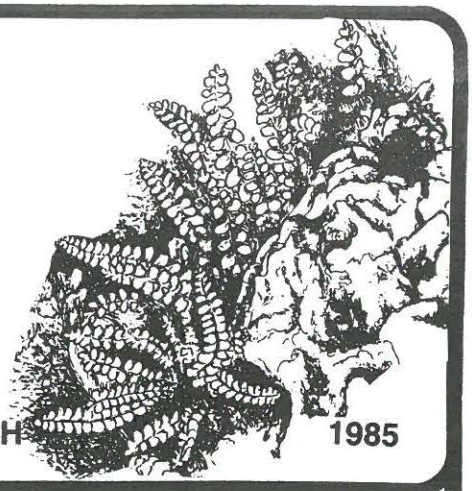
THE PLANT PRESS

FIELD BOTANY IN ONTARIO



Vol.3 No.1 **MARCH 1985**

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NEWS

The Plant Press IS INCORPORATED

In late 1984 The Plant Press became a non-profit corporation. This step was taken to ensure continuity of The Plant Press and to enable it to pursue revenue sources permitted by non-profit corporation status.

Production and content of The Plant Press will continue as in the past. We are very fortunate to have as the first Board of Directors, individuals from a diversity of professions: law, research and teaching, management, consulting and business. All are committed to ensure continuity of The Plant Press. We are grateful to this first Board of Directors:

Richard S.W. Bobbette
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The Plant Press NEEDS DONATIONS: WE CAN NOW SEND RECEIPTS FOR TAX CREDIT

Start up costs plus increasing size of each issue have meant that subscription fees did not cover costs for 1983 or 1984. Rather than raise fees for personal subscriptions for 1985, we anticipated that we would be granted status as a non-profit corporation and that we could ultimately issue receipts for donations which are tax-deductible. We need donations to ensure that the quality of The Plant Press continues to improve. Please consider us worthy of a donation.

Each issue of The Plant Press takes many hours of volunteer time from the Editorial Committee, reviewers, and authors. Our aim for accuracy increases the hidden costs of production: xeroxing and postage of material sent for review; office supplies and transportation costs to the post office and printer, etc.; and long distance telephone charges for sorting out last minute details.

The Plant Press NEEDS SUBSCRIBERS

We need your help in promoting The Plant Press. Please use the enclosed advertisement - pin it to suitable bulletin boards or send it to someone who might subscribe. Have it included in your naturalist club newsletter, etc. We still think that we can at least double our readership. An increase in the number of subscribers would greatly help to increase both public and government awareness of field botany and field botanists.

The Plant Press SURVEY OF READERS' INTERESTS

Our thanks to the readers who filled in the questionnaire in the 1985 subscription form (circulated in the September 1984 issue). The results confirmed some of our suspicions, but were most enlightening in other areas. For instance, readers' interest in "grasses and sedges" (tied with "trees") rated higher than interest in "ferns"! Elaine McShane organized the summary of results, and this appears in the "News of Field Botanists" column.

Field Botanists of Ontario MOVING RIGHT ALONG

More than 1/3 of the subscribers to The Plant Press have already joined the FBO. This is very encouraging. Some FBO news will be included as supplements in subsequent issues; other news may be included in the "News of Field Botanists" or "Information & Requests" columns of The Plant Press. To be aware of all FBO activities, we hope that you decide to become a member of that organization. Only then will you receive special mailings from the FBO.

LETTERS

Field botanists experienced in writing papers appreciate that considerable time is needed to gather necessary information and to prepare material suitable for publication. No individual should be discouraged from contributing to The Plant Press because they are "corrected" by later feedback; however, we do expect our contributors to spend the time necessary to prepare material suitable for publication. 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. We welcome different points of view.

CORRECTION TO THE DECEMBER '84 ISSUE

On page 108 we should have mentioned that the grass taxonomist position at the Biosystematics Research Institute was filled by Jaques Cayouette. That issue was proof read by a number of us who should have recognized the error!

Our thanks to Jaques for recently subscribing to The Plant Press and buying back issues. In an enthusiastic note, Jaques never mentioned this mistake!

SOME ENCOURAGING LETTERS FROM READERS

"My compliments on the excellence of The Plant Press. I am delighted with it and am sorry that it was not in existence years ago when I was in charge of the Fowler Herbarium at Queen's University [Kingston, Ontario] and much more active in field work than I am at present... I manage to keep active by acting as Assistant Curator of the Fowler Herbarium during six months of summer, and then going to Tucson Arizona for the winter where I am as busy as I wish to be at the Arizona - Senora Desert Museum. This gives me an outlet for some activity as Curator of the A.E. Garwood Herbarium, so kindly named after me while I am still alive.

"An interest in botany keeps me young. I heartily recommend it. I will be working on a revision of 'Flora of the Kingston Region' along with other botanical activities, including helping to prepare a history of the Department of Biology at Queen's."

A.E. Garwood, Kingston, Ontario and Tuscon, Arizona

"I have been meaning to write for some time to tell you how much we in the Southwestern Region of the MNR like The Plant Press. It is very enjoyable, but more than that, informative and of considerable practical value regarding vegetation management issues."

J.P. Prevett, Regional Ecologist, Ministry of Natural Resources, London

"Thank you for sending us a copy of The Plant Press. We were delighted to receive it. It is a fine publication. Your enthusiastic support for what we are attempting to do really gave us a lift...

"I am enclosing some information that we have compiled for Canada. We would appreciate your comments and additions...

"Our greatest need at present is for information for our computerized information clearinghouse. We are interested in information about seed and plant sources, recommended species, books, organizations, landscaping projects and restorations projects using native plants. We would be delighted to have you appeal to your readers on our behalf..."

Kathryn Kennedy, Associate Director of Research,
National Wildflower Research Center,
Austin, Texas

[Kathryn, we are delighted to poll our readers for information. The material you sent us, and some questions for readers, is included in the "Information & Requests" column, page 32. JW]

MORE ON WETLANDS EVALUATION

"The Federation of Ontario Naturalists (FON) has been a strong voice for the conservation and wise use of Ontario wetlands. Over the years we have lobbied hard for government action and provincial policies to safeguard these critical ecosystems. Recent initiatives by the provincial government are steps, albeit short ones, toward a wetland policy for Ontario. In other words, some progress is being made.

"Growing coverage in both popular and technical journals contributes to the 'perceived public debate' which brings (or disuades) this progress. It is in this context that we are both encouraged and disappointed by 'Why wetland evaluations before inventories?' by Jeff Kaiser [The Plant Press 2(3):66]: encouraged by the added dialogue; discouraged because the author's suggestions would effectively kill the growing momentum toward wetland protection, and doom Ontario to continuation of the status quo which has already resulted in the loss of at least 80% of southern Ontario's wetlands.

"Specifically, two points merit comment, the first for clarification, the second of greater concern:

"(1) Granted the FON wetland evaluation model is largely a cut-and-paste product. But why reinvent the wheel? Many of the criteria used from other models are based on widely-accepted concepts of wetland ecology. Those used have been extensively tested in the United States and found to be accurate, reliable indicators of wetland value. Criteria less appropriate for the Ontario scene were not included. In the developmental stages the FON model was circulated for critical review to many Ontarians with expertise in various fields from agriculture to wildlife biology to sociology. While the FON model is far from perfect it is a good first cut at the problem of evaluating wetlands. Furthermore it has already achieved one of its major goals which was to stimulate government action in this direction.

"(2) Clearly, in Ontario there is a definite reason to begin with evaluations in the absence of thorough inventories. With an estimated 13-20% of southern Ontario wetlands remaining, and losses continuing at a rate of 1 to 2% per year, it does not take a mathematical genius to see that there is precious little time remaining. If an inventory and description of wetlands were carried out prior to evaluation, as suggested by Jeff Kaiser, it is quite probable that there would be no significant wetlands to evaluate. We are curious about what Jeff Kaiser would consider an appropriate inventory prior to evaluation. Is he referring to a program analagous to the ANSI program which while valuable is thin in many areas and took years to complete? Clearly we do not have policies with any teeth to protect designated ANSI's (e.g. Alfred Bog). Or is he referring to an approach similar to the ESA program? While detailed, that program is yet to be completed for the province and much of the data was collected by 'junior naturalists and biology students'. Still the ESA program in Ontario is valuable and worthwhile. If Jeff Kaiser has another methodology in mind we would be most interested in more details.

"The important point to make here is that contrary to Jeff Kaiser's view there is 'good reason for the creation and use of such a hybrid system...when the basic task of inventory and description has yet to be accomplished' given the critical urgency of the situation. Thorough inventories are necessary and indeed mandatory in conflict situations, but to encourage the luxury of inventorying all wetlands as a first step before evaluation is unrealistic. At the same time lengthy inventory programs may provide an iron clad alibi to cover government inaction (witness the parks system planning process).

"In conclusion, we agree with Jeff Kaiser that there are many flaws with the system currently being implimented. The FON presented a brief discussing many of the problems. Of greater concern, however, is not the contents but the framework of the evaluation system. By hanging the wetland guidelines on the product of a system that obviously raises many logistic and conceptual questions, the Province is extending an open invitation to challenge the framework, the data collection and the evaluation system itself."

Nancy Patterson, FON, Toronto

"This is in response to Jeff Kaiser's brief paper [The Plant Press 2(3):66] in which he expressed his various dissatisfactions with the document An Evaluation System for Wetlands of Ontario south of the Precambrian Shield. As the person who played a major role in creating this very defensible system, I feel that I should reply...

"Jeff Kaiser stated that 'before evaluation begins one could expect that some reliable and comprehensive inventory of wetlands in an area be done.' Why? Now that an evaluation system exists, any jurisdiction, e.g. the province, conservation authorities, MNR districts, etc. can undertake an inventory of their wetlands and get them evaluated at the same time, or they can go ahead and evaluate them on the basis of current available knowledge alone. In the past, it was often difficult to make a credible case for inventory work since there was no way to evaluate the results in a comparative way. Now there is. The existence of the evaluation system is thus a giant step forward for wetland protection.

"There is absolutely nothing wrong with a scoring system which assigns points to values and then simply adds the numbers. What we are measuring are values (not trees, salamanders, distances, eutrophication, rarity, etc.) and therefore we can indeed say that a peregrine falcon nesting site is worth 250 points while the presence of bullfrogs is only worth 2 points. I suggest that anyone who thinks we are forcing apples and oranges to be equivalent should read the introductory rationale again and again. Values are meant to be mutually exclusive but this is not possible 100 per cent of the time. Does Jeff Kaiser have a better alternative? He does not provide one. Then why criticize the current system on its strengths?

"Jeff Kaiser's second major dissatisfaction

with the evaluation system concerns the 'minimum expertise' required to conduct an evaluation of a wetland using the new system. This too was an area of major concern to the committee responsible for the system. In earlier drafts we stated that a 'B.Sc. or equivalent degree' would be the required minimum educational background. However, several conservation authorities brought to our attention the fact that they had some conservation officers (without B.Sc. degrees) who knew the flora and fauna well and that they wished to have the B.Sc. requirement removed from the system. In no way does this mean that the evaluation has been treated in 'such a summary manner'. Any agency that wishes to have high quality evaluations simply must make provisions to hire capable and knowledgeable staff or consultants to undertake their studies. Just hiring a couple of summer students or an engineer to apply the system is a very risky business. Again, the onus to obtain credible evaluations is on the agency and there is real risk to the agency's credibility if expertise is inadequate.

"On the point of 'bonus' points for rare or endangered species, it is of course understood that it takes a great deal of time to locate various categories of rare species in a wetland. Evaluators who have a B.Sc. or even a Ph.D. are usually experts in only a portion of the natural history of the wetland. So, there is no easy solution to this except getting the information in one way or another. Natural history clubs could play a key role here and if they know that a government agency is evaluating wetlands in an area it certainly would be worth concentrating volunteer effort to look for these rare species...

"To conclude, I think that the evaluation system is a very large step ahead of any and all other wetland systems; it has been produced in a very methodical and deliberate way; it combines the best elements of all previous systems (and why shouldn't it?) and contains novel ideas and approaches with good reason. It has been field tested with independent replications on dozens of wetlands by different groups of workers and results have been statistically analyzed so that adjustments could be made to the system to take into account possible variances in perception, approaches, etc. by teams operating independently.

"For the first time a credible instrument exists that can provide any jurisdictional agency with a way of actually determining whether certain wetlands are more important than others and why. While the system still contains a few shortcominings, these appear to be minor and are being addressed through the annual MNR training course. Certainly I agree that wetland evaluation is a very important matter and that is why so much effort was directed toward creating a strong and defensible evaluation system."

Theodore Mosquin, Lanark

[JEFF KAISER'S REPLY]

"I would like to make 4 points.

"1. Ted Mosquin does not deal with my main criticisms of the wetland evaluation system. Briefly they are:

(a) There are wetlands which are valued for their hydrologic function(s); those which are valued for their biological resources; and some which are valued for the educational or recreational programs developed in them. Each of these rationales is sufficient reason to protect those wetlands which are outstanding in their class. I object to the use of aggregate scores because (i) it obscures the factor(s) which impart value to a given wetland and (ii) I believe that a wetland with high 'social' value (i.e. considerable human use) is likely to have moderate to low value associated with its biota (i.e. fewer breeding and rare species; disturbed communities) and vice versa. Thus the main categories of evaluation are not independent of one another.

(b) I believe evaluation is a high level function which should be made by knowledgeable and experienced individuals. If I wish to have my automobile, house, or artwork appraised, I seek out an individual who is an expert in the appropriate field. If the art appraiser pulls out a ruler and evaluates my painting on the basis of the dimensions of the canvas I will not be satisfied with his answer. Should I be satisfied with that approach to the 'evaluation' of such complex biological systems as wetlands? I think not.

