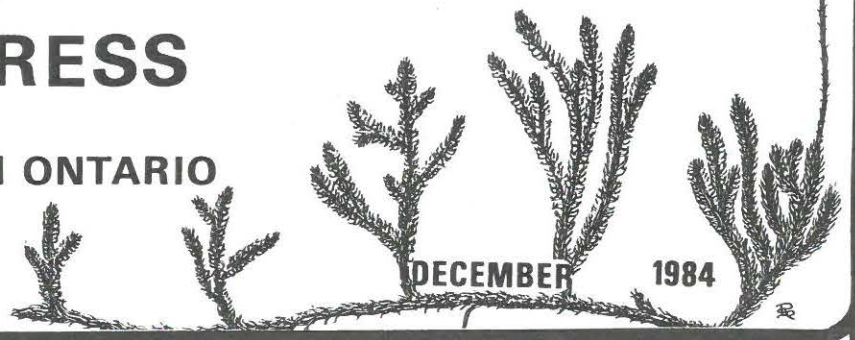
THE PLANT PRESS

FIELD BOTANY IN ONTARIO

Vol.2 No.4 DECEMBER 1984



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Front page illustration: Lycopodium clavatum (common clubmoss) has suffered from over collection for Christmas decorations. The specimen shown here at half size was drawn by Ron Scovell

NEWS

THE PLANT PRESS, INCORPORATED

The Plant Press was recently incorporated as a non-profit corporation. The Board of Directors will meet for the first time on 1 December 1984. The sole function of The Plant Press is to produce a publication about field botany in Ontario.

FIELD BOTANISTS OF ONTARIO

Bob Hounsell, Coordinating Chairman, Field Botanists of Ontario, c/o 105 Moccasin Drive, Waterloo, Ontario N2L 4C2

The Field Botanists of Ontario (FBO) is no longer a proposed organization; it now exists. It may not be large at the start but it is established.

Forty memberships had been received by the time 12 people met at Wilfrid Laurier University in Waterloo on 20 October 1984. The rationale, the aims, the structure and the areas of activity for this new group were discussed. Present were: Rick Bobbette (Barrie), Adèle Crowder (Kingston), Doug Geddes (Brampton), Jim Hodgins (Toronto), Bob Hounsell (Waterloo), Jeff Kaiser (Mississauga), Larry Lamb (Kitchener), John Morton (Waterloo), Mirek Sharp (Kitchener), Isabel Smaller (Toronto), Jocelyn Webber (Mississauga), and Harry Williams (Millbrook).

Rick Bobbette acted as secretary for the meeting.

Discussion was spirited as, first, we tackled the question of whether there should be such an organization. The unanimous conclusion was that no existing group fulfills our botanical needs. Some provide a chance for social contact and exchange of ideas and news but only whet the appetites of those interested in a broader yet more detailed knowledge of the Ontario flora. Other organizations cater to those who have botanical expertise in one specialty or another but provide few opportunities for field trips or workshops.

We think that the FBO will give Ontario field botanists many occasions to get together and to get to know one another at meetings and under field conditions. We hope to be light on structure and strong on field trips such as the well-attended Bruce and Ojibway weekends. A unanimous decision at the October meeting was that the FBO seek a close relationship with The Plant Press, a publication on field botany in Ontario.

Of course some structure is needed to keep things going and to plan activities. As a supplement to this issue you will see a call for nominations; please use it. If you are not yet a member use the membership form on the same page.

Membership in the FBO is separate from the subscription cost of The Plant Press. Most of the cost of running the FBO will come from field trip fees. Those who attend many activities will get the most benefit and will also contribute commensurately. This seems to be a fair way of holding down membership fees.

LETTERS

Professional botanists appreciate that it is possible to spend 50% of their time getting the last 20% of information necessary for an article to be accurate. No individual should be discouraged from contributing to The Plant Press because they are "corrected" by later feedback. The goal of improved communication among field botanists can only be met by the process of those who have access to specific details of knowledge (i.e. new or overlooked plant records and publications) adding to the reports and ideas of others.

RE THE ORIGIN OF COSEWIC

"I recently subscribed to The Plant Press and obtained copies of all the back issues. In Volume 1, No. 3 (pages 45 - 47), Erich Haber stated that the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) was founded in 1977 by the Federal-Provincial Wildlife Conference. The title of this report erroneously implies that this was the origin of COSEWIC! An account of the events leading up to the 1977 founding of COSEWIC is provided below.

"In 1975 when I was the Executive Director of the Canadian Nature Federation, I proposed to the Board of Directors that the CNF organize a national conference to bring together scientific information on endangered species and habitats in Canada. The Directors agreed and the matter was left in my hands. Accordingly, I invited speakers in various fields of specialization and sought funding support from the World Wildlife Fund (Canada) which then asked to become a co-sponsor of the conference.

"In preparing the guidelines for speakers, I asked every participant to suggest resolutions that we should put to the conference. While 40 of the 41 invited speakers accepted the invitation to give papers at the conference, the response to the request for resolutions was disappointing. So, I sat down and prepared drafts of some eight resolutions which seemed appropriate to the subject and that flowed from some of the papers to be presented. Among the draft resolutions was one that was to be sent to the Canadian Wildlife Service asking that the CWS take the initiative through the Federal Provincial Wildlife Conference to establish a committee to deal exclusively with the question of endangered and threatened species and habitats in Canada.

"I then met with a number of staff of the Canadian Wildlife Service to discuss the exact wording of the resolution so that the resolution might actually have some effect on the bureaucratic practices, policies and procedures. The response from the CWS was that this was a very sensitive federal - provincial matter and that really, in this country the provinces would not agree to permit a Federal Agency like the CWS to make any decisions on the status of species that came under provincial jurisdiction. Only Dr. Nick Novakowski of the CWS expressed an interest in and support for the idea and offered some suggestions on wording of the resolution.

"The CNF-CWF Conference on Canada's Threatened Species and Habitats was held 20 - 24 May 1976, and the resolution was adopted unanimously. Here is its exact wording:

> 'That the Federal and Provincial Wildlife Conference strike a standing committee consisting of representatives of the Federal and Provincial governments and appropriate conservation and scientific organizations for the purpose of establishing the status of endangered and threatened species and habitats in Canada.'

"After the conference I sent a copy of the resolution to the Director of the Canadian Wildlife Service and to the Secretary of the Federal Provincial Wildlife Conference. Then, about a month later, at the 1976 FPWC which was held at Fredericton, New Brunswick, 6 - 8 July, the above resolution was put to the Conference. Its wording was identical to the above. Thus, a recommendation from the CNF-WWF Conference on Canada's Threatened Species and Habitats became a recommendation from the 1976 FPW Conference to the 1977 FPW Conference.

The next move took place in March 1977, when an 'extraordinary meeting' of federal and provincial wildlife officials was held in Ottawa to discuss the feasibility of such a standing committee on endangered species. It was decided unanimously that such a committee was not only feasible but desirable. Plans were then made to organize a permanent standing committee and the inaugral meeting of COSEWIC was held in the fall of 1977.

"I enjoy reading The Plant Press and wish the Field Botanists of Ontario every success. Both the publication and the club should play worthwhile and useful roles in the botanical scene in Ontario."

Ted Mosquin, Lanark

USE OF THE WORD "PRAIRIE" BY ONTARIO BOTANISTS

"I am continually disturbed by overuse of the word 'prairie' by Ontario botanists. The 'prairies' in southwestern Ontario, at best, represent transition zones. The groups of plants found have southern as well as western affinities. In Ontario there are no 'prairies', but rather openings in woodland habitats which support a few wide-ranging species that occur in more open habitats with rich soils. Such habitats are a far cry from North Dakota tall grass prairies. Do we call a black spruce bog in Northumberland County 'boreal forest'?"

Stephen Darbyshire, Ottawa

ON COMMON NAMES

"On the subject of 'common names' I would only say that they are a linguistic matter - they are what common people really call an organism. It is, by definition, impossible to 'make up' a common name. English names (or Chinese names, or Russian names) can be manufactured, though no rules apply, but why bother? Not long ago I ran across Roy Lancaster's criticism of those who coin new English names for plants which have no available established ones: 'Americans are particularly fond of this unfortunate albeit

amusing passtime...Established English names... are often part of a rich heritage of folk-lore and history, but to invent a new English name... seems pointless.' (Watsonia 3:319. 1971)."

Ed Voss, Ann Arbor, Michigan

"I agree with Dianne Fahselt that we ought to learn Latin names of plants. However, if Claude Garton and others wish to have a distinctive common name for each plant I would be willing to help pick out names for a goodly number of our plants. I had better warn all those wishing for common names that I would not tolerate any plant being called 'common' or named for any person or thing. I would also like to eliminate all those names translated from the Latin, but that will come later. Aside from those few provisos I am ready and willing to get on with the task. Come on, let's go!"

Wilf Botham, Cottam

"As a botanical consultant, I prefer capitals for the first letter of common names. When reading papers and reports where Latin names are not included, these capital letters act as flags which make it easier to spot the common names of plants."

Susan Reznicek, Ann Arbor, Michigan

"I would prefer not to see capital letters used for common names. Perhaps the discussion in the Council of Biology Editors Style Manual will save some unnecessary editing...

> 'Most common names are not capitalized, although a name derived from a proper noun may retain the initial capital letter, whether hyphenated or set as two words (Cupid's-dart, Dutchman's-pipe, English ivy, flower-of-Jove, Gray's lily). A proper name that is part of a fanciful common name may have an initial lowercase letter (jack-in-the-pulpit, blue-eyed-mary, black-eyed-susan). Compound common names of plants may be hyphenated, run together, or appear as two words. Many botanists prefer to hyphenate the term or run the two elements together when the second part of the name is not taxonomically correct (for example, 'cotton-grass' or 'cottongrass') and to separate the elements when the second part is taxonomically correct (for example, 'beach grass' because it is a grass).'. "

Jim Hodgins, Toronto

[** In future issues we will not use capitals for common names. JW]

MISERY BAY, MANITOULIN ISLAND

"May I say how much I enjoy The Plant Press; for someone like myself who is a great distance from southern Ontario, it fills a need.

"Manitoulin Island has a nature club of which I am the present president. We are currently concerned about the future of Misery Bay - a proposed nature reserve acquired through the Nature Conservancy, but receiving much local opposition from the Township of Burpee in which it is located. If any readers of The Plant Press know of this area, perhaps they would support the project by writing of their concerns to the Ministry of Natural Resources...

"...I would be pleased to hear from anyone who comes to Manitoulin and wishes to contact a local person. If any more information is required concerning Misery Bay - an area with a magnificent fen - I will be pleased to provide it.

"I note that [on the chart of orchid distributions in Ontario (The Plant Press 2(3):71-76)] Arethusa bulbosa is not listed for Manitoulin. I know of at least 3 localities, Misery Bay being one."

(Mrs.) Jean Williamson, Box 116,
Mindemoya, Ontario P0P 1S0

Marsilea quadrifolia (FOUR LEAF WATER-FERN) NO LONGER AT LORNE PARK

The note on the distribution of the fern Marsilea quadrifolia in Ontario (The Plant Press 2(3):68-70) prompted considerable interest. On 3 November 1984 Jeff Kaiser and I visited the Lorne Park site with Vince and Florrie Dunston of Oakville. They had learned of this locality from The Plant Press, but had been unable to locate the fern on a previous visit.

