

# BLOMIDON NATURALISTS SOCIETY



VOLUME 17  
NUMBER 3  
SEPTEMBER 1990

## PROGRAMME

### BNS Fall - Early Winter Programme

**MONDAY EVENING MEETINGS:** All meetings will start at 7:30 p.m. and, unless otherwise indicated, will be held in Room 244 of the Beveridge Arts Centre at Acadia University. All lectures and field trips are open to the public and BNS members are encouraged to bring friends and neighbours. Any changes in the date, time or subject of meetings are announced on posters, the Kings Kable notice board and in The Kentville Advertiser and The Hants Journal.

1. October 22 -- "Adventures in Costa Rica" by Tom Herman. As many Society members know, Tom Herman and his family were on sabbatical in Costa Rica for the past year. Judging from the correspondence we have received from Tom, this presentation will be at least as exciting as an Indiana Jones movie.

2. November 19 -- "Wandering in Nature" by Mary Primrose. Mary will use several media including a dissolving slide projector system, music and poetry to present her experience of natural history. Many people have commented on the excellent quality of her photographs and the moving atmosphere created during her presentations. Mary is a photographer with the Department of Biology, Dalhousie University.

3. December 17 -- "Global Warming" by Fred Scott. Fred is well known by many BNS members for his studies of Nova Scotia mammals and his excellent illustrations in The Amphibians and Reptiles of Nova Scotia. More recently, Fred, and Acadia's Tom Herman, have become interested in how predicted changes in the planet's climate will affect the fauna of our region. Fred is Assistant Curator with the Nova Scotia Museum.

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The BNS Newsletter is published on equinoxes and solstices.

Editors: George and Margaret Alliston  
Art: Mary Pratt  
Production: Larry Bogan  
Distribution: Lana Churchill and Brenda Thexton

"The primary objective of the Society shall be to encourage and develop in its members an understanding and appreciation of nature. For the purpose of the Society, the word 'nature' will be interpreted broadly and shall include the rocks, plants, animals, water, air, and stars."

from the BNS constitution

The Blomidon Naturalists Society is a member of the Federation of Nova Scotia Naturalists, an Affiliated Member of the Canadian Nature Federation and a member of the Nova Scotia Trails Federation.

The Blomidon Naturalists Society is a registered charity. Receipts for income tax purposes will be issued for all donations.

Address correspondence to:  
Blomidon Naturalists Society  
P.O. Box 127  
Wolfville, Nova Scotia  
B0P 1X0

Evening Programme continued..

4. January 21-- Show and Tell Night, in Room 308, Patterson Hall (Acadia University Biology Building). This annual feature is enjoyed by all who attend. As in the past, please bring some natural history (up to ten slides, interesting observations, finds, photos, books, etc.) and/or a friend. We are planning to organize this information exchange a bit differently this year so that it runs more smoothly and ends at a reasonable hour. Details will be announced at an upcoming meeting.

#### Field Trips

There are no field trips scheduled until after the next issue of the Newsletter. Watch for them then.

#### 1990 Wolfville Christmas Bird Count

The 1990 Wolfville Christmas Bird Count will be held on Saturday, December 22 (poor weather date: Sunday, December 23). Everyone, regardless of his or her level of expertise at bird identification, is welcome and encouraged to parti-

cipate. If you are planning to come, please let us know as soon as possible. Call the Secretary of the Biology Department, Acadia University, 542-2201, extension 334, and leave your name, whether you want to work in a specific area and whether you need to be paired with an experienced birder. If you need further information before deciding, call Jim Wolford, Sherman Boates or Peter C. Smith at the same number.

Further information about the count procedures will be provided at the November and December BNS meetings.

The Wolfville Christmas Bird Count is traditionally lots of fun - even if the weather is bad. We're looking forward to having lots of new counters this year.

Acadia Biology Seminar Club  
Weekly Seminars

The Acadia Biology Seminar Club meets weekly on Thursdays, in Room 308, Patterson Hall, at 4:45 p.m. All interested persons, including members of the public, are encouraged to attend. Refreshments are served prior to the lecture. Following is a list of upcoming seminars:

- Nov 1 Dr. Bill Freedman, Dept. of Biology, Dalhousie Univ.  
"Some ecological impacts of harvesting and herbiciding in forestry"
- Nov 8 Dr. Norm Seymour, Dept. of Biology, St. Francis Xavier University  
"Interactions between breeding mallards and black ducks"
- Nov 15 Dr. Lois Hare, Practitioner of Holistic Medicine  
"Naturopathic Medicine"
- Nov 22 Dr. Tom Marrie, Infectious Disease Specialist, Department of Medicine, Dalhousie University  
"Q Fever in Nova Scotia"
- Nov 29 Mr. Harry Brennan, Naturalist  
"Birds of Prey"
- Jan 10 Bob Bancroft, Wildlife Biologist, Nova Scotia Department of Lands and Forests  
Subject to be announced
- Jan 17 Dr. Nick Hill, Dept. of Biology, Mount St. Vincent University  
Subject to be announced
- Jan 24 Dr. Tom Herman, Dept. of Biology, Acadia University  
"Damsel fly Studies in Costa Rica"

## SOCIETY NEWS AND BUSINESS

### Acknowledgements

Many thanks to:

speaker Barbara LeBlanc for her interesting and animated presentation on Acadian cultural history;

our field trip leaders: Peter Austin-Smith, Sherman Boates, Larry Bogan, Bernard Forsythe, George Forsyth, Peter MacDonald, Ruth and Reg Newell, John Pickwell, Sherman Williams, Jim Wolford and Marian Zinck;

special thanks again to Harold Forsyth, Sherman Boates and Jim Wolford for their continued work on the Robie Tufts Nature Centre project;

everyone who helped with the chimney swift public appeal either by stuffing envelopes or again digging into their own pockets;

all our Newsletter contributors.

### From the Editors

Please accept our apologies for any inconvenience the delay in producing this issue of the Newsletter has caused you. Other responsibilities prevented our working on it until after the October meeting.

In the past you may have noticed some inconsistency in printing scientific names in the Newsletter. We produce the copy for the Newsletter on one computer system and Larry Bogan lays it out and prints it on another. The incompatibility in how the second system handles the first's instructions to print the italic scientific names has resulted in the names being printed in regular type. In the future we will probably use yet a third computer system (with a superior printer). Until we have enough time to straighten out the technical problems amongst the systems, scientific names will be treated in an "old-fashioned" way and underlined.

As in the last two years, the next issue of the Newsletter will be produced late (deliberately, that is) to allow the inclusion of the Christmas Bird Counts.

### BNS Newsletter Submissions Deadline - December 1, 1990

Please send or give all contributions to the Newsletter to:

George Alliston (542-3651)  
R.R 3  
Wolfville, N.S. B0P 1X0

For "Trivial Tidbits" only, see the instructions at the beginning of "Trivial Tidbits". Send the submissions to Jim Wolford at:

Biology Department  
Acadia University  
Wolfville, N.S. BOP 1X0

Last-minute observations can be phoned in to 542-2201, ext. 334 (leave a message) or 542-7650. (late evening to midnight).

The editors would greatly appreciate submissions being at least double-spaced to facilitate both editing and word processing. If you are able to submit articles in word-processed form, please contact the editors for technical details. Sketches or diagrams should be submitted in final form, preferably on a separate page.

#### The Robie Tufts Young Naturalists Award

The Robie Tufts Young Naturalists Award was established by the Blomidon Naturalists Society in 1983, in memory of Dr. Robie Tufts, to encourage an interest in natural history. Winners have been:

1984	Tammy Ashley of Newtonville
1985	Paul Fairclough of Coldbrook
1986	Kasia Muldner of Wolfville Sean Timpa of Wolfville
1987	Michael Jodrey of Hantsport
1988	Stephen MacPhee of Wolfville Jelmer Wiersma of Bishopville
1989	Jason Jolly of Cambridge Simon Onyschuk of Kentville

Any resident, of Kings or Hants Counties, fifteen years of age or younger, may enter the competition. Projects entered may cover any subject concerning natural history: for example, a wildflower collection, descriptions of local bird observations, an essay on a natural history subject, a project describing the life cycle of insects, a geological collection, etc. The candidate should display an ongoing interest in the subject.

Questions concerning the competition should be addressed to:

Mr. Sherman Williams  
Blomidon Naturalists Society  
P.O. Box 127  
Wolfville, N.S. BOP 1X0  
Telephone: 542-5104

Nominations should be submitted to Sherman Williams by November 30, 1990.

Entries will be judged by the Executive Committee of the Society and the award(s) presented at the December meeting. The prize will be one year's membership in the Society and a field guide of the recipient's choice.

Members of the Society are urged to nominate suitable candidates and/or encourage young people to enter the competition.

## Summary of BNS Directors Meeting Minutes - July 4, 1990

The President gave a progress report on the Chimney Swift Project and briefed the directors on the program for the official opening of the Robie Tufts Nature Centre on Saturday, July 7, 1990.

The cost of hosting the inaugural meeting of the Federation of Nova Scotia Naturalists was discussed. The Society should realize a small profit after all bills are paid.

It was agreed that the formation of a Conservation Committee be deferred.

Miriam Tams gave a report from the Program Committee. Judy Tufts reported that our current bank balance is in excess of \$800.

Lana Churchill, John Pickwell and Jean Timpa are to be asked to serve on a Nominating Committee. A new slate of officers must be presented at the annual general meeting in October.

### Robie Tufts Nature Centre Update

by Harold Forsyth  
Greenwich, N.S.

Although it seemed like a formidable task when planning began in January, the Nature Centre has now become a reality. A well-attended opening of the Robie Tufts Nature Centre was held on July 7, 1990; we were pleased to have Lillian Tufts (Robie's wife) and Virginia Pickett (Robie's daughter) participate in the opening ceremonies. The downpour of rain that occurred during the ceremonies failed to dampen the spirits of the approximately two hundred attendees. Everyone enjoyed the beautiful rainbow that appeared after the rain.

Landscaping around the Nature Centre was completed in August.

