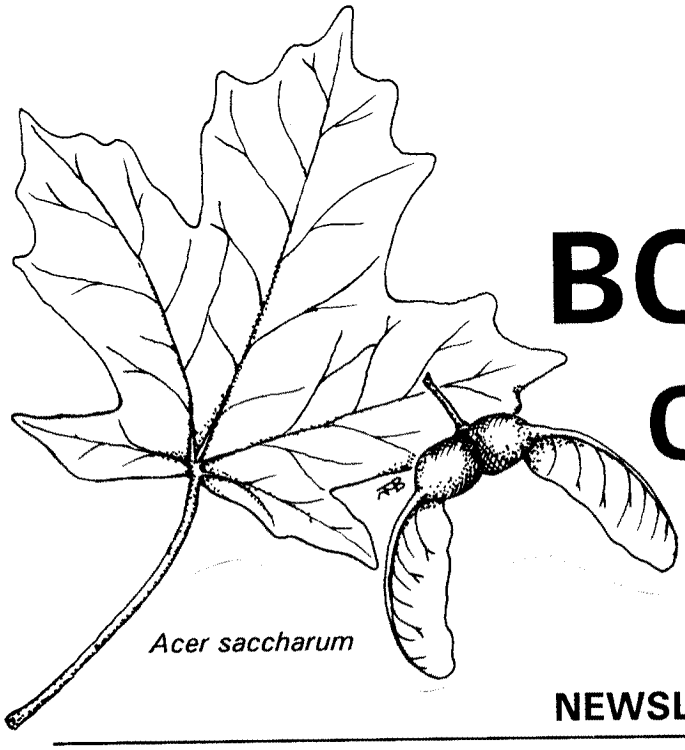


Acer saccharum

FIELD BOTANISTS OF ONTARIO

ISSN: 1180-1417

NEWSLETTER

Fall 1992

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UPCOMING FIELD EVENT
WINTER BOTANY: *November 29, 1992*

There is one remaining FBO field trip planned for 1992. Dr. Jim Eckenwalder is leading an expedition to look at winter twigs in Mt. Pleasant Cemetery, followed by a laboratory session at the University of Toronto. There is still plenty of space on this trip. Call Bill Draper (416)-921-6914 for more information.

!! MEMBERSHIP RENEWALS !!

FIELD BOTANIST OF ONTARIO MEMBERSHIPS FALL DUE AT THE BEGINNING OF THE CALENDER YEAR. PLEASE HELP US BY USING THE FORM ENCLOSED WITH THIS NEWSLETTER TO RENEW YOUR MEMBERSHIP AS SOON AS POSSIBLE.

FIELD BOTANISTS of ONTARIO

NEWSLETTER
Published quarterly by the FBO
ISSN: 1180-1417

The FBO is a non-profit organization founded in 1984 for those interested in botany and conservation in the province of Ontario.

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Member at Large:	Deborah Metsger	(416)-267-4803
Editor:	Jane Bowles, RR #3, THORNDALE, Ontario, N0M 2P0 Telephone: (519)-461-1932	

We welcome Vicki Young, who replaces Don Cuddy as Secretary, as an FBO Executive Board member.

CALL FOR NEWSLETTER MATERIAL

Do you have any botanical information or experience you wish to share with other FBO members?
Why not write an article for the FBO Newsletter?

MINUTES OF THE 1992 FBO ANNUAL GENERAL MEETING DELAWANA INN, HONEY HARBOUR, ONTARIO, SEPTEMBER 12, 1992

The meeting was called to order by current president, George Bryant at 9:45 pm.

Approval of the 1991 AGM Minutes: D. Metsger moved, J. Tiedje seconded that the minutes of the 1991 AGM be approved; motion carried.

Treasurer's Report: Ilmar Talvilla presented the financial statement of the FBO for the period Sept. 1, 1991 to Aug. 31, 1992. A summary handout was distributed. The statement was audited by John Tiedje. Moved by I. Talvilla, seconded by B. Bowles that the statement be approved; motion carried.

Committee Reports:
Membership: Report presented Bill McIlveen. To date there are 199 paid memberships (about 250 if family members are included). No camparison of individual versus family members has been made at this time. Memberships are down slightly from this time in 1991.

Field Events: Report presented by Deborah Metsger. A total of 11 field trips and 2 workshops were held in 1992. Total registration for field trips was 155 (not including board members and leaders). There was a 7% cancellation rate and 4% of registrants were no shows. These figures are on par with the previous year. The changes to the registration system. i.e. a single calendar, has received good response. The policy of having an FBO executive member on each trip has proven to be useful for contingency (eg. Minesing Swamp outing).

