringed Bindweed (Polygonum cilinode)* and Mild Water Pepper (*Polygonum hydropiperoides)*, which several botanists tasted in order to identify it.

Back on the trail again, Eleanor found Northern Lady Fern (*Athyrium filix-femina* var. *angustum)*, which she explained can be recognized because "the lady" points her "toes" (bottom 2 pinnae point downwards), but doesn't shave her "legs" (stalk has dark brown hair-like scales near the base).

It wasn't long after that we reached the barrens habitat. Harebell (*Campanula rotundifolia*) gave us a small clue that we were close and the cliff confronting us, a much bigger one. Gordon had gone ahead to scout out a pathway up and pointed us in the right direction. On the way, a fern with short stiff fronds was spotted seeming to grow right out of the southwest facing granite wall next to the trail. Eleanor identified it as Rusty Woodsia (*Woodsia ilvensis)* by rubbing the stem and finding the joint where it breaks off easily. On checking Mike's list, we learned that *W. ilvensis* had already been found in Victoria County by Don Sutherland. I liked the sound of this fern's genus name "Woodsia" and later found that in 1810, Robert Brown had named it after the English botanist Joseph Woods[3]. Fern lovers probably know that ferns were very popular in the mid-19th century Victorian age; so much so, in fact that the craze developed into fern fever and came to be called Pteridomania. Rusty Woodsia (*Woodsia ilvensis)* was particularly hard-hit by collectors in the Moffat Hills of Scotland which used to have the most extensive populations in the United Kingdom; now, however there remain only a few small threatened colonies.

Up on the cliff, a blue line of paint on the granite marked a section of the Ganaraska Trail called to us… We viewed the marsh stretching out before us – oh to have a canoe! The explorations were limitless, but it was 3:30 p.m. and we were running out of time. Let's record what we can identify here before returning to our cars. To name a few: Swamp Dewberry (*Rubus hispidus*) crawled along the rock floor, Poverty Oat Grass (*Danthonia spicata*), Hairy Aster (*Symphyotrichum ciliolatum*), *Hedwigia ciliata,* a moss common on rock walls, Sweet Fern (*Comptonia peregrina*) which isn't a fern at all, but a shrub, Reindeer lichen (*Cladina* sp.); Wintergreen (*Gaultheria procumbens*), Broad-leaved Panic Grass (*Panicum latifolium*), Velvetleaf Blueberry (*Vaccinium myrtilloides*), Common Juniper and close by, its companion moss *Polytrichum juniperinum*, as well as *Polytrichum piliferum*, and Rock Spikemoss (*Selaginella rupestris*).

On the way back we spotted a lovely spray of Old Man's Beard, an apt name for Virgin's Bower (*Clematis virginiana*) where the flowers have gone to seed. Back at the cars, we relished the nearby habitats that we did not have the time to explore: a Buttonbush (*Cephalanthus occidentalis*) swamp and a bog, and contemplated returning at another time. Positive comments were made about the pleasures of free botanizing. Our tired but satisfied group said its good-byes and departed, some of us with long lists thanks to everyone's participation. To all of you in the group, this amateur botanist is especially grateful for sharing your knowledge and thrilling me with so many botanical lifers in one day!

[1] *Kock, Henry (2008).* Growing Trees from Seed*. Richmond Hill, ON: Firefly Books.*

[2] *Farrar, John Laird (1995).* Trees in Canada, Markham*, ON: Fitzhenry and Whiteside, p. 358.*

[3] *Owen Sound Field Naturalists (2005).* A Guide to the Ferns of Grey and Bruce Counties, Ontario*. Owen Sound, ON: Stan Brown Printers, p.81.*

North American Native Plant Society Speakers' Series 2010 to be held at the Toronto Botanical Garden 777 Lawrence Ave. Toronto at 7:30 PM cost $12.00 per talk for non members.

Feb. 17, 2010
"Tallgrass Prairie: One of Canada's Most Threatened Native Habitats - Alderville Savanah"
By Janine McLeod

... cont'd from p. 3

We were told that White Oaks are at the northern edge of their range in the Barrens, but are very important for wildlife as their acorns are more nutritious than those of Red Oak. Nearby, we saw a monoculture of Virginia Chain Fern (*Woodwardia virginica*), an Atlantic Coastal Plain species, with their characteristic dark stipes and sori in long chains. The air was filled with the smell of crushed Sweet Fern (*Comptonia peregrina*), while the white flowers of Upland White Goldenrod (*Solidago ptarmicoides*) swayed in the air like little clouds. Further along we noticed the large, smooth basal leaves of some Early Goldenrod (*Solidago juncea*) that had finished flowering.

We crossed the road again and began the second leg of our trip, a hike along one of the northern trails in the Barrens. So far we had not come across any signs of wildlife, however rounding the bend we found scat right on the trail. This was unfamiliar territory, however the berries and hair suggested that the scat may have been from a Coyote (*Canis latrans*) or Black Bear (*Ursus americanus*).

We continued hiking and reached our destination for the morning, a boardwalk across peat land; however we first waited for a group of mountain bikers to pass. Mountain biking in the barrens is a popular activity and several groups passed us as the day progressed. Searching in the water, George found a patch of Hidden-fruited Bladderwort (*Utricularia geminiscapa*), another Atlantic Coastal Plain species, and we peered closely at the tiny white fruits along the sacs. We continued to look along the peatland for signs of the Northern White-fringed Orchid (*Platanthera blephariglottis*) and Three-leaf Solomon's Seal-seal (*Maianthemum trifolium*), but only found traces of their foliage; neither plant was flowering. The peat lands were nevertheless a beautiful sight as I gazed at a sea of flowering Pitcher-plants (*Sarracenia purpurea*) poking up from a bed of Red Sphagnum.

It was now past noon, so we trekked back to the parking lot for lunch. As we walked, we came across a clump of Arrow-leaved Violets (*Viola sagittata*) growing among the bedrock. Their flowers were closed and we were told that they were cleistogamous, which is to say that these flowers self-pollinate and never open. Back at the parking lot we broke up into small groups to eat beside a small lake. Gazing around the lake, I noticed how open the skyline was and imagined visiting the Barrens at night to watch the stars.

George began pointing out plants right away once we finished lunch. Tiny patches of Three-toothed Cinquefoil (*Sibbaldiopsis* [formerly *Potentilla*] *tridentata*), a tiny, circumpolar evergreen shrub, were growing in the cracks of the bedrock where we ate. Leaving the lake we gazed out at the vibrant red fall colours of Tufted Loosestrife (*Lysimachia thyrsiflora*) as we headed towards the southern section of the trail. Hiking along, we passed Hairy Goldenrod (*Solidago hispida* var. *hispida)*, which differs from Gray-stemmed Goldenrod (*Solidago nemoralis* ssp. *nemoralis*) as its flowers are in small whorls and the plant is not nodding. We also observed two hawkweeds, Hairy Hawkweed and Canada Hawkweed (*Hieracium gronovii* and *H. canadense*). Both plants are hairy with yellow flowers; however the leaves of Hairy Hawkweed are entire while those of Canada Hawkweed are coarsely toothed.

