Field Botanists Of Ontario

Newsletter

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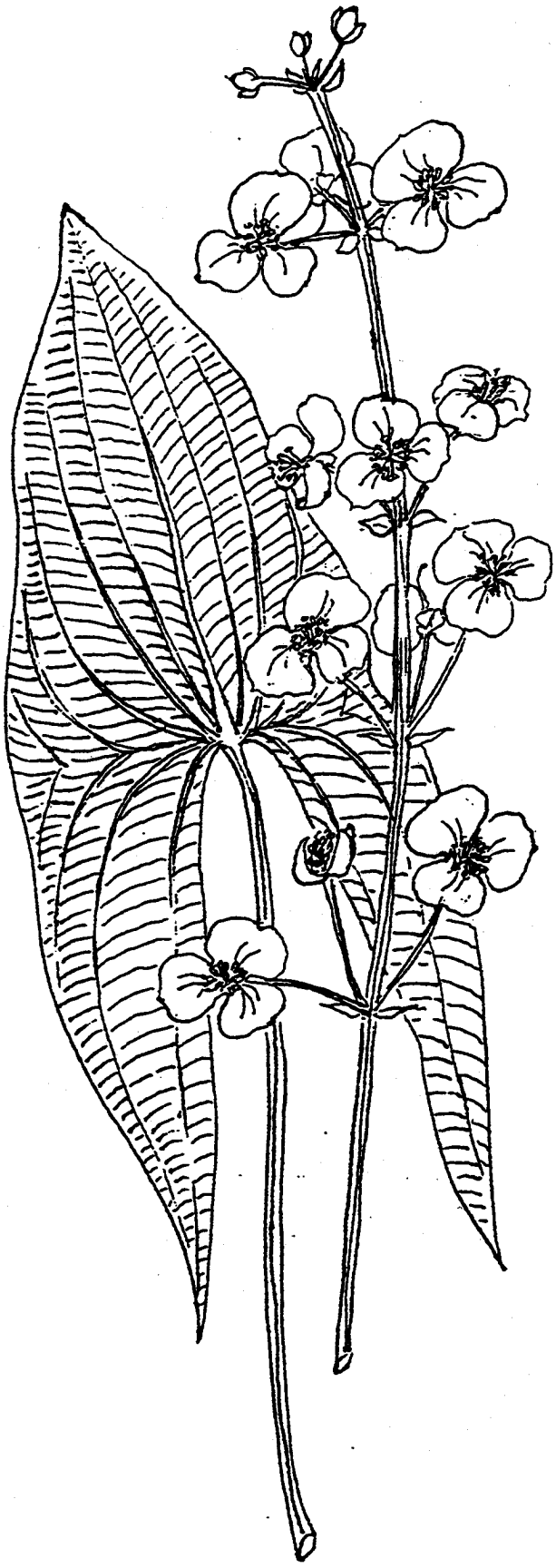

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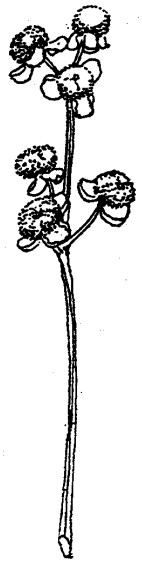


FIELD BOTANISTS OF ONTARIO NEWSLETTER

Published quarterly by the FBO; ISSN: 1180-1417.

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 10(3) - Fall 1997** is **September 20, 1997**.

Standard sources for Latin names:

Morton, J.K. and J.M Venn. 1990. A Checklist of the Flora of Ontario: Vascular Plants. University of Waterloo Biology Series Number 34. 218 pp.

Additional source for common names (as needed) and authority abbreviations.

Gleason, H.A. and A. Cronquist. 1991. Manual of Vascular Plants of Northeastern United States and Adjacent Canada (2 ed.) New York Botanical Garden, Bronx, NY. 910 pp.

Cover Illustration: Arrowhead (*Sagittaria latifolia* Willd.) by Mary Celestino.

Announcements:

Claudia and Jeff Move West!

The following is an abridged version of a letter I received from our president, Claudia Schaefer; dated May 30th. -Ed.

Hello Everyone,

Hopefully I've spoken with most of you [on the executive] by now about my upcoming adventure. Jeff [Matheson] just recently was transferred to the Vancouver office of his company. I was on my way out anyway for a vacation, and went on a couple of job interviews. Guess what? They actually have a couple of jobs out there, and they are giving me one. I am now officially Wildlife Habitat Specialist, which means I'll be doing vegetation mapping for a consulting firm that does wildlife research out of White Rock. We will live in Vancouver, at **4447 Quebec Street, Vancouver, BC. V5V 3L6**

Now the really shocking news. Madeline [Austen, our Vice President] has just been offered a contract in BC for the summer…with Jeff's company no less. What does this mean? We'll see. She and I have gone over many scenarios, and we believe things will work out fine. Jeremy Lundholm has agreed to join the board as Secretary at the AGM. He will make up the 10th spot that I am leaving. Heather [Mackey] will be Vice-President, but may have to step down part way into the year. [A new person] may move into Vice President when Heather leaves, just because Ken and Sarah are doing so well with trips, and I believe Bill, Ilmar and Ed are happy where they are.

So things will continue fairly smoothly. Madeline is trying to get everything for the AGM fully taken care of before she goes (around June 9th).

So, I am off now. Keep up the good work everyone. Take care and enjoy the plants.

Claudia
(*El presidente*, as they once called me.)

