HALIFAX FIELD NATURALISTS NEWSLETTER

#23

c/o Nova Scotia Museum
1747 Summer Street
Halifax, Nova Scotia
B3H 3A6

- JANUARY - MAY 1980

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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 Street, 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 five dollars yearly; family membership is seven dollars. Members receive the newsletter and notice of all excursions and special programs.

Directors for 1980-81:

President	Anne Greene
Vice-President	Bill Freedman
Past President	Joe Harvey
Membership Secretary	Marjorie Willison
Treasurer	Erick Greene
Directors	Magi Nietfeld
	Colin Stewart
	Doris Butters
	Roger Cousens

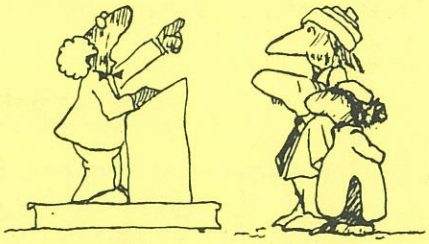
Newsletter: Anne Greene
Mike Burke
Doris Butters

Mailing Address: Halifax Field Naturalists
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 news



SPHAGNUM MOSS EXHIBIT WINS NATURAL HISTORY PRIZE -

The fourth annual Halifax-Dartmouth Regional Science Fair was held this year from April 10 through 12 at Graham Creighton Junior High School in Dartmouth. Students from Grades 7 through 12, representing some 30 schools, entered exhibits. Roger Cousens and Magi Nietfeld acted as judges on behalf of the HFN and awarded a $25 book token, for the best exhibit in natural history, to Susan Hattie, a grade 7 student from Cunard Junior High School. Susan had prepared an exhibit dealing with Sphagnum moss , in which she indicated some properties of the bog moss (i.e. it can absorb great quantities of water, it alters acidity of bog water, etc), and illustrated many of the past and present uses of Sphagnum spp. Among the latter were such things as an absorptive lining for old-fashioned diapers, a cushion within slings supporting fractured limbs, a human preservative, a plant potting medium and a fuel source.

As a whole, the fair could certainly be considered a success in terms of student, parent, and sponsor participation, and I urge the HFN to continue sponsoring a natural history prize in the years to come.

Magi Nietfeld.

There are a lot of birds nesting right in the city. This spring we found a new crow's nest, for example on Vernon St. As of May, the female was on the nest constantly, probably sitting on five or six bluish-green eggs.

TREE SPRAYING

The City Council voted seven to three against spraying the city trees, at a council meeting on 15 May 8:00 pm at City Hall. All present were relieved, however the Council is in need of facts on the issues of spraying and the deseases of our common city trees. HFN has an important role to play in affording this information to insure that spraying do es not resume in coming years.

All those people who responded to our appeals for newsletter articles

WHERE ARE YOU ?

Don't worry about formality. Informal notes on what you have seen or done, accounts of recent field trips, book reviews,are all appreciated.

PRESIDENT'S REPORT FOR 1979

Iam pleased to report that we again had a busy year with a total of twelve monthly indoor meetings and the highly successful symposium on the Development of the Northlands, which dealt with the problems associated with seabed drilling for oil in the Arctic. We are one of the few societies which hold an indoor meeting every month of the year, and since the demand is there I see no reason to discontinue the custom. We had over 130 people attend the symposium, while the monthly meetings attracted an average attendance of 38.

The subject of the talks and workshops were immensely wide, including members' slides, the aerodynamics of bird flight, geography, salt marshes, insect parasites, Sable Island, 2-4-5-T. and a planetarium show among the offerings. Certainly we had no difficulty getting attractive, enthusiastic speakers and we thank them all.

The field trips were equally varied - the year started with a visit to the N.R.C. Seaweed Research Station at Finck Cove, then we had a tree walk, a bird trip to Conrad Beach, a hike along the Old Annapolis Trail to see the old farm sites and escaped Daphne bushes, spring flowers at Smiley's Intervale, Cape Split (twice), the seashore at Cranberry Cove, Pennant Point to see the Arethusa, Uniacke for insect parasites, a walk across Cole Harbour via the railway and a weekend at the Wentworth Youth Hostel.

The weather was quite kind to us since only two trips were completely rained off (Dollar Lake and a warbler walk), with the fungus foray attracting only a hardy four in a heavy drizzle, and the twenty who walked out to Cape Split were treated to glorious sunshine at the Split but paid for it by a steady drizzle on the walk back. For eleven trips, at which attendance was noted, there was an average of 17 people. Again, I want to thank all the leaders for their time and help.

