Halifax Field Naturalists Newsletter

DECEMBER 1986 - FEBRUARY 1987 No.46

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 1986:

President	Michael Downing	823-2081
Treasurer	Bernice Moores	422-5292
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, Regina Maass, Clarence Stevens, Colin Stewart, John Strong.

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

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		John Strong	477-1351
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Bird Atlas Co-ordinator HFN		Clarence Stevens	469-6144
Publicity		Connie Eaton	423-6971
		John Strong	

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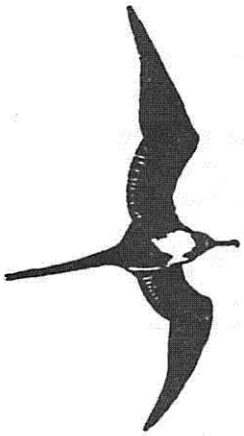
HFN is incorporated under the Nova Scotia Societies Act.
HFN is a member organisation of the Canadian Nature Federation.



hfn news

YEAR-END NOTES FROM THE PRESIDENT.

This will be the last newsletter issued during the term of the present Board of Directors. Over the past year I have described in the newsletter certain changes we are trying to make in our style of operation, changes which we hope will enable us to effectively direct a wider range of projects, make longer-ranging plans, and ultimately make the HFN a more active society. At this point, the membership might reasonably expect some sort of evaluation of the success of the year. However, there will be little solid information on which to base such an evaluation for several months yet. Our usual activities have gone well - the program and newsletter committees have kept up their standards and Environment Week was fairly successful - but it is a little early to say whether we have managed to break any new ground.

Our greatest single thrust of course has been to give the push which started the trails conference - "Trails for Tomorrow - going, and to become heavily involved in the committee which is organising it. This is the largest public event in which HFN has ever been involved, and its success, from our point of view, cannot be judged until after the event. We must see not only how good the final product is, but how well the values we hold are represented in it.

Our board meetings are tightening up a little. We have reached the point where everything on the agenda usually receives at least a token discussion, and to be fair, the agendas are often long. But unless some concrete results soon start coming from this tougher organisation the directors will tire of it, and such ground as has been gained will be lost. There has still been very little done about membership and publicity, despite many hours of discussion over several years. For various reasons I won't enlarge upon at this time, the Bylaw revision has bogged down for at least another year. Consideration of any other major projects always leads back to the fact that the trails conference is taking most of the free time board members have to devote to HFN work, and we are having very limited success in involving other HFN members.

The real question now is this: Are we well enough organised, and do we have a strong enough club, to move to a higher level of activity, or are we taking on more than we can handle? The next year should give some indication. The demands of the trails conference will peak in the early spring. Almost immediately after that we must get ready for Environment Week - this time without the invaluable aid of Filip Volckaert. If we can make our presence felt at the conference, keep up the standard of Environment Week, and then attack our backlog of other project ideas without losing momentum, then I will say that it is beginning to look as if maybe we really are making a fundamental change.

In the meantime, some people are talking about having the Canadian Nature Federation's annual meeting here in 1989 or 1991.....

At this point, it would be very good if we could get some new people from the membership onto the Board of Directors. We have some directors who do not mean to stay on for another term, and others who continue only because they see no one in the wings waiting to replace them. I want to take this occasion to suggest that if you have ever thought you would like to become more active in the Halifax Field Naturalists, you should consider the possibility of sitting on the Board. The Nominating Committee would love to hear from you.

Following is a shortened version of a description of the Board's activities, originally intended for distribution to new Board members. It should be of interest to anyone who wonders what it would be like to be a director. *Michael Downing*

ACTIVITIES OF THE HALIFAX FIELD NATURALISTS' DIRECTORS.

In a general way, it is the responsibility of the Board to further the goals of the society, partly by arranging for the offering of education in natural history to its members and to the public, and partly by promoting respect for nature on its behalf. In practice, this means running educational programs, co-operating with other societies, and on occasion, writing letters to the government and participating in protests.

Committees

The biggest and most obvious jobs are done by two standing committees:

The Newsletter Committee must prepare four newsletters each year. This involves soliciting material, editing, typing, cutting and pasting, and eventually folding, stapling, labelling, stamping and mailing.

The Program Committee is responsible for setting up our regular program of lectures and outings. It lines up speakers and leaders, selects dates, and produces a schedule four times a year which must be ready shortly before each newsletter deadline.

A third standing committee, the Publicity and Membership Committee, is seeking ways to promote the HFN and increase its membership. It has been in operation for only a little over a year.

Temporary committees are formed as needed to do jobs which are not of an on-going nature, such as co-operating with the Canadian Nature Federation during the Halifax stop-over of the Save South Moresby Caravan, and spearheading Environment Week.

All committees are responsible to the Board. Committee members, however, need not be Board members.

contd...

Officers

The Treasurer works in co-operation with an informally appointed membership secretary to collect dues and keep an up-to-date list of paid-up members. Mailing labels must be produced from the list as needed. The Treasurer also prepares cheques as instructed by the Board, and prepares a full, properly audited accounting for the club's financial activity every year.

The Secretary keeps minutes of all formal directors' meetings and membership meetings. (Usually the Annual General Meeting is the only formal membership meeting). He also collects and reviews correspondence, calling items to the attention of the Board as necessary.

The President presides over formal directors' meetings and membership meetings. He must establish and maintain the organisation and co-ordination necessary for the society to make decisions and pursue its goals effectively.

Board Meetings

The affairs of the club between formal membership meetings are governed by meetings of the Board of Directors. They are held about once a month. A typical meeting goes through minutes and business arising, reviews correspondence, and decides on appropriate responses, and then provides any direction or assistance needed by committees. It may go on to discuss projects, environmental problems, future plans - anything related to the goals of the society. It is at these meetings that the decisions are made.

Projects

On behalf of the society the directors frequently undertake or become involved in activities outside of our regular program which relate to our goals. To name a few, we are currently working on an up-date of our Bylaws, participating in the Maritime Breeding Bird Atlas Project, and helping to organise a trails conference. Such projects are managed through individuals or groups sometimes, but not always formally set up as temporary committees.

Annual Cycle

Most of the regular activity for which the directors are responsible revolves around the quarterly newsletter cycle. There are two jobs, however, which come up annually. A Nominating Committee must be set up each year to provide a list of candidates for society offices on time for the Annual General Meeting. This must be held by April first. And for the moment at least, we have an ongoing commitment to provide initiative and extensive participation in the annual preparations for Environment Week, held in early June.

Michael Downing - President.

****

HAVE YOU PAID YOUR DUES YET?