Two panels on chimney swifts have been completed and mounted at the centre. A panel on Robie Tufts and the BNS is near completion and panels describing the use of the area by shorebirds and overwintering bald eagles are being prepared. It is planned that a number of panels be constructed featuring various aspects of the local environment and that they be changed as appropriate (e.g. eagles in winter, swifts in spring and summer, shorebirds in late summer, etc.).

A statement of income and expenses for the project to September 17, 1990 follows. The balance of approximately \$3,500 will be used primarily for the preparation of new display panels.

Thanks to the efforts of many individuals, Wolfville now has a unique structure which will serve as a home for chimney swifts, a tourist attraction for the town and an opportunity for the Blomidon Naturalists Society to foster an awareness of nature in the general public.

BLOMIDON NATURALISTS SOCIETY  
 CHIMNEY SWIFT PROJECT  
 STATEMENT OF INCOME AND EXPENSES  
 SEPTEMBER 17, 1990

INCOME

Environmental Partners Fund.....	\$ 13,825.00
Dover Trust Corporation.....	10,000.00
Chimney Swift Raffle.....	4,561.00
James L. Baillie Memorial Fund.....	2,200.00
Student Employment Grant.....	2,944.00
Donations.....	10,527.24
<b>TOTAL INCOME.....</b>	<b>\$ 44,057.24</b>

EXPENSES

Architect & Engineering.....	\$ 1,952.75
Chimney Repairs.....	4,600.00
Pavilion Construction.....	15,735.00
Lighting.....	2,500.00
Intrepretive Centre:	
Panel frames.....	\$ 880.00
Panel plexiglass.....	814.00
Graphics services.....	981.62
Artist's drawings.....	210.00
Hardware supplies.....	172.93
Student expenses.....	106.70
Nature Centre sign.....	349.58
Swift brochures.....	400.00
Sub-Total.....	3,914.83
Summer Student.....	3,597.91
Fund Raising Costs.....	562.00
Landscaping.....	7,699.61
<b>TOTAL EXPENSES.....</b>	<b>\$ 40,562.10</b>
<b>EXCESS OF INCOME OVER EXPENSES.....</b>	<b>\$ 3,495.14</b>



A Letter from the Federal Minister of the Environment

August 14, 1990

Mr. Harold Forsyth,  
Blomidon Naturalists Society,  
Box 127,  
Wolfville, Nova Scotia.  
B0P 1X0

Dear Mr. Forsyth:

I am pleased to inform you that I have approved your application to the Environmental Partners Fund. The Nova Scotia Selection Committee strongly recommended your project as environmentally sound, technically feasible, and truly community-oriented.

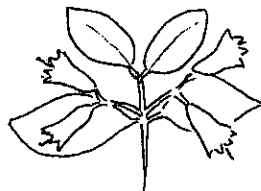
Individual Canadians, and groups such as yours, can help shape the country's environmental future. Your project will not only make a tangible contribution to the quality of the environment in your community, but also encourage others to do their part.

I have asked Mr. Neil LeBlanc, the regional Program Manager, to contact you as soon as possible to complete the formalities.

Please accept my congratulations and my thanks for your excellent proposal, along with my best wishes for success.

Yours sincerely,

Robert R. de Cotret  
Minister of the Environment  
Canada



FLY-HONEY SUCKLE

FIELD TRIP REPORTS

Gaspereau River  
May 24, 1990

by Ruth Newell  
White Rock, N.S.

The lack of black flies and a promising change in the weather compensated for the very muddy trail ten people followed upstream from the White Rock bridge on the evening of May 24. Due to two preceding weeks of wet weather, tall rubber boots were essential. Unfortunately two members of our group found their footwear inadequate and were forced to return to their vehicles soon after we started. We were sorry to have them go. Another time we will try to do a better job forewarning participants of possible trail conditions.

Before we began our walk, Mr. Bert Young kindly filled us in on some of the recent history of the Gaspereau River

in the White Rock area. We then forged ahead to see what was in store for us other than mud. A distinctive hawkweed (Hieracium lachenalii C.C.Gmel.), very common in this part of the Gaspereau Valley, is found along the beginning of the trail above the bridge. The leaves of this plant have purple blotches which are very apparent early in the summer but tend to fade as the season progresses. American Fly-Honeysuckle (Lonicera canadensis Bartr.) was still in bloom and was very picturesque on the bank above us as was the Red-Berried Elderberry (Sambucus pubens Michx.). Flowering Wild Strawberries (Fragaria vesca L., var. americana Porter, forma landonii Boivin) were also seen. These are of particular interest since the mature berries of these plants are white. White Wild Strawberries are associated with Acadian settlements. It is quite likely that at one time there was an Acadian grist mill nearby.

Many ferns grow in the rich, moist soil of the shaded flood plain along the river. Some of those observed were: Ostrich Fern (Matteucia struthiopteris (L.) Todaro), Sensitive Fern (Onoclea sensibilis L.), Christmas Fern (Polystichum acrostichoides (Michx.) Schott), Marginal Fern (Dryopteris marginalis (L.) Gray), Wood Ferns (Dryopteris spp.), and Lady Fern (Athyrium filix-femina (L.) Roth).

Red Trilliums (Trillium erectum L.) and Toothworts (Dentaria diphylla Michx.) - one of the few native mustards in the province - were in bloom. Bernard Forsythe found a patch of the tiny golden saxifrage (Chrysosplenium americanum Schwein.) also in flower in one of the wetter sections of the path. I think the Latin name for this plant is bigger than the plant itself! Other plants of note that were not yet in flower included Agrimony (Agrimonia gryosepala Wallr.), several types of Avens (Geum spp.), Meadow-Rue (Thalictrum polygamum Muhl.), Spotted Touch-Me-Nots (a.k.a. Jewelweed) (Impatiens capensis Meerb.) and the sedum, Live-Forever (Sedum telephium L.).



TOOTH WORT

Birds were somewhat difficult to hear over the sound of the river but we did manage to find a few. Notables included veery's, hermit thrushes, ovenbirds catbirds and a solitary vireo close to a vireo nest from last year.

Impending darkness finally forced us to return. It was a pleasant walk in an area interesting in both a natural and a historical sense.

Scots Bay to Cape Split Hike  
June 2, 1990

by Sherman Williams  
Avonport, N.S.

About a dozen people set off for the eight km hike from Scots Bay to Cape Split. Sunshine mixed with a moderating Fundy breeze made the day very pleasant. Various birds

provided trail music, especially warblers like the black-throated green, magnolia and the redstart. As the trail took us upwards into the stands of yellow birch and maples we were greeted by showy woodland flowers. They had been busy getting their blooming done before the new leaves of the hardwoods diminished the sunlight on the forest floor. Spring beauties in their various shades of pink and white were still very abundant. Red trilliums and Dutchman's breeches blooms were present but were past their best. By this date, many varieties of fern had unfurled beyond the fiddlehead stage. The Ostrich Fern, or the "fiddlehead fern", felt no threat from the green eaters of our group.

A good strong breeze greeted us when we abruptly left the cover of the forest and stepped onto the open headland of Cape Split. The expansive view from here is always a welcome sight to hikers of this trail. After a few minutes devoted to savouring the surroundings and the triumph of having achieved our goal, each found a spot to relax and enjoy the refreshment of lunch and listen to the surge of the Fundy tide.

Time was taken to observe the distribution of nesting seabirds. Great black-backed gulls occupied the flat tops of the rocky headlands, herring gulls nested on the cliff ledges, and double-crested cormorants were on the narrow, outer pinnacles. Several young gulls could be seen.

The hike continued back along the lower trail toward Little Split Cove where we enjoyed several scenic views of the Split and the rugged, wind-exposed shoreline along Scots Bay. It was on this leg of the trail that we examined a lush patch of Starry False Solomon's Seal. Roland and Smith, in The Flora of Nova Scotia, refer to it as "rather rare, found around the coast on headlands or in marshes and wet meadows".

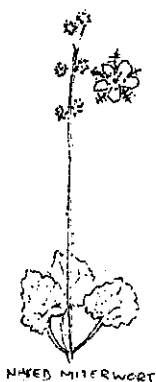
At Little Split Cove, a few members of the group descended the steep, but short, trail to the rocky beach in the cove for a brief period of exploration. Those who chose to remain "aloft" found a cozy spot to sit and enjoy the view.

A short while later we had rejoined the main upper trail and begun the return trek to Scots Bay, stopping for a rest at the occasional Minas Channel lookout. Eventually (by 5:00 p.m.) all had arrived back at the parking lot, tired but satisfied that it had been a very good day's adventure.

Curry Brook Ravine  
June 16, 1990

by Bernard Forsythe  
Wolfville, N.S.

and John Pickwell  
New Minas, N.S.



NAKED MITERWORT

Seventeen people gathered on this pleasant day for a look at Curry Brook. Each of us picked up a walking stick along the path through the woods to the brook. The various trees and bushes were discussed along the trail. At one stop hazelnut and witch-hazel were growing side by side providing a nice comparison. A few birds, such as magnolia warbler and Swainson's thrush, could be heard singing. An ovenbird was flushed from its nest. The roof was built of dead grass and leaves with the entrance on one side looking like a tiny dutch oven, hence the name ovenbird.

Great care was taken on the climb down the steep cliff to the brook and no mishap occurred. The various shades of greens from the numerous mosses and ferns on the steep banks of the brook were very impressive. Ferns of almost every type were found. High upon the rocks at the sides of the ravine we found an uncommon and dainty little fern, the maidenhair spleenwort (Asplenium trichomanes). This fern is very specialized in its habitat requirements. The other uncommon little fern we found in the ravine itself was the fragile fern (Cystopteris fragilis). It was much more widespread. Both these ferns like shaded rocky crevices. The other ferns found were the common wood fern, marginal wood fern, beech fern, oak fern, Christmas fern, sensitive fern, common polypodium, bracken, lady fern, interrupted fern, and cinnamon fern. We also found the field horsetail.

Mosses were everywhere as would be expected in this type of habitat. We also found two of the thalloid liverworts: the larger, the great scented liverwort (Conocephalum conicum) and the smaller, Preissia quadrata with no common name. The smaller one has little umbrella-shaped carpophores; this is the female receptacle of the plant and not a sporophyte.