"2. The wetland evaluation manual assigns values to factors which it does not measure. It assigns values for wetland productivity based on a constellation of indirect factors which are reasonable but not necessarily linked to biological production. A brine pool at Windsor would score very highly in this category due to its geographic location, clay substrate, and the high conductivity of its water. Its actual productivity is likely to be very low.

"3. The defensibility of a given system or technique tells us nothing about its quality nor its appropriateness for the task to which it is applied. The fact that Ted Mosquin

believes that his system is defensible does not mean it is appropriate for determining the 'value' of a wetland.

"4. It is not my intention to 'kill the growing momentum toward wetland protection and doom Ontario' (Nancy Patterson, above) to a landscape without wetlands. The protection of wetlands will not grow out of this or any evaluation system or manual, but out of the political will and the genuine interest of the people of Ontario.

"With suitable coordination and expertise, an inventory of the wetlands of southern Ontario could be completed within a few years. With this kind of data base, a true evaluation could be achieved."

Jeff Kaiser, Mississauga

[WETLAND EVALUATION AND GOVERNMENT POLICY IN THE MINESING SWAMP]

"I would like to thank Jeff Kaiser for his warning regarding the wetland evaluation system currently in vogue with many Ontario interest groups. Although I do not mean to 'cop out' of considering the details of that system, I would like at this time to bring forward some (perhaps personal) points of view.

"For years the Ontario government's attitude has seemed 'non-existant' or downright antagonistic towards serious understanding and conservative use of the landscape. Considering the social and political environment which they must work wtihin, all proponents and workers on wetlands evaluation models from the Federation of Ontario Naturalists to private consultants and the government need to be congratulated and encouraged.

"On the other hand, I like An Evaluation System for Wetlands of Ontario only because it provides an excuse to get students and natural resource personnel observing and documenting in the field. One might progress to argue that the brevity of survey, tender experience of personnel, and perfunctory character of the forms that the evaluators 'fill in' produce only the illusion of understanding and evaluation of the wetland documented. However, I am recently convinced that this procedure will not make much practical difference, as the example below illustrates.

"The Minesing Swamp was studied in detail from 1973 to 1975 using students supervised by experts from the University of Toronto and the University of Guelph. This work was summarized by professional planners of the Moriyama group. The types of decisions possible from the 'evaluation system for wetlands' could not even approach the Minesing studies.

"Further, Garry T. Hunter generated a related drainage study of Willow Creek [part of the Minesing complex] which fully documented the death of hundreds of hectares of bottomland forest due to agricultural drainage changes near the Minesing from the early 1950's to 1976. The Moriyama group concluded from the 1973-1975 studies that the Minesing Swamp was of provincial significance. Their report was rejected because it recommended nature reserve status for the entire swamp. The MNR argued, and convinced me, that the unflooded portions of the bottoms were productive in tree growth, and of secondary natural history interest, so that removing these sites from active timber production could not be tolerated.

"By 1979, however, drainage changes were approved, resulting in removal from timber production of thousands of hectares of these very same bottoms. Imagine my chagrin when flying over the Swamp on other business, I photographed huge expanses of dead, flooded forest that I had once walked through and documented, all situated at the ends of farm drains that 'go nowhere'.

"Here we have the destruction of timber producing sites which the MNR had considered so valuable that they precluded consideration of the Minesing as a nature reserve in toto. The fact that this occurred in one of the most environmentally aware MNR districts that I know [Huronia District] makes it a profoundly bad omen.

"So I have to conclude that when our government agencies ignore top-notch scientific work, as well as undermine their own positions by doing political favours for a few local farmers at the great expense of one of the premier wetlands of Ontario, the real value of their 'evaluation system for wetlands' will be to generate relatively benign 'make-work programs'. The best hope that I have is that these horrible mistakes and oversights may generate what really counts in our society - enough squawking and complaining that institutional attitudes towards wetlands start to approach reality."

Rick Bobbette, Barrie

"In regard to the importance of the Minesing Swamp, recent wetland evaluations have confirmed that portions of it are of provincial significance. The boundaries of the acquisition area were approved in 1971, and contain a total of about 6,590 hectares. Publicly-owned lands within the area total 2,329 ha, or 32%, with the Nottawasaga Valley Conservation Authority being the major owner, followed by the Province and the County of Simcoe.

"The Huronia District Land Use Guidelines, dated 1983, identified 200,000 ha of lands likely to remain available for forestry use for a minimum of 80 years. This broad designation included the Minesing Swamp. However, it was recognized that about 108,000 ha (54%) of these lands would be constrained by official plan zoning, conflicts with other programs, non-productive and protection areas. While our advisory services are not restricted to the private lands within these areas, we have had to give priority to requests from landowners within them, due to a large demand. This is of importance to the promotion of good land use in areas such as Minesing, where a landowner might undertake a poorly planned cutting operation if we did not include that area as one of the priorities, and promote careful selective cutting.

"In 1975 during the planning process, this District presented a proposal for designation of some of the lowland hardwood areas for forestry use, all of which were west of Willow Creek. The areas of deteriorated drainage in Vespra Township [Simcoe County] appear to be east of Willow Creek. This observation is not intended to minimize what I believe to be a waste of renewable resource. This Ministry had input through Regional staff with the Nottawasaga Valley Conservation Authority and Township of Vespra in the Willow Creek Committee of 1978, which resulted in an engineering study being carried out in 1979. Channel cleanouts upstream from and into the Swamp were carried out by the N.V.C.A. in 1980, with these waters being returned to the original (old) Willow Creek channel. Diversions which were contributing to drainage deterioration east of Willow Creek were closed.

"In all this it is important to recognize the continuing major importance of this area as a natural reservoir for flood waters, that the major areas of provincial significance are not at high risk from drainage deterioration, and that the internal drainage has been changing in the lowlands for more than 100 years. The impact of upstream clearing for settlement, for example, is apparent when County of Simcoe maps of 1853 and 1878 are compared. Subsequent studies have noted more recent changes.

"In 1979 goals, objectives and interim guidelines for a joint management committee (N.V.C.A. and M.N.R.) were set out [an attached document was provided]. Coordination of plans and efforts in respect of lands in public ownership, together with advice and assistance to private owners has been particularly effective in reducing wasteful timber practices and destruction of habitat, removal of log jams and potential obstructions.

"I thank you for the opportunity to comment in your publication."

W. Dan Mansell, District Manager,
Huronia District, Midhurst

THE STATUS OF GRAY'S MANUAL OF BOTANY

[The following is excerpted from a letter received in early January from Jim Pringle of the Royal Botanical Gardens (Hamilton). It was sent as a personal letter, but as the details should be of interest to all readers, Jim agrees that it can be reprinted below...]

"Have you seen the latest issue (Vol. 4 No.12) of Herbarium News? If not, I hereby call your attention to an article on page 62 which will presumably be of interest to some readers of The Plant Press. It seems that Van Nostrand Reinhold has let 'Gray's Manual, ed. 8' go out of print and out of stock and has no plans for any further printings. This is probably the first time since February 1848 that no edition of 'Gray's Manual' has been available from the publisher. According to the author of this article, Van Nostrand's editor in charge of such books would welcome comments. Letters should be addressed to:

Ms. Susan Munger,
Van Nostrand Reinhold Company, Inc.,
135 West 50th Street,
New York, N.Y. 10020,
U.S.A.

"Doubtless to the publishers it would seem logical that this work should go out of print. There must be very few 35-year-old books in the sciences that still serve as standard references. Indeed, it might seem logical to me to let 'Gray's Manual' pass into history if and when any Flora of North America project ever survived to fruition.

"As [many of you know] there is an aspect of the standard-reference status of 'Gray's Manual'

that does annoy me, viz., the statements in scientific literature that 'Nomenclature (which, in this context, means considerably more than nomenclature), follows Fernald (1950).' This presents an image of systematics as being so dead that, even in the most scholarly contexts, all of the work of the last 35 years can be dismissed as being virtually negligible. Aside from this, however, the question remains as to whether other, still-available works are equal or more satisfactory as standard plant identification guides. More specific questions might include whether Gleason & Cronquist's 'Manual' (still a Van Nostrand Reinhold publication, I believe) is just as good; whether 'Gray's Manual' has become so expensive that potential customers might decide to opt for 'The New Britton and Brown Illustrated Flora'; and whether manuals of more restricted geographic scope, such as those by Scoggan, Seymour, Straughsbaugh & Core, Roland & Smith, Weishaupt, et al. (but considering only those completed or likely to be within the near future!) have largely replaced 'Gray's Manual' in many areas.

"Ms. Munger will want to hear not just about the use put to existing copies but also about potential future sales. University sales must have fallen off significantly. With subject matter other than the development of identification skills having become increasingly important in introductory plant taxonomy courses since 1950, more and more instructors presumably are requiring some expensive textbook other than a manual (Benson, Stace, Jones & Luchsinger, etc.) and therefore would be reluctant to require the purchase of an expensive manual. Even where identification remains the main subject matter of a course, cheaper regional manuals or Gleason & Cronquist are often being used."

James S. Pringle,
Royal Botanical Gardens, Hamilton

MORE ON NON-NATIVE PLANTS

"In his article on introduced plants [The Plant Press 2(3):62-64], Tony Reznicek advocates a policy for the inclusion of casual species in Floras and checklists which is rarely accepted in practice. There cannot be a single policy which is ideal for all situations. A list for a small area such as a county could follow Tony's advice and include all casual species (casual = exotic species not deliberately planted, but which do not persist for more than one or two years). For a larger area such a list can become quite formidable and in some European countries the list of casual species outnumbers the native species. If all such species were included in an identification manual it could be quite cumbersome and make reliable identification of native plants that much more difficult.

"This situation does not arise in Ontario because reports of casuals are relatively few. However, in countries such as Britain, where there are many enthusiastic amateurs, there are groups who make a hobby of hunting for introduced plants. One such group specializes in 'wool and weave shoddy' aliens. Prior to spinning and weaving wool, the raw wool is combed and washed. The debris form this cleaning process is used as a mulch and soil conditioner in some parts of the country and contains a large number of viable seeds originating from Australia, New Zealand, South America, etc. The seeds germinate and can be found growing as weeds, but because of the cool summers in Britain they rarely flower and none survive the winters. To overcome the problem of identification the plants are transplanted to greenhouses so that they can flower and be identified! Other groups specialize in rubbish-tip aliens, dockyard aliens, etc. The results of this effort are that most Euorpean Floras ignore casuals or mention only the commonly occurring species. Flora Europaea went so far as to state that no introduced species would be included unless it was known to have been naturlized for at least 25 years.

"If such a policy were followed in Ontario then a few species listed in our flora would be excluded. For example Lepidium aucheri, apparently collected once in Toronto in about 1906 would be excluded. On the other hand Coronopus squamatus, first reported from Toronto prior to 1950, would be included in our flora since it is still present.

"I agree with Tony that planted exotics should normally be excluded. However, in an identification manual it is often useful to include trees planted in long persisting stands which, in time, inexperienced people might not recognize as plantations. Students regularly misidentify Pinus sylvestris [scotch pine] for P. banksiana [jack pine] because the former is not included in Native Trees of Canada.

"By far the most important point is that the status of a species should be clearly indicated in any checklist or Flora, so that others are not misled into thinking that a species is naturalized when it is either a plantation or a non-persistant casual."

Peter W. Ball, Mississauga

IDEAS

WHAT HAPPENED TO THE ALGONQUIN WOODFERN?

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

In 1973 Paul Keddy and I collected two fronds of an unfamiliar woodfern (Dryopteris sp.) at Greenleaf Lake in Algonquin Park. To make a long story short, it was ultimately determined to be a sterile hybrid between the fragrant woodfern (Dryopteris fragrans) and marginal woodfern (Dryopteris marginalis) by D.M. Britton of the University of Guelph. This hybrid was new to science and was named Dryopteris Xalgonquinensis D.M. Britton in a subsequent paper about its discovery (Britton et al. 1975. Can. Field-Nat. 89:163-171).

Following its discovery, this single plant was periodically examined by naturalists from the Algonquin Park Museum. In 1979, however, they were unable to locate the fern and subsequent parties were no more successful. In September 1984, Karen McIntosh and I canoed up Greenleaf Lake to search for 'algonquinensis'. With the aid of photographs of the area that were taken during earlier visits, we were able to relocate the exact location of the fern (Fig. 1). It was immediately obvious, however, that the fern was gone.

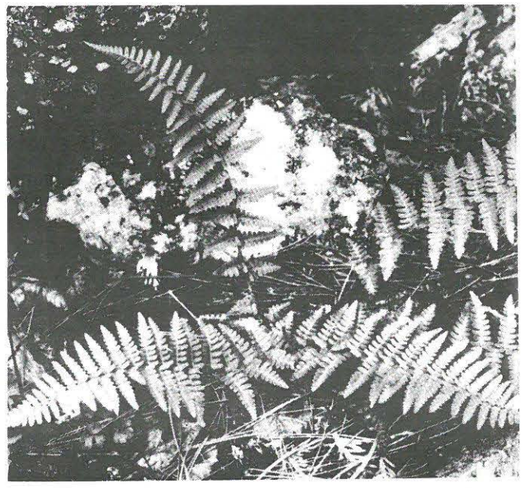


Figure 1. Dryopteris Xalgonquinensis (Algonquin woodfern) photographed in June 1974 by G. McPherson.

Instead of the only living plant of Dryopteris Xalgonquinensis in the world, we found ourselves facing a 3 - 4 cm opening amongst the rocks (Fig. 2). By carefully peeling back the thin moss cover, we could see that the entire plant - rhizome and all - was gone. A large cavity among the boulders marked the space where the rhizome should have been. There were no rhizome fragments in the cavity, nor were there signs of animal activity (such as rodent droppings or nest debris). Woodfern rhizomes are, as the name suggests, woody. They last many years in the ground after the plant has died. Clearly, these had been physically removed. The immediate site was otherwise undisturbed, indicating that only the fern had been affected. Someone had carefully dug it up.

