

# Field Botanists of Ontario

## Newsletter

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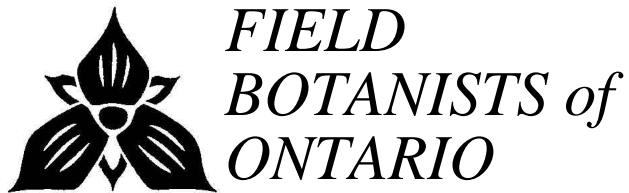
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Wild Yam (*Dioscorea quaternata* J. Gmel.)  
Illustration by Bill McIlveen.



**FIELD BOTANISTS OF ONTARIO NEWSLETTER**

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

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The **deadline** for submissions for **Volume 15(4) - Winter 2002/2003** is **December 10<sup>th</sup>, 2002**.

Standard source for scientific names 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.

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## Field Trip Reports:

### Muskoka Barrens, Bogs, and Lakes

July 20<sup>th</sup>, 2002

It was an extraordinary day. In the morning there was a dying Hognose Snake. At noon there was tea. And at the end of the day there was Gravenhurst's rarest weed.

Our convoy came to a sudden halt on the Torrance Road as our leader George Bryant jumped out to retrieve the Hognose Snake (*Heterodon platirhinos*), a victim of hit-and-run. Later on we examined it, blood still dripping from its mouth: a metre long, thick as your wrist, with dark colouration, its keeled nose designed to root for toads. A rarely seen diurnal animal of dry habitats, this one, sadly, was destined for George's freezer, alongside two Massasauga Rattlers that met a similar end. (The Rattlers made a brief appearance with rattles still functioning, if barely).

All morning we spent at the Torrance Barrens, a provincial nature reserve remarkable for its harsh habitat. Glacial meltwater long ago washed soil cover away, exposing Pre-Cambrian bedrock to extremes of heat and cold; interspersed are pocket of acidic bogs and ponds. Growing in a Pre-Cambrian rock crease where few plants could compete with it was a noteworthy species, the modest Three-toothed Cinquefoil (*Potentilla tridentata* Sol. ex Aiton). The occurrence here is a southerly disjunct of an arctic and circumpolar species.<sup>1</sup> Here one or two late flowers graced the deep green leaves. Dry areas also supported heat-coping plants such as Pale Corydalis (*Corydalis sempervirens* (L.) Pers.), Firecherry (*Prunus pensylvanica* L. f.), and struggling Red Oak trees (*Quercus rubra* L.). A prickly *Rubus* seemed inclined to be a Swamp Dewberry (*R. hispidus* L.). George pointed out two grasses surviving the heat: Poverty Oat-grass (*Danthonia spicata* (L.) P. Beauv. ex Roem. & Schult.) and Crinklehair (*Agrostis scabra* Willd.). Pockets retaining more moisture held plants such as Cow-wheat (*Melampyrum lineare* Desr.), which is a parasitic snapdragon, two widely-separated Northern Ladies' Tresses (*Spiranthes lacera* (Raf.) Raf.

<sup>1</sup> This species was only recently rediscovered in New York State (Mitchell 2002). In northeastern Ontario, it is found in higher elevations, on the coast of Lake Superior, and is an occasional colonist of disturbed, high-traffic sandy areas such as boat launches.-Ed.

var. *lacera*), and Mountain-holly (*Nemopanthus mucronatus* (L.) Loeske). There was a profusion of the trim White Beaked-rush (*Rhynchospora alba* (L.) M.Vahl).

In the boggy areas among typical bog-loving plants we saw the Spatulate along with the Round-leaved Sundew, sporting a generous number of flowerstalks (*Drosera intermedia* Hayne and *D. rotundifolia* L.). In the water itself, alongside the waterlilies, were bright yellow spots of a tiny unidentified bladderwort (*Utricularia*) and the diminutive reddish flowers of the Water-shield (*Brasenia schreberi* J. Gmel.). "Your average sundew captures 28 victims annually," said George. In a shrubby area, George made a point of showing us a sample of the invasive Glossy Buckthorn (*Rhamnus frangula* L.), far more prolific now than shown in the Shrubs of Ontario (Soper & Heimburger 1982).

So then it was noon and convoy time, and the road grew increasingly twisty and claustrophobic until there we were at the end--George's own cottage on the rocky bluffs of Pine Lake. Freshly brewed tea and coffee awaited us as we sprawled in the shade and emptied our lunch bags. But with a willing audience at hand, George soon led a tour of his lands, pointing out specimens high and low. Curiously the parasitic Cow-wheat grew here too, in the forest shade. When specimens of Juneberry faced us, the verdict was that Shrubs of Ontario, less certain as to *Crataegus*, handled *Amelanchier* with assurance. Then Marretta, well back in the line of botanists, spotted a Squawroot (*Conopholis americana*



Squawroot (*Conopholis americana* (L.) Wallr.)  
Photo by Alan Procter.

(L.) Wallr.). This was an event, as it turned out, since it was a first ever on George's property.

In the sheltered cove, Water Lobelia (*Lobelia dortmanna* L.) stood up with Pipeworts (*Eriocaulon aquaticum* (Hill) Druce), and by the shore George's ten-species fern garden thrived, not because he transplanted ferns as that he gently discouraged their competitors. Here too was a naturally-occurring plot of Virginia Meadow Beauty (*Rhexia virginica* L.) as we were promised, though still to flower. Meadow Beauty is one of a group of 30 or so Atlantic Coastal plants brought here, the theory is, by the actions of glacial meltwater 10,000 years ago. With the weight of the ice-sheet depressing the land, the meltwater found its outlet via the Trent-Severn valley to the St. Lawrence River valley and eastwards to the Atlantic. For one to two thousand years, coastal plants could [disperse] up this corridor. Gradually, the weight of ice diminished, the land

uplifted and the flow of water had to find another route southward, thereby closing the corridor.