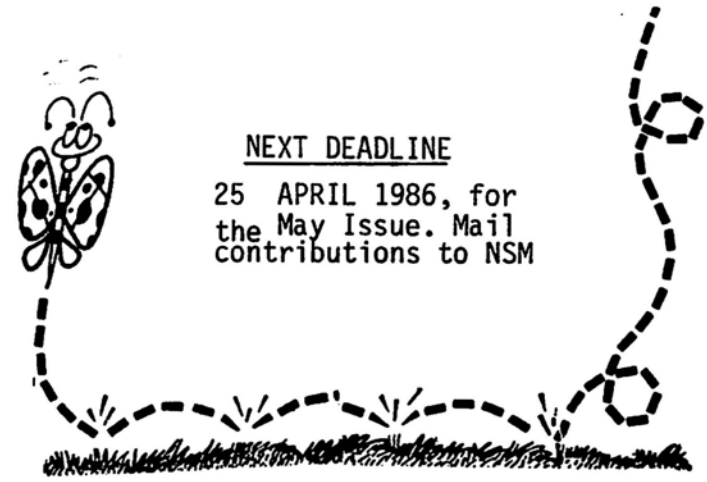
If not,

Send them to Bernice Moores, Treasurer, N.S. Museum or Bring them along to the next meeting.

****

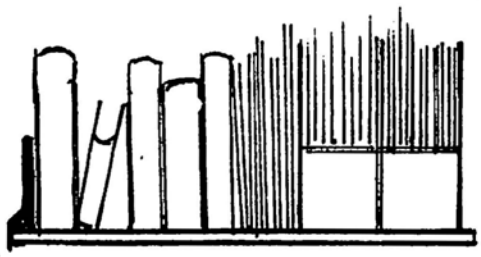
WELCOME TO NEW and RETURNING MEMBERS:

Dr. Jane Mudie
Nancy Bowers
Edna Jones
Lise Fillmore
S. and B. Kennedy
Barbara Hodkin
Marjory Hanson



NEXT DEADLINE

25 APRIL 1986, for the May Issue. Mail contributions to NSM



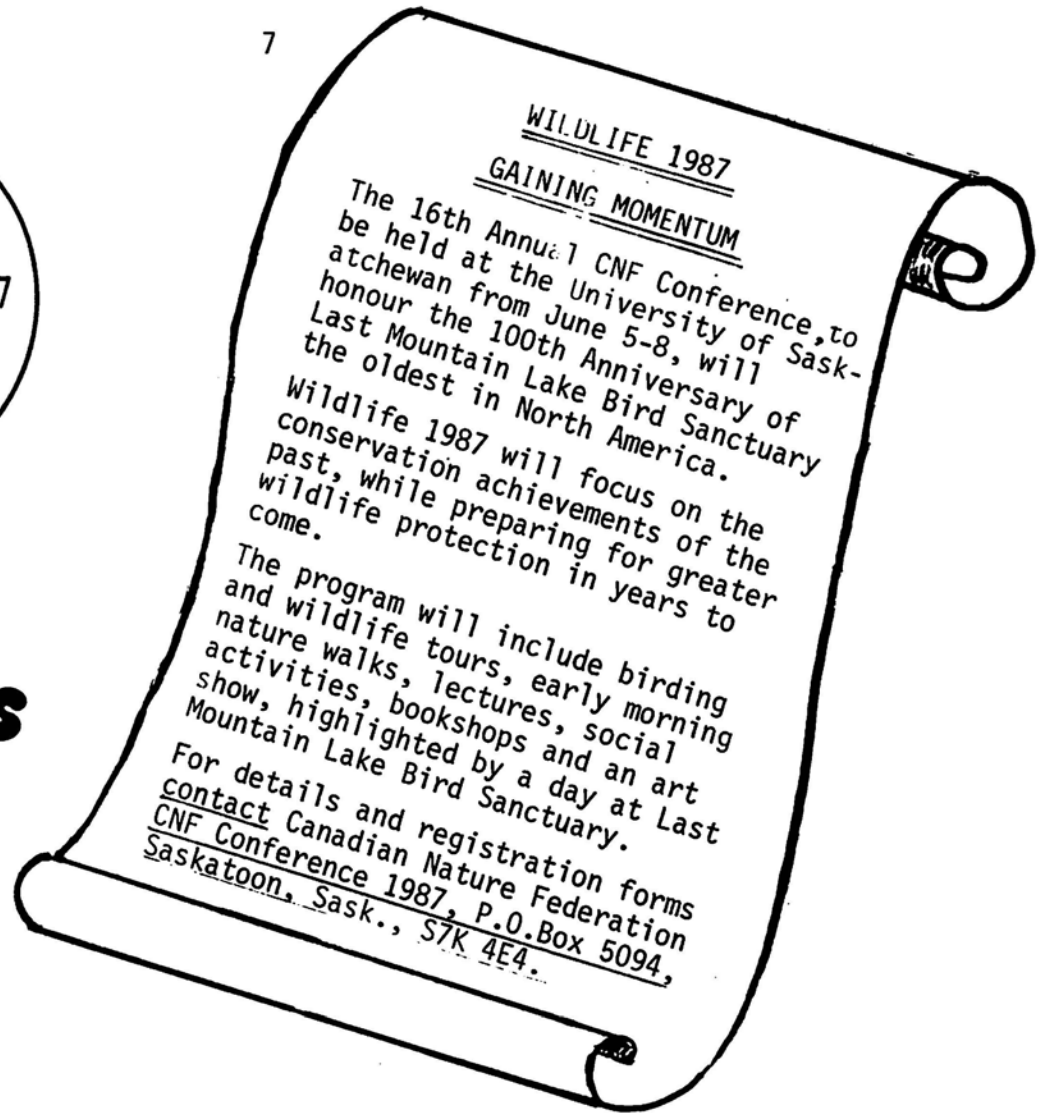
on the shelf

Catherine Traill Naturalists' newsletter Nov.'86 contains Vanessa McKiel's absorbing account of her alpine experience with Outward Bound in Keremos BC., last summer; an informative article on Algae and a feature on pesticides. The Dec.'86 letter offers some personal observations by David Lank of the relentless natural cycle of birth-life-death on the East African plains: also a well-illustrated review of a book by Joan Dunning, The Loon: Voice of the Wilderness.

Nature Canada - Fall '86 - contains a selection of photos from the national travelling exhibit Best of Birds; and Sacred Trust, a feature article on the erosion of parks policy by the creeping dangers of logging, mining, hunting in Canada's National Parks.

WILDLIFE 19 Gaining Momentum Un nouvel essor 87 FAUNE

notices



WILDLIFE 1987

GAINING MOMENTUM

The 16th Annual CNF Conference, to be held at the University of Saskatchewan from June 5-8, will honour the 100th Anniversary of Last Mountain Lake Bird Sanctuary the oldest in North America.

