Field Botanists of Ontario

Newsletter

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Members of the FBO Durham Coastal Marshes trip investigate vegetation on the beach strand. Photo by Mike McMurtry.

FIELD BOTANISTS of ONTARIO

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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.

The **deadline** for submissions for **Volume 17(3)** is **March 31, 2005.**

Scientific names and authorities of vascular plants generally follow:

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

Annual General Meeting Update

Mary Ann Johnson

I would like to take this opportunity to say thank you to all of the trip leaders that gave their time and expertise to this year's AGM in Midland. I would also like to thank Bill McIlveen for giving an insightful presentation on plant defenses as the guest speaker and of course a thank you to the Wye Marsh centre for hosting the event.

The 2005 Annual General Meeting is scheduled for September 17 and 18 and will be held in the Guelph area. The guest speaker will be Dan Kraus of the Nature Conservancy. His presentation will be on the conservation of globally significant vascular plants and communities in Ontario.

Feel free to contact me with any suggestions for this or future AGMs.

Field Trip Reports

Lord of the Rings Grove

July 10th, 2004.

On a Bruce Kershner hike, prepare to look up. Way up.

Bruce Kershner is an old growth forest researcher from Western New York State. In 1989, Bruce started the Western New York Old Growth Forest Survey and since then has identified 80 old growth forest sites in the area. In recent years, Bruce has documented an additional 50 old growth sites on the Ontario side of the Niagara Peninsula working with the Bert Miller Nature Club. Bruce, along with comrades like Bob Leverett from the Boston area, have sparked a rise in old growth forest interest and research in Eastern North America, and between them have co-authored the recently published *Sierra Club Guide to the Ancient Forests of the Northeast* (Sierra Club Books 2004).

So what is an old growth tree or old growth forest? According to the guide, an old growth tree is 150 years or older, and an old growth forest has a canopy dominated by old growth trees. It is generally agreed by old growth forest researchers that trees 150 years and older develop fairly consistent and easily recognizable characters that distinguish them from younger trees. These characters include:

- Antique Bark – balding, peeling, shaggy, or deeply grooved bark;
- Soaring Branchless Trunks – forest grown trees whose lowest boughs start at 50ft or more in height;
- Large Diameter Trunks – an obvious, but often unreliable characteristic;
- Buttressed Roots – trunks that are markedly fluted at the bottom;
- 'Stag-headed' Crowns - craggy, short, right-angled branching of trees that show the battle scars of numerous windstorms; and,
- Bizarre Growth Forms – stunted, straggling, or cliff dwelling trees growing on harsh sites.

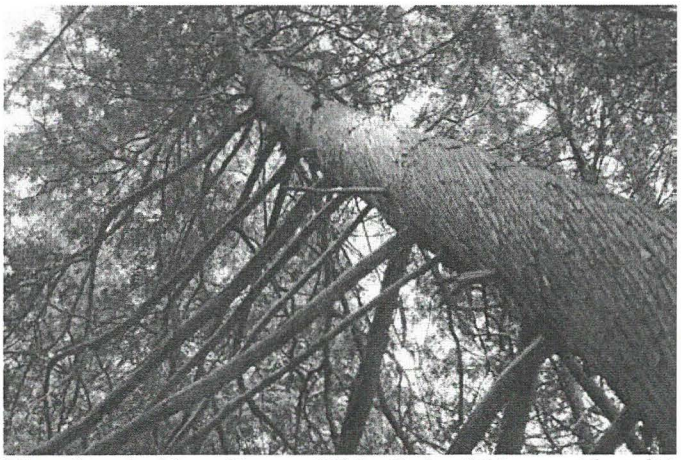
For this FBO outing we were going to explore the ancient forests of the Niagara Glen Nature Reserve in the City of Niagara Falls. Located a few kilometres downstream of the Falls, and just north of 'the Whirlpool,' the Niagara Glen is a 24 hectare forested terrace in the Niagara Gorge between the escarpment cliffs and the Niagara River. Because of the relative inaccessibility of the Glen, the old growth character of the forest has been preserved. Hikers met Bruce and his field assistant Jerry Horowitz at the Niagara Glen picnic area along the Niagara Parkway, and from there we descended the 6 or 7 stories of steel steps into the gorge below.

At the bottom of the steps the steep walls of the gorge met open talus woods. Sugar Maple (*Acer saccharum* ssp. *saccharum*) was dominant in the shadier spots, and in the sunny areas grew limestone specialists like Chinquapin Oak (*Quercus muehlenbergii*), Butternut (*Juglans cinerea*), Eastern White Cedar (*Thuja occidentalis*) and Basswood (*Tilia americana*). Bruce estimated the largest Chinquapin Oak and Butternut at 200 years old, and in this same area pointed out a 300-year-old shaggy-barked Ironwood (*Ostrya virginiana*).

Hikers paused to look at a 'cliffbrake fern' nestled in the cracks of the gorge walls. I heard Purple Cliffbrake (*Pellaea atropurpurea*) from some of the group while others said Smooth Cliffbrake (*Pellaea glabella*). I later read that Purple Cliffbrake has a hairy stem (stipe and rachis) while Smooth Cliffbrake's stem is hairless and shiny. Can you see any hairs in the photo? Further on through a maze of rock, the group puzzled over a White Cedar with half its body bent over a 3 m tall boulder that Bruce estimated at 450 years old (the cedar that is…the boulder is probably older).

Purple Cliffbrake (*Pellaea atropurpurea*) growing in the gorge walls. Photo by Bill McIlveen.

At this point the group split between Bruce and Jerry to see the ancient White Cedar of the 'Lord of the Rings Grove' and - what Bruce jokingly termed - the 'Nearly-Dead-Upside-Down-Tree.' Did I mention this place was rocky? To see these White Cedar we had to ascend into true, ankle-busting talus of pointy, dolomitic rocks as big as the heads they were going to crush. After a few rolling rocks were unleashed hikers were quickly conditioned not to follow directly behind the person in front. As a consolation for our efforts, the air filled with the sweet scent of Small-flowered Leaf-cup (*Polymnia canadense*) as we climbed through its waist-high stands.



