

Symplocarpus foetidus

FIELD BOTANISTS OF ONTARIO

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NEWSLETTER

Spring 1989

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UPCOMING FIELD TRIPS:

* Please note that the Norfolk County field trip scheduled for April 30 has been **CANCELLED.**
* The original date of the Pelee Island trip has been changed. If you hope to attend this trip, make arrangements as soon as possible. Space is very limited and alternate accomodation is hard to find on Pelee Island.
* Make a special note of the Annual General Meeting on the Bruce Peninsula.
* Application forms for the Pelee Island and Bruce Peninsula Trips are enclosed with this newsletter.

April 30:	Carolinian Spring in Norfolk County. **CANCELLED**
May 26 - 28:	Pelee Island Weekend.
June 23 - 25:	**Annual General Meeting** and Field Trips, Bruce Peninsula.

FIELD BOTANISTS OF ONTARIO NEWSLETTER

Published quarterly by the FBO. Botanical information, reports of field events, newsworthy items and any correspondence should be sent to the newsletter committee:

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The FBO is a non-profit organization founded in 1983 for those interested botany and conservation in the province of Ontario.

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NATIVE AND ALIEN WEEDS

Weeds are sometimes defined as non-native plants (alien species) and at other times as any plants growing where they are not wanted. Plants generally considered weeds often share a number of ecological characters including a great reproductive potential, ability to invade new areas and short life span. Most people have some idea of which plants they consider to be weeds, but a few on George Meyers' list may come as a surprise.

George Meyers is famous for his garden of native plants. He grows more than one thousand species of shrubs, trees and wildflowers on two properties, of about twelve thousand square feet (0.1 ha) each, in Grimsby, Ontario.

Most of his plants have been grown from seeds or cuttings, a few were already present and very few were purchased. The garden is living proof that it is generally not necessary to take transplants of wild plants if one develops skill in taking small cuttings. George points out with great pride that he is an holistic, organic gardener. He uses no chemicals, nor does he cultivate. Mulch from lawn cuttings and compost are used as fertilizer while worms look after soil cultivation.

The space available is not large and in the course of developing his garden George has discovered a number of native species which, after intentional introductions, became more successful than was originally planned. Whether they are weeds or not depends on your point of view, but for the sake of the many other plants in George's garden he has been obliged to take action.

Some of the problem plants may be unexpected because they are considered unusual or rare in the wild or have restricted distributions. Below is a list of a few of these unusual weeds along with George Meyers' observations on them.

Sensitive fern (*Onoclea sensibilis*): "Too vigorous for most gardens."

Green Dragon (*Arisaema dracontium*): "Thriving and spreading."

Hairy Yam (*Dioscorea villosa*): "Thriving to become a pest."

Black walnut (*Juglans nigra*): "Eliminated as they appear because they kill everything but grasses."

American Chestnut (*Castanea dentata*): "Thriving even though many *C. sativa*, *C. mollissima* and *C. cyenati* are in the area, all of which are blight vectors."

Pokeweed (*Phytolacca americana*): "Loved by thrushes and mockingbirds, the plant has to be ruthlessly thinned."

Mayapple (*Podophyllum peltatum*): "Too vigorous for a small garden."

Pawpaw (*Asimina triloba*): "Can become a pest, it spreads readily by means of suckers."

Ashleaf maple (Manitoba maple) (*Acer negundo*): "Another garden pest."

Orange jewelweed (*Impatiens capensis*): "Once established it is hard to control."

Northern bush honeysuckle (*Diervilla lonicera*): "Warning: Do not introduce this shrub to a garden!"

Black willow (*Salix nigra*): "Removed for lack of room. Uncommon to rare in Canada and not reaching the large size of those in the southern USA."

Common Persimmon (*Diospyros virginiana*): *"This native if Virginia* can become a suckering pest."

Indian Hemp (*Apocynum sibiricum*): "A pest."