Wildlife 1987 will focus on the conservation achievements of the past, while preparing for greater wildlife protection in years to come.

The program will include birding and wildlife tours, early morning nature walks, lectures, social activities, bookshops and an art show, highlighted by a day at Last Mountain Lake Bird Sanctuary.

For details and registration forms contact Canadian Nature Federation CNF Conference 1987, P.O.Box 5094, Saskatoon, Sask., S7K 4E4.

STOP PRESS !!!

The Catherine Trail Naturalists are arranging a Workshop/Safari to Kenya in May, and leader George McKiel would welcome one or two HFN reps on the trip.....

Emphasis will be on the behaviour of animals, rather than just viewing and no more than five persons will be in each vehicle. Their contact is an excellent Kenyan wildlife expert.

The group leaves Toronto on May 20 for London, Eng., continuing next day to Nairobi. They return on June 3.

Package, incl.land and air ... $3600, (double occupancy - single supplement $600); day room in London; 11 days/10 nights on safari; services of professional English-speaking guides/drivers for all transfers and game activities; Flying Doctor Society membership; day room at Nairobi; breakfast in Nairobi ; three meals per day on safari; entrance fees/local hotel taxes/all transfers.

To give a sketchy outline of the itinerary - - Aberdare Country Club and Tree Hotel with overnight game watch at the floodlit water hole; Mt. Kenya; Samburi Game Reserve; Lerochi Plateau and down into the Rift Valley; Lake Baringo ; an early morning flamingo walk; followed by a cruise on the lake; on to Lake Nakuru National Reserve; Lake Naivasha and then a day or two in Maasai Mara National Reserve adjoining Serengeti, before heading back to Nairobi.

BUT HERE'S THE RUB..... Reservations should be made by MARCH 1, with a deposit of $300. But if you want to talk with George, and get full info, here is his number: 613)525-2638 or to write to him:

George McKiel (Editor: CTN Club)
RR#3, Alexandria, Ont. K0C 1A0

TRAILS FOR TOMORROW

A two-day conference titled TRAILS FOR TOMORROW has been arranged for April 10-12 1986, to review the current situation regarding trails in Nova Scotia and to develop direction for the future.

Topics to be discussed include access, liability, legal aspects, multi-use concepts, location, construction and maintenance. While emphasizing pedestrian use the conference will be of interest to all trail users.

Friday evening - April 10 - Registration and a forum on the extent and diversity of trail use in the province. Designated groups and organisations will be invited to present their involvement: past, present and future, in delivery and/or use of trails, and also outline areas of concern they may have.

Saturday morning - Apr.11 - An overview of recreation and natural history resource base and land ownership patterns; an analysis of the Trails Act and what it means to user and landowner; access, liability and trespass, with reference to the rights of the trail user and landowner and the legal implications of using trails through private and public land.

Saturday afternoon - Four case studies will be presented, to explore the pertinent issues regarding delivery and use of trails in Nova Scotia: (1) Cape Split hiking trail; (2) Rails to Trails movement in Queens Co.; (3) CHA trails in Wentworth Valley; (4) Programs being offered through Snowmobilers Association of Canada.

Saturday evening - Mr. Doug Robertson, Executive Director of the Bruce Trail Association and a member of the Board of Directors of the National Trail Association will speak on the Ontario trails scene.

Sunday morning - Conference participants will be asked to become integrally involved in a workshop to develop a prospectus for the future of trails in N.S. .... The Sunday session will be a major step in ensuring that we will have TRAILS FOR TOMORROW.

A cash bar will be available on Friday evening to help registrants 'break-the-ice'.

A banquet has been arranged for Saturday evening with Minister of Lands and Forests as speaker and Doug Robertson to give the Ontario perspective.

A sandwich and tea/coffee will provide an 'eat-as-you-work' lunch at the Sunday session.

Co-sponsored by Nordic Ski Nova Scotia, Canadian Hostelling Association and Halifax Field Naturalists, the conference will be held at Keddy's Motor Inn, Halifax. Registration Fee - $40, students $30 -

Full details, registration forms, etc. contact: TRAILS FOR TOMORROW
P.O. Box 3010 S
Halifax, N.S., B3J 3G6

AQUACULTURE IN THE MARITIMES

An introductory course designed to familiarize participants with the various forms of aquaculture in the Maritimes, including salmon, trout, oyster and mussel cultivation. This course will appeal to those persons who have an interest in aquaculture as well as those who might be considering an aquaculture business.

Topics include: Facility Design..... Nutrition and Diet.....Fish Diseases.....Insurance.....Marketing.....Permit Application.....and the history of aquaculture in the Maritimes. Handouts and follow-up reading will be included.

WEDNESDAYS - May 27 to June 24, 1987 - times: 7.30 to 9.30 pm.

SATURDAYS - Three Field Trips - times: 9.00 am to 5.00 pm.
1) June 6 - The Fish Hatchery and Trout Farm
2) June 13 - An Oyster and Mussel Farm
3) June 20 - A Salmon Farm

Instructors - Chris Corkett, Instructor, Biology Dept., Dalhousie University, and
Roy Drinnan, Aquacultivator, Fisheries and Oceans

Fee - $165.00 including materials but not transport.
Enrolment - limited to 20 persons.
Information - phone Centre for Continuing Studies, Henson College, Dalhousie University - # 424-2375.

PARKS CANADA LOG and CALENDAR

A Heritage Log with descriptions of the national and historic parks in Atlantic Canada and activity suggestions for each, has been prepared by Parks Canada. A Calendar of special Parks Centennial events in the Atlantic Provinces has also been printed. For copies: Gillian Pullen, Upper Water Street, Halifax, N.S., B3J 1S9, or Ph: 426-7909.

GEOLOGICAL HIGHWAY MAP

A Geological Highway Map of New Brunswick and Prince Edward Island has been issued by the Atlantic Geoscience Society. Special publication #2 - $5.00. Like the previous Geological Map of Nova Scotia, the map provides information on points of interest and detail panels describing the geology of selected localities.

SHARP SHINS -

The Canadian Wildlife Service is attempting to assess the potential of the Sharp-shinned Hawk as a biomonitor of toxic chemical contamination of the terrestial environment. Specimens are needed.

Sharpies occasionally collide with window panes near winter bird-feeding operations. A request is made that such casualties be labelled, placed in plastic bags and frozen. CWS should then be called collect at (506)452-3086 for shipment instructions.

Potential contributors of specimens are thanked in advance for their support of this investigation.

Peter Pearce CWS.

