

Halifax Field Naturalists Newsletter

DECEMBER - FEBRUARY 1986

No. 42



return address:
HALIFAX FIELD NATURALISTS
c/o N.S. MUSEUM, 17 SUMMER STREET
HALIFAX, N.S., B3H 3A6

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DECEMBER - FEBRUARY 1986

No. 42

MEETINGS: First Thursday of every month at 8.00 p.m. in the Auditorium of the Nova Scotia Museum, 1747 Summer Street, Halifax.

FIELD TRIPS: are held at least once a month*****It would be appreciated if those travelling in someone else's car on field trips share the cost of gas.

MEMBERSHIP: is 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 our fiscal year ... JANUARY 1 to DECEMBER 31.

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

EXECUTIVE 1985:	President	John van der Meer	(r) 455-1029	(o) 426-8276
	Treasurer	Bernice Moores	(r) 422-5292	
	Secretary	Michael Downing	(r) 823-2081	
Directors:	Vice-President	Edna Staples	(r) 868-2919	
	Past President	Doris Butters	(r) 463-0033	
	Membership	Colin Stewart	(r)	
	Programs	Filip Volckaert	(r) 479-1095	

Connie Eaton
Ursula Grigg
David Lawley
Regine Maass
Mary Primrose

NEWSLETTER: Editor Doris Butters (r) 463-0033
Edna Staples

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

HFN is a member organisation of the Canadian Nature Federation.

HFN is incorporated under the Nova Scotia Societies Act.

HFN NEWSLETTER is produced by courtesy of the Nova Scotia Museum.



HALIFAX FIELD NATURALISTS
President's Message: 1986

Here we are, just a couple of weeks before another Annual Meeting and once again it is time for the President to compose his traditional review and exhortation to the faithful. I think we have had a very good year, one of which we can be proud.

We continued to have a very active programme of outings, averaging better than two a month. Not bad at all! Although the turnout for some outings was small, others, such as the winter trip to McNab's Island, have become so successful that we will have to introduce a more organized structure for crowd management but the club can handle that. Sure, there are some growing pains associated with these large events but I believe they help our public image and provide important publicity that should translate into new members for HFN. This year also saw another full programme of lectures most of which were well attended. HFN thanks all those who led our walks and presented the talks. It would have been a sterile year without their efforts on our behalf. Thanks also to those who helped with tea and cookies after the meetings, especially Lesley Butters for her dedication to this task.

The newsletter continues strong in the hands of Doris Butters and Edna Staples which is very good to see as it is our best contact with the total membership. I would, however, like to see more well written science and nature articles and on behalf of the editor urge members to contribute in this area. Please remember that it's hard to assemble a true club newsletter without a constant supply of new material from the members. At this point I want to thank the Nova Scotia Museum for its help in printing the newsletter and for providing the auditorium for our meetings.

There has been a regular series of executive meetings throughout the year, and although I wish we could have accomplished even more, I believe the

club was well served by its officers. As President I want to thank all of them for their dedication and helpfulness. The executive adopted a more diffuse structure last year and this continued to function well, with the programme committee now operating almost autonomously. The publicity committee is gelling and has focused on a few large community events. This year the club is taking a leadership role in planning Environment Week. There is still room for additions to these committees and for the growth of additional specialty committees (environment, membership, education, a youth program to name some possibilities) and perhaps this will slowly happen in the coming years. The club is currently in a very good financial position to try a few small innovative things. On the subject of finances, I want to thank Mr. A. W. Linton for his continuing willingness to act as our official auditor.

I believe that one of the signs of a strong vibrant club is the regular rotation of its officers and their replacement with new people. New people not only bring new ideas, they bring fresh enthusiasm, optimism and energy to the executive and thus to the club itself. Just as important, a chance to serve the club on the executive, to help mould the club's future, is attractive to many of our best members and that opportunity does not exist with a static executive. For this reason I will move on to the position of Past President with enthusiasm, without regret, knowing that an excellent slate of fine people is waiting in the wings to take the club ahead into the new year. I have every confidence they will serve the club well. In closing I want to thank the members of HFN for the privilege of having served them and for making my period in the Presidency enjoyable and rewarding. Thanks to you all!