Much to our disappointment we found that the water level of the pond had been lowered another metre. Areas which had been under water in September 1983 supported dense vegetation dominated by Bidens spp. (beggar's ticks) and other tall forbs. We were unable to find any trace of the fern, the habitat had become too dry.

Jocelyn Webber, Mississauga

THANKS TO ALL

"I would like to say thank you for providing me (us) with an excellent publication. Not only do I enjoy reading it, but I will be satisfied to have my short notes published in The Plant Press knowing that they reach an appreciative audience."

Stephen Darbyshire, Ottawa

This issue marks the end of one of Ontario's smallest small businesses. As our next issue will undoubtedly include news about a non-profit corporation called "The Plant Press, Incorporated", it seems appropriate here to share appreciation to all who have made this possible.

First thanks go to all who have worked on the Editorial Committee during the past two years: Rick Bobbette, Wilf Botham, Dan Brunton, Bill Cattley, Bill Crins, Stephen Darbyshire, Jeff Kaiser, Rose Klinkenberg, Kathy Lindsay, Mike Oldham, Bruce Thacker, Richard Sims, Bill Stewart and Steve Varga. Their knowledge, insight and patience has been invaluable. We look forward to future contributions from all who have had to temporarily forego participation due to other committments.

We thank the more than 100 individuals whose contributions were published in the first two volumes. This broad base of support has provided a good diversity of notes, reports, ideas and letters. We have even had cover illustrations from 8 different contributors. All of this work has taken considerable time to prepare, and we hope that those involved with the workload are enjoying the process as much as the product!

Many individuals have provided insight and opinions which have resulted in improvements that could not have come about due to the work of one or even a few. In addition to those above, I am especially grateful to Jim Hodgins, Jim Pringle, Joyce Reddoch, Tony Reznicek and to our printer, Paul Molyneaux of Abbey Printing.

Of course we are also grateful to our 400 or so readers. By sending in subscription cheques promptly you enable us to have the cash flow necessary to run the operation. Thank you.

Jocelyn Webber, Mississauga

NOTES AND REPORTS

A FEW HEPATICS FROM KAPISKAU, HUDSON BAY LOWLANDS

Harry Williams, Millbrook, Ontario L0A 1G0

Kapiskau Camp is a camp for goose hunters on the west side of James Bay, between the mouths of the Albany and Attawapiskat Rivers (Fig. 1). I spent a week there in August 1969 with a party of members of the Federation of Ontario Naturalists and collected some hepatics. The small number of collections (14 taxa) reported below reflects about equally the poverty of the hepatic flora in the immediate vicinity of the camp and the limited opportunities to collect elsewhere.

The camp is on the left bank of the Kapiskau, about 1.2 km from the mouth, just below the site of the old Hudson's Bay post, which is marked as Kapiskau on some of the older maps. The best map of the area available at present is Map 43B, Kapiskau River, 1:250,000, of the

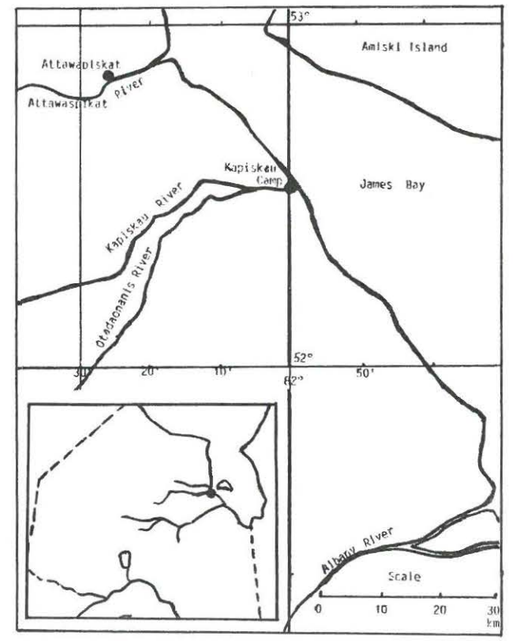


Figure 1. Location of the study area in northern Ontario.

National Topographic Series, published in 1964.

The vegetation in the region of the camp is mainly willow-alder thicket with sedge fens and pools. (The vegetation map (Bates & Simkins 1969) shows a strip of lichen heath on an old beach ridge just east of the camp site, but this is a mistake: the area is uniformly low and flat, a normal part of the upper strand of James Bay.) Along the river, flooding during the spring run-off has deposited calcareous silt over tree bases and stumps and these form the main habitat for hepatics around the camp.

Away from the coast, the river-bank levees support mature spruce forest with a richer hepatic flora. This was sampled briefly on our trip up-river at a spot about 30 km above the camp, approximately due south of Attawapiskat village. This was as far as we were able to go without tracking the canoes; the river here is shallow and fast over a stony bottom. The treed fen away from the river here might repay further examination, but similar habitats are more conveniently accessible from either the Albany or the Attawapiskat, and it is to be hoped that further collections will in time be available from there. As far as hepatics are concerned, the Hudson Bay Lowland is the least-collected area in Ontario. This area holds the greatest promise of additions to our hepatic flora.

Collecting sites:

Site 1 - Kapiskau Camp area, 52°46'N., 82°00'W.

Site 2 - Right bank of Kapiskau, just above confluence of Otadaonanis, 52°46'N., 82°23'W.

Site 3 - Banks of Kapiskau, about 30 km up from camp, 52°39'N., 82°05'W.

Species collected:

Anastrophyllum hellerianum (Nees) Schust.
Site 3: on old spruce log on forest floor, river-bank levee. With Ptilidium pulcherrinum, Riccardia latifrons, Jamesoniella autumnalis, Nowellia curvifolia. No. 2838.

Arnellia fennica (Gottsche) Lindb.
Site 3: in moss sod on base of big spruce, rich fen forest on river-bank levee. No. 2839. The 3rd Ontario collection of this species, which is probably common in the fens of the Hudson Bay Lowlands. The other locations are Muketei-Attawapiskat confluence (Persson & Sjors 1960) and Hawley Lake, Sutton Ridge (Williams 1969).

Lophoclea minor Nees.
Site 2: on humus over moist calcareous silt, top of river-bank. With Plagiochila asplenioides. No. 2840.

Lophozia badensis (G. ex G. & Radenh.) Schiffn.
Site 1: on calcareous silt, top of river-bank. No. 2842.

Lophozia bantriensis (Hook.) Steph.
Site 2: in bryophyte sod on calcareous silt, top of river-bank. Male and female plants, with perianths. No. 2841. The 2nd Ontario collection; the first report was from Hawley Lake, Sutton Ridge (Persson & Sjors 1960).

Lophozia collaris (Nees) Schust.
(=L. mullerii Dum.)
Site 1: on calcareous silt over base of old stump, open poplar forest. No. 2834. The 2nd Ontario report; also known from Hawley Lake, Sutton Ridge (Persson & Sjors 1960).

Marchantia polymorpha L.
Site 1: on ashes of old wood fire. No. 2836.

Pellia endiviifolia (Dicks.) Dum.
Site 1: on calcareous silt over old stump bases. With Blepharostoma trichophyllum. Nos. 2834, 2835.

(Voucher collections are in the personal herbarium of H. Williams.)

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CHECKLIST OF ONTARIO PTERIDOPHYTES PART ONE: FERN ALLIES

D.M. Britton, Department of Molecular Biology and Genetics, University of Guelph, Guelph, Ontario N1G 2W1

The taxonomy of the ferns and fern allies seemed somewhat static around 1950 when many considered the ultimate authority to be Gray's Manual of Botany (Fernald 1950). Since that time, there have been many monographic treatments and new information from new techniques. The science of biosystematics considers not only morphology and geography but also chromosome numbers, breeding data, SEM of spores, chemical taxonomy of secondary products, isozymes, etc. The goal is to delimit a biological species, which at the same time down plays minor ecological variants and mutants such as represented by many varieties and forms of Equisetum arvense.

Field workers are quite familiar with a clubmoss such as Lycopodium complanatum var. flabelliforme, and many realize that some consider it a good species called L. flabelliforme. However, if you now tell them that it is called Diphasiastrum digitatum by European experts, they are quite incredulous and wonder what was wrong with L. flabelliforme. It is hoped that the Ferns and Fern Allies of Canada by W.J. Cody and D.M. Britton, to appear in 1985, will be an authoratative guide for the pteridophytes of Canada which will help to show where we have come from, and where we are going. In the interim, a simple checklist of the taxa in Ontario is given here, so that field workers can look over the names and concepts for 1984. The list below includes the fern allies. A list of the ferns will appear in a subsequent issue.

The format of the list owes a great deal to Peck & Taylor (1980) and their list for Wisconsin. The over-all classification follows a scheme presented by Crabbe, Jermy & Mickel (1975). This scheme recognizes the close affinities of such ferns as Adiantum, Cryptogramma and Pellaea and eliminates the overly large, cumbersome and all inclusive family Polypodiaceae.

In the list, synonyms are in square brackets and are often annotated by a letter code to indicate where that name is used: F = Fernald (1950), G = Gleason & Cronquist (1963) and W = Wherry (1961). A common name or names is given opposite the Latin name for each taxon. There is, of course, no rigorous code for common names such as is used for Latin names, so that considerable variation is possible. For example, Lycopodium clavatum is called common club-moss in Cody & Britton (1985) and running clubmoss in Peck & Taylor (1980). I was introduced to the plant as the staghorn clubmoss and later was intrigued by the name wolf's claw. Arguments with technical editors are possible over whether L. dendroideum should be called round-branched ground-pine or round-branched groundpine and whether or not one should or should not append the word clubmoss or club-moss after each name (e.g. ground-pine and ground-cedar)! Of a more serious nature is the fact that these latter common names, when used alone in an historical sense, will often lead to confusion as one can easily see by looking in Fernald (1950), that ground-pine could be any one of six currently recognized taxa, whereas ground-cedar might be any one of three.

In the list below, I have attempted to append some key recent references that will often explain why that scientific name should be accepted, e.g. Isoetes echinospora Dur (Kott & Britton 1983), rather than I. muricata, I. echinospora var. or subsp. muricata, or I. braunii, etc. A summary of the number of taxa for each of the four genera of fern allies in Ontario appears in Table 1.

LYCOPODIOPHYTA

LYCOPODIACEAE (CLUBMOSS FAMILY)

European workers have accepted the diversity of the various groups in the family based on gametophyte morphology and chromosome numbers and have modified the taxonomy to highlight these differences when comparing the diversity in this genus with the diversity in other genera of the pteridophytes. Hence, for the Lycopodium complanatum-sitchense alliance, they have recognized the genus Diphasiastrum; for L. selago and lucidulum there is the genus Huperzia; and for the L. inundatum complex, the genus Lycopodiella. Huperzia lucidula and Lycopodiella inundata are not readily recognized by workers used to the names L. lucidulum and L. inundatum.

