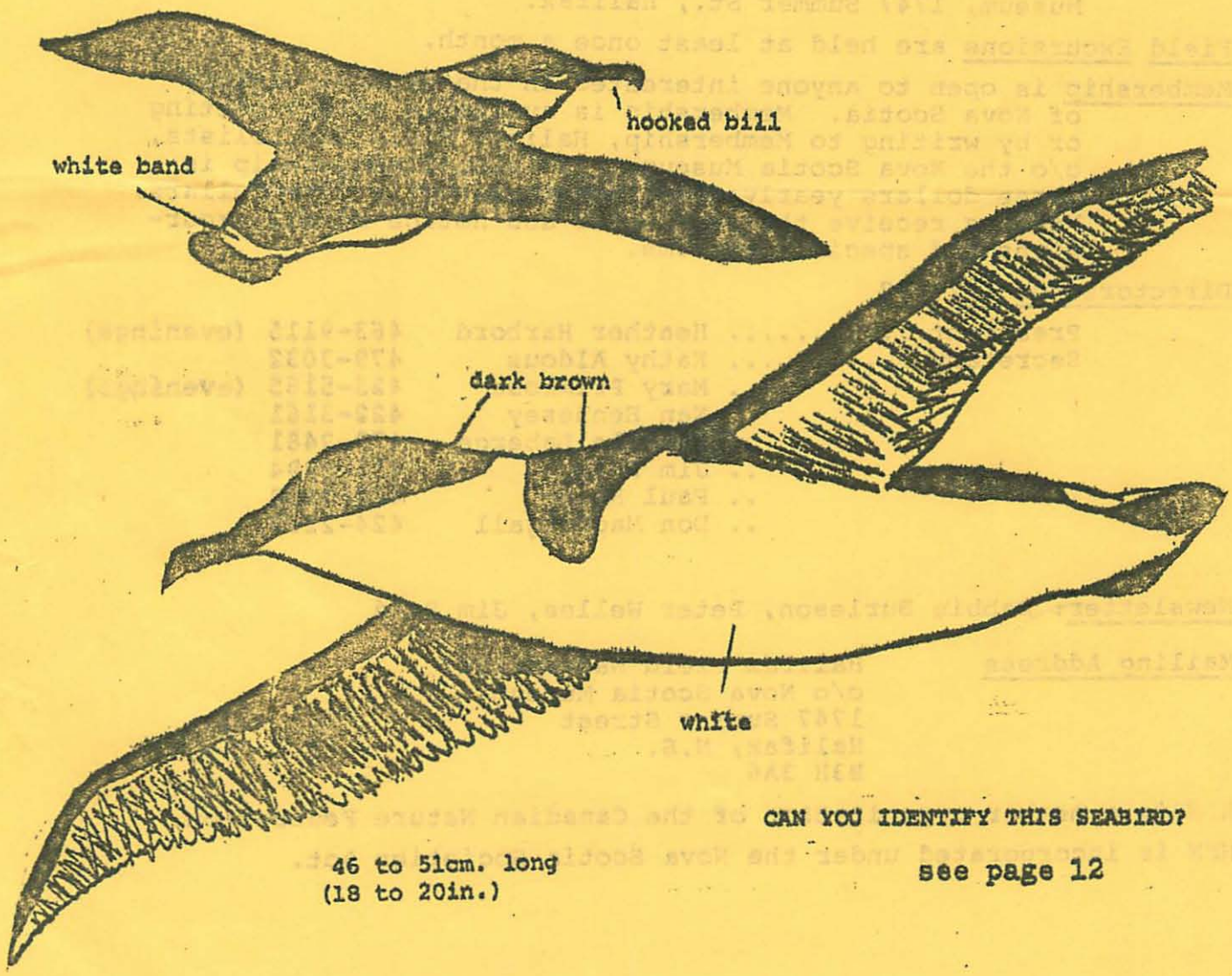
HALIFAX FIELD NATURALISTS NEWSLETTER

c/o Nova Scotia Museum
1747 Summer Street
Halifax, N. S.

JULY/AUGUST 1977

12



CAN YOU IDENTIFY THIS SEABIRD?

46 to 51cm. long
(18 to 20in.)

see page 12

HALIFAX FIELD NATURALISTS NEWSLETTER

JULY/AUGUST 1977 NUMBER TWELVE

Meetings are held on the first Thursday of every month, at 8:00 p.m. in the Auditorium on the ground level of the Nova Scotia Museum, 1747 Summer St., Halifax.

Field Excursions are held at least once a month.

Membership is open to anyone interested in the natural history of Nova Scotia. Membership is available at any meeting or by writing to Membership, Halifax Field Naturalists, c/o the Nova Scotia Museum. Individual membership is three dollars yearly; family membership is five dollars. Members receive the newsletter and notice of all excursions and special programs.

Directors for 1977-78

President.....	Heather Harbord	463-9115 (evenings)
Secretary.....	Kathy Aldous	479-3032
..	Mary Primrose	423-5165 (evenings)
..	Nan Hennesey	422-3161
..	Estelle Laberge	479-2481
..	Jim Reid	455-5894
..	Paul Keddy	422-7238
..	Don MacDougall	424-2287

Newsletter: Debbie Burleson, Peter Welles, Jim Reid

Mailing Address

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

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

president's report

3rd July, 1977

The Parks Awareness Program has been re-named the Regional Resources Awareness Program. The reason for this is that some of the areas where hikes are to be led are still debating whether or not they want to be parks. The first walk was to Hemlock Ravine at 7pm on Tuesday June 28th and sixty people showed up. A number of them wanted to know when the other walks were to be scheduled. After much indecision, the DND have finally decided that we can't use the duty boat to take people to McNabb's Island but the Group of Four think they may be able to arrange an alternative.