Field Trip Reports:

Spring Plant Reproductive Biology on the Bruce Peninsula

Chances are your mother or father introduced you to the birds and the bees, but somehow skipped over the plants. Sunday, June 1st was our opportunity to correct this parental oversight, our purpose being to explore the private lives of plants' private parts.

We met at St. Jean's Point Nature Preserve, just north of Howdenvale on the shores of Lake Huron. The late spring meant that fewer species were out than normal. Our trip leader, Brendon Larson, started with a preamble on how plants need external agents to pollinate (insects, wind, water, birds, mammals). He then stirred our imaginations with the great range of sexual reproduction strategies used by plants compared to other organisms, such as virgin birth (apomixis), self sex (self-fertilization) and perfect sex (cross-pollination).

We had to work for our education though. Our first task was to select ten inflorescences at random from the abundant population of Bird's-eye Primrose (*Primula mistassinica* Michx.) at this site. Brendon instructed us to carefully examine the inner parts with a hand lens. Lo and behold, we discovered that some had a short style and long stamens, while others had the reverse, a long style and short stamens. We then determined the ratio of the two flower morphs. To everyone's amazement, including the leader's, our samples contained precisely 50% of each flower type. In fact, Brendon said the results were too perfect, although he stopped short of accusing us of cheating. In the ensuing discussion, we learned that this type of reproductive anatomy is termed distyly, from the two lengths of the style. Each plant has only one type of flower, which promotes cross-pollination. Even the pollen grains differ in size for each type. When we encountered Bluets (*Hedyotis longifolia* (Gaertner) Hook.) a few minutes later, out came the hand lenses again. We were quicker off the mark this time, and soon realized we were squinting into the nether regions of another distylous species. We were informed that this arrangement can be found in other species such as Partridgeberry (*Michellarepens* L.), Buckbean (*Menyanthes trifoliata* L.), and some Puccoons (*Lithospermum* spp.)

Next we considered the violets. Gathered around a Northern Bog Violet (*Viola nephrophylla* E. Greene), our leader told us that violets produce two types of perfect flowers (i.e. each flower has both male and female parts): showy and cleistogamous. The showy ones were in bloom, so no problem there, but the cleistogamous flowers were less known to many of us. These tiny bud-like flowers on short peduncles appear later in the season at the base of the plant and never open, as the name cleistogamous (*cleisto* = "closed") suggests. Since pollinators are barred from entering, the flowers self-fertilize instead. This inbreeding would have given Darwin fits, but it provides a fail-safe strategy for seed production when outcrossing (cross-pollination) fails.

Other plants seen at St. Jean's Point included:

Aquilegia canadensis L.
Wild Columbine

Arctostaphylos uva-ursi (L.) Sprengel
Bearberry

Castilleja coccinea (L.) Sprengel
Indian Paintbrush

Comandra umbellata (L.) Nutt.
Bastard Toadflax

Iris lacustris Nutt.
Dwarf Lake Iris (rare and endemic)

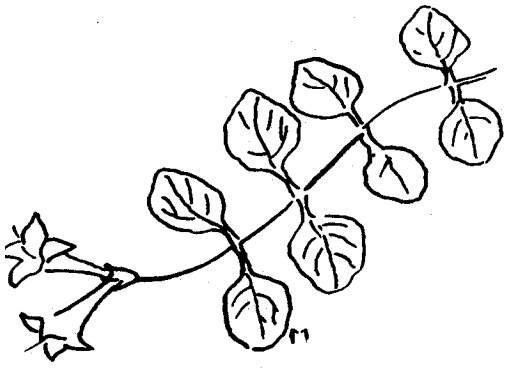
Maianthemum stellatum (L.) Link
Starry False Solomon's Seal

Polygala paucifolia Willd.
Fringed Polygala

Zigadenus elegans Pursh
White Camass

Brendon noted that although the red colour of Indian Paintbrush and Wild Columbine attracts hummingbirds, bumblebees are also important pollinators, equipped with long tongues to reach the deeply set nectaries.

The Dandelions (*Taraxacum officinale* G. Weber) growing near the parking lot offered yet another type of sexual reproduction, termed apomixis. In apomixis, seeds are produced without being fertilized. So why do dandelions have showy flowers and offer nectar, our leader asked, since pollinator aren't needed. What happened was that the plant still possessed these traits after evolving its apomictic lifestyle. Now, a plant which uses only this reproductive strategy is Pussytoes (*Antennaria* spp.). Brendon told us that in Ontario, some populations are composed entirely of females which reproduce apomictically.



Partridgeberry (*Michella repens* L.)
by Mary Anne Miller

Our second stop for the day was the Bruce Alvar Nature Reserve. The 167 acre property was purchased by the Federation of Ontario Naturalists in 1992, but was "opened" in 1996 when a boardwalk was installed. Here we saw the rare Lakeside Daisy (*Hymenoxys herbacea* (E. Greene) Cronq.)*, also known as the Stemless Rubberweed and Manitoulin Gold. An informed source at the FON office tells me this reserve harbours the 4th largest population of this plant in the world, with the three largest ones being on Manitoulin Island. Along the boardwalk we also saw Early Saxifrage (*Saxifraga virginiensis* Michx.) and Lyre-leaved Rock Cress (*Arabis lyrata* L.).

