

# Halifax Field Naturalists Newsletter

SEPTEMBER-NOVEMBER 1987

No. 49



Pileated Woodpecker

return address:

Halifax Field Naturalists  
c/o Nova Scotia Museum  
1747 Summer Street  
Halifax, N.S., B3H 3A6



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**OBJECTIVES:** To encourage a greater appreciation and understanding of Nova Scotia's natural history, both within the membership of HFN and in the public at large. To represent the interests of naturalists by encouraging the conservation of Nova Scotia's natural resources.

**MEETINGS:** First THURSDAY of every month at 8.00 pm in the Auditorium of the Nova Scotia Museum, 1747 Summer Street, Halifax.

**FIELD TRIPS** are held at least once a month \*\*\*\*\*and it is appreciated if those travelling in someone else's car share the cost of the gas.

**MEMBERSHIP:** Open to anyone interested in the natural history of Nova Scotia. Memberships are available at any meeting of the Society, or by writing to: MEMBERSHIP CHAIRMAN, HALIFAX FIELD NATURALISTS, c/o N.S. MUSEUM. Individual memberships ... \$7.00 per year

Family " ... \$10.00 " "

Sustaining " ... \$15.00 " "

This covers HFN fiscal year ... JANUARY 1 to DECEMBER 31.

Members receive HFN Newsletter and notices of all meetings, field trips and special programs.

**EXECUTIVE**  
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Secretary . . . . . Leigh Mazany 455-8592  
Past President . . . . . John van der Meer 455-1029  
Membership . . . . . John van der Meer 455-1029

**DIRECTORS:**  
1986: Chris Corkett, Connie Eaton, Ursula Grigg, Stephanie Robertson, Clarence Stevens, Colin Stewart, John Strong, Judith Kennedy.

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HFN is a member organisation of the Canadian Nature Federation.

Jack-in-the-Pulpit  
Arisaema Stewardsonii



# hfn news

HFN ANNUAL GENERAL MEETING  
THURSDAY - MARCH 3 - 1988

Annual business will include Election of Officers for 1988. It is not too early to think about nominations for the President, Treasurer, Secretary and Board of Directors. If you would like to serve, or wish to nominate another person (with that person's written consent), please call Michael Downing, President, at 823-2081, or mail your nominations to:

Nominating Committee  
Halifax Field Naturalists  
c/o N.S. Museum  
1747 Summer Street  
Halifax, N.S., B3H 3A6.

Following the business meeting, there will be our regular monthly program, followed by refreshments. Speaker: TBA.

A NOTE FROM THE EDITOR -

Hard to believe that 1987 is drawing to an end and it is once again time for us to thank all who have contributed to the Newsletter, whether by submitting reports or articles, nature notes, or illustrations or by helping to collate, fold, label and mail each issue. So many tasks involved in producing each issue, and all help is much appreciated. Thank you again.

Every volunteer society only exists by the help of its members and HFN needs all the help it can get, to keep the club alive and healthy. If you would like to present a talk, or lead a walk, participate in an HFN special project, or make the tea at the monthly meeting, let the president know. It would also be appreciated.

Oh yes - one final but very important point - JANUARY 1 STARTS A NEW FINANCIAL YEAR and early payment of dues would be more than appreciated. Need we mention rising costs of mailing, etc.? No, thought not.

WELCOME TO NEW AND RETURNING MEMBERS:

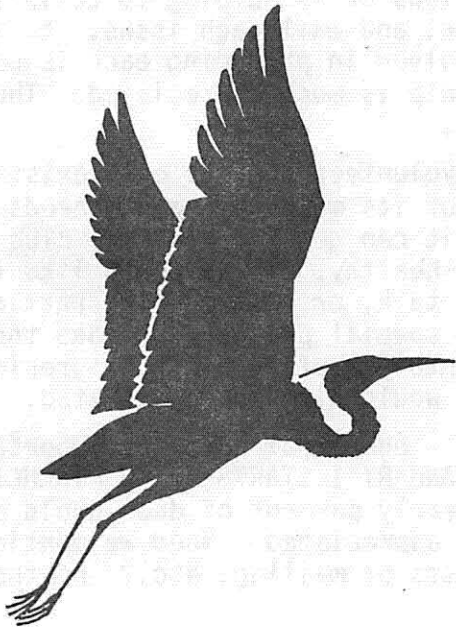
Patrick Stewart  
Krista McCuish  
Elizabeth Calabrese  
Bruce Friis Family  
David Patriquin Family  
Jack Smith  
Jane Bradley & Will Spaulding  
Indu Bhatnagar  
Denise Aucoin & Douglas Lewis  
Anne Cornwall  
Sandra Crook  
Cathy Forbes  
Roberta Hicks  
The Jennegren Family  
Thomas Crausse  
Doug Leahy  
Janet Servant  
Daphne and Nancy Faulkner  
Daryl Bell and Family



Treasurer Leigh Mazany, on Sabbatical in Norway sent a card from the Land of the Midnight Sun. "...hard to believe I am almost at 70°N when I look at the lush vegetation...few conifers, mainly birch... lots of familiars - including lupins and blueberries...took a tour of Finnmark and Lapland. Changing scenery from fjords and mountains; rocky outcroppings (Nord Kapp - furthest north point in Europe); landscape reminiscent of U.S. West, except the herds were reindeer); back to mountains and fjords...many wildflowers, heather...parts near Bergen remind me of N.S." .....

..... and from Portugal, a letter from long-time member Dorothy Morris. Last year she and husband Arthur sailed to the Caribbean and Bermuda and now continue their wanderings in Spain. Dorothy says she took 'the chicken route' and flew from Bermuda to UK and after a family visit flew to Lisbon to meet Arthur. He and a friend had...braved the Atlantic crossing to the Azores and were struck by lightning en route, resulting in all kinds of damage to electrical and electronic gadgets. Thankfully, no one was hurt and no structural damage was done to the boat... still collecting spare parts and new and repaired items...off to Spain ...to continue our wanderings". Good Luck and fair weather to you both.

Should get a few interesting slide/talks out of the travels of Leigh and Dorothy upon their return.



So far as our survey of Conrad's Beach is concerned, momentum gained in 1987 has been inconspicuous. However, our small group of inexperts are soldiering on. The project is proving a touch more complex than it seemed at first. The area is a fascinating one - the more we have looked at it, the more we find to look at.

Little or no documentation appears to have been done until the early seventies when the area became part of a regional development plan for Halifax/Dartmouth. Since then there have been several reports dealing with different aspects, e.g. The Nature Conservancy of Canada submitted a Proposal for the Acquisition of Conrad's Beach Property, Halifax County, Nova Scotia, early in the 1970's, and A Biological Survey of Conrad Island was prepared for the N.S. Bird Society by J. Stewart and B. Freedman several years later.

HFN proposes to coordinate the separate parts, and survey those aspects which have received little attention - molluscs, fish in the waters around the island, the cattail swamp and animals. Comprehensive bird and plant lists have already been compiled.