View from inside an Eastern White Cedar (*Thjua occidentalis*) grove growing on the talus slope. Photo by Bill McIlveen.

Our group hit the Lord of the Rings Grove first, and boy was it worth the potential compound fractures. Here was a talus White Cedar grove where the trees grew like giant octopuses. The largest cedar had a main body of 3 or 4 vertical trunks ~15 m in height and 25 lateral trunks that swooped, dived, arched, and swirled out 15 m in every direction. Almost every 'leg' of the tree rooted where they touched down on rock - like the layering habit of Black Spruce (*Picea mariana*) in northern wetlands. This was a tree you walked into, and once inside you could sit on the branches and the thick layer of cedar duff that had built up over centuries. A tree that, in the absence of soil, had created its own. Pretty clever. Bruce estimated this tree's birth year, where it originates in the rock, at between 1300 and 1400 AD.

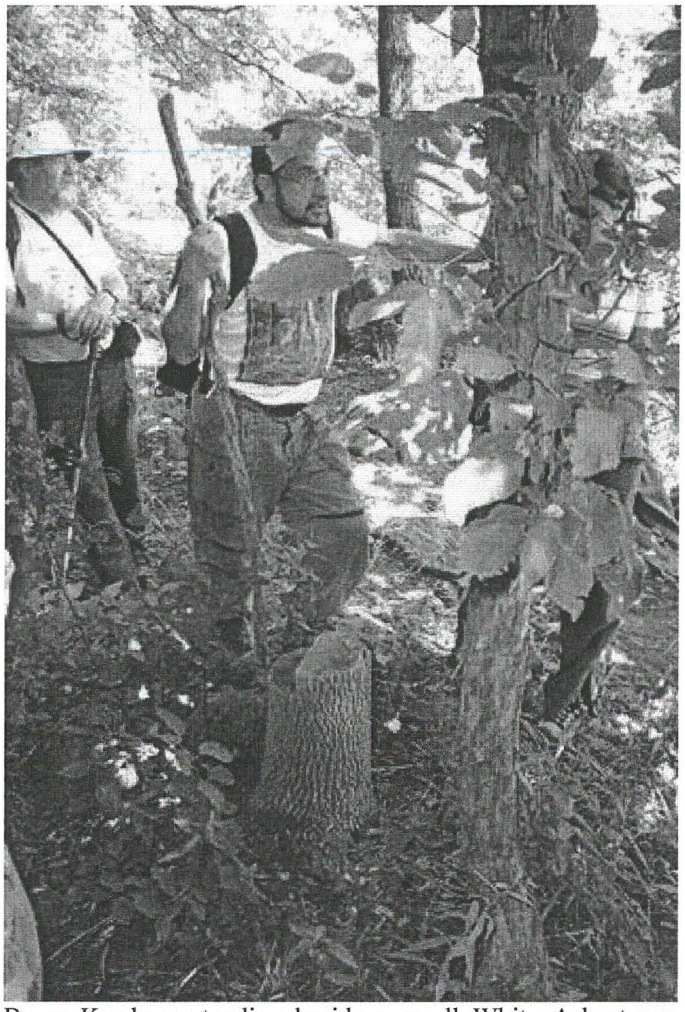
The 'Nearly-Dead-Upside-Down-Tree' was equally fascinating. This White Cedar consisted of a 10 m trunk half-covered in bark that grew down the talus slope, and then at the end turned up like a hook. Bruce guessed the tree grew for about 350 years standing up, was knocked down by a falling boulder, and spent the last 200 years getting back on its feet to face the wind again. Tree of Life indeed. To date, Bruce and Jerry have documented over 1,200 cliff and talus old growth White Cedar, 250 to 750 years old, in the Niagara Gorge from the Falls to Queenston Heights.

The two groups descended from the talus slopes and re-joined to travel down well-worn forest paths. Giant boulders were frequent along the path; the largest of which were used by groups of rock climbers for practice. Sugar Maple was dominant in the forest here with Beech (*Fagus grandifolia*), White Ash (*Fraxinus americana*), Red Oak (*Quercus rubra*), and White Oak (*Quercus alba*) as secondary dominants. In the shrub layer grew Witch-hazel (*Hamamelis virginiana*) and Bladdernut (*Staphylea trifoliata*). All trees had a characteristic forest grown appearance - the tallest of which had lowest boughs 20 m above the ground and soared to over 30 m in height. Bruce estimated the average canopy tree age at 180 years, and mentioned that since the trees here grew on shallow soils, that put their estimated ages higher than trees of similar size growing on deeper soils. For example, the group counted 130 rings on a cut White Ash stump just 20 cm in diameter!

Despite the tourist traffic the ground flora was surprisingly intact. Dominant ground layer species in the shady woods included common escarpment forest species like Wild Ginger (*Asarum canadense*), Blue Cohosh (*Caulophyllum thalictroides*), Wild Sarsaparilla (*Aralia nudicaulis*) and Black-fruited Mountain Rice (*Oryzopsis racemosa*). In the sunnier areas near the river grew patches of Smooth Aster (*Symphyotrichum laeve,* old name *Aster laevis*), Woodland Sunflower (*Helianthus divaricatus*), Hairy Beardtongue (*Penstemon hirsutus*) and Bottlebrush Grass (*Elymus hystrix*). In this same area grew a metre-high stand of Fragrant Sumac (*Rhus aromatica*) over a carpet of Black-fruited Sedge (*Carex eburnea*). Cottonwood (*Populus deltoides*) and Ninebark (*Physocarpus opulifolius*) were common along the shoreline of the racing Niagara River.

Further on the group was reminded which end of the Niagara Escarpment they were at. In this part of the Glen grew Sassafras (*Sassafras albidum*), Chinquapin Oak (*Quercus muehlenbergii*), Red Mulberry (*Morus rubra*), and Tulip-tree (*Liriodendron tulipifera*). A twenty-six metre Sassafras - the tallest in Canada, and one of the tallest on record for Eastern North America; and, Tulip-tree – 25 m to the first branch and 38 m in height. The largest Tulip-tree stood with two gigantic Black Walnut (*Juglans nigra*) bodyguards and topped out at 41 m. Twenty-five metres below, the endangered Red Mulberry grew in their shade.