John van der Meer,
President, Halifax Field Naturalists

Halifax Field Naturalists
Statement of Receipts and Disbursements
For the Year Ended December 31, 1985

Receipts

Membership dues	\$1,233.00
Interest income	<u>120.93</u>
Total receipts	<u>\$1,353.93</u>

Disbursements

Meeting expense	\$ 180.53
Publications and stationery	214.38
Postage	472.46
Dues - Can. Nature Federation	25.00
Donation - Can. Nature Federation	25.00
Bank charges	48.88
Projects - Science Fair Prizes	<u>47.90</u>
	<u>\$1,014.15</u>

Excess of Receipts over Disbursements	\$ 339.78
Surplus Account balance - January 1, 1985	<u>1,946.65</u>
Surplus Account balance - December 31, 1985	<u>\$2,286.43</u>

Consisting of:

Petty Cash Fund	\$ 25.00
Bank Current Account, December 31, 1985	88.97
Bank Savings Account, December 31, 1985	<u>2,172.46</u>
	<u>\$2,286.43</u>

Signed Bernice G. Moore
Treasurer

Accountant's Comments

I have prepared the above Statement of Receipts and Disbursements of Halifax Field Naturalists for the year ended December 31, 1985, from the records of the Society and information supplied to me by its officers.

A. W. Linton
A. W. Linton, F.C.A.

Halifax, Nova Scotia
January 28, 1986



hfn news

Welcome to New and Returning Members

Virginia Crawford
Barbara Purcell
S. Pearce

Sheeri & Neena Ismaily
J. Milton & Norma Gregg
John Maly & Janet Crosbie
Lorette Gendron & Geof Chinn

Cheers to the New Year

HFN, it appears is starting its year off right
By having the years first gathering, a members night.
The winter-spring programmes all look like hits,
And when you go to McNabs remember to take your mitts.
The beginner's bird workshop will put you in the know,
And off to the sugar bush to have desert on the snow.
And every year I look forward to the salamander crawl.
Oh, I could cry, I could spit. I'm going to miss them all.

Ricki Garrett

WANTED :

Volunteer ASSISTANT COORDINATOR for Canada Environment Week
(1 - 7 June 1986).

Job description : lots of phoning, personal contacts, preparing
meetings, lay-out, typing, etc.

Your salary : a smile from your friends

Contact : Filip Volckaert, phone 479-1095 (evenings).

NEXT DEADLINE

25 April, 1986, for the
May issue. Mail contri-
butions to the N.S.
Museum, or phone the
Editor at 463-0033.



nature notes



Anting, with Marigolds

How grackles get the bugs out

Not too long after the sun rose, a small flock of iridescent grackles landed in a tree, near Robert Parsons' home in Winnipeg. "After a minute or two," he said, "one bird flew down to the lawn and strutted toward the marigolds and tore off a flower, pecked at it until he had broken it up and began rubbing the petals through his feathers, particularly those on his breast and wings." Others followed. "Presently they were all doing this and began acting as if they were drunk, seemingly unable to balance as they swayed from side to side. Finally, however, they 'recovered' and flew away."

The habits of Parsons' grackles came to light after Cathy Kaminski confessed that she too had observed grackles doing something "peculiar" with the marigolds in her backyard. Her report to *Winnipeg Free Press* bird columnist, David Hatch, prompted other birders to write. Winnipeg observers had evidently been watching common grackles in their marigolds for years.

The grackle's peculiar behaviour was markedly similar to "anting" — a strongly instinctual act that has been observed many times in many coun-

tries of the world. But never before had anting behaviour been observed with marigolds, or indeed flowers of any kind.

In its classic form, anting is a highly stereotyped performance. An anting bird appears to be seized by a compulsive drive. It sprawls on the ground, tail spread wide for balance, then picks up ants with its bill, applying them to its plumage by thrusting its head first under one wing and then the other. Such a bird almost ignores people. I watched an adult male red-winged blackbird anting on a lawn in Madison, Wisconsin on June 8, 1949. The bird persisted for at least 10 minutes while I crouched nearby, taking notes. Since it isn't easy for a bird to reach underneath its wings and rub ants against its feathers, it had the appearance of toppling about, acting, as Parsons said, as if it were drunk.

Generally, it is believed that the function of anting is to help rid a bird of external parasites, for many species of ants release formic acid and other stinging substances when picked up or squeezed. It is as if a bird were spraying itself with a pesticide! Besides, the

bird's contortions put its head in contact with the wings. If anting does indeed deter parasites, the bird could well be spreading the repellent on its head, where lice are often abundant.