We slowly made our way downstream crisscrossing the brook often for a close look at points of interest. The walking sticks were now put to good use to help with balance over the very slippery rocks along the brook. At one slick spot the youngest member of our troop fell into the water but other than this there were no problems.

An interesting find was naked miterwort with its tiny blossoms at their best. The flowers are greenish with beautiful fringed petals that look like snowflakes.

During the return to our cars all commented on the beauty of this rugged area and how much we enjoyed the afternoon.

A Habitat Walk Through History  
June 23, 1990

by George Forsyth  
Port Williams, N.S.

Approximately 16 people took part in a walk through a variety of habitats in Greenwich, Kings County, paying close attention to man's influence on the natural world.

It has been my perception that most naturalists' interests, and hence field trips, have been focused on natural, pristine and spectacular areas of our province. These areas certainly do deserve our attention and respect but most common habitats in Nova Scotia have been influenced by man.

In Greenwich, within three hours, we were able to trace history from the earliest Micmac inhabitants, who summered on the hills near the present Hennigar's Farm Market, to the Acadians (represented by the foundation of an Acadian house), to the Planters whose descendants currently farm the land.

Man has influenced Greenwich in many ways. We were able to find many introduced plants: the buckthorn, hawthorn, daphne, yarrow, lichnis, and others, of the Acadians and Planters; the Quercus bicolor of Ebenezer Bishop; and the present field and tree crops of Harold Forsyth, Doug Hennigar and Andrew Bishop.

Animal species introduced by man were also observed: the European starling, house sparrow, ring-necked pheasant, white-tailed deer (tracks) and seven-spotted lady beetle.

By far the most noticeable influence has been the change in the vegetation; all of the forest encountered during the walk had been cut and is now second growth forest. We compared a cattle-grazed forest of almost pure spruce having little undergrowth with an adjacent ungrazed forest which contains a tremendous variety of species and a dense understory growth.

Thinking back to when Greenwich was still "undiscovered", you imagine a spectacular old growth, mature forest of pine, hemlock, yellow birch and maple. The animal inhabitants - the barred owl, pileated woodpecker, cougar, woodland caribou, pine marten and fisher - have all but disappeared. However, this area is not lacking in animals. The open fields support mourning dove, ring-necked pheasants, spotted sandpipers and killdeer, all species that have been "introduced" through man's influences. At the edges of field and forest, yellow, black and white, and yellow rumped warblers, and song sparrows, were ever present. Though not seen, raccoons, skunks and white-tailed deer were mentioned as agricultural pests. Through man's influences they have benefitted, feeding on many of the crops planted.

This naturalists' walk was for the historian as well. We found an Acadian house foundation and imagined the small Acadian settlement along a quiet woodland brook. We imagined a hedge of buckthorn, hawthorn and daphne surrounding a garden planted with herbs and vegetables different from our own.

The New England Planters settled this hillside following the expulsion of the Acadians and have farmed these fields

since. We saw some of their homes, followed their property boundaries and met their descendants (the six Forsyth(e)s in the group).

This trip did not fit a purists's idea of a "naturalists'" field trip but the "new" nature created and influenced by man is the natural world most of us have experienced. It is awe inspiring to view Cape Split and it is spirit renewing to visit Little River Falls, but it is also rewarding and enlightening to visit Greenwich to see what man has done to this land. Some will view these changes with remorse and even disgust; others will accept the facts and see beauty and splendour in this new "natural" world.

Observation of Chimney Swift Exodus  
July 7, 1990

by Jim Wolford  
Wolfville, N.S.



I intended all week to phone George Forsyth, leader of the (advertised) 4:00 a.m. field trip to the Front Street chimney, but, having neglected to do so, I looked up the time of sunrise, 5:35 a.m., and got up at 4:30 a.m.

After driving past the Robie Tufts Nature Centre and seeing no one there, I found a similar crowd at University Hall at 4:55 a.m. I set up my lawn chair west of the chimney and sat, waiting for light and swifts and whatever else, with a Thermos of coffee, a note pad and a hand counter.

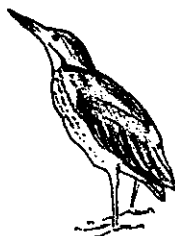
My first sighting of a swift came at 6:30 a.m. and it entered the chimney! Another entered at 7:20. One may have exited at 8:16 (but I'm unsure - I was dozing a bit).

The morning was overcast and cool and, in very late morning, the sky cleared. Then, starting at 11:46 a.m. (almost seven hours after I began the vigil!), about 170 swifts came out in four minutes. This number closely approximated my relatively accurate count of 175 entering the chimney the previous night.

So, all of you who didn't show up for this trip can be glad you didn't! However, I don't want to discourage you from trying it another time. Normally, on a fine morning, the swifts depart within a half hour of sunrise.

Cornwallis River Canoe Trip  
July 14, 1990

by Larry Bogan  
Cambridge Station, N.S.



BUTEN

Downstream from Kentville the Cornwallis River is tidal but upstream the river has created a large floodplain through which it meanders. This trip took us through the floodplain. We started at the Lovett Road bridge and floated down to the Meadowview

Community Centre on Brooklyn Street just outside Kentville.

In the spring as all the swollen tributaries of the Cornwallis empty their waters into this central catchment, the river overflows its banks and fills the floodplain. Now, in midsummer, the river was low and well within its banks. In most places the banks were two feet above the river level.

This morning six canoes traveled the six kilometres along the meandering river which probably required over 12 kilometres of water travel. Along the way we saw painted turtles, green frogs, bullfrogs, muskrats, and many birds. Two large owls, probably great horned owls, flew into the nearby woods as the first canoe glided past. At the start, an American bittern flew over Lovett Road and landed in the intervale. Of course, there were spotted sandpipers, woodcock, Wilson's snipe, black ducks and red-winged blackbirds.

At about the half-way point we had a rest stop under a large white pine tree near the shore. The first third of the trip had been through an intervale grazed by cattle and had many sand beaches next to the closely cropped grass with scattered large trees growing next to the river. For the last two-thirds, the land was covered by expanses of tall meadow grasses with steep banks by the river. This provided less interesting canoeing but this area had more adjacent ponds where black ducks were nesting.

The trip took over three hours and we all enjoyed the outing.

Cadden Bay, Keji Seaside Adjunct Park  
July 22, 1990

No report was received for this field trip.

Shorebirds and Chimney Swifts  
August 4, 1990



by Jim Wolford  
Wolfville, N.S.

This joint Halifax Field Naturalists, Blomidon Naturalists Society excursion met at the Acadia Gym parking lot where we formed a ten-car caravan, and then drove slowly through Wolfville's Mud Creek Days celebration to the Grand Pre dykelands where we searched for roosting shorebirds.

The first roost we observed was so distant that we could only discern black-bellied plovers and gulls. Then at noon we hit paydirt. In a short-grass sod field close to the road were two whimbrels; beyond them was a roost containing a Hudsonian godwit, three ruddy turnstones, 20 dowitchers (very probably short-billed) and 40 black-bellied plovers. A female northern harrier was seen hunting low over the field.

We continued on east of Evangeline Beach. Below the bluff where we ate our lunches was a roost of "peeps" (mostly semipalmated sandpipers, a few hundreds of both semipalmated plovers and least sandpipers, five white-rumped sandpipers, and two sanderlings). "Guesstimates" of the flock size ranged from 5,000 to 12,500. We learned from two different observers that, four to seven days previously, the peeps had been extremely numerous.

After a relaxing pause on the bluff, we walked east on the "beach" toward Boot Island. The stroll was uneventful; we saw only four black-bellied plovers.

We all sat down and waited for the tide to recede and the shorebirds to return to forage on the mud flats. Our wait was a fairly long one but, three hours after high tide, a flock flew in from the dykelands and landed at the receding water-line. There were two Hudsonian godwits plus ruddy turnstones, black-bellied plovers and dowitchers. The latter wasted no time in becoming "living sewing machines", so rapidly were they probing the mud with their bills.

There was a long break for supper and then some of us regrouped at the new Robie Tufts Nature Centre at 8:00 p.m. I explained the history of chimney swifts roosting in Wolfville, mentioning that the numbers of chimney swifts in Wolfville this summer were far fewer than in 1989 and their current roosting site was University Hall at Acadia University. So we walked, biked or drove there.

A crowd of at least 100 people had assembled at University Hall.

Sunset at 8:40 came and went. A couple of swifts entered the big southwest chimney at 9:00 and 9:07. Numbers built up very slowly and the flock disappeared for long periods. Only five had entered by 9:15 and only at 9:20, extremely late for this time of year, was there any rapid funnelling into the chimney. By 9:25 it was too dark to see anything.

My total "guessed" entries were only 120 - two other estimates were 160 and 190+. The crowd applauded but this was a very poor show.

The Perseid Meteor Shower Observing Session  
August 12, 1990

by Larry Bogan  
Cambridge Station, N.S.

It rained all day but just before sunset the clouds dissipated and the skies cleared so that we could view the skies at the peak of the Perseid meteor shower. The Moon was below the horizon and, as the skies were darkening at 9:30 p.m., two bright meteors, both out of the constellation Perseus, streaked parallel to the horizon.

By 10 p.m. it was dark enough for the few that had gathered at the Stile Park in Wolfville to see the constellations and fainter meteors. There were an abundance of brighter ones this year. Sherman Williams guided us through the major constellations while I pointed my 75mm refractor at a few interesting nebulae, star clusters, and planets.

One of the most delightful observations was that of



Comet Levy which, by that time, was a "naked eye" comet (if you knew where to look). In the telescope or binoculars it had a prominent coma of light about its bright star-like nucleus. It was then approaching the Earth; two weeks later, it was closest to Earth and showed a fan shaped tail.

Our observations were cut off prematurely with the sudden development of an overcast. As I left I was surprised to discover that, only a kilometre west on the Ridge Road, it was still clear and that the overcast was a local phenomenon.

Although the date for the annual Perseid meteor shower is given as August 12, this is only the date of the peak of the shower. It really occurs over a four day period and, this year, on the two nights following the "peak", there were many bright meteors if you were out there enjoying the skies.