A real treat however was finding Yellow Bartonia (*Bartonia virginica*), a tiny plant with yellow flowers and scale-like, paired leaves. George had us stay on the bedrock as he searched for the plant. Once it was found however, we realized that the plant was growing all around us.

Continuing on we passed through a small forest. Within we observed the large fronds of Interrupted Fern (*Osmunda claytoniana*), thick, shiny oval leaves of Bluebead Lily (*Clintonia borealis*) and pair of whorled leaves of Indian Cucumber-root (*Medeola virginiana*).

We stopped on the other side of the forest to rest at the top of a rocky hill and view the surrounding landscape. George explained the origin of the bedrock we were sitting on and the impact of the last glaciation on the topography as we looked at the mica, hornblende and quartz at our feet and gazed at the barrens stretching out before us.

Finishing our rest we walked to our destination along the southern section of the trail; a boardwalk across a wetland. Here we were delighted to find a baby Northern Watersnake (*Nerodia sipedon*) basking on the rocks by the water, as well as a Painted Turtle (*Chrysemys picta*) basking on a log. We let the reptiles return to sunbathing and resumed searching for plants. We noticed Buttonbush (*Cephalanthus occidentalis*) with its flowers in large spherical heads and Water Arum (*Calla palustris*) with its long-stalked heart-shaped leaves sticking out of the water. The star attraction however was another bladderwort, Purple Bladderwort (*Utricularia purpurea)*. It is one of the few bladderworts to have purple flowers and branches in whorls.

By now our trip was coming to a close. We bushwhacked out to the road to look for more Asters and Goldenrods as we returned to the parking lot. We were not disappointed, as we came across Rough Goldenrod (*Solidago rugosa*) with rough leaves and stem, Canada Goldenrod (*Solidago canadensis*), one of the three-veined goldenrods, and an aster, which we believed to be Calico Aster (*Symphyotrichum lateriflorum*).

After a pleasant day of hiking in the Barrens we returned to our vehicles where Bill Crowley and the other participants thanked George for a most interesting tour of Torrance Barrens. We observed a variety of Atlantic Coastal Plain species, including Virginia Chain Fern (*Woodwardia virginica*) and Hidden-fruited Bladderwort (*Utricularia geminiscapa*). We observed at least six Goldenrods and three Asters. We found a Painted Turtle (*Chrysemys picta*), a Watersnake (*Nerodia sipedon*) and evidence of a large mammal. Lastly, the various reds of Tufted Loosestrife, Pitcher-plants, and Red Sphagnum complemented the fall colours of the trees around us. As I got in my car to return home, I had to share George's enthusiasm for the site. Torrance Barrens is a beautiful place.

Simon Gräfe

Menzel Nature Reserve

July 5, 2009

On a beautiful summer day, sunny but not too hot, eight FBO members explored the Menzel Centennial Provincial Park, 17 km northwest of Napanee, guided by Todd Norris, Peterborough District biologist with the Ministry of Natural Resources. In his introduction, Todd said that about 20 years ago he visited the site, identified as an Area of Natural and Scientific Interest (ANSI), and proposed that it should be purchased. The opportunity to protect these lands attracted the interest of Dieter "Bill" Menzel, who made a substantial donation allowing Ontario Parks and the Nature Conservancy of Canada to acquire them, with support from other organizations, so that today over 8 square kilometers are protected. We went in, past a few Common Buckthorn (*Rhamnus cathartica*) trees which so far have not invaded the park's interior, to the start of Oivi's Nature Trail, paid for by an additional gift from Bill Menzel to honor his late wife Oivi (1941-1974). Eight numbered posts along this 1.7-kilometer long trail identify different ecosystems.

Post 1. The forest returns. In the southeast corner of the park, cleared by early settlers, shrubby vegetation is growing up in what is now an alvar. We saw Pennyroyals — Rough, American False, and False (*Hedeoma hispidum, H. pulegioides*, and *Trichostema brachiatum*); a thistle, probably Spiny Plumeless (*Carduus acanthoides*) which is not native; and rosettes of Early Saxifrage (*Saxifraga virginiensis*). Smooth Sumac (*Rhus glabra*) was in bloom, but we could not tell whether it had staminate and pistillate flowers on different bushes. We went back to the nature trail, where Narrow-leaved Vervain (*Verbena simplex*) was flowering, and continued along it past fruiting Lilacs (*Syringa* spp.) and a dead White Elm (*Ulmus americana*), which Todd said was alive two years ago; nearly all the plants here were of European origin, but a large Bur Oak (*Quercus macrocarpa*) was growing on the eastward slope.

Post 2. The wetland edge. We continued into a narrow belt of upland forest with deeper and wetter soils supporting Eastern White Cedar (*Thuja occidentalis*), Poplar *(Populus* sp.), Ash (*Fraxinus* sp.) and Tamarack (*Larix laricina*), going on down towards wetland, past a small pond on the right and the first of several prominent anthills some 30 cm high.

Post 3. Wooded wetland. Our journey into the wetland was very comfortable thanks to a fine boardwalk. From it we viewed Cinnamon, Royal, Marsh, and Sensitive Ferns (*Osmunda cinnamomea, O. regalis* var. *spectabilis, Thelypteris palustris* var. *pubescens,* and *Onoclea sensibilis*), Water Arum (*Calla palustris*) and Marsh Cinquefoil (*Potentilla palustris*) in bloom, fruiting Dwarf Raspberry (*Rubus pubescens*), Swamp Milkweed (*Asclepias incarnata* ssp. *incarnata*) in bud, Black Bulrush (*Scirpus atrovirens*) probably, and Water, Narrow-leaved Woolly, and Spiked Sedges (*Carex aquatilis, C. lasiocarpa,* and *C. stipata*), the last a fen species. We saw three orchids, a Yellow Lady's Slipper (*Cypripedium calceolus* variety indistinguishable) with a withered flower, also Loesel's Twayblade (*Liparis loeselii*) and White Adder's-mouth (*Malaxis monophyllos* ssp. *brachypoda*) in bloom. The wetland had several shrubby species; Todd pointed out their distinguishing features (admitting uncertainty in some identifications): Sweet Gale (*Myrica gale*), Dwarf Birch (*Betula pumila)*, Bebb's, Sage-leaved, Sandbar, Shining, and Blue-leaved Willows (*Salix bebbiana, S. candida, S. exigua, S. lucida,* and *S. myricoides*), and Winterberry (*Ilex verticillata*). A Wintergreen (*Gaultheria* sp.), Pink Pyrola (*Pyrola asarifolia*), seemed to be out of place. In more open places Common Reed (*Phragmites australis*) appeared; whether its origin was native or introduced was unknown, but it did not seem to be invasive enough to be a concern. An open wet area had Marsh Mermaid-weed (*Proserpinaca palustris*).

