Field Botanists of Ontario

Newsletter

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Pitcher-plant (*Sarracenia purpurea* L.) at Moss Lake wetland. Photo by Leslie Collins.

FIELD BOTANISTS of ONTARIO

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The **deadline** for submissions for **Volume 17(2)** is **December 31, 2004.**

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

Field Trip Reports

Ferns and Orchids of the Rocky Saugeen

July 24th, 2004.

A group of enthusiastic FBO members joined Nelson and Jean Maher for a field trip in the area of the Rocky Saugeen River in Grey County. Our goal was to view many of the ferns and orchids for which Grey County is well known. Nels and Jean live in the county and have led many trips to view ferns and orchids, so are well equipped to introduce others to the natural features of the area. They started the trip using their T-shirts as an instruction aid, making sure we knew the scientific names of some of the unusual ferns we would see, such as the Walking Fern (*Bootin alongus*) and Hart's Tongue (*Extremely rudius*).

Nels Maher models his instructional aid. Photo by Mike McMurtry.

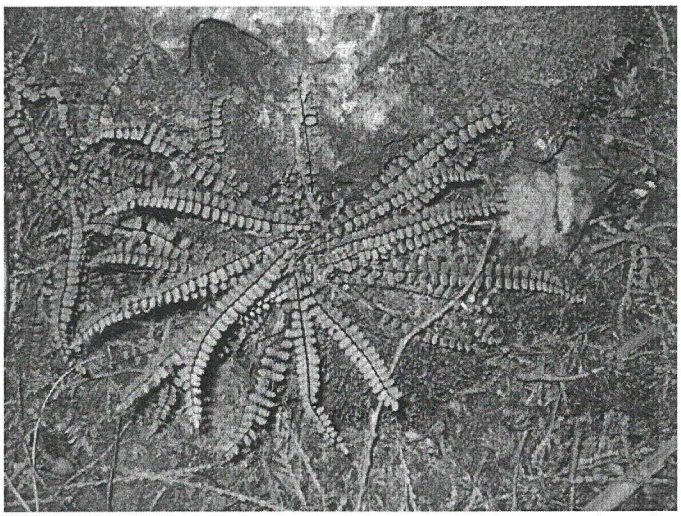
We visited several sites during the day, the first of which was a private property near Highway 6. Nels had arranged permission from the landowner to bring the group to this location and the landowner joined us for part of the walk to learn about the local flora. This site included a rocky outcrop with many crevices ideal for ferns, and a lower area adjacent to the river. The outcrop was not unlike the rocks of the Niagara Escarpment, which lies considerably further to the east. It is part of the Guelph Formation according to *Geology of Ontario* (Thurston *et al.* 1991), which is primarily composed of dolostone, a sedimentary rock made up of calcium carbonate and magnesium.

A canopy of Eastern White Cedar (*Thuja occidentalis* L.), and American Basswood (*Tilia americana* L.) covered most of the site. The slopes of the rock outcrop were laden with a rich cover of Bulblet Bladder Fern (*Cystopteris bulbifera* (L.) Bernh.) and Maidenhair Spleenwort (*Asplenium trichomanes* L.). Most ferns have very specific habitat requirements and we tried to learn as many of these as we could. Walking Fern (*Asplenium rhizophyllum* L.) was present on larger boulders and Marginal Wood Fern (*Dryopteris marginalis* (L.) A. Gray) in lower-lying areas. The bluish-green foliage of the latter species was pointed out to the group. Plantain-leaved Sedge (*Carex plantaginea* Lam.), with its wide crinkly leaves, a sedge of rich mixed and deciduous forests, was also present. Other common plants of the ground cover were Wild Ginger (*Asarum canadense* L.), Bitter Nightshade (*Solanum dulcamara* L.), Herb-robert (*Geranium robertianum* L.) and Fowl Manna Grass (*Glyceria striata* (Lam.) A. Hitchc.).

In our explorations we found Sensitive Fern (*Onoclea sensibilis* L.), also known as Bead Fern, for the fertile pinnules which roll over the sori to form bead-like shapes at maturity (Cody and Britton 1989). The sori were collected for medicinal purposes by early residents to cure a variety of ailments. Crested Wood Fern (*Dryopteris cristata* (L.) A. Gray) was found amongst the Sensitive Fern and is distinguished by its dark green leathery leaves that face the sky like a Venetian blind. Wild Coffee (*Triosteum aurantiacum* E.P. Bicknell) was also common in the ground layer, as were Small Jack-in-the-pulpit (*Arisaema triphyllum* (L.) Schott ssp. *triphyllum*), Canada Anemone (*Anemone canadensis* L.), Riverbank Grape (*Vitis riparia* Michx.), Canada Enchanter's Nightshade (*Circaea lutetiana* L. ssp. *canadensis* (L.) Aschers. & Magnusson), Dwarf Raspberry (*Rubus pubescens* Raf.), Wild Sarsasparilla (*Aralia nudicaulis* L.) and White Lettuce (*Prenanthes alba* L.).

One of the members of the group noticed an orchid that some of us had overlooked, the Northern Green Orchid (*Platanthera hyperborea* (L.) Lindl.). Another orchid, the Common Helleborine (*Epipactis helleborine* (L.) Crantz), an introduced species, was one of the few non-native species at the site. Clumps of the Silvery Glade Fern (*Deparia acrostichoides* (Swartz) M. Kato), a fern new to some of us, were also observed. The silvery hairs covering the stem or rachis of this species and the herringbone pattern of sori, separate it from other Ontario ferns.

The provincially rare and threatened Hart's Tongue (*Asplenium scolopendrium* L. var. *americanum* (Fern.) Kartesz & Gandhi) was found in the lower spots and crevices of the rocks. Nels believes that the distribution of this species is limited by the fact that the spores do not travel far from the site of production. Hart's Tongue prefers shady moist habitat on limestone.



Maidenhair Spleenwort (*Asplenium trichomanes* L.). Photo by Mike McMurtry.

Hart's Tongue (*Asplenium scolopendrium* L. var. *americanum* (Fern.) Kartesz & Gandhi). Photo by Mike McMurtry.