### Blomidon Park Field Trips

This summer, in cooperation with the Nova Scotia Department of Lands and Forests summer program "Parks are for People", the Blomidon Naturalists Society organized five field trips in Blomidon Park. These Wednesday evening trips got off to a bad start when nobody appeared for the first trip (June 27) leaving Jim Wolford twiddling his thumbs at the Park Administration Building. Another trip (Coastal Birds of Blomidon, August 1) had to be cancelled because of fog. The remaining three trips, however, were quite successful. Reports on these trips follow.



### Creatures of the Mud July 4, 1990

by Sherman Boates  
Wolfville, N.S.

At the Park Administration Building I met about ten people who wanted to meet the creatures of the Blomidon mudflat. Despite the fact that it was American Independence Day, we were able to convince a honeymooning American couple, strolling on the beach, to join us. I assured them that life in the mud was far more interesting than honeymoon or fourth of July activities. However, the couple, and others in the group, did begin to doubt me when I explained that part of "the experience" was removing your footwear and allowing the life in the mud to come in direct contact with the soles of your feet.

Beginning at the top of the beach, we wandered down the mudflat and began to examine the common organisms that comprise the mudflat community in our area. I identified and explained something about the behaviour and lifestyle of mud shrimp (Corophium volutator), ragworm (Nereis spp.), milky ribbon worm (Cerebratulus lacteus) and a variety of clam and snail species. I think that everyone had a better appreciation of what a biological community was after this experience because these organisms show so clearly how they live

in very close association with each other and are in many ways interconnected. When you are in a forest or old field you have less sense of the community of organisms living there because you typically see only one or a few of the species at a time.



I was also impressed by the fact that five of the people that came on the trip had lived in the area for many years, and in some cases had ventured out onto the mudflats, but had not realized that the mudflat is largely a blanket of living organisms that are held together with a bit of mud. Mudflat watching is very different from bird watching. If you are going to appreciate the creatures of the mud, you have to stand for long periods of time, squatting with your nose pressed close to the mud. It sounds awful; but try it, you'll like it!

Peregrine Falcon Hack Site  
July 11, 1990

by Peter Austin-Smith  
Wolfville, N.S.

About 20 people gathered at the Blomidon Park gatehouse to participate in a trip to the peregrine falcon release site within the park. Before travelling to the site, I gave a short presentation on the past and present status of the peregrine falcon (anatum race) in the Maritimes. We discussed the falcon mass release program, now in its fourth year, in this region. It was noted that such release projects, involving "hack" boxes in which four-week-old falcons are placed and reared until released when ready to fly at about six weeks of age, have been quite successful elsewhere. Birds released at such sites have returned as adults to the areas where they were reared and are now breeding. There are two release sites in Nova Scotia, the one in Blomidon Park and another in Five Islands Provincial Park.

The group then drove to the campsite at the entrance to the trail to the falcon release site to meet Allison Foster, the hack attendant. Allison recounted his experiences with the rearing and the July 3rd release of the first hack of young birds this year. There were some questions about the release techniques followed by comments concerning an aggressive male, 6N2, which had caused problems for the young birds in this area every year but one since the first release in 1987. Allison then led the way down the trail to the hack box about a twenty minute walk from the campgrounds.

When the group arrived at the observation station overlooking the release site, there, as if on cue, on top of the hack box was one of the recently released young peregrine falcons, a male. The bird remained perched quietly during our visit to the site in spite of much loud and excited whispering, only moving a few times to show both his front and back to the group. After a lengthy period of observation during which everyone, including the youngest children in

the group, had ample opportunity to view every detail of this bird, the group reluctantly began to hike back to the campground. From the comments it was clear that everyone had thoroughly enjoyed this trip and the remarkable view of a recently fledged falcon which, some day, may return to claim a breeding site on the cliffs overlooking the Fundy.

Flowering Plants of Blomidon Provincial Park  
August 15, 1990

by Marian Zinck  
Canning, N.S.

This evening a baker's dozen of us set out along the Indian Springs trail northward by the cliffs of Blomidon. Beginning at the upper picnic area, the trail meanders through spruce forest before reaching the higher elevations of the deciduous woods. Among the evergreens (red and white spruce and balsam fir), many of the asters and goldenrods were in bloom: Woodland Aster



(Aster acuminatus), New York Aster (A. novibelgii), Early Goldenrod (Solidago juncea), Canada Goldenrod (S. canadensis), Rough Goldenrod (S. rugosa), and our only white goldenrod, S. bicolor. Bordering the trail we noted many of Nova Scotia's common shrubs: the dogwoods, both Round-leaved (Cornus rugosa) and the Alternate-leaved (C. alternifolia), the Chokecherry (Prunus virginiana) and Downy Alder (Alnus crispus). In the shady cover of taller trees, we saw leaves of the early-flowering violets and wild Lily of the Valley (Maianthemum canadense) carpeting the ground. In damp spots there were Indian Pipes (Monotropa uniflora) peeking out from the needles and litter. Sarsparilla (Aralia nudicaulis) was seen throughout this area.



After crossing a grassy interval we entered the mixed hardwood forest where beech and maple predominate. In the dappled light we saw hazelnuts in their fuzzy coats and attendant flocks of blue jays who dine on the ripened fruit. Herbs seen here included Black Snakeroot (Sanicula marilandica), White Baneberry (Actaea spp.), False Solomon's Seal (Smilacina racemosa) and Clintonia lilies (Clintonia borealis) which seemed to be suffering; there were large patches of dead leaves. At this point, a Broadwinged Hawk flushed nearby - a pleasing addition to the evening sky. Eastward along the cliff face, somebody spotted an Osprey. As we headed further along, Bernard Forsythe showed us a couple of his favourite orchids: Helleborine (Epipactus helleborine) and the Tall Leafy Green Orchid (Platanthera hyperborea). He observed that the Helleborine seems to be spreading, as the

patches appeared larger than he remembered. The whorled leaves of the Red Trillium (Trillium erectum) were seen although long past blooming. Several were curious about leafless stalks carrying globular seed heads. These are the Wild Leeks (Allium tricoccum) and this site is one of only a few where they are known to grow in Nova Scotia. As the sky was darkening quickly, we decided to return along the roadside. Just before reaching the last corner Bernard demonstrated another compelling reason for taking binoculars along on botany trips (I had forgotten mine). From a distance of about 30 feet, he spotted a single specimen of an uncommon plant, Blue Lobelia (Lobelia spicata)!

After a short pause to view the lights of the distant Minas shore, the group dispersed.

### NATURAL HISTORY NEWS

#### Hurry to Join Project FeederWatch

Project FeederWatch is a joint project of the Long Point Bird Observatory in Canada and the Cornell Laboratory of Ornithology in the United States. More participants in Nova Scotia are desirable, particularly because of our diversity of habitats. Collecting this information all over North America provides a method for answering some of our questions about bird distribution patterns and also may provide new information about migrations.

Participants record, on computer-readable forms, the peak number of each species seen at their feeders during ten two-day periods from November until April. You can participate even if you will be away during part of that time since FeederWatch can handle receiving fewer than ten sets of observations from an individual feeder.

Participants are required to pay a registration fee of \$12.00 since the sponsoring organizations are non-profit. The fee covers the expense of printing and mailing the computer forms, newsletters in April and August each year, and computer time for processing the data. To join, send your name, address and a cheque made payable to "Project FeederWatch" to:

Project FeederWatch  
Long Point Bird Observatory  
P.O. Box 160  
Port Rowan, Ontario  
NOE 1M0

Forms will be mailed around early November so join up now if you're interested. Materials are also available in French. Those interested in receiving the newsletters and reports but not in collecting data may do so by paying the fee and requesting newsletters only. See the last issue of this Newsletter (Vol. 17, No. 2, June 1990, pp. 21-22) for an example of the information you will receive from the Project.

## Canadian Birding

In November 1989, after nine successful years of publication, Birdfinding in Canada (B.I.C.) sent out its last issue. Gerry Bennett's one-man effort in producing all 54 of the newsletter's issues was monumental; he managed to create something different from any other bird-related publication on the market, filling a pleasant niche between hard-core birding journals and chatty nature magazines. B.I.C. tied together the loose fraternity of birders throughout this immense land, and did so in a pleasing, informative, and timely style.

Canadian Birding, a new quarterly newsletter that begins where B.I.C. left off, will be a cooperative effort involving some of Canada's most avid birders. Some of the regular items that will be found in Canadian Birding include:

- Site descriptions of birding locations across Canada.
- Articles on how to find the most wanted birds in Canada.
- The Beginner's Page, with tips for novice and intermediate birders.
- The Canadian Birding Assist Service, helping subscribers contact birders elsewhere in the country to facilitate trip planning.

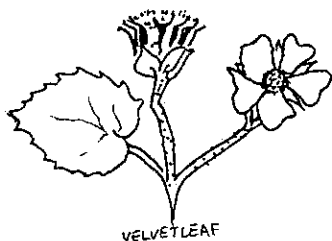
To contribute articles, artwork, or photos or to assist with the production of Canadian Birding, write to the address below. To subscribe, make cheques or money orders payable to Canadian Birding and send them, along with your name and address, including postal code, to:

Canadian Birding  
Site 14a, Box 43  
R.R. # 4  
Armdale, Nova Scotia  
Canada

Subscription rates are \$15 (one year) and \$29 (two years). (American and other foreign subscriptions are payable at the same rates but in U.S. funds.)

## Velvetleaf Alert

by George Alliston  
West Brooklyn, N.S.



The Kings County Soil and Crop Improvement Association has recently issued a Weed Alert for Velvetleaf (Abutilon theophrasti) that is "showing up in alarming amounts in Kings County in 1990". This weed has the potential to become a serious problem to our agricultural community. It is already a serious problem in central Canada and parts of the United States.

Velvetleaf is appearing in manure piles and fields that have been manured suggesting that it is entering the province in livestock feed imported from areas where the weed is established. Another possible source of this weed is imported bird seed.