In late June we got a call from the Young Canada Works Program to say that they would be willing to fund the Parks Awareness Program. We explained that we had already been underway for some time thanks to Parks Canada.

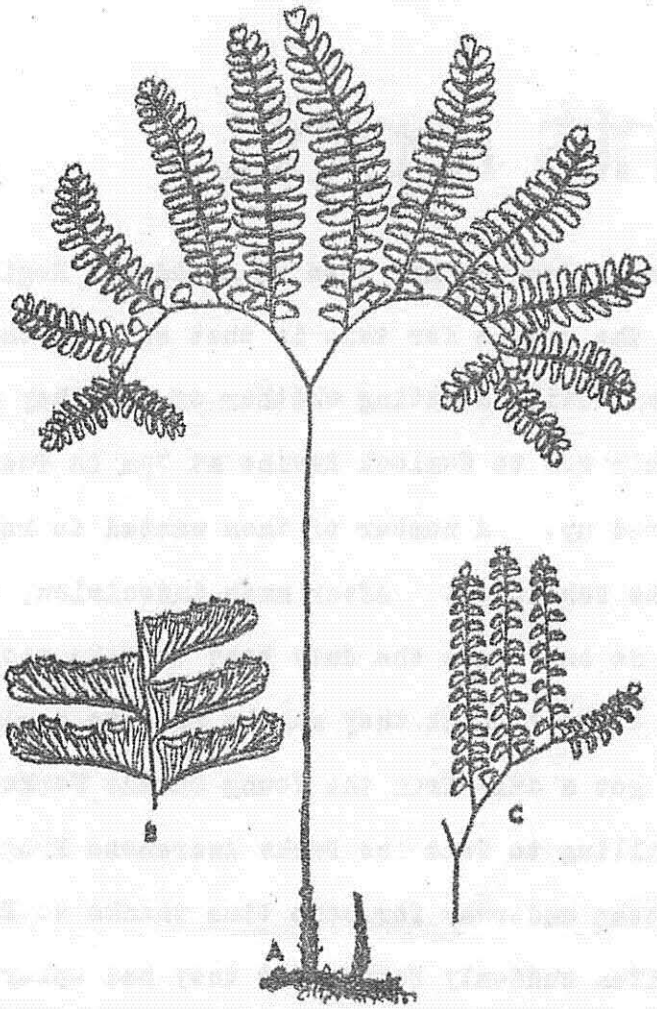
The City of Halifax suddenly found that they had sprayed the wrong person when on the second day of their annual week long tree spraying program they sprayed our illustrious Past President - with Sevin! Even the Provincial Government drew the line at using that stuff on the spruce bud worm because of its danger to human health.

We hope that as many as possible of those who heard Barry Goldsmith's interesting talk on forest ecology in June will be able to make it to the July 23rd Bowater trip. Unlike some of our speakers, Barry raised a lot of questions without spoonfeeding us with the answers.

Have a good vacation and don't forget to take your fern checklists with you. Like my bird book, I have marked my fern book with notes on how common or rare the various ferns are in Nova Scotia. This speeds up identification and makes it a bit surer.

Heather Hayhurst, President

Have You Seen This Fern ?



NORTHERN MAIDENHAIR FERN

Type variety: A. Plant, reduced. B. Pinnules.
Northwestern variety: C. Blade-division, reduced.

Maidenhair Fern (Adiantum pedatum) is one of our most beautiful ferns; it has a purple-black stem with a gracefully arching frond. It stands roughly one foot high.

It is very rare. It was collected years ago in scattered locations around the province, especially in the Kings-Hants Co. area. We know of no sightings in recent years, and it may now be extinct in Nova Scotia.

Please watch for it in your travels. It grows in rich woods, and may be expected in sugar maple woods, stream valleys, ravines, etc. If the area has calcareous bedrock (gypsum, limestone, etc.) your chances are that much better.

If you find it, DO NOT PICK IT! Note the exact location so you can re-find it , and, if possible, take a picture. Then contact Cathy Keddy, c/o Halifax Field Naturalists Fern Project, Nova Scotia Museum, 1747 Summer Street, Halifax, N.S. It is important to know whether this fern still survives, but we will not reveal the exact location publically, so you need not worry that other people will hear about the plant and collect it.

WERE YOU WONDERING WHAT WOULD HAPPEN TO ALL THAT SEVIN THAT WAS JUDGED TOO DANGEROUS TO SPRAY ON BUDWORM-INFESTED TREES IN CAPE BRETON ??

THE ANSWER IS SIMPLE.

PARKS AND GROUNDS DECIDED TO SPRAY IT ON HEALTHY TREES IN HALIFAX.

During the second week of June, Parks and Grounds of Halifax began a one-week city tree spraying program, designed to cover the entire Halifax Peninsula. All trees were being sprayed, regardless of whether they showed any evidence of insect attack. A truck towed the spray equipment behind it, moving along the streets slowly as a great cloud of insecticide blown by an air jet was squirted into the foliage of each tree. The drifting spray was a mixture of malathion and Sevin. The latter you will remember was not used in Cape Breton against the budworm on the recommendation of the Provincial Cabinet.

HFN became aware of the tree spraying program in the middle of the week and contacted Parks and Grounds. The official assured us that Sevin was the best and safest insecticide that could be used. Through various sources, HFN found this simply was not true.

