

S P R I N G 2 0 1 2

# FIELD BOTANISTS OF ONTARIO NEWSLETTER

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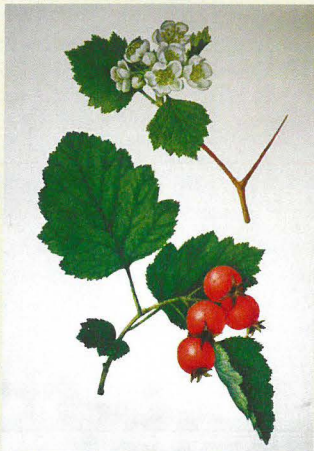
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# President's Message

As I write this note we are just entering the third week of April. I had a look in my garden and found Prairie Buttercup in full bloom, which is two or three weeks earlier than usual. However, Prairie Buttercup is a little unpredictable. A few years ago we had a warm spell and I took a Prairie Buttercup flower to the local field naturalists meeting on the last Friday of January. Today, I also noted that Golden Corydalis are in bud. Larry Lebert advised me that he saw Lakeside Daisy in bud at an alvar on the Bruce Peninsula a week ago. It looks like an early season but, in the end, I hope events will return to their normal schedule.

By now, you have no doubt received the Field Trip program. There are a number of locations which we haven't visited before: Navy Island sounds interesting - I understand that it was botanized by several of the early botanists. We have also included a few locations which are in, or almost in, Toronto. Sometimes, I think people fail to look close to home and miss visiting places which should be seen. In my opinion, High Park is a gem and, while I haven't been to Humber College in many years, I suspect that the Arboretum has developed very well. I wish to thank Leah and Sarah for their hard work in preparing an excellent Field Trip program.

The AGM will be held at Elbow Lake, north of Kingston. This is Frontenac Arch country where a finger of the Canadian Shield stretches southward into the limestone zone. Thus, we will see an interesting mix of southern and northern botany. I hope to see the elusive (to me) Pitch Pine which grows in the area, at its northern limit.

In the near future a draft revised constitution will be published on our web site. There are a few items in the constitution which are badly out of date. Please read the proposed revision so we can discuss it at the AGM. Feel free to email me with your comments or questions.

My field season is going to be somewhat limited this year. I have been threatening to tour the north shore of Lake Superior for the past five or six years and have not made it. But this, I have decided, is the year. The plan is to make it all the way to Lakehead but, I understand that there are a number of possible obstructions between Sault Ste. Marie and Lakehead, so I may not make it to my final destination.

A good summer to all.

Bill

## On the cover:

The expanse of Cape Croker Alvar. Insets: Object of admiration - Gattinger's Agalinis (*Agalinis gallingeri*); FBO contingent. Photos: Bill Thompson.

A perfectly aligned Sparrow Lake armada under the command of Skipper Crins (second from right, front row). Photo: Dirk Janas.

Sidebar artwork: Downy Hawthorn (*Crataegus mollis*).

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

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

Membership forms can be found on the FBO website:

[www.trentu.ca/fbo](http://www.trentu.ca/fbo)

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

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# Field Trip Reports

## Sparrow Lake's Underwater Treasures

11 September 2010

Brian Miller

We began the day at the Franklin Park boat launch on the east shore of Sparrow Lake, a 6.5 km long lake located approximately 8 km south of Gravenhurst. It was here that the group unloaded their canoes and kayak and met our trip leader, botanist Bill Crins of the Ministry of Natural Resources. Bill began by explaining the botanical significance and history of the lake. Sparrow Lake is the richest known lake in Ontario for aquatics due its location at the southern edge of the Canadian Shield and the influence of the Severn River, which is its main inlet and outlet. These features create a mixture of aquatic conditions that support both acidophilic (common on the Shield) and calciphilic plants (common off the Shield). Some areas of the lake (e.g. McLean Bay at the north end) contained extensive beds of Wild Rice (*Zizania palustris*) in the recent past, but these populations have declined.

Our first area of investigation was the shoreline next to the boat launch. Growing in the moist sandy lawn were two attractive little species of *Cyperus* (Flat, Umbrella or Nut Sedges): *C. bipartitus* (Shining Flat Sedge) and *C. diandrus* (Low Umbrella Sedge). Bill explained that *C. bipartitus* is a common beach species that may be found in disturbed weedy areas, while *C. diandrus* is much less common and is generally restricted to higher quality non-weedy habitats. Both species have similar shaped flattened spikelets, but the scales of *C. bipartitus* are shiny, reddish-brown and have a pale green edge, while the scales of *C. diandrus* are usually paler throughout. More characteristic of *C. diandrus* are its persistent styles that are deeply cleft and extend beyond the scales giving the spikelets a fuzzy appearance. *C. bipartitus* has deciduous styles that are not as deeply cleft and spikelets that are much less fuzzy in appearance. In the same location, we observed two other *Cyperus*: *C. esculentus* (Yellow Nutsedge) and *C. strigosus* (Staw-coloured Flat Sedge). *C. esculentus* has smaller scales and long thin rhizomes that contain tubers, while *C. strigosus* usually has larger scales with a larger overall inflorescence and lacks long thin rhizomes and tubers. Bill added a surprising note about *C. esculentus*: it is considered one

the worst weeds in the world because of the significant reduction in crop yields it causes in tropical areas.

Next, we looked at a sizable specimen of *Echinochloa pungens* (a native Barnyard Grass) with deep purple spikelets. Bill mentioned that as a rule of thumb, specimens with the deep purple colour are usually native *Echinochloa* and that a more definitive method is to open the spikelets and examine the lemma. The lemma of the non-native *E. crus-galli* has a wrinkled tip, while the lemma of the native *E. pungens* is smooth and shiny.