After lunch at the Reserve, we headed over to the Hope Bay area to hike a part of the Bruce Trail. Almost immediately, our taskmaster had us squatting beside large patches of White Trillium (*Trillium grandiflorum* (Michx.) Salisb.) to watch for insect pollinators. Despite much diligence, the only collective sighting was one lone beetle. Isn't it odd, our leader pondered, that a plant with such large stands should have such infrequent insect visits. As it turns out, little is known about the pollination ecology of many common wildflowers, including this trillium species. Perhaps, offered Brendon, the low visitation rate is compensated by the trillium's long flowering time. This little exercise poignantly demonstrated just how many everyday botanical mysteries remain to be solved.

Next on the menu was Jack-in-the-pulpit (*Arisaema triphyllum* (L.) Schott). Interestingly, this plant can change sex: it may be male one year and female the next. Since the plant contains either all female or all male flowers, outcrossing is ensured. Other plants seen included:

Cardamine diphylla (Michx.) Alph. Wood
Toothwort

Claytonia caroliniana Michx.
Carolina Spring Beauty

Claytonia virginica L.
Spring Beauty

Erthyronium americanum Ker Gawler
Trout Lily

Maianthemum racemosum (L.) Link
False Solomon's Seal

Viola canadensis L.
Canada Violet

* This plant has been recognized as a separate species since the publication of Morton & Venn (1990). Both Arthur Cronquist and Allison Cusick independently recognized this as a distinct species. Thus, depending on the exact publication date (both authors published the same name in 1991), the full name might alternatively be *Hymenoxys herbacea* (E. Greene) Cusick (M.J. Oldham, pers. comm.). -*Ed*

H. acaulis (the name used by Morton & Venn) is not globally rare, it is actually fairly common in western North America. Only the var. *glabra* (which = *H. herbacea*) is globally rare, being a great lakes endemic...Incidentally, from a global conservation perspective, this is probably Ontario's most significant vascular plant, since all but two of its 20 or so native populations worldwide are in Ontario (there is a single recently discovered population in Michigan, plus one in Northern Ohio). - *M.J. Oldham.*

After so much sex on the brain, the trip concluded with a hearty "thank you" to our leader for a much greater appreciation of what plants have secretly been doing under our noses all this time.

Richard Aaron

Features:

Potential Additions to the Native Vascular Flora of Ontario

by Michael J. Oldham[1]

There is perhaps no greater thrill for the Ontario field botanist than discovering a new native plant for the province. Such discoveries are rare and often fortuitous, but a thorough knowledge of the local flora and the flora of adjacent areas can help. By familiarizing yourself with the floras of adjacent states and provinces, you can increase the chances of recognizing a potential addition to the Ontario flora should you be fortunate enough to encounter one. Although the Ontario flora is fairly well known, native additions to the flora are found almost annually (e.g. Reznicek *et al*. 1985, Oldham *et al*. 1995, Brownell *et al*. 1996). Additions to the Ontario flora are still being found, not only in difficult to identify groups such as quillworts, sedges, and grasses, but also in relatively better known groups of vascular plants such as ferns (e.g. Creeping Fragile Fern, *Cystopteris protrusa* (Britton *et al*. 1985) and Massachusetts Fern, *Thelypteris simulata* (Catling 1985)), orchids (e.g. Oval Ladies-tresses, *Spiranthes ovalis* (Brown 1986)), shrubs (e.g. Mountain Bilberry, *Vaccinium membranaceum* (Barclay-Estrup 1987) and Bear Oak, *Quercusilicifolia* (Brownell *et al*. 1996)), and trees (e.g. Ohio Buckeye, *Aesculus glabra* (Darbyshire and Oldham 1985), Shumard Oak, *Quercusshumardii* (Morsink and Pratt 1984; Waldron *et al*. 1987), and Pumpkin Ash, *Fraxinus profunda* (Anonymous 1994; Waldron *et al*. 1996).

The appearance in recent years of several floras and atlases covering states adjacent to Ontario (e.g. New York Flora Association 1990; Ownbey and Morley 1991; Cooperrider 1995; Voss 1996) has made it easier to learn about the distribution of various species in adjacent areas. I have gone through these and other floristic treatments for areas adjacent to Ontario (e.g. Braun 1967; Voss 1972, 1985; McCance and Burns 1984; Coffin and Pfannmuller 1988; Fisher 1988) and compiled a list of native vascular plant species known near to Ontario but not yet known from within the province (according to Morton and Venn 1990 and Oldham 1996b). Since there is no atlas of the flora of Quebec or Manitoba (although Rousseau 1974 and White and Johnson 1980 contain some maps and were consulted), the floristic treatments used cover areas mostly to the south of Ontario. In order to obtain at

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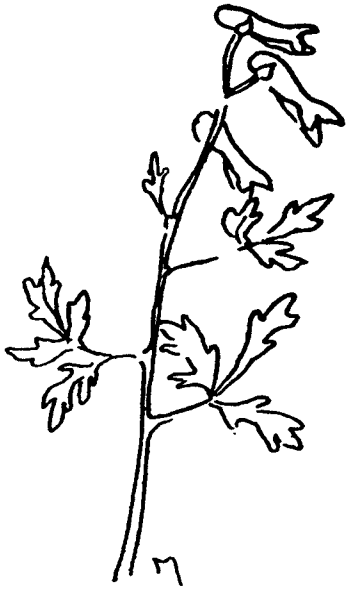
least some coverage in more northern areas, Hultén (1968) and Riley (1990) were also consulted.