However, despite a successful indoor and outdoor programme, the Executive Committee still felt there was something missing and this was illustrated in a way by the response to the Halifax City tree survey where the returns of a simple questionnaire on the health of the trees in a street was a mere nine out of well over 250 leaflets distributed. In previous years the much more ambitious and technically more difficult project to map the ferns of Nova Scotia had a similar response. We realised that by providing experts in certain subjects we were attracting audiences, but that this was not generating experts among the audience or even getting them sufficiently interested in a subject to start their own project. We were - to put it bluntly - acting as a substitute for T.V. The problem is to get our members actively involved in some work which is within their capabilities and which will produce some rewarding result within a reasonable time span.

Threats to force members to rely entirely on our own resources brought the cogent response that one of the real attractions of the society was that speakers were brought in who could talk knowledgeably about special topics and that there was no other local source of this type of information. In this sense we provide a unique service in the Metropolitan area, made easy for us by the presence

of an unusually rich concentration of government and university institutions just bursting with people willing to talk about their own, often unique, insight into a particular topic.

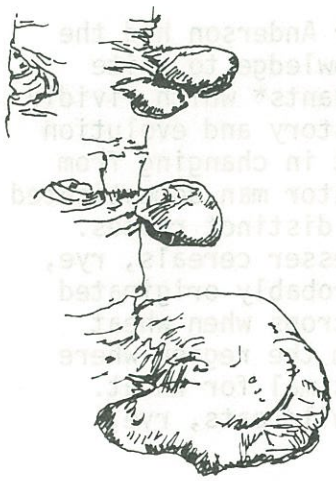
But the complaint that we provide too much passive entertainment still stands. We need people who are active in collecting and identifying particular groups of insects or plants or studying a particular region in some detail, people who can exchange knowledge and enthusiasm with others. Maybe our meetings are too formal. Certainly there is plenty of scope for miscellaneous notes to go into the Newsletter, things such as field observations, questions, notes on useful field guides, accounts of interesting localities which it would be interesting to visit, historical notes, etc. At the moment articles have to be extracted from people with a dental forcep (this one for instance) and members should be more aware that short, informal articles are very welcome and greatly appreciated.

For 1980 we propose to continue talks and walks as in previous years but we want to add to this another level of activity; a series of things which depend on the volunteer efforts of our ordinary members. We are proposing to set up small groups of members, each group to undertake a detailed examination of a park or popular locality with a view to two things. First a series of detailed studies of the geology, history, plants and animals to be published from time-to-time in the Newsletter. We need this type of survey as a base data for future reference. With one or two exceptions due to lack of staff at the Nova Scotia Museum, no local area has been studied in detail yet. This may surprise some people but we are far behind in this type of study in Nova Scotia. Secondly, to distil the information gathered during the first year into a leaflet which can be printed and distributed for the benefit of members and possibly the general public.

It remains to thank the many people who helped in the running of HFN over the past year; to the tea and cookie makers, those who wrote articles, stapled the Newletter, produce address lists, licked stamps and did all the sundry jobs of running around and helping things work - many thanks. Another debt is owed to the Nova Scotia Museum for the provision of the auditorium and for printing the HFN Newsletter so thanks are due to the Director and his staff.

I hand over to the incoming President - Anne Greene, and wish her and the new Executive the best of success for 1980

M. J. Harvey.



Polyporus betulinus

The species name betulinus ("of Birch") is the key to identifying this mushroom. Polyporus betulinus grows only on Birch.

editorial

THE ICEBERGS FROM CALIFORNIA -

Some friends of mine told me they had joined the current popular pastime of growing vegetables in their garden. We got to discussing mutual gardening problems, it turned out that their beans had done well but the lettuce turned bitter, "We just couldn't eat it, never again lettuce", they said.

This exchange worried me and got me to thinking where society had come from, and where it was going to, all in terms of lettuce genetics. After all I had grown the same variety of lettuce as they had, Great Lakes, and, sure it got a bit bitter in the late summer, but I always enjoyed it and to me being a bit bitter was no real disadvantage, at least I didn't have to buy it from the store. Maybe this just fits my coarse palate as any of you who have sampled the red wine I brew will appreciate. Anyway, here we go, the history of Western Civilisation from the point of view of lettuce.