It should be noted that Lycopodium annotinum and L. clavatum have not received the same attention by recent New World specialists as the other species in our list, so that further revisions will probably occur.

Lycopodium annotinum L.
var. annotinum — (stiff clubmoss, bristly clubmoss)
var. pungens (LaPylaie) Desv.
[L. dubium Zoega]

L. clavatum L.
var. clavatum — (common clubmoss, running clubmoss, staghorn clubmoss, wolf's claw)
var. monostachyon Hook. & Grev.
[L. lagopus (Laest.) Zinserl. ex Kuzen]

L. complanatum L. (Wilce 1965) — (flat-branched ground-pine)

L. dendroideum Michx. (Hickey 1977) — (round-branched ground-pine)
[L. obscurum var. dendroideum (Michx.) D.C. Eat. ex Gray (F,G,W)]

L. digitatum A. Br. (Hickey & Beitel 1979) — (crowfoot clubmoss)
[L. flabelliforme (Fern.) Blanch. (W)]
[L. complanatum L. var. flabelliforme Fern. (F,G)]
[Hickey & Beitel (1979) say that the correct name at the varietal level is L. complanatum var. dillenianum Döll.]

L. inundatum L. (Bruce 1975) — (bog clubmoss)
[Bruce (1975) recognizes at least six taxa (three species and three hybrids) for this complex in Michigan.]

L. lucidulum Michx. (Beitel 1979b) — (shining clubmoss)

L. obscurum L.
var. obscurum (Hickey 1977) — (flat-branched ground-pine)
var. isophyllum Hickey (Hickey 1977) — (equal-leaved ground-pine)
[L. obscurum L. (F,G,W)]

L. sabinifolium Willd. (Beitel 1979a) — (savin-leaf clubmoss)

L. selago L.
var. selago — (mountain clubmoss, fir clubmoss)
var. patens (Beauv.) Desv.
[This represents a mixed assemblage of hybrids in Ontario, e.g. L. lucidulum X selago and L. lucidulum X porophilum etc. which are being sorted out by Beitel (1979b).]

L. sitchense Rupr. (Beitel 1979a) — (sitka clubmoss)
[L. sabinifolium Willd. var. sitchense (Rupr.) Fern. (F)]

L. tristachyum Pursh — (ground-cedar)

Hybrids: (Wilce 1965)
L. Xhabereri House (L. digitatum X tristachyum)
L. Xzeilleri (Rouy) Vict. (L. complanatum X tristachyum)
L. complanatum X digitatum

SELAGINELLACEAE — (SPIKEMOSS FAMILY)

Selaginella eclipes Buck (Buck 1977; Webster & Mehrhoff 1984) — (northern meadow spikemoss)
[S. apoda (L.) Fern. (F,G)]
[S. apus (L.) Spring (W)]
[Based on geographical distributions (S. eclipes on Long Point and S. apoda in Ohio), it seems unlikely that this taxon merits more than subspecific recognition. But, as yet, definitive biological data are lacking, so the species is given tentative recognition.]

S. rupestris (L.) Spring — (rock spikemoss)

S. selaginoides (L.) Link — (northern spikemoss)

ISOETACEAE — (QUILLWORT FAMILY)

Isoetes eatonii Dodge (Kott & Bobbette 1980) — (Eaton's quillwort)

I. echinospora Dur. (Kott & Britton 1983) — (spiny-spored quillwort)
[I. muricata Dur. (F,W)]

I. riparia Engelm. (Kott & Britton 1983) — (shore quillwort)
[I. dodgei Eat.]
[I. canadensis (Englem.) A.A. Eaton]

I. macrospora Dur. (Kott & Britton 1983) — (big-spored quillwort)

EQUISETOPHYTA

EQUISETACEAE (Hauke 1963; 1978) — (HORSETAIL FAMILY)

The Scouring-rushes are sometimes recognized as a separate genus, Hippochaete, e.g. H. hyemale.

Equisetum arvense L. — (field horsetail, common horsetail)
[Note: Hauke (1978) does not consider var. boreale worthy of recognition.]

E. fluviatile L. — (water horsetail)

E. hyemale L.
var. affine (Engelm.) A.A. Eat. — (common scouring-rush)
[var. hyemale is European]

E. laevigatum A. Br. — (smooth scouring-rush)
[E. kansanum Schaffn.]

E. palustre L. — (marsh horsetail)
E. pratense Ehrh. — (meadow horsetail)
E. scirpoides Michx. — (dwarf scouring-rush)
E. sylvaticum L. — (woodland horsetail)

E. variegatum Schleich. (variegated scouring-rush)

Hybrids: (Hauke 1963; 1978)

E. Xferrissii Clute (E. hyemale X laevigatum)
[E. hyemale L. var. intermedium A.A. Eat. (F)]

E. Xlitorale Kuhl. (E. arvense X fluviatile) (shore horsetail)

E. Xnelsonii (A.A. Eat.) Schaffn.
(E. laevigatum X variegatum)
[E. variegatum Schleich. var. nelsonii A.A. Eat. (F,G,W)]

E. Xtrachydon A. Br. (E. hyemale X variegatum)
[E. variegatum Schleich. var. jesupi A.A. Eat. (F,G,W)]

Table 1. Summary of the fern allies in Ontario.

Genus	Species	Varieties	Hybrids
Lycopodium	12	3	3
Selaginella	3	-	-
Isoetes	4	-	-
Equisetum	9	-	4
Totals	28	3	7

(TOTAL TAXA 38)

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RESTORATION OF AQUATIC VEGETATION IN RONDEAU BAY, LAKE ERIE

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Rondeau Bay, located on the north shore of Lake Erie, was characterized historically by luxuriant growths of submerged aquatic vegetation (SAV). Based on water quality records the Bay receives high loads of nutrients and sediments; the watershed consists of fertile loam and silty loam soils which are intensively cultivated for row crops.

Rondeau was once renowned for its warm-water fishery, in particular large-mouth bass (Micropterus salmoides) and panfish, drawing fishermen from many parts of Canada and the United States (Berst 1950). In the early 1960's, the Bay was invaded by Eurasian water-milfoil (Myriophyllum spicatum). This plant (Fig. 1) soon became the dominant species and extended in dense beds throughout the Bay. The Ontario government and private boating clubs attempted to control the weed with herbicides and harvesters in the late 1960's and early 1970's. The chemical control methods were abandoned around 1975 due to their limited success.

In the summer of 1977, local residents contacted staff of the Ontario Ministry of the Environment about a sudden die-off of Eurasian water-milfoil. Similar die-offs were also noted in other lakes in Ontario and eastern North America (Bayley 1978; Carpenter 1979). While a number of

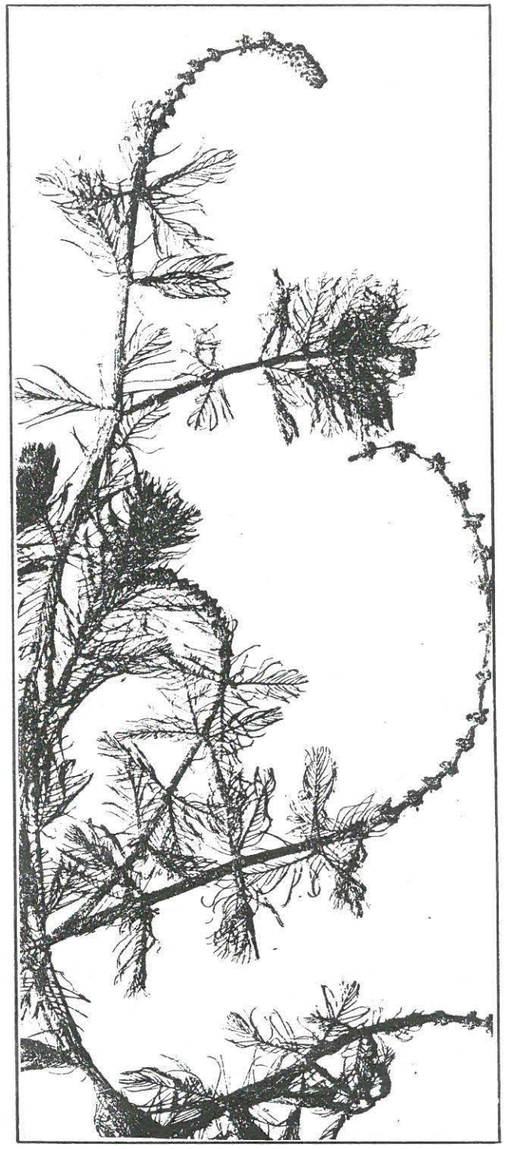


Figure 1. Herbarium specimen of Eurasian water-milfoil (Myriophyllum spicatum) from Muskoka, TRTE accession number 015767.

causal agents have been postulated (e.g. natural parasites, disease, nutrient limitation, build-up of toxins in sediments, climate, etc.), no single explanation appears adequate to account for the observed collapse of European water-milfoil at all sites. Similar collapses have been documented following European water-milfoil invasions in other lakes after variable lengths of time. The cause of the rapid reduction in Eurasian water-milfoil abundance in Rondeau Bay has yet to be determined.

By 1978 only remnant stands of SAV were present. Concurrently, an apparent reduction in the water quality of the Bay occurred (Ontario Ministry of the Environment 1982). In particular, elevated concentrations of suspended solids were noted. This change has been partially attributed to increased soil erosion in the watershed. However, with regards to the loss of the dense Eurasian water-milfoil beds, increased wave action appears to have reduced settling rates of suspended solids and increased resuspension of sediments. The resultant reduced light transmission produced unsuitable habitat for Eurasian water-milfoil and other aquatic plants.

As Rondeau Bay has a mean depth of about 1.7 m and a northeast-southwest orientation (the same as the prevailing summer winds) it has a maximum fetch of about 6.5 km and frequently experiences heavy wave action. During the Eurasian water-milfoil invasion, much of the native SAV was shaded out with only remnant stands persisting. When the Eurasian water-milfoil collapse occurred, three major changes appear to have resulted:

1, Dense beds of Eurasian water-milfoil are effective wave barriers, absorbing wave energy and dampening waves significantly. The absence of these beds permitted wave action across all of the Bay, thereby increasing effective fetch and hence, wave energy.

2. The sediments, where the Eurasian water-milfoil beds had occurred, were exposed to water turbulence and resuspension took place. This resuspension is readily apparent in terms of water clarity when a heavy wave event follows a period of extended calm weather.

3. The Eurasian water-milfoil beds had acted as effective filters of the inflowing agricultural runoff, causing the fine fractions to settle out either on the vegetation or on the bottom; settling rates appear to have decreased significantly after the demise of the Eurasian water-milfoil. The sediment load from agricultural runoff is exacerbating the problem by renewing the supply of material for resuspension.

The Bay has remained virtually devoid of SAV since the 1977 Eurasian water-milfoil collapse. In addition the quality of the warm-water fishery has decreased significantly with an associated loss in recreational fishing opportunities and tourism revenues for local businesses (Sztramko 1980). As a result, the Ontario Ministry of the Environment funded two separate studies to deal with the problem. The first resulted in a master erosion control program (Ecologistics Ltd. 1983). The purpose of that program is to reduce soil erosion in the watershed and associated sediment loads to the Bay. The plan is now in the implementation stage.