This summer, Jack Scott found Velvetleaf growing in his garden in the Town of Wolfville. The garden was tilled this spring and a bird feeder, containing Niger seed from central Canada, was placed in it. Since he had not applied manure to his garden, it seems quite likely that the source of this weed could have been the bird seed.

Since Velvetleaf is an annual, the collection and incineration of its seedpods and cutting down the plant will effectively destroy it and prevent it from reseeding. If you have a large infestation to deal with you may have to cut down the plants, bag them (so that the seeds won't be dispersed) and transport them to the county landfill site.

Velvetleaf can grow to be very tall; although normally in the three to eight foot range, it has been known to grow to eleven feet when in competition with such crops as corn. "The entire plant is velvety to the touch and has valentine-shaped leaves which can be six inches across or larger. The plant is light green with small yellow to yellow-orange flowers about the size of a dime with green seed pods that turn black upon maturity." Each plant produces about 700 seeds. "Velvetleaf has a strong disagreeable odor and is not consumed by livestock."



SEED POD CLUSTER

For further information or assistance with this weed contact Eric Frank, Municipal Weed Inspector for Kings County, at 678-6141 or a crop specialist at the Nova Scotia Department of Agriculture at 678-7365, Ext. 120.

Your assistance, particularly those of you who feed birds and/or keep livestock, in preventing the spread of this noxious weed would be greatly appreciated by the agricultural community.

### Highlights of the 1990 Upper Bay of Fundy Peregrine Release Program

by George Alliston \*  
West Brooklyn, N.S.

In 1990, the ninth year of this program, 25 young peregrines were released: 10 at Blomidon Provincial Park, 10 at Five Islands Provincial Park and five at Quaco Head, New Brunswick. This brings the total number of peregrines released during this program to 168: 69 in New Brunswick and 99 in Nova Scotia (32 of which were released from Blomidon Provincial Park during the past four years).

Losses of hacked birds were disappointingly high in 1990 -- eight of the 25 birds are known or believed to have perished shortly after their release. Six of the eight "losses" occurred at the Blomidon release site. None of these birds was confirmed to have died but all disappeared

from the hack site within three days of their release and it seems most unlikely that they could successfully fend for themselves at this age. A bird from Quaco Head died in a power line collision and a bird from Five Islands was killed by a raccoon within two days of its release.

At Blomidon one bird from the first hack disappeared prematurely and the entire second hack (five birds) is believed to have been lost. An unfortunate combination of events is believed to have caused the apparent loss of the entire second hack. The adult (seven-year-old) male (band 6N2) that had caused problems with the releases at Cape d'Or in 1987 and Blomidon in 1988 (see BNS Newsletter, September 1988) was again, for the third year, defending his territory on Blomidon. During the 1989 releases and the first hack in 1990 it appeared that 6N2 had mellowed somewhat and, although he sometimes harassed the newly-fledged peregrines, the young peregrines quickly learned to avoid him and the number and intensity of interactions was thus minimized.



Immediately after the release of the second hack of peregrines in 1990, a heavy fog rolled into the Blomidon cliffs and persisted for several days. Because of the fog it is believed that the newly-fledged peregrines were not able to form an accurate visual image of their hack area. These bumbling young birds, apparently not having developed much of a sense of direction, seemed to provoke more vigorous attacks by 6N2. These attacks drove the young birds from the hack site and they were apparently unable to find their way back.

The highlight of the 1990 program is the confirmation of five peregrine pairs occupying sites in New Brunswick. Three of these pairs nested and produced young. The two pairs that were known to nest successfully in 1989 (see BNS Newsletter, September 1989) returned to their nest sites and each produced three young. The pair in Fundy Park fledged all three young but the pair nesting on the Saint John Harbour Bridge succeeded in fledging just one young. A third pair that was suspected of nesting in 1989 near Mary's Point returned in 1990 and nesting by this pair was confirmed. This pair hatched three young, two of which fledged successfully. Two "new" territorial pairs occupied historic peregrine sites in Grand Manan and on the Peticodiac River system but neither of these pairs nested.

Unfortunately there have been no confirmed nesting or territorial pairs in Nova Scotia. An attempt was made to provide a mate for the territorial male (6N2) that has been present on Blomidon for the past three years. A rehabilitated two-year-old female that had been injured in New Brunswick in 1989 was released at Blomidon on May 17, 1990; however, this female apparently did not remain in the area. Four other peregrines from previous releases were recorded in the province in 1990. One immature bird was seen in the vicinity of the last known active peregrine nest site in Nova Scotia at Cape d'Or.

While the success of the overall program is now virtually confirmed with the results from New Brunswick, it seems that we in Nova Scotia must wait a bit longer to share in

this success.

The release program is planned to continue in 1991.

\* From information provided by Peter Austin-Smith, Nova Scotia Department of Lands and Forests, and Bruce Johnson, Canadian Wildlife Service.

### Strange Sea Creature Sighted \*

by Caroline Norwood  
Digby, N.S.

"It really scared me. I'll tell you the truth," says a Freeport resident while describing a strange sea creature which surfaced last Thursday morning near Dartmouth Point, Long Island.

The creature had a reptilean shaped, smooth black head, no tusks or whiskers. It was at least five feet long with a round body and had what appeared to be a ruffled fin along its back.



The Freeport man (who asked not to be identified) said he was walking along the Long Island shore, close to the waters of St. Mary's Bay. It was nearly low water.

"I thought it was some kind of snake. It was very aggressive. That's what scared me. I heard it first. It was snorting. My wife says it sounded like a horse snorting.

"I saw it when it rolled up. When it was swimming toward me, it looked to be black under the water and looked like it had a ruffle on it, waving. It looked like it was going to come out of the water.

"I threw stones at it and that slowed it down some," he said.

He began walking along the shore to where his wife was waiting. The creature followed along, though this meant swimming out and around a point of rocks.

"It came right down to where she was sitting, still making that noise. It looked to be looking right at us. It knew that we were there and didn't seem to want us there."

A former fisherman, the Freeport man said he travels the shore a lot and has never seen anything like this creature.

"I have seen seals a lot. They are friendly. They will follow you along the shore but you can tell they are friendly.

"If I was like I used to be and could get around better, I would have stayed to see what it was going to do.

"It's just something that I have never saw before. It just gave me a weird feeling, like it didn't want us there."



Word of the unusual sighting spread quickly on the Islands. Fishermen and whale watchers are keeping an eye out for this strange aggressive creature.

\* Reprinted, with permission of the author, from The Digby Courier, October 3, 1990.

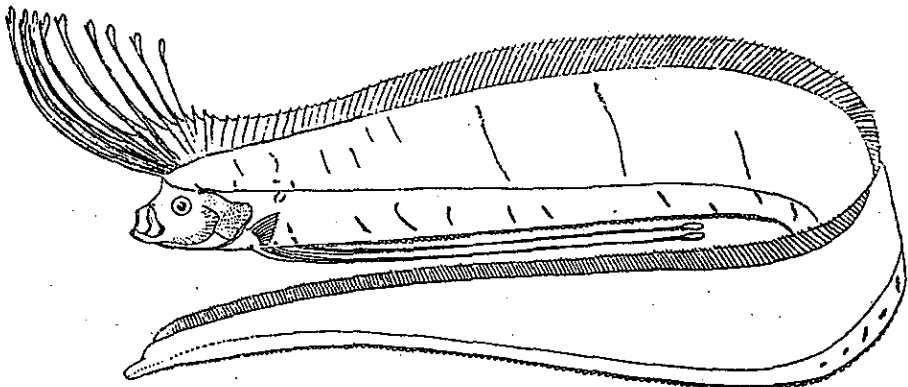
### Editor's Note

Dr. Sherman Bleakney, retired Professor of Biology at Acadia University and former Curator of Herpetology at the National Museum of Canada, suggests that the sighting by the Freeport man was, in all likelihood, that of a very rare giant fish, Regalecus glesne, commonly known as the Oar Fish or King of the Herrings. Relatively little is known about the fish. It is believed to grow to a length of more than 20 feet, and perhaps very much longer, and can weigh as much as 600 pounds. It possesses a tall, frilly dorsal fin that drapes mane-like over its scaly, snake-like body. Norman and Fraser's Field Book of Giant Fishes states that, "There can be little doubt that stories of sea serpents, which describe the monster as having the head of a horse with a flaming red mane, have as their basis the large Oar Fish seen swimming at the surface of the sea with its scarlet dorsal crest erect."

Although one of the world's rarer fishes, since 1740 specimens have washed ashore or been seen swimming at the surface off British Columbia, Japan, New Zealand, India, Bermuda and Norway so, obviously, it has a world-wide distribution.

Its alternate name, King of the Herrings, was derived from the belief that it preceded or accompanied large schools of herring. (How were the herring catches in this area at the time of the sighting?)

The Oar Fish is not included in the official list of Canadian Atlantic Fishes since a specimen has never been taken in Canadian waters. However, accounts of sea serpents at Green Harbour, N.S. in 1855 and several sightings off Cape Island in July of 1976 were also probably sightings of Oar Fish.



## Climate Report for the Summer of 1990

by Larry Bogan  
Cambridge Station, N.S.

Hot and dry describes the summer just past. I wonder if it set any records? The table of monthly statistics shows how exceptional this summer was. June, July, and August were warmer than normal while September was average but overall it was very dry.

Consider the following:

- The growing degree-days above 10C were 999: 16 percent larger than we usually can expect. This was great for growing tomatoes, melons, and giant pumpkins.

- The overall average temperature for the four months was 1.0 C above the 30-year average. August was the most unusual averaging 2.3 C hotter than the 30-year average.

- Only July had "normal" rainfall but, because the other three months had so little, the summer rainfall was only 61 percent of the average for the last 30 years. The accompanying graph† gives the daily distribution of rainfall and shows how uneven that was. In the period of four days from July 23 through the 26th we got 64 mm of rain; that is 81 percent of the rainfall for July and 45 percent of the rainfall for the three months of June, July, and August.

- As might be expected the amount of bright sunshine was up also but only by 6 percent above the 30-year average.