The decision on which species to include on the list was somewhat arbitrary, but was based on the number of records near Ontario, how close the records were to the province, how abundant the species was in adjacent regions, how recent the records were (when known), and the presence of suitable habitat within Ontario. Several species doubtfully native near Ontario (e.g. *Najas marina*, *Alopecurus carolinianus*) have not been included. Other species known from near Ontario, but only on physiographic features not occuring in Ontario (e.g. Appalachian Plateau) have also been excluded. The list of possible additions is not meant to be exhaustive, and many potential species were excluded to keep the list from becoming too lengthy.

Of course, many of the listed species will never be found in Ontario, but a few probably will turn up with further exploration, particularly in areas near the province's border. Southwestern Ontario has been the area where most recent additions to the provincial flora have come from (e.g. Reznicek *et al*. 1985), but northern Ontario (e.g. Riley and Walshe 1985), southeastern Ontario (e.g. Brownell *et al*. 1996) and northwestern Ontario (e.g. Harris and Oldham 1996, Oldham 1996a) have also produced new native plants for the province in recent years.

Listed below are 100 species which are potential native additions to the Ontario flora. Fifteen species are marked with "✿"; I consider these to be among the most likely additions to the provincial flora. Authorities for scientific names have been omitted to save space; these can be found in Kartesz (1994). Notes on the identification and habitat have been kept to a minimum, but can be found in regional floras (e.g. Braun 1967; Cooperrider 1995; Fisher 1988; Gleason and Cronquist 1991; Voss 1972, 1985, 1996). Asteraceae is the family with the most potential additions (22), followed by Cyperaceae (12) and Poaceae (8). The genus *Carex* has 8 potential additions, followed by 5 in *Aster* and 4 in *Poa*.



Pale Corydalis (*Corydalis sempervirens* (L.) Pers.)
by Mary Anne Miller

By familiarizing yourself with the habitat, similar species, and distinguishing characteristics of species occurring close to Ontario, you may just be lucky enough to spot one of them during one of your trips afield!

LYCOPODIACEAE

Lycopodiella margueritae

Known from SE Michigan and NW Ohio, from sandy ditches and borrow pits. Plants of *L. inundata* in SW Ontario should be carefully checked. See Bruce *et al.* (1991) and FNA (1993).

SELLAGINELLACEAE

Selaginella apoda

Ontario plants are now thought to belong to *S. eclipes* (Morton and Venn 1990, FNA 1993), although *S. apoda* ranges to the S shore of Lakes Erie and Ontario in Ohio and New York (FNA 1993). The taxonomy of these two taxa needs further study.

OPHIOGLOSSACEAE

Botrychium mormo

The tiny Goblin Fern is known from a few locations in Minnesota, Wisconsin, and Michigan. It occurs in mesic Basswood-Sugar Maple woods, but will be hard to find, since mature plants are often less than 1.5 cm tall!

DRYOPTERIDACEAE

Dryopteris campyloptera ✿

Known from central and N New York and SW Quebec close to the Ontario border.

SPARGANIACEAE

Sparganium glomeratum

Known from several locations near the Ontario border in NE Minnesota.

JUNCACEAE

Juncus biglumis

Known from the Hudson Bay Lowlands in Manitoba.

Juncus platyphyllus

Known from N Ohio, including 2 Lake Erie counties. Also known from central New York. Similar to *J. dudleyi* and *J. tenuis*, both very common in S Ontario. Sometimes called *J. dichotomus*, and considered a variety of *J. tenuis* by some authors.

Luzula wahlenbergii

Known from the Hudson Bay Lowlands in Manitoba.

ALISMATACEAE

Lophotocarpus calycinus ✿

Occurs in 2 Ohio counties bordering Lake Erie, and from SE Michigan. A wetland species similar to *Sagittaria*, and placed in this genus by some (as *S. montevidensis*).

Sagittaria brevirostra

Known from St. Clair Co., Michigan, bordering Ontario. Similar to *S. cuneata*, and perhaps only a variant of that species (Voss 1972).

POACEAE

Glyceria acutiflora

Found in central New York, central Ohio, and SW Michigan, though not in any counties bordering Ontario.

Panicum commutatum

Mapped from central New York, including Erie Co., adjacent to Ontario, from NE Ohio, including two Lake Erie counties, and from several S Michigan counties. Previous Ontario reports are rejected by Morton and Venn (1990) and Argus *et al.* (1982-1987).

Panicum microcarpon

Mapped from 4 Lake Erie counties in Ohio, and from 3 counties in S Michigan, including Wayne Co., which borders Ontario.

Poa cuspidata

Occurs in 4 Ohio counties bordering Lake Erie.

Poa eminens ✿

Known from the SE shore of James Bay in Quebec, near the Ontario border.

Poa flexuosa

Known from the Hudson Bay Lowlands in Manitoba.

Poa paludigena ✿

Occurs in central Minnesota, central New York, S Michigan and N Ohio. Quite likely to be found eventually in Ontario. A species of bogs, swamps, and wet woods, usually growing in *Sphagnum*.

Scolochloa festucacea

Comes very close to the Ontario border in N Minnesota. To be looked for in Rainy River District.

Trisetum pensylvanicum

Known from NE Ohio and W New York (including Niagara Co., adjacent to Ontario). Sometimes placed in the genus *Sphenopholis*, and similar to *S. obtusata*.

CYPERACEAE

Carex adelostema

Known from the Hudson Bay Lowlands in Manitoba.

Carex albolutescens

Mapped from 1 county bordering Lake Erie in Ohio and from SW Michigan. Recently found in Lucas County, Ohio (A.A. Reznicek, pers. comm.) A member of the difficult Ovales section of *Carex*.

Carex caroliniana

Reported from 2 N Ohio counties bordering Lake Erie.