AROUND THE HIGHLANDS -

Elaine Wallace, Assistant Chief Park Interpreter, Cape Breton Highlands National Park, has written suggesting that some HFN'ers might be interested in spending a ski-ing weekend in the Park - downhill or cross country. She points temptingly to crisp clean air, deep snow-covered valleys and ... adventure!

The Park offers short, level, groomed trails for the novice to long, challenging wilderness excursions. The more popular trails include the following (experienced skiers have unlimited possibilities):

Highland Links (nearest village Ingonish) - A series of easy trails (each 1-22km) in the Clyburn Valley. Starts either at the Golf pro shop or Clyburn Brook parking lot. Groomed, beginner, 53km network.

Mary Ann Falls (Ingonish) - A climb up through picturesque forest ending at some falls, with a chance of seeing moose or deer. Ungroomed, intermediate-advanced 14km return.

Branch Pond (Ingonish) - A challenging trail leading up onto the plateau and a magnificent view of the Atlantic. Be prepared for changeable weather. Starts from Mary Ann Falls Trail, ends at a warm-up cabin. Must register with a warden. Ungroomed, advanced, 24km return.

Beaulach Ban Falls (Cape North) - A rolling trail hugging the south side of the magnificent Aspy Valley. Starts directly behind the Big Intervale Warden Station. Groomed, beginner, 3km loop. Groomed, intermediate 10km loop.

Skyline (Cheticamp) - Follow an old section of the Cabot Trail to the MacKenzie Fire Tower, or continue up and down gentle hills to Fishing Cove trail head. Groomed (to tower), intermediate, 12km return.

Trous de Saumons (Cheticamp) - A sheltered trail through the Cheticamp River canyon. Starts at The Cheticamp Visitor Centre. Groomed, beginner-intermediate, 9km return.

Experienced cross country skiers may wish to ski onto the plateau from Paquette Lake, Benjie's Lake or the Acadian Trail (the latter is just outside the Park). We advise that you check in with Park staff before venturing out on a wilderness trip.

An alpine ski hill, operated by the province, is located just south of the Park's Ingonish entrance.

Other winter activities in the Park include snowshoeing, tobogganning (Ingonish), and ice fishing on Freshwater Lake from January 15 to March 1.

Roofed accommodation is available in both Ingonish and Cheticamp. The hardy can winter-camp at the Ingonish Campground or beside the Cheticamp Visitor Centre.

A winter activities brochure describes trails in more detail. Up-to-date information on trail conditions is available at the Park's administration building in Ingonish Beach, Monday to Friday, 8-4.30 , phone: (902) 285-2270.

And— Elaine wishes us - Happy Ski-ing!

..... a nature note from 22 storeys up? - during the January 31 blizzard, the black painted metal window ledge of my apartment showed fine threadlike particles of snow (something like asbestos fibres). As the wind cleared the ledge and the particles blew away some clustered together to form perfect 6-point stars. They appeared identical in form,some growing to about 5mm diameter and all staying put as the other threadlike particles blew away. (DEB)

STANDARDS ARE FOR THE BIRDS -

We began atlassing in our chosen square, the West Jeddore/Ostrea Lake area of the Eastern Shore of Nova Scotia, during the trial year of the Maritimes Breeding Bird Atlas survey. During the second hour of our first visit to the square, we discovered an occupied osprey nest. The nest was very large, shaped like a deep cup and attached to the side near the top of a dead black spruce tree. The nest cavity was so deep that when the bird was inside, its head could not be seen.

So anxious were we to 'confirm' osprey in the first official year, we made a special trip to check the nest on April 20, 1986. One osprey had settled in the nest. We assumed the bird was a male since we understand that the male usually returns about a week before the female.

Shortly after our arrival, the osprey flew out of the nest to a nearby tree. We thought we were in luck! The nest would be occupied in an atlas year! Two grey jays (out for an afternoon lark!) made two attempts to climb to the top of the nest and look in but were given the bum's rush by the osprey. The nest had received considerable damage during the winter and we left the scene with visions of the pair busily repairing their home during the next few weeks.

May and June visits revealed an empty nest and no indication that repairs had even commenced. Our feminine intuition soon took over and it became clear what had transpired. When the female returned, she took one look at the nest, and screamed "If you think I'm going to raise another brood in this shack, you are greatly mistaken. Now get busy and find us a new home!"

We have since heard osprey calls from another part of the square. It seems the pair has set up housekeeping in a brand new home where we hope little calls for food will be heard for each of the remaining years of the Maritimes Breeding Bird Atlas.

Bernice Moores
Liz Townsend

TECHNOLOGY - MAY HELP SEALS and FISHERMEN SHARE THE SAME OCEAN -

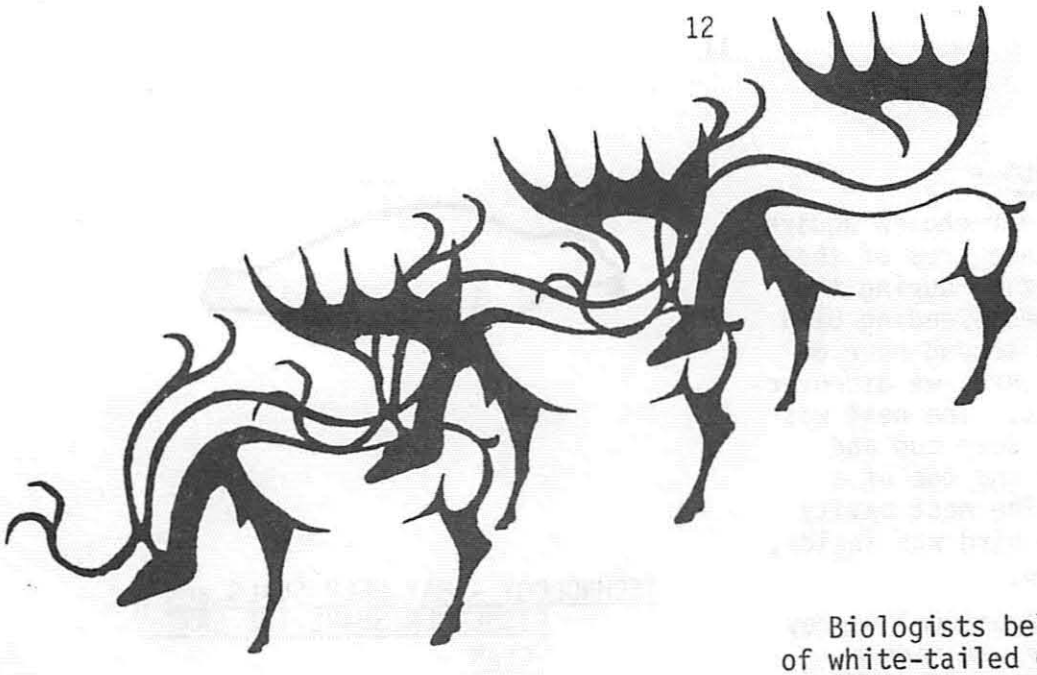
Following a Royal Commission Report last December, recommending that a cull of grey seals would benefit the fishing industry, and in anticipation of a strong PR campaign by animal rights groups against a kill, a group of scientists will start work this spring on technological solutions to the problems involving fishermen sharing the ocean with seals.