Why was it stolen**? It seems most unlikely that it was taken for any scientific purpose; as soon as the results of any research were published, the culprits would be identified. Could it have been collected as a herbarium specimen? Yes, but it seems unlikely that the entire rhizome, a large and bulky item that would have to be trimmed extensively, would have been taken in this case. In addition, the slight degree of disturbance at the site suggests that the plant was removed carefully. It seems most likely to me that the fern was removed intact for transplantation to a rock garden or other similar situation in cultivation.

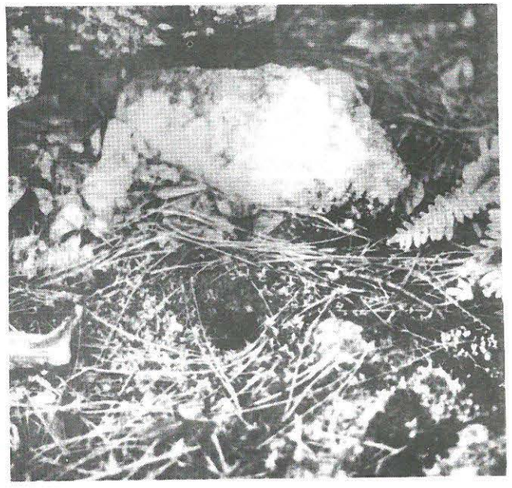


Figure 2. Site of the Algonquin woodfern photographed in September 1984 by D.F. Brunton.

Who could have demonstrated such a disregard for collecting ethics and common sense? Clearly someone who knew something about ferns, as they must have recognized the rarity of this specimen in the field. This person must have been so keen to have the fern that they were willing to go to the considerable effort of getting to this isolated location. It also seems reasonable to assume that if someone were driven to make such an effort to obtain 'algonquinensis', that they very likely have snatched other rare ferns and fern hybrids. And that may be our best chance of getting the hybrid back.

I ask readers to keep an eye open for unusually rich fern collections in rock gardens and greenhouses, especially ones in which hybrids are apparent. This might be a private collection or perhaps some inconspicuous, unlabelled part of a public garden. Conceivably, the fern could be just about anywhere.

The other distasteful possibility is that the fern is now a herbarium specimen. Any specimen of Dryopteris Xalgonquinensis with rhizomes could be the specimen in question, as collections prior to 1979 were of fronds only. Sadly, the discovery of such a specimen would confirm that 'algonquinensis' is no longer alive.

Perhaps someone will see this fern hybrid in a rock garden. If so, while we might not have the satisfaction of seeing the thief or thieves punished, we might see the plant put back in Algonquin Park where it came from.

Obviously we can no longer assume that the isolation of a rare plant will protect it, or that all readers of technical/scientific literature are ethical enough to prevent a recurrence of this travesty. This example of Dryopteris Xalgonquinensis clearly demonstrates that authors must carefully consider the consequences of including precise locations for "collectable" plants in their publications.

** I intentionally use the term "stolen" to describe this action, since it is an offence under the Provincial Parks Act to remove or damage any plant or animal in a provincial park without prior permission from the park authorities.◆

[Other opinions on the fate of this fern will be included in the next issue...]

NOTES & REPORTS

PLANT EXPLORATIONS AT WINISK, KENORA DISTRICT

Doug Sadler, R.R. #4, Peterborough, Ontario K9J 6X5

Few Ontarians have had an opportunity to visit the province's subarctic coast - a narrow strip of treeless tundra which extends along the coast of Hudson Bay (Fig. 1). A harsh climate and the cooling effect of pack ice on the Bay until early August account for this area's subarctic character. This is a region of permafrost.

In 1983 I had the good fortune to make a visit to this area as part of my contribution to atlassing the breeding birds of Ontario. Brian Specht of Marianna, Florida and I drove to Timmins where we took advantage of an offer made by Austin Airways to help the atlas project, namely to provide free flights on a "seats available" basis to remote areas. This time our flight took us to Moosonee, where we were met by staff of the Ontario Ministry of Natural Resources, who arranged details of our Winisk trip, including an Austin Airways scheduled flight to Winisk. We were able to stay at the Polar Bear Provincial Park office building. Normally, visitors can acquire accomodation at the airport building, but, as everything must be flown in, this can be somewhat expensive.

Figure 1. Southern limit of the subarctic tundra region (broken line) based on unpublished information of P.F. Maycock (in preparation for "provincial nature reserves in Ontario", Ministry of Natural Resources).

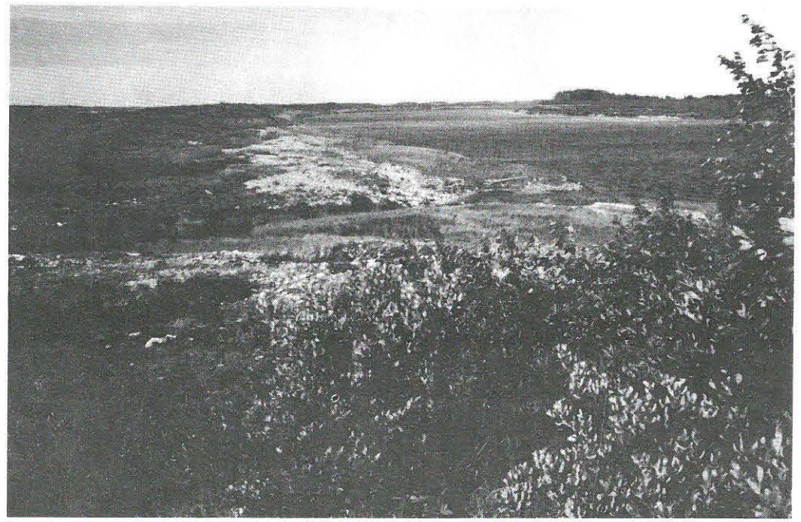


Figure 2. Vegetation along bank of the Winisk River (photo by D. Sad ler). June 1983).

Although I had spent time on James Bay before, this was my first experience of the Hudson Bay coast. Because of poor drainage, much of the flat alluvial lowland of the muskeg lacks tree growth and boreal forest follows the rivers north on better drained soils of the natural levees. This phenomenon does not extend to the tundra coast. Narrow tongues of stunted forest peter out towards the Bay. We saw a vast expanse of open wetland which according to the wetland classification of Jeglum et al (1974) is mainly fen. We certainly sloshed through what seemed like endless kilometres of this waterlogged country, day after day.

Some areas were better drained (Fig. 2) and supported vegetation which differed from the mainly graminoid fen. Some of the fens had metre-high hummocks called palsas, the result of permafrost action and local plant growth. A series of old shorelines, or relict beaches, line the coast, evidence of isostatic rebound since the retreat of the last glacier. In places on the coast itself there are dunes. Some higher shoreline ridges showed taiga vegetation with mosses and lichens among scattered, stunted spruce. Local variation in environmental conditions allowed for a fair amount of variation in vegetation.

When we arrived on 13 June, it was sunny and 33°C, yet there were remnants of ice on the river banks and we were told that a few days before the land was snow-covered. The weather proved fickle and extremely varied: on 15 June it suddenly turned cold and windy with some rain. That night the mercury dropped to near freezing. Such sudden changes depended on the wind direction, i.e. whether warm winds blew from the south or whether cold winds blew from the north or over the Bay ice which still came within a few hundred metres of the shore.

Little plant activity was evident at first. Woody plants were bare, except for a few evergreen shrubs, though some willows had started to flower. The land was generally drab. It was still late winter, though a few flowers and a hardy little primrose spoke of early spring. In the two weeks of our stay it was fascinating to see all trees and bushes leaf out and a rapid succession of herbaceous and woody plants burst into flower.

Busy on the breeding bird atlas, I had little time to devote to plant study, and had been unable to bring along any reference materials or a plant press. However, I made sketches (Fig. 3) and took colour slides which helped a great deal in later attempts at identification.

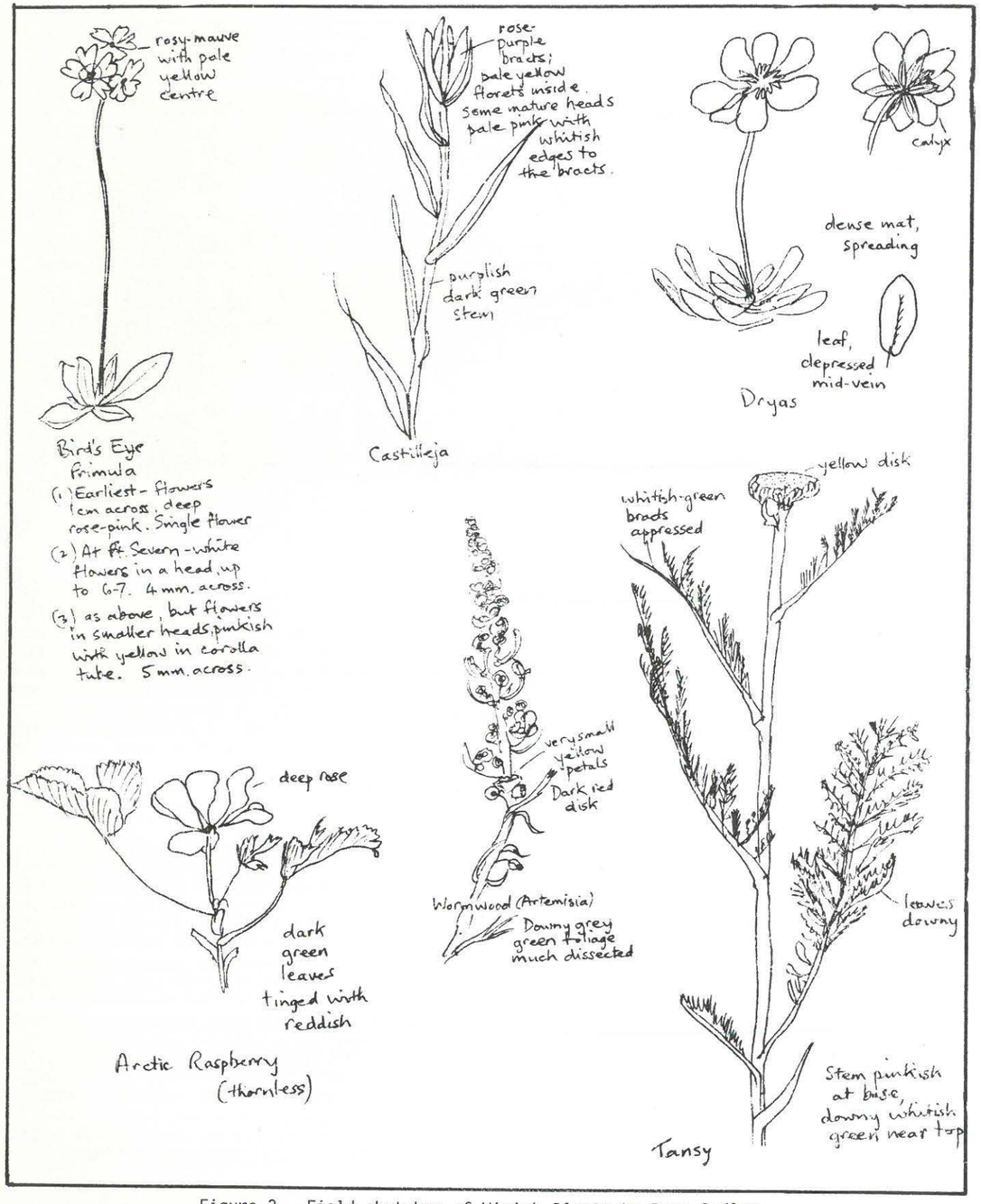


Figure 3. Field sketches of Winisk Plants by Doug Sadler.

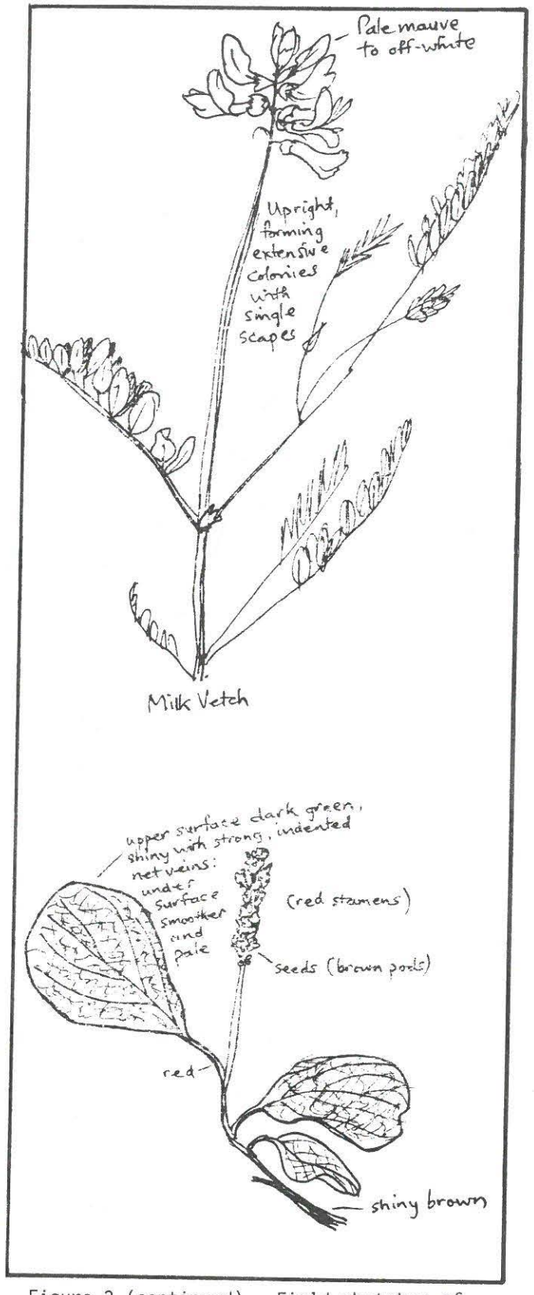


Figure 3 (continued). Field sketches of Winisk plants by Doug Sadler.