Two other species observed on land were *Polygonum lapathifolium*, which lacks bristles on the ocrea, and an unusual looking *Lycopus*. Bill pointed out that the specimen in question was the non-native *Lycopus europaeus* (European Bugleweed) or a possible hybrid between *L. europaeus* and the native *L. uniflorus* (Northern Bugleweed). A key feature of *L. europaeus* is the impressed venation on the upper surface of its leaves.

From here, we got in our canoes and headed out onto the water paddling south along the east shore of the lake, and staying in water shallow enough to support aquatic plants (generally up to 2 metres deep). We immediately found aquatic plants and would

*Cyperus diandrus* (left) vs. *Cyperus bipartitus* (right). Photo: D. Janas.



continue to find numerous species throughout the trip, including many from the large and tricky genus *Potamogeton* (Pondweeds). Bill went over some general vegetative characteristics that are necessary to examine when identifying *Potamogeton* in the field. These include the overall size of the plant (robust vs. small), stipule size and shape and whether or not the stipules are fused to the leaf, presence of floating leaves and presence of leaf petioles. He recommended that looking for floating-leaved

*Potamogeton* is best beginning in mid-July and acknowledged that the narrow-leaved *Potamogeton* provide the greatest identification challenges. We first observed *P. illinoensis*, which has large stipules and leaf tips that extend into a stiff point. Next was *P. richardsonii*, a robust submergent that has sessile leaves, and *P. praelongus* with its “huge” stipules and sessile leaves that have boat-shaped tips. We observed the variable *P. gramineus* which has floating leaves that are broader than its submersed leaves, as well as the common *P. natans* with its characteristic kinked or bent petiole. Other *Potamogeton* observed on the trip were the common submergent *P. pectinatus* (Sago Pondweed), which has recently been renamed *Stuckenia pectinata*. The final *Potamogeton* observed was also a submergent - *P. robbinsii*. This species has alternating linear leaves that have a prominent midvein and are arranged similar to that of a palm frond.

Other aquatics observed included water milfoils (*Myriophyllum* spp.) and *Vallisneria americana* (Tape Grass or Wild Celery), with its long and characteristic spiral peduncle, cylindrical fruit and three-stripped ribbon-like leaves. Bill explained that milfoils are easily separated from two other submergents (Coontail and Bladderworts) that also have slender thread-like leaves. Milfoil leaves are whorled and pinnately divided, while Coontail (*Ceratophyllum demersum*) leaves are dichotomously branched, also in whorls and have sharp teeth. The leaves of Bladderworts (*Utricularia* spp.) are not in whorls and are irregularly and alternately branched. He also went over the best method to distinguish between two similar milfoils: The common and native *Myriophyllum sibiricum* and the aggressive Eurasian species *M. spicatum*. *M. sibiricum* generally has 5 to 10 leaf segments per side of the leaf axis, while *M. spicatum* has 13 to 20 leaf segments on each side. This is best observed on well developed leaves.

Nearing the midway point of our trip, we pulled into a shallow bay where we observed the diminutive *Eleocharis acicularis* (Needle Spike-rush) growing abundantly and completely submerged in the very shallow water (less than 30 cm) near the sandy shore. Bill commented that this is the smallest of our *Eleocharis* species. A little farther, south of the bay, we landed our boats at a rocky and sandy section of shore to check out an unexpected and delightful patch of tallgrass prairie. This feature was very small and did not extend beyond the narrow shore. Several characteristic species, such as three large prairie grasses, as well as other species more loosely associated with prairies were present. Plant species observed growing here included:

*Andropogon gerardii* (Big Bluestem)  
*Apocynum cannabinum* (Indian Hemp)  
*Desmodium canadense* (Showy Tick-trefoil)  
*Desmodium paniculatum* (Panicked Tick-trefoil)  
*Doellingeria umbellata* (Flat-topped White Aster)  
*Euthamia graminifolia* (Grass-leaved Goldenrod)  
*Muhlenbergia* cf. *frondosa* (Satin Grass)  
*Pycnanthemum virginianum* (Mountain-mint)  
*Rubus flagellaris* (Northern Dewberry)  
*Solidago juncea* (Early Goldenrod)  
*Solidago rugosa* (Rough Goldenrod)  
*Sorghastrum nutans* (Indian Grass)  
*Spartina pectinata* (Tall Cord Grass)

From this location, we got back in our canoes and began paddling back to our starting location at Franklin Park. Additional aquatics observed along the way were *Elodea canadensis* (Broad Waterweed), which has leaves that are wider, but shorter in length than the less common *E. nuttallii* (Slender Waterweed). We observed another native submergent, the common *Najas flexilis* (Slender Naiad), which can be readily separated from the exotic *N. minor* (Brittle Naiad) by the size of the teeth on the leaf margins. *N. flexilis* has tiny teeth along its leaf margins, while the leaves of *N. minor* have larger teeth that are clearly visible. The final aquatic that we observed for the day was *Armoracia lacustris* (Lake Cress), an uncommon aquatic mustard that typically has submerged leaves that are very finely divided and emergent leaves that are broad and toothed.