Where did the lettuce come from? Our cultivated forms came from Europe and the Europeans either domesticated it in pre-history or got it from the orient. Asia Minor is the favoured region if only because scholars are taught in nursery school that all good things European are derived from Asia Minor or the Fertile Crescent. Odd, isn't it that a region with so much desert got called the Fertile Crescent.

The earliest written reference to lettuce is probably that of the Greek Theophrastus (c 300 B.C.) who mentioned that there were three varieties. Even today there is some Greek memory in our lettuce varieties since the island of Kos gives its name to a group of long-leaved strains. Cos lettuce is no longer grown commercially but is still available as seed. The older varieties had to have a tie of string put around them to prevent the long leaves from flopping down but modern varieties have stout midribs which hold the leaves erect and keep the light off the inner ones thus keeping them pale and exquisitely crisp, they are said to be self-blanching.

The buttercrunch series is opposite in many ways to the Cos varieties. The leaves tend to be thicker, about as long as broad and to spread out flat on the ground. They have a more chewy texture when eaten, with a flavour of their own. Bibb is one such variety. The remaining varieties form a continuous series starting at one end with the loose, quick-growing leaf lettuces of which Great Lakes is the example which started this train of thoughts, and ending at the other extreme with the big, tight cabbage forms. Despite this great range of shapes and sizes all these are varieties of a single species Lactuca sativa (lak-too-ka sat-ee-va) since they not only intergrade morphologically but interbreed freely with each other. Like the dog, lettuce breeds are genetically distinct varieties produced by human selection under conditions of domestication. There is even a red-leaved variety ['Prize-head', well worth growing].

The late Edgar Anderson had the imagination and knowledge to write several books on plants* which vividly portrayed their history and evolution He pointed out that in changing from gatherer to cultivator man domesticated plants via several distinct routes. For instance the lesser cereals, rye, barley and oats, probably originated as weeds in wheat crops when wheat was grown away from the region where the climate was optimal for wheat. The small grained wild oats, rye,

barley mixed with the wheat would have been subjected to unconscious selection by man as he winnowed the grain to blow away the chaff and weeds. In this way the large seeded forms of the weedy cereals would have selectively survived, eventually giving useful crops in their own right.

Even some poisonous weeds developed large-seeded forms by this method and corn cockle (Agrostemma githago)was a beautiful but deadly weed of grain crops in Europe into this century, by which time mechanically cleaned seeds and later, selective weedkillers gradually eliminated it. We now grow it as a decorative annual in the flower garden.

But lettuce is not in this group of plants. For these Anderson had a term which has stuck in my mind since unlike his more academic colleagues he did not invent some felicitous term of latinised-greek origin, he came right out and called them what they were, 'dunghill plants' ! Remember the term next time you have a salad of lettuce, tomatoes, radishes and cucumber; they all originated as dunghill plants.

The reason this group of plants originated is because the Neolothic cultivators who settled down to grow crops did not have their garbage picked up each week by the garbage truck. The latter had to wait for the invention of wheels. Any junk was just dropped on the floor, or, if they felt really hygienic, they hurled it out the door. (I could make comments about our 'modern' western society at this point but I won't).

The result was that each dwelling was surrounded by a halo of garbage eventually producing the 'tels' or city mounds so beloved of archaeologists. Now bones, plant waste, excrement and urine together produce a rich soil on which certain plants can grow rapidly. Not only could they grow rapidly but with the unstable nature of the habitat around houses there would have been a selective advantage in producing seeds rapidly. We have many examples of cultivated plants which are annuals but whose closest wild relations are long-lived perennials. There seems little doubt that the annual growth habit has been produced as a result of domestication. The unstable habitat has been produced as a result of domestication. The unstable habitat produced by animals grazing, kids playing, garbage being added, all give a premium to those strains of perennial plants which can grow faster, flower sooner and produce seeds in a shorter time than their ancestors. Hence the origin of many of our annual crop plants and, no coincidence, some of our worst weeds. This is where the lettuce came into the picture.

All round the northern hemisphere there are species of Lactuca. We have three species of wild lettuce in Nova Scotia for instance. Some wild species are perennial, that is their rootstock persists for a number of years sending up shoots each year. Some are biennial, the seed germinates in the spring, produces a rosette of leaves during the summer from which arises a full flowering spike in the second year at the end of which the plant dies. A few wild species are annuals.