Eight scientists from universities, industry and government have volunteered their time and expertise to study grey seals - animals on which relatively little research has been done.

Under the chairmanship of Dr. Warwick Kimmins, head of the biology department at Dalhousie University, the team will look at several possibilities for handling a situation which, according to the Royal Commission, costs the East Coast fishery between $60 million and $115 million annually.

Birth control to limit numbers, immunization against parasites that live in seals before infecting codfish, uses for seal meat and basic research on grey seal, its distribution and population and effect on the North Atlantic fishing industry, are all angles which will be under scrutiny .

Funding for the project will be provided by National Sea Products Ltd., who need to find a moderate solution to the seal problem, otherwise the future health of the now-thriving East Coast fishing industry will be in doubt.



MYSTERIOUS DISAPPEARANCE OF CARIBOU IN HIGHLANDS OF CAPE BRETON -

Until the 1920's, a wild herd of woodland caribou roamed the highlands of Cape Breton. Today, they are no more, despite an attempt to reintroduce them. Biologists and park wardens have some ideas why the caribou disappeared, but still their death remains somewhat of a mystery.

The original disappearance by 1920 may be related to an overall decline in eastern North America due to hunting and habitat destruction. In the remote highlands of Cape Breton, overhunting was probably the major cause since their habitat was still largely undisturbed.

In the late 1960's, 51 adult caribou were shipped by air from northeastern Quebec. Forty-three females and eight males were released in Cape Breton Highlands National Park in the late winter of 1968 and 1969.

Much of the original caribou habitat on the plateau barrens had been preserved since 1936 within the boundaries of the national park. Extensive growths of lichens - their winter food - carpet the windswept rocky barrens of the southeastern section of the park. The climate is not too cold - and caribou had previously thrived there.

For the first few years, many caribou, including some newborn calves, were sighted. But by 1972, the herd had all but disappeared. What happened?

Biologists believe that the appearance of white-tailed deer in Cape Breton early in the century may be the cause. Deer have pushed north steadily from their original range, due to land clearing.

Deer themselves do not compete with caribou for food or habitat, but carry a small worm or parasite. This parasite affects the nervous system of both caribou and moose, causing paralysis, blindness and eventually death. Deer are carriers but the disease does not affect them. The parasite spreads by a complex cycle: droppings are partially eaten by snails - deer accidentally eat infected snails as they graze or browse.

But if the disease killed off the caribou, why not the moose? Moose had also disappeared from Cape Breton by the early 1920s, due to overhunting. Adults from Alberta were reintroduced into the park in the 40s. This reintroduction was very successful - moose are now a common sight in northern Cape Breton.

Wildlife biologists do not have the exact answer to this question. It may be because deer and moose do not congregate in the same areas in the spring - the most infectious period. Another possibility is that moose are less susceptible to the disease than caribou.

The results of research play an important part in the management of Cape Breton Highlands National Park. Understanding disease, food requirements and habits of wildlife helps the park to protect them.

Elaine Wallace -
CBH National Park

CARIBOU IN NORTHERN QUEBEC

(In view of the prominence given in the news media about the death of nearly 10,000 caribou in Ungava in autumn 1985, I thought the following, from Catherine Traill Naturalists' Club newsletter, might prove interesting as an update on the story. - Editor)

Dr. Roger Bider, who wrote the story, is a professor in the Department of Renewable Resources at MacDonald College, Quebec. He says:

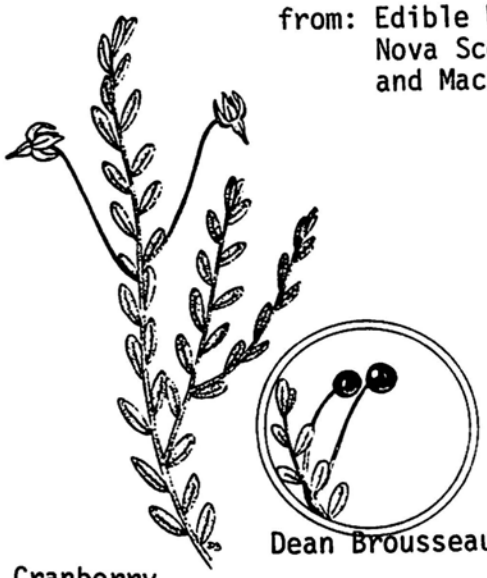
"Amazing as it might seem the death of nearly 10,000 caribou in Ungava never made the news in the N.W. United States, so it came as a complete surprise to me when I returned from a month-long trip.

"In the late 1940's when radar defences were being built in northern Quebec there were estimates of less than 5000 caribou. In the early 1970's when I worked on mammal impact studies for SEBJ from LG4 to the coast and LaGrande to the Eastmain, I never saw a single caribou and only a few tracks. At that time I wanted to get to Lake Bienville, 100Kms to the North where it was rumoured caribou were common. In 1975 I got my first chance to do surveys in that area outside SEBJ jurisdiction and my hopes were fulfilled. We estimated the numbers of caribou in the Great Whale watersheds to number about 1000, a remnant from the great hunting days when families of Cree hunters were actively hunting and trapping the area. In the following years, working with Hydro Quebec we watched the herd expand at an incredible 17% per annum. Excursions northward always produced numerous sightings of small bands in winter and early spring but none like those of the Eastern Quebec region. Three winters ago I was given the opportunity to do a preliminary winter survey of the Caniapiscau River for SEBJ and it was then that I first saw large herds. One herd along Cambrian Lake, a widening in the river, numbered over 5000. Possibly some of these same caribou died in the October tragedy. I have no reason to disagree with the government's estimates of 300 to 400 thousand caribou in northern Quebec. I also believe that the carrying capacity of the caribou range is about 500,000 or about one caribou per square mile, a number which John Kelsal gave me when asked. I therefore believe that we are approaching a point wherein society must decide whether we let a population boom and bust or maintain numbers below the carrying capacity of the range through some extraordinary harvesting scheme. There is no way that 5000 natives of the north could possibly capture, process and eat over a kilo of meat per day for all eternity to keep pace with the production of the herd.