When we got to shore, the group was thankful to Bill for sharing his expert knowledge on the subject of aquatics and about other plants encountered during the trip. Much was learned from Bill’s clear and practical plant descriptions. 🌿

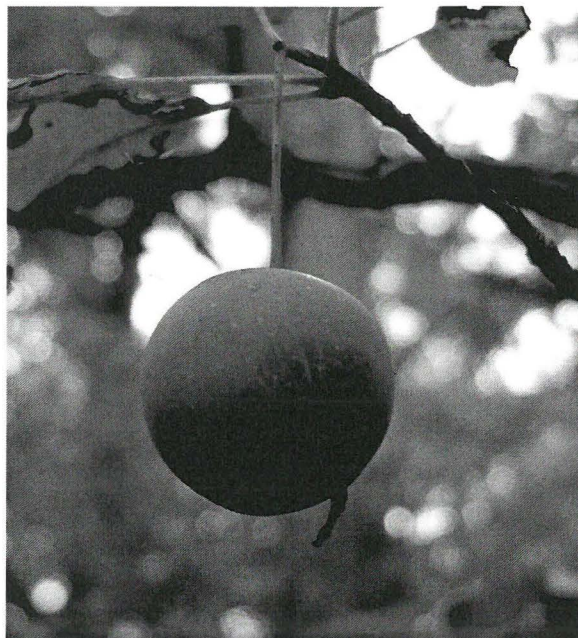
## Mary Gartshore Presents

11 September 2011

Christoph Zoladeski

For this trip, your correspondent had to undergo an astounding apparel transformation to align himself with the “standard” FBO garb for such occasions. The (2-piece) suit and tie, not to mention the walking stick, of the previous evening were exchanged for rubber boots, dirtyish jeans, a shirt of equally questionable cleanliness and a hat that had been subjected to rain innumerable times, but never to soap. In light drizzle, the group assembled in the parking lot at the hotel where we had held the AGM. Mary Gartshore, the “Native Plant Girl” and trip leader, arrived just seconds past 9 o’clock. Being so well known, she did not have to introduce herself, instead, simply outlined the plans for the day. We would visit three areas of the Haldimand Clay Plain: Selkirk Provincial Park on Lake Erie’s shoreline, Oriskany Sandstone and Ruthven Historic Park, the latter combining botanical and cultural elements.

We convoyed to Selkirk where we parked at the gate.



*Malus coronaria* pome. Photo: A. Dean.



*Solidago bicolor*. Photo: P. Patel.

The park was closed for the season but, as botanists, we assumed we were not excessively trespassing. The Wheeler's Walk Trail led us, unhurriedly, first through great deciduous woods and then to the Spring Creek marsh. A missed highlight was Willdenow's Sedge (*Carex willdenowii*), a true S1 rarity, which was reported from the forest but at this late time of the year virtually unrecognizable. The hickory-oak community, though, supplied other species aplenty: Downy Arrow-wood (*Viburnum rafinesquianum*), abundant in the shrub understorey; Golden Alexanders (*Zizia aurea*); a beautiful, old specimen of Narrow-leaved Crabapple (*Malus coronaria*), with its peeling bark and laden with waxy-green fruits; Early Goldenrod (*Solidago juncea*), now almost finished for the year; Smooth Blue Aster (*Aster laevis*); and the common Large-leaved Aster (*Aster macrophyllus*).

On the slope near the bridge, where a patch of oak savanna used to occur, we saw several White Goldenrod (*Solidago bicolor*) stems, somewhat struggling under the dense tree canopy of the arrow-wood, which overtook the site due to lack of burns. Mary told us that New Jersey Tea (*Ceanothus americanus*) and Neglected Milkvetch (*Astragalus neglectus*) used to grow here in better times.

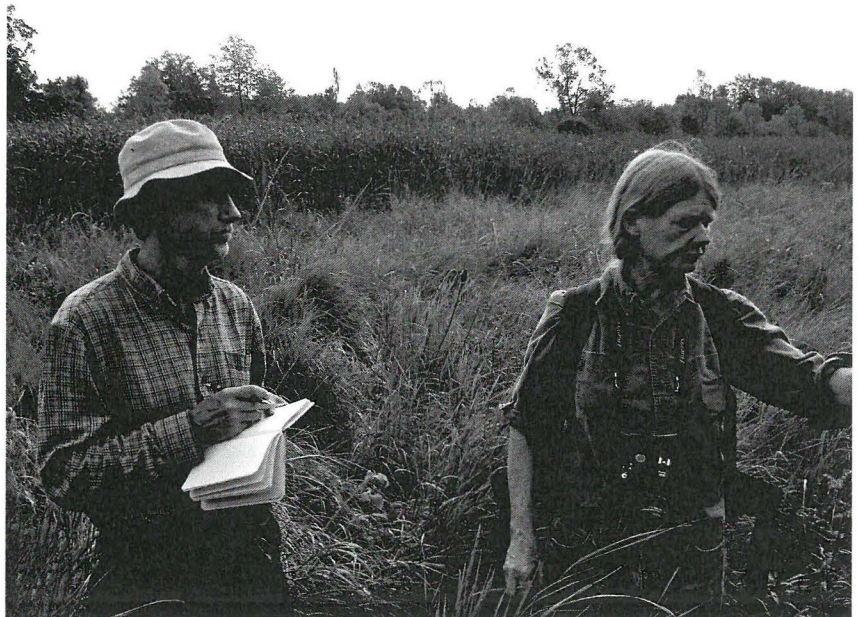
The bridge across the creek was under repair so we carefully walked on the sometimes loosely-fastened boards to stop in the middle to get the best view of the Glaucous or hybrid Cattail (*Typha x glauca*) marsh. There, Mary pointed to us a tussock of Southern Wild-rice (*Zizania aquatica*), 6-feet tall and growing in a strip of mud at the edge of cattail on the creek's shore. Drier areas away from the channel where cattail was sparser, less robust plants managed to live, such as Hedge Bindweed (*Calystegia sepium*) and Arrow-leaved Tearthumb (*Polygonum sagittatum*).

Back on firm ground but following the valley, just inside the woods, Mary pointed to us a fine specimen of Pignut Hickory (*Carya glabra*), a rare tree of S3 rating. She described the characteristics of the fruits, being pear-shaped, cleanly splitting open right down to the base to expose flattish nuts. The non-native Guelder Rose (*Viburnum opulus*) was found in vicinity, from my experience much more common in southern Ontario than the native High Bush Cranberry (*V. trilobum*). The two are rather tricky to tell apart and one has to compare the shape of glands on tops of the petioles: concave in *opulus* or flat to convex in *trilobum*.