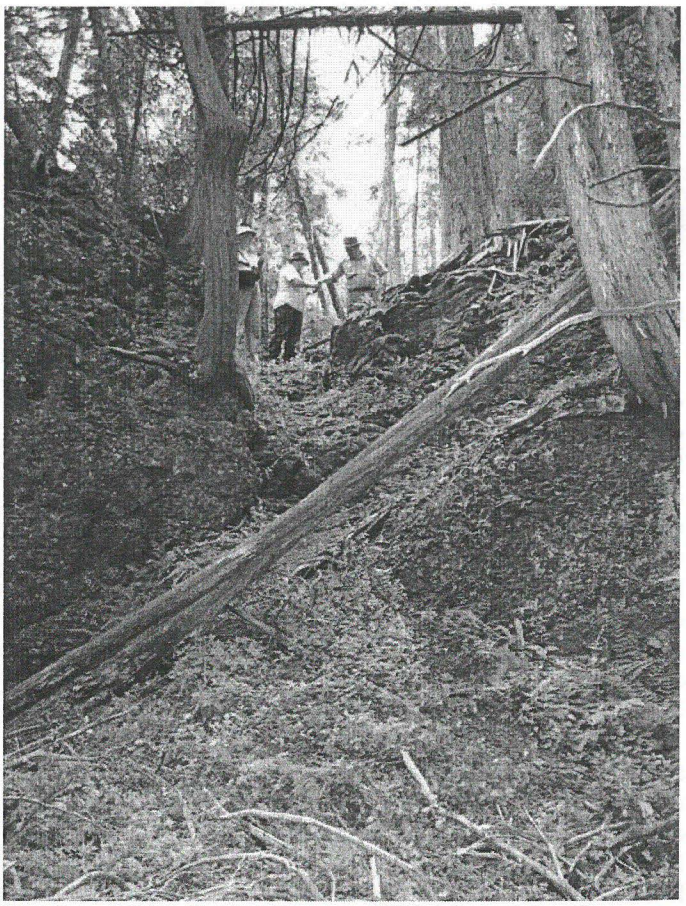
The Evergreen Wood Fern (*Dryopteris intermedia* (Muhlenb. ex Willd.) A. Gray) is not rare and is found in moist woods and swamps. It can be still seen in the middle of winter when the green fronds appear through the snow. On our walk, last year's brown fronds were evident along with the green new growth from this year. One of the ways this species can be separated from the similar-looking Spinulose Wood Fern (*D. carthusiana* (Vill.) H.P. Fuchs), is by the length of the pinnule on the lower pinna closest to the rachis. *D. intermedia* has inner pinnules shorter that the second pinnule and *D. carthusiana* has an inner pinnule longer than the second. *D. carthusiana* is also identified by the triangular lower pinnae. Nels pointed out a hybrid of *intermedia* and *carthusiana* (*D.* X *triploidea* Wherry) with shorter pinnules than either parent.

Some of us noticed an impressive buttressed specimen of Yellow Birch (*Betula alleghaniensis* Britton) that was growing out of an old stump. A Spring Peeper (*Pseudacris crucifer*) [Herpetologists now place the Spring Peeper in the genus *Pseudacris*, along with Chorus Frogs.] was presented to the group by one of the participants. It is hard to imagine how such a small frog can produce the din that we hear every spring during the amphibian mating season.

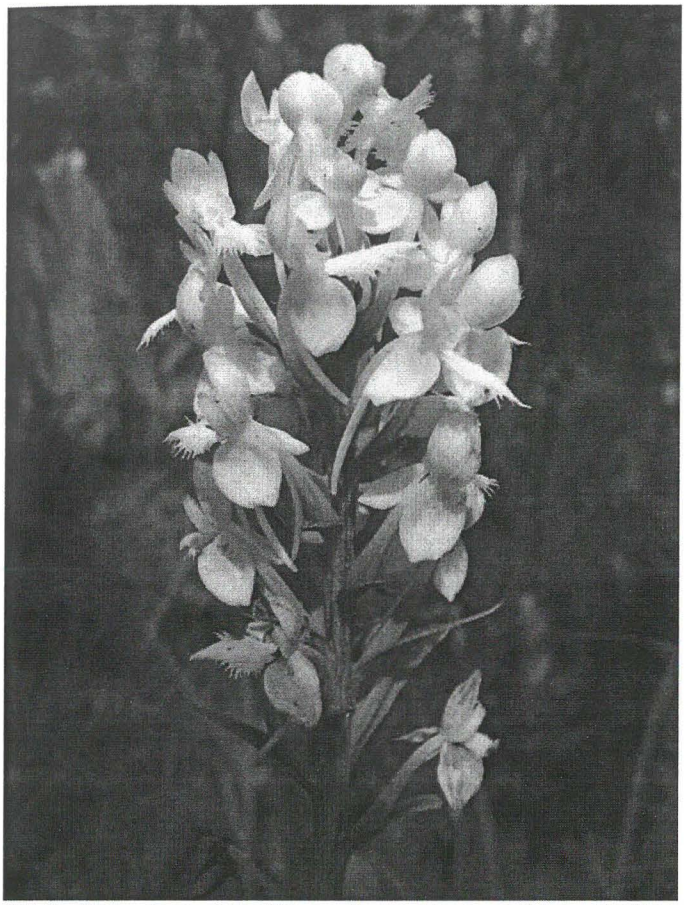
Nels attributes his interest in plants to the influence of Alex Johnson, of the Cape Croker First Nation on the Bruce Peninsula. Alex had shown him how the dark purplish stem of the Maidenhair Fern (*Adiantum pedatum* L.), also seen by the group, could be woven to form a pattern on ash baskets made by the native people.

Other species observed were the expansive Royal Fern (*Osmunda regalis* L. var. *spectabilis* (Willd.) A. Gray) and Northern Lady Fern (*Athyrium filix-femina* (L.) Roth ex Mert. var. *angustum* (Willd.) G. Lawson). Nels produced a quip about how this species is really not very ladylike due to its hairy legs. The horseshoe-shaped sori, lacy appearance and lack of taper of the lower part of the frond are characteristic features of this species. It is commonly found in moist forests in southern Ontario. In a low-lying area we saw Marsh Fern (*Thelypteris palustris* Scott var. *pubescens* (Lawson) Fern.), with its delicate texture, thin rachis and light green colour. Unlike Ostrich Fern (*Matteuccia struthiopteris* (L.) Tod. var. *pensylvanica* (Willd.) C.V. Morton), another species encountered, it does not grow in clumps. The familiar double-tapered fronds of the Ostrich Fern also set this species apart. Aquatic Sedge (*Carex aquatilis* Wahlenb.) was pointed out in the wet area near Marsh Fern. Green Spleenwort (*Asplenium trichomanes-ramosum* L.) was found in a number of places on the rock faces; with its green stem and angled leaves, it can be easily separated from Maidenhair Spleenwort when they grow side by side in rock crevices.

Our second stop was a rocky cleft below a dam on the Rocky Saugeen, a site that had been visited previously by Nels and Donald Britton, one of the authors of *Ferns and Fern Allies of Canada* (Cody and Britton 1989). Hart's Tongue was particularly robust here along with Green Spleenwort and Maidenhair Spleenwort. At the top of the bank in a drier and sunnier environment was Eastern Bracken-fern (*Pteridium aquilinum* (L.) Kuhn var. *latiusculum* (Desv.) L. Underw. ex Heller). Rock Polypody Fern (*Polypodium virginianum* L.) was found on the rock face as well. Red Baneberry (*Actaea rubra* (Aiton) Willd.) was common along the top of the bank under a canopy of Balsam Fir (*Abies balsamea* (L.) Miller). A moribund Butternut (*Juglans cinerea* L.) was present near the river. This species is now tracked by the Ontario Natural Heritage Information Centre as it is in decline due to the Butternut canker disease.



Members of the Rocky Saugeen FBO trip making their way down a cleft on the Rocky Saugeen River. Photo by Mike McMurtry.



White-fringed Orchid (*Platanthera blephariglottis* (Willd.) Lindl. var. *blephariglottis*). Photo by Mike McMurtry.

Giant Rattlesnake Plantain (*Goodyera oblongifolia* Raf.), with its dark-green leaves white-striped down the midrib, was an interesting orchid found. Other species noted here were Canada Yew (*Taxus canadadensis* Marshall), Largetooth Aspen (*Populus grandidentata* Michx.) and number of other ferns already noted.