Annual Report of the President: George Bryant gave a verbal report to the members, presenting accomplishments over the past year and future plans for the organization over the next few years. The Board has assembled complete archives of all FBO activities and correspondence from its beginning in 1984. George will remain as FBO representative on the F.O.N. and N.H.L. (Natural Heritage League). Over the following year it is intended to segregate the planning and organization of workshops from field events. Future plans may also include the production of special publications and involvement in voluntary naturalist projects.

By-law ratifications:
a) **Life membership:** Moved by G. Bryant - Under Article 3 of the constitution that life membership be $250. Seconded by E. Gillan. Motion carried.
b) **Term of office:** Moved by G. Bryant - Under Article 11 of the constitution that the words "Officer" be replaced by the words "President" and "Vice-President". Seconded by B. Crins. Motion carried.

1993 AGM: For 1993 George Bryant suggested that the format of the AGM be changed to a one day indoor meeting near Toronto followed by a field trip the following day. The AGM would be held in early to mid autumn.

Election of Officers - 1992-93 Board: The slate of nominations is as follows:

President: George Bryant
Past-President: Donald Kirk
Vice-President: Bob Bowles
Treasurer: Ilmar Talvilla
Secretary: vacant
Membership: Bill McIlveen
Member: Jane Bowles (Newsletter Editor)
Member: Bill Draper (Field Trip Coordinator)
Member: Deborah Metsger

It is expected that the single vacancy will be filled by the next executive meeting.
Moved by D. Kirk, seconded by D. Tiedje that the list of officers be approved; motion carried.

The meeting was adjouned at 10:20 pm.

FIELD BOTANISTS OF ONTARIO ANNUAL REPORT 1991-1992

It has only been eight years since the formation of the Field Botanists of Ontario. Events of the past year indicate that we have reached a good level of credibility and recognition amongst the Ontario botanical community at both the professional and amateur level.

The FBO is now incorporated. This has enabled Revenue Canada to grant us charitable status, and has allowed us to establish a Life Membership category. The Life Membership fees are presently $250. Charitable receipts will be issued for $238 ($250 less the first year's membership dues of $12). A separate fund will be established to ensure that tax deductible contributions (including life memberships) are dedicated to approved expenses such as special publications. We now await our first life member.

During the past year, two amendments were made to the constitution as by-law changes. Both of these were approved at the 1992 AGM. The first amendment sets the life membership dues. The second amendment allows officers other than the President and Vice-President to remain in office for more than three years. This meant that the treasurer did not have to resign because of a three-year constitutional requirement, when neither he nor the executive wished him to step down.

Our finances are in good shape with our highest bank balance being attained this year. I am pleased to report that the FBO now has an auditor. Recommendations by the auditor will assist both the treasurer and the executive in maintaining our financial records.

Over the past year we have established an archival file. Copies of newsletters, executive and AGM minutes, financial reports and field event materials are now in stored in one location. If you have any old FBO files which may be of interest, please let a member of the executive know.

This past year saw the retirement of our secretary, Donald Cuddy. Don has been an executive member since the founding of the FBO in 1984. His contribution will be missed.

The FBO is fortunate to have a committed and enthusiastic executive. The results of their efforts have been very rewarding. The Newsletter speaks for the editor. Our field events program was again successful and workshops had the highest number of registrations this year. Membership levels remained stable. The success of the AGM, including the superb weather, excellent program and the sighting of a gravid Massasauga Rattlesnake on the Beausoleil Island tour, are all as a result of the efforts of our Vice-President.

Given the successes of the past year, we are all looking forward to next year's workshops, field events, special projects and annual meeting with a real sense of anticipation and excitement.

George Bryant
President

FIELD BOTANISTS OF ONTARIO
FINANCIAL STATEMENT

			Sep 1, 1991- Aug 31, 1992			Jun 1, 1990- May 31, 1991
Bank balance, September 11, 1991			$ 7250.22			$ 3337.38
REVENUE						
Memberships	$ 2313.00			$ 3263.00		
Field Trips	3171.00			5013.25		
AGM	742.28			--		
Bank interest	104.86			93.04		
U.S. exchange	25.39			15.58		
Donations	13.00		6369.53	28.00		8412.87
			$ 13619.75			$ 11750.25
EXPENSES						
Field Trips	1954.93	(1)		4001.46	(5)	
Leaders' honoraria	1125.00			--		
AGM	2502.76	(2)		--		
Newsletter	1900.00	(3)		2308.17		
President	409.04			147.63		
V.P.	--			47.47		
Membership	16.63	(4)		106.00		
Treasurer	24.97			45.00		
Incorporation	329.73			82.22		
FON Membership	100.00			25.00		
Bank charges	29.85		(8391.91	16.89		(6779.84
Bank balance, August 28, 1992			$ 5227.84	(6)		$ 4970.41

Notes:

1. Includes phone calls, postage, photocopy, FAX, envelopes, food, donations.
2. Expenses shown are for 1991 AGM.
3. Newsletter account contained $698.50 (June 19, 1992).
4. From previous membership chairman.
5. Includes leaders honoraria.
6. Outstanding expenses: $900.10: revenue: $608.40.