The second study, which was completed in March 1984, focussed on the environmental factors limiting SAV growth and provided an overall restoration strategy for the Bay (JE Hanna Associates Inc. 1984). Field surveys and laboratory experiments were undertaken to investigate the Bay environment and Eurasian water-milfoil ecology. Extensive field surveys of the current SAV species distribution and abundance, density and viability of seeds and tubers in the sediments, and of sediment characteristics were undertaken. In addition, laboratory experiments using controlled greenhouse conditions were set up to test the effects of sediment type and available light on three native species being considered for transplanting, namely Potamogeton pectinatus (a pondweed), Vallisneria americana (tapegrass) and Heteranthera dubia (water-stargrass).

Results of this study showed that the pondweed (Potamogeton pectinatus) grew best and that silty organic sediments supported the best growth. Wave forecasting was used to evaluate sediment resuspension potential and extensive analyses of historical records were undertaken to selecting the best sites to attempt to reestablish SAV. Based on this work a restoration program was designed using transplanted P. pectinatus tubers. A nursery which could supply adequate numbers of tubers was located and planting was carried out in May 1984.

The effectiveness of the planting scheme is still being evaluated, but several encouraging signs have been recorded in the Bay. First, overall water quality, as measured by Secchi disc depths, has been much improved during the past two summers. Secondly, significant new stands of SAV, primarily pondweed (Potamogeton pectinatus) have been observed growing in water as deep as 3 m. Whether these stands originated from transplanted tubers is unclear; several days after the transplanting was completed, gale force winds completely scoured the sediments of the Bay. The transplanted tubers were weighted, but the strong wave action caused large scale movements, spreading the tubers over an extensive area.

Experimental studies on SAV restoration have focussed almost exclusively on marine environments. The attempts by the Ontario Ministry of the Environment to restore SAV to Rondeau Bay are contributing to the development of complementary techniques for freshwater systems. Readers who have specific knowledge in these matters, or who have had experience dealing with similar types of problems, are encouraged to contact the author. Copies of the report describing the aquatic vegetation management strategy for Rondeau Bay are available from Dennis Veal, Chief, Water Assessments, Southwestern Region, Ontario Ministry of the Environment, 985 Adelaide Street South, London, Ontario N6E 1V3.

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ENVIRONMENTAL AND FLORISTIC ASPECTS OF WASAGA BEACH, SIMCOE COUNTY

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Wasaga Beach (Fig. 1) has been well known as a summer and, more recently, winter resort. It is more widely famous as the largest fresh water sand beach in the world. Naturalists from communities around Wasaga (Collingwood, Midland, Orillia and Barrie) are among those who gradually spread the word that distinctive plants and wildlife occur at Wasaga.

Under the stimulus of planning, and the acquisition of large tracts of land by the Ontario Ministry of Natural Resources, a new chapter has been opened in the history of Wasaga Beach. The development of Wasaga Beach Provincial Park by Huronia District assisted in the preparation of reports of botanical work previously done in the area by A.A. Reznicek and the author (Bobbette 1972). Funding for further study of the plant life of Wasaga resulted in further reports (Bobbette 1975a; 1975b; 1979; 1981). The renewed interest in the area also provided a stimulus for a number of terrain and historical studies (e.g. Martini 1974).

Terrain characteristics can be organized into mappable units called "ecodistricts" (similar to the less exacting term "landscape units") which reflect the landforming processes that

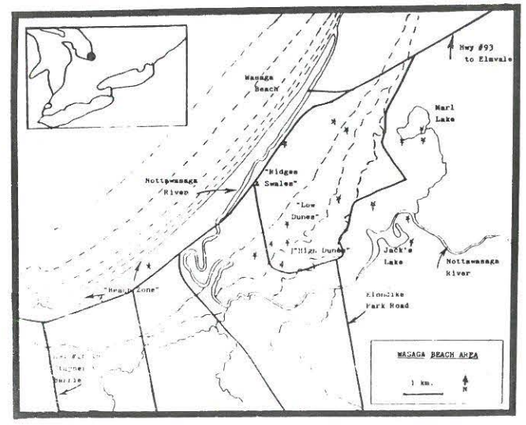


Figure 1. The location of Wasaga Beach in southern Ontario. Areas of particular botanical interest are indicated by the symbol ✱.

have produced areas of recognizable uniformity. Two of the ecodistricts at Wasaga will be briefly discussed in terms of their general character and some of the interesting associated plant species.

1. Coastal Ecodistrict

This is the zone in which active coastal and near-shore processes of erosion and deposition take place. This ecodistrict includes the active beach and back-shore dunes, the spit of the Nottawasaga River and the raised off-shore ridges between the river and the dune systems inland. Coastal habitats are home for one of the most distinctive plant communities in Simcoe County. Some of the most interesting species are: Tofieldia glutinosa (false asphodel), Lathyrus maritimus (beach pea), Lobelia kalmii (Kalm's lobelia), Ammophila breviligulata (marram grass), Andropogon scoparius (little bluestem), Arabis lyrata (rock-cress), Prunus pumila (sand cherry), Lithospermum caroliniense (puccoon) and Aster laevis (smooth aster).

Within the coastal cedar and mixed woodlands occur many of the most attractive plants of the Georgian Bay area: Goodyera oblongifolia (giant rattlesnake-plantain), G. repens var. ophioides (dwarf rattlesnake-plantain), the sedges Carex castanea and C. capillaris, Halenia deflexa (spurred gentian), Corallorhiza striata (striped coralroot), Lycopodium annotinum (bristly clubmoss), Acer pensylvanicum (striped maple), Comandra umbellata (bastard toadflax) and Platanthera psycodes (small purple fringed-orchid). Rarities and oddities here include Calypso bulbosa (calypso, under pressure but with at least some good habitat saved), Cypripedium arietinum (ram's-head lady's-slipper), Arceuthobium pusillum (dwarf mistletoe), Platanthera hookeri (Hooker's orchid) and Trisetum melicoides (melica-like trisetum).

One of the fascinating experiences at Wasaga Beach is to stroll across the wooded ridges and swales, then to cross the zone of active coastal disturbance and eventually, while wading into the shallow waters, experience the same regularity of ridges and swales which also occur under the water of Georgian Bay.

2. Dunelands Ecodistrict

This ecodistrict can be divided into a band of low, irregular sand dunes and a band of high, smooth, parabolic dunes with essentially interlocking crests. Red oak woodlands are important here, along with native stands and plantations of red and white pine, amongst trembling aspen, large-tooth aspen, American beech, white birch and eastern hemlock. Among the low dunes deflation hollows occur with plants such as Anemone multifida (cut-leaved anemone), Andropogon scoparius (little bluestem), Sorghastrum nutans (Indian grass) and Smilacina stellata (starry false Solomon's seal). Openings of grass, dwarf scrub and lichen barrens are present throughout the low dunes among the pines and oaks.

A large portion of the Wasaga area is currently zoned as a nature reserve. Species that occur here include Cirsium hillii (Hill's thistle), the hawkweeds Hieracium gronovii, H. scabrum and H. canadense, Arabis drumondii (Drummond's rock-cress), Lycopodium tristachyum (ground-pine), Helianthemum canadense (frostweed), Cyperus houghtonii (a sedge), Bromus kalmii (Kalm's brome grass), Lithospermum carolinien-sis (puccoon), Asclepias tuberosa (butterfly weed) and Andropogon gerardii (big bluestem). Occurrences of Chimaphila maculata (pipsissewa) and Hamamelis virginiana (witch hazel) may possibly be escapes, but are definitely well established.

Other ecodistricts in the Wasaga area also support plants of interest. Some notable ones are Pterospora andromeda (giant bird's nest) apparently extirpated on a river-altered site through the dunes) and Xanthoxylum americanum (prickly ash) and Celtis occidentalis (hack-berry) near Jack's Lake.

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BOTANICAL SOCIETIES IN CANADA

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(translated by the author from Bulletin de la Société botanique du Québec no. 1 (1981) and reproduced with permission of La Société botanique du Québec)

We are all familiar with some major national botanical associations such as: Société botanique de France, Botanical Society of the British Isles, American Bryological and Lichenological Society. Commonly these societies consider as their main responsibility the publication of a serial open to the scientific papers by their members. And indeed, as a frequent result of this activity, a society member will find that a large number of the papers in his own field of interest are to be found in the very serial of his own society. Just think of a New Englander consulting Rhodora.

Nothing of the kind has happened in Canada. Our botany is scattered among several institutional series, bulletins of natural history societies, proceedings of scientific societies and annals of some societies with episodic activities. Worse, much of our botany is found in serials from across the border. If there are any journals with a good show on Canadian botany, these bear names like Brittonia, The Bryologist, Madroño, Mycologia, Rhodora, and not "Gaultheria" or "Le Botaniste canadien".

Yet, there were some attempts to establish the botanical societies and journals that we need. One of them, the Botanical Society of Canada, was always of special interest to me and I believe it worthwhile to relive this foray into cultural autonomy.

To better grasp the state of the art at the time, I shall first review briefly the several botanical societies which existed in Canada. First came the Botanical Society of Montreal established in 1855. Two personalities dominated this society. There was George Barnston (1800-1883), a Hudson Bay factor whose years of service allowed him to travel throughout the country, collect plants and build an herbarium of 715 specimens, given to McGill University in 1939. His son, James Barnston (1831-1858) studied medicine and became a botany professor in 1856. But he died in less than two years and, with him, the society disappeared. The Society's herbarium was incorporated into that of McGill in about 1925.

Soon thereafter a society was founded at Kingston in 1860. This was the Botanical Society of Canada, which we shall discuss further on.

The next society was the most ephemeral: Canadian Botanists' Correspondence Association, founded in London (Ontario) in 1890. It disappeared right after the release of its four-page prospectus.

The Botanical Club of Canada, founded in 1891 and existing until 1910, was the most unusual of all. First, its objectives were primarily educational. Although the society meant to encourage all facets of botany, its activities revolved mainly around phenology. Even more unusual, the society implicated itself in the teaching of botany at the primary and secondary school levels. The kingpin of the society was A.H. Mackay (1848-1929), former principal of the Pictou Academy and, in 1890, Superintendent of Education in Nova Scotia. The society recruited its members from across Canada, but particularly Nova Scotia, and many members were professors who involved their students in the society. The secretary provided all with standard forms for phenological observations. Once the phenological tours were completed, the members and students returned the forms to the secretary who compiled and published a collective report in the proceedings of the Royal Society.

Why phenology? Because some phenomena, such as the first flowering of a Trillium, are climatic indicators. Furthermore, this indicator automatically integrates all climatological variables to provide a result easily observable and comparable from year to year. However, a phenological phenomenon is essentially an integration, it does not provide a basis for the analysis of climatological parameters, and comparisons are possible only between regions with the same floristic elements. During the last century meteorology was still establishing its function, criteria and instrumentation; it is only little by little that phenology gave way to meteorology.