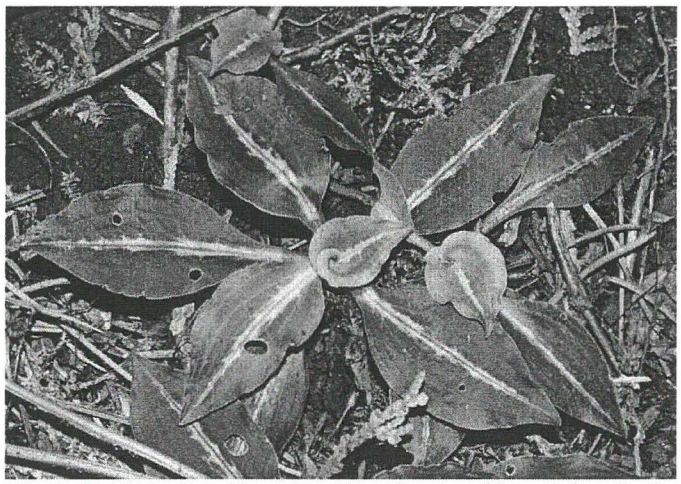
The group was invited to eat lunch at the beautiful farm property of Nels and Jean, a farm established in 1875 by Jean's family and purchased directly from the Crown. We had a look at publications by the Owen Sound Naturalists, including excellent volumes on the ferns and orchids of Bruce and Grey counties that the Mahers have contributed to. Nels' training as a printer has facilitated production of these and other volumes for the club. In 2001 Nels received the prestigious W.W.H. Gunn Conservation Award from the Federation of Ontario Naturalists (now Ontario Nature) for his ongoing work protecting natural habitats in Bruce and Grey counties and sharing a passion for nature with so many people over the years.

Our hosts then showed us their wonderful fern garden, which contains more that 50 species of ferns from Ontario. Donald Britton has contributed a number of specimens to the garden. A card listing more that 50 species of ferns is available to visitors at the entrance to the garden. Highlights to the author were Goldie's Fern (*Dryopteris goldiana* Hook. ex Goldie) A. Gray), Northern Adder's-tongue (*Ophioglossum pusillum* Raf.), Blunt-lobed Woodsia (*Woodsia obtusa* (Spreng.) Torr. ssp. *obtusa*), Braun's Holly Fern (*Polystichum braunii* (Spenn.) Fée), Holly Fern (*Polystichum lonchitis* (L.) Roth), Limestone Oak Fern (*Gymnocarpium robertianum* (Hoffm.) Newman) and Male Fern (*Dryopteris filix-mas* (L.) Schott). We also saw an unusual hybrid of Clinton's Wood Fern (*Dryopteris clintoniana* (D.C. Eaton) Dowell) with Evergreen Wood Fern (*Dryopteris* X *dowellii* (Farw.) Wherry). When constructing the garden, the Mahers insisted that the large boulders be dug at least a foot into the earth so as to hold moisture and temperature.

Elsewhere in the grounds were Narrow-leaved Spleenwort (*Diplazium pycnocarpon* (Spreng.) M. Brown), Clinton's Wood Fern, Michigan Lily (*Lilium michiganense* Farw.) and Pale Touch-me-not (*Impatiens pallida* Nutt.). We then walked around the rest of the property where members of the family have created naturalized ponds and where Nels is involved in planting hundreds of native trees. He explained that his property is situated such that it forms a natural corridor to and along the Saugeen River.

Our final stop on a full day was Moss Lake wetland, located further to the east near Highway 4. The lake, a nearby wetland and a mature deciduous woodland corridor, are now owned by the Grey Sauble Conservation Authority in a purchase orchestrated by the Federation of Ontario Naturalists with Nels' help. We were entertained by a herd of cattle that were very interested in our progress as we picked our way along a hedge of English Hawthorn, (*Crataegus monogyna* Jacq.), distinctive with its leaves deeply cleft into lobes.

The woodland had received a heavy selective cut the year before but still contained an array of species characteristic of a rich mature deciduous forest, including Sugar Maple (*Acer saccharum* Marshall ssp. *saccharum*), American Beech (*Fagus grandifolia* Ehrh.), Black Cherry (*Prunus serotina* Ehrh.), Wild Leek (*Allium tricoccum* Aiton), Northern Lady Fern, forma *rubellum* (Gilbert) Farw.), distinguishable by the wine-red rachis (The Bruce-Grey Plant Committee 2002, Cody and Britton 1989), Tall Meadow-rue (*Thalictrum pubescens* Pursh), *Trillium* species and Bluebead-lily (*Clintonia borealis* (Aiton) Raf.). We followed a trail along a "hog's hack" to the wetland. Fern allies included Stiff Club-moss (*Lycopodium annotinum* L.), Southern Running-pine (*Diphasiastrum digitatum* (Dill. ex A. Braun) Holub).



Giant Rattlesnake Plantain (*Goodyera oblongifolia* Raf.). Photo by Leslie Collins.

Once at the wetland, we saw Palmate-leaf Sweet-coltsfoot (*Petasites frigidus* (L.) Fr.), Mountain-holly (*Nemopanthus mucronatus* (L.) Loeske), Leatherleaf (*Chamaedaphne calyculata* (L.) Moench), Labrador-tea (*Ledum groenlandicum* Oeder), Three-leaved Solomon's Seal (*Maianthemum trifolium* (L.) Sloboda), Pitcher-plant (*Sarracenia purpurea* L.), stunted Black Spruce (*Picea mariana* (Miller) B.S.P.) and Tamarack (*Larix laricina* (Du Roi) K. Koch). As is often the case with peatlands in southern Ontario, a moat surrounded the wetland and we had to cross it on some rickety logs with the aid of a walking stick. Most of the wetland vegetation was on a floating mat of *Sphagnum* moss.

We had a discussion on the differences between bogs and fens. One of the participants, who had just returned from a wetland evaluation course organized by the Ministry of Natural Resources, related that abundant Tamarack indicated that the wetland is probably a fen. Bogs are more acidic than fens and have fewer vascular plant species. Satisfied that what we were seeing was a fen, we proceeded to discover more plants.

The most spectacular was undoubtedly the White-fringed Orchid (*Platanthera blephariglottis* (Willd.) Lindl. var. *blephariglottis*), almost in full bloom. Another beautiful orchid was the Grass Pink (*Calopogon tuberosus* (L.) B.S.P.). Donald Kirk and Chris Zoladeski identified Marsh Scheuchzeria (*Scheuchzeria palustris* L.), a species characteristic of northern bogs. Near the moat were Blue Flag (*Iris versicolor* L.) and Red Maple (*Acer rubrum* L.) seedlings. Throughout our visit there were occasional outbursts from a White-throated Sparrow (*Zonotrichia albicollis*). Close to the wetland was Wild Calla (*Calla palustris* L.) in bloom, Indian Pipe (*Monotropa uniflora* L.), Spinulose Wood Fern, Creeping Partridge-berry (*Mitchella repens* L.), Shining Club-moss (*Huperzia lucidula* (Michx.) Trevis.), Bristle-leaved Sedge (*Carex eburnea* Boott) and White Baneberry (*Actaea pachypoda* Elliott).

Some of the party then headed out in search of Grape Ferns *(Botrychium* spp.), while those of us who had a long drive ahead, left for home.

The participants and I would like to thank Nels and Jean for leading a wonderful trip and for hosting us at their farm.

Mike McMurtry

Cody, W.J., and D.M. Britton. 1989. Ferns and fern allies of Canada. Agriculture Canada. Ottawa, Ontario. 430 p.

Thurston, P.C., H.R. Williams, R.H. Sutcliffe, and G.M. Stott (eds.). 1991. Geology of Ontario. Ont. Geol. Surv. Spec. Vol. 4, Parts 1 and 2. Min. North. Devel. Mines, Toronto, Ontario. 1525 p. & maps.