We walked over a short boardwalk which straddled a wet spot, then through a few strips of coniferous plantations of White Pine (*Pinus strobus*), and back to the edge of the marsh, all this to see a small population of Great St. John's-wort (*Hypericum ascyron*). For most of us this was a first sighting of this species, so many photographs were taken. The plants were by now in fruit, and it would have been a real treat to see them in the summer displaying their large yellow flowers.

After Selkirk, we drove to the second location, which was an opening amongst dry woods, where flat Ordovician sandstones came to the surface. This and many other areas in vicinity have long been quarried and vestiges of first primitive pits could be seen (some holes contained water and even had frogs living in these tiny ecosystems!). The open space encouraged us to disperse with each person or group searching for something interesting. Bats who inhabit the Oriskany area could not be seen, of course, but we were hoping to spot a snake or two basking in the sun, as the weather by then much improved.

Scattered throughout this dry, demanding habitat, was Swamp (what a misnomer) or Carolina Rose (*Rosa carolina*). It could be recognized by its very thorny short stems and dark-green shiny leaves. Together with it we saw numerous Intermediate Bush-clover (*Lespedeza intermedia*), many still bearing flowers. Early



Chris Zoladeski monitors the activity of Mary Gartshore. Photo: M.McMurtry.

Saxifrage (*Saxifraga virginiensis*), persisting as leaf rosettes only, impossibly grew in hardly any soil at all within shallow flat depressions on the sandstone, which flood in the spring. Ebony Spleenwort (*Asplenium platyneuron*) was common a short distance away, under light cover of oaks and maples. To top up the list, we saw two Smilax species: the Bristly Greenbrier (*Smilax hispida*) and, burdened with heavy fruit clusters, Herbaceous Carrion Flower (*Smilax herbacea*). Finally, there was a small patch of Velvet-leaf Blueberry (*Vaccinium myrtilloides*), a southern locality of this classic small shrub of the Boreal Forest.

For late lunch we drove to our last stop, Ruthven Manor, just north of the town of Cayuga. Mary described the history of the place while we sat at picnic tables in a beautiful park on the high banks of Grand River. Now, we only had one more interesting plant to see: Black Cohosh (*Actaea* or *Cimicifuga racemosa*). There it grew, on the upper slope of the valley under the canopy of Bitternut Hickory (*Carya cordiformis*) and Black Walnut (*Juglans nigra*), several plants now bearing fruits.

As we stood there, talking about this and that, not ready yet to separate, a thunder was heard in a distance: a clear reminder of the long afternoon coming to a close. It was indeed getting late and many had a long drive home, so we had to say goodbye to each other. In lieu of flowers, Mary was cordially thanked for a wonderful outing. We can only hope now that the Native Plant Girl will lead more FBO trips in the future. 🌱

## Cape Croker plants - the Finnish connection

13 August 2011

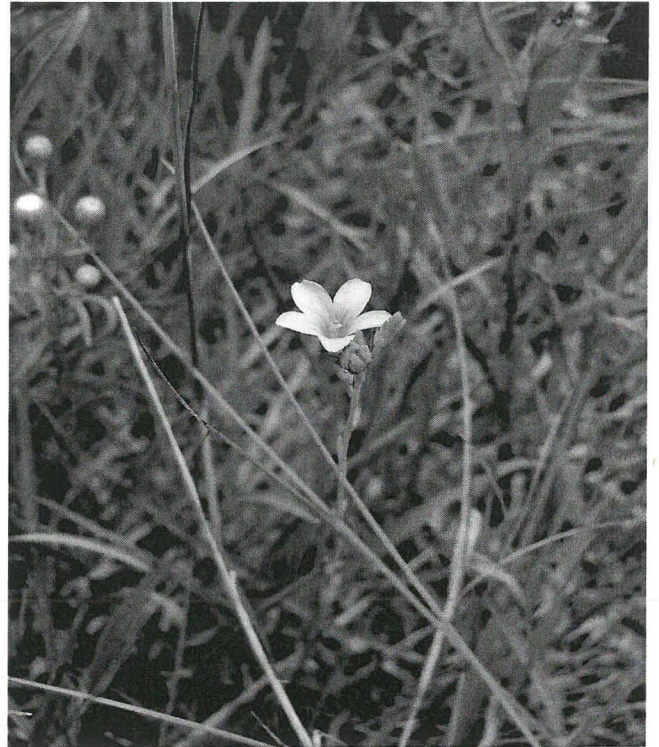
**Bill Thompson**

This trip to the Prairie Point Alvar on Cape Croker had everything I love about FBO outings – a knowledgeable leader showing us rare species in a rare ecosystem, things that I might not otherwise have a chance to visit.

The trip, to a large grassland alvar owned by the Chippewas of Nawash First Nation, was led by Jarmo Jalava and Tony Chegahno who have been monitoring the site for several years, developing species at risk inventories, and managing some of the problems on the property.

In the 1990s, the Chippewas were considering developing this site as a major community centre, which would have included pow-wow grounds, band office and a school. Given the significance of the site though, they decided instead to relocate those facilities, and set aside the 350 acres as a protected area. As a land-poor First Nation, this was a far-sighted position to take, especially since the importance of alvar communities was then only starting to come into public knowledge.