"What of the October tragedy? Regardless of arguments that the tragedy sensitized a lot of Canadians to this magnificent resource that is shared by natives of Quebec and Labrador and a few, very few, white hunters. The tragedy has shown that a lot of entrepreneurs are interested in the resource and an economic harvesting scheme might be devised. The tragedy will undoubtedly help the causes of the native people and biologists in trying to form future policy. The tragedy will help reinforce the position of biologists who have asked for specific water regimes in rivers which would mitigate some of the losses caused by Hydro construction. Finally the tragedy has afforded me the opportunity to write this letter. "

In a PS the editor of the Catherine Traill Naturalists Club newsletter says -

"The Ungava caribou are now the largest herd in the world but have suffered previous devastation. The fascinating aspect is how the caribou can regenerate as they are not prolific (like a moose), for the female matures only at 3-4 years and then has only one calf per year. There does seem to be a long-term cycle, 30-40 years , so that at present they are in high cycle."



from: Edible Wild Plants of
Nova Scotia - MacLeod
and MacDonald.

Dean Brousseau.

Cranberry

field trips

AN EXPLORATORY HIKE TO LABRADOR CASTLE

Date: Sunday, October 19, 1986.
Place: Labrador Castle Rock, nr. Chester, N.S.
Weather: Sunny, warm and clear; calm
Leader: Julie Sircom Participants: 21

The HFN walk to Labrador Castle Rock was perfect on the best summer day of the year. We drove out towards Chester and turned down at the interchange before Chester. After re-arranging we went in by a bumpy wood road to a tiny railroad shed. Julie Sircom was our leader and the senior Sircoms left us there to prepare their cottage for our finale after the hike. There were 21 of us.

The first kilometre of the hike was up a logging road through late autumn colours. Then we reached the wood and the narrow trail for the next kilometre. At first this was easy with a few granite outcrops; towards the end there was a large granite rock which took some scrambling. Then we saw it. A massive towering rock--the castle! Some of our more agile members were ahead of us and we could see them climbing up the rock face, and finally as small figures on the top.

We slid down the small rock and went through a swampy area to the base of 'the castle'. There were enormous tumbled granite rocks and way above us the first people up were standing or sitting nonchalently....they had made it, and so would we. It was not a trail. We squeezed and pulled ourselves up one rock at a time, looking neither up nor down. Finally, there was a long, steep, sloping rock surface that needed good footwear ..... and we had made it!

Wow! What a view! We could see the full extent of Mahone Bay right out to the Tancooks. Chester was hidden behind the trees on our right. About three quarters of our total group made it to the top. The youngest was two years old and the oldest over eighty!

Someone found a gentler way down, but we all scrambled down somehow and met those less adventurous ones who, exploring or resting at a lower level, also had a good day, albeit less strenuous.

We then drove to the Sircom cottage in a beautiful spot by the ocean, to enjoy fish chowder, muffins, and tea and coffee. A splendid day all round.

Labrador Castle is a geological phenomenon. It rears 122m above sea level and measures about 100m long and 30m wide with a crown of scrubby plants on top - a 350million year old granite intrusion dating back to the Devonian period.

Murray Cunningham

NOTES re: THE CRANBERRY WALK

Cranberry (*Vaccinum macrocarpon*) a trailing evergreen; the small pale-pink flowers have four deep petal-like divisions which curve back; stamens protrude and form a cone. Cranberry flowers in June and July. The berries, which ripen in late fall have a high Vitamin C content.

Harlequin Duck (*Histrionicus histrionicus*) is a rare winter resident in Nova Scotia. The male is dark bluish grey with white patches and spots and chestnut flanks; the female brown with three round white spots on each side of the head. Robie Tufts (Birds of N.S. - 3rd ed'n.)mentions that Harlequins "...were widely known as 'lords and ladies' a name appropriately bestowed in an attempt to describe the elegance of the drakes, these are perhaps the most beautiful of sea ducks. Another local name is 'rock duck' inspired by the bird's habit of feeding on inshore waters off rocky coastlines..." Roger Tory Peterson's Field Guide describes them as '...dark and bizarre'. Our harlequin fits the Tuft's description to a "T".

CRANBERRY PICKING AT CLAM HARBOUR

Date: Sunday, November 16, 1986.
Place: Clam Harbour, Eastern Shore, Halifax County.
Weather: Overcast, warm, no wind.
Leader: Bernice Moores.
Participants: 14

We set off on a rather dismal morning, but by the time we arrived at our destination the mist and fog had cleared and the weather was calm and warm enough for bare-hands picking. We were told that many pickers had been there during the previous two months and, in fact, it did seem to be well-picked, or raked, over. However, after careful searching, we each managed to take home a moderate amount.

When our eyes were not close to the ground in search of berries, we observed only one shorebird, and at a distance - probably a sanderling. Not surprisingly there were a number of very large clam shells on the beach. We had a very good sighting of a duck in a sheltered backwater and on checking the field guide decided that it was a female harlequin duck. Black-capped chickadees and a boreal chickadee were also seen and heard.

No one was able to positively identify some recent animal droppings in the area but further checking suggests that a deer may have passed that way. There was also evidence of the presence of a snowshoe hare.

The mild weather allowed us to enjoy our lunch at the picnic tables on the bluff near the Information Centre which of course was closed for the winter. Here we had a wonderful view of the bay and islands and also of two late robins busy nearby.

After lunch we split into groups to go walking or looking for more cranberries. During the afternoon a female pine grosbeak was spotted singing at the top of a fir tree.

The sun had made several unsuccessful attempts to pierce the clouds and as we prepared to leave, a short shower hit us - good timing!

Marjorie Hanson.

AN AUTUMN WALK TO PENNANT POINT

Date: Saturday, November 1, 1986.
Place: Pennant Point, nr. Sambro, Halifax County.
Weather: Sunny; brisk wind.
Leader: Pierre Taschereau. Participants: about 25

This late autumn hike with Pierre was a real treat. I'm always struck afresh with the beauty of nature just outside Halifax, and especially along the ocean.

Starting at Crystal Crescent Beach, we went along the coast on a good trail. There are spectacular cliffs, sand dunes, vistas of crashing waves and giant boulders to climb over and around. Along the way we spotted beach peas, bay, crowberry and rose hips. As we walked, Pierre told many amusing stories about the plants along the trail. We passed through a burned-out area which fell victim to a forest fire a few years ago. Most of us found the black silhouettes of leafless charcoal trees beautiful, stark and poignant. It is still an enchanted forest.

A half dozen hardy souls finally made it to the Point; other small groups split off along the way to enjoy lunch in spots sheltered from the boisterous wind. It was an invigorating, sun-drenched afternoon.