The Bruce-Grey Plant Committee. 2002. A Guide to the Ferns of Grey and Bruce Counties, Ontario. Owen Sound Field Naturalists, Owen Sound, Ontario. 119 p.

Orchids of the Bruce Peninsula

June 27th 2004.

We met at Sideroad 14 and Highway 21, Bruce County, south of Sauble Beach, on a breezy, sunny day and drove a couple of minutes to our first stop, a secluded natural pond. Around the pond margins Shining Ladies' Tresses (*Spiranthes lucida* (Eaton) Ames) were coming into bloom. The name refers to the glossy leaves. The flowers have a colour combination unique for Ontario orchids, white with a deep yellow lip, and are the first Ladies' Tresses to flower.

We got back into the cars and went to the Sauble Beach dunes where we spotted Large Yellow Lady's-Slippers (*Cypripedium calceolus* L. var. *pubescens* (Willd.) Correll), past flowering, and Grass Pink (*Calopogon tuberosus* (L.) B.S.P.) in bud, in amongst the Willows (*Salix* sp.), Common Bearberry (*Arctostaphylos uva-ursi* (L.) Spreng.), Kalm's Lobelia (*Lobelia kalmii* L.), Indian Paintbrush (*Castilleja coccinea* (L.) Spreng.), Bird's-eye Primrose (*Primula mistassinica* Michx.), Kalm's St. John's-wort (*Hypericum kalmianum* L.) and masses of Ragwort (*Senecio* sp.) tossing in the breeze.

Leaving the dunes we entered Walkers Woods, a botanist's paradise, past mats of Twinflower (*Linnaea borealis* L. ssp. *longiflora* (Torr.) Hultén) and found Dwarf Rattlesnake-plantain (*Goodyera repens* (L.) R. Br.) and Giant Rattlesnake-plantain (*Goodyera oblongifolia* Raf.) growing close together on the relatively bare forest floor. Further along in the more open clearings were Seneca-snakeroot (*Polygala senega* L.), Sandwort (*Arenaria* sp.) [probably *Minuartia michauxii*], Plains Puccoon (*Lithospermum caroliniense* (Walter ex J. Gmel.) MacMill. var. *croceum* (Fern.) Cronq.), Bastard Toad-flax (*Comandra umbellata* (L.) Nutt.), Wood Lily (*Lilium philadelphicum* L.) and another orchid, Striped Coral-root (*Corallorhiza striata* Lind.).

The next stop was up Shoreline Road to just below the Oliphant Fen boardwalk. We walked into a lovely wet fen, straight up to a magnificent clump of Showy Lady's Slippers (*Cypripedium reginae* Walter). The Rose Pogonia (*Pogonia ophioglossoides* (L.) Juss.) was in full bloom, as were the Grass Pinks and the Tall White Bog Orchis (*Platanthera dilatata* (Pursh) Lindl. ex Beck). We tramped around amongst Pitcher-plants (*Sarracenia purpurea* L.), Cotton-grass (*Eriophorum* sp.), Narrow-leaved Blue-eyed-grass (*Sisyrinchium mucronatum* Michx.), Spike-moss (*Selaginella* sp.), Slender-leaved Sundew (*Drosera linearis* Goldie), and the rarity, Tuberous Indian-plantain (*Cacalia tuberosa* (Raf.) Shin.). Southern Blue-flag (*Iris virginica* L.) bloomed across the road.

Showy Lady's Slipper (*Cypripedium reginae* Walter). Photo by Tom Johnson.

After lunch we drove up to the alvar at the corner of Highway 6 and Dyers Bay Road where Ram's-head Lady's Slipper (*Cypripedium arietinum* R. Br.) grows, and Allen showed us Robert's Fern (*Gymnocarpium robertianum* (Hoffm.) Newman), also known as Limestone Oak Fern, which completely filled the large crevice it was growing in. This rare fern reaches its southern limit on the Bruce Peninsula. Nearby and seeming to grow straight out of the bedrock was Purple-stemmed Cliff-brake (*Pellaea atropurpurea* (L.) Link) and rare White Camass (*Zigadenus elegans* Pursh ssp. *glaucus* (Nutt.) Hultén), Lance-leaved Tickseed (*Coreopsis lanceolata* L.), Savory (*Calamintha arkansana* (Nutt.) Shin.) and Roses (*Rosa* sp.) were seen. We disturbed a resident Common Nighthawk (*Chordeiles minor*) and were able to get a good look at the bird, which an earlier group of ornithologists had not been able to find that morning.

We got back into the cars once more and went down to Petrel Point where one of the highlights was a fen orchid, Fen Twayblade (*Liparis loeselii* (L.) Rich. ex Lindl.), against a backdrop of Juniper (*Juniperus* sp.), Meadow-rue (*Thalictrum* sp.), Cinquefoil (*Potentilla* sp.) and many other plants.

Our last stop was down a sideroad below Red Bay to see the non-native Oval-leaved Twayblade (*Listera ovata* (L.) R. Br.), thriving and apparently spreading in the ditch beside the road. Pink Pyrola (*Pyrola asarifolia* Michx.) and Lady's Slippers (*Cypripedium* sp.) were nearby. This orchid has also been found (by Allan) in Wellington County and more recently in Oxford County.

This was a well organized, relaxing trip, much appreciated by everyone. Sorry, I could not possibly name everything we saw. Our thanks to Allan Anderson and Mary Ann Johnson.

Christine Wenzler

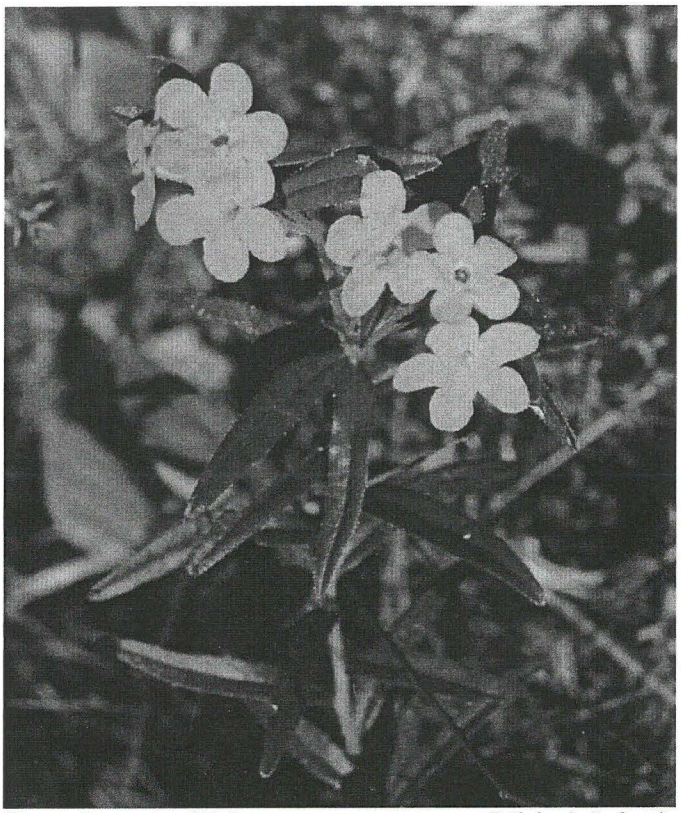
Wasaga Beach Provincial Park

July 17th, 2004.