What has remained are disjunct colonies of coastal plants in the Parry Sound- Muskoka area. The greatest concentration of these, George told us, is by the difficult-to-access Matchedash Lake, south of our excursion site, in Simcoe County. Was our excursion done yet? Not by a long chalk. We were off to the Muldrew Lake Bog, known to naturalists for years, but scarcely accessed by the public. "Over yonder," said George waving his arm, "you could find if you looked hard enough the rare Southern Twayblade (*Listera australis* Lindl. ) and the boring but exotic Pod-grass (*Scheuchzeria palustris* L.), not a grass but a herb of its own family." But we didn't look; we headed straight on. Swishing through the knee-high Virginia Chain Fern (*Woodwardia virginica* (L.) Sm.), we reached the open fenland which bowed under our weight but didn't let us down.

Here the White Calla (*Calla palustris* L.) was fruiting. The rare White-fringed Orchid (*Platanthera blephariglottis* (Willd.) Lindl. var. *blephariglottis*) was in bloom along with a single late-blooming Grass Pink (*Calopogon tuberosus* (L.) B.S.P.) and the two sundew species. A 20 cm species of bladderwort held a large bright yellow spurred flower at its summit; Horned Bladderwort (*Utricularia cornuta* Michx.). Dotting the



Left: White-fringed Orchid (*Platanthera blephariglottis* (Willd.) Lindl. var. *blephariglottis*).  
Right: Smooth Rupturewort (*Herniaria glabra* L.). Photos by Alan Procter.

meadow was the Yellow-eyed Grass (*Xyris montana* Ries). Of species inhabiting the Xyridaceae Family, two grow in Ontario and several hundred more live in the tropics.

And finally the Gravenhurst rarity: about a decade ago, in the huge gravelly parking lot to which we had now removed, and where once upon a time train passengers disembarked, George found a weed. For the longest time no one could identify it, until finally it was determined to be a European native called Smooth Rupturewort (*Herniaria glabra* L.). Apparently it's a member of the Pink Family, but who could tell, with flowers half the size of a pinhead and leaves to match, on wiry prostrate stems. But here it thrives, and apparently is known from only two or three other Ontario locations. George, who loves weeds, then pointed out several species of *Lepidium*, an *Anthemis* (or was it a *Matricaria*), several *Silene*, the native Horseweed that used to be lumped with *Erigeron*, but now has its own genus (*Conyza canadensis* (L.) Cronquist), Clammy Ground-cherry (*Physalis heterophylla* Nees), and on it went. Did you know that Staghorn Sumac (*Rhus typhina* L.) has male and female flowers on separate shrubs?

I haven't listed all we identified; perhaps half or less. George Bryant proved to be a skilled leader, a generous host, and so, so knowledgeable. 🌱

Alan Procter

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## **Rice Lake Plains**

August 11<sup>th</sup>, 2002

The term "Rice Lake Plains" describes a hilly, sandy area at the eastern edge of the Oak Ridges Moraine south of Rice Lake. Savannah species are thought to have come here from the south-west during a drier period some 5,000 years ago. Subsequently, regular burns by Natives to maintain open hunting areas kept

the encroaching forests out. But [European settlers] brought by turns farming, abandonment, and reforestation, and the savannah was destroyed.

But not quite. The intent of our trip leader, James Kamstra, was to show us not only savannah remnants but also present-day efforts to maintain and strengthen savannah habitat. By far the richest of these was on the 50-acre Alderville First Nations Reserve where James put us in the hands of the Ojibwa biologist, artist, and Natural History Co-ordinator Rick Beaver. It soon became apparent how Rick's scientific background, in combination with his engagement with his land, had brought about the most intimate association possible.

Dotting the sandy hillsides were the fiercely drought tolerant Black Oaks (*Quercus velutina* Lam.). This is the best example in Ontario of Black Oak Savannah. The sandy soil on the Reserve tends to acidity, Rick told us, supporting in places Early Saxifrage (*Saxifraga virginiana* Michx.) and Lowbush Blueberry (*Vaccinium angustifolium* Aiton).

The prairie grasses were spectacular. Stands of Big Bluestem (*Andropogon gerardii* Vitman) waved at eye level along with Indian Grass (*Sorghastrum nutans* (L.) Nash), the metallic-bronze sheen of their inflorescences spotted with bright yellow anthers. There were the straw-coloured arched inflorescences of Slender Wheat Grass (*Elymus trachycaulus* (Link) Gould ssp. *trachycaulus*), and patches of Little Bluestem (*Schizachyrium scoparium* (Michx.) Nees). Then on hands and knees Rick pointed out two panic grasses rare to Ontario. One, the Long-haired Panic Grass (*Panicum villosissimum* Nash [S3]), bore oval green spikelets from its white-villose leaf-axils. The other, Long-stalked Panic Grass (*P. perlongum* Nash) is rarer still [S1S2]; we saw only the pedicels as the spikelets had already dropped.

In tandem Rick and James identified herb after prairie herb. The round crenate basal leaves of the uncommon Prairie Buttercup (*Ranunculus rhomboideus* Goldie [S3]) remained from their spring blooming; they bloom in the thousands.

The first Sky-blue Aster (*Aster oolentangiensis* Riddell) was in flower as well as the Round-headed Bush-clover (*Lespedeza capitata* Michx.). Thimbleweed (*Anemone cylindrica* A. Gray) and Prairie Cinquefoil (*Potentilla arguta* Pursh) bore seed-heads; so too the



Rick Beaver, a biologist from the Alderville First Nation. Photo by Alan Procter.

invasive Rabbit-foot Clover (*Trifolium arvense* L.). Wild Bergamot (*Monarda fistulosa* L.) scented the air; Butterfly-weed (*Asclepias tuberosa* L.) delighted us, not only the orange, but also a little-seen yellow variant. Rick also mentioned the Wood Lilies (*Lilium philadelphicum* L.) that flower here in spring.

Among the shrubs encountered were New Jersey Tea (*Ceanothus americanus* L.), Prairie Willow (*Salix humilis* Marsh.), both the Ontario hazels (*Corylus americana* Walter and *C. cornuta* Marsh.), Downy Arrow-wood (*Viburnum rafinesquianum* Schult.) and much too much Grey Dogwood (*Cornus foemina* Miller ssp. *racemosa* (Lam.) J.S. Wilson) for the good of the savannah.