This big tree highlight marked the end of our trip as hikers followed the loop through the woods back to the steel steps and up and out of the Glen. Before reaching the steps the group paused on some rocks in the shady woodland to reflect on this experience. Because after a few hours of 30 m this and 250 year old that, the stats go quickly to cold and Bruce Kershner's real message comes to the fore.



Bruce Kershner standing beside a small White Ash stump, approximately 20 cm in diameter and containing 130 growth rings. Photo by John Ambrose.

That message, paraphrased from one of Bruce's handouts, goes as follows: Old growth forests are "living historic monuments" and the "last surviving landscapes of the pre-European Native American era." "They provide pristine places for people to renew themselves" and "habitats for numerous rare and endangered animals and plants." They "teach lessons of wisdom about recycling, life and death, symbiosis, timelessness and the Eternal" and "are part of our irreplaceable legacy." Amen.

Paul O'Hara

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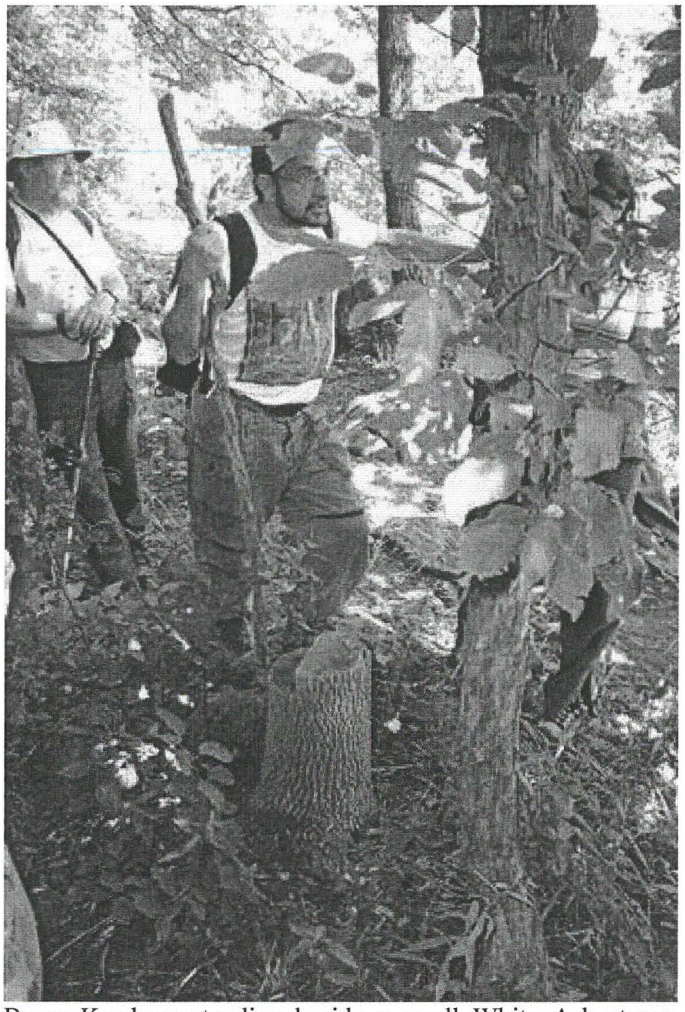

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Paul O'Hara

Water Smartweed (*Polygonum amphibium*) in flower. Photo by Mike McMurtry.

Along the way, mostly in upland areas, were a bewildering array of non-native plants, including European White Birch (*Betula pendula*), planted Hackberry (*Celtis occidentalis*), ornamental Red Currant (*Ribes rubrum*) (no glands), Forsythia (*Forsythia viridissima*), planted Shrubby Cinquefoil (*Potentilla fruticosa*), Brittle-stem Hempnettle (*Galeopsis tetrahit*), Cow Vetch (*Vicia cracca*) and European Guelder Rose (*Viburnum opulus* var. *opulus*). The latter species closely resembles the native Highbush Cranberry, but differs in having bristle-tipped stipules, and glands at the junction of the petiole and blade, which are concave with saucer-like discs (Soper and Heimburger 1982). The hardy Bur Oak (*Quercus macrocarpa*) was one of the few native plants in sight at this point. Non-native species can make botanizing in near-urban areas a challenge!

Steve pointed out an impressive number of grasses, including Fowl Manna-grass (*Glyceria striata*), American Mannagrass (*Glyceria grandis*), Fowl Bluegrass (*Poa palustris*) (long ligules compared to *P. pratensis* and is present in almost every marsh), Red-top (*Agrostis gigantea*), Meadow Timothy (*Phleum pratense*) and Canada Blue-joint (*Calamagrostis canadensis*) (bluish nodes, native grass present in coastal marshes), and Annual Bluegrass (*Poa annua*). As we entered wetter habitat again, we found Dark-green Bulrush (*Scirpus atrovirens*), and Purple Loosestrife (*Lythrum salicaria*), Bog Yellow-cress (*Rorippa palustris*), Marsh Vetchling (*Lathyrus palustris*), and both Greater and Lesser Duckweed (*Spirodela polyrhiza* and *Lemna minor*, respectively). Eurasian Water-milfoil (*Myriophyllum spicatum*) and Leafy Pondweed (*Potomageton foliosus*) were abundant in the open-water habitat on the west side of the marsh. Species at the edge of the wetland were Spotted Jewel-weed (*Impatiens capensis*), Riverbank Grape (*Vitis riparia*), New England Aster (*Symphyotrichum novae-angliae*), Panicled Aster (*Symphyotrichum lanceolatum*), Stinging Nettle (*Urtica dioica*), Devil's Beggarticks (*Bidens frondosa*) (retrorse awns on fruit), Tumor-curing Cocklebur (*Xanthium stramarium*), White Ash (*Fraxinus americana*), Red-osier Dogwood (*Cornus stolonifera*), Common Milkweed (*Asclepias syriaca*), Hedge Bindweed (*Calystegia sepium*), Silver Maple (*Acer saccharinum*) and Eastern White Cedar (*Thuja occidentalis*); in other words, a mix of wetland and upland species. On sandy substrate between the marsh and the beach, Smooth Rose (*Rosa blanda*) was present, along with Eastern Cottonwood (*Populus deltoides*), Sandbar Willow (*Salix exigua*) (picture), Basket Willow (*Salix purpurea*) (sub-opposite leaves), Hybrid Honeysuckle (*Lonicera* x *bella*) (intermediate in fuzziness), Bitter Nightshade (*Solanum dulcamara*) and Inserted Virginia Creeper (*Parthenocissus vitacea*). Other species at the edge of the marsh on the inland side of the sandbar were Indian Hemp (*Apocynum cannabinum* var. *cannabinum*) and River Bulrush (*Scirpus fluviatilis*).