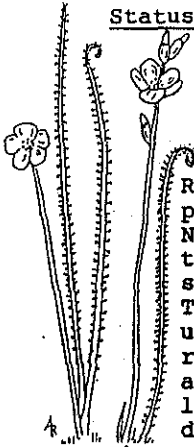
Weather Statistics from the  
Kentville Research Station  
(data in parentheses are the 30 year averages)

Month	Average Temperature (deg.C)	Rainfall (mm)	Bright Sun (hours)	Growing Degree Days > 10 deg.C
June	17.3 (15.9)	31 (71)	229 (209)	215 (178)
July	20.6 (19.2)	79 (70)	237 (239)	320 (284)
August	20.7 (18.4)	32 (98)	266 (225)	334 (262)
Sept	14.6 (14.3)	55 (85)	168 (175)	130 (134)
Summer	18.3 (17.3)	197 (324)	900 (848)	999 (858)

† see page 43

Status of an Endangered Plant Species in Nova Scotia  
The Thread-leaved Sundew\*

by Marian Zinck  
Canning, N.S.



The Thread-leaved Sundew (Drosera filiformis Raf.) is one of three species of the carnivorous plant family Droseraceae (Sundew Family) found in Nova Scotia. It is easily recognized by its long, thread-like red leaves which are covered with sticky glands used to ensnare unsuspecting insects. The plant, which grows in nutrient-poor soil, actually has developed specialized glands which release digestive enzymes enabling it to derive additional nitrogen from trapped insects. In bright light the colonies of these plants shine with these droplets of "dew".

The purple and yellow flowers are carried on graceful leafless stalks which slowly uncoil at flowering. Only one flower opens at any one time, with each plant having six to twelve flowers. Many seeds are produced in each capsule and appear to germinate the following year while still attached to the parent plant.

Late in the growing season, tiny coils of leaves are produced at the base of the plant. These "buds" overwinter and begin to emerge early in the spring before the flower scape develops.

In Nova Scotia, there are only three sites where the Thread-leaved Sundew is known to occur. All of these sites are near Barrington, Shelburne County. Indeed these are the only known areas where this species occurs in Canada. Like Coreopsis and Plymouth Gentian, the plant is a member of the Coastal Plain Floral Element and may be found elsewhere along the coast from Massachusetts south.

The Thread-leaved Sundew grows in wet peaty depressions in open raised bogs where there is little competition from neighbouring shrubs. Although all three species of Drosera are found in these three bogs, this species, relative to the others, prefers areas of intermediate moisture. The bogs are characterized by hummocks and hollows with low available nutrients. A Status Report has been filed with the Committee on the Status of Endangered Wildlife in Canada listing the status of the Thread-leaved Sundew as "Endangered".

Although the three bogs where the Thread-leaved Sundew occur are presently free from human disturbance, a fuel peat extraction enterprise has been proposed for two of them. This extraction process, if it were to proceed as currently proposed, would almost certainly lead to the elimination of the Thread-leaved Sundew in these areas. The application for this enterprise is currently being reviewed by the Nova Scotia Department of the Environment.

\* Drawing used with permission of the artist.

## Book Review

### Tidal Life: A Natural History of the Bay of Fundy

by Harry Thurston, with photographs by Stephen Homer. Camden House Publishing, 167 pages, 1990. (Approximately \$25 plus tax.)

by Sherman Bleakney  
Wolfville, N.S.

This is a most unusual book for in it are successfully blended factual information, poetic prose and evocative photographs. The title and subtitle may mislead some into thinking this is a book only for biologists. Don't be misled, for Tidal Life is really about the fascinating and innumerable ways in which Fundy tides have in the past, are now, and will in the future affect the lives of those persons fortunate enough to live along these shores. Tidal Life is a revelation and celebration of our Blomidon Naturalists Society countryside. But there is a dark side as well, and such topics as overfishing, tidal power and pollution are included.

The author and photographer have already received official accolades for previous accomplishments (particularly their work for Equinox magazine) and undoubtedly will receive many more, unofficially and in absentia from the hearts of each and every reader of Tidal Life. This 167-page book will make an ideal Christmas gift for it need not be read in marathon effort from cover to cover. Each of the 19 chapters is an essay in itself; both the text and the photos in each chapter can be explored together as a unit. And once you have read through the entire book, you will want to return to your favourite sections and reread the prose (remember this is "poetry" and deserves rereading over and over again) or simply indulge yourself in the photographs. This book could well serve as both a coffee-table and a bedside volume.

The uniqueness of Tidal Life is a reflection of the unusual capabilities of its author. Harry Thurston is an Acadia University biology graduate, a concerned citizen, a sensitive scientist, a sensible journalist and a gifted poet. He is at home with the scientific literature and can speak the language with any scientist; there is no journalistic distortion of facts in this book. You will learn a great many facts about tides, fossils, plants, animals, coastal communities and individual persons, but the prose and storyline are so engrossing and enjoyable that you will hardly be aware of just how much you have inadvertently learned. For such journalistic skills, Harry Thurston has twice received the coveted Canadian Science Writers' Association "Science Journalism Award".

The 19 essays finish with a marvellous Epilogue, two pages of suggestions for Further Readings, an Index which even includes the names of all persons interviewed, a list

of additional Photo Credits, and a map of the Bay of Fundy and all localities mentioned in the text. Remarkably few errors were noticed but there are two biological oversights worth correction, one being the crab photo on page 26. That it is not a Rock Crab is evident by the round paddles on the rear legs and by the long narrow pincers. It is the southern Lady Crab (*Ovalipes ocellatus*) normally found south of Cape Cod, but an isolated population thrives in the warm summer waters of the Minas Basin. On page 41, in the first paragraph, only nematodes are mentioned as dominant worms of the Minas Basin silts and muds. Polychaete and nemertean worms should have been included.

Many of us have watched the flocks of shorebirds at Evangeline Beach in late summer. We are thrilled, we are moved, we are at a loss for words. Harry Thurston, the poet/scientist, has the enviable ability to articulate that experience. I read these particular paragraphs twice to myself, and then just had to read them again, out loud, to my wife.

"An aerial dance, a grand ballet of flight performed by tens of thousands of mercurial dancers, storms my vision: the peeps have returned to Fundy. They are a flock of semipalmated sandpipers, a dark cloud of wing beats that creates its own musical wind. Their speed is startling, and the swift beating of their two-tone wings, flickering first white, then dark, produces a stroboscopic effect as unsettling as the rapid eye movements of a dream. The mist of birds grows denser, darker, then thins out like a summer storm cloud buffeted and frayed by high winds. The flock has an infinite elasticity that allows it to change shape constantly as well as a magnetic cohesion that draws it back to an ever-shifting centre. The eye delights at the constant metamorphosis. Flying low over the water, the flock abruptly spirals upward like a tornado; at the zenith of its curving climb, it seems to explode in all directions like a flowering of fireworks; then, pulled together by an inseparable bond, the birds continue their peregrination of the Bay in long, wavy banners of flight.

Flying wing to wing, each bird seems miraculously to anticipate its neighbor's next move so that none seems to lead and none to follow. Executing this impossibly intricate choreography, the flock becomes one body, supremely alive and in touch with all its parts.

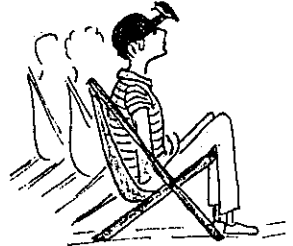
Suddenly -- and with uncanny precision -- the sandpipers bank, revealing their white underbellies; instantly, the dark cloud becomes a silver cloud. In the strong light, the effect is of thousands of palm-sized mirrors turned to the sun in unison, then turned again to show their dark sides. It is a constantly changing light show, engineered to take advantage of every caprice of breeze."

Avian Encounters of the Unique Kind

by Sherman Bleakney  
Wolfville, N.S.

Unique implies that it could never happen again. Having a red-breasted nuthatch perch on the visor of my cap while sitting on a bench, on the ocean, half way between Newfoundland and Nova Scotia has got to be unique. Until that moment, I had no idea how brilliant were the rust colored undertail coverts of this little tree creeper. They were presented to my vision, live, at a distance of six inches (15 cm).

Nancy and I were returning from a camping trip in Newfoundland on August 15, 1985. Accompanying us on the Port-au-Basque to Sydney ferry were several warblers and the above mentioned nuthatch. There were many passengers milling and sitting about in the open deck area in the stern, and they periodically disturbed the bird migrants resting beneath the benches. At one point, the nuthatch was flushed over the side of the ship and swept away by the air stream to behind the stern of the ship. Many of us watched its gallant struggle to catch up with the ship. It gradually gained sea ground in the buffeting air and then came over the side and was swept into our tourist deck area on a back draft. It rode that air current directly towards my face but, instead of passing overhead, it lowered its landing gear, grabbed the edge of my baseball cap visor and settled down to catch its breath. (Have you ever listened to a red-breasted nuthatch panting?) I sat frozen and stared cross-eyed at the tiny claws, short tail and colorful cloacal area. This amusing spectacle generated laughter from those nearby; disturbed by the laughter, the nuthatch flew off to a grating behind the smoke stack and settled there for the remainder of the voyage.



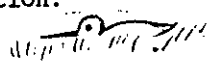
A more recent unique experience illustrates the unpredictability of natural history events. Birdwatching at my home on Kent Avenue, Wolfville, is normally confined to the backyard where there are gardens, shrubs, trees and a forest. At the front of the house, the prime activity is trucks, tractors and traffic. There, avian activity is an anomaly and is typically limited to the discovery of cadavers, casualties of picture window visual deceptions. Thus, it is understandable why, on the rainy Sunday morning of September 23, 1990, I did not notice the Wilson's snipe on my front lawn until 10:00 a.m. The snipe remained there for the next six hours, through morning rain squalls, the Sunday traffic and the afternoon joggers and dog-walkers. This was a unique opportunity to observe snipe behaviour hour after

hour from my living room chair: a large brown bird on a bright green lawn.