A partial list of plants of the area was made and forwarded to John Riley, who has botanized at Winisk and is compiling a catalogue of the plants of northern Ontario (Riley 1983). John's comments were quite useful in narrowing down the identity of some of the plants I had tried to determine. For the interest of readers familiar with the flora of southern Ontario, the plants found at Winisk which also occur in southern Ontario are listed in Table 1. Those which occur only in northern Ontario are listed in Table 2. These lists are certainly not complete for the Winisk area, but they do provide some insight as to the type of flora which occurs here.

Table 1. Vascular plants at Winisk which may be found in southern Ontario.

TREES	
Larix laricina	(larch, tamarack)
Picea mariana	(black spruce)
SHRUBS	
Alnus viridis ssp. crispa	(green alder)
Ledum groenlandicum	(Labrador tea)
Potentilla fruticosa	(shrubby cinquefoil)
Shepherdia canadensis	(buffalo berry)
Vaccinium oxycoccus	(small cranberry)
FORBS	
Actaea rubra	(red baneberry)
Caltha palustris	(marsh marigold)
Cardamine pratensis	(cuckoo flower)
Corallorhiza trifida	(early coralroot)
Heracleum maximum	(cow parsnip)
Menyanthes trifolia	(bogbean, buckbean)
Pyrola minor	(wintergreen)
Triglochin palustris	(arrow grass)
Tanacetum huronense	(Lake Huron tansy)
Vallerianella septentrionalis	(swamp valerian)
FERNS & ALLIES	
Equisetum fluviatile	(water horsetail)

Table 2. Vascular plants at Winisk which do not occur in southern Ontario.

SHRUBS	
Andromeda polifolia	(bog rosemary)
Arctostaphylos alpina	(alpine bearberry)
Betula glandulosa	(dwarf birch)
Rhododendron lapponicum	
Rubus acaulis	(northern dwarf raspberry)
Vaccinium uliginosa ssp. pubescens	(bog bilberry)
Salix arctophila	(Labrador willow)
S. glauca ssp. callicarpaea	(willow)
S. reticulata	(willow)
FORBS	
Anemone parviflora	(anemone)
Antennaria borealis	(mugwort)
Castilleja raupii	(paintbrush)
Dryas integrifolia	
Erigeron hyssopifolius	(fleabane)
Mertensia paniculata	(lungwort)
Oxytropis leucantha var. hudsonica	(stemless locoweed)
Pedicularis flammea	(lousewort)
P. lapponicum	(lousewort)
Petasites sagittatus	(sweet coltsfoot)
Primula stricta	(primrose)
Ranunculus pedatifidus	(buttercup)
Taraxacum lapponicum	(dandelion)

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CHECKLIST OF ONTARIO PTERIDOPHYTES PART TWO: FERNS

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

This list follows the same pattern as Part one, for the fern allies (Britton 1984). It will be noted that segregate species e.g. in the Dryopteris spinulosa complex and the Cystopteris fragilis complex are the "order of the day", whereas many varieties and minor variants (forms) are omitted. The emphasis today is on "biological species" and population biology, and we now have many ways to distinguish between similar appearing taxa, e.g. by cytology, chemistry, SEM, isozymes, etc. Hybrids that have been studied both morphologically and cytologically are now accepted.

I have found when compiling this list that my focus for Ontario was slightly different than when considering all of Canada. Accordingly, this is not a "pre-print" of Cody and Britton (1985). This list incorporates some of my own prejudices and preferences, and was of course influenced by new papers and new information that appear almost daily. Note, also, if one compares this list with Gleason and Cronquist (1963), one would conclude that this list is far from being a radical document (22 years later!). Hopefully, it has a few items in it to generate some interest and controversy. Some may object to the dropping of well known variants (often clinal), such as Dryopteris fragrans var. remotiuscula, Botrychium virginianum var. europaeum, etc., but they are not clearly separable in a province that extends from the Carolinian zone to the subarctic.

The twelve species prefixed by R (Rare) are treated in detail by Argus and White (1983) and I saw no reason to cite again the references therein. Three species are prefixed by Excl., i.e. Excluded. If "excluded" why are they "included"? They are excluded because we have no records of living plants at this time. They are included because of the great interest they generate, and the challenge they represent for field botanists, even though in some cases it is questionable whether they ever were part of our flora. Each is a story in itself.

I departed from the alphabetical sequence of genera under the family Aspleniaceae as given in Peck & Taylor (1980), in order to show relationships within the family. Accordingly, the subfamilies of Crabbe et al. (1975) are shown, also their generic sequence.

Common Names

The author bows to technical editors who like (insist) on no capitals. When working within a smaller geographical unit, one can drop part of the common name, e.g. (american) royal fern, (american) ostrich fern, (northeastern) lady fern, (eastern) bracken, etc. Also, it is possible to leave out "fern" quite often, e.g. adder's-tongue (fern), hart's-tongue (fern), (northern) maidenhair (fern). As time goes on, some names seem less suitable than others, e.g. bladder ferns and brittle ferns for fragile ferns; and shield ferns and bucklers (English) for some Dryopteris species. I would feel the simpler the name the better, as long as we are sure we are talking about the same entity. I found it difficult to coin a simple name for Botrychium simplex var. tenebrosum - "long-stiped least moonwort"?, "long-stiped simplex"?, "swamp least moonwort"? Perhaps a contest is in order! Also, some segregate species are so new that they have not attracted a common name in general usage e.g. Dryopteris expansa and Cystopteris tenuis.

A summary of the number of taxa recognized in Ontario is given in Table 1. Note: F=Fernald (1950), G=Gleason & Cronquist (1963), W=Wherry (1961), S=Scoggan (1978).

POLYPODIOPHYTA	
OPHIOGLOSSACEAE (Wagner & Wagner 1983)	
Ophioglossum vulgatum L. var. pseudopodum (Blake) Farw.	((northern) adder's-tongue (fern))
R. Botrychium lanceolatum (Gmel.) Ångstr. var. angustisegmentum Pease & Moore	(triangle grapefern, lance-leaved grapefern)
B. lunaria (L.) Sw.	(moonwort)
B. matricariifolium A. Br. ex Koch	(daisy-leaved grapefern, matricary grapefern)
B. minganense Vict. (Wagner & Lord 1956) [B. lunaria f. minganense (Vict.) Clute (F)(S)] [B. lunaria var. minganense (Vict.) Dole (G)]	(mingan moonwort)
B. simplex E. Hitchc. var. simplex	(least moonwort)
B. simplex var. tenebrosum (A.A. Eat.) Clausen	(long-stiped least moonwort)
B. virginianum (L.) Sw.	(rattlesnake fern)
Fall grapeferns belonging to subgenus Sceptridium (Wagner & Wagner 1982)	
B. dissectum Spreng. f. dissectum [B. dissectum Spreng. var. dissectum (G)]	(dissected grapefern)

B. dissectum Spreng. f. obliquum (Muhl.) Fern. (oblique grapefern)
[B. dissectum var. obliquum (Muhl.) Clute (G)]
[B. obliquum Muhl. (W)]

B. multifidum (Gmel.) Rupr. (leathery grapefern)

B. oneidense (Gilb.) House (Wagner 1961) (blunt-lobed grapefern)
[B. dissectum f. oneidense (Gilb.) Clute (F)(S)]

B. rugulosum Wagner (Wagner & Wagner 1982) (rugulose or ternate grapefern)
[B. ternatum (Thunb.) Sw. (W)]

OSMUNDACEAE

Osmunda cinnamomea L. (cinnamon fern)

O. claytoniana L. (interrupted fern)

O. regalis L. ((american) royal fern)
var. spectabilis (Willd.) Gray.

SCHIZAEACEAE

Excl. Schizaea pusilla Pursh. (curly-grass)

ADIANTACEAE

Adiantum pedatum L. ((northern) maidenhair (fern))

Excl. Aspidotis densa (Brack.) Lellinger (indian's dream)
[Cheilanthes siliquosa Maxon (F)(S)]
[Cryptogramma densa (Brack.) Diels]
[Onychium densum Brack. (W)]
[Pellaea densa (Brack.) Hook. (G)]

R Cryptogramma crispa (L.) R.Br. (mountain parsley, parsley fern)
var. acrostichoides (R.Br.) C.B. Clarke
[C. cripsa ssp. acrostichoides (R.Br.) Hult. (S)]
[C. acrostichoides R.Br. (W)]

C. stelleri (Gmel.) Prantl (slender cliff-brake)

R Pellaea atropurpurea (L.) Link (purple cliff-brake)

P. glabella Mett. ex Kuhn (smooth cliff-brake)
[P. atropurpurea var. bushii Mack. (G)]

POLYPODIACEAE

Polypodium virginianum L. (Cranfill and Britton 1983) (rock-cap fern, polypody)
[P. vulgare L. var. virginianum A.A. Eat. (G)]
[P. vulgare L. ssp. virginianum (L.) Hult.]
Includes three cytotypes-diploid, triploid and tetraploid (Kott & Britton 1982)

DENNSTAEDTIACEAE

Dennstaedtia punctilobula (Michx.) Moore (hay-scented fern)

Pteridium aquilinum (L.) Kuhn var. latiusculum (Desv.) Underw. ((eastern) bracken)

THEYLYPTERIDACEAE

Phegopteris connectilis (Michx.) Watt (northern or long beech fern)
[Dryopteris phegopteris (L.) Christens. (F)]
[Thelypteris phegopteris (L.) Slosson (G)(S)]

R P. hexagonoptera (Michx.) Fée (Goltz et al. 1984) (southern or broad beech fern)
[Dryopteris hexagonoptera (Michx.) Christens. (F)]
[Thelypteris hexagonoptera (Michx.) Weatherby (G)(S)]

Thelypteris noveboracensis (L.) Nieuwl. (new york fern)
[Dryopteris noveboracensis (L.) Gray (F)]

T. palustris (Salisb.) Schott var. pubescens (Laws.) Fern. (marsh fern)
[Dryopteris thelypteris var. pubescens (Lawson) Nakai (F)]

T. simulata (Davenp.) Nieuwl. (Catling 1984) (massachusetts fern)
[Dryopteris simulata Davenp. (F)]

ASPLENIACEAE

ASPLENIOIDEAE

R Asplenium ruta-muraria L. (wall-rue)
[A. ruta-muraria var. cryptolepis (Fern.) Wherry (G)(W)]
[A. cryptolepis Fernald (F)]

A. platyneuron (L.) Oakes ex D.C. Eaton (ebony spleenwort)
(Wagner and Johnson 1981)

A. trichomanes L. (maidenhair spleenwort)
Includes two cytotypes - a diploid and a tetraploid (Moran 1982)

A. viride Huds. (green spleenwort)

Camptosorus rhizophyllus (L.) Link (walking fern)
[Asplenium rhizophyllum L.)
Juding by the "intergeneric" hybrids involving this taxon that are known in the U.S.A., it should be considered an Asplenium. It is retained here for historical reasons.

R Phyllitis scolopendrium (L.) Newm. ((american) hart's tongue)
var. americana Fern.
[P. japonica ssp. americana (Fern.) Löve & Löve]
Some European workers consider Phyllitis to be an Asplenium also.

ATHYRIOIDEAE

Matteuccia struthiopteris (L.) Todaro ((american) ostrich fern)
var. pensylvanica (Willd.) Morton
[Pteretis pensylanica (Willd.) Fern. (F)]
[Matteuccia pensylvanica (Willd.) Raymond (W)]

Onoclea sensibilis L. (sensitive fern)

Athyrium filix-femina (L.) Roth ((northeastern) lady fern)
var. michauxii (Spreng.) Farw.
[A. angustum (Willd.) Presl (W)]
[A. filix-femina var. angustum (Willd.) Moore]

A. pycnocarpon (Spreng.) Tidestr. (glade fern, narrow-leaved spleenwort)

A. thelypterioides (Michx.) Desv. (silvery glade fern, silvery spleenwort)

Gymnocarpium dryopteris (L.) Newm. ssp. (oak fern)
dryopteris.
[Dryopteris disjuncta (Ledeb.) Morton F]

Gymnocarpium jessoense (Koidz.) Koidz. ssp. (nahanni oak fern)
parvulum Sarvela (Sarvela 1978, Pryer 1981)

R G. robertianum (Hoffm.) Newm. (limestone oak fern)
(Sarvela et al. 1981) (Pryer 1981)
[Dryopteris robertiana (Hoffm.) Christens. (F)]
Hybrids: (Sarvela 1980, Pryer 1981)

G. dryopteris ssp. Xbrittonianum Sarvela =
G. dryopteris ssp. disjunctum X G. dryopterissp. dryopteris

G. Xintermedium Sarvela (G. dryopteris X jessoense)

Cystopteris bulbifera (L.) Bernh. (bulblet fern)

C. dickieana Sim (Hagenah 1961) (dickie's fragile fern)
[C. fragilis (L.) Bernh. f. dickieana (Sim) Boivin (S)]

C. fragilis (L.) Bernh. (northern fragile fern)
var. fragilis

C. laurentiana (Weath.) Blasdell (laurentian fragile fern)
[C. fragilis var. laurentiana Weath. (F)(G)(S)]

C. protrusa (Weath.) Blasdell (creeping fragile fern)
(Britton et al. 1985)
[C. fragilis var. protrusa Weath. (F)(G)]

C. tenuis (Michx.) Desv. (Moran 1983) (mackay's fragile fern)
[C. fragilis var. mackayi Lawson (F)(G)(S)]

R C. montana (Lam.) Bernh. (mountain lace fern)

Woodsia - Even-stubble section

R W. alpina (Bolton) S.F. Gray (alpine or northern woodsia)
[W. bellii (Lawson) Porsild]

W. glabella R. Br. (smooth woodsia)

W. ilvensis (L.) R. Br. (rusty woodsia)

Hybrids:

W. Xgracilis (Lawson) Butters
(W. alpina x ilvensis)

W. Xtryonis Boivin
(W. glabella X ilvensis)(Tyron 1948)

W. alpina X W. glabella (Soper & Maycock 1963)

Uneven-stubble section

W. cathcartiana Robins. (cathcart's woodsia)
Note: This species is a tetraploid
[W. oregana var. cathcartiana (Robins.) Morton (G)]
[W. oregana var. oregana f. cathcartiana (Robins.) Boivin (S)]

R W. obtusa (Spreng.) Torr. (Britton 1977) (obtuse or blunt-lobed woodsia)

R W. scopulina D.C. Eaton (rocky mountain woodsia)

Hybrids:

W. Xabbeae Butters (W. cathcartiana x ilvensis)
(Butters 1941)
[W. confusa Taylor] (W. ilvensis x scopulina) (Tyron 1948)
(W. ilvensis x oregana)(Peck & Taylor 1980)
My thinking is that there are probably two hybrids above. The first is a sterile triploid (Wagner unpubl.) and the second would be a sterile diploid.