The wild species are a tough, stringy group of herbs. Anyone brave enough to chew a mouthful will discover two things; one, something akin to dental floss between their teeth, and two, a very bitter taste. So domestication of lettuce probably involved three changes: a shortening of the life cycle, a loss of fibre and a lessening of the bitter taste.

The bitter taste is interesting, it is due to chemicals, alkaloids, in the white milky sap, latex, which exudes when the plant is damaged. Many other members of the Compositae (dandelion family) also have latex. One dandelion from Russia, (Taraxacum kok-saghyz, was cultivated during the Second World War for its latex in order to make rubber. The very names lettuce and Lactua refer to this milky sap, the American Heritage Dictionary gives "Middle English letus(e), from Old French laituës plural of laituë, from

Latin lactuca from lac (lact-) milk.

The latex is not only bitter-tasting but is somewhat poisonous. It is repellent to slugs, caterpillars and vertebrate grazing animals. To those gardeners who bitterly ask me why their vegetables are chewed by all the animals under the sun while their dandelions have nary a bite out of them, here is your answer. What has happened to lettuce is that man has selected the nice-tasting plants from the wild population resulting in our present day, almost latex-free cultivated varieties. Some varieties have more latex than others and the amount of latex increases with age. So young lettuce plants can really be slaughtered by slugs but the late summer, old plants that are starting to flower (bolt) will not attract slugs and will be unchewed but, as my friends noted, somewhat bitter.

I mentioned that the bitter substance was a poisonous alkaloid but don't let that bother you, the amount in even old lettuce is so small that you would have to eat a bushelful at one sitting to achieve even a mild poisoning case.

Not only has the alkaloid content of modern lettuce been reduced but the fibre content is also extremely low. The extreme case of the reduction of fibre and alkaloid is achieved in a large cabbage variety called "Iceberg". If anyone of British extraction is reading this, Iceberg is very closely related to "Webb's Wonderful". These varieties have no fibre and the latex vessels are very few and confined to the base of the central stalk, which of course is not eaten. The results of this are more pervasive than you might initially think. Let us consider the consequences one by one.

First, Iceberg is rather hard to cultivate in an urban garden with a normal, insect and slug population. I tried it once and friends tell me they met slugs crawling across the bridge from Dartmouth solely to eat the lettuce in my Halifax garden. Iceberg is a completely helpless plant, it lacks any natural protection against grazing animals.

Second, to grow Iceberg you have to spray it with several sprays to defeat the various phyla of invertebrates which would otherwise multiply on it. So Iceberg was one of the first crops requiring intensive chemical treatment to grow it successfully.

Third, despite the above, Iceberg is the commercial lettuce of choice because (a) it will grow in hot climates (Florida and California) and (b) it forms compact crush resistant heads which ship well. Here in Nova Scotia we normally eat Iceberg grown around Salinas, California, over 8000 km. away.

Fourth, we now have a generation of adults who have never eaten any lettuce but Iceberg. Naturally when they try a more 'normal' variety, they do not like either the colour or the texture or the flavour (presence of flavour I should say). Furthermore, they expect lettuce every week of the year.

Fifth, the lack of latex in Iceberg and hence the lack of natural flavour (I have heard Iceberg called "solidified water") has given rise to a secondary food industry whose sole purpose is to supply flavour. "Would you like Italian, French, Roquefort or Thousand Islands, sir?" The turnover of the sauce section of the food industry would be enough, I am sure, to fund the governments of several smaller countries.

What conclusions or morals can we draw from the foregoing? Without really trying we have restricted our choice of food to a single variety. Oh yes, I know, it is possible to get other varieties if you keep your eyes open and pay a little more but for most ordinary people lettuce is Iceberg. We have a generation which knows nothing of the crisp texture and

distinct flavour of Cos nor the very different texture but equally delightful flavour of the butterheads. By opting for a "higher" standard of living, i.e. lettuce year round, we have achieved a lower standard of living, i.e. a lack of choice of varieties. I am sure Murphy's Law has some corollary about this.

Iceberg of course is not merely solidified water but represents a considerable fraction of its weight as petroleum; oil to produce the fertiliser, oil for the pesticides, oil to till the field, oil to pump the water to irrigate it, oil to truck it to the ends of the continent.

What I suggest we should do is to eat locally grown lettuce in season or grow your own if you have a garden and depend on alternatives during the winter. Would this really represent a lowering of our standard of living? Some people would so argue, I am not convinced that this is seriously the case, it would represent an increase in the diversity of the diet for most people.