In the shade were two sunflowers (*Helianthus strumosus* L. and *H. decapetalus* L.), two tick-trefoils (*Desmodium canadense* (L.) DC. and *D. glutinosum* (Muhlenb. ex Willd.) Alph. Wood), and Black Snakeroot (*Sanicula marilandica* L.). A Field Thistle (*Cirsium discolor* (Muhlenb. ex Willd.) Spreng.) grew in part shade.

Then Rick, delighting in his prize, showed us another Ontario rarity, Sharp-leaved Goldenrod (*Solidago arguta* Aiton var. *arguta* [S3]) with its broad, and doubly-toothed basal leaves and bold corolla-tubes. Alongside were Silver-rods (*S. bicolor* L.), not yet in

flower.

The Alderville Reserve has a history of burns, and to encourage the savannah habitat the spring burns continue. From Rick, and from Dave Mowat who is the Reserve's Economic Development Officer, we learned of the Habitat Stewardship Programme that's in place in conjunction with Environment Canada. Burns are conducted, and plots of land are monitored. Species are being inventoried and photographed with a view to publications that will combine English and Latin with Ojibwa and Ojibwa botanical knowledge. Also planned is an interpretive centre along with guides and educational involvement for both visitors and the Ojibwa themselves.

Rick Beaver, who carried no species lists with him on our walk, unreeled English and Latin names with equal ease. This, plus his people's ancient interdependence with the land, gives his, and their, heritage stewardship an unsurpassable depth and



Cylindric Blazing-star (*Liatris cylindracea* Michx.). Photo by Alan Procter.

richness.

Much enriched ourselves, we gave in to the need to take leave of our Alderville hosts and push on. For the afternoon, James had chosen sites where stewardship had a more colonial tone. Cemeteries carry historical value along with unfarmed soil where savannah species have survived. Friends of the Russ Creek Cemetery, on the one hand, have been in combat with Haldimand Township officials over promoting the history of the site, not to say leaving it unmowed. (Alongside was a riotous sowing of coneflowers and compass-plants, well-intended, but clearly not native to the Rice Lake Plains). By contrast, across the line in Cramahe, the Red Cloud Cemetery proudly displays its history and nurtures its native plants.

Besides other savannah species we'd met, both sites displayed flowering populations of Cylindric Blazing-star (*Liatris cylindracea* Michx. [S3]) in all their ruffled modesty. Red Cloud as well produced a yellow flax (*Linum sulcatum* Riddell [S3]), and a spread of Bearberry (*Arctostaphylos uva-ursi* (L.) Spreng.) not to mention some more magnificent shiny, spiky Black Oaks.

Thanks are due to the FBO and to James Kamstra; this was a trip to remember, both botanically and culturally. 🌱

Alan Procter

Kamstra, James. 1997. The Rice Lake Plains. *In* Oak Ridges Moraine, compiled by the Save The Oak Ridges Moraine Coalition, Boston Mills Press.

## Ghost Town Botany

First settled in 1860, the hamlet of Emberson, near Huntsville, supported a thriving population of over 25 people by 1888. Backbreaking human labour, aided by the odd horse and primitive implements, had cleared the forest primeval. By the 1930's, most of the 100-acre farm lots had been abandoned. Now the fields and buildings are gone. Emberson has reverted to forest with few traces of the once thriving community. Oddly, garden plants, some persisting over 100 years, are one of the best indicators of human occupation.

We were fortunate to have Dr. James Pringle as leader in our search for botanical clues to Emberson's existence. His explorations in Emberson were instigated

by the creation of the Barbara Laking Garden at the Royal Botanical Gardens, an historic garden of the 1920's. He studied old maps and censuses as far back as 1820, learned the clues and located many sites of the pioneer log cabins. For old farmsteads, this was often only a depression in the woods. Churches and schools lacked even a foundation—only persistent garden escapes revealed their location.

From Britannia Road, we began our adventure by walking north into the bush along Emberson Road, now only a snowmobile track. After one kilometre, we reached our first site; an old shack dwarfed by a robust Lilac (*Syringa vulgaris* L.) and Guelder Rose (*Viburnum opulus* L.), the latter with obvious petiole glands. Here were many other cultivated escapes. Cinnamon Rose (*Rosa majalis* Herrm.) is a sterile rose with compound pink flowers that spreads by runners. Unlike most rose escapes that prefer calcareous soils, this species does well on the Shield. It covers acres of sandy soil at North Seguin, another ghost town. Some shrubs bore extra-large flowers: these belonged to Apothecaries' Rose, (*Rosa gallica* L.). Queen-of-the-Prairie (*Filipendula rubra* (Hill) Robinson), now in fruit, is a spectacular prairie native, still popular with gardeners. Wild Parsnip (*Pastinica sativa* L.) has recently become quite widespread in Ontario. Pink-blooming Musk Mallow (*Malva moschata* L.) and aptly named Live Forever (*Sedum telephium* L. ssp. *fabaria* (Koch) Kirschl.) were two classic garden escapes.

After another kilometre, we arrived at sites on both sides of the trail. On one side there was a substantial patch of Periwinkle (*Vinca minor* L.), often associated with cemeteries. Now long past flowering, the short-spurred deep purple European Columbine (*Aquilegia vulgaris* L.) persisted in the deep forest shade. When Dr. Pringle first scouted the area in 1993, he encountered Eyebright (*Euphrasia stricta* D. Wolff ex J. Lehm.). He suspected the plant had finally given up the ghost. On the other side, a forest depression and a patch of the persistent Lily-of-the-Valley (*Convallaria majalis* L.), gave mute testimony to an old farmstead.

A side trail led into a clearing dominated bizarrely by two derelict school busses. Why would anyone drag these into the bush? Here Dr. Pringle pronounced that the Snowberry shrubs, appearing to be native *Symphoricarpos albus* (L.) Blake, were actually the



Abandoned Barn surrounded by persistent, introduced pasture grasses. Photo by Bill McIlveen.

cultivated Pacific slope var. *laevigatus* (Fern.) Blake. The every dependable Shrubs of Ontario (Soper & Heimburger 1982) gives a concise description of this plant.