The thick lawn grass was about 2.5 inches (6.4 cm) high. The snipe would stand at one spot and probe deeply, first in one direction and then in another, in a fan pattern. Then it would move forward and repeat the search probes, sometimes capturing something edible. I assumed these were earthworms but, even with my 9X binoculars, I could never identify these items because the snipe's bill, although pulled out of the ground, was still partially hidden in the grass. Whatever was caught seemed to travel directly up the bill out of sight (a conveyor-belt tongue?) and did not hang out over the sides. Neither did the snipe lift its bill above its head and swallow with the assistance of gravity. All the while it was feeding and walking, its entire body was gently bobbing up and down in a shallow, perpetual knee-bend exercise. Then quite suddenly it would stop wandering and feeding, crouch down, tuck its extremely long bill into the feathers along its back and indulge in a sleep/rest period.

During the six hours of my observations, the snipe worked over an area of lawn about 30 x 30 feet (9 x 9 m), from near the picture window out to the roadway. It was even, at one time, on the lawn area between our shrubs and the pavement, a mere eight to ten feet (2.5 to 3 m) from traffic and walkers but, to my knowledge, no one noticed that wad of brown leaves on a green lawn. When a car approached, the snipe would stop feeding and bobbing, and change from standing tall on its legs to a half crouch such that only about half of its body was above grass level. The response to walkers was fascinating. The closer they got, the farther into the grass the snipe would sink until finally its back was level with and then even below grass level. Only the top of its head and eyes were visible. As the walkers receded from view, the snipe slowly emerged vertically, as if on a hydraulic lift, and once more commenced its cycle of bobbing, feeding and snoozing.

I am still trying to imagine where that Wilson's snipe was raised; to prefer a lawn over nearby normal snipe habitat, to tolerate traffic and people, and to totally ignore the binocular laden apparition towering over it at the picture window, certainly begs the question.



Shorebird Watching in Minas Basin  
A Different Perspective

by George Alliston  
West Brooklyn, N.S.

During the heat of mid-August I convinced myself (and Margaret) that instead of my early morning constitutional I (we) might get a better daily workout (and cool off) by swimming in the Minas Basin. Not having been swimming voluntarily in many years (not counting rolled canoes and dunked helicopters), we were both amazed at how warm and pleasant the Minas Basin waters were. So from mid-August through mid-

September we frequented the Basin at high tide whenever possible. Only once did the beach we chose have other human swimmers but we usually shared the beach with a few hundred to a few thousand roosting shorebirds.



Before approaching the beach we would observe it from a higher point of land to see if and where shorebirds were present. If present we would approach the beach carefully to minimize disturbance to the birds. This seemed to work well and the flocks never flushed from the beach. (Others have commented upon the apparent skittishness of the shorebird flocks this year but this was not our experience.)

We soon found that the roosting shorebirds could be approached very closely from the water without eliciting any apparent reaction. In fact it was possible to swim and crawl right in to shoreline and lie there, head and shoulders out of the water, viewing these birds from a distance of less than ten feet -- no need for binoculars here! Of the species we watched like this (semipalmated sandpipers, least sandpipers, dunlins, dowitchers, sanderlings, ruddy turnstones, semipalmated plovers and black-bellied plovers), only the black-bellied plovers seemed alarmed enough to move off up the beach and even these wary birds did not flush.

Although viewing the roosting flocks at point-blank range was enjoyable, having flocks of flying shorebirds skimming over the water within inches of our heads as we swam or floated was certainly the most incredible experience. Sometimes they would pass over with little apparent recognition of our presence. Other times the flock split as they approached with torrents of birds passing to either side and melding together again in a single flock as they passed.

Other interesting experiences we had while swimming were observing, from a shorebird's perspective, a (unsuccessful) merlin attack and, twice, harbour seals appeared to enjoy watching our feeble attempts at swimming -- one at a distance of about 40 feet. Fortunately we did not see any oar fish!

### The Trouble with Classifying the Wood Fern (Dryopteris)

by John Pickwell  
New Minas, N.S.

New developments in biology will no doubt further change the already confusing and changing classification of the Wood Ferns (Dryopteris spp.). Already the genera Gymnocarpium and Thelypteris, once included in Dryopteris, have been removed.



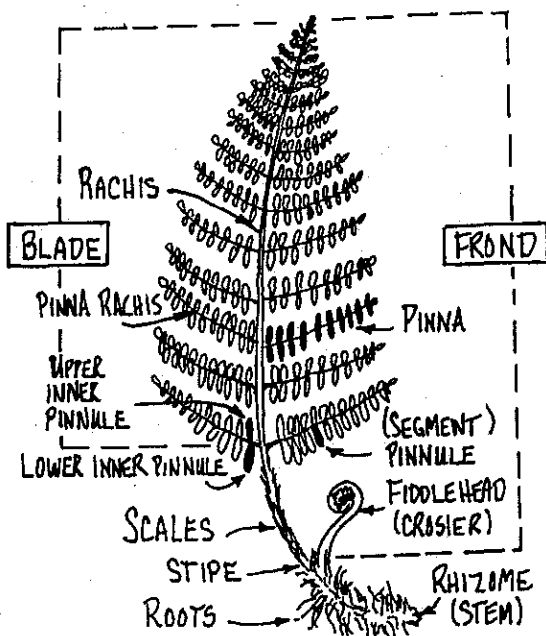
Some time ago Ruth Newell recommended to me a new book on ferns, Ferns and Fern Allies of Canada, by W.J. Cody and D.M. Britton (Agriculture Canada, 1989). I have found this a very worthwhile addition to my collection. It also probably started me off trying to sort out the Dryopteris species for myself. Species names within this genus seem to change with each book read. So I have spent a considerable amount of time looking at the Wood Ferns in the patch of woods where I take my daily walk.

For some years now, many new techniques have been employed for looking at ferns as well as many other plants. Species were artificially hybridized (crossed), numbers of chromosomes were counted, chemical analysis done, and so on. As a result, the classification of Wood Ferns has become much more complex in recent years and older field guides, like Boughton Cobb's (Peterson Field Guide Series) often need some updating.

Ferns reproduce by spores, not seeds. Spores are produced in spore cases (sporangia) on the back of the fern fronds (leaves). When the spores are ripe and the spore case is dry, it bursts open and the spores are catapulted out. Spores are very light, almost like dust, and they are dispersed far and wide by the wind. When a spore lands in a suitable habitat, it develops into a small, heart shaped, leaf-like structure called a prothallus. On the underside of the prothallus develop the sexual organs, the antheridia, which produce sperm, and the archegonia, which produce eggs. When conditions are right, the sperm are released. The archegonia give off a chemical which attracts the sperm and fertilization takes place. However, it is usual for the antheridia to mature first thus helping to avoid self fertilization. If two prothalli of two different species within the same genus grow in close proximity to one another and the timing and conditions are right, cross fertilization can occur and hybrid spores, and hence plants, can be produced.

In Kings County there are five known species of Dryopteris:

D. marginalis - a medium large, leathery, dark, bluish green fern that is pale green on the underside, with the "fruit dots" (i.e. clusters of sporangia) on the extreme



outer edge of the leaf. It is found in dryer, rocky terrain in mixed woods.

D. cristata - a tall, slender, upright fern with rather leathery fronds and leaflets (pinnae) that are almost perpendicular to the ground giving it a Venetian blind look. The lowest pinnae are shorter than the rest and stand out in front giving a forked effect. This is a fern of wet habitats e.g. the edges of bogs and marshes. They generally occur in small numbers or singularly.

D. intermedia - this is one of four species (D. intermedia, D. carthusiana, D. campyloptera and D. expansa) that, after much biological research, have been separated from what used to be considered a single species, D. spinulose. As far as we know, D. expansa does not occur in Nova Scotia. D. intermedia is a medium large, very lacy fern that is found in a variety of habitats. It seems to prefer moist woods and wooded slopes. The best field identification character is the short inner lower pinnule (leaflet); the next pinnule is longer than the first. The fern is dark green in colour although this, along with many of its features, exhibits great variation from location to location. Because it grows in such a wide variety of habits, D. intermedia is one parent of many of the hybrids.

D. carthusiana - this fern has a less lacy appearance and is somewhat more yellowish green than D. intermedia. Its pinnae tend to slope slightly upwards. The lower inner pinnule is longer than the next pinnule and has a tendency to curve outwards. This first lower inner pinnule is almost level with the first pinnule above it. This is important when comparing it with D. campyloptera.

D. campyloptera - in my experience, this species is less common in Nova Scotia than D. intermedia and D. carthusiana. It is much like D. intermedia: wide, dark green, and very lacy. But look at that all important first lower inner pinnule; it is long like D. carthusiana except that it is not level with the pinnule immediately above it. In fact the first upper pinnule is much closer to the stipe (main stem) than the lower one.

A number of hybrids of these Dryopteris species also exist in Nova Scotia:

D. Boottii - this cross between D. intermedia and D. cristata seems to be the most common Dryopteris hybrid in this area. Like D. cristata, it grows in wet ground but is a little flatter, wider and less leathery. Also like D. cristata, its first lower pinnae are short and growing forward. I have found this hybrid in most of the wet areas in the woods where I walk.

D. slossonae - according to the literature, this cross between D. marginalis and D. cristata is very rare. I have found it in four small groups of 12 to 15 plants each where rocky, dry and wet habitats meet. It is much like D. Boottii except that its pinnulae have round smooth edges like D. marginalis.

D. triploidea - the literature indicates that this cross between D. carthusiana and D. intermedia is the most common Dryopteris hybrid in Canada. However, since the parents themselves can be so variable, it is hard to determine in the field if you are dealing with the parent species or the

hybrid. I have identified only one hybrid plant. D. triploidea is more like D. intermedia in general appearance although its first two lower pinnules seem to be the same length and longer than the rest.

Generally speaking, Dryopteris hybrids are sterile although it is suspected that they may reproduce by spores on rare occasions. The specimen of D. triploidea I identified had few sporangia. When the hybrids do spread at all, it is by roots so it is sometimes possible to find a few plants of a given hybrid growing together.

Almost all Dryopteris species will cross with each other so I hope to find more hybrids someday if I keep looking.

Like mosses, ferns can be a fascinating group to study. Much progress has been made in understanding their taxonomy though they have not yet given up all their secrets.