Lynn Ragan

CROSS COUNTRY SKI TRIP and BASIC TECHNIQUES SESSION

Date: Sunday, 18 January, 1987. Participants: 8
Place: Blue Mountain Hill, nr. Kearney Lake, Hfx. County.
Weather: Cold, but sunny.
Leader: Ron Rhodenizer,

On a cold but beautifully sunny day, the group met at the parking lot at Maskawa Canoe Club on Kearney Lake, to learn the basic techniques of ski-ing.

Under Ron Rhodenizer's excellent instruction and encouragement we all-in-all didn't do too badly. Basic techniques shown to us were: Diagonal striding; double poling; downhill positioning; herring-bone for ascending; snow plow for descending; snow plow turns; falling and getting up; star turns, skating; the telemark turn and telemark position.

After lunch in the warmth of the Maskawa Canoe Clubhouse, we tried out our newly-learned skills.

Ron also instructed us on the proper use of the various waxes for the different climatic conditions of snow.

We had a fun-filled afternoon trying-out our skis by ski-ing along the side of the lake and onto a trail leading up onto Blue Mountain Hill. A great way to start the first day of National Ski Week in Canada!

Susan Hawkins

BLUE MUSSEL 7.8 cm.

reports

THE ATLANTIC MUSSEL INDUSTRY.

The blue mussel, Mytilus edulis, is a major epifaunal component of littoral and shallow sub-littoral environments, though it has occasionally been found in deeper waters. It will live on a variety of secure substrates including rock, stones and even compacted mud or sand. Sexes in Mytilus are separate with no signs of dimorphism. Mussels can become sexually mature in their first year, but the time at which this occurs depends on the rate of growth. Sex determination is possible by visual inspection of the gonad tissues. Male gonads are usually white in color, while with females the color varies from white to orange. Spawning is induced through May to July by the increase in ambient seawater temperature. The early life history of the species begins with external fertilization. Subsequent embryological development proceeds with a ciliated trochophore stage being reached approximately 24 hours after fertilization. The first signs of larval shell formation are apparent with a veliger stage developing at about 48 hours. The planktonic veliger stage lasts from 3 to 12 weeks during which time larvae actively feed on phytoplankton, detritus and dissolved inorganics. When larvae reach 150 microns in length, a rounded umbo appears, marking the transition from "straight hinge" to the "umbo" stage of development. A well defined foot is present in larvae measuring 200 microns in length. The next development stage, metamorphosis, occurs when veliger larvae reach 250 microns in length. Upon contact with a suitable substrate, such as mussel culture ropes, the larvae undergo "settlement". This is characterized by the secretion of byssal threads that attach the larvae to the substrate and signals the beginning of a sessile existence. It is this act of settlement or "spatfall" upon which those engaged in mussel culture must capitalize.

Although mussel aquaculture in Atlantic Canada is presently in its infancy, the region could potentially produce nearly 10,000 metric tons per year. Mussel culture is a labor intensive operation and requires a considerable level of expertise. The first commercial operation involved in the suspended culturing of this species in N.S. waters was established in the last decade in response to a growing demand for cultivated mussels. The 1985 Nova Scotian production of cultivated mussels was estimated to have been 400 m.t., the bulk of which was produced by only four growers. The large number of suitable growing environments along the Atlantic coast is highly desirable for expansion purposes in a developing mussel culture industry. Furthermore, estuarine environments offer considerable protection from storm damage and good growth potential (18 to 22 months to market size). Although the immediate future of the Maritime mussel industry appears bright, it is essential that fundamental research be continued to gain biological knowledge of this organism and its relationship to variable environments.

Information concerning larval behavior and settlement of mussels is sparse. Regular monitoring of the abundance of planktonic larvae and subsequent settlement is a good indicator of spawning time and may also enable prediction of maximum recruitment in order to exploit the resource most effectively. However, the time and duration of settlement not only vary annually, but are also different from one region to another. Observations of larval recruitment at Ostrea Lake (site of a Provincial hatchery) have traditionally been consistent from year to year. However, the summer of 1985 witnessed a recruitment failure which resulted in a potential one and a half million dollar loss to the industry. Other locations in Nova Scotia also showed considerable variability in settlement density and it is apparent that not all areas are equally suitable for commercial spat collection. The reasons for this failure are not well understood but are probably controlled by the natural cycle of physical and biological events. There is speculation that heavy spring rainfall may have brought about a reduction in salinities and an accompanying flushing whereby larvae suffered osmotic shock and/or were removed by tidal currents.

To knowledgeable shellfish consumers there is a fear, at certain times of the year, of paralytic shellfish poisoning (PSP), commonly known as red tide. This has in the past normally been limited to the Bay of Fundy region and the New England and Gaspe coasts, where warmer water temperatures and high nutrient levels are more conducive to the growth of toxin-producing dinoflagellates Gonyaulax and Gymnodinium species. Nonetheless, a PSP incident did occur along the South Shore of the province in Shelburne County in the summer of 1985. The adult mussel ingests the toxic dinoflagellates and accumulates the toxin in its flesh. If these toxic shellfish are eaten by humans the outcome can be serious, resulting in neurotoxic symptoms and occasionally death. However, it is a detectable phenomenon and thus mussel growers can continue to operate at times outside of the dangerous red tide-producing seasons. Of significantly more drastic implication is the occurrence of Diuretic Shellfish Poisoning (DSP). The well-developed mussel industry of Sweden was closed in October 1984 due to this phenomenon. A one and a half year closure was legislated banning harvesting and marketing in an attempt to let Mother Nature rectify this problem. Mussels remain toxic throughout the winter months due to the toxin-producing Dinophysis acuminata. There is apparently no obvious reason for this species to have become toxic. Analytical methods and techniques are not sufficiently developed for specific detection of this toxin known as oxalic acid. Speculation as to the causes of DSP has included eutrophication due to fertilizers and acidification from fossil fuel combustion. Meanwhile, many producers are facing bankruptcy as two years will have soon passed without return on investment.

Therefore, it behooves us in Nova Scotia that we monitor the environmental effects on mussel culture and also the effects of mussel culture on the environment. It is essential that a thorough understanding of the relationship between mussel culture activities and environmental variability exist. In this way the Atlantic mussel culture industry will develop and expand while research on ecological interactions will help to diminish the impact of adverse management decisions on both the industry and the environment.

Scott Coffen

THE ANIMAL KINGDOM

(This is one of a series of Vancouver Public Aquarium Docent Notes - submitted by Leigh Mazany. Other will follow from time to time)

All of us grew up 'knowing' that there are three kinds of matter: "animal, vegetable and mineral". At the level that we perceive things in our everyday lives, these categories are easily distinguished. However, at the microscopic level the boundaries are fuzzy.