Sevin is indiscriminant- it kills the pest insects and their insect predators. As well, the safety of Sevin with respect to human health has not been proven. Besides the problems with the chemical itself, tax dollars are being wasted spraying healthy trees.

For these reasons, HFN in conjunction with the Nova Scotia Resources Council, Ecology Action Centre and the Nova Scotia Bird Society issued a press release calling for a halt to this blanket spray program. The following day, interviews on radio and television were held and by 6:00 pm. the spray program was stopped 'until definite answers were found to questions about the effects on human health'.

Following the program cancellation, Paul Keddy, representing HFN, gave a brief before the Committee of the Whole at City Council which outlined a more practical alternative to widespread spraying. It included the following recommendations:

1) no further blanket spraying
2) identify particular trees with a definite insect problem
3) determine the species of insect pest
4) if spraying is deemed necessary to save the life of the tree, use an insecticide specific to the insect pest
5) spraying should be carried out at a time when there will be minimal effect on other wildlife (eg. not during the fledging period for young birds)

After this meeting, our brief was passed on to Parks and Grounds. We are now awaiting their reply to City Council.

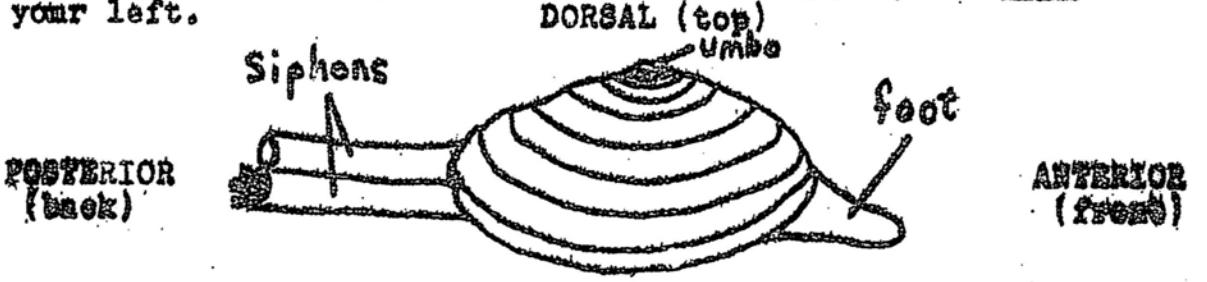
COMMON MOLLUSCS OF THE MARITIMES

MYA ARENARIA: Soft-Shell Clam, Long-Necked Clam

The soft-shell clam will be dealt with in two parts of the HFN newsletter- it is such an important shellfish that much can be said about it. The next issue will deal with this clam's growth, reproduction, and economic importance in the Maritimes. This issue describes its general characteristics, where it lives, and how it obtains food.

General Characteristics. The softshell clam belongs to the mollusc class Bivalvia, because it has 2 shells, or valves, which surround a soft body. There is no head. The fragile, white shell usually shows well-developed growth rings and a length of about 5 inches (125 mm) can be attained in the oldest individuals. The shells are roughly elliptical in shape and an examination of a live clam reveals that both ends gape when the shells are closed- this enables the foot to protrude from one end and the siphons from the other.

How can one define the different ends of a clam- which end is up? The dorsal (top) side is the hinge or attachment area of the shell valves, and the ventral (bottom) side is the open side. The umbo (the hump in the shell above the hinge) usually points toward the anterior (front) end of the shell where the foot protrudes, and the posterior (back) end is where the siphons, erroneously called the "neck", are located. When the posterior end is facing you, the left valve is on your left.



VENTRAL (bottom)

Distribution and Habitat. Mya arenaria is found mainly on intertidal substrates ranging from oozy mud through mud and stones to hard-packed sandy mud (its favorite habitat) but it can exist subtidally. It is found from Labrador south to the Carolinas. It is scarce in areas with a covering of fine surface silt or shifting sand because siphons and gills can become clogged, inhibiting growth and survival. In stony substrates the clams are often stunted because of limited space to grow.

Clams burrow to a depth limited by the maximum extension of their siphons and in general, the larger the clam the deeper it is found. If it is dug up or otherwise exposed, a young small clam can reburrow with its foot, but a larger older clam cannot reburrow because the foot is not large enough to pull the bigger shell into the ground again, and it will die on the surface.

When walking on clam flats, locate holes that look like the business end of a double-barrelled shotgun. This is the typical shape of the hole

accomodates the siphons of the clam. One siphon takes water and food and oxygen into the clam, and the other siphon expells water containing waste products and carbon dioxide out of the clam. The siphons are held erect by water pressure, and every so often a jet of water will squirt from a hole near where you are walking, as the startled clam has retracted its siphons into its shell, thus expelling the water.

Feeding. The softshell clam is referred to as a suspension- or filter-feedor because it feeds on particulate matter in the water using a filtering and sorting mechanism which, in common with many bivalves, works roughly as follows:

Paired gills lie on each side of the body and function partly in respiration and partly in feeding. Each gill is composed of parallel filaments surrounded by minute hairs which beat rhythmically to set up a current which draws food-containing water down one siphon into the interior of the clam. Here the gills strain out particles, larger ones being rejected and dropped out of the clam and smaller ones being carried toward the mouth via grooves on the gill surface. The mouth is really just a "hole" between the sets of gills, and it leads to a small, coiled intestine. In front of the mouth are 2 leaflike structures which do further sorting by size. It is quite a discriminating feeder.

-Michael V. Burke
August, 1977.