The frugality of the Botanical Club of Canada is exemplary. The membership fee was only 25 cents and not more than 10% of the members paid it. No matter, the budget was pared to the bone: the year 1897-98 was started with 56 cents on hand and $ 6.25 was gathered in fees; $ 6.00 was spent for the stationery, printing and stamps, closing the year with an 81 cent surplus. This

exceptional husbandry is better understood when one notices that MacKay, the president, the secretary and a large part of the membership were of Scottish origin.

A very local society, the East Elgin Botanical Association, was founded in Aylmer (Ontario) in 1889. During the fall of the same year and in 1900, many key members left or were lost and the society died. However, one member, George Fisher (1869-1953), personally took charge of the exchange system and maintained it for more than half a century; it eventually became the American Botanical Exchange located in Texas from 1911 to 1953.

To summarize: a first society was founded in Montreal in 1855 and vanished two years later with its founder's death. It left an herbarium now preserved at McGill.

A society founded in Aylmer in 1889 was even more ephemeral but its exchange service survived and the music professor who was in charge carried on the service on his own for another 60 odd years.

A society, almost stillborn, was founded in London in 1890.

A curious society, the Botanical Club of Canada, founded in 1891, committed hara-kiri in 1910. This society was mainly active in phenology and recruited thousands of students at the primary and secondary school levels from Halifax to Victoria. It left behind little tangible work, but certainly played an important role in the field of education.

Closer to us, the Canadian Botanical Association was founded in 1965. It publishes a newsletter and holds annual meetings. The program of the meetings includes the abstracts of the papers given.

Let us go back to the Botanical Society of Canada, a society founded in 1860 through the efforts of George Lawson. Who was George Lawson? When the society was founded, he was a 33 year old chemistry and natural history professor at Queen's University. Born in Scotland in 1827, he was particularly interested in botany and, at the age of 19, in 1846, published several articles in The Phytologist. In 1850 he produced the first monograph of 100 pages on the Nymphaeaceae. He studied in Germany at Giessen University. Germany had just evolved new standards and procedures for the training of students at the doctoral level, the very kind of training that we currently attempt to apply in Canada, and was destined to spread almost worldwide after adoption first by England, then by the United States.

A Ph.D. was granted to Lawson by the University of Giessen in 1857. The following year there was an opening at Queen's and Lawson was the successful candidate. He came over with 8 crates, 7 of them filled by his library, instruments and collections. Lawson's appointment was remarkable in many ways: he already had a bibliography of 52 published papers, one of which is about plant distribution in Canada; he was part of the new breed of Ph.D.'s trained in Germany; and he was a laymen in a confessional university which had previously appointed only churchmen as professors.

Lawson no doubt dreamt of establishing in Kingston some institutions similar to those he had known in Edinburgh, especially a botanical society and public seminars. In the autumn of 1860 he called a preliminary meeting and in December of the same year, the Botanical Society of Canada was founded.

The inaugral meeting took place in the chemistry classroom of the College and principal Leitch was the guest speaker. He briefly reviewed the history of botany in Canada and explained the society's objectives. Every professor was present. There was Mowat, Weir and Williamson, as well as Smith, the librarian; Stewart and Yates of the medical school and many distinguished people of Kingston and its surrounding area: Drummond, the manager of the Bank of Montreal; Flanagan, the township secretary; Skinner, a pharmacist; Hinds, a banker; Burrowes and Berry, lawyers; some doctors from the neighbourhood; some visitors; a good number of students, mainly medical students; and various interested amateurs. After the speeches, the audience repaired to the adjacent laboratory where exhibits, books and microscopic slides were on display.

In 1861 there was about one meeting per month, except during the summer. At the second meeting, that is in January 1861, the membership had already doubled to nearly 140 fellows. Among the recruits was Sir John A. Macdonald, future prime minister; Shultz, a future lieutenant-governor of Manitoba; ladies; doctors; lawyers; Strange, an ex-mayor of Kingston; Creighton, a librarian; Campbell, a deputy; Bertlett, a minister; Laing, a horticulturist; and several other people such as John Macoun, botanist; and Grant, the superintendent of the Cataraqui cemetery.

In short the meetings immediately became more than scientific events, they were also social functions attracting le tout Kingston. Members added to their name the initials F.B.S.C. (Fellow of the Botanical Society of Canada). Correspondent members were elected liberally and they numbered 85 by the second meeting. Usually a soirée began with a conference or communiques, followed by exhibits and demonstrations.

By the second meeting, the society organized a library with initial donations of about 10 books.

At the third meeting, three lots of seeds were received and an annual seed distribution was organized for the members.

In March, the first issue of the Annals of the Botanical Society of Canada was published. It was a 60-page fascicle including, among others, a study of the flora of the Kingston area and one for Fort Garry and vicinity in Manitoba. The Annals continued the same style for another 196 pages. Some items are worth special notice. At the fifth meeting, a letter from Hooker mentioned the proposed production of floristic manuals for various colonies, Canada included, similar to the one already published for Hong Kong, and at the price of less than one pound sterling per volume. Unfortunately the project died aborning.

At the seventh meeting, the society's herbarium was organized along with an exchange system between members.

Subjects treated are rather various. There are local checklists, such as the one of Prescott and vicinity; papers on plants economic, edible and poisonous: cotton, pumpkin and hemlock. Even poems were published. Many ladies involved themselves in the society, including Mrs. Lawson, who gave a talk on the silkworm at the third meeting.

In 1862 the publication of the Annals was halted after the February meeting, and the reports kept in the society's archives suggest a rapid decline in activities.

In 1863 Lawson left Queen's; he had accepted an appointment at Dalhousie University in Halifax.

What happened? This resignation has long puzzled botanists. I found the solution in a book by Hilda Neatby published in 1978 concerning the history of Queen's University. Lawson arrived at Queen's in 1858, at the end of a period of sustained expansion and progress.

Among the last fortunate events, we note the founding of the Botanical Society of Canada and the creation of a faculty of law. A new principal was appointed in 1860 and his term was characterized by an almost continuous series of failures, bad luck, arguments and scandals. As a result the University was drifting. Nothing worked out. Discouraged, Lawson left. In 1860 there were 8 professors at Queen's; between 1860 and 1864, 3 resigned, 2 were fired and the principal died. The faculty of law became bankrupt and the number of student registrations declined.

Lawson was not personally involved in those difficulties except that, as secretary of the faculty, he was continually buffeted by that series of problems. He was a good professor, well liked by his students. Accordingly he felt it appropriate, during his last lecture, to explain the reasons for his departure. His gesture was not appreciated by the administration. The students organized a farewell party which almost turned into a riot. They then took revenge on Lawson's replacement, Robert Bell, the geologist, making his life difficult. He had a hard time lecturing amid the organized pandemonium.

Lawson's departure for Dalhousie was not a move to a sinecure. He taught chemistry and mineralogy, and soon added a botany course. He joined existing scientific societies and contributed 24 articles, mostly on botany, to the Proceedings of the Nova Scotia Institute of Science. He also published in other journals, particularly in the Transactions of the Botanical Society of Edinburgh. He was one of the founders of the Royal Society of Canada in 1882. He was secretary for the Agriculture Bureau as early as 1864 and held this office until his death, the Bureau becoming a Ministry in 1885. For 12 years he was the editor of the Journal of Agriculture. However, after 1864 Lawson's botanical activities decreased considerably. In 1867 he announced a revival of the Botanical Society of Canada in the very near future and the continuation of its Annals. However, nothing of this ever happened. On the other hand, it was he who, in 1891, proposed to the Royal Society the formation of the Botanical Club of Canada, of which he was president until his death.

In March 1894 Lawson attended a meeting of the Nova Scotia Intitute of Science and discussed his manuscript on the flora of Canada which he said was already well advanced. After that, however, he lost almost all interest in the project. The manuscript still exists and is

preserved in the National Herbarium. Lawson died in 1895. His herbarium, one of the most important of his time, was stored at Mount Allison University for almost half a century before its transfer to the National Herbarium in 1950.

Thus was born and died a society, which might have become our national society of botany. Today, if we indulge in some "what if", it would be 121 years old and the transactions would reach volume 120.

(This article is a slight reworking of a text presented 16 May 1980 as a liminary lecture to the founding of the Société botanique du Québec. The event occurred during the annual meeting of the Association canadienne-française pour l'Avancement des Sciences (ACFAS) held in Quebec City in that year.) ◆

NEWS OF BOTANISTS

Starting in 1985 Elaine McShane will be Associate Editor of this column. Readers' contributions on their activities will be welcomed and should be sent to Elaine at 15 Kingsview Blvd., Brampton, Ontario L6Y 1C5.

Archival material continues to be stored by Wm. G. Stewart. Please send any contributions directly to him at 6 Yarwood St., St. Thomas, Ontario N5P 2Y3.

THE OJIBWAY FIELD TRIP, 18-19 AUGUST 1984

Bob Hounsell, Coordinating Chairman, Field Botanists of Ontario, c/o 105 Moccasin Drive, Waterloo, Ontario N2L 4C2

Andropogon gerardii, Vernonia altissima, Ratibida pinnata, Silphium terebenthinaceum, Helianthus giganteus and Coreopsis tripteris still may not be names that roll easily off the tongues of all of the overy thirty field botanists who attended the Ojibway Prairie weekend, but the memories of these impressive plants will be retained for a long time.

Turkeyfoot, ironweed, grey-headed coneflower, prairie dock, tall sunflower and tall coreopsis were just a few of the species enjoyed by those who were lucky enough to visit extreme south-western Ontario on August 18 to 19. Paul Pratt naturalist at the Nature Centre, Ojibway Park, organized the field programme. Terry Pratt of Top Flight Nature Tours, Leamington, organized other details of the weekend at cost, which really gave those attending more than their money's worth. Paul was assisted in the field by Mike Oldham and Wilf Botham. All of us benefited from their great field knowledge, endless patience and easy-going manner.

Before lunch on Saturday we had a slide-talk introduction to the prairies by Paul followed by a look at the plantings near the Nature Centre. Later, we roamed through the nearby OMNR Ojibway Prairie Provincial Nature Reserve. The diversity of interesting species in the oak savanna setting was most impressive. A few of the memorable sightings were: Aureolaria flava (smooth false foxglove), Helianthus divaricatus (woodland sunflower), Lythrum alatum (wing-angled loosestrife), Panicum virgatum (switch grass), Scleria triglomerata (tall nut-rush), and Liparis lilifolia (lily-leaved twayblade).

One of the time-resistant memories of the three years I spent on the big prairie - Manitoba - is that of the ferocity of the thunderstorms. We were not to be denied that aspect of prairie summers. Paul laid on a super storm which thoroughly drenched and temporarily deafened those who were still out in late afternoon.

After a change of clothes and then dinner, some of the participants returned to the Nature Centre where Paul opened some beer. The Pilsener, alas, was mixed with bananas and molasses and spread on trees to attract moths. Two magnificent species of underwing moth were observed by this technique: Catocala cara and C. amatrix, the darling and sweetheart catacloas, respectively.