Once we were on the barrier beach, we found our targeted species: Baltic Rush, Sea Rocket, Seaside Spurge (many patches) and the provincially rare Bushy Cinquefoil.

American Sea Rocket (*Cakile edentula*) and Seaside Spurge (*Chamaesyce polygonifolia*) (lower left corner). Photo by Mike McMurtry.

On the strand Evening Primrose (probably *Oenothera biennis* – taxonomy of this genus is difficult and species aren't easily identified in the field) was also common, as well as Common Ragweed (*Ambrosia artemisiifolia*) (I only need my dripping nose to ID this), Sweet Coltsfoot (*Petasites frigidus*) and Devil's Beggarticks. Sandbar Willow provided an elegant backdrop on the higher areas of the beach. Field Camomile (*Anthemis arvensis*) was in flower, and we also saw Bog Yellow-cress, Woolly Sedge (*Carex pellita*), Old Witch Panic-grass (*Panicum capillare*), Marshpepper Smartweed (*Polygonum hydropiper*) (peppery taste), Spearscale (*Atriplex*

patula), Bald Spikerush (*Eleocharis erythropoda*), Broad-leaved Water-plantain (*Alisma plantago-aquatica*), Fragrant Umbrella Sedge, Red-top, Oakleaf Goosefoot (*Chenopodium glaucum*), Pale Smartweed (*Polygonum lapathifolium*), Toad Rush (*Juncus bufonius*), Ensheathed Dropseed (*Sporobolus vaginiflorus*), Red Clover (*Trifolium pratense*), True Forget-me-not (*Myosotis scorpiodes*), and Square-stem Monkeyflower (*Mimulus ringens*). Above our heads as we ambled along the beach Cooper's Hawk circled and gave the group a great view.

Marsh communities, with a diversity of species, were found in depressions on the strand that would be subject to frequent inundation. Species here were Creeping Spike-rush (*Eleocharis smallii*) and Northern Arrowhead (*Sagittaria cuneata*), Broadleaf Arrowhead (*Sagittaria latifolia*) (scimitar-shaped lobe on seeds), Least Spike-rush (*Eleocharis acicularis*), Porcupine sedge (*Carex hystericina*). Also present were Hairy Willow-herb (*Epilobium ciliatum*), and Soft Rush (*Juncus effusis*). Further back on the strand in drier areas were Canada Wild Rye (*Elymus canadensis*), Porcupine Sedge (*Carex hystericina*), Slender Agalinis (*Agalinis tenuifolia*), White Heath Aster (*Symphyotrichum ericoides*) and Quack Grass (*Elymus repens*).

We visited a small marsh near the mouth of Robinson Creek and picked up a few new species such as Tussock Sedge (*Carex stricta*), Turtlehead (*Chelone glabra*), Lake-bank Sedge (*Carex lacustris*) (the dominant species), and Speckled Alder (*Alnus incana* ssp. *rugosa*). Nearby a large Pacific Salmon was lying dead on the beach; several non-native salmon species have been stocked in the last couple of decades by the Ministry of Natural Resources. The fisheries for native salmonid species - Lake Trout and the extirpated Atlantic Salmon – were impacted by a combination of over-fishing, Sea Lamprey and toxic chemicals.

The group rested at a picnic spot at Darlington Provincial Park while we waited for one of the group to retrieve his field notebook lost near Robinson Creek (his success in finding it demonstrated the value of brightly coloured field notebooks). We then walked back to our parking spot. On the way we noticed a thick growth of the non-native Glandular Touch-me-not (*Impatiens glandulifera*), a showy, pink, non-native species of *Impatiens*. A few members of the group went on to Pumphouse Marsh in search of the Water Willow, or Swamp Loosestrife, (*Decodon verticillatus*). This species is not to be confused with the provincially-rare American Water-willow (*Justicia americana*), found in a few locations in southwestern Ontario. Neither species is actually a member of the willow family.

The group dispersed in the late afternoon, pleased with a day spent in good company, and appreciative of Steve for his expert interpretation of Lake Ontario wetlands.

Mike McMurtry

Hanna, R. 1984. Life Science Areas of Natural and Scientific Interest in Site District 6-13. Parks and Recreational Areas Section, Central Region, Ontario Ministry of Natural Resources, Richmond Hill, Ont. 57 pp. & map.

Soper, J.H., and M.L.Heimburger. 1982. Shrubs of Ontario. Royal Ontario Museum, Toronto, Ont. 495 pp.

Feature

Significant Plant Records from the Herbarium of Royal Botanical Gardens (HAM): 2003

Carl Rothfels (CJR), Royal Botanical Gardens

This document is a summary of new regional records for the City of Hamilton or Halton Region, and of significant records from other areas in Ontario, accumulated over the course of the 2003 field season. For significant (but not regionally-new) records from Hamilton and Halton, see Rothfels et al. 2004. There are some specimens that have not yet been identified (especially in *Geum*); if they turn out to be significant, they will be included in a 2004 summary.