Yellow trillium (*Trillium luteum*): "One bulb was removed from the Bruce Trail clump before it was trampled to extinction. The plant has now spread to fifty flowers."

To an indigenous species gardener nothing makes the blood boil quicker than the sight of uninvited alien. Amongst these pests which require vigorous eradication and ruthless extermination George lists the following: grape hyacinth (*Muscari botryoides*), corkscrew willow (*Salix* sp.) black alder (*Alnus glutinosa*), white mulberry (*Morus alba*), giant knotweed (*Polygonum sachalinense*), creeping buttercup (*Ranunculus repens*), garlic mustard (*Alliaria officinalis*) false spirea (*Sorbaria sorbifolia*), multiflora rose (*Rosa multiflora*), tree of heaven (*Ailanthus altissima*), Norway maple (*Acer platanoides*), black swallowwort (*Cynanchum nigrum*), guelder rose (*Viburnum opulus*) and clustered bellflower (*Campanula glomerata*).

As with a traditional garden, there are rewards and disappointments in developing a native garden. In a future article we will deal with some of the surprises and successes of these most unusual urban yards.

NEWS OF REGIONAL PLANT LISTS

Members who joined the recent FBO trip to the ROM Vascular Plant Herbarium (TRT) may have noticed the large labels saying "Muskoka" affixed to many of the cabinets. These provide tangible evidence that Emerson Whiting is still working on a comprehensive flora of Muskoka District.

Presently Mr. Whiting visits TRT about twice a week and is systematically going through the complete collection looking for Muskoka vouchers. He advises that the field work is pretty well finished and he hopes to see the final product published in the next few years. Another Precambrian Shield flora which has been anticipated for some time and should be published shortly is for Haliburton District, just east of Muskoka. This is being prepared by the Eleanor and Emerson Skelton and is almost completed.

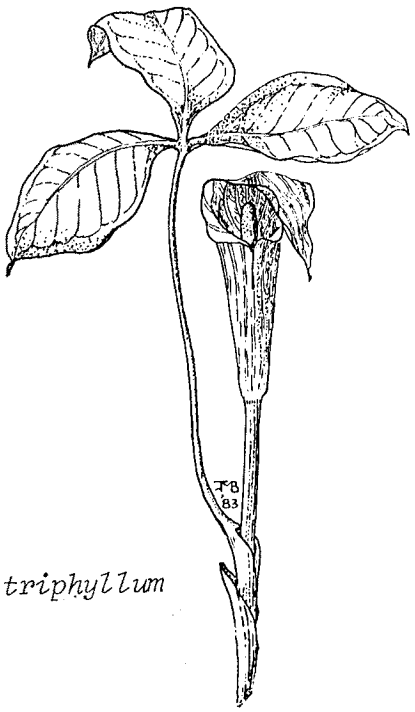
Further south, Gary Allen and Steve Varga are compiling status reports for the plant lists of all counties in the Carolinian Zone. This article should be ready in the summer as part of the Proceedings of the Carolinian Canada Workshop held in January 1988.

In all, some 31 Regional Plant Lists are being, or have been compiled for Ontario. A list of these was published recently in a Supplement to **Seasons** - Spring 1989. We hope to be able to provide you with status reports on other Ontario regional lists in the future. Perhaps one day these will be combined into a flora for the entire Province of Ontario.

MORE ON SITE DISTRICT REPORTS

Almost all of Ontario south of the Precambrian Shield has now been covered by Site District Reports which list and document the Areas of Natural and Scientific Interest (ANSIs). Site District Reports are published and distributed by the Ministry of Natural Resources. Recently a report was completed for Prince Edward County and the next area of study should be the Algonquin Highlands.

Unfortunately, not all of the thirteen or so reports published to date are equally available. Some of the earlier Site District Reports are out of stock. If you are fortunate enough to have a copy of the 1975 report on the Niagara Escarpment Planning Area <u>do not loose it</u>. It covers the whole area from the tip of the Bruce Peninsula to Niagara Falls in some detail and is considered a real collector's item.