W. Xmaxonii Tryon (W. cathcartiana X scopulina) (Tryon 1948)

DRYOPTERIDOIDEAE

Polystichum acrostichoides (Michx.) Schott (christmas fern)

R P. Braunii (Spenner) Fée (braun's holly fern)

P. lonchitis (L.) Roth (Mills 1985) (holly fern)

Hybrid:

P. Xhagenahii Cody (P. acrostichoides X lonchitis) (Wagner & Hagenah 1954)

Dryopteris (Britton & Soper 1966, Carlson & Wagner 1982)

D. carthusiana (Villars) H.P. Fuchs (spinulose woodfern)
[D. spinulosa (O.F. Muell.) Watt (F)(W)]
[D. austriaca var. spinulosa (O.F. Muell.) Fiori (G)(S)]

D. clintoniana (D.C. Eat.) Dowell (clinton's woodfern)
[D. cristata var. clintoniana (Eat.) Underw. (F)(S)]

D. cristata (L.) Gray (crested woodfern)

D. expansa (Presl) Fraser-Jenkins & Jermy (1977) (northern woodfern, "eastern diploid")
[D. spinulosa var. americana (Fisch.) Fern. (F)]
[D. austriaca (Jacq.) Woynar var. austriaca (G)(S)]
[D. dilatata Gray (W)]
[D. assimilis S. Walker]
Note: The similar appearing species, D. campyloptera Clarkson, a tetraploid, is well known from the Laurentians north of Montreal, but not from Ontario.

D. filix-mas (L.) Schott (male fern)

D. fragrans (L.) Schott (fragrant woodfern or fragrant cliff fern)

D. goldiana (Hook.) Gray (goldie's woodfern)

D. intermedia (Muhl.) Gray (glandular woodfern, evergreen woodfern)
[D. spinulosa var. intermedia (Muhl.) Underw. (F)]
[D. austriaca var. intermedia (Muhl.) Morton (G)(S)]

D. marginalis (L.) Gray (marginal or leathery woodfern)

Hybrids: (Britton 1965, Montgomery 1982)

D. Xalgonquinensis Britton (Britton et al. 1975) (D. fragrans X marginalis)

D. Xbenedictii Wherry (D. carthusiana X clintoniana)

D. Xburgesii Boivin (D. clintoniana X marginalis)

D. Xboottii (Tuckerm.) Underw. (D. cristata X intermedia)

D. Xdowellii (Farw.) Wherry (D. clintoniana X intermedia)

D. Xneo-wherryi Wagner (D. goldiana X marginalis)

D. Xpittsfordensis Slosson (D. carthusiana X marginalis)

D. Xslossonae (Hahne) Wherry (D. cristata X marginalis)

D. Xtriploidea Wherry (D. carthusiana X intermedia)
[D. austriaca var. fructuosa (Gilb.) Morton (G)(S)]
[D. spinulosa var. fructuosa (Gilb.) Trudell (F)]

D. Xuliginosa (A.Br.) Druce (D. carthusiana X cristata)

D. clintoniana X cristata

D. clintoniana X goldiana

D. filix-mas X marginalis

D. intermedia X marginalis

Intergeneric: D. goldiana X Polystichum lonchitis (Wagner and Wagner unpubl.)

BLECHNACEAE

Woodwardia virginica (L.) Sm. (virginian chainfern)

MARSILEACEAE

†Marsilea quadrifolia L. (Webber 1984) (european waterclover)

AZOLLACEAE

Excl. Azolla caroliniana Willd. (mosquito fern)

†Introduced

Table 1: Summary of Ferns

Family	genera	species	varieties and forms	hybrids	excluded
Ophioglossaceae	2	11	2		
Osmundaceae	1	3			
Schizeaceae	1				1
Adiantaceae	4	5			1
Polypodiaceae	1	1			
Dennstaedtiaceae	2	2			
Thelypteridaceae	2	5			
Aspleniaceae					
Asplenioideae	3	6			
Athyrioideae	6	21		8	
Dryopteridoideae	2	12		16	
Blechnaceae	1	1			
†Marsileaceae	1	1			
Azollaceae	1				1
Totals	27	68	2	24	(3)

Total extant taxa recognized - 94.

For the whole of the extant pteridophyta in Ontario, there are 28 genera, 96 species, 4 varieties, 1 form and 31 hybrids for 132 taxa recognized. Peck and Taylor (1980) for Wisconsin reported 27 genera, 82 species, 20 hybrids; two species represented by two varieties and one species represented by two forms, for a total of 105 taxa.

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A FOLLOW-UP ON Ranunculus rhomboideus Goldie (PRAIRIE BUTTERCUP)

Harry Williams, Millbrook, Ontario L0A 1G0

In the first two weeks of May 1984 I was able to confirm the presence of Ranunculus rhomboideus Goldie in all of the locations mapped in Williams (1984; Fig. 3) and to add other locations within the area mapped as well as an extension of range to the east of about 20 km.

Populations in the western portion of the range mapped in my report are small and scattered: there are no large old field habi-

tats like those in Hamilton and Haldimand townships where the species is most abundant. However, these small populations seem to be maintaining themselves. Some have persisted over the past 32 years with little change according to my observations.

One small patch along a field edge west of Millbrook was down to 3 plants in 1984, presumably as a result of recent grazing by cattle. Plants from this site were my first introduction to the species in the early 1950's; a specimen from here is in TRT. Some of the occurrences in the Ganaraska Forest area are along the edges of former fields, which survived as open strips when the fields were reforested in the 1950's; others are along the open edges of forest and township roads. The population cited along Highway 115 in Manvers Township was much reduced in 1984 and would not likely have been visible from a passing car, as it formerly was. Presumably some plants were growing here when the right-of-way was cleared in 1956 and since that time there has been a limited spread of the species into the newly available habitat along the verges.

The eastward extension of range mentioned above is based on the sighting of two good populations in Cramahe Township (Northumberland County). According to the physiographic map accompnaying Chapman & Putnam (1951) these sites are east of the Oak Ridges moraine. I am not giving localities for these as previous citations have apparently resulted in some collecting for transplanting to gardens. It is my impression that the species would be easily grown from seed, and I would urge anyone desiring to cultivate the prairie buttercup to use this method. I will test it myself in the forthcoming season and report my results in due course. This species already grows on my farm, so there is no question of a new introduction to trouble future plant geographers.

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A PRELIMINARY STUDY ON HYBRIDIZATION OF RED AND SILVER MAPLE

Mary I. Moore, 6 Laurier Ave., Box 159,
Deep River, Ontario K0J 1P0

The frequency of hybridization between red maple (Acer rubrum L.) and silver maple (A. saccharinum L.) was first reported for the Ottawa Valley by Dore (1967).

My involvement in the study of these trees and their hybrids began at the Petawawa National Forestry Institute in 1978. Foresters at that time were recommending red maple as an urban shade tree because the widely planted silver maple was no longer considered suitable. Its vigorous rooting habit interferes with drains, branches are susceptible to ice damage, seed can not be stored and leaves turn yellow in the autumn. Red maple, on the other hand, is a smaller, slower-growing tree with seed which can be stored and leaves which turn beautiful shades of red in autumn. Both species flower in early spring. Seeds mature in the Upper Ottawa Valley by late May or early June as the leaves become full-grown.

Cedric Larsson, a forester with the Ministry of Natural Resources, had also noticed many hybrid populations where the two species meet in southern Ontario. Seeds collected from these populations produced trees which could be confused with either parent. These hybrids typically occurred in maple swamps or along flood plains of rivers where trees were surrounded by water in spring. Foresters were looking for dependable characters, readily observed in the field at the time of seed collection, in order to separate the maples from each other and from their hybrids. Since the Canadian Forestry Service was interested, I was asked to do a preliminary study.

Circumstances limited the work to one year but 113 trees were sampled. These included good red maple, good silver maple and what appeared to be hybrids. Range maps (Little 1971; Hosie 1979) show silver maple to be absent from Newfoundland and coastal New Brunswick, but these maps differ for the Upper Ottawa Valley.

A limited number of red maple were sampled in Newfoundland. Specimens were examined in two herbaria in St. John's (NFLD and NFRC). In New Brunswick, what appeared to be both species and their hybrid were collected between St. Andrews and Fredericton. Specimens were examined in two herbaria in Fredericton (AFES and FFB). Collections of red maple, apparent hybrids and possibly a few silver maple were made in the Upper Ottawa Valley at the time of seed maturity. There was no opportunity to collect in central, southwestern or northwestern Ontario.

Table 1. Variation of characters useful in separating red maple and silver maple.

	character	red maple	silver maple
1.	number of leaf lobes	3 or 5	5 or 7
2.	basal lobe size (ratio a:b)	1:8 to 1:4	1:3 to 1:2
3.	terminal lobe size (ratio c:d)	≤1:1.5	>3:1
4.	terminal lobe shape (ratio e:c)	≤1:1.5	>1:4
5.	terminal lobe shape at widest point (ratio e:f)	≤1.5:1	>1:3
6.	sinus between terminal and lower lobes	sides of lobes straight	sides of lobes curved inward
7.	short, straight pubescence on lower leaf surface	absent	present (fairly to quite dense)
8.	minute, curved pubescence	covers lower leaf surface	absent
9.	samara length (cm)	2.5(3?)	5 to 8

In uplands of the Upper Ottawa Valley, away from lakes and rivers, red maple leaves were very similar. In maple swamps, most trees were hybrids, but some could be silver maple. Characters useful in separating red maple from silver maple are shown in Table 1. Positions of the leaf measurements used in ratios are shown in Figure 1.

Specimens examined showed suprisingly little symmetry; opposite leaves and petioles can be distinctly different. Young or damaged red maple often have elongated leaves. At least three kinds of pubescence were seen on the lower surfaces of leaves. In addition to the two forms of short pubescence described in Table 1, long, flexuous, white or brownish hairs were found on both species. Characters found to be not dependable include the width and pubescence of mature seeds, angle of samaras and ratio of leaf width vs. leaf length. Flower characters were not considered since they are not available when seeds are mature and ready to be collected.

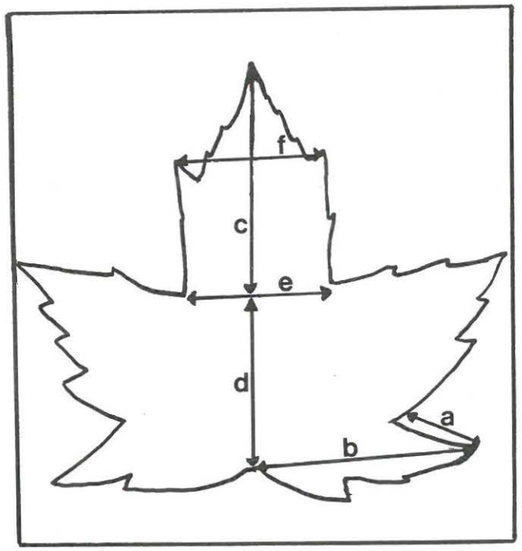


Figure 1. Leaf measurements used in ratios.

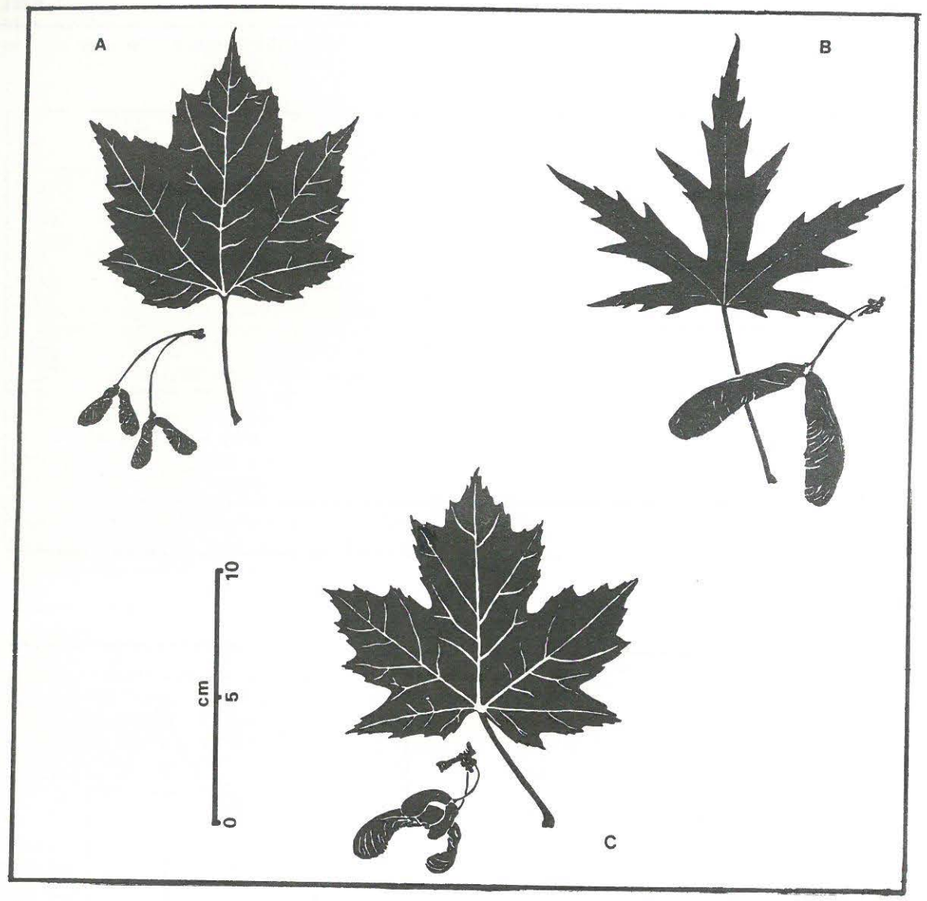


Figure 2. Leaves and samaras of red maple (A), silver maple (B), and their hybrid (C). The silver maple leaf was photocopied by Stephen Darbyshire from a tree "of southern stock" planted at the Biosystematics Research Institute, Ottawa. All other illustrations are by Derek Lister.