This list does not include our records from Brant County, which we hope to summarize at a later date. It also does not include our records of *Azolla caroliniana* (Eastern Mosquito Fern), which we are preparing for potential publication in Canadian Field-Naturalist.

Records are the result of fieldwork by Royal Botanical Gardens (RBG) staff, fieldwork by other individuals who then deposited their specimens in the RGB herbarium (HAM), or are from herbarium work by RBG staff on previously collected specimens (re-identifications, etc.). Non-native species are indicated by an "*".

The following resources were used when determining whether or not a given species was significant in a given areas: Smith (2003) for RBG, Goodban (2004) for Hamilton, Varga et al. (2000) for Halton, York, and Durham Regions, Bruce-Grey Plant Committee (2003) for Grey County, and Newmaster et al. (1998) for Ontario. The determination of new sites for Halton is a guess, since Varga et al. (2000) give a number of extant sites for each species, but don't list them (thus, if we find a species in Halton, we don't know if it's a new or known site).

Special thanks go to Dr. Barre Hellquist for annotating all our *Potamogeton* specimens. Without his help, we would have been at a loss with this difficult group, and would not have been able to confirm *Potamogeton friesii* or *Potamogeton strictifolius*. Similarly, Stephen Darbyshire generously reviewed and annotated our specimens of *Zizania* and some grasses, and Bill Crins did the same for *Carex* and *Melica*. Finally, Dr. Jim Pringle was again of great assistance with specimen identification, literature searches, and general herbarium matters.

APIACEAE

**Anethum graveolens* L.

Dill

New for RBG and Hamilton. One plant of this common herb was growing in a waste areas in the Mercer's Glen compost facility. CJR 654, S.R.Spisani, J.L.Sylvester.

**Conium maculatum* L.

Poison Hemlock

New for RBG and Hamilton. This is the hemlock of Socrates fame. It is common as large plants around the edges and

wetter slopes of the Mercer's Glen compost facility. It dies back by mid-summer. CJR 653, J.L.Sylvester, S.R.Spisani.

**Peucedanum ostruthium* (L.) Koch
Masterwort
New for RBG, Halton, and Ontario. Dean Gugler discovered this species on the south side of Grindstone Creek, on the south side of Creek Side Walk approximately 30m east of the Brackenbrae Trail bridge, in lush vegetation with *Ambrosia trifida* and *Impatiens glandulifera*, etc. At least 12 plants were present, but Dean reports seeing larger numbers in past years. D.Gugler. HAM# 17622. Determined by J.S.Pringle.

ARALIACEAE

**Hedera helix* L.
English Ivy
New for RBG, Hamilton, and Ontario. This common ornamental plant is not reported as escaping in Ontario by Newmaster et al. (1998), although it can be a problematic invader in areas farther south. One clump (approximately two feet long) was well established on a mesic forest floor with *Solidago caesia* and *Aralia nudicaulis* along the South Shore Trail by Double Marsh. It was removed as completely as possible. This site is far from any habitation and from any obvious means of introduction. This species, like *Euonymus fortunei*, should be watched for invasive tendencies. CJR 842.

ASTERACEAE

**Artemisia annua* L.
Sweet Wormwood
New for RBG, Hamilton, and Halton. This rare weed (SE1) was common in the Mercer's Glen compost area, and in disturbed waste grown near the Hendrie Valley entrance on the east edge of the Rose Garden (by the Auxillary Garden). It looks a little like the more-common *Artemisia biennis*, but is lacier and has very fragrant foliage. CJR 868; 977, S.R.Spisani.

Cirsium discolor (Muhl. ex Willd.) Spreng.
Field Thistle
New for Hamilton. A population of this native prairie-associated thistle was growing along the railway near RBG's Rock Chapel Nature Sanctuary, just east of Sydenham Road. CJR 903.

**Echinops sphaerocephalus* L.
Common Globe-thistle
New for Durham Region. About ten stems found in a weedy ditch in Orono. CJR 913, P.Rothfels.

Eupatorium purpureum L. var. *purpureum*
Purple Joe-pye-weed
This provincially rare species (S3) was re-discovered on RBG property. R. Johns collected it in 1963, but it was left off Dr. Jim Pringle's "Flora of Royal Botanical Gardens" (1969). Sean Spisani and Jenifer Sylvester re-found it on the talus at Rock Chapel near the railway tracks in the course of surveying our *Morus rubra* populations. Jim Pringle was able to identify their photograph, and subsequent visits demonstrated that there is a large population of over 100 individuals growing beneath *Fraxinus americana*, *Morus rubra*, *Acer saccharum* ssp. *saccharum*, *Acer saccharum* ssp. *nigrum*, *Juglans nigra*, and *Carya ovata.* S.R.Spisani, CJR, K.Oxley. HAM# 17850.

**Iva xanthifolia* Nutt.
Burweed Marsh-elder
New for RBG, second record for Hamilton. This species has been found once before in Hamilton, around the Aberdeen railyard (Pringle 1997). In 2003 there was a single large plant growing in dry waste ground in the Mercer's Glen compost area. CJR 754, S.R.Spisani, J.L.Sylvester.

**Senecio sylvaticus* L.
Woodland Groundsel
Should be removed from the RBG and potentially from the Halton lists (it is listed as present in Halton, but no estimation of number of records or locations is given). The HAM specimens, including those from Hendrie Valley in Halton, have all been annotated to *Senecio vulgaris* L.

**Tanacetum parthenium* (L.) Schultz-Bip.
Common Feverfew
New for Hamilton. This species was poorly established (low numbers) in the Mercer's Glen compost area, with other weeds. We found it nearby in Hendrie Valley in 2002 (Rothfels 2003). CJR 734, J.L.Sylvester, S.R.Spisani.

BETULACEAE

Corylus americana Walter.
American Hazel
New for Hamilton; second site for Halton. This species was overlooked by Goodban (2003); there are specimens from two Hamilton sites in HAM, including Cootes Paradise and a 1951 record from Sheffield, and this species is listed in Smith (2003) and Pringle (1969). Records from 2003 include one from an oak remnant along Burlington Heights (the High Level) above Kay Drage Park, and a second record from Sixteen Mile Creek around one kilometre west of Lion's Valley Park. P.G.O'Hara. HAM# 17844; 17792.