Arisaema triphyllum

PETERSON GUIDE TO EASTERN TREES

Petrides, George, A. (1988) A Field Guide to Eastern Trees: Eastern United States and Canada. Peterson Field Guide Series No. 11. Houghton Mifflin Company, Boston. pp. 272.

At long last we have a complete revision to the old Field Guide to Trees and Shrubs by George A. Petrides. The new edition bears very little resemblance to the original and even the name has changed. This new guide deals only with trees, it covers all of eastern North America (not just the northeastern United States and eastern Canada) and there are attractive colour plates. It is a delight to report that this field guide is now up to the very high standard of the other current guides.

The text covers 455 species of trees found in eastern North America including all the native trees and many non-native ones which have escaped from cultivation. All the drawings are new. There are 48 colour plates, 11 black and white plates and 26 text drawings showing leaves, twigs, fruit or other distinctive features. Each plate is accompanied by a chart comparing distinguishing characters of the trees listed. In addition there is a section showing some diagnostic tree silhouettes.

As in the old guide, species are arranged in six major groups by visual similarity, then compared using recognizable field marks. Emphasis is given to those features that can be seen in all seasons. One of the biggest improvements over the old edition is the inclusion of 266 geographic range maps.

An interesting observation made in reviewing the range maps is the number of tree species whose range reaches, but does not include, Ontario. It raises hope that there may yet be potential for other new tree species being found here, similar to the recent discoveries of Ohio Buckeye (*Aesculus glabra*) on Walpole Island and Shumard Oak (*Quercus shumardii*) in Essex and Kent Counties.

What may be of most value to the field botanist are diagnostic identification features given for complex families including oaks and willows. With this book one may be able to distinguish between some willows (*Salix*) even in winter. However the guide wisely steers clear of attempting to separate the most difficulty groups such as hawthorns (*Crataegus*).

There are some minor criticisms to be made. It is frustrating that illustrations are not more obviously cross-referenced to text and there seems to be little justification for this flaw in an otherwise state of the art publication. Ontario botanists with a knowledge of tree distribution might question some of the range maps. For example, does Gray Birch (*Betula populifolia*) really extend in a wide band across southern Ontario to Lake Huron? Printing of the colour plates is not as clear as it might be and some of the details are a little fuzzy.

The appendices include a winter key to non-evergreen trees and a list of plant relationships (important because the general treatment is not taxonomic). There a good glossary (although the book avoids most technical terms), and a short bibliography. One section is devoted to Florida specialities. In general this guide has a lot to offer anyone with an interest in trees.

PLANT PROTECTION AND COSEWIC

Did you know that most wildflowers in Ontario are unprotected unless they are on the Endangered Species list? Some protection for plants is given in parks where there are local by-laws against interfering with the flora and fauna. All native orchids and some other plants are protected from export without a licence under the International Convention on Trade in Endangered Species of Wild Fauna and Flora (1973, 1975).

The Endangered Species Act (1971) affords protection to both endangered species and their habitats. At present there are some 15 species of plants in Ontario listed as endangered in Canada. An endangered species is any indigenous species whose existence in Canada is threatened with immediate extinction through all or a significant portion of its range, owing to the action of man.

The endangered status is assigned to species by COSEWIC (The Committee on the Status of Endangered Wildlife in Canada) with the object of bringing these species to the attention of responsible government agencies, but COSEWIC itself has no legislative power. The mandate of COSEWIC is to prepare status reports on rare, threatened and endangered fauna and flora. The following plant reports have now been completed and (excluding site-specific information) are available from the Canadian Nature Federation. There is a charge for shipping as well as any photocopying.