Carex conjuncta ✿

Known from N Ohio, including Ashtabula County bordering Lake Erie, and from Hillsdale and Lenawee Counties, Michigan (A.A. Reznicek, pers. comm.). No specimen has been found to substantiate an early Ontario report from Lambton County.

Carex decomposita

Known from S Michigan, N Ohio, and central New York.

Carex nigra

Has been found in the Upper Peninsula of Michigan and recently in northern Lower Peninsula (A.A. Reznicek, pers. comm.). Main range to the east of Ontario.

Carex straminea

Occurs in Ashtabula and Erie Counties, Ohio, near Lake Erie, and SW Michigan (Kalamazoo Co.) (A.A. Reznicek, pers. comm.). Main range to the east of Ontario.

Carex ursina

Known from the Hudson Bay Lowlands in Manitoba.

Eleocharis melanocarpa

A coastal plain species which is quite widespread in SW Michigan. To be watched for in the SE Georgian Bay area of Ontario, where other Atlantic Coastal Plain species occur.

Eleocharis parvula

Found in central New York and S Michigan, but rare in both areas. Recently found in N Ohio near Lake Erie (A.A. Reznicek, pers. comm.).

Psilocarya scirpoides

Known from S Michigan, including several counties in the SE part of the state. A coastal plain disjunct species to be looked for in SW Ontario and the SE Georgian Bay area.

Rhynchospora globularis

Mapped from 2 Lake Erie counties in NW Ohio and from Allegan County in SW Michigan, where recently rediscovered. Similar to *R. capitellata*.

Scirpus polyphyllus

Mapped from 5 Lake Erie counties in Ohio, and several counties in W New York, including 2 bordering Ontario.

LEMNACEAE

Wolffia papulifera

Known from 2 N Ohio counties. Several other *Wolffia* species are possible in S Ontario. Close examination of these tiny aquatics (and also the genus *Lemna*) in S Ontario might reveal species new to the province.

XYRIDACEAE

Xyris torta ✿

Occurs in N Ohio, including 4 counties bordering Lake Erie, and from 12 S Michigan counties.

LILIACEAE

Smilax glauca

Known from 3 counties bordering Lake Erie in N Ohio. Distinctive with its leaves whitened beneath.

Smilax pulverulenta

Mapped from 5 N Ohio counties on Lake Erie. Considered a variety of *S. herbacea* or *S. lasioneura* by some authors.

Trillium nivale

Snow Trillium is known from central Ohio and Minnesota (though not particularly close in either state) and from S Michigan. A small and very early flowering Trillium to be looked for in calcareous river valleys in SW Ontario.

Veratrum viride ✿

Known from 2 NE Ohio counties bordering Lake Erie, 2 New York counties bordering Ontario (both in the St. Lawrence area and Niagara area) and from SW Quebec very near the Ontario border.

ORCHIDACEAE

Spiranthes tuberosa ✿

Known from both N Ohio and S Michigan, and quite likely to be found eventually in Ontario.

SALICACEAE

Populus heterophylla

Found in swamps in S Michigan and N Ohio.

Salix alaxensis

Known from the Hudson Bay Lowlands in Manitoba.

Salix sericea ✿

Silky Willow occurs in N and W New York in counties bordering Ontario, and is quite widespread in S Michigan, including counties bordering Ontario.

JUGLANDACEAE

Carya tomentosa

Mockernut Hickory occurs close to Ontario in N and W New York, however there are no confirmed Ontario reports.

BETULACEAE

Alnus serrulata

Smooth Alder, a wetland species, is widespread in central and E New York, and also occurs in SE Quebec. It has more finely and evenly toothed leaves than *A. incana* ssp. *rugosa* (see Furlow & Mitchell 1990).

FAGACEAE

Quercus coccinea

Scarlet Oak is mapped a county bordering Ontario in N New York and in W New York. Mapped from many S Michigan counties, although Voss' (1972) concept of this species includes *Q. ellipsoidalis* which is known from S and NW Ontario.

Quercus imbricaria

Shingle Oak is an entire-leaved species which retains brown leaves well into winter. Known from 8 S Michigan counties, including Wayne Co., bordering Ontario (See Wagner and Schoen 1976).

ARISTOLOCHIACEAE

Aristolochia serpentaria ✿

Known from SE Michigan near the Ontario border, including Grosse Isle in the Detroit River, and also from W New York.

CHENOPODIACEAE

Suaeda maritima

Known from the Hudson Bay Lowlands in Manitoba.

RANUNCULACEAE

Ranunculus ambigens

Mapped from 2 S Michigan counties, including St. Clair Co., adjacent to Ontario. It is also known from scattered sites in central New York.

Ranunculus nivalis

Known from the Hudson Bay Lowlands in Manitoba.

BRASSICACEAE

Arabis missouriensis

Mapped from 9 S Michigan counties, including 2 in the SE part of the state.

ROSACEAE

Agrimonia rostellata

Known from 3 S Michigan counties. Similar to *A. gryposepala*, but more delicate with smaller flowers and fruit.

FABACEAE

Baptisia lactea

A white-flowered *Baptisia* known from 13 counties in S Michigan, including 2 bordering Ontario.

Desmodium obtusum

Mapped from 10 S Michigan counties, including 2 bordering Ontario.