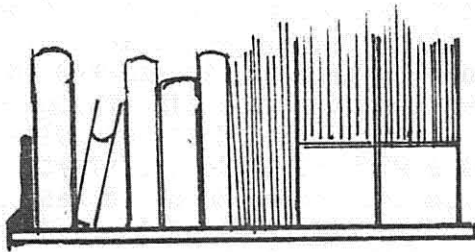
Eventually we hope to produce an information booklet or brochure suitable for visitors to the area to direct their attention to its importance and variety.

Conrad's Beach is an area of "national significance - the only known, little-disturbed example of sand dune succession in Halifax County... The area is an island, windswept, exposed to the sea, a place to learn about the piping plover, dune grass, seagulls, high tide line and salt air. Its proximity to Halifax/Dartmouth enhances its potential as an outdoor education area where the dune system of succession from bare sand through dune formation to groves of white spruce may be studied.. Landward lies a salt marsh feeding area for Great Blue Heron, Osprey, Bald Eagle, and during migration, many other birds".\*

Volunteer help would be greatly appreciated when field trips are arranged for the purpose of gathering data, at different seasons in the various habitats.

Doris Butters

\* from the Proposal for Acquisition of Conrad's Beach, prepared by Nature Conservancy of Canada.



## on the shelf

Just received... from Elaine Wallace of Cape Breton Highlands National Park, a copy of Environment Canada's MANAGEMENT PLAN SUMMARY for the Park. Containing highlights of the Plan and a series of area maps, the book is informative and well laid out. Take a look at it, sometime.

Latest issue of Maritime Breeding Bird Atlas Newsletter contains - among other interesting news - an article by Azor Vienneau on his rather dismaying experience on June 13, when for a short while he became lost in the woods.

During the summer, newsletters from other groups, government booklets and info pamphlets and magazines including Nature Canada, continued to come in - too many to draw attention to even the very best items. If you are interested in reading these periodicals for yourself, check our Library Shelf behind the Information Desk in the NSM foyer - bottom shelf, (or ask the girl at the desk). I think you will find plenty to interest you.

As we only have sufficient space for about one year's accumulation of incoming reading matter, periodically the file boxes must be cleared of old issues, but before pitching them out I will hold on to them for a short time in case anyone would like to cull items of particular interest.

Editor.



## nature notes

When Bernice Moores and Clarence Stevens were 'working' Bernice's square at Ostrea Lake towards the end of the summer, they spotted two weasels romping, at a distance of five feet away..... a pheasant was noticed right on Highway 103 during Labour Day weekend..... What appeared to have been a skunk lay in the road near Caledonia that same weekend; as we passed the spot, Lesley commented that "Yup, that was a skunk" (Phew!)..... Our Indian Summer late in October brought forth many second bloomings, including purple spikes of lupin seen on the way to Caledonia.....

THE "B.&B." OF ATLASSING -

The first "B" of Atlassing is Birds. Atlassers have spent many an hour searching for an elusive species carrying food or displaying signs of amorousness. But, how many atlassers have sought the second "B"? One of the bonuses of atlassing is the discovery of berries! Discovering new berry-picking grounds can 'fulfill' an atlasser's hope that the square will be 'fruitful'! (Please permit us a little pun here before we get on with our story!)

We are responsible for square 94 in the Maritime breeding region 18, zone 20T, block ME, more easily described as the area on the Eastern Shore of Nova Scotia including West Jeddore, Ostrea Lake and the eastern tip of Martinique Beach. During the spring and summer we counted birds, but we also had our eye on the progress of several patches of foxberries. On a sunny Saturday morning in mid-September 1986, we set out to reap our harvest.

As we approached our square on the Ostrea Lake side an adult Bald Eagle flew up from short alders on the roadside about 30 metres ahead of the car. The car responded to our excitement by screeching to a halt as we watched this magnificent bird flying to the opposite side of Musquodoboit Harbour narrows on our right.

Before we had fully collected ourselves, an immature bald eagle rose from the same spot and flew across the road to land in a tree on our left. The immature eagle was brown with some white flecks. A large white patch in the area of the upper tail covers and rump was evident as it flew and also as it landed and folded its wings. Its downy head and careful landing, folding its huge wings with great deliberation, led us to believe that it was a very young bird. It called several times and changed perches at least twice. During all this time, two ravens were noisily circling overhead. We assumed the eagles had been feeding, and decided to proceed on our way.

*(This story has also been printed in "Nova Scotia Birds" - Vol.29 #2, April, 1986).*

As we were passing the spot from which our two eagles had flown, another adult eagle suddenly lifted its head and emerged in the ditch no more than 2 metres from the car! After exchanging stares with us for about 20 seconds, it started to walk through the alders with a limp favouring its right side. We moved the car slowly to keep pace with it while its fierce eye observed us. After 8m or so, an opening appeared in the trees at the side of the ditch and the eagle hobbled through it and out of sight.

We decided our first two eagles were assisting and showing concern for an injured family member while the ravens added to their distress. As we left the scene, a backward glance revealed that the first adult eagle had returned and was doing a great deal of calling from a tree top near the ditch, while the immature eagle and ravens added to the cacophony. We hurried back to the nearest telephone to report the injured eagle to the Dept. of Lands and Forests.

Although the department had closed at noon, 15 minutes before our call, we located a competent lady who answered "Zenith 40,000" and took our report. Two hours later, we joined a department representative and his dog in conducting a search for the injured bird (the wait was no hardship as the Lions Club was holding a chicken barbeque at the museum where we had been sent to find the person on call for the Department of Lands and Forests). The area was now silent except for the cheerful sounds of black-capped chickadees. The only evidence that the eagles had been there was a few bits of down and feathers on bushes some distance away at the water's edge. There was no evidence of feeding, a scuffle, or injury. The eagle's injury must have been very slight.

By 4.30 pm, we headed for the berry patch. Luckily the foxberries were ripe and sufficiently plentiful for us each to pick a small pail-full. For that day, the "B. & B." of atlassing included an eye level encounter with three magnificent birds and enough berries for jam for Christmas presents!

Bernice Moores  
Liz Townsend



Around Cape Breton Highlands  
from Elaine Wallace

NEW SELF-GUIDING TRAIL OPENS

Seventeen signs interpreting the ecology and history of the only jack pine forest in Cape Breton have been installed along the Jack Pine Trail, located at Black Brook Day Use area. This family-use trail takes one to one and a half hours to walk from the Black Brook trailhead to the coast and back.

The narrow, winding trail starts in a spruce and fir forest and follows a stream in a small valley up to a granite ridge covered in jack pine trees. It follows this ridge out to the Atlantic coast where it meets the Coastal Trail. Here the salt spray vegetation and fresh air are fragrant with bayberry and the smell of the sea.