REPORT ON THE *SALIX* WORKSHOP

In the middle of a night this past winter, an executive member of the Field Botanists of Ontario awoke in a cold sweat. Instead of "visions of sugar plums" this Ontario Hydro employee had dreamt of doing a vegetation transect through the middle of a vast *Salix* thicket (for a hydro corridor from the Bruce Generating Station to the "Tainted Horseshoe"). Unable to differentiate Sandbar Willow (*Salix exigua*) from Peach-leaved Willow (*S. amygdaloides*), and let alone Pussy Willow (*S. discolor*) from Slender Willow (*S. petiolaris*) or Beaked Willow (*S. bebbiana*), this botanist was worried and decided to take recourse.

On the morning of June 6, 1992, members of the FBO gathered at the entrance to Sandbanks Provincial Park, greeted by a steady, but undaunting sprinkle of rain. There are numerous plant genera which strike a chord of apprehension amidst botanists (both neophyte and professional/less neophyte). Such genera include *Crataegus*, *Salix*, *Carex* and many other graminoids. This was the weekend for *Salix*!

Our leader for the trip was George Argus, an internationally recognized Willow-person heralding from the Canadian Museum of Nature, and one of Canada's foremost botanists. His many years of field and lab experience with the difficult *Salix* genus have taught him many invaluable botanical tenets, and how to identify most willows. If it has taken his dedicated lifetime to sort out most of the continent's willows, the difficulty in unravelling and quantifying the world's biodiversity (perhaps 30 million species) becomes supra-apparent.

We began our course on willows by learning some basic properties of the genus *Salix*, as well as some essential terminology. Willows are dioecious, in that there are both male and female plants. The flowers are borne in catkins (also called aments, both terms meaning "cluster of flowers"), with each flower subtended by a bract (scale) and one to several glandular nectaries. The male flowers typically have 2 stamens, but occasionally as many as 8, whereas the female flowers have a single style and 2 stigmas.

The development of the catkins in temporal relation to the leaves is an important character, which allows for a quick recognition of some species. If the catkins appear precociously (before the leaves unfold) they are also sessile on short, bracteate branchlets. Conversely, if the catkins appear at the same time as the leaves unfold (coetaneously), or after they have expanded (serotinously), they are on distinct, leafy shoots.

We also spoke briefly of habitat preferences - willows typically enjoy moist to wet mineral soils, in relatively open or early-successional habitats.

Dr. Argus also stressed two more important points before we set out:

1. Willows are difficult to identify for a number of reasons. The plants are unisexual, and though flowering specimens are ideal, they are not always available. Identification characters are exceedingly variable and species hybridize prolifically. Keys are not always available for staminate, pistillate or vegetative specimens. In addition, the genus is diverse; there are 43 taxa in Ontario (Morton and Venn, 1991), including 6 hybrids (likely many more) and 13 introductions.

2. The best way to identify a plant is to "get to know it", so that cerebral integration of characters leads to an identification, rather than a sole reliance on one or a few field characters, which often lead to mistakes due to the vagaries of botanical variation. Keys are merely a taxonomist's attempt at enabling someone unfamiliar with the taxon to identify it simply, which often isn't possible. This tenet of plant taxonomy was expressed eloquently by Abbey (1977):

> "We think we perceive character or "personality" in the shape, face, eyes of our fellow humans; why not find something similar in the appearance of plants?"

It was now time to see some willows and, to the serenade of a Pine Warbler and the continued patter of rain, we issued forth. Our first stop was a sand dune community at Sandbanks. Here, a typical dune species, Sand-dune Willow (*Salix cordata*, the specific

epithet referring to the heart-shaped leaf base) was prevalent. Dr. Argus allowed willow-specimen collecting on the trip as this "pruning" seems somewhat beneficial to the willows. However, we first learned willow collecting etiquette. Shears, scissors or a good knife are essential. Ideally, a pistillate branch should be collected, but if this isn't available, a staminate branch or a "typical" vegetative branch (not a vigorous leafy shoot) will suffice. Aments can be collected below the shrub if they have fallen, but ensure that they are from the same shrub as the leaves.

We also found Pussy Willow (*Salix discolor*, epithet referring to the contrast between dark green upper surface of the leaves and pale under surface), Beaked Willow (*Salix bebbiana*, named for M.S. Bebb, a willow expert of the mid-1800's) and Slender Willow (*Salix petiolaris*). For each species we discussed diagnostic features, ecology and confusingly similar species. We also encountered some likely hybrids (i.e. *S. discolor* X *S. bebbiana*), which evinced the commonality of hybridization.