For separating the two species, the most useful characters are size and shape of the leaf lobes, especially the terminal lobe. Typical red maple has squarish leaves with three lobes, with or without two smaller lateral lobes (Fig. 2A). Silver maple has leaves deeply cut with five to seven lobes (Fig. 2B). These lobes are typically widest well above the base. Samaras of red maple are small (Fig. 2A). Those of silver maple (Fig. 2B) are 2 to 3 times longer.

Trees with leaves and samaras that do not fit either species may be considered hybrids (2C).

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GILIBERT'S PLANT NAMES

Bill Crins, Department of Biology, Erindale Campus, University of Toronto, Mississauga, Ontario L5L 1C6

Previous papers on nomenclature [The Plant Press 1(4):83-84; 2(2):50-51] have dealt with various aspects of the International Code of Botanical Nomenclature (hereafter ICBN) and how these rules relate to the names of Ontario's plants. This note briefly discusses the specific epithets of Jean Emmanuel Gilibert (1741-1814) and how the ICBN applies to them.

Gilibert (Fig. 1) was a French botanist who taught at the University of Grodno in Poland from 1775 to 1783 before returning to Lyon, France. At least two of his publications, Flora Lithuanica Inchoata (1782) and Excercitia Phytologica (1792), presented new names for European plants, some of which now occur in Ontario. Although he advocated the Linnean system of classification, Gilibert did not always employ the binary system of nomenclature. This is the important point when considering Gilibert's plant names. Article 23.6(c) in the ICBN (1983) states that, "Epithets published in works in which the Linnean system of binary nomenclature for species is not consistently employed...are not to be regarded as specific epithets." Gilibert's publications of 1782 and 1792 fall into this category as he did not consistently use the binary system of nomenclature. Therefore Gilibert's plant names are invalid.

How does this affect the names of Ontario plants? To be correct, we must replace Gilibert's plant names as has been done in Flora Europaea. A list of the Gilibert names used in our floras and the names that should be used in their place are provided in Table 1.

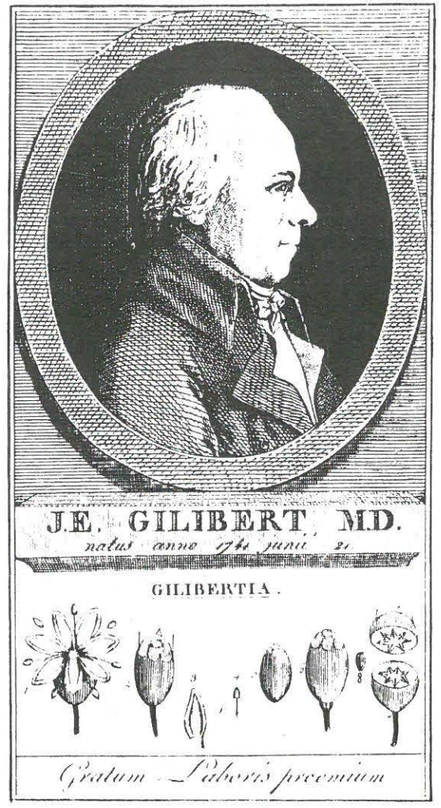


Figure 1. Portrait of Jean Emmanuel Gilibert from a wood engraving from the collection of The Linnean Society of London, presumably by anonymous artisans. Portrait courtesy of the Hunt Institute, Carnegie-Mellon University Pittsburgh, PA, USA.

Table 1. Gilibert's plant names and the names which should replace them. (Abbreviations: F=Fernald (1950); G=Gleason (1952); GC=Gleason & Cronquist (1963); and S=Scoggan (1978-79). References used to determine the correct names include Flora Europaea, ICBN, Taxonomic Literature (Vol. 1) and Linnaeus and the Linnaeans.

Gilibert's plant names	Names which should replace them	(Common names)
Armoracia lapathifolia Gilib. (F)	A. rusticana P. Gaertner, B. Meyer & Sherbius (1800) (incorrectly cited as A. rusticana Gaertn. in G; and A. rusticana (Lam.) Gaertn., Mey. & Sherb. in S)	(horseradish)

cont'd...

(Table 1, continued...)

Gilibert's plant names	Names which should replace them	(Common names)
Centaurium umbellatum Gilib. (F, G, GC)	C. erythraea Rafn. (1800)	(centaury)
Cerastium semidecandrum Gilib. (GC) (probably an editing error in GC)	C. semidecandrum L.	(mouse-ear chickweed)
Coronopus procumbens Gilib. (F,GC,G)	C. squamatus (Forskal) Ascherson (1860)	(wart-cress)
Filipendula hexapetala Gilib. (F,GC, G)	F. vulgaris Moench (1794)	(dropwort)
Lappula echinata Gilib. (F, GC,G)	L. squarrosa (Retzius) Dumortier (the name L. myosotis Moench in S should be replaced by the above)	(stickseed)

NEWS OF FIELD BOTANISTS

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Plant Groups:
- orchids
- grasses and sedges/trees
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- shrubs and vines
- aquatics/"weeds"
- mosses and liverworts
- lichens
- fungi

Subjects:
- identification keys
- individual species
- plant ecology
- new records/botanical activities
- descriptions of unusual vegetation
- conservation
- checklists
- environmental assessment
- nomenclature
- art and illustration

Of all who responded, none indicated that they disliked any articles or columns in The Plant Press. [We can assume that anyone greatly dissatisfied will not resubscribe!] This tabulation should help us to encourage material of interest. However, we can only consider material we receive for publication!

A number of respondents indicated that they liked all subjects, plant groups and columns of The Plant Press equally. We were amused by one reader's comments, "My interests change from day to day as well as from year to year!"

Many thanks to all who responded. A special "thank you" to Wayne McShane for tabulating the results.

Elaine McShane

CAROLINIAN ONTARIO WEEKEND

A spring field trip to old Norfolk County has been planned by the Field Botanists of Ontario for the weekend of 10 - 12 May. The associated meetings, including the first annual meeting of the FBO, will be held at the Minden Manor, 385 Queensway West, Simcoe. Accomodation and dining packages are listed on the registration form (see over).

Norfolk County has long been known as a botanically interesting part of Ontario. The landscape is quite diverse: from marshes to sand ridges, from oak-pine communities to shore cliffs and bogs. And, of course, there are the stands of Carolinian forest offering assemblages of plants not found elsewhere in Canada.

Backus Woods, Spooky Hollow, Delhi Big Creek, Turkey point and St. Williams Forest Station are among the places we will probably visit. You will have an excellent opportunity: to admire tulip-tree, cucumber magnolia, black gum, flowering dogwood and (from a distance!) poison sumac; to see a great variety of spring wildflwoers, such as birdfoot biolet, moss campion, early buttercup, rue anemone and, perhaps, harbinger-of-spring; and to search for elusive beauties such as three-lobed violet and large whorled pogonia.

On Saturday evening Dr. Paul Maycock of the Univeristy of Toronto will give an illustrated talk on the conservation of the Carolinian forest. To help prepare you for what you may encounter on the Saturday and Sunday forays, slides will be shown on Friday night. If you have 3 or 4 slides of typical Norfolk species please feel free to bring them along.

Further details, including a map, will be mailed upon receipt of registration form and payment. Since the Minden Manor would like confirmation of the number of rooms to be reserved a month before the event, please send in form and payment as soon as possible. Those who are not already members of the FBO should also fill in the form below; the $ 8.00 fee is included in the registration cost.

MEMBERSHIP APPLICATION - FIELD BOTANISTS OF ONTARIO

Name _____

Address _____

Postal Code _____ Telephone _____

Fee for 1985 ($ 8.00) enclosed _____

Interests _____

Mail to Robert Hounsell; for address, see over

Supplement to THE PLANT PRESS Vol. 3 No. 1 (March 1985)
Second Class Mail Registration No. 6305

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INFORMATION & REQUESTS

EIGHT-MONTH CONTRACTS FOR FIELD BOTANISTS ONTARIO MINISTRY OF NATURAL RESOURCES SOUTHWESTERN REGION

applications requested by Paul Prevett, Regional Ecologist, Ontario Ministry of Natural Resources, Southwestern Region, P.O. Box 5463, London, Ontario N6A 4L6 (519-681-5350)

Again in 1985, the Ontario Ministry of Natural Resources, Southwestern Region, is looking for qualified field botanists to work out of district offices in the region on an 8-month (approximately) contract basis. Applicants should have (1) a degree in biology or plant sciences or equivalent work experience; (2) demonstrated knowledge of the flora of southwestern Ontario; (3) demonstrated ability in written and oral communication. Previous experience with botanical field inventories is an asset. Applicants should submit a resumé, list of publications and sample of work done to the address above.

CONTRACT POSITIONS FOR FIELD BOTANISTS, ONTARIO MINISTRY OF NATURAL RESOURCES, CENTRAL REGION

applications requested by Jim Griffin, Regional Parks and Recreational Areas Coordinator, 10670 Yonge Street, Richmond Hill, Ontario L4C 3C9 (416-884-9203)

Central Region is looking for qualified field botanists to conduct biological inventories of Areas of Natural and Scientific Interest this summer. Contracts will be of 4 to 8 months duration, working out of district offices. Applicants should have (1) a degree in biology or plant sciences or equivalent experience; (2) knowledge of the flora and plant communities of southern Ontario; (3) good written and oral communication skills; and (4) a valid driver's licence. Previous experience with biological field inventories is preferred.

Apply to the address above with a resumé and details of related experience.

FIELD BOTANISTS OF ONTARIO FIELD TRIP TO THE ALFRED BOG AND THE BURNT LANDS ALVAR IN EASTERN ONTARIO

An eastern Ontario field trip is being organized for FBO members and subscribers to The Plant Press for the weekend of 20 - 21 July 1985. Saturday, 20 July, will be spent at the Alfred Bog, eastern Ontario's largest bog, located about 100 km east of Ottawa. Here we can expect to see Massachusetts fern (Thelypteris simulata), rhodora (Rhododendron canadense), dwarf mistletoe (Arceuthobium pusillum) and a variety of bog orchids including the white fringed-orchid (Platanthera blephariglottis). The bog is floristically rich and has a number of eastern species some of which are found nowhere else in Ontario. The hybrid Aster Xblakei grows with both its parents species (Aster acuminatus and A. nemoralis) and should be in flower by 20 July. By that date, the first blueberries should also be ripe! Participants should be physically fit and capable of a 5 km slog through a typical bog. This will be an all day field trip (leaving Ottawa by 8:30 a.m. and returning by 6:00 p.m.).

On the following day, Sunday, 21 July, there will be another trip to the Burnt Lands Alvar, which is located about 40 km west of Ottawa. Here we can expect to see typical limstone barren/alvar vegetation. The alvar should be yellow with golden ragwort (Senecio pauperculus) by 21 July. We can expect to see a variety of rare and uncommon plants including Cooper's milk-vetch (Astragalus neglectus) and several grasses and sedges (such as Panicum virgatum and Carex richardsonii). The Sunday trip will be concluded by 2:00 p.m. to leave adequate travel time.

To register for the trips and to obtain more information on accomodation in the Ottawa area, meeting times and places, contact Don Cuddy, R.R. #4, Kemptville, Ontario K0G 1J0 (613-258-5953 evenings, or between 7:30 and 8:00 a.m.). The number of participants for the bog trip will be limited to 20, but if enough interest is shown, we may be able to arrange for another leader and run two trips simultaneously. We urge you to register early!

FIELD BOTANISTS OF ONTARIO CAROLINIAN WEEKEND, 10 - 12 May 1985

See the enclosed supplement for details!

(Table 1, continued...)

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- mosses and liverworts
- lichens
- fungi

Subjects:
- identification keys
- individual species
- plant ecology
- new records/botanical activities
- descriptions of unusual vegetation
- conservation
- checklists
- environmental assessment
- nomenclature
- art and illustration

Of all who responded, none indicated that they disliked any articles or columns in The Plant Press. [We can assume that anyone greatly dissatisfied will not resubscribe!] This tabulation should help us to encourage material of interest. However, we can only consider material we receive for publication!

A number of respondents indicated that they liked all subjects, plant groups and columns of The Plant Press equally. We were amused by one reader's comments, "My interests change from day to day as well as from year to year!"

Many thanks to all who responded. A special "thank you" to Wayne McShane for tabulating the results.

Elaine McShane

INFORMATION & REQUESTS

EIGHT-MONTH CONTRACTS FOR FIELD BOTANISTS ONTARIO MINISTRY OF NATURAL RESOURCES SOUTHWESTERN REGION

applications requested by Paul Prevett, Regional Ecologist, Ontario Ministry of Natural Resources, Southwestern Region, P.O. Box 5463, London, Ontario N6A 4L6 (519-681-5350)

Again in 1985, the Ontario Ministry of Natural Resources, Southwestern Region, is looking for qualified field botanists to work out of district offices in the region on an 8-month (approximately) contract basis. Applicants should have (1) a degree in biology or plant sciences or equivalent work experience; (2) demonstrated knowledge of the flora of southwestern Ontario; (3) demonstrated ability in written and oral communication. Previous experience with botanical field inventories is an asset. Applicants should submit a resumé, list of publications and sample of work done to the address above.