Anting, however, is not restricted to ants. Birds choose items that are by nature pungent, aromatic, hot, stinging or penetrating, possibly producing a sensation not unlike that of the formic acid released by ants. Popular author John V. Dennis names numerous plants or fruits used by birds for anting, from citrus fruit rind, sumac berries, chokecherries, apple peel, walnut leaves and husks, to raw onion. Most of these things contain acidic or stinging penetrating fluid. Even stranger substances from vinegar to beer have been recorded by observers in their own backyards. One tame magpie even applied lighted cigarettes to its plumage. And this improbable performance was topped by a detailed account of a tame rook that by itself learned to hold a kitchen match with its feet and peck at the match head until it ignited, whereupon it applied the burning match to its plumage!

Clearly, anting is an instinctive act induced by a wide variety of stimuli and ingredients. Lovie Whitaker, in 1957, published a technical review of the subject of anting, listing 148 species of birds that had been observed in the act. The majority of the reports, it should be noted, were made by amateurs.

But none of this explained to Winnipeg amateurs why grackles found their marigolds so attractive. The clue lies in some common garden knowledge. Many gardeners, without knowing exactly why, have long planted marigolds as borders along vegetable gardens because this led to better tomatoes. Horticulture experts can explain that parasitic worms called nematodes disappear from the soil in which marigolds are grown.

As it happens, marigolds, chiefly of the genus *Tagetes*, are among a group of flowers that contain pyrethrum, a natural insect repellent. It is likely that this is what stimulates grackles to ant with marigold flowers. But how did the grackle discover the marigold? Its strong odour could not have been the attraction; grackles, like most birds, have a limited sense of smell. They do have a sense of taste which may trigger the reaction. I chewed the petals from a marigold flower and found that they have a strong, bitter flavour. But why did the grackle taste the marigold petals in the first place? The mystery remains.

Robert W. Nero

Reprinted from:
NATURE CANADA - Summer 1985

The Art of Discovering

by John Brownlie

Do you know why you are a naturalist? And don't tell me because you like to walk in the woods. That's just a cover for the real reason. I'll tell you why you're a naturalist. You like to discover.

Why do you think Fulton Lavender carries binoculars with him when he walks through the woods? To discover any interesting birds that may have settled in. Why do Doris, and several other Halifax Field Naturalists carry little magnifying lenses on a thong about their necks? To discover little red dots on the backs of newts. DISCOVERY. It's a powerful force that drives all naturalists to do the strange things they do.

And what could be stranger than going for a walk at eleven o'clock at night during a rain-storm. But you won't think me strange if I tell you I'm a naturalist eager to discover what kinds of salamanders breed in the ponds nearby. Put in that context I'm just a naturalist succumbing to the thirst for discovery.

But sometimes it is hard to prove sanity to others that are non-naturalists. For example, the police officer who caught me driving slowly along the road late at night.

"Yes officer, I was weaving a bit, but only to miss the leopard frogs sitting on the road."

He wanted me to take a breathalyser test so I showed him the two yellow-spotted salamanders I had collected for

the terrarium and that convinced him that at least I wasn't drunk.

Now, there are three different levels of discovery. The most common type occurs when you re-affirm something you already knew or highly suspected. Like when you spy a large boulder along the path up ahead and say to yourself, "Hm-m. There's probably rock polypo dy growing on that boulder." When you climb up on top of the boulder, sure enough, patches of short green ferns cluster in the granite.



Polypodium virginianum
(polypody fern)

Then you stand up to survey your surroundings from on high. "Wow! There's a big nest in that spruce tree." Suddenly a goshawk leaps up off the nest to screech at you from above. Now you're elevated to the second kind of discovery, when you unexpectedly come upon something you knew was there, but your chances of actually finding it were very low.

The third kind of discovery comes when you slip and fall off the boulder while trying to observe the young in the nest. Fortunately you land on thick moss. Brushing the lichen from your hair, your gaze fixes upon an unusual flower you have never seen before. You look it up in your field guide to find that it is not supposed to be there. This level of discovery gives the greatest energy boost and you run back to the museum to get Alex Wilson to confirm your observations.

Admittendly, discoveries of the third kind do not occur very often. In 10 years of naturalizing in Nova Scotia, I finally made a discovery of the second-and-a-half kind just last spring. When the police officer had

driven off, scratching his head in disbelief, I bent down and picked up a blue-spotted salamander as it crossed the road. I should have thanked that policeman for stopping me there. That salamander led to the re-discovery of an isolated population of blue-spotted salamanders that had been lost for 34 years. And I still feel a buzz from that experience.