-see next issue for more on the softshell clam-

HFN SUMMER PROJECT

The Halifax Field Naturalists and Heritage Trust of Nova Scotia have co-sponsored a "Regional Resource Awareness" program with a grant from Parks Canada, under the Parks Awareness Program.

The program is being conducted by four students: John Jenkins, Barry King, Marcel Maessen and Kim van Faggelen. They have been leading walks to the existing and proposed regional parks in the Halifax-Dartmouth area. Ecological, environmental and historical aspects of each area are discussed during these perambulations. All of the areas are of natural or historical significance and it is hoped that this program will give credence, through greater public input, to the creation of the areas not only as parks, but parks preserving their relatively natural and unblemished state.

The group will produce a booklet in the form of a trail guide to the ten areas concerned, permitting visitors to find, and learn about the sites. This is certainly an important part of the project as the students are finding that really very few residents know the location of most of the proposed parks.

This is the first year of such a program, and it has been successful. More than 450 people joined in the 25 or so walks. It may become a permanent summer program, as it is of value to both metro residents and tourists, as well as the naturalists hired for the job.

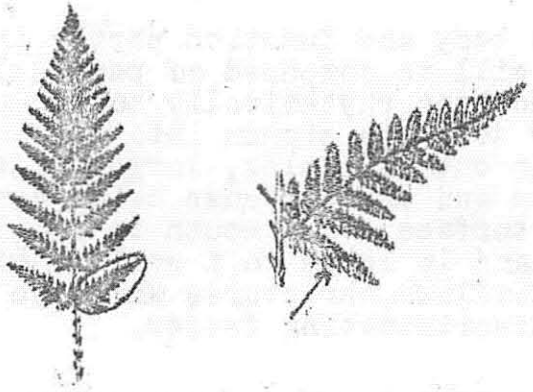
Walks have been publicized in various newsletters, through pamphlets, and on radio and television. The group has been based at the Nova Scotia Museum.

NOTES ON THE SEPARATION OF 3 DIFFICULT PAIRS OF FERN SPECIES

1

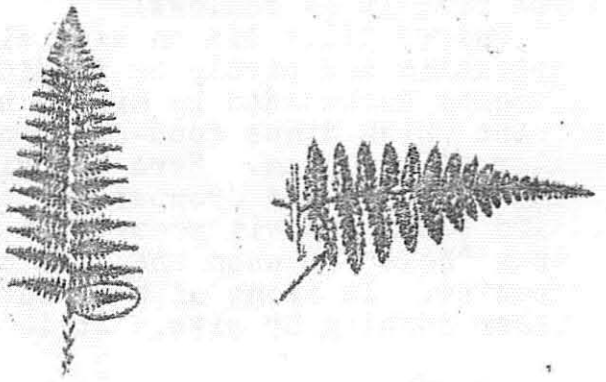
Dryopteris spinulosa

-inner basal pinnule longer than adjacent pinnule on bottom pinna



Dryopteris intermedia

-inner basal pinnule shorter than adjacent pinnule on bottom pinna



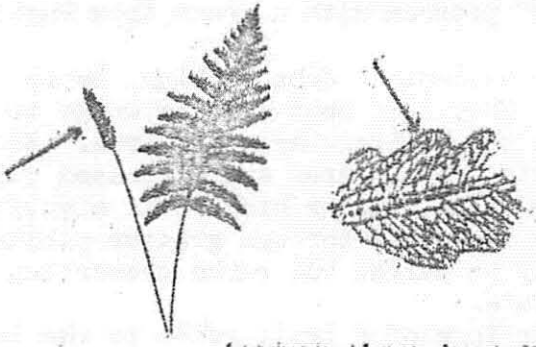
Where these two species grow near one another they may hybridize, producing plants with characteristics of both parents. If you find a woodfern which does not resemble either of those in 1), look at other woodferns in the area near the original specimen for typical Dryopteris spinulosa or Dryopteris intermedia.

2

Onoclea sensibilis

-fertile leaf beaded

-sterile leaf margin smooth

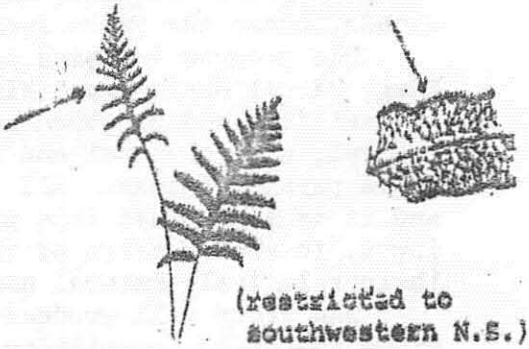


(common throughout N.S.)

Woodwardia areolata

-fertile leaf resembling sterile one

-sterile leaf margin toothed



(restricted to southwestern N.S.)

Both these species grow in wet areas, along river banks, lake margins.

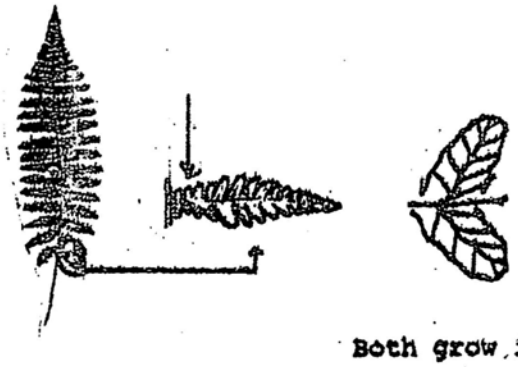
Note At the end of each species description, Cobb gives characteristics which distinguish the species from others which look similar.