Extirpated species:
Blue-eyed Mary (*Collinsia verna*)

Endangered species:
Cucumber tree (*Magnolia acuminata*)
Eastern prickly pear
(*Opuntia humifusa*)
Heart-leaved plantain
(*Plantago cordata*)
Hoary mountain mint
(*Pycnanthemum incanum*)
Large whorled pogonia
(*Isotria verticillata*)
Pink milkwort (*Polygala incarnata*)
Skinner's purple false foxglove
(*Agalinis skinneriana*)

Slender bush clover
(*Lespedeza virginica*)
Small white lady's slipper
(*Cypripedium candidum*)
Small whorled pogonia
(*Isotria medeoloides*)
Spotted wintergreen
(*Chimaphila maculata*)

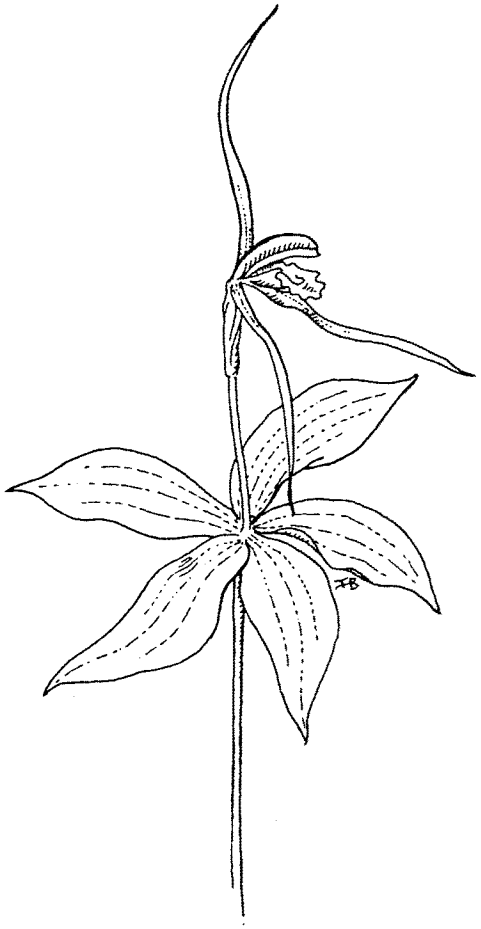
Threatened species:
American chestnut
(*Castanea dentata*)
American water willow
(*Justicia americana*)
Blue ash (*Fraxinus quadrangulata*)
Bluehearts (*Buchnera americana*)
Colic root (*Aletris farinosa*)
Kentucky coffee tree
(*Gymnocladus dioica*)
Nodding pogonia
(*Triphora trianophora*)
Pitcher's thistle
(*Cirsium pitcheri*)
Red mulberry (*Morus rubra*)

Rare species:
Broad beach fern
(*Phegopteris hexagonoptera*)
Climbing prairie rose
(*Rosa setigera*)
Dense blazing star
(*Liatris spicata*)
Dwarf hackberry (*Celtis tenuifolia*)
Few-flowered club rush
(***Scirpus verecundus***)
Green dragon (*Asisaema dracontium*)
Hill's pondweed
(***Potamogeton hillii***)
Hop tree (*Ptelea trifoliata*)
Prairie white fringed orchid
(*Platanthera leucophaea*)

/continued...

Shumard oak (*Quercus shumardii*)
Swamp rose mallow
(*Hibiscus moscheutos*)

Contrast native plant protection in Ontario with that in New York State where the Penal Code provides protection against picking, removing or transplanting of any listed plant without the consent of the property owner. Listed plants cover 34 species, genera and families including all orchids and all ferns except bracken (*Pteridium aquilinum*), hay-scented fern (*Dennstaedtia punctilobula*) and sensitive fern (*Onoclea sensibilis*).