We also learned of the fascinating morphology of dune-stabilizing willows. Germinating when only a young dune was present, the shrubs grew as sand accumulated, so that leafy shoots at the dune's present apogee are but the terminus of an ancient, living vascular system which extends downwards to the dune base, where precious water is contacted by the roots.

There were also many Crack Willow hybrids (*Salix* X *rubens*, a fertile hybrid between *S. alba* and *S. fragilis*) in moist sites. This is the most common cultivated tree willow in southern Ontario, and although *S. fragilis* is often reported for the province, Dr. Argus finds none of the records convincing and feels they represent this hybrid.

At our second stop was a small thicket swamp dominated by Sandbar Willow (*S. exigua*), which is characterized by its remotely toothed leaves and rampant reproduction of clones by root shoots, so that large, unisexual stands are often found. Also present was Peach-leaved Willow (*S. amygdaloides*, epithet referring to leaves like those of the Peach tree), which is usually a scruffy, small tree in moist areas, with dead lower branches and dangling dark green leaves.

Our next stop was to look at another cultivated tree willow, *Salix* X *sepulchralis* (*S. alba* X *S. babylonica*), whose hanging, elongate branches are somewhat distinctive. However, the taxonomy of the tree willows is often quite complex due to the innumerable introduced cultivars and the effects of hybridization.

The rain had gradually subsided and, blessed with fair skies, we had our lunch break near the beach at Sandbanks. During lunch we talked of both willowy and non-willowy affairs.

After lunch we headed for the Queen's Biological Station on Lake Opinicon. *En route* we made a few quick stops, mainly to reinforce earlier character concepts and gestalts.

Upon arrival at the station, we did some heavy R&R, had dinner and then regrouped at the lab. Dr. Argus passed out a number of handouts dealing with *Salix*, ranging from various keys, to a general description of the genus, and from definitions to an extensive computer character list.

After much discussion, the remainder of the evening was spent in reductionist splendour as we studied specimens collected during the day, specimens provided by Dr. Argus from the Ottawa region, and herbarium specimens. Tidbits of typical query:

"Is abaxial towards the main axis, or is that adaxial?"
"George, are these bud scales connate?"
"Is this leaf coating glaucous?"
"Are these hairs pilose or sericeous?"
"There's no *Salix interior* in this key!!"

As the evening wore on there were more and more triumphant successes, such as "Dr. Argus, do you agree that this is *Salix eriocephala*?"

Later in the evening we discussed the **DE**scriptive **L**anguage of **TA**xonomy ("DELTA") software which Dr. Argus is using. For each species he has inputted data on 122 characters into the data base (e.g. Character 19: juvenile leaf colours best described as 1) reddish, 2)

yellowish-green, 3) colour obscured by indumentum). A user can now pick the best match for any chosen character, and this eliminates all species which the specimen couldn't be, and lists those it could still be. Another character can then be used to remove more specimens, and so on until an identification is reached. The program is even more exiting in that it will suggest the best character(s) to use in order to differentiate the remaining species.

Akin to the computer hackers of our society, members of our group spent the last few hours of the day frantically testing the program, and it quite often lead to correct identifications!

After breakfast the next morning we went to a few nearby sites, saw a few additional willow species, and further reinforced the concepts of the previous day. Inevitably, group diversification arose and *Carex* and other genera became locally abundant denizens of our collective mindset. After lunch, keeners remained in the lab to tackle DELTA and pester Dr. Argus with final questions.

On behalf of all FBO members, I would like to thank Dr. Argus for his excellent leadership and preparation - his efforts made this trip beneficial and enjoyable for all, and his timely and witty anecdotes enhanced the learning environment (no more *Salix* sp., or at least less often). Annie Dillard may have met Dr. Argus. In her Pulitzer Prize winning book "Pilgrim at Tinker Creek", she stated "I suspect that the real moral thinkers end up, wherever they may start, in botany."

References:

Abbey, Edward, 1977. The Journey Home: some words in defense of the American West. A Plume Book. 242 pp.

Argus, George, W. 1992. Handouts for Field Botanists of Ontario workshop in *Salix* identification.

Dillard, Annie, 1974. Pilgrim at Tinker Creek. Harper and Row. 271 pp.

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

Brendon Larson

FBO SPECIAL PUBLICATION

The handout prepared by Dr. George Argus for the 1992 FBO workshop in *Salix* identification is available as a Field Botanists of Ontario special publication.

The handout material includes background information, illustrations, keys and descriptions for *Salix* species in southern Ontario. The keys were written by Dr. Argus for the workshop and are in draft form. Your feedback and input would be appreciated.