We continued on a forced march east along a corduroy road toward South Portage whilst Dr. Pringle provided a running commentary on the native clubmosses, ferns, and graminoids. After, by my calculation a walk of 3 kilometres, we reached the Henry Jarvis homestead, the *piece de resistance*. An 1879 map showed that this was the biggest and most prosperous farm. With sandy soils and level topography, the Jarvis farm was the last to be abandoned. An isolated stand of Balsam Poplar (*Populus balsamifera* L.) could be natural, but Dr. Pringle thought it was probably anthropogenic. Between the wars the Department of



Black Currant (*Ribes nigrum* L.). Photo by Bill McIlveen.

Agriculture had promoted clones of this species as a windbreak. Near the site of a barn, we noted several non-native grasses: Timothy (*Phleum pratense* L.), Redtop (*Agrostis stolonifera* L.), Red Fescue (*Festuca rubra* L.), and Quack Grass (*Elymus repens* (L.) Gould). Bouncing amongst the grasses, Soapwort (*Saponaria officinalis* L.) may well have been intentionally planted to process wool. At the base of a huge old Common Apple (*Malus sylvestris* (L.) Mill.), we noted extensive patches of Red Raspberry (*Rubus idaeus* L.) and Black Current (*Ribes nigrum* L.), all remnants of the old vegetable garden. Elsewhere, a plantation of Red Pine (*Pinus resinosa* Sol. ex Ait.) had sadly, eliminated many horticultural relics.

Across the road, now surrounded by forest, a moss-covered rock wall intersected with an open-branched Sugar Maple (*Acer saccharum* Marsh.). An old map showed that Milton Lester once lived here. Dr. Pringle said that in contemplating these old walls and the amount of human labour that went into making them, he was reminded of a line from Thomas Gray's *Elegy* in a Country Graveyard, "Some inglorious Milton here may rest, ---for them no more the blazing hearth shall burn." ❄️

George Bryant



A long-forgotten moss-covered rock fence-row on Milton Lester's homestead. Photo by Bill McIlveen.

## **Rare Trees of the Carolinian Forest**

September 14<sup>th</sup>, 2002.

As I drove through Simcoe, in the Municipality of Haldimand-Norfolk, towards our designated meeting



point, I kept my fingers crossed that the current downpour would not 'put a damper' on my first ever outing with the FBO. As an avid lister of native plants and animals, I was very much looking forward to adding a few Carolinian ticks to my life list of trees. Except for a few sprinkles, the heavy rain held off until we were all assembled at the Annual General Meeting in New Sarum later that night.

Upon arriving at the meeting place, 5 km northwest of Port Rowan, Bill Draper and Bill McIlveen, our trip leaders, introduced themselves. I was soon handed a large-scale and detailed map with our planned route clearly marked, as well as a full colour identification guide to the oaks and hickories of southern Ontario. These are just a few examples of the fine job of organizing that Bill and Bill did for this tour. While waiting for other participants to arrive, our leaders commented on the reproductive ecology of trees in general and explained why the fall season is a good one for tree botanists. With several tree species, mature cones or fruits simplify or are necessary for their identification. At this time of year, many of these plant parts can conveniently be found on the ground. Earlier in the season some fruits wouldn't be fully developed, or would still be firmly attached high in the canopy. Later, many fruits would have been harvested by forest wildlife. With our group finally assembled, we caravaned off to our first stop at Backus Woods.

For those of you unfortunate enough to never have visited this precious part of our natural heritage, Backus Woods represent some of the finest examples of one of the rarest habitats in Canada - mature Carolinian Forest. This and other tracts of Crown forest in the vicinity of Long Point provide critical habitat for numerous species of plants and animals, many of which are Species at Risk in Ontario and Canada. Lowland portions of these forests are usually flooded in spring, but the surface water is typically gone by mid-July. This ephemeral flooding greatly influences the growth, reproduction and morphology of several of the hardwoods that we saw.

Wandering into the forest at Stop 1, we compared the differences between White Oak (*Quercus alba* L.) and Red Oak (*Quercus rubra* L.), and soon we found one of our first target species: Black Gum (*Nyssa sylvatica* Marsh.). Gum trees are a slow growing species and



Bill Draper introduces field trip participants to a Cucumber Magnolia (*Magnolia acuminata* (L.) L.). Photo by Bill McIlveen.

several in this tract are known to be over 400 years old! Black Gum is ranked S3 (i.e., rare to uncommon) by the Ontario Natural Heritage Information Centre (NHIC), and natural regeneration is poor. With its characteristic odour and bright red fruit, another Carolinian specialty, Spicebush (*Lindera benzoin* (L.) Blume) was easy to pick out. Yellow Birch (*Betula alleghaniensis* Britton), American Beech (*Fagus grandifolia* Ehrh.), and Red Maple (*Acer rubrum* L.) were found scattered throughout this stand as was another 'deep south' species: Tulip Tree (*Liriodendron tulipifera* L.), which is characteristic of seasonally flooded sites. While reinforcing a stereotype--which I am proud to be part of--one participant actually hugged a veteran Tulip Tree, but she could reach less than half way around its



Pawpaw (*Asimina triloba* (L.) Dunal) foliage. Photo by Bill McIlveen.

circumference! Just before we left for Stop 2, we noticed several Sassafras (*Sassafras albidum* (Nutt.) Nees) trees in the area so this, along with the Spicebush, completed our 'sweep' of Ontario's two representatives in the Lauraceae.

Upon arriving at Stop 2, which was also in Backus Woods, Bill M. compared and contrasted Riverbank Grape (*Vitis riparia* Michx.) and Summer Grape (*V. aestivalis* Michx.), which were growing side by side along the road. Black Walnut (*Juglans nigra* L.) and White Elm (*Ulmus americana* L.) were added to the daily tally just before we saw another featured species. Pumpkin Ash (*Fraxinus profunda* Bush) was first identified in Ontario less than 10 years ago - probably because of its similarity to other, more common species of ash found here. Some of the keys (no pun intended) to separating Pumpkin Ash from White Ash (*Fraxinus americana* L.), which we saw later in the day, are its more spreading branches, preference for wetter sites, and longer fruits. The NHIC ranks Pumpkin Ash as S2 (i.e., very rare) in Ontario.