A sizeable tract of sandy soils including dune systems covered by mainly native vegetation has been retained as a natural environment and nature reserve zone in Wasaga Beach Provincial Park between a wide bend in the Nottawasaga River before it discharges into southeastern Georgian Bay. Approximately 700 plant species are known from the park. Sarah Mainguy, our trip leader, will be updating the vegetation mapping for the park.

Starting eastward from Powerline Road, the orange glory of Butterfly-weed (*Asclepias tuberosa* L.) was quickly evident. The smaller yellow flowers of Hoary Puccoon (*Lithospermum canescens* (Michx.) Lehm.) were somewhat less showy, but they belong to a provincially rare (SRank: S3) species.

This was set among a community of Eastern White Pine (*Pinus strobus* L.) and Red Pine (*Pinus resinosa* Sol. ex Aiton) trees of variable ages and densities into which mingled Red Oak (*Quercus rubra* L.), Large-tooth Aspen (*Populus grandidentata* Michx.) and Red Maple (*Acer rubrum* L.), as well as minor occurrences of Trembling Aspen (*Populus tremuloides* Michx.), Black Cherry (*Prunus serotina* Ehrh.), Choke Cherry (*Prunus virginiana* L. ssp. *virginiana*) and White Ash (*Fraxinus americana* L.).



Hoary Puccoon (*Lithospermum canescens* (Michx.) Lehm.). Photo by Leslie Collins.

Natural unplanted Red Pine is uncommon and site-specific enough south of the Canadian Shield that it has been given the relatively high "Co-efficent of Conservatism" (CC) of 8 (Oldham *et al.* 1995)[1], the same as Butterfly Milkweed. Songs of Hermit Thrush (*Catharus guttatus*) and Pine Warbler (*Dendroica pinus*) were common while Yellow-rumped Warbler (*Dendroica coronata*) was heard fleetingly.

Low shrubs included Black Huckleberry (*Gaylussacia baccata* (Wangenh.) K. Koch, CC8 and particularly abundant), Low Sweet Blueberry (*Vaccinium angustifolium* Aiton) with tempting fruit, Bush-honeysuckle (*Diervilla lonicera* Miller), Canada Soapberry (*Shepherdia canadensis* (L.) Nutt.), Sweetfern (*Comptonia peregrina* (L.) J.M. Coult.), Wintergreen (*Gaultheria procumbens* L.), Common Bearberry (*Arctostaphylos uva-ursi* (L.) Spreng., CC8), Common Pipsissewa (*Chimaphila umbellata* (L.) Barton ssp. *cisatlantica* (S.F. Blake) Hultén, CC8), Glaucous Honeysuckle (*Lonicera dioica* L.), Common Juniper (*Juniperus communis* L.), possibly both New Jersey Teas (Narrow-leaved New Jersey Tea (*Ceanothus herbaceus* Raf.), with a CC of 9 as well as the more common New Jersey Tea (*Ceanothus americanus*

[1] A co-efficient of conservatism (CC) is a numerical score between 0 and 10 assigned to a plant species based on its degree of faithfulness to a specific habitat or set of environmental conditions. Species with a high CC show a high degree of fidelity to a narrow range of ecological parameters while those with a low CC are found in a wide variety of plant communities, including disturbed sites (Oldham *et al.* 1995).

L.)) and, of course, Poison-ivy (*Rhus radicans* L.). It was decided to leave identification of the Serviceberry to simply *Amelanchier* sp.

A short trip into an opening dominated by Reindeer Lichen (*Cladina* sp.) led us to the rosettes of another provincially rare (S3) species – Hill's Thistle (*Cirsium hillii* (Canby) Fern.). Silvery-flowered Hay Sedge (*Carex siccata* Dewey, CC8) grew among the lichen and Wormwood (*Artemisia campestris* L., CC8) along the trail.

Hill's Thistle (*Cirsium hillii* (Canby) Fern.) and Reindeer Lichen (*Cladina* sp.). Photo by Leslie Collins.

Other herbaceous species in the woodland included Venus-pride (*Hedyotis longifolia* (Gaertn.) Hook., CC8), Cow-wheat (*Melampyrum lineare* Desr.), Canada Mayflower (*Maianthemum canadense* Desf.), Eastern Bracken-fern (*Pteridium aquilinum* (L.) Kuhn var. *latiusculum* (Desv.) L. Underw. ex A. Heller), Spreading Dogbane (*Apocynum androsaemifolium* L. ssp. *androsaemifolium*), Wild Sarsaparilla (*Aralia nudicaulis* L.), Star-flower (*Trientalis borealis* L. ssp. *borealis*), Low Bindweed (*Calystegia spithamaea* (L.) Pursh ssp. *spithamaea*), Racemed Milkwort (*Polygala polygama* Walter, CC9), Oakes' Evening-primrose (*Oenothera oakesiana* (A. Gray) Robbins ex S. Watson & Coult., CC8), Bastard Toad-flax (*Comandra umbellata* (L.) Nutt.), Shinleaf (*Pyrola elliptica* Nutt.), Pinesap (*Monotropa hypopithys* L.) and several Hawkweeds including Kalm's Hawkweed (*Hieracium kalmii* L.).

Grasses were well represented. In addition to the non-native Canada Blue Grass (*Poa compressa* L.), there was Kalm's Brome (*Bromus kalmii* A. Gray, CC8, with a distinctively attractive head), Little Bluestem (*Schizachyrium scoparium* (Michx.) Nees), Sand Dropseed (*Sporobolus cryptandrus* (Torr.) A. Gray), Rocky Mountain Fescue (*Festuca saximontana* Rydb., CC9), Common Hairgrass (*Deschampsia flexuosa* (L.) Trin., CC8) and Poverty Grass (*Danthonia spicata* (L.) P. Beauv. ex Roem. & Schult.).

After taking a convoy along the road to the east, we headed north from Klondike Park Road over a flat old field. Variable moisture conditions were evident with Balsam Poplar (*Populus balsamifera* L. ssp. *balsamifera*), Eastern White Cedar (*Thuja occidentalis* L.), White Elm (*Ulmus americana* L.), Red-osier Dogwood (*Cornus stolonifera* Michx.), Canada Anemone (*Anemone canadensis* L.) and Wild Bergamot (*Monarda fistulosa* L.). A spreading Common Lilac (*Syringa vulgaris* L.) marked the location of a long-gone homestead and younger Northern Catalpas (*Catalpa speciosa* Warder ex Engelm.) showed more recent planting efforts.

At the end of the field were picnic tables making a great stop for lunch. After this refreshment, the hike proceeded into the main hilly part of the dunes. The forest at the base of the dunes contained some White Spruce (*Picea glauca* (Moench) Voss) and White Birch (*Betula papyrifera* Marshall), while open moist spots had Balsam Groundsel (*Senecio pauperculus* Michx.) and Baltic Rush (*Juncus balticus* Willd.). Climbing the hills, broadleaf tree cover was more evident, with Red Oak most common. More shade-tolerant trees included Sugar Maple (*Acer saccharum* Marshall ssp. *saccharum*) and Hop Hornbeam (*Ostrya virginiana* (Miller) K. Koch). However, the topography appeared to support diversity. There was Maple-leaved Viburnum (*Viburnum acerifolium* L.), Canada Wood-betony (*Pedicularis canadensis* L.), Round-lobed Hepatica (*Anemone americana* (DC.) H. Hara), Southern Running-pine (*Diphasiastrum digitatum* (Dill. ex A. Braun) Holub), Wild Columbine (*Aquilegia canadensis* L.) and Hairy Goldenrod (*Solidago hispida* Muhlenb. var. *hispida*). I was thrilled to see Trailing Arbutus (*Epigaea repens* L., CC9) growing with Indian-pipe (*Monotropa uniflora* L.). The birders were thrilled to hear the Eastern Towhee (*Pipilo erythrophthalmus*).