Over half of the group stayed for the Sunday programme and were treated to another great



Figure 1.- Participants on the Ojibway Prairie field trip (left to right): Ted Rosen, Dave McLeod, Judy Hernandez, Alec Ritchie, Susan Ritchie, Jo Barten, D. Osborn, Sue Morrison, Mrs. Schaus, Mrs. Osborn, Dave Schaus, Wayne McShane, Elaine McShane, Emily Hamilton, Wilf Botham, E.L. Reader, Paul Pratt, Mike Oldham, Fran Westman, Don Sutherland, Mirek Sharp, Kent Glauser (seated), Gary Allen, Gwen Sharp, Mary Gartshore, Bob Hounsell, Audrey Fortier, Roy Fortier and Doug Geddes (photograph by Doug Geddes).

day with no rain. The morning was spent on Point Pelee. New to most observers were plants such as Agastache nepetoides (yellow giant hyssop), Campanula americana (tall bellflower), Ipomea pandurata (wild potato vine), and Smilax ecirrhata (upright carrion-flower).

After lunch we had the privilege of visiting the Triphora trianthophora (nodding pogonia) station north of the Park. In the June 1984 issue of The Plant Press, Mike Oldham wrote that there are 19 specimens from this site in Ontario herbaria; only 20 plants were counted on this excursion. As we cautiously admired the little flowers several horses came up to look over our shoulders. The horses' presence in the woodlot further points out the precarious position of this rare species.

A second rarity seen at this stop was the grass Paspalum ciliatifolium.

Returning to the Windsor area we were shown some halophytic species such as Solidago sempervirens (seaside goldenrod) and Puccinellia distans (reflexed saltmarsh grass). To end this exciting weekend we went to the Canard River to view the magnificent "stand" of Nelumbo lutea (American lotus).

The efforts of our leaders ensured the success of the weekend. If you were unable to attend this year, perhaps another prairie outing should be organized for a future date. For such enjoyable get-togethers we continue to need support for the Field Botanists of Ontario. We need more members and some have to be willing to help out in the planning and running of the outings. There are many other botanically exciting areas in Ontario and within reasonable driving distance outside Ontario. They await our exploration. All we need is a group of eager botanists. ◆

POSITIONS FILLED AT THE BIOSYSTEMATICS RESEARCH INSTITUTE

Our grass taxonomist position has been filled by Dr. Richard Cayouette of Laval University. Dr. Cayouette has extensive field experience with plants, especially grasses and sedges. One of his duties will be to provide a manual of all grasses native and naturalized in Canada.

We recently hired a biologist, Ms. Sandra Needham, to be Curator of our National Collections of Fungal and Bacterial Cultures. One of her duties is to make operational a liquid nitrogen facility for these collections and to develop improved methods for the preservation of cultures.

G.A. Mulligan, Director,
Biosystematics Research Institute

ATLAS OF THE RARE VASCULAR PLANTS OF ONTARIO - PART 4

Kathleen Pryer, Botany Division, National Museum of Natural Sciences, Ottawa, Ontario K1A 0M8

The following families are now under study for Part 4 of the Atlas of the Rare Vascular Plants of Ontario. Species that are being considered in addition to those listed in Argus & White (1977. The Rare Vascular Plants of Ontario. Syllogeus 14), are noted here in parentheses.

Recent information or comments on any of the species is much appreciated. We thank those who have provided us with new information on species that appeared either in the recently released Part 3, or in Parts 1 or 2. We hope to use this information in an "Atlas Update" once the final part (Part 4) is completed.

APIACEAE (= UMBELLIFERAE)
[+ Conioselinum chinense, Ligusticum scothicum, Sanicula trifoliata, Thaspium trifoliatum, Zizia aptera]

BETULACEAE

BRASSICACEAE (= CRUCIFERAE)
[+ Cardamine bulbosa]

\+ CERATOPHYLLACEAE
[+ Ceratophyllum demersum, C. echinatum)

CHENOPODIACEAE

CISTACEAE [+ Lechea major, L. villosa]

ELATINACEAE [+ Elatine americana, E. triandra]

EUPHORBIACEAE

HALORAGIDACEAE [+ Myriophyllum heterophyllum]

IRIDACEAE [+ Iris virginica = I. shrevei]

NAJADACEAE

NYMPHAEACEAE

NYSSACEAE

POLYGALACEAE
[+ Polygala cruciata, P. polygama, P. sanguinea, P. verticillata]

PORTULACEAE

POTAMOGETONACEAE

SPARGANIACEAE

ZANNICHELLIACEAE

THE CANADIAN BOTANICAL ASSOCIATION (CBA/ABC) CONSERVATION COMMITTEE

Dianne Fahselt, Chairman, CBA/ABC Conservation Committee, Department of Plant Sciences, The University of Western Ontario, London, Ontario N6A 5B7

This committee is an executive committee of the CBA formed to provide a forum where professional botanists can arrive at a concensus concerning contentious issues. Then the best professional opinion is transmitted via the president of the CBA to the appropriate bodies. Hopefully the botanical opinion carries more weight when it comes via an official CBA channel. The committee has on hand a list of member experts who have indicated their willingness to participate in resolution of local or regional conservation problems. These persons may be asked by the Conservation Committee to express their views or participate in the study of local issues.

A case is brought to the attention of the Conservation Committee either directly, which is faster, or through the President of the CBA/ABC. After careful study a recommendation is made which is then conveyed to the appropriate authorities via the President of the CBA/ABC.

To date several Ontario issues have been processed through the Conservation Committee and others are in the works. (Of course the Committee handles issues from all regions of Canada.) In 1984 encouragement was given and inquiries were made to the Ontario Minister of Natural Resources regarding the establishment of new parks promised for the province. A brief was sent to the Ontario Ministry of Transportation and Communications opposing construction of a highway through the significant habitat of the Holland River Marsh. Techniques of environmental assessment preceding highway construction in Ontario were investigated and it was determined that an environmental lobby does in some cases have a significant effect on choice of route. Registers of botanically important sites are being compiled for northern and southern Ontario in order to provide some status for crucial areas should they become threatened.

Dr. P.F. Maycock of the Conservation Committee has been actively involved in selection of important natural areas for protection under the Carolinian Canada (World Wildlife/Nature Conservancy of Canada) project and D. Fahselt is representing the CBA/ABC on the Steering Committee of Carolinian Canada.

The CBA is also represented on the Advisory Committee for Backus Woods and has had input into the management plan for Ojibway prairie. Complete reports of the CBA/ABC Conservation Committee's activities are given at the annual CBA meetings and may appear periodically in the CBA Bulletin.

THE NATURE CONSERVANCY OF CANADA

Lynda M. Best, Public Relations, The Nature Conservancy of Canada, Suite 1710-2200 Yonge Street, Toronto, Ontario M4S 2C6

The prime mandate of The Nature Conservancy of Canada is to seek out significant natural areas and to secure their preservation. "Private action for land preservation" is accomplished through the financial support of individuals, corporations and foundations with the cooperation of various levels of government. The Conservancy is a private, non-profit organization governed by a Board of Trustees, the strength of which lies in its diversity of background and talent of its members. Business executives, internationally recognized biologists, active conservationists and professionals from the fields of law, medicine and engineering give their service to the Board. All geographic areas of Canada are represented on this Board, which establishes policy guidelines and approves all projects with which the Conservancy becomes involved.

From 1963 to 1983, The Nature Conservancy of Canada's generous supporters have provided $ 5,900,000 which has been used to purchase or otherwise secure $ 22,500,000 worth of property. Thus, the Conservancy has been involved with the preservation of 242 properties across Canada for a total of 19,750 ha. In Ontario, the Conservancy has been involved in the preservation of 213 properties, including a total of 15,450 ha. Selection of some of these properties has been based mainly on their botanical significance.

Acquisition of a property is dependent on several requirements; the first being availability. The Conservancy is usually notified by either an individual, conservation authority, government personnel or local conservation group as to the availability of a particular site and what its natural values are. A thorough investigation of the area, usually including a site visit and an ecological survey, is made. Once an evaluation is prepared, the Conservancy must decide if there is sufficient funding available, or if funding can be raised over a given time period. If funding can be obtained, the final decision rests with the Projects Committee of the Conservancy's Board of Trustees. Committee members include Drs. Bruce Falls, David Fowle, George Francis, Jennifer Shay and Pierre Taschereau.

Natural features of properties secured by the Conservancy are of primary consideration. Scientific research, outdoor education and other non-destructive uses may be permitted, depending on the fragility of the area concerned. The Conservancy works with conservation groups, donors and local volunteers to formulate management plans which provide for maintenance and protection of these areas.

A significant part of the Conservancy's work is also directed to providing advice and guidance to private landowners who wish to maintain their property in its natural state and, in some cases, eventually deed it to the Conservancy.

If you would like to know more about The Nature Conservancy of Canada, or make a contribution to assist our continuing efforts in land preservation, please write to us or telephone (416-486-1011). ◆

BOTANICAL RESOURCES AT THE ALGONQUIN PARK MUSEUM

D.F. Brunton, 2704 Marie Street, Ottawa, Ontario K2B 7E4

Steve Varga's (1983) update of county/regional vascular plant checklists (The Plant Press 1(4): 69-74) noted that an herbarium was maintained in Algonquin Park and that it contained a comprehensive collection of plants of Algonquin Park. I thought that readers of The Plant Press would be interested in hearing more about the botanical facilities in the Park and how visiting botanists might be able to use them.

The Algonquin Park Museum is 21 km east along Highway 60 from the west gate. It houses the Park herbarium, which is officially registered by the acronym "APM". Two standard metal herbarium cabinets preserve approximately 3600 sheets. Each specimen is fully labelled and mounted on standard herbarium paper. The collection is filed in the order of Gray's Manual of Botany. Every sheet has been examined by botanists at Agriculture Canada's Biosystematic Research Institute (DAO) and/or by an authority on a particular group of plants, either directly or by means of duplicates. Duplicates of all staff collections are now routinely sent to DAO for verification. The Algonquin Park collection consists exclusively of collections from the Park. It is the largest and most complete collection of the flora of Algonquin Park.

In addition to the herbarium, an "Observations File" is maintained on 5 X 7 index cards, arranged in the same order as the herbarium. The basic specimen data are recorded again on these cards, as are sight records from various locations in the Park. Flowering data and other significant information are also recorded on these index cards. In the late 1970's the DAO, CAN, TRT, TRTE and OAC herbaria were examined for Algonquin material and all of those records were also referenced in the card file. This file is the most complete record of floristic knowledge of Algonquin Park.

As well as these data sources, the Museum maintains an excellent natural history library which includes most of the basic identification manuals. There is also a reprint collection which includes all of the known publications that relate to the Park. This goes back to John Macoun's (1900) description of the vegetation and flora.

The Museum staff is willing to make all of these facilities available to visiting botanists. They will also try to provide working space as well, if this is possible. The Museum will also provide material on loan to botanical researchers.

Before any collections are made in Algonquin Park a collector is required to obtain a Collection Permit from the Ministry of Natural Resources. Normally, the staff will require approved collections to include a duplicate for APM. The Museum is, in the main, an interpretive facility and botanical research is carried out as staff and resources permit. Still, the existing staff see these collections as important sources of information about Algonquin and will assist those willing to examine the material.