Just north of Backus Woods, we made our third stop, which was in the St. Williams Crown forest. Historically, the well-drained soils here supported a prairie-savannah flora, and a few species indicative of this community type were found on the ecotone between the road and the managed forest. While the Dwarf Chinquapin Oak (*Quercus prinoides* Willd.) that we saw on the tour was a colonial shrub less than 2 m high, it can be more tree-like in stature, growing up to 5 m tall. New Jersey Tea (*Ceanothus americanus* L.) and American Hazel (*Corylus americana* Walter) were two other shrubs present at this site.

We then travelled about 20 km northeast to Stop 4 at Hay Creek Conservation Area. The primary reason for visiting this site was to see Pignut Hickory (*Carya glabra* (Miller) Sweet), which is ranked S3 by the NHIC. There is considerable confusion over the taxonomic status of this species in Ontario. To help with our identification we examined characters such as how extensively the mature fruits split and the number and pubescence of the leaflets. We also saw Black Oak (*Quercus velutina* Lam.) and discussed how it differs from Red Oak, which is another of the Ontario oaks with 'bristle-tipped' leaf lobes. Finally, we observed a non-native White Mulberry (*Morus alba* L.), which was

planted at the site. We learned that by hybridizing with our native Red Mulberry (*Morus rubra* L. [S2]), White Mulberry is negatively impacting the genetic integrity of Ontario's Red Mulberry population.

Heading back to the southwest, we made our fifth stop of the day in the Smith Tract, which possibly supports the highest number of Cucumber Magnolia trees (*Magnolia acuminata* (L.) L.) in Canada. Here we discussed its fascinating reproductive ecology and other factors that lead to its ranking of S2. In the Smith Tract we looked at the hybrid Freeman's Maple (*Acer x freemanii* E. Murr.) and I was surprised to learn that this is most likely what many of us here in Ontario have been calling Silver Maple (*Acer saccharinum* L.). We also added Blue Beech (*Carpinus caroliniana* Walter) to our day list.

Our next stop was in the DeVos Tract, which is just northeast of Langton. This is one of very few places in Ontario where all four of our native hickory species can be found. Here we examined the non-overlapping scales on the sulphur yellow buds of Bitternut Hickory (*Carya cordiformis* (Wangenh.) K.Koch), the 7 leaflets/leaf and overlapping bud scales of Big Shellbark Hickory (*Carya laciniosa* (Michx. f.) Loudon), and the characteristic tufts of hairs on the teeth of the 5 leaflets/leaf of Shagbark Hickory (*Carya ovata* (Miller) K.Koch). Some of the easier to distinguish species of trees at this site included Sugar Maple (*Acer saccharum* Marsh.), Basswood (*Tilia americana* L.), and Trembling Aspen (*Populus tremuloides* Michx.). However, Bill D. soon had us testing our taxonomic skills when he pointed out the 'typical' differences between leaf lobes on the local Swamp White Oak (*Quercus bicolor* Willd.) and Bur Oak (*Quercus macrocarpa* Michx.).

After the confusion of Stop 6, we made two successive brief stops to finish off our day. Site 7 was just west of Delhi, where we saw Black Cherry (*Prunus serotina* Ehrh.) and yet another 'bristle-tipped' oak species: Hill's or Northern Pin Oak (*Quercus ellipsoidalis* E.J. Hill). The latter species is reported to be fairly common on moraines in Brant County and is typically found on dry sites. With time running out, we decided to make a quick stop along Big Otter Creek just northwest of Vienna in southern Elgin County. It was here that we found Sycamore (*Platanus occidentalis* L.) and Pawpaw (*Asimina triloba* (L.) Dunal) trees. The group was quite

excited to find ripening fruits on the latter species, but despite their reputation as being edible, nobody was willing to try one.

The organization, knowledge, ability to communicate and patience of our trip leaders are a credit to the FBO. Without the guidance of Bill D. and Bill M. I would have not added those 10 tree species to my life list. Now, did I hear somebody say field trip for Bear Oak (*Quercus ilicifolia* Wangenh.)?

All in all this was a great day in the field. My only regret is that I didn't tell this one at the DeVos tract: A physician goes into his favourite bar and orders his usual - a dacquiri with crushed walnuts on top. That day the bartender was out of walnuts so he substituted hickory nuts. The physician immediately tastes something different and asks the bartender what he has been served. The bartender replied, "that's a hickory dacquiri, doc". 🍷

Burke Korol

## **Komoka Park**

September 15<sup>th</sup>, 2002

Komoka Provincial Park is a 'non-operating' provincial park<sup>2</sup>. Dr. John Ambrose, an ecological consultant and our leader, has surveyed the park and will be suggesting future management strategies. Using a large aerial photograph, John reviewed some of the plant communities and special features of the area. Established in 1985 and located a few kilometres downstream of London, the 440 hectare park straddles both sides of the Thames River. Enormous glacial deltas have left an amazingly diverse geology, including steep river slopes and calcareous gravel deposits. In some places, floodwaters cascading through the gravel had left a tufa-like deposit. This was now a historic feature, John remarked, as the lime-rich aggregate had been used to build Highway 401. Komoka Park has a wide diversity of habitats including Black Oak forest on the north slopes, hawthorn savannahs, abandoned pastures and a cultural fen.

<sup>2</sup> There are numerous 'non-operating' provincial parks in Ontario, although the majority of them occur in the Northeast and Northwest Zones. They can range from only a few hectares in size to over one hundred thousand hectares. Even where the demand for a campsite development is high, some properties would be maintained as 'non-operating' parks, particularly where significant features (earth science, life science, or cultural) within the property would be threatened by such development. -Ed



Wild Crab (*Malus coronaria* (L.) Mill.).  
Photo by Bill McIlveen.

Leading us through an overgrown field and soggy trail toward the river, John discussed some interesting plants and management concerns. One of the most common shrubs was Autumn Olive (*Elaeagnus umbellata* Thunb.). First planted by conservation authorities for wildlife in 1974, it has become invasive. The legacy of this ill-conceived notion is now spreading through many natural areas.

Fall is an excellent time of the year to study the differences between some similar species. For instance, the tendrilled Virginia Creeper (*Parthenocissus inserta* L.) had already turned bright red, unlike the suction cupped species (*P. quinquefolia* (L.) Planch.). Wild Crab (*Malus coronaria* (L.) Mill.) now bears flattened green glaucous pomes. Black Oak (*Quercus velutina* L.) buds are much larger than those of the sibling Red Oak (*Quercus rubra* L.).