So, don't try to hide it by saying you're just going for a walk. We all have a bit of Chris Columbus in us. The next time someone looks at you in a questioning way while you are down on your hands and knees in the back yard measuring earthworms during a rainstorm - tell him you're just discovering.



FOR THE WONDERFUL OLDER GENERATION

anon.

Just a line to say I'm living
That I'm Not among the dead
Though I'm getting more forgetful
And more mixed up in the head.

For sometimes I can't remember
When I stand at the foot of the stairs
If I must go up for something
Or if I've just come down from there.

And before the fridge so often
My poor mind is filled with doubt
Have I just put food away, or
Have I come to take some out?

And there's times when it is dark out
With my nightcap on my head
I don't know If I'm retiring, or
Just getting out of bed.

So if its my turn to write you
There's no need in getting sore;
I may think that I have written,
And don't want to be a bore.

So here I stand beside the mailbox
With face so very red...
Instead of mailing you my letter
I have opened it instead.

REPRINTED FROM: Catherine Trill
Naturalists' Club Newsletter, No. 99.
1985.

field trips



A FALL WALK ALONG THE NORTHWEST ARM

Date: Sunday, November 2, 1985
Site: Fleming Park (the Dingle) east along right-of-way path
Participants: 19-20 adults and three children
Leader: Regina Maass
Weather: Sunny and cool; 9-10°C.

A perfect fall day for a walk along the shore of the beautiful Northwest Arm. The Arm was originally called "Waeg-wol-tich-k" (it runs down to an end) by the Micmac Indians because it had the look of a great river flowing out of the hinterland. Early settlers had heard about 'a navigable river' and for a time thought that the Northwest Arm was this river, so they named it Sandwich or Hawk's River.

We began our walk at the Dingle Tower, which sits majestically on top of a drumlin in Fleming Park. Made of granite and ironstone, it was built in 1912 to commemorate the first legislative assembly in Halifax in 1758. Stones for the tower were contributed from all parts of the world. Regina mentioned that the land for Fleming Park (100 acres) was presented to the City in 1908 by Sir Sandford Fleming, who had become concerned that there was no place for ordinary people to enjoy recreation. Sir Sandford, a Scot, built the Intercolonial Railway and much of the Canadian Pacific Railway. He also designed the international time zone system.

We then proceeded to the right-of-way path known to local residents as the "Toe" Path, and walked along the beautiful shoreline of the Arm. The sedimentary rocks brushed so often by the force of tides were carpeted with rock barnacles; and rockweed (*Fucus*) abounded on the rocky shore. A variety of mosses grew in the damp, shady areas beneath the trees.

Regina pointed out that the Purcell family had originally had a house and gas pump in Pt. Pleasant Park to supply fuel to the boats on the Arm. They also provided ferry service from this point to Jollimore until 1968, while the Boutilliers provided service from Oakland Road to the Dingle Tower, and rented canoes at what is now the boat launching area of the Park.

The remains of the old government wharf can still be seen. Before the school burned in 1946, children were picked up by boat at Melville Cove, dropped off at this wharf and would then walk through the woods to school.

Original residents along this shore were fishermen, small time farmers and - alas - a few smugglers who hid out in these woods.

Regina led us up a steep hill off the main trail (a moth hitched a ride on Filip's trousers) to see a hemlock grove on Boscobel Drive. Tall hemlock crowns rise above the rest of the trees to bathe in full sunlight and block the sun from reaching the forest floor. Because of this dense shade the understory is poorly developed.

Returning to the main path along the water's edge our eyes fell on a beautiful duck floating in the Arm. Binoculars came out and cameras made ready to capture the action. What kind of duck is it? - maybe a mallard - it has a green head! No the body is not quite right. Is it a merganser? ... no ... tail not quite right. After several suggestions were offered, it was decided that it was a wood duck...u-u-ummm yes - it was a wood duck, alright - IT WAS MADE OF WOOD!!

After a good laugh and comments that Regina had really outdone herself, I looked at the expanse of water and tried to visualise what it must have been like when the Arm was the recreation centre of the town back in the 1800s. Winters were very cold and the Arm froze solid. Skating was the favourite winter sport and high officials joined the crowds who skated there. In hot weather it was a main resort for swimming, canoeing and small boating. Canoes dotted the Arm until the 1950's.

Further along the path we stopped to look across at some very lovely estates. We could see the site of one of the first houses to be built on the Arm, by refugee printer, John Howe. It was a humble house and in 1804, Joseph Howe was born, the most famous and beloved figure in Nova Scotia history. Later summer cottages appeared and well-to-do officials and merchants began building country estates.