One problem in suggesting that we buy locally-grown lettuce in season is that the supermarkets generally refuse to deal with local growers. The local farmers have a short season and cannot offer reliable supplies. What the supermarkets want is guaranteed weekly supplies throughout the year and long-term contracts with the California and Florida growers do just that. Hence my disappointment at seeing only 69c California Icebergs in my local store in July and at only 10c or 20c a head less than the normal winter price.

What are the alternatives in winter? Well, I don't want to turn this into a cookery article but cole slaw variously livened up with onion or carrot is the old standby. Nowadays sprouted seeds provide a great variety; mung beans are a cinch to sprout once you get the moisture and temperature right and they mix in with all sorts of things raw as well as minimally cooked; alfalfa seeds also sprout well and my old favourite is mustard and cress but no one seems to sell mustard seed any more. Just sprinkle the see ds on wet paper towelling in a dish and let it grow on a window ledge. Then there are the pickles: red cabbage is the easiest of all the pickles to make at home - it isn't even cooked; beetroot is similar but you boil the roots first. These variously combined with each other make excellent salad dishes, e.g. beansprouts and red cabbage. Apples and raw mushrooms also make excellent additions. Only your imagination and a lifetime of conditioning to "solidified water" holds you back.

M.J. Harvey.

* Anderson, E.: Plants, Man and Life, 1954.
Anderson, E.: Introgressive Hybridization, 1949.

Postscript.

After writing the above article I chanced to visit Sherbrooke Restoration Village just before it closed for the 1979 season. This is run as a living museum by the Nova Scotia Museum. Arriving on Friday evening we sought out somewhere to eat and chose the nearby Bright House where we enjoyed a really high class meal which would do credit to some of the high-priced restaurants in downtown Halifax. The thing which transfixed me was the salad which included Oakleaf lettuce, a variety which I had not seen for years. This is a leaf lettuce in which the individual leaves have wavy edges. Demands to see the proprietor flushed Mrs. Wynneth Turnbull out of the kitchen and it turned out that the Turnbulls grow much of their lettuce and other vegetable requirements in the garden of Bright House. Mr. Turnbull we were told, ran the restaurant in the restoration area for the Museum where we met him the next day and enjoyed his meal. Gordon Turnbull, dressed in clothes of the period, really cut a striking figure in the restoration area.

reports

SPRAYING -

On 24 March 1980 Halifax City Council held a public meeting at Queen Elizabeth High School to hear opinions from all sides on the subject of the spraying of the city trees with insecticide. In addition to the Mayor and aldermen, two tree experts had been invited from the Forestry Institute at Fredericton, and members of the City Field staff were present. Public attendance was very limited, only four people turned up, there were in fact more reporters than public.

The meeting started off with an introduction by the Mayor, and the history of tree spraying in Halifax was reviewed by Mr, Calda and Mr. Scallion. It appears that spraying has been practised since at least 1948 and probably before that. Mr. Marks of Fredericton reported on his survey' of the city trees and emphasised that the elm trees were in a critical state due to defoliation by the elm leaf miner. There were then various presentations from the public including Dr. D. Patriquin, Mrs. Nina Patriquin and Dr. M.J. Harvey on behalf of the H.F.N. Prior to the meeting Council had been provided with copies of the HFN Newsletter dealing with the City Tree Survey.

Despite the low public turnout there was a vigorous and fair exchange of views and information. The City Field and Fredericton people were of the opinion that there had been a marked deterioration in the health of city trees since the cessation of spraying in 1977 and that despite a sanitation programme to trim and fertilise trees which was started to replace the spray, the amount of dead wood - especially on the elm trees had increased noticeably in the past couple of years. They recommended a resumption of a spray programme to halt the further deterioration of the trees and to prevent the easy access of elm bark beetle, which transmits dutch elm disease to weakened elms.

Counterarguments of the public health danger from low levels of exposure to sprays, especially in children;that the decline in health of the tree s since spraying stopped was exaggerated; that it was foolish to spray all trees in the city including perfectly healthy maples, were rebutted with greater or lesser strength. Questioning elicited the hitherto unpublished quantities of insecticide which were used during the last spring spraying which was permitted. Over the five days of the spray period 10 gallons of Malathion sprayable concentrate and 96 lbs. of Sevin were used.