Alvars are rare (typically G2) communities, found only on shallow soil sites underlain by alkaline bedrock. They are usually



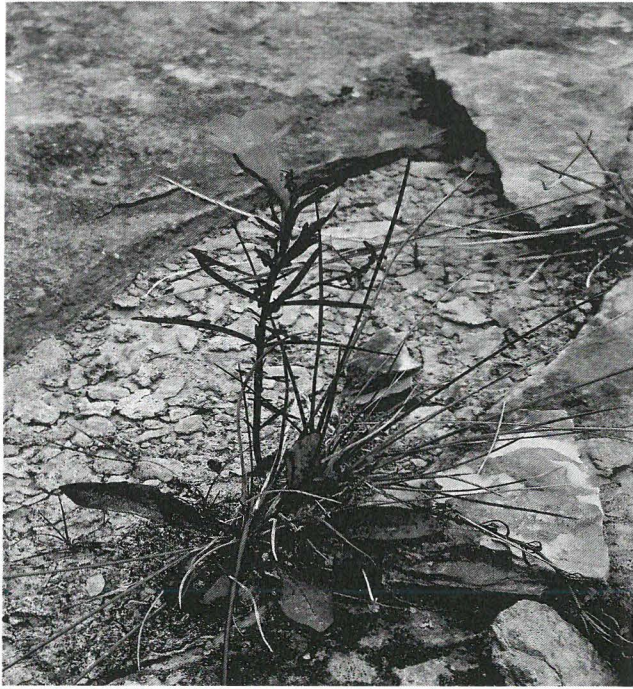
*Linum sulcatum*. Photo: B. Thompson.

flat and poorly drained, the conditions that cause them to be both very wet in the spring and very dry and hot in the summer. As very few plants are able to tolerate these extremes, alvars are well known to the field botanist as excellent sites to see rare plants.

The Prairie Point Alvar is one of the largest and most significant examples on the Bruce Peninsula and, perhaps because of the relatively deep soil, and position on the east side of the peninsula, it displays some characteristics more common to the Carden area than to other Bruce Peninsula alvars. The Prairie Point Alvar is a grassland, not a pavement, alvar, and is locally known as the “prairie”. It seemed though, as we got closer to the lake, the soil got thinner, and a more classical pavement alvar appeared.

The deeper soil also allowed for a greater range in soil moisture conditions, with drier areas dominated by a community of Northern Dropseed (*Sporobolus heterolepis*), Little Bluestem (*Schizachyrium scoparium*), and Flat-stemmed Spike-rush (*Eleocharis compressa*), and a Tufted Hairgrass (*Deschampsia cespitosa*) community dominating in wetter sites. In even wetter spots, such as cracks in the limestone, wetland species such as Softstem Bulrush (*Schoenoplectus tabernaemontani*), Lake Sedge (*Carex aquatilis*), and Swamp Milkweed (*Asclepias incarnata*) became common.

Unfortunately, the deeper soil of this alvar may also make it more vulnerable to invasions by weeds. It was obvious from where we started our hike that White Sweet Clover (*Melilotus alba*) had gotten well established there. Jarmo, Tony, and others from the community have been actively hand-pulling, and they showed us an area where it had effectively been eradicated. Given the size of the property though, the manual



*Agalinis paupercula*. Photo: B. Thompson.

labour needed to continue eradication efforts is pretty daunting, so they are considering the value of conducting a prescribed burn as another way to control this weed.

The superstars of the day were Grooved Yellow Flax (*Linum sulcatum*), an S3 plant, and Gattinger's Agalinis (*Agalinis gattingeri*), an S2 species listed as Endangered under Ontario's Endangered Species Act. These rare alvar forbs are monitored annually by Jarmo and Tony, and their populations seem to vary significantly from year to year. In some years there are thousands flowering, and in some years just handfuls. We thought we were in for one of the latter on our visit; in their scoping of the site the day before, Tony and Jarmo were only able to find one flowering example of each. By the time we got to that location though, others quickly became evident. Both flowers must have bloomed overnight, because, by the time we had finished our hike, we had seen several dozen *Agalinis*, and probably over 100 of the delicate *Linum*.

Gattinger's *Agalinis* is a small delicate plant with a pale purple flower, and a very rare find. Most recorded populations of this species in Canada are in little bluestem-dominated alvars on First Nations land, in very isolated populations. Along the shore, Jarmo pointed out the more common Small-flowered *Agalinis* (*Agalinis paupercula*), and noted the differences between the species. Although the two are quite similar in overall morphology, the Small-flowered *Agalinis* is slightly stouter of the two, and has a deeper purple flower.

In addition to the typical alvar plants, this FBO trip was also a good place to see asters and goldenrods. Some of the species we saw were Lance-leaved Aster (*Symphotrichum lanceolatum*), Upland White Goldenrod (*Solidago ptarmicoides*), Grass-leaved Goldenrod (*Euthamia graminifolia*), Bog Goldenrod (*Solidago uliginosa*), Grey Goldenrod (*Solidago nemoralis*) and Ohio Goldenrod (*Solidago ohioensis*).

Other interesting species we saw on this trip included: Fragrant Sumac (*Rhus aromatica*), which is relatively common in Carden, but rare on the Bruce Peninsula, one lone Indian Paintbrush (*Castilleja coccinea*), Cooper's Milkvetch (*Astragalus neglectus*) an S3 plant, Crawe's Sedge (*Carex crawei*), a sedge that's typical of grassland alvars, and Kalm's St. John's-Wort (*Hypericum kalmianum*), a Great Lakes endemic, named after Pehr Kalm, the Finnish botanist who explored eastern North America in the mid 1700s and, apparently, a distant ancestor of Jarmo Jalava!

In the afternoon, we went to the Cape Croker lighthouse, a southern enclave of forest plants, and a climb up a steep hill, which was a good workout after lunch. Interesting species we saw on the top of the hill included Wild Coffee (*Triosteum aurantiacum*), Wood Millet (*Milium effusum*), and Smith's Melic Grass (*Melica smithii*), a cordilleran disjunct. One species we didn't find, but hoped to, was Putty-root (*Aplectrum hyemale*), another S2 species. As this species is relatively inconspicuous, but evergreen, it is best to search for it during the fall or winter, when there isn't as many other green species getting in the way.