To obtain a copy of the *Salix* handout send a cheque or money order for $20.00 made payable to the Field Botanists of Ontario to:

Deborah Metsger
ROM Botany Department
100 Queen's Park Cres. W
Toronto, Ontario
M5S 2C6



CANOEING IN BON ECHO

Fourteen eager souls participated in the outing led by Don Cuddy in Bon Echo Provincial Park, June 27 and 28, 1992. Most participants arrived Friday night, and tent city was erected in Group Camping. Those arriving after dark were forced to navigate for a clear spot and found out in the morning where they were actually located. Bill arrived the next morning after having spent a wild night in some sleazy motel, trying to get some poor soul arrested for running into a tree outside his room. In any case, everyone was on time for Saturday's jaunt.

Heading out from the Lagoon, where the Mugwump Ferryboat Shuttle Launches, we swung up through the narrows to Upper Mazinaw Lake. Skirting the shore we sidled up to the Walt Whitman Memorial and the Indian Pictographs, some of which were well worn. Along this shore were Bittersweet (*Celastrus scandens*), Hairbells (*Campanula rotundifolia*) and several interesting ferns. The Prairie Warblers were singing profusely, and swooping barn swallows were guarding nests full of young.

The portage was unforgettable. Recall it was advertised at 750 metres. At approximately the 800 metre mark, we found Spotted Coral-root (*Corallorhiza maculata*). At approximately 1000 m, Golden Saxifrage (*Chrysosplenium americanum*) lined the side of a short, slightly unstable boardwalk. The enthusiasts who had recently attended a sedge workshop identified many of this group on this portage (they had a lot of distance in which to find them, approximately 1300 metres in all). These included the sedges *Carex gracillima*, *C. rosea*, *C. deweyana*, *C. pedunculata*, *C. arctata* and *C. intumescens*.

At the lunch stop several fools swam in the icy water. (We could never keep Brendon out of the water for long, anyway). False Loosestrife (*Ludwigia palustris*) and Buttonbush (*Cephalanthus occidentalis*) were among the plants found at the stop.

The trip after lunch was replete with little portages and hurdles over beaver dam after beaver dam. This stretch, spent noses to the water, was, however, extremely pleasant, with abundant pondweeds (*Potamogeton* spp.) and Swaying Rush (*Scirpus subterminalis*). After the last beaver dam, *en route* back, the wind came up, and canoes became widely separated. Ospreys were spotted, and we had a wonderful view of two female mergansers. Two more people went for an involuntary swim on the way back (Brendon's father was not going to be outperformed by his son).

Back on dry land, we were shown the northern Green Alder (*Alnus crispa*), rare south of 46°N and essentially absent south of the Canadian Shield (Soper and Heimburger 1982), and Wood-betony (*Pedicularis canadensis*). And so, back to camp.

During the night, Don's Wonder-Dog, Lucy, fiercely guarded the camp from marauding Raccoons. Everybody was quite aware of this, but at least we all felt safe.

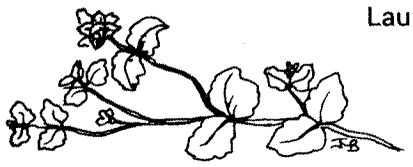
On Sunday, we had a half-day, very relaxing and interesting paddle around Joeperry Lake. We often got out and inspected the shore, finding Duck-grass (*Eriocolon aquaticum*), the Spike-rush *Eleocharis erythropoda* (red feet), Beak-rush (*Rhynchospora fusca*), Lance-leaved Violet (*Viola lanceolata*) and Mink Frogs. Lunch was partaken of on a smooth rocky island shore with a wonderful vista. We then leisurely paddled back to the launching point for the last non-leisurely 'portage' back to the parking lot. From here, some left for distant destinations while the rest took a final short hike before heading home.

This being one of the only weekends of the summer that it was warm, very sunny and did not rain torrentially (much), this trip was a very memorable part of the summer.

Reference:

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

Laurie Consaul



Chrysosplenium americanum

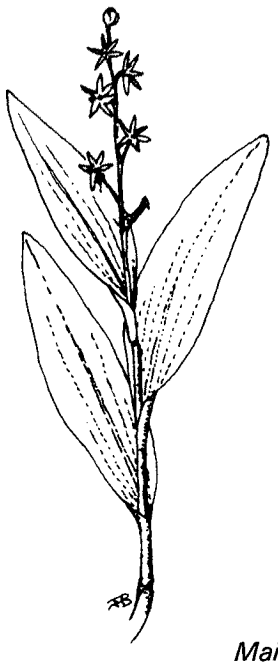
FLORA AND ECOLOGY OF MINESING SWAMP

"To the aspiring visitor, Minesing is readily accessible although more than a little formidable. Half the challenge, it seems, is knowing where and when to go and how not to get mired or lost." So wrote John Sparling (1985) in his excellent article on Minesing Swamp in SEASONS magazine. Never was a truer word spoken! The FBO members who participated in the July 5, 1992 outing to Minesing Swamp can attest to the challenge, and the delight, to be found in this vast and diverse wetland.