The aldermen had come to the meeting for purposes of seeking information and no vote was taken. That would be done at a later Council meeting. The low public turnout has already been mentioned; it was at least partly due to the mechanism of publicity since this was by means of a public notice placed in the advertising section among legal notices and contract tenders. The media seem to have kept a low profile until the meeting, after which the local radio stations broadcast short reports.

On Wednesday, 7 May, the Council meeting in Committee debated the issue and voted 4 for and 4 against spraying. The Mayor - who has always expressed great concern over the health of the trees, broke the tie and voted in favour of spraying. As of writing the matter will come before Council in regular session next week when a final decision will be taken.

HEMLOCK RAVINE -

The question of access points to Hemlock Ravine has come up recently. At the moment there are three main ways of access - (1) along 'Sea King Motel' by Bedford Highway; (2) along the track called Lodge Crescent leading off Lodge Drive; (3) from the top of Lodge Drive. It is also possible to walk along the Bicentennial Highway from Kearney Lake intersection and climb over the barrier rail into the head of the ravine, although we cannot recommend this latter route.

At the moment Mrs. Thibeault claims that she owns the property at the mouth of the ravine at the Bedford Highway end and according to reports has been shouting at people entering the ravine accusing them of trespass. Since the length of the ravine is traversed by an old track called the Old North Road there is an obvious need of a legal decision as to whether a right-of-way exists at that point. Canadian law on public right-of-way is much less definite than say British law, and the position is uncertain. In any case, the Bedford Highway access point is not suitable as a major entry. It really only serves as a minor pedestrian access.

Lodge Crescent, which is a street which was proposed in a subdivision plan of the 1950's but was never built on after being bulldozed free of trees, is currently a public right of way. Mr. Donald Hogan, son of the Mr. Hogan who originally owned the ravine, has over three acres of property on the edge of the ravine nature area. He now wishes to build a single family dwelling on his property and to help in doing so is requesting to buy Lodge Crescent from the City. In addition, the zoning restrictions on the land would have to be modified by being changed from R1 to R1 schedule E which will permit the use of well water and septic tank. City Hall originally advised against the application but said that if Council thought it worth considering then a public hearing should be called. A public hearing is due to be held as of the time of writing on 21 May, 1980. If this application to purchase Lodge Crescent is approved then public access by this route will be extinguished.

Lodge Drive is a part of the 1950's subdivision which was built,at the head of the Drive the roadway turns into a gravel track and finally disappears into bushes. Mr. Hogan owns a strip of the land across the gravel portion of Lodge Drive and claims that he can legally bar access across his property. Again a legal ruling is needed. Lodge Drive has been used freely by the local residents including schoolchildren going to and from school since the subdivision was built. It seems dubious that Mr. Hogan could now bar access. However, what Mr. Hogan may have in mind is an exchange of the Lodge Crescent right-of way for his (dubious) ownership of the Lodge Drive access. As he points out, if the City sells him the Lodge Crescent right-of-way there will be no public access to Hemlock Ravine.

We all thought when the publicity came out about the Nature Conservancy of Canada organising the purchase of the Ravine with the assistance of several corporations and Provincial and Municipal bodies, that the question of access had been dealt with. How wrong we were! The definition of the boundaries of the Ravine Natural Area was handed to a real estate agent who was apparently not given the mandate of looking into public access or omitted to do so. We now have people claiming that the public has to cross their private property to get into the ravine and are indignant about it.

By the time this report is printed, the Public Inquiry will have been held and there will be either no legal way into the Ravine or various swaps and/ or legal decisions will have been made. One principal does seem to be obvious though, and that is there should be as many access points as possible to minimise foot traffic pressure at any one point. I should add that from the point of view of providing a good car park the access at the top of Lodge Drive is the site of choice.

M.J. Harvey.

field trips

AREA STUDIES PRELIMINARY TRIP:
PEGGY'S COVE BARRENS -

The Halifax Field Naturalists visited a Peggy's Cove bog as the first in a number of trips associated with our Area Studies program. The trip took place on 22 March and was led by Anne and Erick Greene.

Heaven clearly approves of our Area Studies project for it gave us a glorious day for our trial run, even though Reid Dexter had forecast rain. We splashed through the bogs and clambered over the rocks, finding a surprising number of interesting things useful to list in the forthcoming area leaflet, and many more besides. The "moonscape" terrain abounds in mosses, lichens and liverworts to draw to the attention of the casual visitor; also higher plants which he will notice and wish to have identified.