Post 4. Central upland. At the end of the boardwalk, we continued on the nature trail gently upwards through second-growth woods where Northern Maidenhair Fern (*Adiantum pedatum*) was prominent, and on into a

Rough Pennyroyal (*Hedeoma hispidum*). Credit: D. Bree

White Adder's-mouth (*Malaxis monophyllos* ssp. *brachypoda*). Credit: D. Bree

Foxglove Beard-tongue (*Penstemon digitalis*) Credit: Y. Bree

more open area with Foxglove Beard-tongue (*Penstemon digitalis*). Yellow and Pale Sedges (*Carex flava* and C. *pallescens*) were also pointed out.

Post 5. Flowering fields. The wood now gave way to a field, but one being invaded by Eastern Red Cedar (*Juniperus virginiana*); Todd raised the question of whether there should be intervention to prevent the natural succession occurring, in order to perpetuate this ecosystem. We paused to observe a crab spider eating a bee on the flower head of a Black-eyed Susan (*Rudbeckia hirta*). Climbing a small drumlin or moraine, we saw brilliant orange clumps of Butterfly Weed (*Asclepias tuberosa*), which Todd said was at the eastern limit of its range here, being commoner westward.

Post 6. Sand and gravel. The trail then descended, past a Golden-fruited Sedge (*Carex aurea*) with conspicuous orange perigynia looking like berries. It then approached a gravelly area not completely vegetated, but with plants of Upland White Goldenrod (*Solidago ptarmicoides*), not flowering, and with grasses Small Rush Grass and Poverty Dropseed (*Sporobolus neglectus* and *S. vaginiflorus*). We went off the trail eastwards by an old gravel pit, noticing a 30 cm stone overturned, presumably by a Black Bear looking for food. Our photographer and entomologist, David Bree, managed to capture a Dog-day Cicada (*Tibicen canicularis*) in a jar and show us its light sensors between its eyes; we were also impressed by how big it was.

Crossing the remnants of a stone wall, we came into a young wood with fruiting Wild Blue Phlox (*Phlox divaricata*) and Bishop's Cap (*Mitella diphylla*) showing conspicuous black seeds, and Wild Leek (*Allium tricoccum*) flowering stems in bud, the leaves having disappeared long before. We were shown Marginal Wood Fern (*Dryopteris marginalis*), grasses Long-awned Wood Grass (*Brachyelytrum erectum*), Wood Millet (*Milium effusum*), and False Melic (*Schizachne purpurascens*), and two Bedstraws, White Wild Licorice and Fragrant Bedstraw (*Galium circaezans* and *G. triflorum*). Snowberry (*Symphoricarpos albus*) was present, as it often is over shallow limestone bedrock. We continued over a carpet of Pennsylvania Sedge (*Carex pensylvanica*), serenaded by a White-throated Sparrow, into a savanna of Rock Elm (*Ulmus thomasii*), noticing its corky twigs; some elms were dying,

Clammy Ground-Cherry (*Physalis heterophylla*). Credit: D.Bree

and we discussed inconclusively whether this species too is susceptible to Dutch elm disease. At our feet were Poverty Oat Grass (*Danthonia spicata*) and Wild Basil (*Clinopodium vulgare*). From there we headed back west to the nature trail, which continued to descend northwards, with Common Milkweed (*Asclepias syriaca*), Indian Hemp (*Apocynum cannabinum*), and Staghorn Sumac (*Rhus typhina*) in view.

Post 7. Shrub fen. A second boardwalk has been built to take the nature trail across a fen, characterized as a wetland on muck soil receiving most of its moisture from groundwater. Bog plants were evident, including Sheathed and Thin-leaved Cottongrass (*Eriophorum vaginatum* ssp. *spissum* and *E. viridi-carinatum*), Softstem Bulrush (*Scirpus validus*), Common Bogbean (*Menyanthes trifoliata*) no longer blooming, Bog Rosemary (*Andromeda polifolia)*, Pitcher-plant (*Sarracenia purpurea*) without the maroon petals that would have been conspicuous a month earlier, and Shrubby Cinquefoil (*Potentilla fruticosa)*. The orchids promised in the write-up for this field trip were there in abundance, Grass Pink (*Calopogon tuberosus*) in spectacular numbers, and Rose Pogonia (*Pogonia ophioglossoides*), which needed more looking for before we saw it. Plants also found in other kinds of wetland were there too, including very slender Narrow-leaved Cattail (*Typha angustifolia*) and Spotted Joe-pye-weed (*Eupatorium maculatum*) in bud. Todd had done field work in the park often, and he stated that the water level fluctuates from year to year; this year the fen is quite wet, but in the mid-1990s it was much drier.

Post 8. Lakeside. The boardwalk ends as the nature trail rises into a wood where we were shown Fox Sedge (*Carex vulpinoidea*), Spikenard (*Aralia racemosa)*, and Clammy Ground-cherry (*Physalis heterophylla*). We went eastwards off the trail to where there were White Snakeroot (*Eupatorium rugosum*) not flowering yet, and Baneberries, the Red (*Actaea rubra*) definitely ripening red berries, but the White (*A. pachypoda*) with only 3 mm green fruits. Coming into a cedar wood, we saw Common Oak Fern and Rattlesnake Fern (*Gymnocarpium dryopteris* and *Botrychium virginianum*), and Helleborine (*Epipactis helleborine*) in bud. Back at the nature trail Blue Cohosh had still green berries; we were not concerned with the distinction *Caulophyllum giganteum* or *C. thalictroides*. Another few meters brought us to the terminus of Oivi's Nature Trail, the shore of Mud Lake, in which we saw large-leaved pondweeds (*Potamogeton* spp.). A picnic table was just big enough to accommodate the eight of us as we enjoyed our lunch, while an Osprey flew overhead, and a Common Loon called from somewhere on the lake.

Back at the park entrance at the end of the day, Todd Norris was duly thanked for leading us through a most interesting part of the park, carefully teaching us about the shrubs and graminoids characteristic of its ecosystems, while leaving the fun things like orchids for us to find. He mentioned that a population of the vulnerable Eastern Prairie Fringed Orchid (*Platanthera leucophaea* - S2) grows in its own secret place in the park where neither trail nor boardwalk intrudes. We had indeed benefited from Todd's detailed knowledge of the park's flora, gained from many years of inventory work. However, the existence of the park itself is due in large part to Todd's enthusiasm that helped persuade decision-makers and benefactors to establish and enlarge Menzel Centennial Provincial Park. By keeping it as a nature reserve, we Wise Humans (*Homo sapiens*) challenge evolution's drive to fill the biosphere completely with ourselves and the species we farm for our food, instead asserting that all have intrinsic value and need room to flourish.