Abundant regeneration of White Pine was noted beneath a Red Pine overstorey. Old fire scars were observed on some trees. Mixed opinions were offered about fires as a positive and negative management tool. A small Aspen sprout with many tiny teeth and a fuzzy underside to the leaves induced a discussion about the complicating potential of hybridization.

It was a pleasure to have the opportunity to explore with such a knowledgeable group this natural area, which shows little invasion by non-native species or off-road vehicles.

Bohdan Kowalyk

Oldham, M.J., W.D. Bakowsky and D.A. Sutherland. 1995. Floristic Quality Assessment System for Southern Ontario. Natural Heritage Information Centre, Ontario Ministry of Natural Resources. 69 pp.

Natural Heritage Information Centre species lists: www.mnr.gov.on.ca/MNR/nhic/species/species_list.cfm

Feature

The Atlantic Coastal Plain Flora of the Great Lakes Basin and Ontario

Dirk Janas

The Atlantic Coastal Plain (ACP) flora of Ontario and the Great Lakes basin is a group of plants that are disjunct from their primary range. The biogeographical area known as the Atlantic Coastal Plain is from Cape Cod south to Florida, and extending along the gulf coast to Texas. There is limited

distribution of ACP flora inland from the Atlantic and gulf coasts along eastern and southern United States. ACP disjunct plant populations in Canada occur in Nova Scotia and the Great Lakes basin, including the Muskoka and Parry Sound areas. The disjunct populations in both Nova Scotia and central Ontario/Great Lakes basin have been well studied (Keddy, 1981; Wisheu *et al.*, 1994). Although the diversity and concentrations of ACP species is greater in Nova Scotia, the disjunct populations in the Great Lakes basin are remarkable in that their distribution is some 500 to 1000 kilometers from their primary range (Keddy and Sharp, 1989). How did these plants get there?

It was during the end of the last glaciation some 11,000 to 12,000 years ago that the story of the migration of these plants to the Great Lakes basin began. As the glaciers started their retreat the resulting flood of melt water lead to a succession of glacial lakes in the Great Lakes basin. Of these glacial lakes it was Lake Algonquin, Lake Iroquois, and the Champlain Sea that inundated large parts of central and southern Ontario as well as the present day Lakes Ontario, Erie, Huron, and Georgian Bay (Chapman and Putnam, 1984). For a period of likely several 100 years glacial Lake Algonquin covered the Parry Sound and Muskoka District areas east of Georgian Bay to approximately Highway 11. In fact, the Highway 11 corridor is built along the ancient sandy shoreline of Lake Algonquin. The outlet of Lake Algonquin was in the area of Kirkfield through what is called the Kirkfield Outlet. This important outlet allowed for the glacial melt waters to make their way to the Atlantic Coast, flowing down through the Trent Severn Waterway, through Rice Lake and beyond, eventually flowing into the Hudson River in New York and then out to the Atlantic (Keddy and Sharp, 1989; Chapman and Putnam, 1984). It was along this waterway that the ACP plants were able to migrate by various means such as wind, colonization along the shores, and dispersal by birds and other animals from the Atlantic Coast to the Great Lakes basin.

As new outlets from Lake Algonquin opened up, namely the French River (which at the time would have flowed to the east) to Ottawa River route and then the St. Clair River to current Lake Erie route, Lake Algonquin receded to the present day Georgian Bay shoreline (Chapman and Putnam, 1984). This left behind a forested and rock barren landscape with numerous lakes in the Parry Sound and Muskoka Districts. A number of these lakes now support remnant populations of Atlantic Coastal Plain flora that once would have flourished along the ancient Lake Algonquin shoreline (Keddy and Sharp, 1989). The primary distribution of ACP flora within the Great Lakes basin is generally along the inland and shoreline areas of the southern parts of Lake Superior and Lake Michigan, and east of Georgian Bay. Secondary locations for ACP species are found outside of these areas in other parts of the Great Lakes basin, though in smaller concentrations (Reznicek, 1994).

In Ontario the ACP flora is concentrated within several lakes of the Muskoka and Parry Sound Districts, although populations also occur in the Kawartha Lakes Region. Some species, such as Bayonet Rush (*Juncus militaris* Bigelow) and others, have broader distributions reaching out to the Temagami District and the Ottawa River. The habitat for most of the ACP species consists of gently sloping shorelines with a sand or gravelly peat substrate (Keddy and Sharp, 1989). This is essentially coastal plain habitat. Some ACP species, such as Virginia Chain Fern (*Woodwardia virginica* (L.) Sm.), are found mostly in bogs and fens. For the shoreline species a critical feature of the coastal plain lakes is that the lake levels fluctuate. Lake fluctuations prevent the establishment of shrubs and other competing species below the high water mark. During the low water levels in mid to late summer the ACP species are able to grow on the exposed shoreline. The coastal plain lakes evaluated in one study found average water level fluctuations below the high water mark of 20 cm to 30 cm (Keddy and Sharp, 1989). In lakes where the water regime does not fluctuate (due to natural or anthropogenic influence) shrubs such as Sweet Gale (*Myrica gale* L.) and Leatherleaf (*Chamaedaphne calyculata* (L.) Moench), as well as Blue-joint Grass (*Calamagrostis canadensis* (Michx.) P. Beauv.), crowd the shorelines and displace the ACP species. An important adaptation of the ACP species that allows them to persist through periods of natural lake level stabilization, such as from beaver dams, is the ability to develop large seed banks in the substrate (Keddy and Reznicek, 1982). These seeds are able to remain dormant through extended periods of inundation. If the beaver dam is abandoned or washed out during a large storm event the newly exposed shoreline erupts in the germination of various wetland species, including ACP species. A study on the role of seed banks on Matchedash Lake (Keddy and Reznicek, 1982), where historic water level fluctuations were determined to be over a meter, found 41 different species of vascular plants including many ACP species from the coastal plain sediment samples. The periodic low water levels were determined to be critical for the persistence of these species.

Wave disturbance along the shorelines is also an important factor and can explain the distribution of ACP plants within a lake. A study completed by Keddy (1985) determined that the proportion of ACP species to other shoreline species increased along shoreline areas with greater exposure to wave action. Given the diversity of species in these lakeshore seed banks, the restriction of ACP species to the infertile substrate of the wave washed shorelines is largely due to their low competitive, yet stress-tolerant ability (Wisheu and Keddy, 1994).

Depending on the definition used for determining plants with "coastal plain affinities" there are approximately 20 to 25 ACP species found in the area east of Georgian Bay. These include both floating leaved and emergent aquatics. Some of the lakes with the best assemblages of these species include Matchedash Lake south of the Severn River, Morrison Lake north of the Severn River, and Axe Lake in the northern part of the District of Muskoka. Many other lakes such as Hardy, Wahwashkesh, Gibson, Wolf, and Kahshe support populations of ACP plants. In survey studies for ACP plants, species that were used as indicators include Common Meadow-beauty (*Rhexia virginica* L.), Bayonet Rush, Ridged Yellow Flax (*Linium striatum* Walter), Two-cupped Pondweed (*Potamogeton bicupulatus* Fern.), Swamp St. John's-wort (*Triadenum virginicum* (L.) Raf.), and Two-formed Yellow-eyed-grass (*Xyris difformis* Walter), among others (Keddy and Sharp, 1989). A summary of the ACP species found in the Muskoka and Parry Sound Districts and their associated

provincial rank is provided below. ▲

Chapman, L.J. and D.F Putnam. 1984. The Physiography of Southern Ontario - Third Edition. Ontario Geological Survey, Special Volume 2.