The trail has a variety of flora: Butter and Eggs (*Linaria vulgaris*) also known as Yellow Toadflax, is a member of the snapdragon family. At one time its juices were considered a valuable skin lotion. Mixed with milk, the juice constitutes a fly poison. The plant was introduced from Europe.

Barberry (*Barberis vulgaris*) is abundant. It is a shrubby plant with small red oval berries and brilliant red leaves in the fall. The original variety was the alternate host of the black stem rust of cereals. People were encouraged to destroy this plant and a similar, rust-resistant species variety was planted.

Sheep Laurel or Lambkill (*Kalmia angustifolia*). We noticed several large patches of this plant - its leaves drooping in a hugging position to prevent transpiration and conserve water during the cold of winter when the water is locked up in the frozen ground. In summer the leaves are upright. The leaves are poisonous to livestock, especially sheep, although deer feed on it with no apparent adverse effects.

Asters (*Aster* sp.) - several small patches of blue asters were noticed. Birds and small mammals feed on its seeds.

Spurge - Cypress Spurge perhaps (*Euphorbia cyparissias*) with numerous needlelike, pale green leaves. Flowers in summer, prefers dry open areas and contains a milky juice.

Woody Nightshade or Bittersweet (*Solanum dulcamara*) - a member of the tomato family. A climbing, woody plant with long drooping branches, which bears beautiful, but inedible red berries.



(MacLeod & MacDonald, *Edible Wild Plants of Nova Scotia*, 1977)

Meadowsweet (*Spiraea latifolia*) belongs to the rose family. Its pink flowers, clustered at the top of the plant, had turned to a fuzzy brown until Spring.

Japanese Knotweed (*Reynoutria japonica*). This plant, which grows to 8-10ft. in a season, is edible. Regina says it tastes like rhubarb - Mary P. says it tastes awful! ... so there you are!

Wild Rose (*Rosa* sp). The orangey-red rose hips can be crushed and a teaspoonful steeped in one cup of boiling water for ten minutes. Has a high Vitamin C content.

Of birdlife observed, apart from the usual Herring Gulls (*Larus argentatus*) we only spotted a Black Duck (*Anas rubripes*), Nova Scotia's most common duck ... and THIS one was real. The sexes are very similar and this one was believed to be a female. The voice is the same as that of the mallard, and black and mallard ducks frequently interbreed.

The sun was sinking and the coolness of the breeze over the Arm waters tickled our faces. It was time to start back. We hastened from a slow saunter to a fast trot, especially when Regina announced hot tea and cake waiting for us at her home on the Arm.

Thank you, Regina, for a most informative and enjoyable walk.

Etta M. Parker.

LATE FALL IN CLAM BAY

Date: November 17, 1985

Place: Clam Bay

Guide: Linda Morris

Weather: Cold, windy, rainy, hail.

Participants: 10

Although we gathered at the museum in anticipation of a trip to Taylor's Head, the threatening weather report mounted concerns about the possibility of having to return on icy roads; hence, we wisely changed our plans and proceeded to Clam Bay.

Under the capable leadership of Linda Morris, we started our walk along the beach, the silence broken only by the high, stormy, winter waves which were breaking heavily against the land. Approximately 8,000 waves break upon a beach every day. The energy in these waves is reduced by the time they break and because of this, they dump a large amount of sediment. Then, as the water washes back down the beach face gathering momentum, it picks up sand grains once again. The sea had certainly given this beach a bath and had left behind treasures torn up from the deep sea and distant rocky shores. Some of the treasures we found on the beach were:

Modiolus modiolus (Horse Mussel): These mollusks inhabit heavy, bulky shells bound to rocks by a tangle of golden-hued byssus threads produced in glands in the slender foot. The threads are spun from a milky secretion that solidifies on contact with seawater.

Spirorbis borealis (Sinistral Spiral Tube Worm): This small plumed worm looks like a snail. It is a tube builder that secretes a calcareous shell or tube about itself, cemented to weeds or rocks. The chalky white tube is approximately the size of a pin and is wound in a flat, closely coiled spiral. The worm lives permanently within the tube, thrusting out its head from time to time to filter food from water passing through the fine filaments of its tentacles. These tentacles also serve as gills for breathing.