All in all, this was a very interesting trip, and an excellent way to end another summer of FBO trips. Thanks to Tony, Jarmo, and the FBO executive for arranging this trip. 🌱



Plant love triangle: Jalava-Zoladeski-Dean. (The body on the left belongs to Dr. Peter Beckett.) Photo: B. Thompson.

## Hunting thorny beauties in Middlesex County

24 September 2011

**Bill Moses**

On September 24th, 2011, sixteen participants enjoyed an FBO hawthorn field trip led by Dr. James Phipps. We travelled throughout northern Middlesex County stopping at several pre-selected sites to see various species of hawthorn.



Dr. Phipps demonstrates how easy it is to identify hawthorns. Photo: B. Moses.

We thoroughly lucked out with the weather. After enduring dire forecasts about the possibility of rain for the weekend, Saturday turned out to be a beautiful sunny day. We met at the Lucan Foodland parking lot and carpooled from there.

The list of different hawthorns we saw would make most people's eyes glaze over. Looking at the pictures of the trip (accessible at <https://picasaweb.google.com/bill.mosesos/2011hawthornFieldTrip>), the hawthorns are the trees and shrubs without leaves. Well, it wasn't quite that bad. However, conditions were far from ideal. Still, our fearless leader did not throw up his hands in despair. Rather, he worked tirelessly with what nature gave him and was eminently able to provide the group with a very worthwhile experience. There were no complaints.

Dr. Phipps impressed upon us that rather than trying to identify a particular hawthorn, we should first study how hawthorns differ from each other. Assigning a scientific name to a plant could come later.

Speaking only for myself, I came away from the day feeling that learning how to identify hawthorns was doable. (I am a volunteer for the Inglis Falls Arboretum where we are currently assembling a collection of the woody plants of Grey

and Bruce Counties. In our local vascular plant checklist 16 species of hawthorn are recorded. I am now looking forward to seeking them out.)

Of course, there were a few distractions from the hawthorns. One revolved around the seemingly perennial discussion about how to reliably ID Tall Goldenrod (*Solidago altissima*). Some consensus seemed to revolve around the need to examine the phyllaries. At this point, I should plug a book produced by the Owen Sound Field Naturalists, "The Asters, Fleabanes and Goldenrods of Bruce and Grey Counties", where that process is well described. (This book would surely be useful for the whole of Ontario, as well.)

Moving on, we saw several wild crabapple plants (*Malus coronaria*), Ontario's only native *Malus* species. This was a first for me. We stumbled upon a very small marijuana patch (*Cannabis sativa*), which appeared to only be geared to someone's personal supply.

David pointed out an Amethyst Aster (*Symphyotrichum x amethystinum*) which is a hybrid between New England Aster (*Symphyotrichum novae-angliae*) and Heath Aster (*Symphyotrichum ericoides*). This was especially striking because all three plants were in the same location and all were at their flowering peak.

Naturally, having a group of people standing on a rural roadside attracts attention. One car, in particular, stopped and asked us what we were doing. "Looking at hawthorns." "Hawthorns! Why are you doing that?" Explanation given. "Hawthorns are no good for anything. We just cut them down." After a spirited defence of hawthorns with each fact followed by a "we just cut them down" mantra-like reply, both sides gave up. This brings up the point that, in some quarters, hawthorns get no respect. I was reminded of another field trip led by a retired forester. As he walked down a hedgerow



naming the various species, he skipped over a hawthorn. When questioned he said, "We don't talk about them."

Dr. Phipps, on the other hand, ended the day reminding us that, in his view, hawthorns, as well as being an interesting botanical challenge, are also a thing of beauty and for us to be mindful of that aspect when in the field.

As shadows started to fall, nine of the group met for dinner at the Four Seasons Restaurant on the outskirts of London. In conclusion, it is not often that an amateur like myself is afforded the opportunity to attend an event such as this. It was a day that I will not soon forget. ✱

## *Botanical roots*

### *Early botany in Ontario: evidence from Quaternary deposits in the Don Valley, Toronto*

*W.D. McIlveen*

Opportunities to examine the ancient flora of Ontario are extremely limited, especially when one considers that the entire province was covered by a deep layer of ice until about 12,000 years before present. The extensive glaciers wiped out most traces of earlier vegetation as they moved across the landscape. Yet, we do have a few sites where remnants of the previous vegetation cover can be found. One of these is the Scarborough Bluffs and, more notably, the interglacial deposits at the Don Valley Brickyard site in Toronto. The following account is a summary of the unique window that we have on the ancient flora of Ontario.

The situation with respect to the various deposits present in the Don River valley, particularly those laid down during the last great period of glaciation, is rather complex with several different formations having been created [Eyles, 2002]. The sequence of events is simplified here. The bedrock at the Don Brickyard site is Georgian Bay Shale originally deposited as sediments during the Ordovician period of about 425 million years ago. Subsequently, there have been many profound geological changes with many periods of glaciation in the more-recent millions of years. We are concerned here with the most recent two glacial periods. The earlier of these was the Illinoian glaciation, which lasted until about 135,000 years before present. When the Illinoian glaciers departed, they left a layer of till known as York Till that would be similar to the tills left by the most recent glaciers. After the Illinoian glaciation, there was a warm period that lasted for about 75,000 years. It is recognized as the Sangamon Interglacial period during which mineral matter was deposited as the Don

Formation. Some of the flora and fauna that developed during this period became incorporated within the Don Formation. After the Sangamon period, the most recent glacial period commenced 80,000 years ago and eventually left a number of layers of till materials that we find commonly as the present ground surface. The primary focus of this article is the plants that became embedded within the Don Formation and that allows us a special opportunity to study the flora of a period that existed here prior to the most recent ice age.