Keddy C..J. and M.J. Sharp. 1989. Atlantic Coastal Plain Flora Conservation in Ontario. Prepared for: Natural Heritage League, World Wildlife Fund.

Keddy P.A. 1981. Vegetation with Atlantic Coastal Plain Affinities in Axe Lake, near Georgian Bay, Ontario. Canadian Field-Naturalist 95(3): 241-248.

Keddy P.A. 1985. Wave disturbances on lakeshores and the within-lake distribution of Ontario's Atlantic coastal plain flora. Can. J. Bot. 63: 656-660.

Keddy P.A. and A.A. Reznicek. 1982. The Role of Seed Banks in the Persistence of Ontario's Coastal Plain Flora. Amer. J. Bot. 69(1): 13-22.

Reznicek, A.A. 1994. The Disjunct Coastal Plain Flora in The Great Lakes Region. Biological Conservation 68:203-215.

Wisheu, I.C., C.K. Keddy, P.A Keddy, and N.M. Hill. 1994. Disjunct Atlantic Coastal Plain Species in Nova Scotia: Distribution, Habitat and Conservation Priorities. Biological Conservation 68:217-224.

Wisheu, I.C. and P.A Keddy. 1994. The Low Competitive Ability of Canada's Atlantic Coastal Plain Shoreline Flora: Implications for Conservation. Biological Conservation 68:247-252.

Table 1.
Summary of Atlantic Coastal Plain Species Occurring in the Districts of Muskoka and Parry Sound

Scientific Name and Authority	Common Name	Provincial Rank
Blechnaceae	**Deer-fern Family**	
Woodwardia virginica (L.) Sm.	Virginia Chain Fern	S4
Droseraceae	**Sundew Family**	
Drosera intermedia Hayne	Spatulate-leaved Sundew	S5
Elatinaceae	**Waterwort Family**	
Elatine minima (Nutt.) Fischer & C.A. Mey.	Small Waterwort	S4
Gentianaceae	**Gentian Family**	
Bartonia paniculata (Michx.) Muhlenb. *ssp. paniculata*	Screw-stem	S1
Guttiferae	**St. John's-wort Family**	
Triadenum virginicum (L.) Raf.	Swamp St. John's-wort	S3
Lentibulariaceae	**Bladderwort Family**	
Utricularia cornuta Michx.	Horned Bladderwort	S5
Utricularia purpurea Walter	Purple Bladderwort	S4
Linaceae	**Flax Family**	
Linum striatum Walter	Ridged Yellow Flax	S1
Melastomataceae	**Melastome or Meadow-beauty Family**	
Rhexia virginica L.	Common Meadow-beauty	S3S4
Menyanthaceae	**Buckbean Family**	
Nymphoides cordata (Elliott) Fern.	Eight-angled Floating-heart	S4?
Polygonaceae	**Smartweed or Buckwheat Family**	
Polygonum careyi Olney	Carey's Knotweed	S3S4
Scrophulariaceae	**Figwort Family**	
Gratiola aurea Muhlenb. ex Pursh	Golden-pert	S4?
Cyperaceae	**Sedge Family**	
Cladium mariscoides (Muhlenb.) Torr.	Water Bog-rush	S5
Eleocharis olivacea Torr.	Bright-green Spike-rush	S4
Eleocharis robbinsii Oakes	Robbins' Spike-rush	S4
Rhynchospora capitellata (Michx.) M. Vahl	Small-headed Beaked-rush	S4
Rhynchospora fusca (L.) Aiton f.	Brown Beaked-rush	S4?
Juncaceae	**Rush Family**	
Juncus militaris Bigelow	Bayonet Rush	S3S4
Poaceae	**Grass Family**	
Panicum rigidulum Bosc ex Nees	Ridged Panic Grass	S2S3
Potamogetonaceae	**Pondweed Family**	
Potamogeton bicupulatus Fern.	Two-cupped Pondweed	S3S4
Potamogeton confervoides Reichb.	Alga-like Pondweed	S2
Xyridaceae	**Yellow-eyed Grass Family**	
Xyris difformis Walter	Two-formed Yellow-eyed-grass	S3?

Species list taken from Keddy and Sharp (1989).

Essay

Mystery Plant at Port Franks

Lynn J. Dukelow

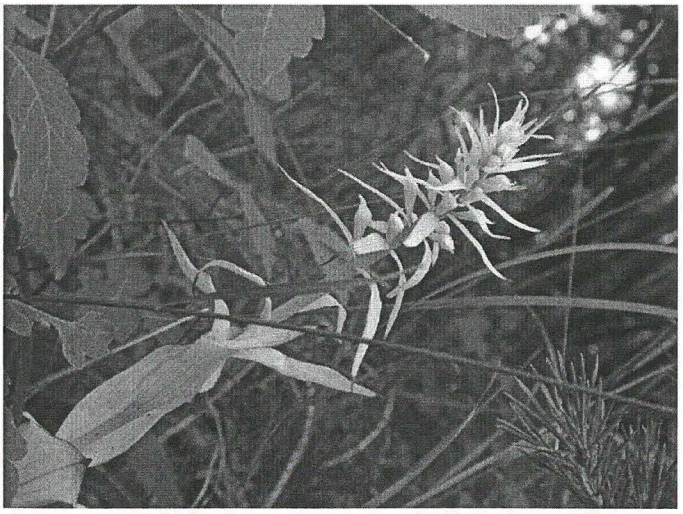
Tucked away in Port Franks is a private subdivision that surrounds an inland body of water known as Old Mouth Lake. There is an incredible variety of plant life in this one small area, including some rare species, and I have enjoyed photographing and attempting to identify the many wildflowers here for over twenty years.

On July 5th of this year, as I was strolling the road near the lake searching for flowers to photograph, a flash of white caught my eye. It was a plant, about eight to ten inches high, which was fairly well hidden by a Fragrant Sumac (*Rhus aromatica* Aiton) and some surrounding grasses.

As I looked more closely I was quite astonished to discover a plant I had never seen before. This plant had white, well-veined, egg-shaped leaves that clasped a pinkish-purple stem. There was a raceme of small cream coloured buds with longish, narrow white bracts. The shape of the plant, its buds, bracts and leaves reminded me of the Common Helleborine (*Epipactis helleborine* (L.) Crantz) which grow in this area, but it was the wrong colour. I began to wonder if perhaps there was an albino version of Helleborine.

Since the plant was located between the road and the lake edge about nine feet away, I knew the soil was sandy. The area was well shaded by pine trees and shrubs, which also meant the ground had a thin layer of pine needles and there was the possibility of decomposing leaves. I hoped that noting these details would help me to locate the plant in a book and attach a name to it.

After taking several photographs and searching in vain through my wildflower identification books, I contacted Dorothy and John Tiedje, as well as Jane Bowles at the University of Western Ontario herbarium, in the hopes that they could help me identify this unusual specimen.