Lunatia heros (Moon Snail): The moon snail is blind; however, it has no use for eyes because



COMMON
PERIWINKLE

it gropes through dark sands hunting mollusks that live as much as a foot below the surface. It has a smooth rounded shell which aids its descent into the sand as it digs with its immense foot. When it locates its prey, it holds the animal with its foot and drills a round hole in the shell to open it. Moon snails are voracious; the young animals eat more than a third of their weight in clams each week. They lay their eggs in a sand collar made of sand grains wrapped around the parent. Each egg is surrounded by a thin layer of fine sand grains and there can be thousands of eggs in a single collar.

A variety of seaweeds were also found thrown up on the beach, having been torn from their growing places by the waves.

Fucus vesiculosus (Bladderwrack) and Fucus serratus: We walked over crackling masses of bladderwrack. They are members of the brown seaweeds, which owe their olive green to dark brown colour to the pigment fucoxanthin, which masks the chlorophyll. Some species have small bladders filled with gases secreted by the plant, which makes the plant bouyant allowing it to float up towards the light when it is submerged.

Laminaria longicruris (Oarweed, Devil's Apron, Sea Tangles, Kelp): This member of the brown algae is the largest local seaweed and is one of the most important for commerce. It has a tough holdfast which is similar to the roots of a tree, branching out, dividing and subdividing. Some animals such as horse mussels find secure attachment in these holdfasts. The holdfast anchors kelp to the rocky bottom but it can be torn away in a surge of stormy seas and the plant floats to the surface. The plant's tissues contain large amounts of alginic acid and salts which create a tensile strength and elasticity able to withstand the pulling and pounding of the waves.

Agarum cribrosum (Sea Colander): This is a deep-water relative of Laminaria that is characterized by wide fronds pierced by numerous perforations.

Ulva lactuca (Sea Lettuce): There was a small amount of sea lettuce on the beach. It is an edible green alga that can be used in soups and fresh salads.

Chondrus crispus (Irish Moss): Because this red alga grows low in the tidal zone, its exposure to the atmosphere is brief, allowing it to retain a freshness and sparkle that reminds one of its recent contact with the surf. It has a long history of use for urinary disorders and in 19th century Europe it was used as a treatment for consumption. Today the carrageenin extracted from Irish Moss is used primarily in the food, pharmaceutical, photographic and paint industries.



NORTHERN MOON SHELL

From the beach we proceeded to the dune area and could readily observe the result of the interaction of wind and waves which carry sand to this area. However, without some kind of stabilizing activity, the dunes would just continue to be swept away, eroded by wind and waves.

American beach grass (Ammophila breviquilata) was prevalent in this area and is the primary stabilizer of dunes. This true grass has an amazing affinity for sand, encouraging dune growth by holding sand in place. It must be covered by an average of almost three inches of sand per year to survive. Even a single shoot of the beachgrass traps wind-borne beach sand around it. The sand stimulates growth of the beachgrass which responds by sending out horizontal runners called rhizomes. Every 6 to 10 inches along the runners more roots grow down into the sand and blade sprouts push up out of the sand. As more blades of grass reach the surface they in turn trap more sand and are stimulated to send out even more runners. The dune sand becomes locked in place by the mass of buried plants and rhizomes, while the living vegetation on the dune reduces the surface sand movement. Denuding of vegetation follows excessive foot traffic of beach lovers. American beachgrass is an exceptionally hardy plant but if the surface plants and rhizomes are crushed by pedestrian traffic, the plant cannot survive and dune migration accelerates.

Next we proceeded to the bog and forest area somewhat protected from the harsh elements by the sand dune. By this time the rain was very heavy and we quickened our pace considerably over this part of our tour. Some of the plants here (as well as dune plants) need features that protect them from salt damage and from drying out in the wind and sun. Hence, these plants have adaptations similar to desert plants (Xerophytes). Their narrow leaves are leathery and have waxy cuticles that reduce water loss by evaporation. These plants are often anchored by long, spreading roots that are able to collect even small amounts of rain from shallow soils. Plants observed in the bog area were:

Sphagnum rubellum: This plant was dominant in the wet areas. Starting at the water's edge it spreads by branching and vegetative reproduction until it gradually covers the entire water surface. In time, the resulting bog fills in completely as rich soil composed of decaying moss replaces open water.

Drosera (Sundews): On the sphagnum hummocks we found delicate sundews. Each leaf is covered with drops of sticky fluid on the ends of tiny glistening hairs. Insects, attracted by its color and aroma, land on the leaf and become trapped. The hairs slowly bend around the insect and glands on the tips secrete the digestive enzymes that ingest the insect in a matter of hours.