Thelypteris simulata

-veins of leaflets do not fork before they reach the margin

-lowest pair of pinnae tapered to base

-stalk slightly scaly

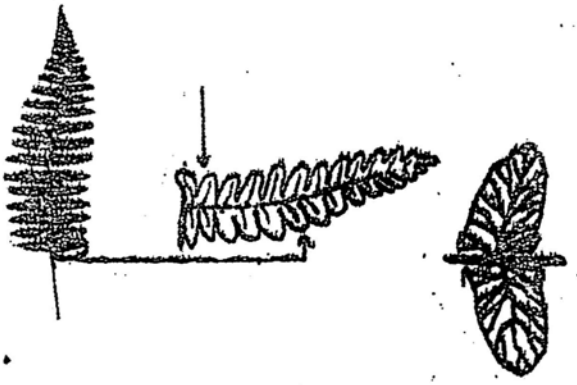


Thelypteris palustris

-veins of leaflets fork before they reach the margin

-lowest pair of pinnae not tapered to base

-stalk smooth



Both grow in moist areas.

FERN FLASH!! The N.S. Museum exhibit "Ferns--from Fossils to Fashion" will be on display in the McCulloch Museum, 2 nd floor of the Dalhousie Biology Dept. until Sept. 30. If you missed this excellent exhibit at the N.S. Museum, don't risk missing it this second time. The McCulloch Museum is open to the public roughly 9 AM to 4:30 PM weekdays.

A TASTE FOR THE WILD

by Heather Abriel

Since July is salad month, let us look at two wild edible plants that can be used to spruce up salad recipes as well as providing nourishment in their own unique ways.

The Dandelion (Taraxacum officinale)

Most people are able to recognize the fairly common dandelion. The lion's-tooth leaves, thick root, and yellow flower are easily recognizable. The leaves of a young plant may be eaten in a salad but the older the plant, the more bitter the leaves become. Older plant leaves may be boiled in a few changes of water andmake a tasty cooked green. For a delicious caffein-free coffee, dandelion roots can be peeled and ground in a blender, roasted until hard and brown, then brewed like regular coarse ground coffee...an inexpensive brew for coffee lovers! The unopened flower buds can be eaten raw, or steamed in a small amount of salted water for a few minutes. The fully opened flowers are used for making dandelion wine.

Dandelion greens are high in vitamins A,B,C, calcium, phosphorus and iron. The unopened buds provide vitamins A and C.

Lamb's Quarters (Chenopodium album)

Sometimes known as pigweed or goosefoot, this beautiful little plant makes a delicious addition to any salad. Lamb's Quarters are commonly found in gardens (and unfortunately are too often pulled up as weeds) and anywhere else where the soil has been disturbed. The leaves are approximately triangular in shape with stepped serrations causing them to resemble goose feet and are dark green on the upper surface and gray-green to light purple on the under surface. The young plants two to four inches high are sweetest, therefore best eaten raw in a salad. However the older plants may be boiled and then make an excellent cooked green. The lamb's quarter, it may be noted, is an uncultivated member of the spinach, and beet family.

RECIPES

Dandelion Salad[1]

Wash and gently dry 2 quarts of young tender dandelion leaves. Arrange in a salad bowl and sprinkle with bits of crispy fried bacon. Set in the refrigerator.

For the dressing, melt ¼ cup of light cream in a skillet over low heat. Beat together 2 eggs, 1 teaspoon salt, a little pepper and paprika, 1 tablespoon of sugar, and 4 tablespoons of vinegar. Blend this in with the melted butter and cream and heat slowly until the mixture becomes thick. Pour over the dandelion greens and stir well. Serves 4 to 6.

Lamb's Quarters Cheese Balls[2]

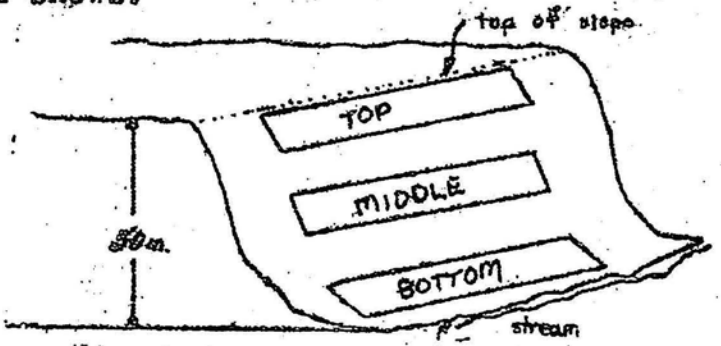
In a small amount of salted water, cook 1½ pounds lamb's quarters leaves until tender. Drain 1 cup of the cooked leaves well and chop finely. Add 2 beaten eggs, 1½ cups dry bread crumbs, ½ cup grated cheese, 2 tablespoons finely chopped onion, 1 tablespoon lemon juice, and 1 teaspoon salt. Shape the mixture into small balls and fry in deep fat until brown and crisp. Drain on paper towels. Serves 6 to 8.

1. Knutson, Karl Wild Plants You Can Eat pgs., 34
2. Knutson, Karl Wild Plants You Can Eat pgs., 57,58 Doubleday and Company, Inc., New York 1975.