Attractive, informative signs along the trail explain the influences of glaciation, fire, insects and maritime weather on the coastal forests of jack pine. Signs describe common plants such as sheep laurel and bracken which grow successfully on these nutrient-poor soils. Two signs emphasize the importance of remaining on the trail when crossing the bedrock ridges of jack pine and the salt spray vegetation on the coast. Here soils are only a few centimetres deep and are protectively held in place only by the roots of trees and bushes. Trampling bushes and soil can expose and kill roots which permits soil to be carried away by wind and rain.

The history of a 1921 forest fire, subsequent evacuation of Neil's Harbour and New Haven and the ability of jack pine to grow into a forest on fire-scarred earth and rock are highlighted on this self-guiding trail.

These signs will be left up year round so that spring, summer and fall visitors can enjoy this informative walk with the changing seasons.

Dave Algar.

A FIRST ? -

Bernice sends us the following extract from American Birds, The National Audubon Society magazine, regarding the Christmas Bird Count 1986.

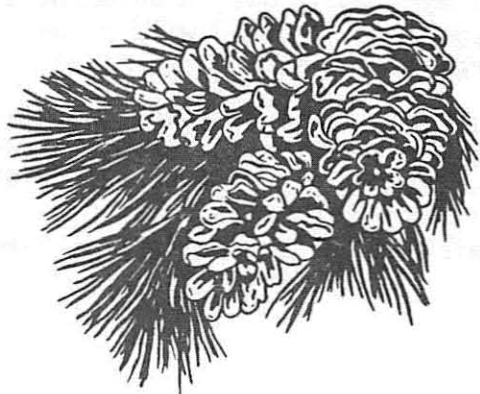
"...The cold, damp, foggy predawn of December 21 looked like Frankenstein's idea of Club Med, but that failed to darken or deflate the spirits of the small group of Christmas Bird Counters gathered in the Goose Creek Game Impoundment Area in Pamlico County. Appropriately decked out with field clothes, boots, binoculars and notepads, they gathered in an area known as "The Cathedral".

"The central people present, in addition to the count compiler and his wife, were a man, a woman, and Rev. Rich Boyd of the First Presbyterian Church of New Bern. Kathryn McCray and Dennis Smith were there to be married. And married they were at the close of a short 20-minute ceremony.

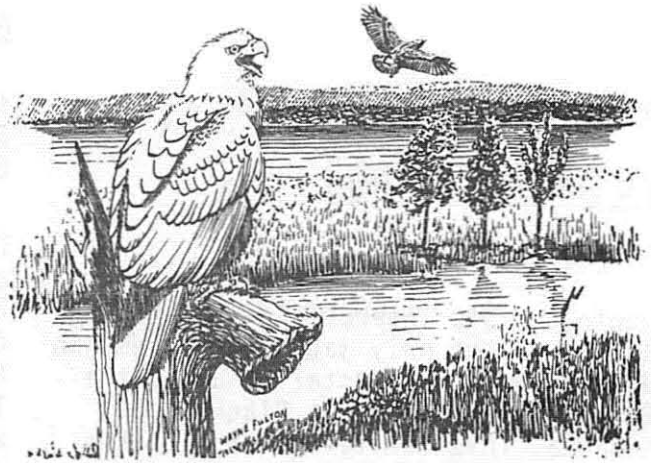
Now here we are talking about hard-core birders. Following the service, Rev. Boyd, the Smiths, and their guests spent the rest of the day counting grebes, herons, canvasbacks, scaup, northern bobwhites and killdeer, lots of gulls and woodpeckers, towhees and sparrows.

In the 86 years of the count this is the first instance of a wedding between participants held on count day..."

The article remarked on "...The effervescent quality and upbeat undercurrent of frivolity that underlies the Christmas Bird Count..." and we took them for a serious bunch.



# field trips



## SMILEY'S INTERVALE, SPRING FLOWERS AND A VINEYARD TOUR.

Date: Saturday, April 25, 1987. Participants: 35  
Place: Smiley's Intervale and gypsum area near Windsor,  
 then to the Grand Pre Winery just outside Wolfville  
Weather: Sunny, cool wind, clear - about 12°C  
Leader: None (Phyllis Blades unable to go).

Several car loads of HFN members and friends left the Museum on a bright, sunny but cold morning. As the weather had been unseasonably cold, the gypsum area at Windsor was bypassed and we headed straight to Smiley's.

On the way, one sharp-eyed member spotted a red-tailed hawk.

At Smiley's only the bloodroot was in bloom, and not a great deal of that. It was too bad that we were unable to return about the middle of the week, when considerably more would have blossomed, as well as some of the other wild flowers which were showing signs of arrival.

At the entrance to the park, water-cress was seen growing in a small stream, and wild strawberry leaves were looking healthy. There was evidence of Blue Cohosh which is quite rare in this area.

### Vineyard:

This was a very interesting tour. Our guide (a staff member of the Grand Pre Winery) told us how a mini-climate is created by the waters of the Bay of Fundy. The cold water prevents the weather from being too hot in summer and the bitter cold of winter prevents any possible budding during the winter thaw. Acidic soil is necessary for the grapes and several outside growers are also suitably placed to grow them.

Red and white grapes are processed separately and need different lengths of time for maturing.

The vats in which wine is left to mature are made from a Jugoslavian wood.

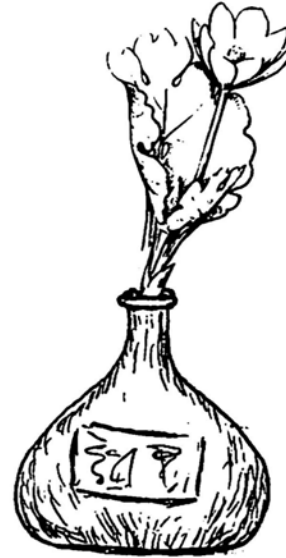
A wine that is not a blend of different grapes shows the date of bottling on the label. Wine that is a blend of various grapes only shows the name of the manufacturer.



Harvesting of the grapes means they are picked, delivered to the winery, cleaned, crushed and processed all on the same day, which can lead to 18-hour days during the wine-making season. We were 'disappointed' to learn that the romance has gone out of crushing grapes, and that they are now crushed by machine.

Part of the tour included a wine tasting with instructions on how to understand the bouquet, clarity and flavour. Wine is used to clear the taste buds during a meal, as well as an aid to digestion, as it helps to distinguish the flavours from the various dishes served during each course.

Elizabeth Surett.



The usual 'add-on' to a trip -

Ten of us came home via Waverley, to a lake deep in the woods. There were masses of Mayflower alongside the trail, some of them a deep blush pink. Beautiful spot, but now much damaged by off-road vehicles.



HOW TO DROOL ON A RARE BLOSSOM

Date: Saturday, 15 August, 1987. Participants: 17  
Place: Tusket River Valley, S.W. Nova Scotia  
Weather: Mild.  
Leader: Bob Ogilvie, Curator of Special Places, N.S.Museum.