Isotria verticillata

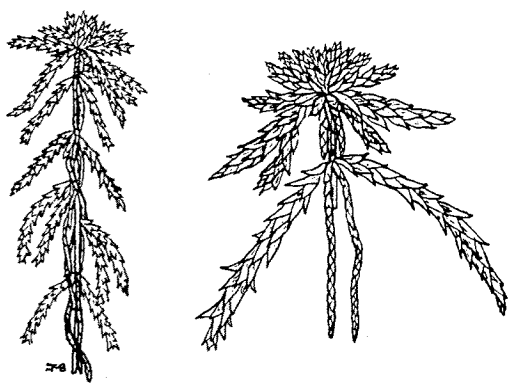
MICHIGAN FLORA

It is an unfortunate fact that the best available guide to the flora of Ontario is only two thirds complete and does not actually cover Ontario. We refer, of course, to Michigan Flora Parts I and II by Edward G. Voss, published by the Cranbrook Institute of Science and the University of Michigan Herbarium.

Part I, covering gymnosperms and monocots was published in 1972 and Part II, dealing with about half the dicots (Saururaceae to Cornaceae) came out in 1985.

Both publications were greeted with high acclaim by reviewers and are considered indispensable by most serious field botanists. The two hardcover books are not readily available in Ontario because the price is too low to interest booksellers. Some stores will order the books for you or they can be obtained by writing directly to the publishers. The price for each is a very reasonable $12.50 (US) plus handling and shipping. The address is

Cranbrook Institute of Science
500 Lone Pine Road
P.O. Box 801
Bloomfield Hills, Michigan
U.S.A. 48013



Sphagnum angustifolium

ROM OUTING REPORT

Twenty seven FBO members showed up on a snowy February 26 in downtown Toronto to visit the ROM herbarium. Debra Metsger, Curatorial Assistant, and Emily Hamilton, FBO member and herbarium volunteer, gave everyone a fascinating first-hand introduction to the operation of Canada's third largest herbarium. (The herbaria of Agriculture Canada and the National Museum are larger.) The ROM herbarium, which houses the largest collection of Ontario plants, was transferred from the University of Toronto Botany Department to the ROM Botany Department in 1982.

Debra Metsger gave a well-received presentation followed by a tour of the facilities. She showed us how pressed specimens, mounted on herbarium sheets, are filed in large folders (colour coded as to species geographic origin) and stored in rows of metal cabinets. Each folder may contain several specimens of the same species. Ms. Metsger also explained how to construct and use a plant press and pointed out some of the techniques she has learned from first hand experience.

Emily Hamilton, a well-respected amateur botanist among Toronto field naturalists, and an invaluable volunteer at the herbarium since 1983, explained the proper way to mount pressed plants. Due to lack of funding, the short-staffed herbarium needs volunteers who can make a commitment to help out, particularly on weekdays during normal office hours.

Of the 280 families represented in the collection, the majority are from Ontario, while the remainder are from elsewhere in Canada and the rest of the world. Herbarium specimens are used by plant researchers as references for identification, documentation and biosystematic research. Professional and amateur botanists working on projects sometimes add to the collection by donating plants. In addition, herbarium staff collect specimens on field trips or as part of their research activities. An example of the latter is the ongoing work with *Crataegus* (hawthorns) conducted by Dr. T.A. Dickinson, Assistant Curator. Another research area is the use of computers in plant identification. Herbarium staff provide a variety of public services as well. These include tours of the collection, answering public enquiries about plants and identifying poisonous plants for regional poison control centres across the province.

Judy Hernandez

PROJECTED PLANT EXTINCTIONS

According to a article in **Bioscience** (1989, Vol.39(4): 276), a recent survey of botanists indicated that some 253 species of plants in the U.S. are likely to become extinct in the next five years. Another 427 may be gone by the year 2000.

Of the critically endangered plants, 73% are found only in California, Hawaii, Texas, Florida or Puerto Rico. Only 91 of these species are in the National Collection of Endangered Plants, a living collection of rare native flora distributed in 19 botanical gardens and arboreta. Emergency measures will be taken to bring some of the others into cultivation.

About 200 taxa of native plants are thought to have gone extinct in the U.S. in the last 200 years. The loss of most is attributed to destruction of habitat by farming, urban and industrial development.