"Life" is usually defined in terms of the ability of something to reproduce itself -- to 'replicate'. But certain carbon-nitrogen compounds can do this. Is this life??? Or is it 'mineral'?

A 'plant' is usually defined as a life form that can 'photosynthesize'; that is, it can take carbon dioxide and sunlight and manufacture carbohydrates, on which it lives. On the other hand, 'animals' cannot do this. They must eat plants or substances to keep alive. But what do you call the little one-celled protozoan that can photosynthesize and also absorb food from its surroundings? It is both plant and animal.

The Animal Kingdom is comprised of the millions of forms that do not photosynthesize and never did so in their immediate ancestry. Thus, a mushroom, which does not photosynthesize, is a plant because it is descended from ancestral plants that did photosynthesize.

There are one-celled animals, called 'protozoans', and many-celled animals called 'metazoans'. We humans are metazoans, along with sponges, worms, fish and many others.

So when we speak of the Animal Kingdom, we generally mean the metazoans, and we go on to say that all of these take in their food from outside their bodies. They do this because they cannot manufacture it using sunlight, as plants do.

The Animal Kingdom is divided by biologists into large groups of animals that have similar characteristics. The species of each group are similar to each other but very different from all other animals outside the group. Each of these large groups is called a 'phylum' (plural 'phyla').

The various phyla can be arranged in a sort of ascending order of complexity, and when biologists do this, they draw a tree-like structure called a 'family tree of animals' (or 'phylogenetic tree'). Since complex animals, over millions of years evolved from simple animals, the branches of the family tree reflect relationships of the phyla to each other. Thus, the corals and sea anemones are down near the sponges, on a lower branch. while we humans are up with the birds and starfishes. Odd, that latter, isn't it? But it is true. We are akin to sea squirts and starfishes.

The following are the main animal phyla that most of us see at one time or another:

Phylum Porifera: sponges; the simplest metazoans that we see in the Aquarium.

Phylum Coelenterata: corals, sea anemones, jellyfish, hydroids.

Phylum Annelida: segmented worms, including tube worms, earthworms, leeches.

Phylum Arthropoda: largest phylum in the history of the earth; includes insects, crabs, lobsters, shrimps, centipedes, spiders and many others.

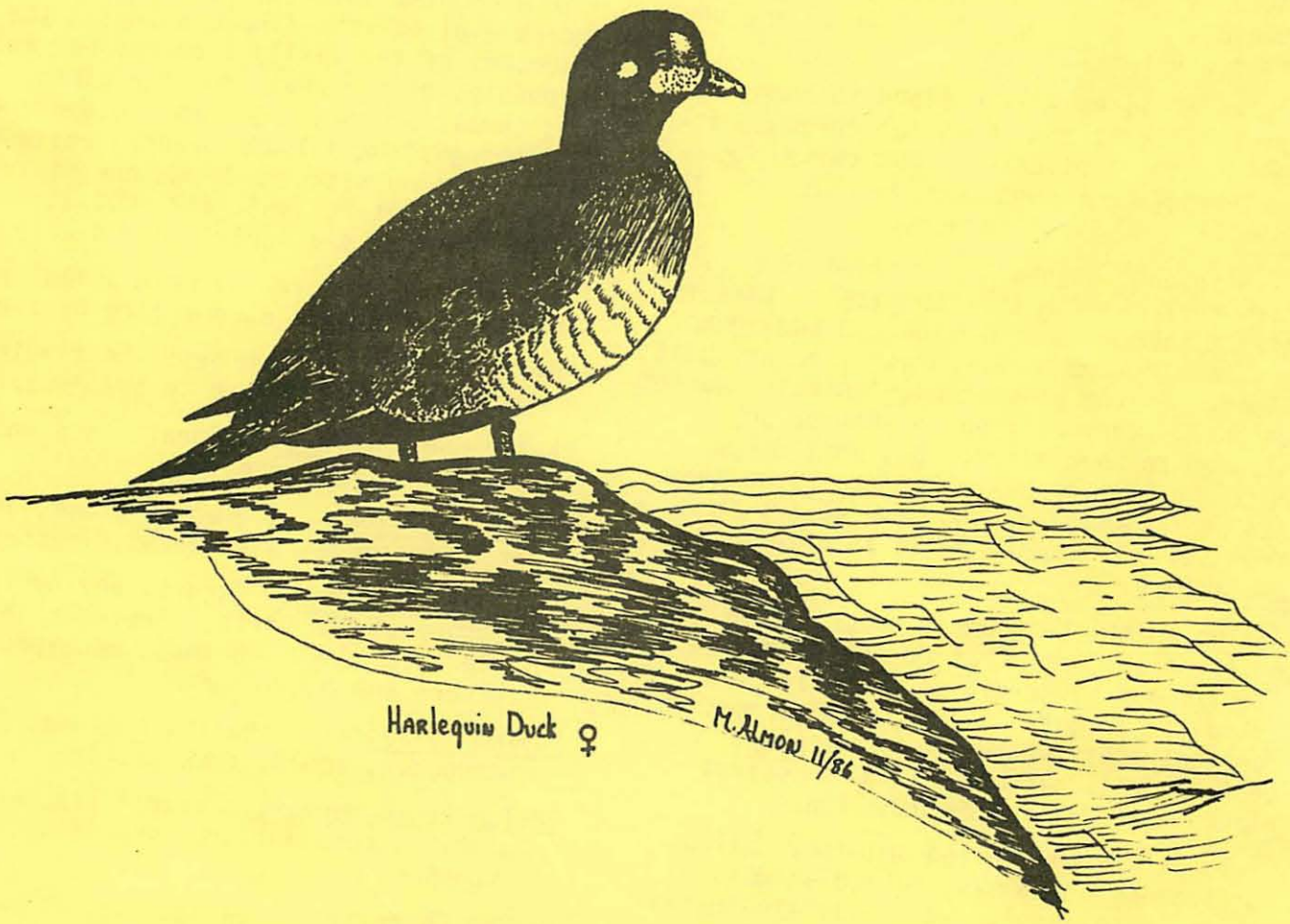
Phylum Mollusca: snails, chitons, clams, octopuses, squid, tusk shells.

Phylum Echinodermata: starfishes, sea urchins, sand dollars, sea lilies, sea cucumbers.

Phylum Chordata: sea squirts, fishes, reptiles, birds and mammals.

Class Tunicata:	sea squirts
Class Pisces:	fishes
Class Amphibia:	frogs, toads, salamanders
Class Reptilia:	lizards, snakes, turtles, crocodilians
Class Aves:	birds
Class Mammalia:	mice, whales, cats dogs, humans.

(S.J. Proctor)
Vancouver Public Aquarium.


Harlequin Duck ♀
M. Almon 11/86