One of the greatest moments for a naturalist is the moment of discovery. That moment when your eyes come to rest upon that rare object that has eluded you for so long. And now, when you've just about given up hope, your mind goes blank, your heart flutters - "Can it be true! Is it really what I've been looking for all this time?"

I'm sure that's how Paul Keddy must have felt in 1978 when he finally found Plymouth Gentian, a beautiful and very rare flower growing along the lakeshore at Gillfillian Lake in the Tusket River Valley.

On 15 August (nine years later) 17 members of the HFN got that feeling of discovery by retracing Paul Keddy's search for three of the rarest plants in Canada. Bob Ogilvie guided us through the Tusket River Valley with all the art of a master chef, whetting our appetite for that moment of discovery. Knowing that our appreciation for rare plants would be magnified by a long search beforehand, Bob refused to take us directly to Gilfillian Lake.

"It's important to understand that these three very rare plants are part of a whole group of about 50 plants - the coastal plain flora - that all have similar habitat requirements. About 20 of them are restricted to southwestern Nova Scotia and grow no further north."

We walked along the edge of Ellenwood Lake to observe a surprising number of different plants: golden pert, yellow-eyed grass, creeping spearwort, sundew, pipe-wort, water parsnip, water lobelia. These all grew near the water's edge in the wet muck and peaty soil amongst the cobbles. In July this strip of beach would still be underwater. As summer progresses, the water level drops and these coastal plain plants bloom.

Higher up the cobble beach, we found slender-leaved goldenrod, pale green orchis and a bright yellow bladderwort blooming amongst green grasses. And, just at the edge of the woods, climbing upon the huckleberry and bayberry bushes, were two interesting coastal plain plants - cat brier and ground nut.

With our understanding of the coastal plain plants and their habitat now firmly established, we formed car pools and dashed off in the direction of Gillfillian Lake. Soon I found myself wondering in which direction we were headed; scooting down dusty back roads, turning left and right, left and left again - I lost all sense of direction and began to wonder if Bob was leading us in circles just to whet our appetite the more for Plymouth Gentian. "Where is this lake? Will we ever get there? I hope Bob isn't lost!"

Finally Bob parked his car and got out. "Here we are."

"Great, Bob. But where's the lake?"

"Oh, it's just a short hike along this trail" (another trick to increase our anticipation for rare flowers?) A 10-minute walk brought us to the edge of Gillfillian Lake. Bob stopped and gazed out over a broad patch of tall green grass dotted with numerous large pinky-mauve blossoms.

"There you go. Plymouth Gentian."  
(*Sabatia kennedyana*)

Wow! Such a beautiful rarity growing right here at the bottom of this trail that leads us right to it. Somehow I felt that such a rare species should be hidden from view, around a point of land or on the other side of the lake. Then I remembered how difficult it was to get to the trail to begin with. The trail had brought small

groups of local people to the lakeshore for many years for a swim or evening campfires. Plymouth Gentian was very much part of that quiet enjoyment of Gilfillian lakeshore. But the popularity of all-terrain vehicles during the last five years or so now threatens to crush this stand of Plymouth Gentian.

After much work and frustration in trying to protect this site, Bob has hit upon an idea which may prove to be the best solution of all. With help from Susan Holtz of the Ecology Action Centre, local people have formed a "Friends of Special Places" group. These people are proud of the rare plants in their area of Nova Scotia and have agreed to monitor the welfare of several sites and to help spread knowledge of these rare plants to others in the area. Local people directly involved in protecting their own special places - I think it's a great idea that will work.

When the camera shutters came to rest, with images of Plymouth Gentian locked inside little black boxes (and inside bony brain cases as well) we returned to the cars with promises from Bob of even better things to come. Now he had us all drooling.

At Wilson's Lake, we saw and photographed not only Plymouth Gentian, but also a smaller flower of a more subtle pink, scattered in amongst the others, Pink Coreopsis (*Coreopsis rosea*).

At this site, a large expanse of flat mucky shoreline lay uncovered as the water levels had lowered dramatically during this very dry summer. Water pennywort (*Hydrocotyle americana*) our third very rare plant, covered these mud flats with miniature, nasturtium-like leaves. Blossoms have never been observed in Nova Scotia. This site has been purchased by the Nature Conservancy of Canada and Wildlife Habitat Canada, and will become Nova Scotia's first formally established, legally protected ecological reserve, in the fall of 1987.

Much of the credit for this achievement goes to two people. First, Bob Ogilvie, our guide, who is curator of Special Places at the N.S. Museum. He has spent four years documenting ecological sites and implementing the Special Places Act. And Paul



Keddy, founding member of the Halifax Field Naturalists, now with the University of Ottawa. With the help of students and grant money, he has spent the last four years recording the plants and describing the area - requirements needed to formally establish the site.

It's a great feeling to stand amongst three of the rarest plants in Canada, and to know that they are protected. They survive not just on a whim or a passing fancy. Someone cares.

Thanks, Bob, for whetting my appetite.

John Brownlie.

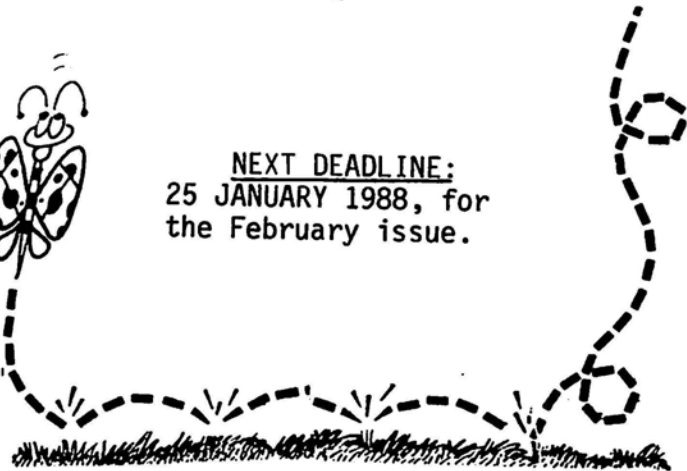
P.S. If you care about Nova Scotia's ecological sites, why not try to visit one or two during the year. Bob can give you a form to record your observations of birds, plants and animals. This way your outdoor adventures can be more meaningful in helping to describe and establish more ecological sites for Nova Scotia.



Plymouth  
Gentian  
*Sabatia Kennedyana*



NEXT DEADLINE:  
25 JANUARY 1988, for  
the February issue.



### Tusket Valley Weekend continued -

The Tusket River Valley being quite a distance from Halifax, several of us camped overnight at Ellenwood Park - a pleasant wooded area on the lake, with camp sites set among trees along winding roadways. Mary Primrose picked Lesley and myself up at 5.30am on Saturday. It was barely daylight. As the sun rose the early morning light cast wonderful shadows in unexpected places among the rocks and trees alongside the highway creating a strangely unfamiliar landscape.