About 20 participants gathered with eager expectation at the designated meeting place, armed with boots and mosquito repellent. We were not a bit dismayed by the local resident farmer who looked at us knowingly and said "You wouldn't catch me going in there at this time of year!" To our great disappointment we learned that our leader, John Sparling, who is intimately acquainted with Minising, had a car break down that morning. Bill Draper offered to go and pick him up, and we decided to begin exploring the swamp and hoped that John and Bill would catch up with us later. Bob Bowles generously agreed to lead us in the meantime.

We descended the ancient Lake Payette shorecliff into the swamp and began to explore the White Cedar-Balsam Fir community. Minesing boasts 20 species of orchids, and we tried to discover as many of these as possible throughout the day. We observed several species in this portion of the swamp, including *Cypripedium calceolus* (Yellow Lady-slipper), *Epipactis helleborine* (Helleborine), *Malaxis monophylla* ssp. *brachyopoda* (Adder's Mouth) and *Platanthera hyperborea* (Northern Green Orchid). Other plant species observed in this area included *Monesis uniflora* (One-flowered Pyrola), *Pyrola asarifolia* (Pink Pyrola), *Rubus pubescens* (Dwarf Raspberry), *Botrychium virginianum* (Rattlesnake Fern), *Linnaea borealis* (Twinflower), *Maianthemum trifolium* (Three-leaved False Solomon's-seal) and *Menyanthes trifoliata* (Bog Buckbean).

There are several types of wetland habitat present in Minesing and we would visit several of them throughout the day. However, we were especially interested in finding the open fen, where many of the rarities occur. The absence of landmarks and lack of marked trail made this search a challenge, to say the least. From the White Cedar-Balsam Fir swamp we traversed a very wet area of springs into a tamarack forest, where we stopped to have lunch. Later, still searching for the elusive fen, our trek took us into a dogwood and willow carr.



Maianthemum triflorum

We were about to declare ourselves lost at this point. Daniel Campbell climbed a tree to try and see a way out! Just then we heard a voice! Who should appear in the middle of the swamp, but John Sparling and Bill Draper who had tracked us to this spot! We were saved!

John shared with us some of the excellent material he had prepared, and gave us a brief explanation of the ecology of Minesing. Unfortunately, by this time it was about 3:00 p.m., and we did not have time to fully benefit from the wealth of John's knowledge. However since we had, in fact, come past the fen, we were able to return through it and observe some of its unique flora on the way. Some of the orchid species observed included *Calopogon tuberosus* (Grass-pink), *Platanthera dilatata* (Tall White Northern Orchid), *Platanthera leucophaea* (Prairie Fringed Orchid)

and *Platanthera obtusata* (Small Northern Bog Orchid). Other species seen included *Lathyrus palustris* (Marsh Pea), *Senecio aureus* (Golden Ragwort), *Potentilla palustris* (Marsh Cinquefoil). *Parnassia glauca* (Grass- of-Parnassus), *Salix myricoides* (Blue-leaf Willow), *Andromeda glaucophylla* (Bog-rosemary), *Myrica gale* (Sweet Gale), *Scirpus hudsonianus* (Bulrush), *Eriophorum viridi-carinatum* (Cotton-grass), *Cladium marisicoides* (Twig-rush) and *Proserpinaca palustris* (Mermaid Weed).

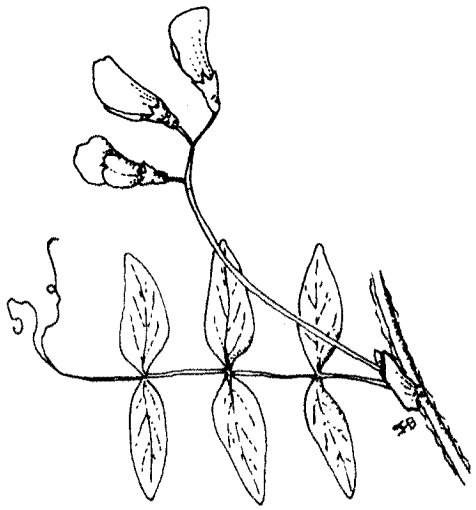
In addition to the may interesting plants, there was some other usual wildlife, such as the chimney crayfish (*Cambarus* spp.) which make burrows in the fen. Butterflies and other insect life (including the biting variety!) were abundant. The Bog Copper (*Epidemia epixanthe*) was among the many species seen.

John said that he was good at finding his way into the swamp, but not out again. (Was he just kidding?). In the end, with some help from air photos and compasses, we emerged from the swamp at 6:30 p.pm., a tired, but satisfied group. I think most of us would agree that it was well worth the effort.