BRASSICACEAE

**Cardamine impatiens* L.
Cardamine
Second and third stations for Hamilton. We found this weird rare mustard (SE1) new for Hamilton in 2002 (Rothfels 2003; Rothfels 2004), and found it at two other nearby locations in 2003. The 2002 record was from the boathouse, and the 2003 records came from a steep slope in the wooded ravine west of Old Guelph Road and north of the Arboretum access road, and from a weedy patch in the lawn above the ravine near the Aquatic Nursery. The *Cardamine* is fairly common in both these new sites, in contrast to the three plants found in 2002. CJR 647; 651, J.L.Sylvester, S.R.Spisani.

Cardamine pratensis L. ssp. *angustifolia* (Hook.) O.Schulz
Cuckoo-flower
"Rare" in Grey Co. This taxon was seen in two locations in a large swamp/fen complex two kilometres south of Cruickshank. CJR 578, E.Oberndorfer.

**Cardamine pratensis* L. ssp. *pratensis*
Cuckoo-flower
This pretty, large-flowered *Cardamine* was fairly common in patches in the lawn of the park on the east side of Queen's University, Frontenac County. CJR 503, M.Roffey.

**Diplotaxis muralis* (L.) DC.
Wall-rocket
Second through fifth Hamilton records? The *Diplotaxis* species can be difficult to separate, and some of our collections of either species may be intermediate between the two. The best site for them was Windermere Basin, where both were blooming, and mixed together. Petal size was sufficient to separate them, even from a distance, and even when the *D. tenuifolia* were depauperate. Generally, both species seem to be fairly common, with *D. tenuifolia* being slightly more so? In 2003 we collected *D. muralis* from the Carden Plain, Pelee Island, and four locations in Hamilton. CJR 497; 774; 783; 848; 912; 923; J.Lundholm, E.Oberndorfer, et al.

**Diplotaxis tenuifolia* (L.) DC.
Slender-leaved Wall-rocket
See *D. muralis*. Collected from Brant County and six locations in Hamilton and Halton. CJR 732; 781; 785; 898, Rob Hepworth, J.L.Sylvester, S.R.Spisani. HAM# 17552;17575.

**Sinapis alba* L.
White Mustard
New for Hamilton. You never know what you'll find if you explore empty lots in downtown Hamilton .... CJR 563, J.L.Sylvester, S.R.Spisani.

CAPRIFOLIACEAE

**Lonicera xylosteum* L.
Fly Honeysuckle
New for RBG. Earlier reports of *Lonicera xylosteum* from RBG were the result of misidentifications of *Lonicera maackii*. However, a concerted look at *Lonicera* this summer did find *L. xylosteum* on our properties, at three locations in Cootes. It is less frequent than *L. maackii, L. morrowii, L. tatarica,* or *L. X bella*. The honeysuckles in this group (the above, excluding *L. maackii*) are variable, and appear to be hybridizing (hence *Lonicera X bella*, and see other hybrids at the end of this document). One cannot assume that weedy honeysuckles are *L. tatarica*. CJR 649;657, J.L.Sylvester, S.R.Spisani; HAM# 17358.

CELASTRACEAE

**Celastrus orbiculatus* Thunb.
Oriental Bittersweet
New for RBG and Hamilton. This species is growing on the fence along the waterfront trail at the east end of Cootes Paradise. The plants are robust, and suspiciously even in their distribution along the fence, so may have been planted. This species is very similar to the native bittersweet (*Celastrus scandens*), but has fruit all along the stems, not just at the end (Voss 1985). It is a problematic invasive in some jurisdictions (Voss 1985), and should be removed from this location. CJR 897.

CHENOPODIACEAE

**Chenopodium polyspermum* L.
Many-seeded Goosefoot
New for RBG and Hamilton. A nice little weed, it was growing in the piles of waste clippings, etc, at the Mercer's Glen compost area. CJR 729, S.R.Spisani, J.L.Sylvester.

CONVOLVULACEAE

**Ipomoea purpurea* (L.) Roth
Common Morning-glory
New for RBG and Halton. One plant was growing along the roadside at Sunfish Pond. CJR 793, S.R.Spisani.

CUCURBITACEAE

**Cucurbita pepo* L.
Pumpkin
New for RBG and Hamilton. There were several large sprawling plants in the Mercer's Glen compost area. CJR 722, S.R.Spisani, J.L.Sylvester.

CYPERACEAE

Carex chordorrhiza Ehrh. ex L. f.
Creeping Sedge
"Rare" in Grey County. This species (what a cool sedge!) was locally common in a large fen two kilometres south of Cruickshank. CJR 581, E.Oberndorfer.

Carex exilis Dewey
Starved Sedge
"Rare" in Grey County. This species was one of the dominants in a large fen two kilometres south of Cruickshank. CJR 586, E.Oberndorfer.

Carex livida (Wahlenb.) Willd.
Livid Sedge
"Rare" in Grey County. This species was locally common in a large fen two kilometres south of Cruickshank. CJR 582, E.Oberndorfer.

Carex oligocarpa Schkuhr ex Willd.
Few-fruited Sedge
New for Halton. On Tyler Smith's recommendation, we looked for this rare sedge (S2) in Clappison Escarpment Woods east of Hwy. 6. There were approximately eight clumps seen along the Bruce Trail for the first ~300 meters east of Hwy. 6. It was more common closer to the highway, becoming scarce farther in (where *C. hitchcockiana* becomes more common). Invasives (especially *Cynanchum*) are present, but not as dominant as at Berry Tract. We only searched the trail. CJR 602, S.R.Spisani, J.L.Sylvester.

Scirpus cespitosus L. ssp. *cespitosus*
Cespitose Bulrush
"Rare" in Grey County. This species was one of the dominants in a large fen two kilometres south of Cruickshank. CJR 577, E.Oberndorfer.