We cut off the highway at Mahone Bay where we stopped to exclaim over the eight great blue herons stalking their prey without disturbing their perfect reflections in the silver of the Bay. Five osprey quartered the sky overhead.

After a very satisfying breakfast in a nice little restaurant in Bridgewater, we pushed on to the meeting place at Ellenwood and while Mary and Lesley fought the tentpegs into the rock hard ground I kept discreetly out of the way (O.K! So what if I'd never tented before and didn't know the ropes!). Then we met the others and went off on our adventure, so aptly described by John Brownlie. The day finished with a campfire in the evening.

On Sunday the group split up. Several of us returned via Kemptville Tin Mine, a moonscape deep in the country. We visited a favourite lake of Bob's, now much frequented by trailer campers and stopped off to take a look at "Flintstone Rock". This is a huge granite glacial erratic, split in two from top to bottom with a second large rock balanced on top. Colin climbed up while the rest went to look for treasures in the barrens that stretched beyond this landmark rock. Pity there's so much graffiti all over it.

Eventually we made our way back to Halifax via Green Bay, Voglers Cove and LaHave. Super weekend!

Doris Butters

AQUATIC LIFE IN LAKE EGMONT

Date: Saturday, August 8, 1987  
Place: Lake Egmont, Middle Musquodoboit area, Hants Co.  
Leader: Alex Wilson, Curator of Botany, NSM  
Weather: Sunny, light winds.  
Participants: 20 and two children

It was another in a series of warm days as we gathered at the Museum for directions to Lake Egmont to observe aquatic plant life.

The dirt road ended abruptly, cars were parked at the lake, and the adventure began. An eager group of field naturalists in a small flotilla of canoes were soon weaving their way along the water's edge, paddling past beds of pickerelweed (*Pontederia cordata*), arrowhead (*Sagittaria*), and fragrant waterlily (*Nymphaea odorata*). Along the shallow edges pipewort (*Eriocaulon septangulare*) with its button-like, grayish-white flowers emerged from the water. The alternate common name 'hatpins' appropriately describes its overall appearance.

Along the borders of the lake we noticed the signatures of muskrats (*Ondatra zetheticus*). The muskrat is the largest rat in the world, eating chiefly the roots, stems and leaves of aquatic plants. Shellfish make up part of its diet, as was evidenced by piles of opened freshwater mussel shells (*Anodonta cataracta*), on paths leading to the water's edge. Scat piles approximately three feet apart were at certain areas on the shore,

As we looked up a short-stalked damselfly (*Agria*) alighted on a bare sunny place on a log projecting from the shore into a garden of pickerelweed. An aquatic insect, blue in colour, it has an appetite for mosquitoes and flies.

An American bittern (*Botaurus lentiginosus*) added its pleasant mysteriousness to the lake. Standing motionless, with its plumage drawn in tight and its bill straight up in the air, its streaked breast and general colouration blended in perfectly with the marshy edge. A member of the heron clan, its song sounds like the sucking noise of an old-fashioned water pump, or a stake being driven into mud with a rubber hammer. In the spring,

the male develops a large esophagus and utters a booming cry, repeated three or four times, and sounding like a muted foghorn.

We paddled on, after stopping to look at a member of the water-lily family, the water-shield (*Brassenia schreberi*) its floating leaves covered with a gelatinous film.

Bladderwort (*Utricularia vulgaris*) a small floating carnivorous plant with bi-symmetrical yellow flowers, has tiny bladders on its underwater leaves, which act as traps for catching minute water life. When a small organism brushes hairs near the bladder pore, a tiny door opens and water rushes in carrying the organism with it. The door closes and enzymes are stimulated to digest the victim.

Slipping along the shore we flushed a flock of black ducks (*Anas rubripes*) into a bed of wild rice (*Zizania aquatica*). Canoe bows were then pointed out into open water and we paddled towards a beaver lodge on the north-east side of the lake. Our pace slackened when the lake narrowed down to channels thickly lined with aquatic plants (mostly *Carex* and *Scirpus lacustris*). The sediment and accumulation of organic matter increased, the water depth decreased and floating aquatics appeared in the form of fragrant waterlily (*Nymphaea odorata*) and water smartweed (*Polygonum natans*). These plants have poorly developed root systems but highly developed aerating systems. The upper surface of the floating leaves are heavily waxed to prevent water clogging the stomatas (tiny holes on top of the leaf for exchange of gases). Leaves and stems are leathery and tough to withstand wave action. They offer food and support for many organisms.

Water smartweed has long, prostrate stems which grow across the water, and end with very attractive, erect, dense,



egg-shaped pink flower masses. The seeds are eaten by water fowl.

The leaves and long stemlike petioles of the water-lily and yellow pond lily (*Nupha*) and other aquatic plants die back each year, contributing to the organic build-up in the lake.

In the shallows beyond the zone of floating plants grow the emergents. The roots and lower stems of these plants are immersed, the upper stems and leaves standing above the water. Bur-reed (*Sparganium*) is an erect, grasslike plant with zig-zag stalks bearing ball-like heads of tiny green flowers. Muskrats feed on the entire plant, while the seeds are eaten by waterfowl and other marsh birds. Arrowhead (*Sagittaria*) has arrow-shaped leaves and tall stalks with white flowers in whorls of three. Beneath the muck their rhizomes produce starchy tubers known as 'duck potatoes', which are eaten by ducks and muskrats.

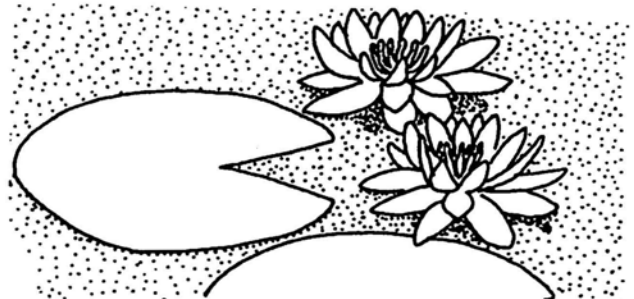
Pickerelweed was abundant in areas of shallow, quiet water. It is an aquatic herb with violet-blue flower spikes extending above water. Fruit and seeds of this plant can be eaten like nuts, and the young leaf stalks cooked as greens. Another important emergent, wool grass (*Scirpus lacustris*) provides food as well as shelter for waterfowl and other wildlife. The tall, nearly round stems were once used by the Micmac Indians in the construction of mats. Scattered among the emergents was water parsnip (*Sium suave*) a fragrant plant with flat clusters (umbels) of tiny dull white flowers at the top of strongly-ridged stems.

As we paddled through narrow channels lined with tufted clumps of *Carex nigra* (a leafy-stemmed sedge) the lake continued to weave its magic spell. Soon we emerged into a pond where beavers (*Castor Canadensis*) had constructed a large, well-built island lodge. It was completely surrounded by deep water and reminded one of a castle moat. The beavers start the lodge by anchoring sticks in the mud bottom and continuing to pile up the debris on top until it protrudes above the water and is properly mounded. Smaller sticks are then

worked in between the larger sticks and mud is added to solidify the whole thing. Two or three tunnels lead up into a chamber, which is divided into two sections. The main floor is raised about 4" above water level and is a feeding shelf as well as a place for the beaver to stand, allowing the water to drain from its fur before it climbs into its bed. The bed is usually about 6" above water level and covered with pieces of soft, shredded wood.