If you wish more specific information, need to arrange a collection permit, or simply wish to have a look at the herbarium, contact either Dan Strickland or Ron Tozer at the Algonquin Park Museum, Box 219, Whitney, Ontario K0J 2M0; 705-633-5592. ◆

ROYAL ONTARIO MUSEUM VASCULAR PLANT SYSTEMATIST, ASSISTANT OR ASSOCIATE CURATOR (TENURE TRACK)

Applications are invited for an academic curatorial position for 1 March 1985 or shortly afterward. Responsibilities include curation of an herbarium (TRT), research in vascular plant systematics, public education in the museum context, and administration of a small staff. The successful applicant will establish a strong research program and vigorously build collections of vascular plants. The scope of the museum is world-wide but it is expected that work on the Canadian and North American flora will be kept in balance with work involving the flora of other continents. The successful applicant will also participate in the development of a new botany gallery, commencing in 1986. The opportunity exists for a cross-appointment to the professorial staff of the University of Toronto. Qualifications include a doctorate in botanical systematics and additional relevant professional experience. Send Curriculum Vitae, statement of professional goals, and names of 3 references before 31 December 1984 to Dr. J.H. McAndrews, Department of Botany, Royal Ontario Museum, Toronto, Ontario, Canada M5S 2C6.

THE PLANT PRESS REQUESTS YOUR INPUT

Over the summer we received few contributions for The Plant Press. Perhaps we should not have mentioned our backlog in the June '84 issue! We now need material. We hope that our readers will have more time to write letters and short papers over the winter. In order to maintain diversity, we need a backlog.

We encourage contributors to send us ideas for papers before actually writing them. Then we can suggest details which you might wish to include or recommend sources of information. Please refer to 'Submission of Contributions' on the back cover. In addition to these basic requirements, we request that: (a) plant records be verifiable by specimens or photographs deposited in a recognized herbarium; (b) specimen documentation be included at the end of the paper (precise localities may not be published in the interest of conservation); (c) an explanation of why the information you report is significant; and (d) a map showing the localities discussed.

We discourage plant checklists and field trip reports unless certain features are of particular interest to field botanists over a large part of the province. Please be patient. We want acceptable contributions to be presented as well as possible. We also need authors to follow up on details and respect our deadlines. Some of our most interesting papers are very short. So long as we aim for accuracy, we believe that our publication will be of interest to professional botanists as well as keen beginners.

If you do not have time to write a formal paper, please send us feedback for the 'Letters' column. We encourage different points of view. We are interested in receiving comments which can be published with your name. Brevity is encouraged. All contributors are sent a "proof" copy of the text which will be published; this allows for any last-minute changes. At this time we would especially appreciate comments on the following:

1. wetland evaluation;
2. checklist order ("taxonomic order" vs. alphabetical order by growth form - trees, shrubs, ferns, etc.); and
3. transplanting, growing rare plants from seed and what to do with these.

We are especially eager to hear from field botanists who have not contributed to date. Please encourage others to support us.

ONTARIO PLANTS IN PRINT

Mike Oldham is taking time out from editorial duties to finish other projects. For the time being, please send contributions for this column directly to The Plant Press.

Various readers have volunteered to compile lists of references to plants in Ontario from journals and less formal publications. However, we have not received as many contributions as we anticipated. If you find you cannot search a publication which you volunteered for, please let us know. This will ensure that efforts are not being duplicated by someone else.

In keeping with the positive tone of The Plant Press we are eager to learn of good publications on Ontario field botany for review in this column. If you have suggestions, or if you would be willing to write a review, please let us know.

A PARTIAL LIST OF PARKS CANADA ONTARIO REGION REPORTS RELATING TO THE INTERESTS OF FIELD BOTANISTS

compiled by Natural Resource Conservation, Ontario Region, Parks Canada, P.O. Box 1359, 132 Second Street East, Cornwall, Ontario K6H 5V4 (613-933-7951)

PUKASKWA NATIONAL PARK

Airphoto Analysis Associates. 1975. Resource inventory Hattie Cove Area, Pukaskwa National Park (draft). Unpublished report prepared for Ontario Region, Parks Canada.

Alexander, M. & J.A. Mason. 1979. Newspaper accounts of forest fires in Pukaskwa National Park. Misc. Office Reports, Forest Fire Research Project, Great Lakes Forest Research Centre, Canadian Forestry Service.

Anions, D. 1973. Limiting factors affecting Arctic/Alpine plants in Pukaskwa National Park. Unpublished report of Ontario Region, Parks Canada.

Brownell, V.R. 1983. Verification and priorization of the rare vascular plants of Pukaskwa National Park. Unpublished report of Ontario Region, Parks Canada.

Garton, C.E. 1974. Botanical investigations of Pukaskwa National Park. Report prepared for Ontario Region, Parks Canada.

Gimbarzevsky, P., N. Lopoukhine & P. Addison. 1978. Biophysical resources of Pukaskwa National Park. Forest Management Institute Information Report FMR-X-106, prepared for Parks Canada.

Keddy, C. 1979. An ecological study of Cypripedium passerinum and Listera borealis. Unpublished report prepared for Ontario Region, Parks Canada.
Keddy, C. 1982. An ecological study of Cirsium pitcheri (Pitcher's Thistle) in Pukaskwa National Park. Unpublished report prepared for Ontario Region, Parks Canada.
Parks Canada. 1982. Pukaskwa National Park Management Plan.

ST. LAWRENCE ISLANDS NATIONAL PARK

Anonymous. 1979. Vascular plants of the Thousand Islands - trilingual list. Unpublished report of Parks Canada.
Bufo, Inc. 1977. An ecological study of the Landon Bay and Lake of the Isles Area. Unpublished report prepared for Ontario Region, Parks Canada.
Cody, W.J. 1975. A phytogeographical study of the flora of St. Lawrence Islands National Park Region. Report prepared by Biosystematic Research Institute for Ontario Region, Parks Canada.
Crowder, A., D. Greer & N. Fongern. 1979. The ecology of terriculous mosses in the St. Lawrence Islands National Park. Unpublished report prepared for Parks Canada, Ontario Region, 2 vols.
Crowder, A. 1983. Impact indices based on introduced plant species and litter. Environmental Management 7(4);345-354.
Hirvonen, R. & R. Woods. 1978. Integrated resource survey, St. Lawrence Islands National Park and surrounding areas. Forest Management Institute Information Report, FMR-X-114, prepared for Parks Canada.
Redhead, S.A. 1975. Fungus survey - St. Lawrence Islands national Park. Unpublished report prepared for Ontario Region, Parks Canada.
VanderKloet, S.P. 1981. Status of Pinus rigida in Canada with special reference to St. Lawrence Islands National Park. Unpublished report prepared for Ontario Region, Parks Canada.

RIDEAU CANAL

Hodges, J.A. & J. Arbour. 1981. The environment of the C.O.R.T.S. corridor - Rideau sector. Ecological Land Classification Series, No. 15, Cat. No. EN 73-3/15, Minister of Supply and Services Canada. 57 pp.
Arbour, J. & J. Hodges. 1981. The environment of the C.O.R.T.S. corridor - the Rideau Sector. Addendum #1 Landscapes of the Rideau sector. Ecological Land Classification Series, No. 15, Environment Canada.
Blancher, P. 1984. Resource Description and Management Analysis of the Cataraqui Marsh. Unpublished report prepared for Ontario Region, Parks Canada.

TRENT-SEVERN WATERWAY

Cuddy, D.G. 1977. Natural resource inventory of the Trent-Severn Waterway. Unpublished report prepared for Parks Canada.

POINT PELEE NATIONAL PARK

[a recent report not cited in Brownell (1983) (THE PLANT PRESS 1(1);18-190)]

Varga, S. 1984. Status and species habitat management analysis for 16 plant species. Point Pelee National Park. Unpublished report prepared for Ontario Region, Parks Canada.

GEORGIAN BAY ISLANDS NATIONAL PARK

[two recent reports not cited in Brownell (1983) (THE PLANT PRESS 1(1):18-190)]

Brownell, V.R. 1984. Resource management study of rare vascular plants of the Tobermory Islands Unit, Georgian Bay Islands National Park. Unpublished report prepared for Ontario Region, Parks Canada.
Francis, J., J. Johnson & E.D. Macdonald. 1983. An ecological land classification of the Tobermory Islands Unit, Georgian Bay Islands National Park. Unpublished report prepared for Parks Canada, Ontario Region. ◆

The Vascular Plant Flora of Peel County, Ontario by Jocelyn M. Webber. 1984. Botany Press, 90 Wolfrey Ave., Toronto, Ontario M4K 1K8. v + 94 pp. $ 10.00 (Can.)

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reviewed by Wm. J. Cody, Biosystematics Research Institute, Wm. Saunders Bldg., Central Experimental Farm, Ottawa, Ontario K1A 0C6

There is as yet, no comprehensive flora of the province of Ontario, although the grasses, trees and shrubs have recently been treated in some detail. Plant lists have been published for various parts of the province, e.g. Ottawa District, Kingston District, Lambton County and Norfolk County.

This treatment of the plants of Peel County is one of the best yet prepared for a small area in the province. The bulk of the volume comprises an annotated checklist of 1334 taxa in which the families and genera are in taxonomic sequence and the species and subspecies taxa in alphabetical sequence. Common names are provided where available. An indication is given of which of the five townships from which specimens have been collected, abundance, if introduced, and rarity in the province.

The introduction includes sections on geography, geomorphology and soils, climate, forest regions, floristics, botanically significant areas, habitats, a history of botanical collecting, the methods used in the preparation of the checklist and a list of excluded species. There is also quite an extensive list of references and an index to families and genera in the checklist.

Works such as this are invaluable as an aid in the preparation of comprehensive floras of larger regions. They are useful to naturalists and environmentalists concerned with these restricted areas. This treatment for Peel County could be used as an excellent example for similar treatments of other counties in the province and elsewhere. ◆

George Lewis Fisher (1868-1953) Director of Music and Botanist Extraordinaire of St. Thomas, Ontario by William G. Stewart. 1983. Published by and available from Wm. G. Stewart, 6 Yarwood St., St. Thomas, Ontario N5P 2Y3. $ 10.00.

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reviewed by John B. Lord, Naturalist and Extension Co-ordinator, Royal Botanical Gardens, P.O. Box 399, Hamilton, Ontario L8N 3H8

[Introduction by Jocelyn Webber

[I was surprised and pleased to learn of Bill Stewart's publication on George Lewis Fisher, as this project was never mentioned in many conversations and letters during 1983. When I suggested that the biography be advertised or reviewed in The Plant Press, Bill cautioned me that only 100 copies were made and that the subject matter was not strictly botanical...

[The Fisher biography covers 3 topics: information on Fisher's botanical activities, details on his activities with the St. Thomas College of Music, and a record of the local history of St. Thomas. Although I think that John Lord's review (below) of the botanical content of the biography is very good, perhaps readers with greater interest in music and/or local history of the St. Thomas area would find the latter topics of most interest. Apparently some doing research on family histories have already found useful leads through the names of witnesses of the Fisher wills, names of pall-bearers, etc. Those interested primarily in the botanical information will, of course, find some of the other details less exciting.]