EUPHORBIACEAE

**Mercurialis annua* L.
Herb Mercury
New for RBG and Hamilton. This species has a rank of SEH ("historical"), meaning that it has not been recorded in Ontario for twenty years or more. It was weakly established

wetter slopes of the Mercer's Glen compost facility. It dies back by mid-summer. CJR 653, J.L.Sylvester, S.R.Spisani.

**Peucedanum ostruthium* (L.) Koch
Masterwort
New for RBG, Halton, and Ontario. Dean Gugler discovered this species on the south side of Grindstone Creek, on the south side of Creek Side Walk approximately 30m east of the Brackenbrae Trail bridge, in lush vegetation with *Ambrosia trifida* and *Impatiens glandulifera*, etc. At least 12 plants were present, but Dean reports seeing larger numbers in past years. D.Gugler. HAM# 17622. Determined by J.S.Pringle.

ARALIACEAE

**Hedera helix* L.
English Ivy
New for RBG, Hamilton, and Ontario. This common ornamental plant is not reported as escaping in Ontario by Newmaster et al. (1998), although it can be a problematic invader in areas farther south. One clump (approximately two feet long) was well established on a mesic forest floor with *Solidago caesia* and *Aralia nudicaulis* along the South Shore Trail by Double Marsh. It was removed as completely as possible. This site is far from any habitation and from any obvious means of introduction. This species, like *Euonymus fortunei*, should be watched for invasive tendencies. CJR 842.

ASTERACEAE

**Artemisia annua* L.
Sweet Wormwood
New for RBG, Hamilton, and Halton. This rare weed (SE1) was common in the Mercer's Glen compost area, and in disturbed waste grown near the Hendrie Valley entrance on the east edge of the Rose Garden (by the Auxillary Garden). It looks a little like the more-common *Artemisia biennis*, but is lacier and has very fragrant foliage. CJR 868; 977, S.R.Spisani.

Cirsium discolor (Muhl. ex Willd.) Spreng.
Field Thistle
New for Hamilton. A population of this native prairie-associated thistle was growing along the railway near RBG's Rock Chapel Nature Sanctuary, just east of Sydenham Road. CJR 903.

**Echinops sphaerocephalus* L.
Common Globe-thistle
New for Durham Region. About ten stems found in a weedy ditch in Orono. CJR 913, P.Rothfels.

Eupatorium purpureum L. var. *purpureum*
Purple Joe-pye-weed
This provincially rare species (S3) was re-discovered on RBG property. R. Johns collected it in 1963, but it was left off Dr. Jim Pringle's "Flora of Royal Botanical Gardens" (1969). Sean Spisani and Jenifer Sylvester re-found it on the talus at Rock Chapel near the railway tracks in the course of surveying our *Morus rubra* populations. Jim Pringle was able to identify their photograph, and subsequent visits demonstrated that there is a large population of over 100 individuals growing beneath *Fraxinus americana*, *Morus rubra*, *Acer saccharum* ssp. *saccharum*, *Acer saccharum* ssp. *nigrum*, *Juglans nigra*, and *Carya ovata.* S.R.Spisani, CJR, K.Oxley. HAM# 17850.

**Iva xanthifolia* Nutt.
Burweed Marsh-elder
New for RBG, second record for Hamilton. This species has been found once before in Hamilton, around the Aberdeen railyard (Pringle 1997). In 2003 there was a single large plant growing in dry waste ground in the Mercer's Glen compost area. CJR 754, S.R.Spisani, J.L.Sylvester.

**Senecio sylvaticus* L.
Woodland Groundsel
Should be removed from the RBG and potentially from the Halton lists (it is listed as present in Halton, but no estimation of number of records or locations is given). The HAM specimens, including those from Hendrie Valley in Halton, have all been annotated to *Senecio vulgaris* L.

**Tanacetum parthenium* (L.) Schultz-Bip.
Common Feverfew
New for Hamilton. This species was poorly established (low numbers) in the Mercer's Glen compost area, with other weeds. We found it nearby in Hendrie Valley in 2002 (Rothfels 2003). CJR 734, J.L.Sylvester, S.R.Spisani.

BETULACEAE

Corylus americana Walter.
American Hazel
New for Hamilton; second site for Halton. This species was overlooked by Goodban (2003); there are specimens from two Hamilton sites in HAM, including Cootes Paradise and a 1951 record from Sheffield, and this species is listed in Smith (2003) and Pringle (1969). Records from 2003 include one from an oak remnant along Burlington Heights (the High Level) above Kay Drage Park, and a second record from Sixteen Mile Creek around one kilometre west of Lion's Valley Park. P.G.O'Hara. HAM# 17844; 17792.

BRASSICACEAE

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Cardamine
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Cardamine pratensis L. ssp. *angustifolia* (Hook.) O.Schulz
Cuckoo-flower
"Rare" in Grey Co. This taxon was seen in two locations in a large swamp/fen complex two kilometres south of Cruickshank. CJR 578, E.Oberndorfer.

determined that they were mostly *Zizania palustris* L. (Northern Wild-rice), but did find one *Zizania aquatica* specimen from Cootes and another from Hendrie Valley. So we have both species on RBG properties. *Zizania palustris* is probably introduced from elsewhere in North America, whereas *Z. aquatica* would historically have been common. [It would be useful to know how recently collected the specimens were, particularly *Z. aquatica*, which is probably declining in Ontario. Note that *Z. aquatica* is mapped for Hamilton in Dore and McNeill (1980) and Aiken at al. (1988; "Wild Rice in Canada"), so technically is not "new" for Hamilton.]

PONTEDERIACEAE

Heteranthera dubia (Jacq.) MacMill.

Water Star-grass

Fourth site for Durham Region. This species was abundant (dominant) in an off-stream pond near Claremont. It formed a mass of vegetation at least four feet wide and four feet deep, extending most of the way around the pond. CJR 769.

POTAMOGETONACEAE

Potamogeton friesii Rupr.