We manoeuvred our canoes back through the narrow channels in the direction of the outlet stream of the lake, where the beavers had built a dam. On reaching open water we pushed through carpets of fragrant water-lily, surprising several ring-neck ducks (*Aythya collaris*) which ran and pattered over the water upon our approach. Mats of aquatic debris covered with freshwater mussel shells gave the impression that the muskrats had had a giant clambake the night before. White caddisflies and green snails (*amnicola limosa*) had taken up residence on water-lily leaves. Just before reaching the dam we stopped to peer underwater at carpets of water-millefoil (*Myriophyllum*) and were fascinated by a school of sticklebacks darting in and out of the feathery leaves of this submerged plant.

The barely-audible song of a white-throated sparrow (*Zonotrichia albicollis*) serenaded us as we paddled leisurely through a strand of flexible, wandlike cattails (*Typha latifolia*). This emergent sends tough, fibrous rhizomes and roots into the soft ooze, developing a mat which holds the plant firmly.



Fragrant White Water-Lily -

Approaching the beaver dam we startled a great blue heron (*Ardea herodias*) standing motionless in the stream below the dam. A timid bird, it took offence at our presence and flew off in an awkward, flopping manner, but breaking into beautiful flight once airborne.

Our eyes returned to water level and fell upon a dark brown, flat, wingless insect with long slender legs walking vigorously on the water beside our canoe. A common water strider (*Gerris remigis*), known in Canada as a 'skater' - in Texas, as a 'Jesus bug' because it walks on water!

The beaver dam was built of alders, live and dead wood, grasses and rocks, and sealed with mud. The dam maintains the water level of the lake, ensures deep water around the lodge and provides a habitat for the many forms of plant and wildlife found there.

Paddling back across the lake we were accompanied by a small flock of cedar waxwings (*Bombycilla cedrorum*). Crested brownish birds with yellow-tipped tails, they were catching moths with great gusto, in flycatcher fashion. An osprey (*Pandion haliaetus*) a large, long-winged hawk, flew past while tree swallows (*Iridoprocne lucolor*) performed graceful aerobatics overhead. A kingfisher (*Megaceryle alcyon*),

his crest standing up as though he had received a nasty scare, flew over, hunting for his supper. A black-capped chickadee (*Parus atricapillus*) sounding as though he had forgotten the tune, tried several times before he got it right.

A picturesque pair of loons (*Gavia immer*) that had been laughing, yodelling and wailing all afternoon, continued to fill the lake with their wild harmony. The loon is an excellent swimmer and diver. It can compress its plumage, forcing air from its lungs and allowing it to ride low in the water, or even slowly sink out of sight.

By now a stiff breeze was blowing, encouraging steady paddling, and before long we were back at our embarkation point enjoying hot tea and a snack.

It is difficult to decide on the most significant highlight of the day - they were so many and so varied. The lake left us overwhelmed with its beauty of vegetation, bird and animal life. Thank you, Alex, for a most gratifying trip on a magical lake.

Etta Parker.

P.S. Small wonder that the members of N.S. Museum's Natural History Section would like to see Lake Egmont declared a preservation area - Ed)

#### KENTVILLE RAVINE WALK

Date: Saturday, September 19, 1987  
Place: The Ravine adjoining the Agricultural Station, Kentville.  
Weather: Mainly overcast but some bursts of sunshine, 16°C, cool breeze.  
Leader: Prof. Sam van der Kloet, Acadia Un. Participants: 9

Two cars with seven occupants left NSM parking lot shortly after 9AM and drove to the bottom car park at the entrance to the Agricultural Station where we met with two more members who had driven directly from Bridgewater. We arrived about 10.20AM and waited, chattering expectantly until nearly 11AM, when a vigorous cyclist in shorts came down to claim us. This last, Dr. van der Kloet, had been waiting at the upper car park for the same length of time! (He was right).

But the weather was pleasant and we set off in high good humour down the long groomed trail to the bottom of the Ravine. Hemlock always grows on well-drained, and usually steep, slopes, we learned.

This Ravine has just been declared an ecological reserve under the control of Nova Scotia Museum for the next 25 years. Though by no means unique in the province it does have the distinction of never having been logged. Its area is just under 100 acres.



First impressions were those often experienced among tall trees - silence, and a relative dearth of bottom flora, magnified in 1987 by a very dry summer.

Nearer to the bottom of the Ravine, which must be about 300ft in depth, was a great variety of ferns, seemingly the most abundant plant family inhabiting the Ravine. Species identified by our leader and the more knowledgeable of our members included:

Christmas Fern  
Polystichum acrostichoides



<i>Thelypteris palustris</i>	Marsh Fern
<i>Polystichum acrostichoides</i>	Xmas Fern (pale green fertile tips)
<i>Dryopteris</i> sp	- (with unequal-sized blades)
<i>Onoclea sensibilis</i>	Sensitive Fern (turns bright orange early in Fall)
<i>Matteuccia struthiopteris</i>	Ostrich Fern ("Fiddlehead" - grows in circle around root which shows above ground protected by thin brown tissue-y sheath)
<i>Dryopteris ptegoteris</i>	Beech Fern (bottom two leaves turn away from others)
<i>Osmunda cinnamomia</i>	Cinnamon Fern (stem covered with fine hairs)
<i>Dennstaedtia punctiloba</i>	Hay-scented Fern (you guessed it!)

Because of the extreme dryness of the summer, fungi - normally prolific - were limited to one common puffball and a single field mushroom, hardly a feast for nine.

Among flowering and currently fruiting plants we encountered common nightshade, corn lily, partridge-berry, sarsaparilla, impatiens (touch-me-not) with its fascinating exploding seed capsules, mustard, coltsfoot, wood goldenrod, several species of aster, wild carrot, and down at the edge of the stream which runs through the Ravine, Jack-in-the-pulpit. Numerous weeds - irritating when in the herbaceous border - such as oxalis looked properly and prettily at home. Evening primrose provided a splash of gay colour.

Trees, though mostly hemlock, included red pine, white pine, beech (all of which had their normally attractive silvery smooth bark marred by a disfiguring fungal scab), American ash, oaks, yellow birch, moosewood (striped maple), ironwood (horn-beam). Introduced honeysuckle and berberis

also thrived and caused some misgivings as to whether they should be eradicated as a non-indigenous residents.

Animal and birdlife were restricted to two squirrels and one downy woodpecker.

After lunch, enjoyed at the end of the Ravine, we were privileged to wander through, and sample from, the experimental pear orchards and blueberry plots in the adjacent Experimental Station grounds.