This biography is one of a series of articles by William G. Stewart on the early naturalists and natural history associations of Elgin County. Four articles have appeared in The Cardinal (publication of the McIlwraith Field Naturalists) but this biography of George Fisher has been published privately by the author.

George Lewis Fisher, a native of the St. Thomas area, was an instructor of instrumental and keyboard music who had received his early training at the Toronto Conservatory of Music. He held various posts in teaching and administration throughout his career that lasted from 1890 until his death in 1953.

Although Fisher had no formal education in botany, plants were his principal interest and avocation. He began collecting plant specimens around Aylmer and St. Thomas as early as 1892 and amassed a substantial herbarium during the mid-1890's while furthering his music studies in Leipzig and London (England). Upon his return to St. Thomas, he resumed collecting in southern Ontario. One infers that he had a distinct interest in the pteridophytes.

Many of Fisher's specimens found their way into an exchange program set up by the East Elgin Botanical Association. Two large consignments (totalling 344 Fisher specimens) went to the University of Minnesota in 1899 and 1900. Fisher may have established the Canadian Botanical Exchange Bureau prior to 1899, or he may have assumed control over the E.E.B.A. program under that name. Whatever the case, it was probably around 1902 that he disposed

of his personal herbarium through the C.B.E.B. By 1905 he was widely advertising his exchange service and had considerable stock to offer.

Fisher moved to the Texas Panhandle in 1911 and on to Houston in 1912, where he resided for the rest of his life. There he did most of his voluminous botanical work. From his garage he operated the non-profit American Botanical Exchange "selling and exchanging his own collections and those received from others" to a market comprised of high schools, colleges, museums, and herbaria largely in Europe and North and South America.

In connection with the music profession, he travelled frequently in the U.S., often extendung his expenses-paid convention trips by as much as a month to indulge in his hobby of collecting. From 1924 until 1949 he made triennial forays in Mexico, the first trip resulting in his only scientific article, published in the American Fern Journal of 1926.

Toward the end of his life, Fisher bequeathed what remained of his plant collections to Southern Methodist University, Dallas, Texas. The American Botanical Exchange ceased operation upon his death.

It would be difficult to estimate how many specimens passed through Fisher's two exchange bureaus. There are records of nearly 18,000 at Southern Methodist University and the University of Minnesota alone. Twenty-nine other herbaria are known to have received Fisher specimens, although no attempt has been made to count them. Fisher's personal collection numbers had reached 51,068 by then.

Fisher also contributed the holotypes for at least four new taxa of plants, all of them varieties and forms of species native to Texas and the southern U.S. One of these, Eustoma grandiflorum forma fisheri (Standl.) Shinners, was named in his honour.

I am really of two minds about this book. Mr. Stewart clearly has a keen eye for detail and has diligently collected much information about his subject. His account of Fisher's botanical activity is thoroughly and carefully written and will doubtless be of great value and interest to anyone encountering Fisher specimens during herbarium studies.

On the other hand, I was left with the impression that the book is, at 122 pages, much longer than it needed to be. Having gone to some lengths to collect the data, Stewart seeems to have been reticent to leave anything out of the final draft. Consequently, the reader is left to extract the important facts (those that contribute to the understanding of Fisher and his work) from the trivia. Unfortunately there is a great deal of the latter: a detailed description of the sheet metal sign over Fisher's music studio; the exact date, instrument number, and names of witnesses of his father's will; names of Fisher's pall bearers, address of the funeral home, and much more. Information of this sort could have been omitted with negligible loss to the narrative.

There is also much repetition. Page 28, as but one example, contains many personal details that were given earlier in the text.

The reference list (pp. 31-44) is comprehensive, as it should be, but I felt the 61 pages of appendices, comprising mainly music-related ephemera found amongst Fisher's possessions, were all out of proportion to the 30 pages of double-spaced typing that constituted the narrative portion. Surely this archival material is of extremely limited interest (even to a music aficionado, which I am) warranting no more than a short note on its present location.

The book was produced in St. Thomas by Impressions Printing wroking, I presume, directly from Stewart's typescript. It is stapled with a stiff paper wrap-around cover. Suspecting the work would have a limited market, Stewart ordered a press run of only 100 copies. Sadly, this has led to a rather high cover price of $ 10.00 for a book that does not look expensive. Had the work been shortened through rigorous editing, it could have been considered a major journal article in which form it would have received wider exposure than the book is liable to get.◆

NEW AND USED BOTANICAL REFERENCES

"Just a quick note and a plug for John Johnson, Natural History Books, R.D. 2 - No. Bennington, Vermont 05257, USA. He buys and sells natural history books and publishes 2 catalogues a year of about a thousand used books. I have been buying and selling to him for the last 4 years. If you do get his catalogue and see something you want, best call him; some of his stock goes incredibly fast."

P.M. Banks, Sarnia

ROYAL BOTANICAL GARDENS TECHNICAL BULLETINS

During the past 25 years, staff of the Royal Botanical Gardens have written on a variety of subjects of interest to field botanists. Some of these publications have been revised from time to time. All are available at the Royal Botanical Gardens but those who would like to order some by mail may send a cheque or money order to the Royal Botanical Gardens, P.O. Box 399, Hamilton, Ontario L8N 3H8.

No. 1 Aquatic Plants for Fish and Wildlife, by W. John Lamoureaux. 1957. Revised 1963, 1971. ($ 0.75)

No. 2 The Common Aster Species of Southern Ontario, by James S. Pringle. 1967. Revised 1981. ($ 0.50)

No. 3 The Common Solidago Species (Goldenrods) of Southern Ontario, by James S. Pringle. 1968. Revised 1982. ($ 0.75)

No. 4 Checklist of the Spontaneous Vascular Flora of the Royal Botanical Gardens. Hamilton, Ontario, Canada, compiled by James S. Pringle. 1969. ($ 0.75)

No. 5 The Trilliums of Ontario, by James S. Pringle. 1970. Revised 1976 ($ 0.75). Revised (with colour photographs) 1984 ($ 2.40)

No. 6 Proceedings of the Symposium - A National Botanical Garden System for Canada - Royal Botanical Gardens, Hamilton, Canada. October 22nd - 24th, 1971, edited by Peter F. Rice. 1972. ($ 0.50)

No. 7 Proceedings of the Symposium - Horticulture as a Tool in Therapy - Royal Botanical Gardens, Hamilton, Ontario, Canada, by L. Dennis, R. Halward, J. Lord and A.S. White. 1975. (out of print)

No. 8 A Survey of Wisterias in Southern Ontario Gardens, by Wray M. Bowden. 1976. ($ 0.50)

No. 9 Nature Trails, by W.J. Lamoureaux and J.B. Lord. 1978. ($ 0.75)

No. 10 An Introduction to Wetland Classification in the Great Lakes Region, by James S. Pringle. 1980. ($ 0.50)

No. 11 Aleksander Tamsalu 1891 - 1960: A Botanist in Exile, by J.B. Lord. 1980. ($ 3.50)

No. 12 Changes in the Aquatic Biota of Cootes Paradise Marsh, by W.L. Simser. 1982. ($ 0.75)

The preliminary checklist of the vascular plants of Waterloo Region, by Craig Campbell and Larry Lamb, is no longer available. Only a limited number were printed in May and those who would like a copy will have to wait until it is published.

Directory of Canadian Field Research Stations

Over 175 field stations are included; these are located in all 12 Canadian provinces and territories and include a substantial number in the arctic and boreal regions. Maritime stations are also included. For each station details are provided for location, facilities and availability to researchers. The Directory costs $ 10.00 and is available from M.B. Fenton, Secretary, Biological Council of Canada, Department of Biology, Carleton University, Ottawa, Ontario K1S 5B6.

J. McNeill, University of Ottawa

Checklist: Vascular Plants of Thunder Bay District prepared by Claude E. Garton. Revised to 1984. Published by the Thunder Bay Field Naturalists. $ 1.50 (Can.)

A revised list of the vascular plants covering 1004 species for Thunder Bay District has been produced this year by Claude Garton. It is arranged alphabetically and hierarchically (i.e. alphabetically by genus and species within families, alphabetically by families within subclasses, etc.). This checklist should provide a useful reference for the mid and low boreal flora of northwestern Ontario.

With the exception of some of the sedges, common names have been provided through research of several sources. A bibliography, errata and addenda are also included. The pamphlet is missing an outline map of the Thunder Bay District with some of the major place names which would have provided a geographic frame-of-reference for the list.

Mr. Garton brings to the list considerable experience with the regional flora through his years of collecting in the district, his curatorship of the Lakehead University herbarium and through 12 years of searching other herbaria for collections from the north shore of Lake Superior. The checklist is available at a cost of $ 1.50 from the Lakehead University Bookstore, Oliver Road, Thunder Bay, Ontario P7B 5E1.

Bruce Thacker, Thunder Bay

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OBJECTIVES OF THE NEWSLETTER

1. Provide a medium for communication among Ontario field botanists;
2. Distribute information on Ontario field botanists and their activities;
3. Report on projects and research in progress.
4. Distribute current botanical information on subjects such as species distributions, identification keys, field equipment and methods;
5. Monitor publications about Ontario plants and provide reviews where appropriate;
6. Encourage publication by field botanists, both in The Plant Press and in other publications.

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We are pleased to receive submissions about native or naturalized vascular plants, bryophytes and lichens in Ontario. All submissions should include original information (i.e. your own observations or experiences). All submissions are informally reviewed by the Editorial Committee. Submissions with content beyond our expertise may be sent to North American specialists. Although our system is not so rigorous as that of scientific journals, we request that articles be well-written and in the style of this publication. We request 3 copies of typed, double-spaced manuscripts whenever possible.

Non-subscribers are requested to pay the annual subscription fee for unsolicited submissions which are published. In return they may receive 4 copies of the issue in which their work is published.

DEADLINES FOR SUBMISSIONS

A minimum of 3 months is needed to review most submissions. Material for 'Information and 'Requests' and 'Letters' can usually be inserted up to 6 weeks prior to publication. Deadlines are determined from the first day of the month of issue.

MAPS, PHOTOGRAPHS AND ILLUSTRATIONS

Base maps can be provided for articles appearing in this publication. Black and white photographs are preferred, but figures can be made from colour slides. Those submitting more than one photograph per article may be asked to pay for the cost of production of the figures.

Time permitting, arrangements can be made to provide illustrations. Only drawings in black ink are acceptable for consideration.

ISSN 0826-2258

THE PLANT PRESS

BOX 537
STREETSVILLE POSTAL STN
MISSISSAUGA, ONTARIO
L5M 2C1

Second Class Mail Registration No. 6305
Postage paid at Gateway
THE PLANT PRESS Vol. 2 No. 4 (December 1984)

ABBEY PRINTING
(416) 826-1281
(STREETSVILLE PLAZA)
41 QUEEN ST., NORTH
MISSISSAUGA
ONTARIO
L5M 1A2

1984 SUBSCRIPTIONS

The 1984 subscription fees are as follows:

all 1984 subscriptions* - $ 12.00 (Can. & US)

back issues (1983) - $ 10.00 (Can. & US)
(some photocopied)

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THE PLANT PRESS is a quarterly publication which is entirely supported by its subscribers.