CONTRACT POSITIONS FOR FIELD BOTANISTS, ONTARIO MINISTRY OF NATURAL RESOURCES, CENTRAL REGION

applications requested by Jim Griffin, Regional Parks and Recreational Areas Coordinator, 10670 Yonge Street, Richmond Hill, Ontario L4C 3C9 (416-884-9203)

Central Region is looking for qualified field botanists to conduct biological inventories of Areas of Natural and Scientific Interest this summer. Contracts will be of 4 to 8 months duration, working out of district offices. Applicants should have (1) a degree in biology or plant sciences or equivalent experience; (2) knowledge of the flora and plant communities of southern Ontario; (3) good written and oral communication skills; and (4) a valid driver's licence. Previous experience with biological field inventories is preferred.

Apply to the address above with a resumé and details of related experience.

FIELD BOTANISTS OF ONTARIO FIELD TRIP TO THE ALFRED BOG AND THE BURNT LANDS ALVAR IN EASTERN ONTARIO

An eastern Ontario field trip is being organized for FBO members and subscribers to The Plant Press for the weekend of 20 - 21 July 1985. Saturday, 20 July, will be spent at the Alfred Bog, eastern Ontario's largest bog, located about 100 km east of Ottawa. Here we can expect to see Massachusetts fern (Thelypteris simulata), rhodora (Rhododendron canadense), dwarf mistletoe (Arceuthobium pusillum) and a variety of bog orchids including the white fringed-orchid (Platanthera blephariglottis). The bog is floristically rich and has a number of eastern species some of which are found nowhere else in Ontario. The hybrid Aster Xblakei grows with both its parents species (Aster acuminatus and A. nemoralis) and should be in flower by 20 July. By that date, the first blueberries should also be ripe! Participants should be physically fit and capable of a 5 km slog through a typical bog. This will be an all day field trip (leaving Ottawa by 8:30 a.m. and returning by 6:00 p.m.).

On the following day, Sunday, 21 July, there will be another trip to the Burnt Lands Alvar, which is located about 40 km west of Ottawa. Here we can expect to see typical limstone barren/alvar vegetation. The alvar should be yellow with golden ragwort (Senecio pauperculus) by 21 July. We can expect to see a variety of rare and uncommon plants including Cooper's milk-vetch (Astragalus neglectus) and several grasses and sedges (such as Panicum virgatum and Carex richardsonii). The Sunday trip will be concluded by 2:00 p.m. to leave adequate travel time.

To register for the trips and to obtain more information on accomodation in the Ottawa area, meeting times and places, contact Don Cuddy, R.R. #4, Kemptville, Ontario K0G 1J0 (613-258-5953 evenings, or between 7:30 and 8:00 a.m.). The number of participants for the bog trip will be limited to 20, but if enough interest is shown, we may be able to arrange for another leader and run two trips simultaneously. We urge you to register early!

FIELD BOTANISTS OF ONTARIO CAROLINIAN WEEKEND, 10 - 12 May 1985

See the enclosed supplement for details!

BOTANICAL RESEARCH IN PROVINCIAL PARKS

Paul Prevett, Regional Ecologist, Ministry of Natural Resources, Southwestern Region, P.O. Box 5463, London, Ontario N6A 4L6

Although most people seem to be aware that it is unlawful to "pick flowers" in provincial parks, the situation with regard to scientific collecting and research is apparently less well understood. The scope for these activities is made clear in Ontario Regulation 822 of R.R.O. 1980, paragraph 2 made under The Provincial Parks Act, R.S.O. 1980, Chapter 401 (paraphrased in part here).

No person shall:
- damage or deface any natural object
- cut or remove any plant or tree
- remove any natural object
- conduct research

However, the regulation also states that the last three activities are allowed with the written consent of the Minister. Hence, anyone wishing to collect or do research in provincial parks must apply to the Ministry of Natural Resources.

A policy has been developed to handle requests to do research in provincial parks and park reserves. The essentials are outlined below:

A completed application form (supplied to the researcher) is forwarded to the appropriate District Manager(s). Optimally, the proposed research will have the potential to increase the Ministry's ability to plan, protect and manage natural resources in the park. It is recognized, though, that some research will probably not contribute much in this regard, but due to the nature of the study, distribution of the study organism, or for other reasons, it is necessary to do the research in the park. The reasons for wanting to do the study in the park should be clearly stated in the application. It may be useful to discuss the proposed research with Ministry personnel before preparing the application.

The application is reviewed by MNR. It is worth pointing out here that this procedure may take 6 to 8 weeks. (Those of you accustomed to dealing with government red tape will not be surprised at this!) Consequently, applications should be submitted well in advance of the field season.

If approved, the District Manager (acting for the Minister) gives written permission to do the research for not over 12 months. Extension(s) may be granted for an additional 12 months or less if requested in writing, and provided that the intent of the research has not changed.

All specimens and information are the property of Her Majesty the Queen in Right of Ontario. In practice, botanical specimens normally are deposited in a recognized herbarium (first preference for a duplicate being the National Herbarium), and permission to publish results is usually a formality; indeed, researchers are encouraged to publish their findings.

The researcher must submit a final report to the District Manager within 2 years of completion of the project. In addition, 1 copy of all publications, theses, etc. resulting from the research must be supplied.

Researchers are to be supplied with a letter of identification which must be carried while engaged in research activities in a park.

Permission may be revoked at any time if the researcher does not adhere to agreed conditions.

The policy is aimed at formal research projects. But what happens, for example, if a botanist during a casual visit finds a plant that is new to a park, or represents a significant distributional record? What about studies documenting floral lists, when species to be collected are often not known before they are encountered? Outside a park, the plants would normally be collected (unless, of course, they were very rare, threatened or endangered). In a park, plants should be reported to the park superintendent. The location should be marked and accurately mapped to facilitate their relocation. After the plants' status and park records have been checked, a decision will be made on whether to allow their collection or not.

I think most people will realize that the regulations and policy are not meant to overly restrict anyone's activities or decrease their enjoyment of parks. In such a large network (more than 200 parks (approximately) in Ontario) formalized procedures are necessary to properly evaluate potentially negative impacts as well.

research. Overriding concerns are to avoid over-collecting rare species, and to ensure that populations of all species, and communities, are not negatively affected in a park. Accurate records are necessary to keep everyone informed of research activities ongoing in parks. An important objective of provincial parks is to encourage original, innovative research which will lead to effective protection and enhancement of park values.

ENVIRONMENTAL INVENTORY AND PLANNING IN THE KINGSTON AREA, 1984

On 26 October 1984 a workshop on environmental inventory and planning in the Kingston area was held at Queen's Univeristy Biology Station, at Lake Opinicon. Fifty registrants attended this workshop which was organized by the Fowler Herbarium. The workshop brought together naturalists (amateur and professional), environmentalists, consultants, personnel from government agencies including the Ontario Ministry of Natural Resources, Ontario Ministry of the Environment, Parks Canada, the National Museum, the Royal Ontario Museum, and regional planners.

Current inventory projects were described in detail. These included the rare plant atlas project, the atlas of breeding birds, and herpetile surveys. Intensity of sampling, scale, and adequacy of inventory were discussed. Local planners suggested that the level of inventory is above that which can be used in local planning, because of public ignorance; on the other hand, they felt that this same level of detail is inadequate to meet precise queries such as those arising from the siting of hydro lines. Cooperation, coordination, the ownership, the accessibility and the confidentiality of various data bases were major themes during the second half of the day.

The participants valued the interchanges of information and opinion and especially the opportunity to meet. There will be another informal workshop in the fall of 1985.

Adèle Crowder, Fowler Herbarium, Queen's University, Kingston

NATURALISTS' WORKSHOP QUEEN'S UNIVERSITY

The seventh annual Naturalists' Workshop offered by Queen's University, will be held on 18 - 25 May 1985. The workshops are designed for a mixture of amateurs and professionals who want to increase their skills in field identification. These workshops are non-credit, with a diploma given to participants. The intensive programme of field trips is introduced by seminars on taxonomy and ecology; the main focus is on plants, birds, and insects, with shorter sections on mammals, reptiles and amphibians. This year aquatic invertebrates will also be featured. Numbers are limited to 20 and at least 3 instructors go on every field trip.

The workshops are held at Queen's University Biology Station on Lake Opinicon, in the Rideau Lakes. Accomodation, labs and a library are available, and the workshops benefit from the programmes of resident researchers. Field trips use Lake Opinicon and neighbouring wetlands, and a great variety of terrestrial habitats on the station lands, which are on the edge of the Precambrian Shield.

For details, contact Adèle Crowder, Department of Biology, Queen's University, Kingston, Ontario K7L 3N6 (613-547-6675).

A BEGINNERS' COURSE IN WILDFLOWER IDENTIFICATION

Since first offering bird courses in Toronto in 1981, my wife, Joy, and I have been asked to run a beginners' course on wildflowers. We approached the idea with trepidation. I had done little serious botanizing since leaving the U.K. in 1949. Not only are many of the flowers here different, but the taxonomy, nomenclature and even the pronunciation of scientific names is quite different today. In 1983 we looked at the possibility seriously, and I found I was not so rusty as I had imagined. Botanizing seems a little like learning to ride a bike; you never forget how to ride! The challenge then was to develop a short course that would be easy enough for absolute beginners, but which would also give them an interest to go further by themselves.

Apart from the sheer number of species and the subtlety of some taxonomic characters, we feel

tnat nomenclature, technical terminology and complex keys are tne things that most inhibit beginners. Accordingly we try to minimize all three of tne latter, wnile at the same time introducing enough information to demonstrate tnat tnese tnree topics are not so fearsome as tney first appear! We also briefly touch on plant associations and distribution, but the main thrust of the course is to work through the larger families, discuss their superficial characteristics and compare them with other families and other species which could conceivably confuse the beginner.

Most of this is done with slides of the more conspicuous plants. We were able to supplement our own extensive slide collection with material generously loaned to us by Dr. Donald Gunn. In this way we have been able to illustrate most of the common species which the beginner is likely to encounter.

In looking for a suitable reference book we reviewed the current crop of field guides and finally selected the Peterson field guide (Peterson & McKenny. 1968. A field guide to Wildflowers) as best suited to our purposes. We wanted a reasonably comprehensive guide tnat used a superficial and basic approach, but whicn also worked if the user had diagnosed the family first. Hence this book, which includes symbols for the family of each species listed, can be used to check an identification with family characteristics. We also found the Peterson field guide surprisingly complete for the more common and conspicuous wildflowers of the Toronto area, although we have prepared for course participants a supplementary listing of other species not mentioned in the guide.

The class is six weeks in duration and so far we have had very positive feedback from those who took the first series offered in March 1984. If the course yields similar results to our bird courses, it will be a useful complement to the program of the Toronto Field Naturalists, thus helping to build interest in their Botany Group and to stimulate awareness of wildflowers.

The next series of sessions begins at Northern District Library (Yonge St. and Eglinton Ave.) on 22 March 1985. These may not be of interest to readers of The Plant Press directly, but should be useful for beginners who desire a concentrated overview of wildflowers in the Toronto area. Such persons should phone us at (416) 249-9503 for more information.

Clive E. Goodwin, Toronto

BOTHAM AND KIRK HERBARIA DONATED TO THE NATIONAL HERBARIUM (CAN)

The Wilfred Botham Herbarium was donated to the National Herbarium by Wilfred Botham of Cottam, Ontario. Mr. Botham started his personal herbarium in 1937 and upon its donation in 1981, it included some 2,500 specimens of vascular plants. The main part of this collection is from Essex County, Ontario. Specimens include many new plant records for the county, the province, and even for Canada. Representative collections from southwestern and central Ontario are also included. [Many of Wilf's collections are in DAO.]

Malcolm Kirk of Ravenna, Ontario gave his personal herbarium to the National Herbarium in 1983. This herbarium included approximately 1,500 specimens collected from 1935 to 1963 by Malcolm Kirk, Donald W. Kirk and Donald A. Kirk. Collections taken mainly from the area between Muskoka, the Bruce Peninsula and Toronto include several first records for Ontario. Other specimens were gathered on a field trip to the Moose River area of northern Ontario in 1940.

Mike J. Shchepanek, Collections Manager,
Botany Division,
National Museum of Natural Sciences,
Ottawa, Ontario K1A 0M8

NATIONAL WILDFLOWER RESEARCH CENTER (NWRC), Austin, Texas

Based on the idea of its first sponsor, Lady Bird Johnson, NWRC was founded in 1982. Research staff and volunteers at NWRC promote propagation of native and naturalized plants with a view to creating self-sustaining, ecologically appropriate plantings. The first Director, taxonomist David Northington, sees NWRC as a catalyst stimulating research by other organizations.

In addition to planting experiments at NWRC, this organization is disseminating information through publications, workshops and symposia. Information about wildflowers from throughout North America is being compiled for a computerized information clearinghouse. Kathryn Kennedy, Associate Director of Research, recently sent us several pages of information relevant to Ontario. This information includes a list of wildflowers in a seed mixture, names and addresses of companies that offer wildflower seed, and a list of reference books on wildflower propagation. As clearly stated on the information sent, NWRC does not necessarily endorse materials listed; at this time it is just interested in compiling available information.

NWRC would like to obtain information from our readers. Below is a wildflower seed mixture compiled by the Applewood Seed Co. of Colarado. This mixture is called "Midwest Mixture" and Ontario is one of the areas for which it is recommended. What do field botanists think of its suitability for Ontario?