We followed a narrow trail along a Hydro cut up and over a sandy ridge of glacial outwash. Several vines clambering over the wet understory competed for sunshine. Wild Yam (*Dioscorea quaternata* J. Gmel.) spread its light green attractive leaves over the shrubs and forbs (See front cover of this issue). We noted the distinctive winged fruit, some large and filled, others small and empty. Summer Grape (*Vitis aestivalis* Michx.) bearing pubescent silver-undersurface leaves grappled with Hog Peanut (*Amphicarpaea bracteata* (L.) Fern.). Of concern were several patches of Oriental Bittersweet (*Celastrus orbiculatus* Thunb.), a significant invasive, still sold by many nurseries as the native *C. scandens* L. John pointed out that if you run your hand

along stem and feel sharp buds, you've got a problem. In the dry forest of Turkey Point, the takeover by Oriental Bittersweet is so severe that it reminds him of Kudzu (*Pueraria lobata* (Willd.) Ohwi) in the U.S. southeast. Persistent clusters of brown saucer fruit distinguished a patch of New Jersey Tea (*Ceanothus americanus* L.). Here, John raised two management questions. If the Hydro line is removed, will we lose many distinctive species? Should horseback riders be permitted to use the many trails?

Our arrival at the Thames River allowed us to focus on some of John's favourite things—trees. Hackberry (*Celtis occidentalis* L.) and American Sycamore (*Platanus occidentalis* L.) are both characteristic of the flood plains. Norway Maple (*Acer platanoides* L.) was rampant here. In the fall, the ugly leaf tar spots are striking. It is further distinguished from Sugar Maple (*Acer saccharum* Marsh.) by its milky sap and round green buds. Norway Maple is a major problem in southern Ontario. The broad leaves shade out competition and persist into December, encouraging sapling recruitment. Farther along the trail, we encountered a huge Eastern Cottonwood (*Populus deltoides* Bartram ex Marshall). In the right conditions, these trees can grow at an astonishing rate—John speculated that the tree might be only 60 years' old! We arrived at a scattering of Black Maples (*Acer nigrum* L.) in a colony of the threatened Blue Ash (*Fraxinus quadrangulata* Michx.). The ash was distinguished by soft spongy bark and four-sided twigs. John suggested that these species are often found on floodplains or alvars because they are drought-resistant prairie species. We headed uphill near an extensive community of Jewelweed (*Impatiens capensis* Meerb.) now bedecked with orange flowers and captive hummingbirds.

Our return took us beside a most curious swamp. It consisted of quite mature White Cedars (*Thuja occidentalis* L.) and Tamaracks (*Larix laricina* (Du Roi) K.Koch) adjacent to an old gravel road. Limestone screenings had been placed on this roadbed and over time constant seepage had created a marl wetland, a.k.a. a "cultural fen." Masses of Grass of Parnassus (*Parnassia glauca* Raf.) and Nodding Ladies-tresses (*Spiranthes cernua* (L.) Rich.) crowded the roadbed. Here also we noted one specimen of Swamp Thistle (*Cirsium muticum* Michx.), a tall, smooth-stemmed thistle, and

uncommon north and east of here. Just before lunch, we paused in a large of Hawthorn savannah containing Hoary Vervain (*Verbena stricta* Vent.) and Butterflyweed (*Asclepias tuberosa* L.), both now in seed. When the first botanical inventory was taken in 1985, the area was shown as an old meadow. In the past 17 years, the area has remained unchanged. If a fortuitous stroke of lightning ignited a burn, John wondered what seed bank might be liberated. With continuing droughts, even without a burn, would the prairie aspect persist?

Following lunch, John led us to something completely different. Located, just north of Komoka, the Feed Mill Prairie is a substantial glacial outwash terrace formerly used for gravel extraction. Adjacent to the old Grand Trunk Railroad, the 50-odd acres now billowed with russet prairie grasses: Indian Grass (*Sorghastrum nutans* (L.) Nash), Switch Grass (*Panicum virgatum* L.), Big Bluestem (*Andropogon gerardii* Vitman), and Little Bluestem (*Schizachyrium scoparium* (Michx.) Nees). Other native prairie species noted were Smooth Aster (*Aster laevis* L.) and Flowering Spurge (*Euphorbia corollata* L.). Spotted Horsemint (*Monarda punctata* L.), a species found in only a handful of Ontario sites, was abundant. The open vistas encouraged participants to explore. In short order, Irene McIlveen pointed out an eponymous Toadbug, Paul Desjardins spotted Variegated Fritillary and Halloween Pennant (both southern species) and Helen Juhola, identified mysterious Geum-like rosettes as Salad Burnet (*Sanguisorba minor* Scop.). An uncommon garden escape, not covered in any plant or weed guide, its identification gave immense satisfaction to at least one person present. John Ambrose was thanked for providing us with an outstanding day. 🌱

George Bryant

## Feature:

### Carden Alvar: Restoring Plant Communities or Protecting an Endangered Bird? A Conflict of Desirable Objectives.

Dale Leadbeater and Brian Henshaw

The Nature Conservancy of Canada (NCC) has embarked on the most significant natural heritage acquisitions in southern Ontario. Its target: the

Cameron Ranch, encompasses almost 1160 hectares (3000 acres) of the Carden Alvar<sup>3</sup> between Orillia and Lindsay, in the City of Kawartha Lakes (formerly the County of Victoria). The area is considered to be a globally threatened ecosystem that is in immediate peril due in part to the interests of aggregate producers, who want to quarry limestone which is close to surface.

Assuming that the Ranch is purchased,--and your help is neededv (see below)--the managers will be facing a most difficult conflict of objectives.

Ten thousand years ago, as the glaciers retreated from southern Ontario, a plant assemblage existed in the shadow of the great ice fields, the like of which no longer exists on earth. Trailing the spruce bogs and fens was a complex community assembled from three sources:

- prairie plants that had crossed a “sidewalk” from the west when Lake Huron water levels were much lower than currently exist;
- alpine plants that followed the cordilleran spine of eastern North America north from the Appalachians; and
- boreal plants that colonized the newly exposed soil at the toe of the glaciers in the face of the powerful katabatic winds that swept off the ice sheets.