The significance of the interglacial character of the site was first recognized by the University of Toronto geologist, A.P. Coleman in 1894. He relied on two others to identify the fossils present in the geological deposits. They were Sir William Dawson and Professor David Penhallow who joined the staff of McGill University in 1857 and 1883, respectively. Dawson dealt with the animal fossils while Penhallow described the plants. As time went on, Penhallow added to the list of plant species present at the site. More recently, additional species have been identified by Kerr-Lawson [1985] and from pollen [Terasme, 1960; Karrow, 1990]. The Don Brickyard which operated on the site relied on the shale deposits as the raw materials from which to create their brick



Photo 1. Appearance of Don Brickyard shale pit in 1908, (Shale used in making brick is present in lower level) City of Toronto Open Archives.

products. As more shale was excavated, additional cutting through the overlaying deposits exposed more of the Sangamon Formation and so revealed more examples of the plant and animal fossils. The appearance of the shale pit around the time that the main discoveries were made is shown in Photo 1.

A list of plant fossils found in the Sangamon deposits has been tabulated in the attached table. The species shown in that table includes records published by Penhallow in 1900 and 1907 and by Karrow in 1990. The table provides the current taxonomy for each species though some are identified only to genus. In all, there are 75 species or genera included on the list.



Photo 2. Current appearance of Don Brickyard site. (Shale pit has been filled). Photo: Eli McIlveen.

The list of plant species found in the deposits includes mainly those that would be expected as they are generally considered to be common and native in the Toronto area. There are several on the list, though, that are some considerable distance from their native range though we have seen fit to cultivate some of them in the Toronto area. Generally, this group of unusual plants is from climates that are warmer or more moderate than present-day Toronto.

Blue Ash (*Fraxinus quadrangulata*) and Pawpaw (*Asimina triloba*) can be found in Ontario, though generally their range is distinctly farther south in the Carolinian Zone than Toronto. Atlantic White Cedar (*Chamaecyparis thyoides*) and Summersweet (*Clethra alnifolia*) are Atlantic Coastal species that do extend as far north as far as Maine but not inland into Ontario. The original range for Black Locust (*Robinia pseudo-acacia*) was restricted to the Appalachian and Ozark Mountains. Eastern Redbud (*Cercis canadensis*) barely reached into Ontario and the 'canadensis' portion of its name is apparently based on the original specimen that reportedly came from a site in the most southern part of the Province. The native ranges of three other species are still more distant from Ontario. Sweetgum sp. (*Liquidambar*) barely reaches into southern Ohio while Osage-orange (*Maclura pomifera*) is limited to Texas and Oklahoma. The reported Mexican Blue Oak (*Quercus oblongifolia*) comes from even farther away as its range includes Texas, Arizona and New Mexico. By contrast, Bog Blueberry (*Vaccinium uliginosum*) is a species of Northern Ontario, the northern part of North America and the Rocky Mountains [Vander Kloet, 1988]. Penhallow refers twice to *Carex reticulata* in the tables of his 1900 report. I have not been able to find any information that relates to that species name and so have not included it the attached table. Perhaps there was a typographic error and

"*Salix reticulata*" was the intended name.

Penhallow also reported three species that supposedly had become extinct (not included in the table). The first was *Acer pleistocenicum* which he first described in 1890 [Dawson and Penhallow, 1890]. In 1907, A.P. Coleman found a specimen that Penhallow described as *Acer torontoensis* [Penhallow, 1907]. Brown [1942] reviewed the photos of these specimens and concluded that they were in fact only slightly unusual specimens of Sycamore (*Platanus occidentalis*). Later, Warner [1984] examined the actual specimens in the Redpath Museum at McGill University and at the ROM and came to the same conclusion as Brown that the specimens were not extinct forms of maple. In 1907, Penhallow [1907] described an additional specimen as *Gleditsia donensis*. Warner was unable to

locate the type specimen for this species though several single leaflet compressions were present in the ROM collections. Unless the type specimen can be found some day to prove that the new species did exist, it would seem probable that the species will simply prove to be our native Honey Locust, *Gleditsia triacanthos*.

After the shale quarrying operation ceased in 1985, various plans to develop the site were proposed. In the end, the shale pit was filled and the brick manufacturing buildings and the quarry were preserved as a historic site. The present (2011) condition of the north slope of the site is indicated in Photo 2 with pioneer vegetation colonizing the filled area. No doubt, there are still many plant and other kinds of fossils remaining in the untouched portion of the brickyard and probably also under other parts of Toronto. Perhaps some future paleobotanist will have an opportunity to add more information to an already fascinating piece of the Province's history. 🌱

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Latin Binomial	Common Name	P 1900 *	P 1907 *	K 1990 *
<i>Abies balsamea</i>	Balsam Fir	X		X
<i>Acer rubrum</i>	Red Maple			X
<i>Acer saccharinum</i>	Silver Maple			X
<i>Acer saccharum</i> ssp. <i>saccharum</i>	Sugar Maple			X
<i>Acer spicatum</i>	Mountain Maple	X		X
<i>Adiantum</i>	Maidenhair Fern			X
<i>Alnus incana</i> ssp. <i>serrulata</i>	Speckled Alder			X
<i>Ambrosia</i>	Ragweed sp.			X
<i>Artemisia</i>	Wormwood sp.			X
<i>Asimina triloba</i>	Pawpaw	X		X
<i>Betula</i>	Birch			X
<i>Botrychium</i>	Moonwort			X
<i>Carex aquatilis</i>	Aquatic Sedge	X		
<i>Carpinus</i>	Blue Beech sp.			X
<i>Carya ovata</i>	Shagbark Hickory	X	X	X
Caryophyllaceae	Caryophyllaceae			X
<i>Castanea</i>	American Chestnut			X
<i>Cercis canadensis</i>	Redbud		X	
<i>Chamaecyparis thyoides</i>	Atlantic White Cedar	X		X
Chenopodiaceae	Chenopodiaceae			X
<i>Clethra alnifolia</i>	Summersweet			X
<i>Corylus</i> sp.	Hazelnut sp.			X
<i>Crataegus punctata</i>	Large-fruited Hawthorn	X		
Cyperaceae	Cyperaceae	X	X	
<i>Equisetum</i> sp.	Horsetail sp.	X		X
<i>Eriocaulon aquaticum</i>	Pipewort	X		X
<i>Fagus</i>	Beech sp.	X		X
<i>Festuca ovina</i>	Sheep Fescue	X		X
<i>Fraxinus americana</i>	White Ash	X		X
<i>Fraxinus nigra</i>	Black Ash	X		X
<i>Fraxinus quadrangulata</i>	Blue Ash	X		X
<i>Hippuris vulgaris</i>	Common Mare's-tail			X