Charles Chaffey

Bogging in Grey County

I've come to the conclusion that botanists are hardy people who don't mind getting wet and even falling through holes in bogs in pursuit of some unusual plant sightings. Sunday July 12, 2009 was a fabulous day to spend in soggy old bogs. To be more technically correct we spent the day at two different fens. A bog is only fed by rain water and these two fens are fed by spring water and/or streams. We had the opportunity for an interesting comparison of two different fens near Durham, in Grey County.

Wildwood Nature Sanctuary

The morning and lunch were spent at Walter Muma's 50 acre property. This private property has an interesting past life and 15 acres of it was farmed until two years ago. It includes a mix of a cedar swamp, cedar forest, spruce forest interspersed with aster and goldenrod-filled clearings, a sedgy sphagnum fen with a lake in the middle of the fen, a vernal stream leading out of it, hardwood mixed forest, fields of pioneer species on former farm fields, a sedgy meadow, and a White Pine plantation.

We started the day along a trail through a Eastern White Cedar (*Thuja occidentalis*) forest to the fen past Purple Stemmed Asters (*Symphyotrichum puniceum),* Rough Goldenrod (*Solidago rugosa*), Fox Sedge (*Carex vulpinoidea*), *Tortured Tortella Moss (Tortella tortuosa)*, Canada Mayflower (*Maianthemum canadense*), Field Horesetail (*Equisetum arvense)*, Royal Fern (*Osmunda regalis*), Bristle-leaved Sedge *(Carex eburnea)*, and little Common Blue Eyed Grass (*Sisyrinchium montanum*).

On the edge of the fen where it was more swampy we found Spotted Joe-pye-weed (*Eupatorium maculatum*), Yellow Sedge *(Carex flava)*, Bristly Sedge (*Carex comosa*), Common St. John's-wort (*Hypericum perforatum*), Common Arrowhead (*Sagittaria latifolia*), Swamp Milkweed (*Asclepias incarnata*), Northern Blue-flag (*Iris versicolor*), Marsh Fern (*Thelypteris palustris*), lots of Reed Canary Grass *(Phalaris arundinacea)*, Red-osier Dogwood (*Cornus stolonifera*), Black Bulrush (*Scirpus atrovirens)*, Hooded Skullcap (*Scutellaria galericulata),* Sensitive Fern (*Onoclea sensibilis*), Mountain Fly Honeysuckle (*Lonicera villosa*), Alder-leaved Buckthorn (*Rhamnus alnifolia*), and some shrubby willows (*Salix* spp.).

Once on the sphagnum fen there were a few shrubs and trees around the outer edge such as Tamarack (*Larix laricina*), Eastern White Cedar, Balsam Fir (*Abies balsamea*), Sheep Laurel (*Kalmia angustifolia*), and Shrubby Cinquefoil (*Potentilla fruticosa*). Towards the centre of the floating mat there was Narrow-leaved Wooly Sedge (*Carex lasiocarpa)* which was a dominant species, Round-leaved Sundew (*Drosera rotundifolia*), Pitcher-plants (*Sarracenia purpurea*) and Small and Large Cranberry (*Vaccinium oxycoccos* and *V. macrocarpon*). On little hummocks of sphagnum moss there were more Sheep Laurel shrubs, Bluebead Lily (*Clintonia borealis)*, Broad-leaved Cattail (*Typha latifolia*), Bog Rosemary (*Andromeda polifolia*), and Dwarf Raspberry (*Rubus pubescens*). Other interesting plants on the fen include: numerous Grass Pinks (*Calopogon tuberosus*), one of which was white in colour, Loesel's Twayblade (*Liparis loeselii*), three Showy Lady's Slipper (*Cypripedium reginae*) were hanging on in the middle of the fen, Marsh Goldenrod (*Solidago uliginosa*), Grass-of-parnassus (*Parnassia glauca*), and Tall White Bog Orchid (*Platanthera dilatata*). One sharp eyed botanist spotted three tiny Green Adder's-mouth (*Malaxis unifolia*) plants in the shade on the edge of a hummock. Around the edge of the lake there was a few Water Arum (*Calla palustris*).

On the way out of the fen we went back in the cedars through a different area where we found Goldthread (*Coptis trifolia* ssp. *groenlandica*), Pin Cushion Moss (*Leucobryum glaucum*), Crested Wood Fern (*Dryopteris cristata*), Marsh Bedstraw (*Galium palustre*), and a possible Merlin nest. Then we passed through the deciduous woods where we found Balsam Fir, White Ash (*Fraxinus americana*), White Spruce (*Picea* glauca), Sugar Maple (*Acer saccharum* ssp. *saccharum*), Trembling Aspen (*Populus tremuloides*), Balsam Poplar (*Populus balsamifera*), an extra tall Helleborine (*Epipactis helleborine*), False Solomon's Seal (*Maianthemum racemosum* ssp. *racemosum*), and Orange Hawkweed (*Hieracium aurantiacum*).

The first meadow at the back of the property had a lot of sedges of various species and various goldenrods which were hard to identify so early in the season. It also had a few Nannyberry bushes (*Viburnum lentago*), Red-osier Dogwood (*Cornus stolonifera*), Wool Grass (*Scirpus cyperinus*), Common Milkweed (*Asclepias syriaca*), Rough-stemmed Goldenrod (*Solidago rugosa*), Grass-leaved Goldenrod (*Euthamia graminifolia*), Tall Goldenrod (*Solidago altissima*), Thyme-leaved Sandwort (*Arenaria serpyllifolia*), and Tall Agrimony (*Agrimonia gryposepala*). From there we headed back out to our starting point through an Eastern White Pine (*Pinus strobus*) plantation where there wasn't much undergrowth but a few Pinesap (*Monotropa hypopithys*) and some Drooping Wood Sedge (*Carex arcta*a).

We enjoyed our lunches at Walter Muma's trailer and took advantage of his new out house. While we ate we watched a couple of ravens as they flew over playing on the wind.

Moss Lake ANSI

The second fen we went to was the Moss Lake ANSI (Area of Natural and Scientific Interest). It is bounded by mixed hardwood forests and a Red Pine (*Pinus resinosa*) plantation. The hardwood forest is rich in Sugar Maple (*Acer saccharum*), Yellow Birch (*Betula alleghaniensis*), Black Cherry (*Prunus serotina*), Balsam Fir (*Abies balsamea*), Hemlock (*Tsuga canadensis)* and White Birch (*Betula papyrifera*). The under story had a lot of Wild Red Raspberry (*Rubus idaeus)* in areas where there used to be a track through the forest, and the herbaceous layer had Bluebead Lily (*Clintonia borealis*), Shinleaf (*Pyrola elliptica*), Eastern Bracken Fern (*Pteridium aquilinum* var. *latiusculum*), Red Baneberry (*Actaea rubra*), White Baneberry (*Actaea pachypoda*), Rose Twisted Stalk (*Streptopus roseus*), Common Oak Fern (*Gymnocarpium dryopteris*), and Wild Sarsparilla (*Aralia nudicaulis)*. A Red-tailed Hawk was spotted here, possibly nesting, as it has been seen frequently.