With increasing temperatures and the further retreat of the glaciers, more and more species found suitable habitat, crowding out the early colonists. However, in areas like the Carden Plain, where climatic conditions remained extreme, some of these post-glacial species persisted on the alvar while disappearing from areas of richer deeper soils.

About 5000 years ago, southern Ontario experienced a warming and drying trend called the “hypothermal”. During this time, xerophytes blossomed and spread. The forests that had developed in the wake of the glaciers declined and prairie openings appeared. This allowed a new wave of introductions from the west. On the Carden Plain, the mixture of prairie plants and cordilleran/boreal plants consolidated. On the flat,

<sup>3</sup> An alvar is a plant community characterized by more or less level expanses of limestone bedrock, which creates a patchy mosaic of exposed limestone “pavement” among vegetation on thin soils.

poorly fractured, limestone plain, spring rain accumulated and created flood conditions. By summer, through evapotranspiration, the thin soils became parched, and only the plants able to survive the summer drought lived to grow again when the fall rains returned. This severe environment of extreme flood and drought, cold and heat, mimicked the post-glacial conditions (minus the severe winds) and so this community persisted on the alvar even when the climate cooled and precipitation increased.

Alvar communities exist in very limited areas of the globe. Ontario possesses some of the best examples. And yet, until only a short time ago, it was thought that only the cattle maintained this open landscape, and therefore it was not worthy of preservation.

Enter the Loggerhead Shrike (*Lanius ludovicianus*): a regulated species under the Endangered Species Act in Ontario; a bird of short grass open landscapes studded with hawthorn (*Crataegus dodgei* Ashe, *C. macracantha* Lodd., *C. chrysoarpa* Ashe), in which it often nests. The Loggerhead Shrike is a species that is generally found in larger areas of habitat. It forages along fencerows for beetles, grasshoppers and other arthropods (and some small mammals) which it frequently impales on thorns, earning it--along with its winter cousin the Northern Shrike (*Lanius excubitor*)--the colloquial name “Butcherbird.”

Under natural conditions, the Carden Alvar alternatively becomes treed and then reverts to shrubs and grassland with periodic episodes of drought and, according to some authorities, fire. The frequent stumps still visible under thickets of Fragrant Sumac (*Rhus aromatica* Ait.), Downy Arrowwood (*Viburnum rafinesquianum* Schult.), and Grey Dogwood (*Cornus foemina* Miller) attests to its woodland history, as does the presence of a historical lumber settlement nearby. As the European settlers systematically cleared southern Ontario, Loggerhead Shrikes doubtless expanded from their prairie and alvar strongholds with the onset of forest clearing. Marginal farmlands have since declined and alvar habitats have receded as fire has been suppressed and cattle grazing on such “unproductive” land has become economically challenging. A farmer in the Carden area remarked that he had lost half of his grazing area to successional forest. In addition, concerns over the potential effects of

pesticide use both here and in the shrike's wintering areas in the southern US, dust effects on insects, and roadkills due to the shrike's habit of foraging near roadsides are all possible contributors to the precipitous decline and now dangerously low population (around 40-50 pairs) in southern Ontario.

Now, with such restricted habitat, restoration of these open grasslands must be considered to enhance and maintain the habitat architecture that appears to be optimal for these birds. Cattle have artificially maintained the habitat since European settlement and ranching in Carden Township has a long history, making this option an attractive one.

Cattle....grazing....manure....nitrogen. A poor combination for maintaining native plant communities, as most restorationists are aware. Native communities tend to be limited by the lack of nitrogen and phosphorus, which in turn discourages non-native species. Areas of alvar that are subject to low intensity grazing are more diverse than high intensity grazing. An abundance of nitrogen optimizes conditions for invasive non-native species that out-compete and exclude native flora and are often perpetuated *via* cattle feed.

The question becomes, do we manage for the shrike or for the plant community? Can we do both? If the grazing of cattle creates a negative impact on the alvar plant community, can we substitute grazing with fire to control shrubs and trees? More research is needed to determine if shrikes and fire are compatible given the very small number of pairs remaining in the Carden area. In the interim, we do know that floristically higher quality communities are likely to persist under a management regime that closely mimics historical conditions, that is fire and drought, rather than cattle and drought.

Fortunately, the very size of the Cameron Ranch may be the saving grace. It may be possible for cattle to remain as a management practice for Loggerhead Shrike in the lower end of the ranch. While using fire and/or drought to preserve the north end plant communities may benefit species such as:

*Arabis hirsuta* (L.) Scop.  
Hairy Rock-cress

*Astragalus neglectus* (Torr. & A. Gray) E.Sheld.  
Cooper's Milkvetch

*Carex richarsonii* R.Br.  
Richardson's Sedge

*Castilleja coccinea* (L.) Spreng.  
Indian Paintbrush

*Deschampsia caespitosa* (L.) P.Beauv.  
Tufted Hairgrass

*Geum triflorum* Pursh  
Prairie Smoke

*Juncus secundus* P.Beauv. ex Poir  
Secund Rush

*Potentilla fruticosa* L.  
Shrubby Cinquefoil

*Ranunculus fascicularis* Muhl. ex Bigel.  
Early Buttercup

*Rhus aromatica* Ait.  
Fragrant Sumac

*Saxifraga virginensis* Michx.  
Virginia Saxifrage

*Scutellaria parvula* Michx.  
Small Skullcap

*Senecio pauperculus* Michx.  
Balsam Ragwort

*Solidago ptarmicoides* (Nees) B.Boivin  
Prairie Goldenrod

*Sporobolus heterolepis* (A.Gray) A.Gray  
Northern Dropseed

*Trichostema brachiatum* L.  
False Pennyroyal

The Cameron Ranch project offers a significant opportunity not only for conservation, but for research on the maintenance and restoration of alvars that may benefit ecosystems elsewhere.

In order to engage in this important research however, it is necessary to raise the \$1.6 million required to secure the property and provide funds for its management. NCC has partnered with the Couchiching Conservancy, the Ontario Field Ornithologists, the Toronto Ornithological Club and Ontario Parks to raise the necessary resources. Clearly, the Society of Ecological Restoration and the Field Botanists of Ontario should have a part to play as well. Your support will secure these lands and allow us to embark on this great management challenge.