Latin Binomial	Common Name	P 1900 *	P 1907 *	K 1990 *
<i>Ilex</i>	Holly sp.			X
<i>Juglans</i>	Walnut sp.			X
<i>Juniperus virginiana</i>	Eastern Red Cedar	X		X
<i>Larix</i>	Tamarack sp.			X
<i>Liquidambar</i>	Sweetgum sp.			X
<i>Lycopodium</i>	Clubmoss sp.			X
<i>Maclura pomifera</i>	Osage-orange	X	X	X
<i>Osmunda</i>	Fern sp.			X
<i>Ostrya virginiana</i>	Ironwood	X	X	X
<i>Picea glauca</i>	White spruce			X
<i>Picea mariana</i>	Black Spruce	X	X	X
<i>Picea</i> sp.	Spruce sp.	X		
<i>Pinus</i> cf. <i>banksiana</i>	Jack Pine			X
<i>Pinus strobus</i>	Eastern White Pine	X		X
<i>Platanus occidentalis</i>	Sycamore	X	X	X
<i>Populus balsamifera</i>	Balsam Poplar	X		X
<i>Populus grandidentata</i>	Large-toothed Aspen	X	X	X
<i>Potamogeton</i>	Pondweed sp.			X
<i>Potamogeton natans</i>	Common Floating Pondweed	X		
<i>Prunus</i> sp.	Cherry sp.	X	X	X
<i>Quercus alba</i>	White Oak	X	X	X
<i>Quercus macrocarpa</i>	Bur Oak	X		
<i>Quercus muehlenbergii</i>	Chinquapin Oak	X		X
<i>Quercus oblongifolia</i>	Mexican Blue Oak	X		
<i>Quercus rubra</i>	Red Oak	X		
<i>Quercus velutina</i>	Black Oak	X		
<i>Robinia pseudo-acacia</i>	Black Locust	X	X	X
<i>Rumex</i>	Dock sp.			X
<i>Salix</i> sp.	Willow sp.	X		X
<i>Scirpus</i>	Bulrush			X
<i>Selaginella</i>	Spike-moss			X
<i>Sicyos angulatus</i>	One-seeded Bur-cucumber			X
<i>Sparganium</i>	Bur-reed			X
<i>Taxus canadensis</i>	American Yew	X		X
<i>Tilia americana</i>	American Basswood	X	X	
<i>Tilia</i>	Basswood sp.			X
<i>Thuja occidentalis</i>	Eastern White Cedar			X
<i>Typha latifolia</i>	Common Cattail			X
<i>Ulmus</i>	Elm sp.			X
<i>Ulmus americana</i>	American Elm	X	X	
<i>Ulmus thomasii</i>	Rock Elm	X		
<i>Vaccinium uliginosum</i>	Bog Blueberry	X		X
<i>Vitis</i>	Grape sp.			X

\*P 1900 (Penhallow 1900)

\*P 1907 (Penhallow 1907)

\*K 1990 (Karrow 1990)

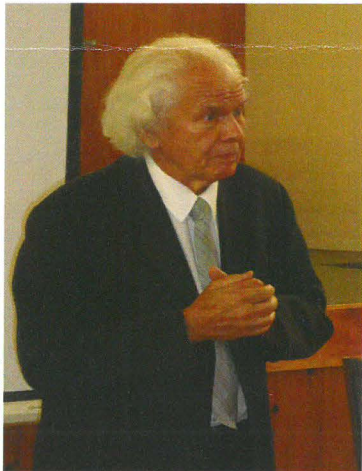
## FBO Website Update

We are once again making FBO news even easier to find. The FBO website has been updated and now includes an FBO Blog. The Blog is your spot to look for current courses and events, happenings, and news from the FBO Executive. We have also added a Google Calendar that is accessible from the Blog. Subscribe to our calendar and never miss a field trip again!!! And, of course, FBO is still on Facebook, so visit us and join (or rejoin) our Facebook group for access to more news and relevant links.

Melinda Thompson

## 2012 Annual General Meeting: 15 September 2012

This year, the FBO will be holding its AGM in Eastern Ontario. We will assemble at the Elbow Lake Nature Conservancy of Canada Reserve, a short drive north of Kingston. The featured speaker will be Mr. Michael Runtz, a well known naturalist. As usual, there will be field trips on Saturday the 15th and Sunday the 16th. See you all there!



### REMEMBERING *Paul Frederick Maycock 1930-2012*

*Regretfully, we are informing that the 2010 recipient of the Goldie Award, Paul Maycock passed away on February 23, 2012, in Waterdown, Ontario. Dr. Maycock greatly contributed to the knowledge of forests of Ontario and was instrumental in the preservation of several best examples of vegetation in the province, most notably the Ojibway Prairie. His almost completed treatise on the phytogeography and ecology of Southern Ontario's deciduous forests is being editorially finalized by Dr. Terry Carleton of the University of Toronto, and hopefully will be published soon.*



The Master and his students of the genus Hawthorn.  
Photo: B. Moses.



*Hypericum ascyron*. Photo: P. Patel.



Extensive patch of *Asarum canadense*. Photo: M. McMurtry.