In the moat around the fen there was some Northern Blue-flag (*Iris versicolor*), Water Arum (*Calla palustris*), Mud Sedge *(Carex limosa)* and Bulrushes. Once we had clambered on the makeshift bridge over the moat onto the fen we were on a quite different fen from the one we had been on in the morning, a very shrubby

sphagnum fen. The shrubs include: Leatherleaf (*Chamaedaphne calyculata*), Bog Laurel (*Kalmia polifolia*), Labrador Tea (*Ledum groenlandicum*), Velvetleaf Blueberry (*Vaccinium myrtilloides*), Bog Rosemary (*Andromeda polifolia)*, Winterberry (*Ilex verticillata*), and Mountain Holly (*Nemopanthus mucronata*). The trees on the fen were very typical: Black Spruce (*Picea mariana*), Tamarack (*Larix laricina*), but also several Red Maple (*Acer rubrum*). Amongst the spruce and tamarack in one area there were many leaves and one or two dried up flowers of Pink Moccasin Flower (*Cypripedium acaule*).

Three of the sphagnum species found were *Sphagnum warnstorfii, Sphagnum magellanicum* and *Sphagnum angustifolium*. Herbaceous plants on the floating mat included: Fringed Sedge *(Carex crinita*), Sheathed Cottongrass (*Eriophorum vaginatum*), and Three-leaved Solomon's Seal (*Maianthemum trifolium*). Common Bogbean (*Menyanthes trifoliata*), Northern Manna Grass (*Glyceria borealis*), Cinnamon Fern (*Osmunda cinnamomea*), the unusual chartreuse coloured Pitcher-plants, three extremely large flowered Rose Pogonia (*Pogonia ophioglossoides*), a few Grass Pinks, and many Northern White-fringed Orchids (*Platanthera blephariglottis* var. *blephariglottis)* mostly in tight bud. Five plants in the more sheltered locations had one to four flowers out at the base of the inflorescence. On the east side of the mat there is a channel into the middle of the fen where there is Moss Lake. On a tiny island in the channel there were three Ragged-fringed Orchids (*Platanthera lacera*) one of which was at least two feet tall.

On our way off the floating mat we noticed an Osprey carrying nesting material and that brought to an end our tour of two very different fens.

Kim Sayers

Fringed Sedge (Carex crinita). Credit: A. Barbour

Sedge Workshop at the Royal Botanical Gardens

Miss Natalie Iwanycki, esteemed Field Botanist and Herbarium Curator at the Royal Botanical Gardens, was our trip leader on that fine late spring day. The group, as some noticed, apart from a precious few senior members, was perhaps the youngest we have seen on FBO outings. This bodes well for the future of the organization.

The morning was spent in a classroom environment at the Nature Interpretive Centre. After introductions, Natalie gave an overview of graminoid families—grasses, sedges and rushes—and introduced the term *caricology*, as the study of one exclusive genus, *Carex*. She also told us of her update of a rather original, if sometimes written in light-hearted language, key to common sedges of Ontario by Natalie's predecessor, Carl Rothfels, *Esq*. (I guess, whoever is interested in an innovative approach to plant taxonomy, can ask Natalie personally for an emailed copy.)

Principal characteristics of sedges were then graphically presented and compared to the other two groups. As a reminder, sedges have three-ranked leaves, angular stems, flowers subtended by single scales and fruits (achenes) contained in the perigynium. *Carex* is the largest genus in the family Cyperaceae, which also includes, amongst several others, *Cyperus, Eleocharis, Eriophorum, Rhynchospora* and *Scirpus*.

Numerous taxonomic sources and help are available to those interested in the identification of sedges. Classics include keys such as Gleason and Cronquist (*Manual of Vascular Plants*), Fernald (*Gray's Manual of Botany*) and Voss (*Michigan Flora*). These days, it is also the Internet that has emerged as a valuable source of knowledge. In addition to major atlases, such *Flora of North America* website, there are virtual herbaria and a variety of interactive keys, some specific to Ontario sedges.

The group was then divided into three-person teams to practice a little botany on mounted specimens of sedges, grasses or rushes. After that, Natalie distributed a handful of various freshly collected materials to practice the key in *Michigan Flora*. Some of the specimens were from a deliciously confusing group which includes Stellate Sedge (*Carex rosea)* and Radiate Sedge (*Carex radiata)*, whose nomenclature varies depending on the key used. For example, Voss's *C. convoluta* is now *rosea*, and his *rosea* is now *radiata* (no more *convoluta*, please). According to the *Flora of North America*, and easy to remember in the field, Radiate Sedge (*Carex radiata)* has straight and thin stigmas, and Stellate Sedge (*Carex rosea)* has coiled and thick stigmas.

After lunch we headed to the Aviary on the south side of Coote's Paradise. The leisurely walk along a stream in great weather provided an opportunity to see many species in their natural habitat. Although the sedges were the main focus, other graminoids were also examined, for example the common Fowl Manna Grass (*Glyceria striata*) growing on the banks of the stream, with its characteristic leaves in two rows. At the toe of steep slope vegetation was lush and dense, with Skunk Cabbage (*Symplocarpus foetidus*), Fowl Blue Grass (*Poa palustris), Fox Sedge (Carex vulpinoidea),* Awl-fruited Sedge *(Carex stipata)* and

... cont'd on p. 16

Ilmari Talvila

It is with great sadness that I report the death of my father, Ilmari Talvila, on December 28, 2009 at the age of 81. He was a long-time member of the Field Botanists of Ontario and served as Treasurer from 1989 to 2000. I know he enjoyed fulfilling that role and liked his involvement with the FBO executive during those years.

My father was passionate about the natural world and had extremely broad and deep knowledge of its habitats and inhabitants, gained through both meticulous personal observation and extensive reading. Although he found all of nature fascinating and wonderful and was ever keen to see and learn more, his real life-long obsessions were for birds and botany.

His involvement with the FBO helped him explore the world of botany beyond his beloved garden. I particularly remember two things that captivated his interest, to which he was introduced through the FBO: the Carden Alvar and sedges *(Carex)*. After discovering the Carden Alvar on an FBO field trip, he later shared this interesting habitat with my mother and me on a family outing. I recall the Prairie Smoke (*Geum triflorum*) and white anemones *(Anemone* sp). in bloom, and a turtle crossing the road. Prior to that, sometime in the 1980s, there was the summer of sedges! He was all fired up about sedges after attending a *Carex* workshop. That was him: getting excited about learning the fine details of a subject.

My father was an avid gardener all his married life and took great delight in growing unusual and interesting things from seed. While others grow plants that provide great swaths of brilliant colour with showy flowers, more often than not the plants my father was most pleased with growing had insignificant but interesting flowers or magnificent seed pods or seeds.