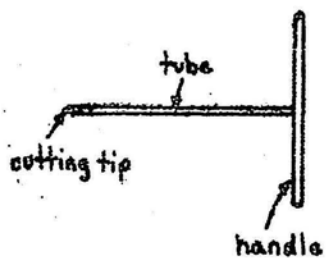
THE HEMLOCKS OF HEMLOCK RAVINE

Hemlock Ravine stretches from the Bedford highway southwest to Hwy. 102. The hemlock forest occurs mainly on the north facing side of the ravine and the opposite slope is covered by a mixed deciduous-coniferous forest. A small stream flows at the bottom of the ravine.

This fall I studied changes in the hemlock forest as one moves from the stream to the top of the ravine. Three plots were set up on the slope (one at the top, middle and bottom) as the diagram shows.



Hemlock trees from each plot were cored using an increment borer (see box for details). From the cores, age and growth rates were determined. In each plot, the number and species were recorded for all trees and seedlings. I will report the results of this work in three sections.



An increment borer consists of a hollow tube which is screwed into the tree trunk by turning the handle. As the tube is turned, the sharp tip cuts out a small cylinder of wood (a core). The core is removed from the tube with a metal rod (termed a spill) which is slipped into the tube alongside the core.

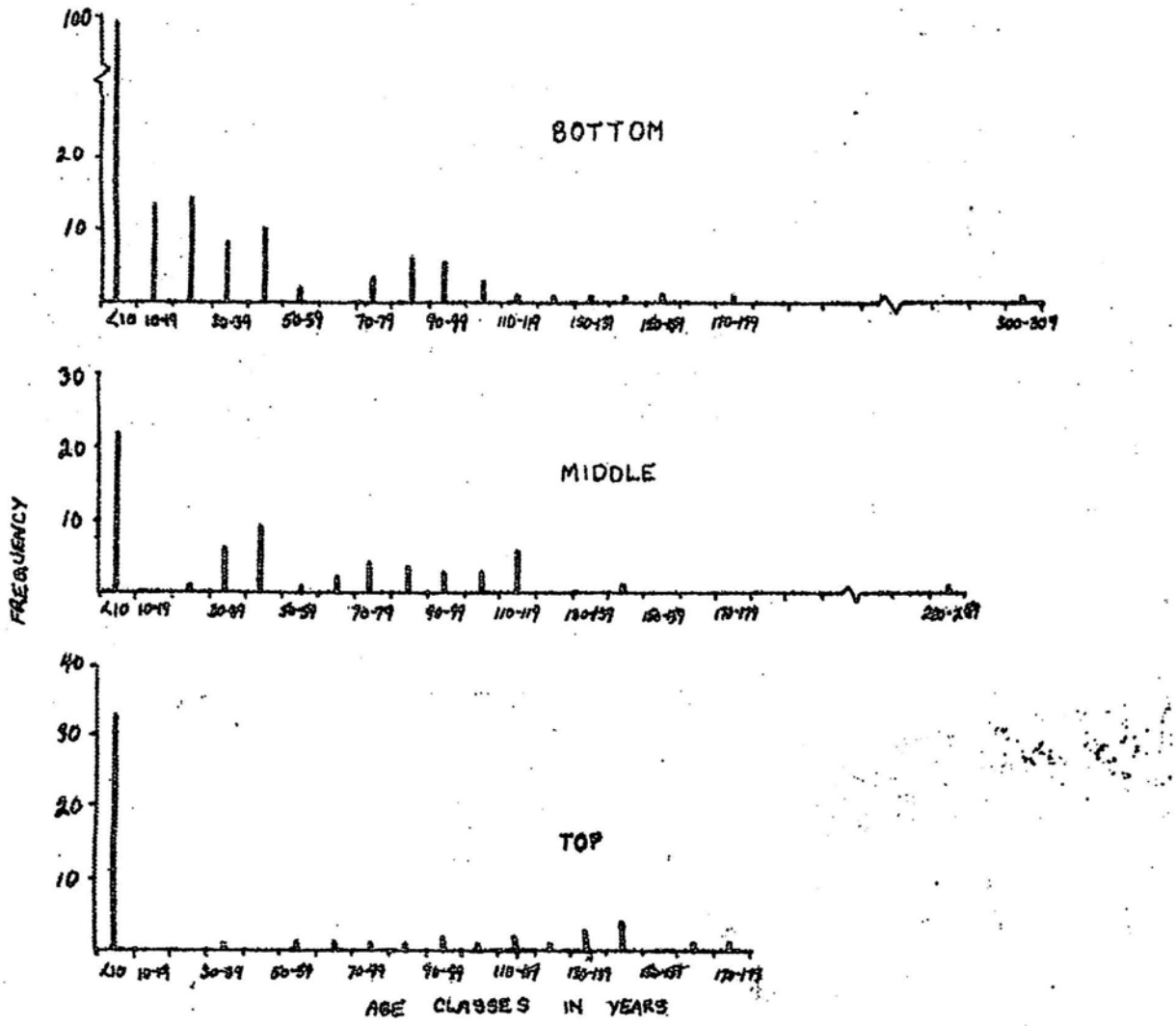
1) Species Composition In all three sites, hemlock was dominant, followed in abundance by spruce and balsam fir. The seedling story however is different. The following table shows that hemlock seedlings dominate in the lower site.

Site	Seedling Ratio hemlock:spruce
bottom	6 : 1
middle	1 : 1
top	1 : 4

As one moves up the slope, the proportion of hemlock seedlings decreases until finally spruce seedlings dominate in the top plot. It is interesting to note that just beyond the top site where the terrain levels off, forest composition changes and spruce becomes dominant over hemlock. These results suggest that the best area for hemlock in terms of reproduction is at the bottom of the slope. In contrast, conditions for spruce reproduction seem to be best in the drier top site.