Common Helleborine Common Helleborine (*Epipactis helleborine* L. forma *monotropoides* (Mousley) Scoggan). Photo by Lynn J. Dukelow.

Close up of inflorescence of Common Helleborine (*Epipactis helleborine* L. forma *monotropoides* (Mousley) Scoggan). Photo by Lynn J. Dukelow.

Dorothy very kindly located a reference in Orchids in Ontario by R.E. Whiting and P.M. Catling (p. 61) to a "pure white" Helleborine. The information from this reference led me to believe that the plant really was a rare form of Helleborine.

A few days later, Dorothy and John came out to Port Franks to look at the plant and we decided that it was indeed a white form of *Epipactis helleborine* L. forma *monotropoides* (Mousley) Scoggan[2]. Jane Bowles also contacted me with the suggestion that it was a mutant albino Helleborine. I was quite pleased to finally identify my mystery plant!

Although I checked regularly, the buds never fully opened and the whole plant eventually withered and died. Finding such as unusual plant specimen has further piqued my interest in local botany and provided an impetus to explore our area's flora more carefully in the future.

Mousley, H. 1927. The genus Amesia in North America. Canadian Field-Naturalist 41(1): 1-6; 41(2) 28-31.

Reddoch, A.H., and J.M. Reddoch. 1987. Colour forms of Ottawa District orchids. Trail & Landscape 21(2): 71-19.

Whiting, R.E. and P.M. Catling. 1986. Orchids of Ontario: An Illustrated Guide. The CanaColl Foundation, Ottawa, Ontario. xii + 169 pp.

[2] The total absence of chlorophyll in these plants gives them the ghostly white appearance of Indian-pipe, *Monotropa uniflora* L., hence the name forma *monotropoides* (Mousley) Scoggan. In the original description (Mousley 1927) the plants were described as having a "pale rose-mauve suffusion to the lower part of the stem" as is shown in the photos of the Port Franks plants. Whiting and Catling (1986) report this form from Halton, Prince Edward, and Waterloo counties, and Reddoch and Reddoch (1987) report it from Ottawa-Carleton. Interestingly this summer I was sent a photo for identification of a nearly identical appearing plant photographed near Anten Mills, Simcoe County, by Doreen Bailey. Lambton and Simcoe can now be added to the list of Ontario counties where this interesting colour form has been reported (M.J. Oldham, pers. comm.).

Announcements

Many Thanks to Ed Morris

Dirk Janas

As you now all know, our newsletter editor Ed Morris has decided to step down and pass the torch after nearly eight years of service. Since the fall of 1996 Ed has tirelessly and enthusiastically carried out the demanding duties of the newsletter editor. Without question the role of editor is the most committed and altruistic of all the FBO executive volunteer positions. It is the newsletter after all that puts a face on our organization and largely defines what the Field Botanists of Ontario are all about. Over the years Ed's efforts have resulted in a high quality newsletter that provided FBO members with excellent content, presenting a balance of essay and feature articles, field trip reports, book reviews, and many of his own quality photos. When the pool of newsletter materials was running low Ed would go the extra mile to write his own feature articles, such as *Common Forest Vascular Plants of Northeastern Ontario* (Summer 2003, 16-2). Although Ed will no longer be our editor he will stay involved with the FBO executive as a director at large and continue to provide representation from northeastern Ontario.

From the FBO executive and from all of the members that have enjoyed the newsletter over the years, many thanks to Ed for all of his time and efforts as newsletter editor. ▲

A Brand New FBO Newsletter Editor

Leslie Collins

When I first learned Ed Morris was hoping to step down as newsletter editor I didn't really think too much about it. Eventually my mind started wandering back to this little nugget of information and the words "what if" kept popping up in sequence. Still, it seemed an outrageous idea. After all, who didn't notice the tardiness with which I submitted my previous two field trip reports (see Field Botanists of Ontario Newsletter, Volume 16(4))?

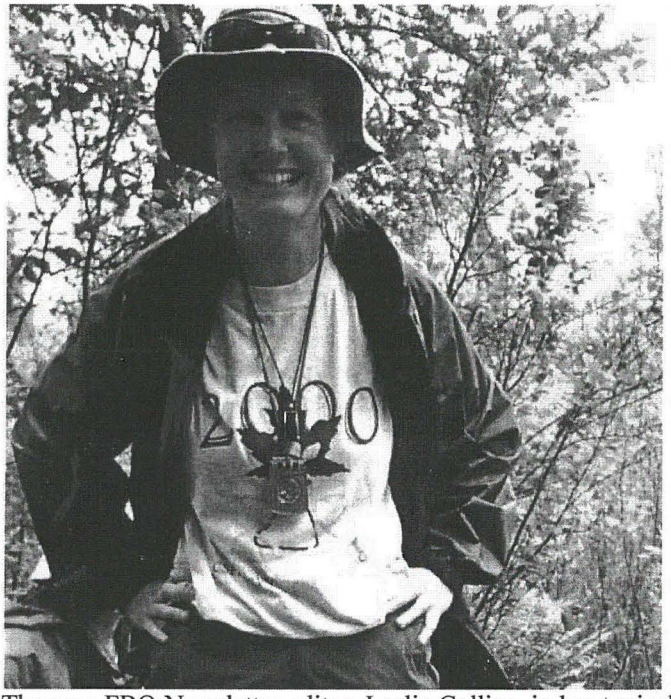
At the 2004 Annual General Meeting (AGM) and associated trips this information came to the fore and many people were talking about whom we could possibly find to replace Ed. He had done the job so well and for so long. I thought I could even detect slight ripples of resistance at the thought of letting him go.

During the trips and dinner I had a chance to mull it over and decided to take the plunge and give it a try. When the question arose during the formal portion of the AGM I didn't initially speak up. I wasn't really worried so much about the time commitment as I was about the actual orchestration of producing a newsletter. I had visions of alienating all of my relatives and friends when they learned I would be forcing them to lick stamps and envelopes quarterly.

The question "Does anyone know of anyone that would be interested in taking over the position of newsletter editor?" was posed to the members in attendance at the meeting and I kept quiet. Fortunately for me (and hopefully it is also fortunate for you), Cheryl Hendreckson was there to speak out while pointing a finger my way (thanks Cheryl).

I have always thought I might enjoy the role of editor, though I was never sure where and how I would make my start. For as long as I can remember I've enjoyed the way text looks on paper and the challenge of creatively going about making the desired message fit in a given space (though I must admit, this has proven more challenging after edits and comments have been taken into account).

I also enjoy botany and am lucky in that I am able to 'botanize' both at work and play. For those of you who already know me, you will know that I frequently attend FBO field trips. You will also know that I enjoy photography and dabble at photography during the trips. For this particular newsletter I have used a number of my own photos from the trips, both to augment articles I received that were not accompanied by photos, and to occupy space.



The new FBO Newsletter editor, Leslie Collins, in her typical field attire. Photo from file.

I encourage everyone with an outstanding trip report to email the article to me when ready, at fbo@lesliec.com, an email I have specifically set up for this purpose. If you have photos to share, please do, keeping in mind that they will be reproduced in black and white. If you do not have photos to share let me know and I will try to find some alternative photos. There are several members of the FBO who enjoy photography and are always willing to share.

I know I have a lot to learn and I am very open to any advice you might have. I aim to give this position my best shot and hope to discover and grow through this experience while providing you with a fun and informative newsletter of the caliber you've come to expect. ▲

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