Some of my happiest childhood memories are of my own apprenticeship as a naturalist, accompanying my father to nearby Lambton Woods, or tagging along with him on his walk about the cottage property during the first visit of the summer, to see what was new, what creatures were stirring, and check in on old favourites like the Cardinal Flower *(Lobelia cardinalis)* that poked up from a cleft in the pink granite shoreline. When my obsession with reptiles and amphibians struck, he indulged it by taking me to ponds all over southern Ontario. With me he shared his vast knowledge and passed on his great passion, and these have shaped my life to this day. I hope that some of you were also able to share the earth's delights with him during his lifetime.

With the assistance of the Senior Alumni Association at the University of Toronto, a scholarship or prize is being established in memory of Ilmari Talvila. For information about contributing, please contact the Senior Alumni at senior.alumni@utoronto.ca.

Thank-you,

Tuula Talvila

I first met Ilmari Talvila in March 1954. I was trudging up Cherry Street after failing to identify the confusing black and white ducks in Toronto Harbour. He drove by with a group of Toronto Junior Field Naturalists (TJFN), picked me up and told me what the ducks were. While I was already interested in birds, Ilmar, as we called him, was leader of the bird group of the TJFN and it was through him that I really got my start as a birdwatcher and naturalist. During the 50s and early 60s Ilmar was a mentor to several of us youngsters. He was very generous with his time, often loading us up in his car and taking us out to birding hotspots such as Rattray's Marsh, Frenchman's Bay or Long Point for the swan migration. My first trip to Point Pelee was with Ilmar—I was held in a constant state of excitement by the number of birds we saw.

Ilmar had a great love of nature—I recall his delight one April day when he recognized the song of a Ruby-crowned Kinglet after an absence of one year. He had a great sense of humour, always maintained a positive frame of mind and instilled a love of nature in his young charges.

Very few people have as strong a sense of volunteerism as Ilmar. In the 60s and 70s, he edited the *Newsletter of the Toronto Field Naturalists*; sometimes even from Vancouver when work took him there. He was active for many years in the University of Toronto alumni association including a term as President. When in the late 80s I joined the newly-formed Field Botanists of Ontario I was delighted to see he was a member and about to become Treasurer, a position he held for a dozen years. After a gap of several decades, it was a great pleasure for me to join Ilmar once again on field trips, the focus being now on wildflowers instead of birds.

Ilmar was an all round field naturalist, appreciating the study of low growing sedges equally with that of soaring hawks. He was also a keen gardener, specializing in esoteric annuals which he grew from seed. He had strong likes and dislikes in this field and with little provocation would readily express his contempt for *Impatiens*!

Ilmari died on December 28, 2009 at St. Joseph's Health Centre, Toronto at the age of 81.

Farewell and thank you!

George Bryant

Wardian Cases

W.D. McIlveen

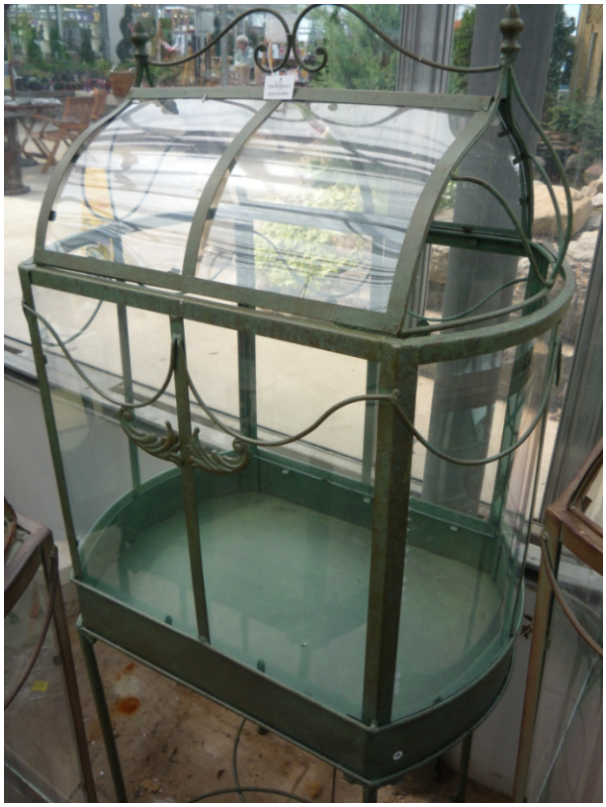
……The Fowls have been in it again last night and have done irreparable damages….

So it was that the naturalist Archibald Menzies found himself in an unfortunate situation on board the *Discovery* on November 18, 1793. He had run afoul of Captain George Vancouver, and as result of the perceived afront, had been effectively placed under house arrest in his cabin on the ship. The Captain would not speak to Menzies and as a result he had to communicate his complaints via writing. The note referred to the damage done by some sort of poultry being kept on the ship in respect to plants that Menzies was trying to transport back to Britain in plant-frames constructed on the quarterdeck. Although Menzies apparently ultimately settled the squabble by apologizing to Vancouver, the botanical mutilation in this instance had been done.

But (presumed) domesticated birds on decks of ships were not the only hazard that botanical specimens faced. Consider the whole practice of bringing back plants from farflung parts of the world to Europe. We know best the craze for collecting unusual specimens of plants and other natural objects that went on in some parts of wealthy society in England who demanded ever more exotic materials. Sometimes this was in the form of pressed specimens. The demand then extended to living material that could be grown in gardens or hot houses. Sometimes, the botanical pursuits were well-intended as part of true taxonomic studies, but was more often the demand was simply for bragging rights and the showing off some rare new specimens.

The result was that many young men were sent out by various botanical gardens, the Royal Horticultural Society, as well as by private nurseries to obtain many kinds of novel plant materials from across the globe. Many of these young men ran into many difficulties and many lost their lives in the process, but some were spectacularly successful too. Some well-known names among the successful were Carl Thunberg, David Douglas, William and Thomas Lobb, Robert Fortune, Richard Spruce and John Goldie.

Bringing back pressed specimens from far afield was relatively easy. Bringing back living material was quite another thing. When seeds could be obtained, this was the preferred means for bringing back the plant material. But not all plants produced the required seeds in quantities in the seasons when the travellers visited the sites or the seeds could be short-lived. The plants might also be brought back as tubers, roots, or corms. In some instances, plants established in pots could be obtained but their transport on the high seas presented considerable problems. At the time, the only means



A modern Wardian Case. Credit. W. McIlveen

of transport was on ships and the voyage might last for six months. Plants could be conveniently enough placed out on deck to get the needed light but they would be exposed to damaging sprays of salt water. The ships might encounter rather cold conditions as they rounded the Cape of Good Hope or Cape Horn. This was especially of concern for tropical plants such as orchids.