We could also see, but not touch, the oh-so-tempting produce in the experimental vineyards. Having seen, one did not linger, for reason of the intermittent ear-splitting reports from a propane-powered bird scarer mounted in the centre of the vines.

We bid our host adieu at about 2PM after a thoroughly enjoyable, in all respects, outing, and went home laden with produce from Hennigar's at about 3.30PM.

Derek Eaton

SECRETS OF INSECT BEHAVIOUR

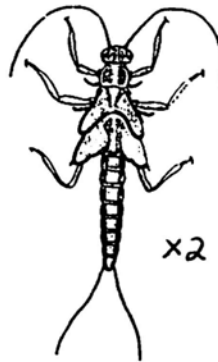
Date: Saturday, September 12, 1987      Participants: 12  
Place: Petite Riviere and Lake Nancy, Lunenburg Co.,  
Leader: John Brownlie  
Weather: Sunny, warm, light breeze, high haze.

A band of ten from Halifax, mostly ill equipped for aquatic forays, joined south shorers John Brownlie (trip leader) and Steve and Beverly Richardson for a day looking at insects on the Petite River. John handed out nets and buckets, and gave us a rundown on the natural history of the insect inhabitants as we encountered them. We first visited a narrow, rapidly moving section of the river just upstream from an old dam near Fancy Lake. Then we moved downstream a few miles to shaded water below a bridge. There the river is wider with quiet water near the edges. There were distinct differences in the insect fauna between these two sites, the former harbouring only species that are adapted to fast-moving water, and the latter having in addition, species requiring quieter water.

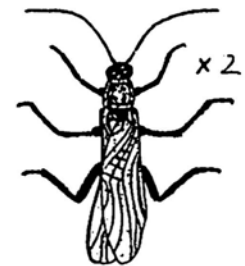
**LARVAE**

Larval stages of many aquatic insects represent the pinnacle of the life cycle, lasting months to years and passing through as many as 30 molts. Most larvae are fully aquatic, absorbing oxygen from water by simple diffusion or with the help of internally or externally located gills. They feed variously on microorganisms, plant debris, invertebrates and small fish, and are themselves important food items for valued fish species. Adults are air breathing, winged, short lived, eat little or nothing and mate, lay eggs and die within hours to days. Eggs are deposited in the water in a variety of modes. We observed eggs on rocks, vegetation and the water water surface. Eggs are not readily identified. The larvae are, at least to the genus or family level.

STONEFLY NYMPHS were abundant on undersides of rocks at the upstream site. John called them the "ferraris" of the stream because of their low slung, hugging habit. Nymphs live 1 to 2 years, browse on algae and other microorganisms and are an important item in the diet of trout and salmon, both of which are caught in the Petite River. They are found only in well oxygenated water. Lack of stoneflies in a suitable stream can be an early indication of pollution. Adults resemble the nymphs but have wings, are slow moving, and some species emerge only in winter. As many as 6000 eggs are produced, dropped singly or in a packet into the water.



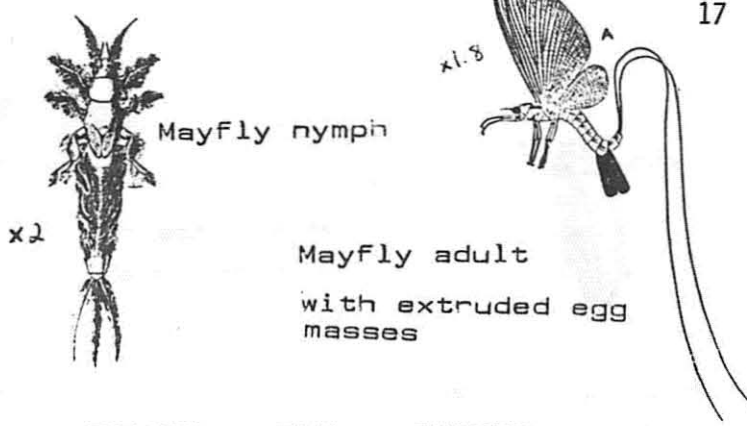
Stonefly nymph



Stonefly adult

MAYFLY NYMPHS look superficially like those of stone flies, but are distinguished by the presence of fluttering gills; they were collected only at the downstream site. Nymphs crawl onto rocks and molt into "subimagos" which fly away and molt again into mature adults. The adults swarm (particularly around lights), mating in flight. Masses of dead mayflies can make lakeside roads slippery.





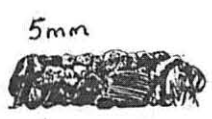
DRAGON FLY NYMPHS were collected in a net placed in the main flow at the upstream site. Normally they crawl about on the bottom, but can move quickly through the water by jet propulsion. (They have a gilled water sac at the back end for breathing which is also used to propel them in squid-like fashion). They are voracious predators catching prey by shooting out their lower lips. Victims include tadpoles, fish, worms and other insects.

The larvae mentioned so far are not very different in appearance from the adults and are commonly called NYMPHS (or in the case of aquatic insects, NAIADS) to distinguish them from larvae which are very different from adults. The latter include the wormlike or caterpillar-like larvae of moths, beetles, flies, bees, wasps and a few others. Before passing into adult stages, they go through a resting, pupal stage during which drastic changes in physiology and structure are effected. Such insects are said to have complete (as opposed to incomplete) metamorphosis. We found some pupal stages but these were not identified. Larval stages in this category follow.



Dragonfly nymph with extended labium

Caterpillar-like CADDIS FLY larvae living in tubes made of cemented sand were abundant on undersides of rocks at the downstream site. Head and legs emerge when left undisturbed for a bit. The larva wiggles to create a flow of water and oxygen through the case (open at both ends) and over its gills. You can watch a caddis worm building its tube by removing it, and then supplying it with suitable building material. Adults are little grayish white "moths". A second type was recovered from the current in mid stream at this site. This species spins a small silk web to catch food.



Caddis fly in case

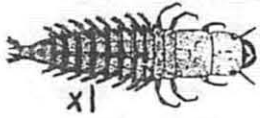
Caddis fly removed from case



Worm-like BEETLE LARVAE were common crawling on undersides of stones at both sites. These may have been larvae of diving beetles (below).

What we thought initially was a tiger beetle larva turned out to be a HELMGRAMITE. It is the larval stage of a dobson fly, a large insect with wings measuring 10+ cm tip to tip. It was caught swimming in quiet water downstream. Its appearance is as frightening as its name, but they are harmless except to mayfly and stone fly larvae on which they

feed. The larval stage lives up to 3 years, the adult stage lives only hours to days.



Hellgramite

A big fat green caterpillar about to pupate, collected streamside, elicited the most oohs and aahs of the day. Big green jobs, Beverly told us, usually turn into big moths. This one was probably a polyphemus species. (Books for identifying caterpillars are not readily available). Arching, inching INCHWORMS (small caterpillars of the Geometer moth) on streamside vegetation elicited laughs. A bristled caterpillar of the TUSSOCK MOTH was found on sweetfern.