2) <u>Tree Ages</u> Hemlock tree age was found by counting the number of annual rings on the core. The oldest trees cored were estimated to be 286yr. (diameter 82 cm.) and 309yr. (diam.98cm.) old. Unfortunately the cores taken from these trees were incomplete because the tree centres were rotten. The age estimates were worked out using the diameter of the tree and the growth rate shown in the length of core obtained.

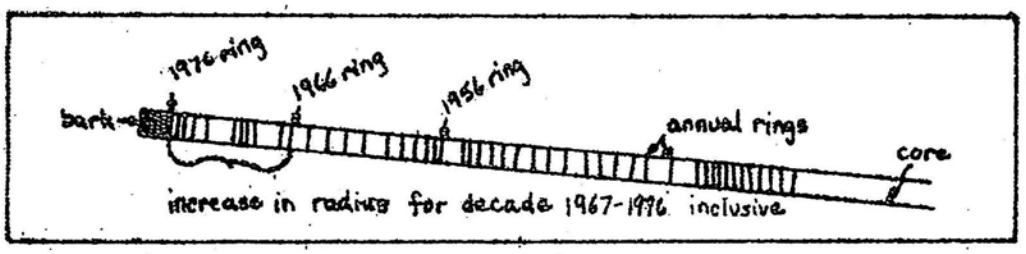
The age class distributions for each site are shown in the figure below. (That is, the tree ages determined from cores are put into groups or classes which are shown on the horizontal axis of the graph. The vertical axis refers to the number in each age class.)



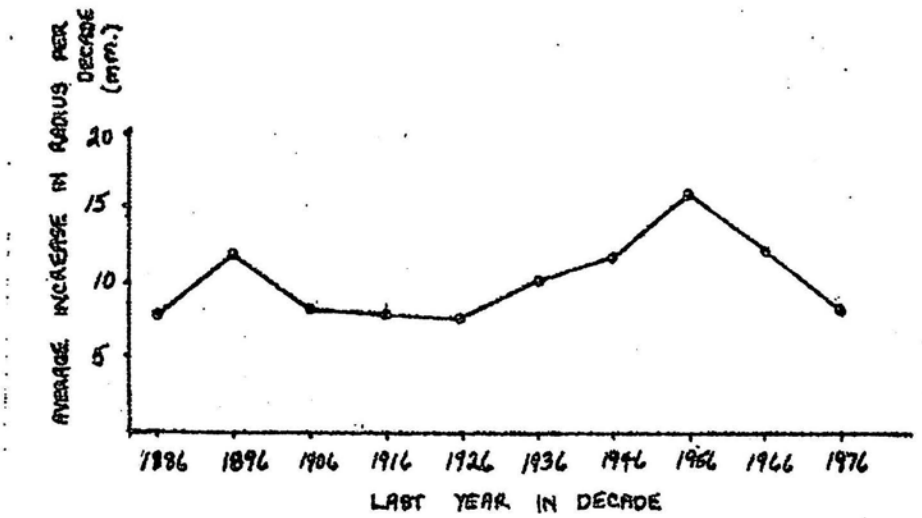
From these graphs, one can see that the bottom site has the most healthy age class structure- one where most age classes are represented and where there are plenty of young trees to replace old ones as they die. This also indicates that the best habitat for hemlock is at the bottom of the slope.

3) Tree Ring History Annual rings have been used to date glacier advances and retreats, landslides, erosion cycles and as an index of past climatic conditions. What can the hemlocks in Hemlock Ravine tell us about the past? Growth rates of the trees will give us some information.

The increase in radius (distance from the centre of the tree to the bark) was measured for every decade for each tree. (see box for explanation). The decade average for these



radial increases was calculated. The last year of the decade is plotted on the horizontal axis of the following figure while the average increase in radius for the decade is plotted on the vertical axis.



Peaks in growth occurred around 1896 and 1956 and a trough occurred around 1926. How is this growth ring history to be interpreted?

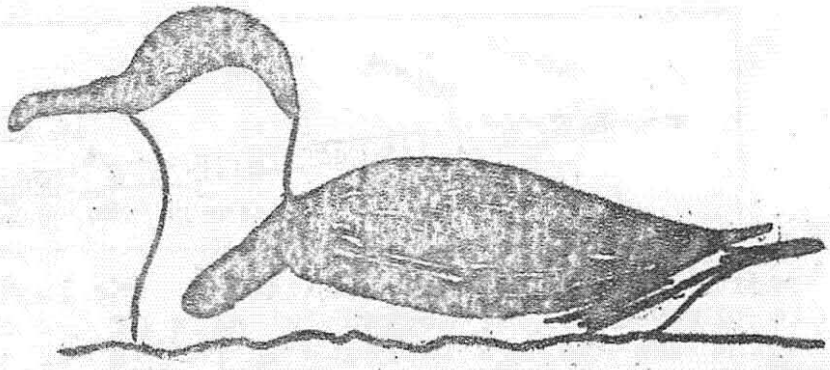
It is well known that in conifers water supply is important in determining ring widths. The more water available, the greater the growth. With this in mind, I compared average annual precipitation for each decade to the growth rates.

The 1896 peak in growth corresponds to a marked peak in precipitation. However, the 1956 peak does not.

Growth rate can also be affected by the amount of light a tree receives. When old trees fall down naturally or when man removes trees, more light reaches the forest below. There is little evidence to support this as a cause of the growth peaks observed.

The growth peaks could be due to a combination of the two factors- precipitation and additional light. Neither of them alone seems to acount for the observed pattern in growth rate. Any suggestions?