Cladonia rangiferina (Reindeer Moss): This and other lichens such as British Soldiers and Old Man's Beard were abundant. A lichen is made of two different plants, a fungus and an alga, living in a close symbiotic relationship. The algal partner makes carbohydrate by using the sun's energy for photosynthesis and this is used by the fungus. The alga in turn benefits by receiving moisture containing inorganic nutrients dissolved by the fungal mycelium. Old Man's beard is a lichen that grows attached to trees and is thus called an epiphyte. It rarely injures the tree, using it only for support.

Myrica pensylvanica (Bayberry) was a common sight in this area. It is a nitrogen fixer and thereby helps support other plants.

Kalmia angustifolia (Sheep Laurel) was also very abundant. It will be interesting to view in the summer when these bushes will be in full bloom, covered with red flowers.

By now we were all thoroughly soaked and it had decided to hail but there were so many delicious-looking cranberries (Vaccinium macrocarpon) that we just had to stop and pick some. Our mouths watered just thinking about how good they would be with Christmas dinner. Then a fast walk back along the beach, where fresh deer tracks indicated we were not the only land creatures to pay a visit that

day, and on to the cars where hot soup awaited us. Finally one last look at the beach and out to sea where gulls were still patrolling, frequently diving to catch fish. We could really sense the physical and biological forces that have been at work in this dynamic place, continuously sculpting and resculpting the beach and dunes for thousands of years. Thank you Linda, for a very informative and enjoyable outing. (Yes, I even liked the wind, rain, and hail.)

Etta M. Parker



PECKIN'

The saddest thing I ever did see
Was a woodpecker peckin' at a plastic tree.
He looks at me, and "Friend," says he,
"Things ain't as sweet as they used to be."

BY
SHIL SILVERSTEIN

submitted by
RICKI GARRETT

RAPTOR HIKE

Date: Saturday, January 25 1986.
Participants: 28 people in 11 cars.
Locale: Annapolis Valley.
Leader: Fulton Lavender.
Weather: Sunny and cold.

We had a beautiful cold day for our drive to the Valley, where we met the rest of our group at the Tourist Centre at Grand Pre. Wasting no time, we began birding in the parking lot, seeing Bohemian waxwings, pine grosbeaks, starlings, rough legged hawks, rock doves, juncos, northern ravens and crows. Out on the dykes we watched red-tailed hawks, blue jays, tree sparrows, a northern harrier, black capped chick-a-dees, horned larks, Canada geese, black ducks, ring-necked pheasants, song sparrows, hairy woodpeckers, American goldfinches, 7 bald eagles and, one of the highlights of the day, 15 short eared owls, 13 of which were flushed from one patch of grass. A couple of them flew over our heads and landed on the ice, posing nicely for us while we looked through the scope.

Leaving Grand Pre we headed for Aylesford where we saw the rarest bird of the day, a red headed woodpecker which appeared promptly when the leader arrived and remained in the trees until everyone had looked his fill. On the way out of Aylesford we passed a donkey in a field with some horses. When we arrived at Morden the patient ones among us had their lunch. On the water we saw common loons, eiders, oldsquaw, red necked grebes, herring gulls and great black-

backed gulls. After a little visit with Hobo, the German Shepherd, we walked up to a wooded spot and found golden crowned kinglets, red breasted nuthatches, boreal chickadees and a brown creeper as well as hearing a robin.

On the way to Margaretsville we saw ruffed grouse and a grey jay, and when we got there we saw red breasted mergansers and had an excellent view of a white winged scoter and a thick billed murre through the scope.

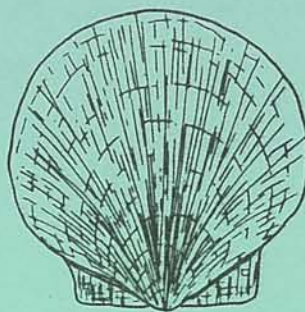
While there we met the Keddy's who told us that there was a barred owl in a back yard not far from there. By this time there were only 3 cars left but we set off and found the Baker's house. A beautiful fat owl was perched on top of the remains of one of the Baker's ducks. It allowed us to get quite close before it flew up to a tree and posed a while longer.

A wonderful day with 42 species of birds seen by the group.

Carol McNeill.



reports



DEEP-SEA SCALLOP

THE DEEP-SEA SCALLOP : Part I.