OXALIDACEAE

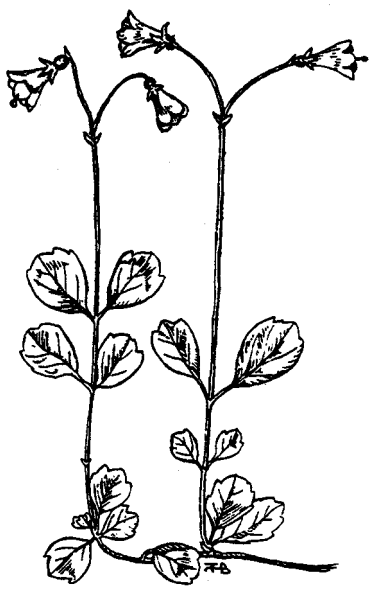
Oxalis violacea

Mapped from 4 Ohio counties on the S shore of Lake Erie, and from 2 S Michigan counties. The violet-coloured flowers of this plant will immediately distinguish it from Ontario species; except the more northern *O. acetosella*, which has pink flowers.

CALLITRICHACEAE

Callitriche terrestris

Mapped from 2 Ohio counties on the S shore of Lake Erie, and from central New York, though not from counties adjacent to Ontario. Recently found in Washtenaw County, SE Michigan (A.A. Reznicek, pers. comm.).



Twinflower (*Linnaea borealis* L.) by Jane Bowles.

RHAMNACEAE

Ceanothus sanguineus
Known from rocky bluffs and borders of woods in northern Keweenaw Co., Michigan. To be watched for on the north shore of Lake Superior, particularly on talus slopes.

Rhamnus lanceolata
Mapped from 3 Ohio counties on the S shore of western Lake Erie. Similar to R. alnifolia.

GUTTIFERAE

Hypericum drummondii
Mapped from 5 Ohio counties on the S shore of Lake Erie. A small, annual species of dry, open ground.

Hypericum gymnanthum
Mapped from 3 Ohio counties bordering Lake Erie. Similar to *H. majus* and *H. canadense*.

CISTACEAE

Lechea racemulosa
Mapped from 3 Ohio counties on the S shore of Lake Erie.

VIOLACEAE

Viola hastata
Mapped from 5 Ohio counties on the S shore of Lake Erie.

Viola pratincola
Occurs close to the Ontario border in N Minnesota.

APIACEAE

Hydrocotyle umbellata ✿
Mapped from 16 S Michigan counties. Similar to *H. americana*, but with peltate leaves, umbels on long peduncles and many-flowered.

ERICACEAE

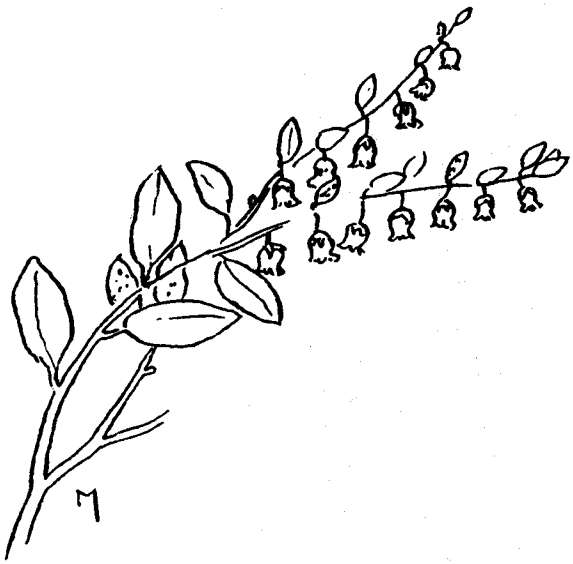
Loiseleuria procumbens
Alpine Azalea is found along the James Bay coast in Quebec and along the Hudson Bay coast in Manitoba, but has not been found in between, in Ontario.

GENTIANACEAE

Gentiana saponaria
Mapped from Erie Co., New York, and Lucas Co., Ohio, both near Ontario. This species is similar to *G. andrewsii*.

ASCLEPIADACEAE

Asclepias amplexicaulis
Known from 3 Ohio counties on the S shore of Lake Erie and 14 counties in S Michigan (though none immediately adjacent to Ontario). Distinctive in its wavy-margined leaves.



Leatherleaf (*Chamaedaphne calyculata* (L.) Moench)
by Mary Anne Miller

POLEMONIACEAE

Phlox maculata
Mapped from 3 Ohio counties on the S shore of Lake Erie, and from 3 counties in SW Michigan. Also in central New York, though not in counties bordering Ontario. A species of fens and other wetlands.

Polemonium reptans
Jacob's Ladder is found throughout Ohio including 5 counties bordering Lake Erie. Known from 3 Michigan counties, although it is thought to be native only in 2 counties in extreme SW Michigan. Also occurs in W New York, including Erie Co., bordering Ont.

LABIATAE

Scutellaria incana
Known from 4 NE Ohio counties bordering Lake Erie. Considered extirpated in Michigan where known from only old specimens without precise locality.

Stachys hyssopifolia
Occurs in the W Lower Peninsula of Michigan and even 2 Upper Peninsula counties, thought not found in the SE part of the state. Mapped from Lawrence Co., New York, adjacent to Ontario. A coastal plain species to be watched for in the SE Georgian Bay area.

ACANTHACEAE

Ruellia humilis
Mapped from 1 SE Michigan county bordering Ontario and from 1 Ohio county on the S shore of Lake Erie.

Ruellia strepens
Known from NW Ohio including 2 counties bordering Lake Erie and from a single county in S Michigan, though not bordering Ontario.