Reference:

Sparling, J. 1985. Minesing: a wetland for all seasons. Seasons Magazine, Winter 1985: 34-42.

Linda Burr



Lathyrus palustris

RECENT PUBLICATIONS IN BOTANY

Boivin, Bernard 1992. Les Cypéracées de l'est du Canada. Provancheria # 25, Université Laval. 230 pp. $15.00 from Herbier Louis-Marie, Faculté des sciences forestières, de l'agriculture et de l'alimentation, Université Laval, Québec, G1K 7P4.

This new publication, in French, contains keys, descriptions and illustrations of the Cyperaceae. It contains no range maps, but it should be of interest to anyone keen on sedges.

★★★★★★★

Semple, John C. and Gordon S. Ringius 1992. The Goldenrods of Ontario: *Solidago* L. and *Euthamia* Nutt. Second Edition. Department of Botany, University of Waterloo. $ 10.00 + $3.00 from Department of Biology, University of Waterloo, Waterloo, Ontario N2L 3G1.

This is the updated version of the original 1983 publication.

★★★★★★★

Cope, Edward A. 1992. Pinophyta (Gymnosperms) of New York State. Contributions to a Flora of New York State X. New York State Mus. Bull. 483. 80 pp. US$8.50 from New York State Museum Publications, 3140 CEC, Albany, NY 12230.

This is the latest in the series "Contributions to a Flora of New York State". It treats all native and naturalized Gymnosperms known to occur in the state. Each species is illustrated and there is an appendix on insect and fungal pests of conifers.

THE FERNS AND FERN ALLIES OF THE CURRENT RIVER PARKS, THUNDER BAY, ONTARIO

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A brief survey of the pteridophytes found in the section of Current River between Trowbridge Falls and Boulevard Lake, Thunder Bay, was made July 1991. A string of city parks and recreation areas follows this stretch of river. The UTM Grid Reference is 375710 on Topographic Map 52A/6 (THUNDER BAY).

For much of its course, the Current River flows over rocks of the Gunflint formatic (Animikie period) constisting of shales, iron-bearing carbonates, and chert-carbonates (Pye, 1969), which are high in calcium and other nutrients. Near Trowbridge Falls it runs through a small gorge and there is an interesting late Precambrian (Keeweenawan) dyke thrusting in its path. Here there are permanently moist, shaded rock surfaces. Dense, moist, second growth forest rises steeply from the river, especially on the west bank. In places there are marshy areas at the foot of the slope. The point at which the river turns to run into Boulevard Lake represents its mouth during the post-glacial period. Here there is a raised beach and old sand banks (Prof. Brian Phillips, Lakehead University pers. comm.). Lying back from this is a 30 m cliff capped with Keeweenawan Diabase (also basic) which would have been part of the shore line of an earlier Lake Superior (Pye, 1969). There is a prehistoric tool making site at the foot of the cliff.

The varied topography has created a diversity of habitats ranging from dry cliffs with south-east exposure to permanently wet north facing cliffs, and from wet forest along the river to well drained mesic forest on the slopes.

The parks are subject to gross environmental disturbance - brush clearing, trampling, vandalism, hydro cuts and wide ski trails. In spite of this, 27 species of pteridophytes were recorded, out of 61 listed for the whole of the southern part of Thunder Bay District (Soper *et al.*, 1989). Jennings (1913) listed 35 species from the north shore of Lake Superior. All the species recorded here were included in his list.

The most interesting find was *Woodsia alpina* (Bolton) Gray, (determined by W.J. Cody), previously reported from the same site by Claude Garton in 1951. This species is only found in four other locations in Thunder Bay District, all on the shore of Lake Superior. It is listed as rare in Ontario (Argus *et al.*, 1982-1987). *Woodsia glabella* R.Br. is abundant on the moist east side of the river. *Gymnocarpium jessoense* (Koidz.) Koidz. ssp. *parvulum* Sarvela, *Cryptogramma stelleri* (S. Gmelin) Prantl, *Cystopteris bulbifera* (L.) Bernh. and *Dryopteris fragrans* (L.) Schott are all calciphiles, and relatively uncommon or localized in this area. *Lycopodium selago* L. ssp. *patens* (P. Beauv.) Calder & R.L. Taylor (determined by W.J. Cody) is infrequent, although it has been collected occasionally by Claude Garton especially in places such as Ouimet and Cavern Lake Canyons.

Equisetum pratense Ehrh. is characteristic of wooded floodplains in northwestern Ontario (Cody and Britton, 1989), habitats which are particularly fragile and prone to interference.

The list indicates an exceptionally rich and diverse flora over a mere 3 km stretch of the river. The flowering plants, bryophytes and lichens in this area all include unusual species of special interest. The forest floor species are most in danger from human activity in the parks. It should be noted that plant collecting is not permitted in city parks.