The area we visited has several different habitats, and in each there are plant species which are superbly adapted for life there.

The most obvious habitat is that of the bog itself. This depression in the granite rock, which underlies the entire area, was at one time a lake. The pond in the centre of the bog is all that is left of the lake now. The pond is the habitat for many aquatic plants, such as water lilies, bladderworts and aquatic liverworts, which have many adaptations for life, partially or completely submerged in water.

Plant succession followed as the lake's edges filled with organic debris; Sphagnum moss slowly grew inward, encroaching on the lake and depositing a deep layer of peat. This is the bog habitat. The sphagnum moss plays an important role in determining the nature of the bog. Sphagnum mossess are able to absorb trace metallic ions such as K^+ (potassium), Ca^{++} (calcium) and Mg^{++} (magnesium) from the water in exchange for hydrogen ions (H^+). As a result, bogs are highly acidic and extremely deficient in mineral nutrients. Often in habitats such as these, the water is too acidic for some plants to use, so although the plants are growing in a moist environment, they have many adaptations for conserving what water they can get. The shrub Labrador Tea is a good example. The leaves have brown wool covering the undersurface and the leaf margins are rolled under. Common Juniper is another shrub which has curled its leaves, forming a margin on one side that can be seen as a prominent white stripe. Both these plants, and many others found in the bog (Bayberry, Sweet Gale, Broom, Crowberry and Laurel) have adapted to nutrient-poor conditions in the bog by remaining evergreen. By doing so they don't "waste" scarce nutrients by shedding their leaves and growing a new crop each year.

Other plants, such as the Pitcher Plant and the Sundew have supplemented the small supply of nutrients by becoming carnivorous. The Pitcher Plant traps insects in the "pitcher" which

contains water and digestive enzymes and absorbs mineral nutrients from digested insects. Some insects, such as mosquito larvae can resist the digestive enzymes within the pitcher, and we saw them happily swimming around inside the plants.

Glaciation played an important part in sculpting the Peggy's Cove region. The higher areas surrounding the bog are largely exposed granite with glacial till and glacial erratics left behind, but with little or no soil. lants found on this rocky, wind-swept habitat are well-adapted to withstand severe dehydration stresses. Andromeda, Broom Crowberry, Black Spruce and a variety of lichens such as Rough and Smooth Rock Tripe, Reindeer Lichen and British Soldier Lichen are found there. Lichens are important colonisers of bare rock. They are made up of both fungal and algal components, and are able to withstand severe dehydration while they are dormant, and then resume metabolism once water becomes available. They manufacture organic components which initiate the gradual breakdown of bare rock into soil.

On the rocky shore which forms the seaward boundary of the area, brown algae, predominantly Fucus and Ascophyllum can be found on the rocks as well as several species of snails of the genus Littorina. Seabirds can be seen in the water just off the shore. The day we were there, Cormorants, Black Guillemots and a Purple Sandpiper were seen.

All in all, Peggy's Cove presents a harsh environment to any coloniser, and provides the visitor with numerous fascinating examples of how organisms have resolved the problems of living there.

Anne Greene
Erick Greene
Maud Godfrey.

Labrador Tea (Ledum groenlandicum)

D. W. Stokes.

PARTIAL FLORAL LIST FOR PEGGY'S COVE BARRENS.

Shrubs-		
	Andromeda glaucophylla	Bog Rosemary.
	Corema conradii	Broom Crowberry.
	Empetrum Eamesii	Pink Crowberry
	Empetrum nigrum	Black Crowberry
	Ledum groenlandicum	Labrador Tea
	Myrica gale	Bayberry
	Juniperus communis	Common Juniper
	Kalmia angustifolia	Lambkill
	Kalmia polifolia	Bog Lambkill
	Charmaedaphne calyculata	Leatherleaf
Trees -		
	Picea marriana	Black Spruce
Smaller Plants -		
	Lycopodium sp.	Clubmoss
	Sarracenia purpurea	Pitcher plant
	Vaccinium macrocarpon	Large Cranberry
	Coptis groenlandica	Goldthread
	Rubus Charmaemorus	Bakeapple
Mosses -		
	Dicranum sp.	-
	Sphagnum spp.	Sphagnum moss.
Lichens -		
	Cladonia cristatella	British Soldier Lichen
		-
	Ochrolechia frigida	-
	Umbilicaria populosa	Rough Rock Tripe
	Umbilicaria muhlenbergii	Smooth Rock Tripe
	Rhizocarpon spp	Map Lichen
	Parmelia spp.	-