RUBIACEAE

Diodia teres
Buttonweed is mapped from 3 counties in SE Michigan, but is considered possibly adventive in the state. In NE Ohio it is known from 3 counties bordering Lake Erie.

Hedyotis nigricans

Occurs as nearby as Kelley's Island, Ohio, only a few kilometres from Pelee Island, though searches for it on Pelee Island have to date been unsuccessful. It occurs in rocky areas. Also known as *Houstonia nigricans*.

CAPRIFOLIACEAE

Viburnum prunifolium ✿

Black-haw occurs in several counties in southern Michigan (though not immediately adjacent to Ontario) as well as in northern Ohio (including 5 counties bordering Lake Erie). It is similar to *V. lentago*.

CAMPANULACEAE

Campanula uniflora

Known from the James Bay coast in Quebec and the Hudson Bay coast in Manitoba, and to be watched for in tundra habitat along the Ontario coast of Hudson and James Bays.

ASTERACEAE

Aster crenifolius

Mapped from N and W New York, including 2 counties bordering Ontario.

Aster furcatus

Rare in Michigan, but known from Washtenaw Co., near the Ontario border.

Aster linariifolius

Mapped from Jefferson and Lawrence Cos., New York, bordering SE Ontario. Also known from southern Quebec, not far from the Ontario border.

Aster lowrieanus

Mapped from Erie and Jefferson Cos., New York, both bordering Ontario.

Aster undulatus

Ontario record is discounted by Morton and Venn (1990). Occurs in N Ohio, including 4 counties bordering Lake Erie.

Boltonia asteroides ✿

A wetland species known from several sites in SE Michigan and NW Ohio, not far from southwestern Ontario. This species also occurs in S Manitoba (White and Johnson 1980), so should be watched for in the Rainy River area of NW Ontario.

Cacalia atriplicifolia

Although mapped from 21 S Michigan counties, these are mostly in the SW part of the state. It is widespread in Ohio, including 7 counties bordering Lake Erie.

Cirsium altissimum ✿

Mapped from 13 S Michigan counties, and from N Ohio, including 5 counties bordering on Lake Erie. A species of floodplain woods, thickets and deciduous woodlands. Similar to *C. discolor*.

Eupatorium fistulosum

Occurs in NE Ohio, including 2 counties bordering Lake Erie.

Eupatorium sessilifolium

Occurs in N Ohio, including 3 counties bordering Lake Erie.

Gnaphalium helleri ✿

Mapped from 7 counties in the NE Lower Peninsula of Michigan and to be looked for in the Algoma District and Manitoulin Island area of Ontario. Similar to *G. obtusifolium* but with green stems rather than white, tomentose stems.

Helianthus microcephalus

In NE Ohio and 1 county in SW Michigan.

Helianthus occidentalis

Widespread in S Michigan; also in NW Ohio including 2 counties bordering Lake Erie. A distinctive species of dry, open woods. No specimen has been found to substantiate an early literature report from Lambton County.

Hieracium trailii

Mapped from 3 N Ohio counties on Lake Erie, but not from Michigan. Similar to *H. venosum*.

Krigia virginica

Found in most counties in S Michigan, and also in NW Ohio. Grows in dry, open, sandy ground.

Kuhnia eupatorioides

Mapped from N Ohio, including 3 counties bordering, and from SW Michigan.

Liatris scariosa

Widespread throughout the Lower Peninsula of Michigan. Also in N Ohio, including 3 counties bordering Lake Erie.

Liatris squarrosa

An old collection exists for Detroit, Michigan, and the species is mapped from N Ohio, including 2 counties bordering Lake Erie.

Mikania scandens

Mapped from central New York, including Jefferson Co., adjacent to Ontario, and recently found near the S shore of Lake Erie in Ohio (A.A. Reznicek, pers. comm.). An early report from Essex Co., Ontario, is not substantiated by a specimen.

Polymnia uvedalia

Occurs in several W New York and S Michigan counties, including 2 bordering Ontario. Also in NE Ohio including 1 Lake Erie county.

Prenanthes aspera

Rare in N Ohio. Similar to *P. racemosa*, except for its rough-pubescent stems and leaves.

Senecio robbinsii

Occurs close to Ontario in SW Quebec.

Senecio schweinitzianus

Occurs in N New York, including Lawrence Co., adjacent to Ontario.

Silphium trifoliatum

Occurs in NE Ohio, including 5 counties bordering Lake Erie.

Vernonia fasciculata

Mapped from 3 NW Ohio counties bordering Lake Erie. *Vernonia* plants in SW Ontario need critical examination.

Vernonia missurica

More common than *V. gigantea* in S Michigan, where mapped from 23 counties. Also known from several NW Ohio counties, including 3 bordering Lake Erie. Similar to and hybridizes with *V. gigantea*.

Acknowledgements

Tony Reznicek, Paul Catling, Allison Cusick, Don Sutherland, and Wasyl Bakowsky provided useful comments on a draft of this article.