Fries' Pondweed

New for RBG and Halton, needs to be removed from the Hamilton list. C.B.Hellquist has annotated a previous record of this species from Cootes to a hybrid between *P. zosteriformis* and some other species (probably *P. friesii*). We collected true *P. friesii* from Osprey Marsh in Hendrie Valley. This species is listed as extirpated from the GTA (Halton, Peel, Mississauga, Toronto, York, and Durham) by Varga, so this is a very exciting record! CJR 678, S.R.Spisani. Determined by C.B.Hellquist.

Potamogeton strictifolius A. Bennett

Straight-leaved Pondweed

New for RBG, Hamilton, and Halton. This species (along with *P. friesii*) is one of the most exciting surprises from our submergent monitoring this year. We found it in Hendrie Valley (Pond 4 and Blackbird Marsh) and Cootes Paradise (Mac Landing and Upper Paradise Marsh Pond). CJR 672; 673; 686; 709; 739, J.L.Sylvester, S.R.Spisani. Determined by C.B.Hellquist.

RANUNCULACEAE

**Consolida ajacis* (L.) Schur

Rocket Larkspur

New for Halton. One plant was growing at the site of a future subdivision (?) on the north edge of Hendrie Valley by the railway tracks, on exposed eroding clay at edge of large cleared area. CJR 904. Determined J.S.Pringle, S.Spisani.

ROSACEAE

**Duchesnea indica* (Andrz.) Focke

Indian Strawberry

We found this species to be locally common in young hackberry forest near the Stone Road Alvar on Pelee Island. It is previously known for Pelee Island from a sight record in 2000 (Oldham 2001), and is a problematic invader in Chicago, for example (J.L.Sylvester, pers. comm.). CJR 500.

SAXIFRAGACEAE

**Tellima grandiflora* Pursh

Big-flower Tellima

"New" for RBG, Halton and Ontario. This species is probably not worthy of being "officially" added to the flora of Ontario as it was only minimally escaped from cultivation. Several patches were growing at the edge of the Woodland Garden with weedy associates (*Poa bulbosa*, *Taraxacum* sp., *Alliaria*), at least 10 metres from their nearest planted location. Still, it's a species to watch. CJR 559.

SCROPHULARIACEAE

**Kickxia spuria* (L.) Dumort.

Round-leaved Cancerwort

New for RBG and Hamilton. This rare little trailing scroph has sticky, hairy stems, and was found around the York Road parking area for the North Shore trails. CJR 968, S.R.Spisani.

**Verbascum nigrum* L.

Black Mullein

New for Hamilton. This species is designated as SEH, meaning that it probably hasn't been found in the province for at least 20 years. It is growing along the waterfront trail between the Desjardins Canal and Bayfront Park, where it was first found and identified by D.Gugler. There are at least two clumps, several hundred metres apart. Perhaps it arrived in the seeds used to naturalize this area, or perhaps its mode of introduction has something to do with the adjacent railway yard? CJR 910. Verified by J.S.Pringle. [Stated above that it was identified by D. Gugler.]

**Verbascum phoeniceum* L.

Purple Mullein

Remove from RBG and Hamilton lists. All specimens of this species have been annotated to *Verbascum blattaria* L. (Moth Mullein). The confusion is due to keys which stress flower colour as the key character, without recognizing that the flowers of *Verbascum blattaria* often turn purplish upon drying (J.S. Pringle, pers. comm.). This is another instance of why it is important to note fresh flower colour on the specimen label when making a collection! If anyone sees *Verbascum* growing wild with purple flowers, they should make a collection.

**Verbascum phlomoides* L.

Clasping-leaved Mullein

New for RBG and Halton. Two stems of this species were growing in a waste area under a conifer at the west end of the Rose Garden area. Not in a cultivated area. CJR 951, J.L.Sylvester, J.S.Pringle.

SOLANACEAE

* *Hyoscyamus albus* L.

White Henbane

New for RBG, Hamilton and Ontario. We found three plants of this species in the Mercer's Glen compost area. CJR 755, S.R.Spisani, J.L.Sylvester. Determined D.Eveleigh, J.S.Pringle.

***Nicandra physalodes* (L.) Gaertn.**

Apple-of-Peru

New for Halton, second site for Hamilton. This species was abundant in the Mercer's Glen compost area, and was also growing in dry waste ground in the west side of the Rose Garden area, near the Auxillary Garden. Previous, unreported, records of *Nicandra* at RBG may have been the result of dispersal by Canada Geese (Pringle 2001). CJR 720;950, J.S.Pringle, J.L.Sylvester, S.R.Spisani.

***Nicotiana rustica* L.**

Wild Tobacco

New for RBG and Hamilton. This species was weakly established at the Mercer's Glen compost area. CJR 725, S.R.Spisani, J.L.Sylvester.

***Solanum rostratum* Dunal**

Prickly Nightshade

New for RBG and Hamilton. Very prickly – one serious nightshade! One plant, on dry exposed sandy fill in Mercer's Glen compost area. CJR 753, J.L.Sylvester, S.R.Spisani.

VERBENACEAE

***Verbena bonariensis* L.**

Purpletop Vervain

New for Hamilton, second Ontario record. We found this species new for Ontario last year (Rothfels 2004), on the Christmas tree barriers at Osprey Marsh (Hendrie Valley – Halton Region). This year we found it to be fairly common and well established in the Mercer's Glen compost area. CJR 718, J.L.Sylvester, S.R.Spisani.

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Notices

Minor Newsletter Changes

Leslie Collins

Recently, I have been lobbied by a few different members of the FBO to remove the authorities from scientific names in trip reports and essays. This suggestion was made based on the fact that their presence can make for very cumbersome sentences. After discussion with the executive I have decided to proceed with this suggestion. Authorities of scientific names will continue to appear in some articles, as appropriate.

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Your FBO membership for 2005 is now due.

Single memberships are $12; and family memberships are $15.
Cheques are payable to **Field Botanists of Ontario.**
Bill McIlveen, R.R. 1, Acton, Ontario, L7J 2L7