Scientific Name	Common Name	Type*	Color
Achillea filipendulina	Gold Yarrow	P	Gold
Achillea millefolium	White Yarrow	P	White
Aquilegia vulgaris	Dwarf Columbine	P	Red/Violet Blue
Centaurea cyanus	Cornflower	A	Blue
Cheiranthus allionii	Wallflower	B/P	Orange
Chrysanthemum leucanthemum	Ox-Eye Daisy	P	White
Coreopsis lanceolata	Lance-Leaved Coreopsis	P	Yellow
Delphinium ajacis	Rocket Larkspur	A	White/Pink/Blue/Violet
Dianthus barbatus D. deltoides	Pinks	P	Pink/Red/White
Dimorphotheca aurantiaca	African Daisy	A	White/Orange/Salmon
Echinacea purpurea	Purple Coneflower	P	Purple
Gaillardia pulchella	Annual Gaillardia	A	Yellow/Red
Gypsophila elegans	Baby's Breath	A	White
Hesperis matronalis	Dame's Rocket	P	Violet
Iberis umbellata	Candytuft	A	White/Pink/Violet
Liatris spicata	Gayfeather	P	Purple
Linaria maroccana	Spurred Snapdragon	A	Pink/Yellow/Violet
Linum grandiflorum rubrum	Scarlet Flax	A	Scarlet
Lupinus perennis	Perennial Lupine	P	Blue
Lychnis chalcedonica	Maltese Cross	P	Scarlet/Rose/Salmon
Machaeranthera tanacetifolia	Prairie Aster	B	Violet
Oenothera missouriensis	Dwarf Evening Primrose	P	Yellow
Papaver rhoeas	Corn Poppy	A	White/Pink/Red
Ratibida columnifera	Prairie Coneflower	B/P	Yellow/Red
Rudbeckia hirta	Black-Eyed Susan	A/B/P	Yellow
Silene armeria	Catchfly	A/B	Pink

Please send us your comments and we will compile them for a subsequent issue. Copies of relevant correspondence will be forwarded to NWRC. Those interested in obtaining the NWRC's publication, Wildflower, should write to the National Wildflower Research Center, 2600 FM 973 North, Austin, Texas 78725.

SOME NEW ORGANIZATIONS

Essex County Field Naturalists' Club was founded in 1984. Its publication The Egret is edited by Mike Oldham and printed by the Essex Region Conservation Authority. Fees for 1985 membership are $ 10.00 for individuals and $ 15.00 for families. Cheques should be made payable to the Essex County Field Naturalists Club and mailed to P.O. Box 3421, Tecumseh, Ontario N8N 3C4.

The Canadian Wildflower Society was started in late 1984. The first issue of its publication Wildflower appeared recently, edited by James French and sponsored by Prudential Insurance. An attractive offering, it features articles on the "how to" of growing various native plants. Membership is $ 15.00 per year and may be sent to 35 Bauer Crescent, Unionville, Ontario L3R 4H3

If this group does become as widespread as advertised, it is important that gardeners not be encouraged to transplant rare or endangered plants unless some compelling justification exists.

ONTARIO PLANTS IN PRINT

The Trilliums of Ontario by James S. Pringle. Revised in 1984. Technical Bulletin No. 5 (3rd edition), published by the Royal Botanical Gardens, P.O. Box 399, Hamilton, Ontario L8N 3H8. 27 pp. $ 2.40.

reviewed by Sheila McKay-Kuja, Department of Botany, University of Toronto, Toronto, Ontario M5S 1A1

J.S. Pringle's "Trilliums of Ontario" was first published in 1970. It has been revised twice, first in 1976. This latest revision was prepared in honour of Ontario's Bicentennial (1784-1984) and is a very handsome tribute to our native trilliums! It is particularly appropriate since the white trillium is our provincial flower.

In terms of sheer aesthetic impact there is no comparison between this colourful bulletin and the earlier black and white editions. The seven pages of colour photographs (many of which were taken by D.R. Gunn) are especially complementary to the publication. Aside from the close-up on the cover, four full-page photographs show our native species: Trillium grandiflorum (white trillium), T. erectum (red trillium), T. undulatum (painted trillium) and T. cernuum (nodding trillium). Three additional pages are devoted to photographs of habitat and aberrant forms of the white trillium. A page of line drawings has been added to act as an illustrated glossary. Two

maps have been included: one showing the world-wide distribution of the genus; the other, by J.H. Soper, indicating the Ontario distribution of T. grandiflorum as previously published in the Bulletin of the Federation of Ontario Naturalists No. 92, p. 6 (June 1961). Allen Paterson, Director of the Royal Botanical Gardens, has written an introductory page. The bulletin has indeed been revised with many additions and deletions.

The most up-to-date taxonomic treatment has been applied and references given to ongoing research. Accounts of various trillium introductions in Ontario are discussed. Although a list of contents is lacking, several new headings have been added: variations and aberrations, where to see trilliums in Ontario, and traditional and historic uses of trilliums. The first and last of these topics were previously treated under different sections. The conservation section has been expanded, however, reductions have been made elsewhere. Approximately 6½ of the 31 pages in the 1976 edition were used for illustrations (drawings or photographs), while this is true of 9½ of the 27 pages of the 1984 edition. In addition, the lower quarter to half of several pages have been left blank rather than begin a new topic. The text has of necessity been shortened. The reference list has been trimmed from 70 entries to 37. The distribution and habitat descriptions of our native species have been updated, made more succinct and additional discussion eliminated.

To me it seems unfortunate that some interesting portions of the previous bulletin were not repeated, i.e. the illustration comparing leaves of the four native species, the discussion of common names for the red trillium, comparison of the pale yellow phase of the red trillium with the white trillium, the explanations of Latin names, etc. It does not seem so essential to include a map of the distribution of the genus, since the information is given in the text and no further mention made of how this particular pattern may have arisen. The page saved here might have allowed for those interesting notes about the species to be retained. Perhaps too, it might have been better to show a current map of the Ontario distribution of the white trillium, simply to have the 1984 distribution. All in all, "Trilliums of Ontario" is full of historical, scientific and horticultural information presented in an attractive way in honour of Ontario's Bicentennial.◆

The Flora of Manitoulin Island by J.K. Morton and J.M. Venn. Illustrated by D.R. Gunn. Second revised edition. 1984. University of Waterloo Biology Series No. 28. Published by and available from Department of Biology, University of Waterloo, Waterloo, Ontario N2L 3G1. 181 pp. (incl. 124 coloured photographs) plus 106 pp. of maps. $ 20.00.

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reviewed by P.W. Ball, Biology Department, Erindale College, University of Toronto, Mississauga, Ontario L5L 1C6.

Although described as the second edition of the "Flora of Manitoulin Island" the scope and content of this edition differ so substantially from the first that no real comparison is possible. Compared with most county or local Floras published in North America this is a very ambitious work indeed, although local Floras of similar scope have appeared in Europe. There is a lengthy introduction which covers such topics as climate, geology, history of botanical exploration, vegetation, phytogeography, etc. This is followed by the main Flora which constitutes the bulk of the text. The authors claim to follow Fernald (Gray's Manual of Botany, ed. 8, 1950) in their arrangement, but only the families are arranged in taxonomic order. Even here the authors have introduced changes in the delimitation of families so that several family names will be unfamiliar (e.g. Molluginaceae, Fumariaceae, Menyanthaceae, Cupressaceae). Genera and species are arranged alphabetically within families and the authors have made numerous nomenclatural and taxonomic changes (compared to Fernald) which will be unfamiliar to many Ontario botanists (e.g. the genera Zosterella, Chamaesyce, Gentianopsis, Calystegia, Acinos, Leucophysalis and Balsamita). There is some inconsistency here since although the segregate genera of Satureja and Euphorbia are accepted, the segregates of Polygonum which appear to be just as soundly based are ignored. In the Caryophyllaceae the generic taxonomy follows the most recent European treatments, so that Lychnis alba is now placed in Silene (as S. latifolia) and the segregates of Arenaria (Minuartia and Moehringia) are accepted. On the other hand Dentaria is kept separate from Cardamine although on a world-wide basis such a separation is patently unsound. It would be possible to quote a similar variety of changes and inconsistencies at specific level (including the next chapter in the Oxalis corniculata saga), but such a list would take up too much space. The absence of a reasonably up-to-date Flora of Ontario makes such changes inevitable. Unfortunately, "Flora of Manitoulin Island" lacks an adequate index or system of cross-referencing (particularly of species) so that species given unfamiliar names in this work may be difficult to track down.

The information given for each species is relatively detailed. There are comments on abundance, habitat, distribution on the Island and flowering or fruiting season. Often there are aids to identification or lengthy discussion of taxonomic problems. Most taxonomic changes at specific rank are adequately referenced. "Flora of Manitoulin Island" is unusual in providing keys to groups of species or rarely to all the species in a genus. Salix is provided with three keys (one each to foliage, staminate and pistillate specimens). Although the keys are intended as aids to the identification of difficult groups of species they rely most on easily seen qualitative characters. For example, the key to Carex section Laxiflorae will almost certainly lead to misidentification since C. leptonervia can have as many as 4 nerves on each side of the perigynium not just one. Likewise the separation of C. blanda from C. laxiflora on leaf width alone is not very reliable. Carex hitchcockiana is mentioned as a species which is liable to be confused with Laxiflorae, but a far commoner source of confusion is C. granularis. In general the keys are useful for making a quick identification in the field, but such identifications should be later verified using more reliable, but perhaps more difficult characters.

The authors have taken a rather liberal view of what constitutes a member of the Flora. Horticultural relicts are included, many of which appear to be persisting only in the places where they were originally planted or on the rubbish tips where they were discarded. Whilst the status of such species is made clear in the text, they are otherwise treated on a par with widespread and clearly naturalized aliens such as Silene latifolia, S. vulgaris (S. cucubalis) and Leucanthemum vulgare (Chrysanthemum leucanthemum).

The second major section of "Flora of Manitoulin Island" consists of 1051 distribution maps, all species being mapped except taxa known from only one or two sites. These maps are based on the UTM grid system, 5 km squares being used as the basic unit. This is sufficiently small to give a reasonable overview of the distribution of a species on the Island. Such maps do not necessarily give a clear picture of abundance, but if used in conjunction with the text they provide a great deal of information about a species. My only quibble here is that the authors give no estimate of the thoroughness of their coverage. An additional map giving an indication of the number of species recorded from each square would have been helpful.

Last, but not least, "Flora of Manitoulin Island" is illustrated with 124 coloured photographs, nearly all close-ups of one or a few flowers. Apart from their aesthetic quality they are nearly all helpful aids to identification. The colour reproduction is excellent except for the bright reds which are rather muddy. The subtle shades of pink, purple, violet and blue, which often cause difficulties, are almost always accurate, although the colour of Geranium pratense and one or two other species is washed out and Epilobium angustifolium is much too blue.

Although this review may seem critical, this is because the authors have packed a great deal of information into this "Flora of Manitoulin Island" and have not been satisfied to produce a routine, uncritical list. Anyone seriously interested in the flora of southern Ontario should purchase a copy and it is essential reading for anyone contemplating writing a county or similar flora.◆

The Biology of Canadian Weeds contributions 33-61. edited and compiled by G.A. Mulligan. 1984. Agriculture Canada. 415 pp.

This second volume of a series on the names, variation, economic importance, geographic distribution, habitat, life history and response to herbicides, etc., of Canadian weeds is now available. Originally published as individual papers in the Canadian Journal of Plant Science, all 28 entries include vascular plants which occur in Ontario. Aliens such as Myriophyllum spicatum (Eurasian water milfoil), Arctium minus and A. lappa (burdock) and Alliaria petiolata (garlic mustard) are included, as well as native species such as Prunus virginiana and P. serotina (choke cherry and black cherry).

Free copies of this publication (No. 1765) may be obtained from Communications Branch, Agriculture Canada, Ottawa, Ontario K1A 0C7.

EDITOR	Jocelyn Webber	3120 Kirwin Ave., #408, Mississauga, Ontario L5A 3R2
EDITORIAL COMMITTEE	Wilfred Botham	R.R. 1, Cottam, Ontario N0R 1B0
	Wm. E. Cattley	R.R. 2, Orillia, Ontario L3V 6H2
	Stephen Darbyshire	7 Braemar Street, Ottawa, Ontario K1K 3K3
(Ontario Plants in Print)	Bruce Ford	24 Zircon Ct., Willowdale, Ontario M2H 2A1
(News of Field Botanists)	Elaine McShane	15 Kingsview Blvd., Brampton, Ontario L6Y 1C5
	Richard Sims	Great Lakes Forest Research Centre, P.O. Box 490, Sault Ste. Marie, Ontario P6A 5M7
	Bruce Thacker	374 Van Norman Street, Thunder Bay, Ontario P7A 4C3
ARCHIVES	Wm. G. Stewart	6 Yarwood St., St. Thomas, Ontario N5P 2Y3
BUSINESS MANAGER	Jeff Kaiser	

OBJECTIVES OF THE PLANT PRESS

To provide a medium for communication among Ontario field botanists by:

1. distributing information on the activities of Ontario field botanists;
2. reporting on projects and research in progress;
3. distributing information on plant distributions, identification keys, field equipment and methods;
4. monitoring publications about plants in Ontario with reviews where appropriate;
5. encouraging publication by field botanists, both in The Plant Press and other publications.

OPINIONS EXPRESSED IN THIS PUBLICATION ARE NOT NECESSARILY THOSE OF THE EDITORIAL COMMITTEE OR THE BOARD OF DIRECTORS

SUBMISSIONS

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 some scientific journals, we request that articles be well written and in the style of this publication. Contributors are encouraged to ask qualified persons to appraise their work before submission to The Plant Press. We request 3 copies of typed, double-spaced manuscripts whenever possible.

Non-subscribers must 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 appears. Submissions in excess of 3 pages may be subject to a page charge.

DEADLINES

A minimum of 3 months is needed to review most submissions. Material for 'Information & 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 for this publication. Black and white photographs are preferred, but figures can be made from colour slides. Those submitting more than one figure per article may be asked to pay for the cost of figure production.

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

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