NCC hopes that you will make the support of the Cameron Ranch your most significant natural heritage

contribution in 2002 and in 2003 (the funds must be in place by February 2003). Those willing to make an important contribution can sign up for a bus tour of the property this fall. Birders have challenged themselves to contribute \$100 or more for the chance to view this property that has only just become accessible to the natural heritage community. What can the botanical community do? 🌱

Please contact the Nature Conservancy of Canada, R.R. #5, 5420 Highway 6 North, Guelph, ON N1H 6J2 or call 1-877-343-3532 for more information.

Hope to see you at the "Ranch"!

## Reviews:

Sabbagh, Karl. 2000. A Rum Affair: A True Story of Botanical Fraud. Farrar, Strauss, and Giroux.

The gloomy island of Rum is one of the Inner Hebrides situated off the west coast of Scotland. Here, during the 1940s a distinguished professor of botany from Newcastle University made a remarkable series of discoveries. He recorded twelve species of plants, including five new to Britain, four known only from the Scottish mountains and three previously found only on the Channel Islands. Some botanists began to wonder. Was this a string of incredible good fortune or, almost impossible to conceive, an elaborate hoax made to enhance the professor's reputation? In order to determine the truth, a young Cambridge don managed to infiltrate one of the professor's botanical expeditions to the island. By studying the rare plants *in situ*, he gathered sufficient evidence to prove that the plants had been introduced and to discredit their discoverer. Remarkably he chose not to do the latter. He intentionally buried the report of his findings in order to protect the professor and his descendants, two of whom also became botanists.

In what is best termed a scientific detective story, Karl Farragh interviewed descendants, unearthed the hidden report and reconstructed the saga of the mysterious and exotic flora of the Isle of Rum. The account of the surreptitious botanizing on this remote Scottish island is particularly intriguing. As an exposure of a long-concealed fraud, this is a delightful

yarn. For those who have an interest in rare and insignificant graminoids, it is doubly fascinating. 🌱

George Bryant

## Achiever Microscope, LW Scientific, Inc.

Ed Morris

I hate hand lenses. It stems from my tendency to lose them five minutes into my field trip! Although hand lenses do indeed offer a handy magnification function in the field, they cannot compare to a good stereo dissecting microscope that require

manipulation in order to view distinguishing characters. For example, keys to *Carex* require that you extract and examine perigynia and the achenes. A stereoscope allows me to use both hands, giving me a fighting chance to attempt such delicate operations. I'm too much of a klutz to attempt such a thing with a hand lens.

Recently, I was given the opportunity to obtain a relatively inexpensive stereoscope at work. After searching through various online biological supply catalogues on the world-wide-web, I found several such stereoscopes. However, most suppliers made it difficult to order their products directly. As such, it was difficult to compare prices, and companies always wanted to refer me to a middle-man, who was undoubtedly working for a sales-commission. I found playing telephone tag with sales-people far too frustrating. When I found one supplier that took orders over the internet, I seized the opportunity. The scope I'm reviewing is by LW Scientific, Inc. which I ordered from [www.GreatScopes.com](http://www.GreatScopes.com).



*continued*

## Eyepieces and Lenses 🌿 🌿

The Achiever has two eyepieces: a stereoscope. This allows the user to retain depth perception as one manipulates the specimen. The optical quality of the scope's lenses are adequate. You have to pay considerably more for 'wowing' optical clarity. I would like the option of acquiring oculars (eye-pieces) other than the standard 10x.

## Lighting 🌿 🌿 🌿 🌿

The Achiever stereoscope offers both fluorescent lighting from above and below the base. Fluorescent lighting doesn't 'cook' the specimens in the same manner as incandescent lighting. Although neither the lighting intensity nor direction may be varied, I find that I don't need such features anyway. I love the convenience of having the lighting incorporated in the stereoscope's base. Setting-up the scope is greatly simplified, and there is less chance that a frayed cord will leave you in the dark.

## Magnification 🌿 🌿 🌿

I have used high-end stereoscopes that allow the user to switch between 5x to 40x in several steps. Some stereoscopes allow you to zoom smoothly between minimum and maximum magnifications, but it's not worth paying extra for that feature. The stereoscope I ordered allows me to switch between 20x and 40x. While I do use both of these powers, there are times when I wished I had ordered the 10x/30x model instead. To compensate, I'm on the look-out for some 5x oculars (eyepiece lenses) that may be switched with the 10x oculars supplied with the stereoscope. This would allow me to switch between a 10x/20x scope and 20x/40x scope simply by exchanging oculars.

## Base Design 🌿 🌿 🌿

Again, high-end stereoscopes meant for botanical work may be mounted on the end of a long, sturdy adjustable arm. An entire herbarium sheet may be laid on the table, and the stereoscope head can pan over any part of the specimen. Officially, the Achiever stereoscope cannot be mounted onto such an arm, but the heart of the unit may be removed from its base. Theoretically, one could custom-make a long-armed

base. For the time being, most of the specimens I observe under the scope are unmounted, so base design isn't an issue.

## Price 🌿 🌿 🌿

As a rule, scientific equipment is expensive; particularly items that might be sold to the medical industry. The price of most stereoscopes is often inflated too, but at \$259 US (\$414 CDN, taxes and duties not included), the Achiever stereoscope is within reach of many amateur botanists.

Overall Rating: 🌿 🌿 🌿 <sup>1/2</sup>

- Reasonable price.
- Integrated dual fluorescent lighting.
- Adequate optical quality.
- Two magnification levels.
- Potentially customizable (different oculars, base).

P.O. Box 1948, Jamestown, North Carolina, 27282  
Toll Free Ordering & Product Info (877) 454-6364  
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### Another "Almost Free" Book Needs a Reviewer.

Shelly Braiden of Lone Pine Publishing has sent us a review copy of Linda Kershaw's latest field guide. This one covers Wayside Flowers of Ontario. If you are interested in reviewing this book, please contact Ed Morris (address on inside of front cover). 🌿

\$16.95+ applicable taxes.

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