Once plants reached their destinations, the growing condition and cultural demands of the new plants might not be known. Knowledgeable gardeners might be able with luck or informed guesses how to get the plants started but they also faced another major challenge at the time. These were the years of the industrial revolution which not only provided money to purchase plants for the rich but also left the air heavily laden with soot and toxic sulphurous compounds. It was in this setting that the keen observations of one Dr. Nathaniel Bagshaw Ward led to the discovery of the item that forms the basis for the

present article.

Dr. Ward had two hobbies: one was the growing of ferns and the other was moths. He was aware of the problems caused by bad air and in 1829 noted that some fern spores germinated and grew well within a jar containing moist soil and the chrysalis of a sphinx moth he was raising. In the end, he described some of his follow-up experiments that showed that plants could grow well when they were kept in glass containers. He described his discoveries in an article "*On the Growth of Plants in Closely Glazed Cases"* published in 1842. Those containers expanded to larger and larger cases that we now recognize as terrariums. In their day, the terrariums were named after the man that discovered them and were referred to as "Wardian Cases". They became quite elaborate display pieces for the collectors.

Wardian Cases soon became known to the plant hunters or their benefactors. As a result, many new sensitive plants could be brought back to Europe. Joseph Dalton Hooker was one of the first plant explorers to use the new Wardian Cases when he shipped live plants back to England from New Zealand in 1841, during the pioneering voyage of HMS Erebus that circumnavigated Antarctica.

The cases also played a major role in a large way in certain agricultural industries. Robert Fortune shipped (or smuggled) some 20,000 tea plants out of Shanghai, China to British India in Wardian Cases. Without the cases, the short-lived seeds of the tea plant could not have reached their destination in Assam, India. Tea plantations were established at other locations around the world with the help of the Wardian Case. That included the establishment of a tea plantation northwest of Charleston, South Carolina in 1888. It operated as a major national producer of black tea until 1915 but labor costs made it unprofitable. In 1960, the plantation was purchased by the Lipton Tea Company. Lipton soon relocated it to a more suitable location on Wadmalaw Island, South Carolina where the 127 acre plantation still exists, the only functional, commercial tea plantation in the United States.

The Chinese banana, *Musa cavendishii,* was introduced to other parts of the world with the aid of Wardian Cases. After germination of imported seeds in the heated glasshouses of Kew, seedlings of the rubber tree of Brazil were successfully shipped to Ceylon (Sri Lanka) and the new British territories in Malaya to start the rubber plantations there. This was the basis of the British colonial rubber industry, an industry that figured significantly in the Allies' success in the Second World War.

To us, the development of a glass box that could act as a small greenhouse or insulator that could protect plants against environmental hardships seems like a rather simple thing to do. In hindsight, we might wonder why it took as long as it did to develop the technique. In the end though, this simple device resulted in unimagined major changes in the welfare of agriculture, horticulture, and that of the human species.

...cont'd from p. 13

Rough Sedge (*Carex scabrata)*. On that occasion Natalie explained the differences between three similarly looking species, Awl-fruited Sedge, Smooth-sheathed Sedge *(Carex laevivaginata)* and Brown-headed Fox Sedge *(Carex alopecoidea)*. The first and commonest, Awl-fruited Sedge, has characteristically wrinkled leaf sheaths on stem bases, Smooth-sheathed Sedge has smooth sheaths and no wrinkles, while Brown-headed Fox Sedge *(Carex alopecoidea)* has tear-shaped perigynia, abruptly contracted in a beak (rather than evenly tapered perigynia in the first two species).

A short distance further downstream, we saw the common Porcupine Sedge *(Carex hystericina)* with its long-peduncled and drooping female spikelets, prickly to the touch when squeezed. This species is a close relative of Cypress-like Sedge *(Carex pseudo-cyperus)* and Bristly Sedge *(Carex comosa)*, both much taller and more robust plants. A handy feature to tell them apart is the way the perigynium teeth spread out: almost parallel in Cypress-like Sedge, and strongly spreading in Bristly Sedge *(*Carex *comosa)*. (Mind you, *Carex comosa* is not a very common sedge.)

Up on a nearby wooded slope we found a sedge from the Laxiflorae group, Narrow-leaved Wood Sedge *(Carex digitalis)*. The grass species that was very common throughout the woods was the exotic Wood Blue Grass *(Poa nemoralis)*, a delicate plant but invasive all the same, and growing in natural forest habitats, not just some weedy and disturbed sites. In that same area we found live Radiate Sedge (*Carex radiata*(of the morning classroom workshop) and, growing in larger clumps, Fibrous Rooted Sedge (*Carex communis)*. The latter species, of the Montanae group, has pubescent perigynia and stems that are red at bases, and it tolerates a coniferous component such as Hemlock within the deciduous canopy.

An example of wide-leaved sedges was Broad-leaved Wood Sedge *(Carex platyphylla)*, with glaucous blades. Its relatives are Blunt-scaled Wood Sedge *(Carex albursina)*, non-glaucous and awnless scales and pale stem bases, and Plantain-leaved Sedge *(Carex plantaginea)*, with red bases and characteristic parallel venation on the evergreen leaves. Further along the way, we spotted Bur-reed Sedge *(Carex sparganioides)*, that Rothfels dubbed as "*Carex rosea* on steroids", indeed a giant compared to the delicate Stellate Sedge (*Carex rosea)*.

From the main trail we veered into a smaller trail that led us to the South Shore Trail. There, near the lake we saw a sedge from the Laxiflorae group; it was either Common Wood Sedge *(Carex blanda)*, Few-nerved Wood Sedge *(Carex leptonervia)* or Loose-flowered Sedge *(Carex laxiflora)*, difficult to ascertain without a close examination of their perigynia. Along the steep slope we found large colonies of, likely, Rough-clustered Sedge *(Carex cephaloidea)* (not to be confused with similarly sounding Oval-headed Sedge *(Carex cephalophora)* which has tight spikes in a small triangular cluster at stem ends). Finally, and at the end of our walk, Miss Natalie pointed to us Long-stalked Sedge *(Carex pedunculata)* with its deep green leaves, almost blunt at the tip, growing in clumps, a quintessential forest sedge.

And that was the end of that fine day, a trip enjoyed by everybody, for sure. We thanked Natalie for the opportunity to observe so many sedges in such wonderful natural surroundings, and her patience with us as she was assailed with incessant questions, like "what is it?", "how does it differ from…?", "why?", "what's in the name?", etc. By then, we were left on our own in the sedge world, trying to remember all the differences, nuances, and morphology and habitat details. Easy, that.

Christopher Zoladeski

Mr. M's Botanical Expedition to Labrador, 1892

Part one of an account of rare species, multi-dimensional portals and sundry perils as encountered by a company of early botanists in the wilds of Northern Canada.

Botanical fiction by Hans Rasmussen

I. On December 10, 1892, the Royal Botanical Society was set to meet at Oxford University. The members quietly discussed the arrival of the mysterious Mr. M who was new to the Society. Somewhat of an enigma, Mr. M was widely traveled although reclusive. He had been to America, and it was said had crossed Canada on foot. He had explored the grasslands of Patagonia, and had visited the tribes of Madagascar. A specialist in cycads and ferns, Mr. M was eagerly awaited.