Boughton Cobb's field guide is still a good beginner's reference book; it is very well written. Larger and more expensive but to be recommended highly are Ferns and Fern Allies of Canada, A Field Manual of Ferns and Fern Allies by D.B. Lellinger (Smithsonian Institute Press, Washington, D.C., 1985), How to Know the Ferns and Fern Allies by J.T. Mickel (William C. Brown Co., Dubuque, Iowa, 1944), and Henry Potter's Field Guide to Fern Hybrids of the Northeast by F. and L. Thorne (Vermont Institute of Natural Science, Woodstock, Vt., 1989).

I conclude with the following libretto to be moaned to the tune of the Mikado's Lord High Executioner's "I've got a little list":

Dryopteris gilbertii x sullivanii - another hybrid!

It really is ridiculous - you have to tote around

In addition to your list - this new Montgomery list  
A hand lens or a microscope whenever you have found

A new Dryopteris - they never would be missed.

If you really must identify the hybrid at your hand,

The first thing to discover - is it sporting any gland?

It isn't going to help you if you take some Kodachromes.

You'll never really know until you count the chromosomes.  
For identity is something all hybrids must resist -

They never would be missed - they never would be missed.

Chorus:

He'd take 'em off the list - he'd take 'em off the list,  
The hybrids of Dryopteris that never would be missed.

TRIVIAL TIDBITS

TRIVIAL TIDBITS  
of Local Natural History  
June 1, 1990 to August 31, 1990

selected and compiled  
by Jim Wolford  
Wolfville, N.S.

Skies

Sherman Williams, of Avonport, submitted all of the following observations: Comet Levy (David Levy's sixth comet) was first observed on July 11; it became visible to the naked eye July 30, easy to see by Aug. 12, and brightest and closest to us on Aug. 22, with a broad, fan-shaped tail.

He recorded the aurora borealis (northern lights) on July 28 (quite spectacular, seen all across N.S.), Aug 22 (bright patches of shimmering, pulsating curtains), and Aug. 23.

On Aug. 20, the projected image of the sun showed several large sunspots. SW shared the sunspots with an enthusiastic Elderhostel class on Aug. 24.

SW also received a report from Pugwash Junction of an extremely bright meteor or fireball. It had a brilliant orange head, left a fiery trail of sparks and seemed to burst into a mass of sparkling red-orange fragments.

Plants

Flowers

- Jun 7 - large-leaved avens - along Gaspereau River (RRN)
- Jun 12 - ram's-head and yellow lady's-slippers, Poplar Grove (JW)
- Jul 14 - white water crowfoot, monkey flowers, and purple giant hyssop?, along Cornwallis River west of Kentville (JW,BNS)

Invertebrates (non-insect)

Our now-famous woodland pond in Blomidon Park had fairy shrimp again on May 28 and June 10 (GD,JW).

On June 22, Harold Woodman, in his Wolfville garden, discovered peculiar looping 10-cm threads - preliminary looks at one revealed segments (a worm?) and lots of tiny mites? associated with the threads (JW).

On July 29, there were lots of moon jellyfish in Halifax Harbour (JW).

Insects

Dozens of June beetles were on the Thextons' screens in Wolfville on June 7 (JW). From June 19 to 26, lots of rosy maple moths were seen at Falmouth, Sherbrooke Lake and Lake

Rossignol (BBT,JW,SW). Also at Lake Rossignol on June 22 were a luna moth, a polyphemus moth, a cecropia moth, a big poplar sphinx moth and four great ash sphinx moths? (JW)

On July 9, there were bagworm moth cases on a New Minas house (JRB). Along the Cornwallis River west of Kentville, BNS canoeists saw lots of flashy broad-winged damselflies; also a large fishfly seen.

I found very large winged ants in Wolfville on July 15-16 and smallish winged red ants on July 27. On July 17, there were black-and-yellow mud-dauber wasps in two houses in Wolfville (SVK,BBT,JW). On July 19, I found swollen (galled) young green chokecherries full of orange larvae of gall-midges?

The first calling cicada in Wolfville was noticed on July 25 (JW). A monarch butterfly was at the Halifax waterfront on July 29 (JW).



BAGWORM MOTHS

### Fishes

On Aug. 4, near Hortonville and Lockhartville, Wilf Tracy reported an ocean sunfish dead on his beach (JSB,GM,WU,SW). This one was medium-sized at almost two metres in diameter. These peculiar disc-shaped big fish are usually found in southern, offshore waters but occasionally the gulf stream brings them into our area.

### Amphibians

On June 12, in the forest at Poplar Grove, I saw five or six adult wood frogs and a small leopard frog. At Sherbrooke Lake on June 21, spring peepers and green frogs were calling; and, surprisingly, a large swollen female bullfrog was at a small woodland pond with lots of green frogs (JW).

Near Bathurst, N.B., on July 1, Ann Powell saw a probable red eft on the bottom of a lake (red eft is a terrestrial, gill-less stage of the red-spotted newt).



LEOPARD FROG

### Reptiles

We had two reports of wood turtles, which are very poorly known in our area. On June 14, Joan Manuel found one on highway 101 near the Cornwallis River west of Kentville. Then on Aug. 2, Tom Herman, just back from Costa Rica, couldn't believe his eyes when a wood turtle was walking ahead of him on a path in Kentville! It was an old male, probably an escaped or released pet.

From June 23 to 26, there were several reports of nesting snapping turtles, at Lake Rossignol (PM,JW, et al), near Kejimikujik Park (JW), and at Lake George (DO). Two reports of adult painted turtles on land, on June 23 at Lake Rossignol (JW) and on June 30 near Gaspereau Lake (JW), are likewise probably related to nesting.

## Mammals

A road-killed beaver was seen east of Dalhousie on June 30 (JW). On June 26, a mink ran along a stream on the Falmouth golf course (BBT, JW).

Judy Tufts saw a coyote cross highway 101 near Middleton on Aug. 9. Miriam Tams heard coyotes howling on Brier Island on Aug. 24 to 26.

The Woolavers were surprised to see a seal at Huston's Beach (near Blomidon). It approached closely as the Woolavers swam. "It seemed to enjoy the company and stayed around for some time before going towards Delhaven beach with the incoming tide." (AREW)

A harbour porpoise was stranded in a small pool of the Cornwallis River at Kentville on Aug. 23 (IF, AS). It was captured, carried to deeper water and released. The Aug. 28 newspaper report said it was four feet long, about 35 pounds, and its skin apparently molting.

Off Brier Island on Aug. 25, Miriam Tams and the Halifax Field Naturalists had quite a show from humpback whales. Several cow-calf pairs were seen, and one calf breached again and again, near the boat, for about a half hour! Also that calf slapped the sea's surface with its long white pectoral flippers. Miriam also saw several humpbacks from Brier Island's North Light the next day.

Ed. Note: Jim was unable to provide bird sightings for this issue of the Newsletter but promises them for the next issue.

## Contributors

JRB	Joanne and Ron Bezanson	JP	John Pickwell
JSB	Nancy & Sherman Bleakney	AS	Andrew Stannix
GD	Graham Daborn	BNS	Blomidon Naturalists Soc.
IF	Ian Fairclough	JT	Jean Timpa
BLF	Sandra & Bernard Forsythe	MT	Miriam Tams
TH	Tom Herman	WT	Wilf Tracy
SVK	Sam Vander Kloet	BBT	Brenda & Bill Thexton
GM	Gus Meister	JGT	Judy & Gordon Tufts
PM	Peter MacLeod	WU	Walter Urban
JMa	Joan Manuel	HW	Harold Woodman
HFN	Halifax Field Naturalists	JW	Jim Wolford
RRN	Ruth & Reg Newell	SW	Sherman Williams
DO	Don Osburn	AREW	Anne, Ruth & Elinor
AP	Ann Powell		Woolaver

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1990 - 1991 Membership Fees

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Please enclose a cheque or money order payable to "Blomidon Naturalists Society" and forward to:

Mrs. Judy Tufts  
P.O. Box 1313  
Wolfville, N.S. B0P 1X0

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Sources for Local Natural History Information  
(compiled by Blomidon Naturalists Society)

<u>Information</u>	<u>Source</u>	<u>Office</u>	<u>Home</u>
Rocks & Fossils	Geol. Dept., Acadia Univ.	542-2201	
Fish	N.S. Dept. of Lands & Forests	678-8921	
Flora - General	Ruth Newell	542-2201	542-2095
Flora - Trees	Merritt Gibson	542-2201	582-7569
Flora - Fungi	Darryl Grund	542-2201	542-9214
	Nancy Nickerson	678-2171	542-9332
Flora - Lichens	Karen Casselman		633-2837
Flora - Seaweeds	Darryl Grund	542-2201	542-9214
Flora - Mosses & Ferns	John Pickwell		678-8281
Birds - General	Bernard Forsythe	678-4742	542-2427
	Richard Stern	542-2201	678-1975
	Peter C. Smith	542-2201	542-5998
	Gordon & Judy Tufts	542-7800	542-7800
	Jim Wolford	542-7650	542-7650
	Jean Timpa	542-2201	542-5678
Birds - Hawks & Owls	Bernard Forsythe	542-2427	542-2427
	Cyril Coldwell	542-2201	542-2854
Birds - Falcons & Eagles	Peter Austin-Smith	678-8921	542-2109
Mammals	Tom Herman	542-2201	678-0383
Amphibians & Reptiles	Sherman Bleakney	542-2201	542-3604
	Jim Wolford	542-2201	542-7650
	Sherman Bleakney	542-2201	542-7650
Seashore & Marine Life	Jim Wolford	542-2201	542-7650
	Graham Daborn	542-2201	542-5373
	Michael Brylinsky	542-2201	582-7954
Indian Prehistory & Archaeological Sites	Ellis Gertridge	542-2816	542-2816
Astronomy	James Legge	542-3530	542-3530
	Roy Bishop	542-3992	542-3992
	Larry Bogan	542-2201	678-0446
	Sherman Williams	542-3598	542-5104





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| Atlantic Outposts - Harry Thurston 14.95    | Old Days, Old Ways - Hattie Perry 19.95 |
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