In the list below scientific nomenclature follows Morton and Venn (1990) and common names follow Cody and Britton (1989). Taxonomic order of families follows Cody and Britton (1989). Within families, species are presented in alphabetical order.

CHECKLIST OF FERNS AND FERN ALLIES

LYCOPODEACEAE (CLUBMOSSES)

Lycopodium clavatum L.	Running Clubmoss
L. annotinum L.	Bristly Clubmoss
L. dendroideum L.	Round-branched Ground-pine
L. complantum L.	Flat-branched Ground-pine
L. selago L. ssp. *patens*	Fir Club-moss

EQUISETACEAE (HORSETAILS)

Equisetum arvense L.	Field Horsetail
E. pratense Ehrh.	Shade Horsetail
E. sylvaticum L.	Woodland Horsetail
E. scirpoides Michaux.	Dwarf Horsetail

OPHIOGLOSSACEAE (GRAPE FERNS)

Botrychium virginianum (L.) Sw.	Rattlesnake Fern

OSMUNDACEAE (FLOWERING FERNS)

Osmunda claytoniana L.	Interrupted Fern
(*O. regalis* L.	Royal Fern)

- reported in the past by Claude Garton from an island near the mouth of the river at Lake Superior, about 2 km from the survey area.

PTERIDACEAE (BACKEN FAMILY)

Cryptogramma stelleri (S. Gmelen) Prantl	Slender Cliff-brake
Pteridium aquilinum (L.) Kuhn	Bracken

ASPIDIACEAE (TRUE FERNS)

Athyrium filix-femina (L.) Roth.	Lady Fern
Cystopteris bulbifera (L.) Bernh.	Bulbet Fern
Cystopteris fragilis (L.) Bernh.	Fragile Fern
Dryopteris carthusiana (Villars) H.P. Fuchs	Spinulose Wood Fern
D. fragrans (L.) Schott	Fragrant Cliff Fern
Gymnocarpium dryopteris (L.) Newman	Western Oak Fern
G. jessoense (Koidz.) Koidz. ssp. *parvulum* Sarvela	Nahanni Oak fern
Matteuccia struthiopteris (L.) Tod.	Ostrich Fern
Onoclea sensibilis L.	Sensitive Fern
Phegopteris connectilis (Michaux) Watt	Long Beech Fern
Woodsia alpina (Bolton) Gray	Northern Woodsia
W. glabella R.Br.	Smooth Woodsia
W. ilvensis (L.) R. Br.	Rusty Woodsia

POLYPODIACEAE (POLYPODS)

Polypodium virginianum L.	Pock Polypody

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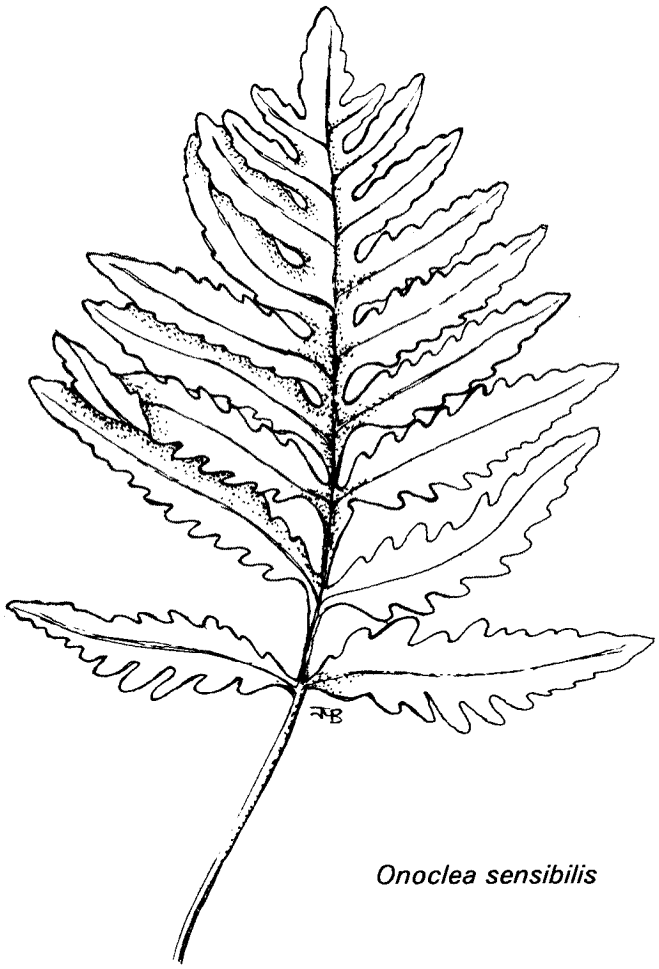
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Onoclea sensibilis

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