The Board members sat in a stuffy room around an enormous oak table. A small coal stove kept the outside dampness at bay. The room was dimly but adequately lit with oil lamps. No one had yet met Mr. M in person, although many had corresponded with him.

When field trips and excursions were scheduled, Mr. M would go to these sites at a different time, and then send in his field notes and observations by courier. Obviously a learned botanist, he had a knack for finding obscure specimens. The exact location of these findings was meticulously recorded in the captions of maps he generated. The maps were drawn freehand but were incredibly accurate, as were his drawings.

Although virtually unknown in the literature, Mr. M had made one appearance at a meeting in Guelph, Canada, where he described in great detail the variability in the Ebony Spleenwort (*Asplenium platyneuron*) that was leading to speciation in the north. His notes on some *Dryopteris* and *Pteridium* were not well received. Apparently the Guelph settlers were so astonished and frightened by his appearance that he was heckled and escorted out of town. The last public sighting of Mr. M was said to be in 1883, when he attended a mycological conference in Berlin.

A thin wispy man entered, wearing an Inuit fringed hood and full outergear, which he did not remove. Small beady eyes darted back and forth behind a pannose moustache. If the hat had been taken off, the surprised onlookers would have been able to see slightly acuminate ears, with their raspy crinkly margins. His skin also appeared unusual, somewhat rugose, almost toadlike, but it was difficult to discern in the dim light. He handed a thick leatherclad volume to a Dr. Ophs, a mediocre scientist with heavy eyebrows, and a longstanding officer of the organization. The volume was obviously ancient, and heavily water stained. The contents were a series of botanical plates of specimens collected in the remote vastness of northern Canada. Many were new to science, and the onlookers gasped. Several conversations broke out at once.

Mr. M hazarded a quick smile, exposing a huge set of oddly shaped teeth seen only by Dr. Ophs. Decidedly unusual, thought Dr. Ophs. The teeth were almost obcordate, but with decidedly uncinate distal ends. Normal teeth would be described as "not as above". He could hear the lively discussion surrounding the specimens, whether or not the leaf surface was hispidulous or minutely pilose, and whether or not another leaf was actually verrucose, and this conversation was fading into the background because right here, before our very eyes, is a man with decidedly sulcate teeth of an unusual colour. He realized that the specimens new to science also included the botanist, but made no sign to reveal his thoughts.

Hesitant to cause any offense, Dr. Ophs maintained a polite conversation with Mr. M about the origin of the specimens, as if absolutely nothing were out of the ordinary.

Mr. M started to regale him about his experiences in the Northwest Territories, where giant bears stalked his expedition, and swarms of insects caused the men to wear hoods over their heads and faces. Perhaps he had been injured in a bear attack or some other gruesome accident. Dr. Ophs then realized it may have been the work of the tribes of Madagascar, if he had been imprisoned, or perhaps party to a ceremonial ritual. He decided that the best policy was to say nothing, but to engage in lively conversation to learn more about Mr. M.

Mr. M was in fact a fascinating character. A raconteur, full of graphic descriptions of faraway lands, dense impenetrable thickets, bloodsucking insects, glaciers that fringed the edges of alpine meadows, fearsome creatures and harrowing escapes, he soon had the entire room at rapt attention."Perhaps you are wondering why I am here today". The only sounds were the faint hissing of oil lamps along the far wall. "We are at the very beginning of a very dangerous time in history. A time of mass extinctions. Those around this table are some of the few that are in a position to make a difference. It is no accident that I have been invited here at this time." The others wondered how and why he actually had been invited, and now that it was brought up, it was peculiar. There had to be someone involved in the initial clandestine communications, but who? All had assumed that someone else knew, but it was unclear who the hidden contact was. In fact, no one was aware of the secret nature of the

communication. A mole within the Royal Society? Preposterous. “A subcommittee will be formed, I can assure you, in order to investigate this” thought Professor Eriopoides to himself. But who would be chosen to be on it? And who would be doing the choosing? A curious affair, but one that had to be addressed.

These speculations soon became overshadowed by the grave nature of Mr. M's concerns.

“Several trends have become obvious, but only to those that spend their lives out on botanical survey or on expeditions, especially in the polar regions. The influence of human activities in the atmosphere are changing the entire planet. The natural botanical world can now only be observed in the most remote regions, while the world disturbed by human activity has become so common that it is viewed as the normal state of things. Consider the dandelion, the white carrot, the plantain, the chicory, these were heretofore unknown in the New World, and now infest every roadside. Forests are being cleared as if there is no end to them. The land itself is being transformed …this cannot continue without consequences. ” The others waited for him to continue. “If left unchecked, I predict changes that cannot be corrected.” With that statement, he abruptly picked up his heavy willow staff and prepared to leave, although it was clear that more needed to be said.

A general clamour arose, with the entire membership on their feet all asking questions at once. Dr. Amundsen, a pathologist, was particularly curious. Pathologists as a rule are a quirky and eccentric lot, even more so than the average botanist. For example, the anthracnose fungus which causes the black leaf spot on maples was cleverly named “black spot”. The brown rot fungus that causes brown rot on plums is known as “brown rot”. An insect that bores a hole is technically referred to as a borer. A rusty coloured fungus that is found on leaves is called rust, and so on. A complex nomenclature reflecting a dry sense of humour. Pathology humour.

Amundsen wanted to know why the boreal zones were of such significance. “After all, most of Canada is a trackless wasteland, or so it is said, and having never been there, I haven't any idea of its relevance”. Amundsen could get right to the point. “Only a fool would comment on something about which he knows nothing, and I appreciate your openness on this matter.” replied Mr. M. “Precisely the reason why I am here. I have seen these areas, but most people have only preconceived notions about them. These notions are far from the truth, in fact, they aren't even close to the truth, to what's really out there. I propose an expedition.Then there would be others aside from myself that can bear witness to the anomalies found there. An expedition to cross these regions on foot, comprised of scientists such as yourselves to provide documentation, through hostile territories, under the most severe of physical and psychological conditions.”

He went on to explain, “What you will find is unbelievable. It's not at all what you may think. There are portals that lead to other spaces in time. They are located in narrow canyons in areas that are otherwise flat and featureless. Within these gullies, even the climate is different. There are paths that lead farther into these zones, where I collected the specimens you have before you. Since there is no link to the present day, it is difficult to determine which year you may be in. One can get a general idea by the flora and fauna, but it is only vague. It is clear, however, that one can journey back several thousand years b[illegible]e presence of now extinct creatures, as well as forwards into much more hideous [illegible]t on [illegible]s can

Annual General Meeting field trip to Torrance Barrens Provincial Conservation Reserve, September 13, 2009. Credit: Z. Zichmanis