Not so long ago our ancestors could pick up their scallop dinner simply by combing the low water mark in SW Nova Scotia; that period coincided with little culinary interest in this remarkable animal. Today we can only dream of those times; supplies have dwindled and prices have soared. Nevertheless, scallops still form an integral part of day-to-day life in eastern Canada; they deserve close attention. I will elaborate in the following pages on the biology of the deep-sea scallop as we understand it today.

The scientific name of the scallop is Placopecten magellanicus (Gmelin, 1791), with "plac" referring to flat, "pecten" to comb and "magellanicus" to the Strait of Magellan (the locality where Gmelin reported it (in error) for the first time in 1791). A variety of popular names are in use : deep-sea scallop, sea scallop, smooth scallop, giant scallop, petoncle geant (French) and others.

Deep-sea scallops occur from the Strait of Belle Isle (northern Newfoundland) to off Cape Hatteras (North Carolina) from just below the low water mark up to more than 100 m deep. The upper shell (left valve) is more convex than the lower one; the colour of the former is usually brownish (although whitish colours and a mixture of brown and white occur), while the latter has usually a white colour. The average shell size of an adult is 13 to 20 cm, but shells of 30 cm have been dredged. The oldest animals (usually found in non-fished areas) reach more than 20 years although 12 years is closer to the average.

Inside the shell are located a large white muscle (40% of the total wet flesh weight), the gonad (red if the animal is a male and white if a female), the liver (greenish and located close to the ligament) and the mantle (responsible for secreting the shell and trimmed with eye spots and tentacles). It is the size and special characteristics of the muscle which make scallops remarkable. The muscle consists of a quick adductor muscle (the larger part) and a catch adductor muscle (smaller; the colour is a clearer white). The "quick" part allows the scallop to make very fast valve contractions, thus allowing it to move (a unique feature in bivalves), while the "catch" part holds the shells tightly together once closed (just like a mussel). The valve "clapping" squeezes water from between both shells, thus enabling the animal to move in all four directions by jet propulsion. Needless to say this suits scallops very well in avoiding certain predators (such as seastars) as well as in looking for a fine feeding spot.

Deep-sea scallops have managed to take the best advantage of their food in several ways. First, they are most common in those areas where there are strong currents carrying high concentrations of little algae and detritus particles. These particles are caught on the gills, moved with tiny hairs (called "cilia") to the mouth where the palatable is sorted from the junk. The latter is discarded as loose pellets (called pseudo-faeces). Second they feed just above the bottom where the water carries one of the highest loads of particles. It is this boundary layer which provides a rich assortment of algae and bacteria.

Scallops possess a variety of means to move around. The little larvae swim freely in the water and form part of the plankton; currents transport them to places tens of kilometers away from where they were born. Juvenile scallops swim by valve clapping (see above) but also by climbing with the help of foot and beard (a threadlike substance secreted by special gland); they spend considerable time attached to algae or rocks. As they grow older they spend more and more time on gravelly to sandy bottoms while the time spent swimming diminishes progressively. Older animals suffer often from weakened muscles (they turn watery and stain dark) while numerous tiny segmented worms inhabit the shell, thus eroding the protective action of the latter. Older scallops often carry a complete "marine zoo" on their shell; a community of sea anemones, bryozoans, barnacles, worms and other creatures share happily their existence. Young red hake find on occasion protection in between the valves.

Scallops grow fast at the juvenile stage (they reach up to 4 cm in their first year) but growth levels slowly off to almost zero in old animals; with age more and more food is allocated to the production of gametes (reproductive cells). However certain areas seem to be more optimal to growth; Georges Bank for example has the largest and fastest growing scallop population.

A scallop life can be considered as a merry one, provided that one passes the bottleneck of the larval stage. More than 90% of all fertilized eggs will never make it to the age of one month (this is when they reach the juvenile stage). Thereafter, most animals survive, although cod, rockfish or seastar prey upon younger animals. Probably the single most important enemy is man whose dredges rake the seabed, bury most scallops and catch a few. The few scallops escaping alive die at the blessed age of two decades or more.

Deep-sea scallops are the focus of very active research in eastern Canada. First of all, the federal government monitors intensively the fishery with experimental fishing, dockside sampling and statistical analysis. Attempts are being made to culture scallops (from egg to adult) or to ranch scallops (from juvenile to adult). Lastly, the ecology, population genetics, physiology and molecular biology provide several fascinating study topics.

In a following article I will pay attention to the fishery of the deep-sea scallop and the numerous side aspects of fishing.

Filip Volckaert.