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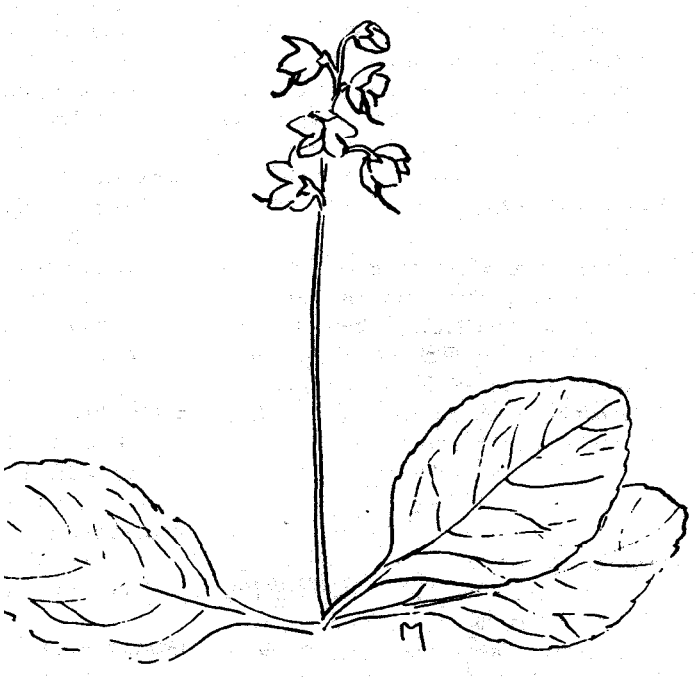

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Survival of Wild Ginseng in Ontario.

February 20th, 1997.

The very title of this treatise is a joke. Wild [*or American*] Ginseng (*Panax quinquefolius* L.) may not survive in the wild for long. The astronomic price for its mature roots…gives to each surviving plant an exaggerated market value.

In my lifetime, which is now embarrassingly long, I have noticed several colonies eradicated by plant hunters stealing from unsuspecting woodlot owners.

Wild or American Ginseng (*Panax quinquefolius* L.) photo from Malcolm Kirk.

Due to the geology of the Niagara Escarpment, Ginseng still does survive; perhaps as a single or half dozen plants. To quote Charles Little "fragments like jewels scattered in the wake of a fleeing thief." My guess is that these plants are the remnants of larger colonies, and are protected from plant diggers who cannot insert a spade in a cleft of a rock. Those clefts, filled with centuries of leaf mould, can readily nourish the demanding ginseng.

If you are interested in saving the Passenger Pigeon of the plant world, hike through the Niagara Escarpment woods in late August. Pick the red berries and plant them in similar crevices nearby, or eat them. One may find that Westerners, like the Chinese, live by myths. Without myths, we might die of boredom.

Malcolm Kirk

Obituary - William G. Stewart

Earlier this month long-time Field Botanists of Ontario member Bill Stewart passed away. Many FBO members will know Bill, whose knowledge of the Elgin County flora was unrivalled. In 1969 Bill and Lorne James produced the first flora of Elgin County, and almost every year since then he has documented additions to the county flora (almost 500 now) in articles appearing in "The Cardinal" (newsletter of the McIlwraith Field Naturalists of London). Not only an accomplished field botanist (who studied mosses, lichens, and fungi, as well as vascular plants), Bill also produced books, articles, and checklists on the mammals, fish, butterflies, dragonflies, and Unionid molluscs (clams) of Elgin County and surrounding areas. In addition, Bill had a strong interest in the history of natural history studies in Elgin County, and published several books documenting the lives of Elgin County natural historians. Bill is survived by his wife Eileene who shared his love for natural history.

Mike Oldham

Answers to this issue's Botanical Time Wasters!

See next page for puzzle.

1. cleistogamous; 2. fertilization; 3. cross pollination; 4. American Ginseng; 5. Partridgeberry; 6. Dwarf Lake Iris; 7. outcrossing; 8. Bastard Toadflax; 9. Fringed Polygala

More Internet Sites for Botanists

The Virtual Foliage Homepage

Address: http://www.wisc.edu/botany/virtual.html

Huge Source of Botanical Images from the University of Wisconsin-Madison! Picture collections include images from university courses covering General Botany, Plant Systematics, Dendrology, and Fungi. Additional collections include Vegetation of Wisconsin, University of Wisconsin-Madison Botanical Garden Tour, and Orchids of Wisconsin. It's a great place to track down pictures of northeastern North American flora.

Internet Directory of Botany

Address: http://herb.biol.uregina.ca/liu/bio/idb.shtml

This is THE place to begin if you want to find something botanically oriented on the web. It appeared in the Summer 1996 newsletter, but has moved since then. The site has been improved tremendously; it is much quicker and easier to use than before.

Invasive Plants of Canada.

Address: http://infoweb.magi.com/~ehaber/ipcan.html

See the results form the 1996 survey of invasive plants in Canada. Additional project details were published in the summer 1996 issue of this newsletter.

Endangered Plants of Ontario, Canada.

Address: http://www.science.mcmaster.ca/Biology/4FF3/

A joint project between the Canadian Botanical Conservation Network and the Department of Biology, McMaster University, Hamilton, Ontario. This is a helpful site for those interested in conservation.

Botanical Time Wasters!

MORE ANAGRAMS

Here are some anagrams made from common plant names and key words from Richard Aaron's field trip report and Malcolm Kirk's letter. There are no prizes if you get them, but we hope you enjoy the challenge.

Example: TIDY SLY (1 word) distyly

1. MUSICAL STOOGE (1 word)_____
2. INITIAL FEZ ROT (1 word)_____
3. NO OSCILLATOR SPIN (2 words)_____
4. GREENING MANIACS (2 words)_____
5. DRY BARTER GRIPE (1 word)_____
6. SIDEWALK FRIAR (3 words)_____
7. CITRUS GOONS (1 word)_____
8. FATAL TAX ROBS DAD (2 words)_____
9. FRIENDLY AGOG PAL (2 words)_____

I hope you had as much fun solving these as I did putting them together. The answers are found on the bottom of the previous page. -Ed.