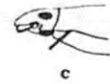
#### ADULTS

Adults of aquatic insects breathe atmospheric oxygen but most can go below the water for periods varying from minutes to hours. They do this by carrying bubbles or films of air with them. You wouldn't think a bubble would last very long, but they have large surface-to-volume ratios and as much as 13 X more oxygen than originally contained in the occlusions may be made available by diffusion of oxygen from water into the bubbles. (The 80% nitrogen gas in the bubbles is relatively insoluble and keeps them from immediately falling apart).

**WHIRLIGIG BEETLES:** The name is descriptive. Equipped with bifocal eyesight- the upper for air and the lower for water - these oval, predacious and generally gregarious beetles whirl and gig over the surface with occasional ventures below and above. The larvae are fully aquatic and are predacious on other insects and small fish which they inject with poison and solubilizing enzymes.



Whirligig beetle



Head showing bifocal eyes

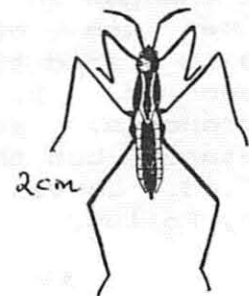
**DIVING BEETLES** were seen darting and diving or hanging down from the surface. They are predacious, and strong swimmers with flattened, fringed hind legs.

An adult **EASTERN GREEN DARNER** (Dragon fly) was caught sleeping streamside.

**WATER STRIDERS** were not easily caught. A covering of fine velvet hairs repel water allowing them to skate on the water. Like skaters, they like a smooth surface and stay away from rippled water. They were found only in the quieter water downstream. They use the first pair of legs to capture living and dead insects. A silvery film of air enveloping the body allows them to submerge for short periods.



Diving Beetle



Water Strider



WATER BOATMEN are bugs (O. Hemiptera). They were caught in nets amongst the vegetation downstream. They spend most of their time sitting on rocks or vegetation, and move by oar-like motion of the hind legs (the related Backswimmers swim on their backs on the surface). Boatmen are the only aquatic bugs that are not fully predacious. They use their scoop-like front legs for sifting up minute protists, plant debris etc.

Some play was had attempting to capture a small PIKEREL FROG with reddish legs and a larger GREEN FROG at the downstream site...the former outsmarted us. Before leaving, we made some vegetation sweeps along a nearby logging road. We returned to Halifax via a balmy drive up the west side of the LaHave River, and a stop for sustenance in Bridgewater.

A tip of the hat, John, for wetting our curiosities, feet and appetites!



Water Boatman

Some good guides for beginners in this business surfaced during the expedition, including Golden Press Nature Series Guides on POND LIFE; INSECTS; and BUTTERFLIES AND MOTHS; PETERSON FIELD GUIDE TO THE INSECTS, and OBSERVING INSECT LIVES (Stokes Nature Guide, Little and Brown). FRESH-WATER INVERTEBRATES OF THE U.S. (RW Pennak, Ronald Press, 1953) is an old standby with good keys and drawings. For more detail still, see AN INTRODUCTION TO THE AQUATIC INSECTS, 2nd Ed. Ed by RW Merritt and KW Cummins, Kendall Hunt Publ. Co., 1984; it's well illustrated.

D.G. Patriquin

#### A TRIP TO THE TREE BREEDING CENTRE

Date: Saturday, October 3, 1987. Participants:  
Place: Lands & Forests Tree Breeding Centre, Debert, Truro

A handful of us met at the Museum car park on October 3 (too many events vying for the same people that weekend) for the trip to the Tree-breeding Centre in Debert, a cooperative venture of the N.S. Government and several paper companies active in the province.

Seeds are gathered from what they term 'super trees', so named for superior qualities such as height, self-pruning of the lower branches and so on. They also collect scions which are grafted onto small trees, and we were shown the procedures used in both methods. The goal is to develop trees which are more disease resistant, grow faster and produce more wood.

We picked up some pamphlets, Trees for the Next Century, for those who would like to learn more about these experiments, and what is being done for the future of our forests. This is a very interesting venture and learning about it made the trip really worthwhile.

Trees were the order of the day. It is a few years since I have seen such a magnificent display of colour in the fall foliage - vibrant reds, yellows, golds and rusts.

We completed our day by having a late lunch in Victoria Park, Truro, on the way back to Halifax.

Daphne Faulkner.



# book reviews

## A REVIEW OF THE FLORA OF NEW BRUNSWICK -

The recently-released (1986) Flora of New Brunswick is an excellent first flora for any province, and well worth considering as a Christmas gift for yourself, or anyone you know who has an interest in the plants of the only province in Canada with an all-liberal government. Written and published by Harold Hinds, a top-notch botanist and curator of the Connell Memorial Herbarium at U.N.B., it offers a concise, up-to-date, thorough presentation of the vascular flora documented so far from New Brunswick.

In its treatment of some 1600 members of the N.B. flora, this book has much to recommend it to amateurs, students and experts alike.

An Up-to-date Taxonomy, with synonymies: Hinds has done his homework well in this department.

Easy access to information: the well organised, concise format means that one never has to look very far or hard for the information desired. For example, species within genera and genera within families are arranged in alphabetical order. The illustrations and distribution maps are in order at the end of the book, and the illustrated 334-entry glossary is terse and clear.

Abundant illustrations and distribution Maps: over 90% of the species have diagrams and about two thirds have maps (with the exception of the very common and very rare). For comparison, Roland and Smith diagram about 50% and map 36% of Nova Scotia's species.

Excellent research: the book is solidly underpinned by Hinds' extensive field experience, specimen examination, and careful literature research. He has made a conscientious effort to verify each report and states in those instances where he could not.

Construction: this is a very well bound book, in contrast to many of today's paperbacks. I have used mine for over 100 hours and it shows no signs of wear yet, other than turned-down corners.

The Flora is not perfect, of course. I found at times that the keys were a bit too technical, and the 'common names' given were often not the ones most frequently used in Nova Scotia. It is somewhat too concise, and much important information is omitted. For example: the connections between Spartina pectinata L. and salt marshes are not mentioned, and apart from the keys, there is virtually no information about the plants themselves. Also the taxonomic minefields associated with such genera as Rubus and Cratageus, and confusing species clusters such as the Polygonum aviculare L. group are either not mentioned at all or only dealt with briefly. One misses Roland's short introductions to major taxa; and the dearth of textual references to the literature is regrettable. Finally, since this is a first edition, there are a few 'bugs' in the works, such as missing synonymies and type-setting errors. However an errata section comes with each book so that most of the 'bugs' can be remedied with half-an-hour's work.

The Flora of New Brunswick by Harold Hinds is available for \$30.00 from :

Harold Hinds, Biology Department  
University of New Brunswick  
Bag Service #45111,  
Fredericton, N.B., E3B 6E1.

Joseph Ross Mayhew