Cathy Keddy



SHIPBOARD SIGHTINGS

J. Reid

During late June and early August, the Greater Shearwater was a common sight on George's Bank, the constant companion of the Cape La Have, a Canadian National Sea Products trawler out of Lunenburg, fishing for cod and haddock.

The trawlerman say the "Hags" or "Hag Downs" as they call them are very fond of the fish livers that are discarded over the side as each catch is gutted and cleaned. In the old days this fondness for fish liver proved to be the downfall of many a "Hag" and was used to procure meat for the fisherman's pot. By baiting a hook with fish liver the birds were jigged and hauled in on a hand line. The meat was best during the beginning of the season before the birds had eaten large amounts of fish liver, for as the season passed the meat became too oily.

The large hooked bill of a hooked hag is to be respected and avoided according to a trawlerman with whom I spoke, whose fingers had inadvertently found themselves in the bill of a captured Hag, more than once.

The Hag is a summer visitor to our waters (well, ½ ours and ½ the Americans), passing through en route to Labrador, Iceland, Greenland and Northern Europe from its breeding grounds in the South Atlantic. (Tristan da Cunha Islands). Tufts lists several land based sightings off Yarmouth and Digby countries (Birds of Nova Scotia).

In the morning at dawn our ship was surrounded by hundreds of swimming Hags patiently waiting for the day's fishing to begin. This graceful bird, which has no trouble keeping pace with the trawler's working speed of 3.5-4.5 knots, skims the waves, circling, forever searching for it's share of the last catch.

COMING EVENTS:

This schedule will have additions as the fall progresses. These are the events which were confirmed by the time this newsletter went to press.

Sept. 1 — MONTHLY MEETING: THE MAGIC OF MUSHROOMS
SPEAKER: Dr. Scott Cunningham
Fall is the time for mushrooms-- and here's your chance to learn more about them. A mushroom walk may be announced at this meeting.

Sept. 25 — FOREST ECOLOGY WALK; Explore an area of forest on this afternoon walk with Dr. Barrie Goldsmith. Learn how to age trees and find out how fast a forest is growing.
Meet 2:00 PM at the N.S. Museum.

Oct. 6 — MONTHLY MEETING:T.B.A.

Oct. 8 tenative — CRANBERRY PICKING/BOG EXPLORATION: a trip to a coastal bog. With luck, we'll be able to arrange this as an island trip. Watch for further details!

Nov. 3 — MONTHLY MEETING: T.B.A.

Dec. 1 — MONTHLY MEETING: THE ROLE OF PREDATORS
SPEAKER: Ray Pierotti
Predatprs, be they wolves, hawks or wildcats, are an unfairly maligned group of animals. Many 'predator control' programs stem from misconceptions. Come and learn more about the fact and fiction of predators.

Membership in the Halifax Field Naturalists is open to anyone interested in the natural history of Nova Scotia. Membership fee is three dollars annually, family membership five dollars. Come to a meeting or write care of the Nova Scotia Museum, 1747 Summer Street, Halifax.

All members are reminded that we would like to receive your fees for 1977.

Halifax Field Naturalists new ___ or renewal ___

name _____

address _____

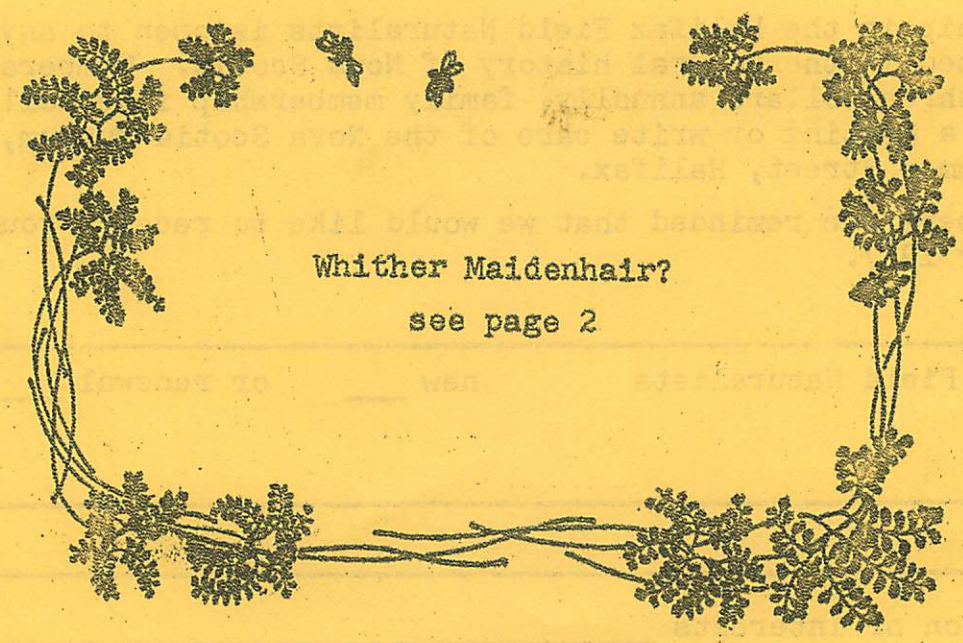
occupation or interests _____

suggestions for programs? _____

_____

BIOLOGY - The science of life
is the liveliest science
DALHOUSIE UNIVERSITY
HALIFAX, NOVA SCOTIA
CANADA

Kesley Butters
5833 Inchcape Drive
Halifax, N.S.



Whither Maidenhair?

see page 2