Area Studies Groups

The idea of carrying out natural history studies at several selected areas around Halifax-Dartmouth (see insert, HFN Newsletter #22) has been received with a great deal of enthusiasm by HFN members. Six areas are to be investigated this summer. Below is the list of volunteers who will be participating in the study of each area (the people whose names are underlined are responsible for the organisation of each group). If you are interested in participating, contact us c/o the N. S. Museum, 1747 Summer Street, Halifax, B3H 3A6.

1. Hemlock Ravine Study: Colin Stewart (423-1927)
   Murray Cunningham
   Pat Cunningham
   Julie Swartz
   Constance Gillis
   Andrew Paton

2. Peggy's Cove Barrens Study: John Robinson (429-6664)
   Magi Nietfeld
   Greg Henry
   Michael Downing
   Lorne Vaasjo
   Helen Painter
   Elizabeth Surrett
   Dorothy Morris

3. South End Railway Cutting Study:
   Joe Harvey (422-3773)
   Doris Butters
   Maud Godfrey
   Bernice Moores

4. Dingle Park Study: Roger Cousens (424-2143)
   John van der Meer
   Marjorie Dunbar
   Hugh Kindred

5. Cole Harbor Heritage Farm Parkland Study:
   Anne Greene (423-8919)
   Nelle Leidemer
   Judy Van Houton
   Susan Murphy
   Suzanne Lewis
   Lindgrens

6. Conrad's Beach Study: Susan Murphy (463-1450)

Rosemary and Peter Anderson
Suzanne Lewis
Tim Randall
Edna Todd

Joe Harvey has drafted a series of basic instructions (shown below) for preparing the leaflets which will be written on the natural history of each area.

We have the full support of the Nova Scotia Museum and groups returning from a field trip to their area may go there with specimens which need identification, and make use of the museum's expertise and resource material. Phone Deborah Burleson (429-4610) at the Museum to reserve a room about a week in advance and ask about the use of their field guides.

Also, if you are stuck on the identification of a certain rock type... or bird... or plant, we have a group of willing experts who may be able to help.

Geology	- Bob Grantham.	N.S. Museum (429-4610)
Plants	- Joe Harvey	home (422-3773)
Birds	- Anne Greene	home (422-8919)
Small Mammals	- Fred Scott	N.S. Museum (429-4610) Mon., Wed. AM, Fri.
Algae	- Roger Cousens	Dalhousie U. (424-2143)

D. W. Stokes

INSTRUCTIONS FOR PREPARING GUIDES TO NATURAL AREAS.

During 1980 and subsequent years, the Halifax Field Naturalists hope to have available a series of leaflets on the natural history of a variety of Nova Scotian localities. Each leaflet will be the work of a small group of volunteers. We hope to start with a few popular areas within easy reach of the Metropolitan region and, if these initial leaflets prove successful, extend to localities further afield in subsequent years. The aim of these leaflets is to make available in an easily understood manner details of the geology, the plants, the animals and the land use history so that anyone would be able to use a leaflet as a guide and be able to appreciate a variety of subtleties about each landscape. If the idea proves successful and we generate enough enthusiasm, there is the eventual possibility of publishing the leaflets in the form of a booklet. Such a booklet would fill a real void in the information on local natural history available at present to the public.

The initial aim is to divide each locality into habitats, to comment on the nature of each habitat, and list the common plants, birds and other animals to be seen. Rarities can certainly be pointed out when they are interesting, particularly where the species needs protecting and this should be mentioned as most people are appreciative of such details and cooperate in conservation. At the same time we are not only concerned with listing species but in viewing the landscape as a whole in terms of its geological and human history.

We hope that each group of volunteers will visit their area several times throughout the season eventually getting to know all the nooks and crannies and discovering most of the plants and animals in the area. However, once you get into naming every moss, lichen, rare bird, rodent, insect and fungus (with the help of the appropriate expert, we hasten to reassure you) there could be a list several hundred species long. Obviously this would not be appropriate information to put into an introductory guide and it should be emphasised that the common or obvious organisms are all that are required for the leaflet. That is not to say that we want to discourage study in depth, and hopefully some people will want to continue to refine and add to their work after the first version of their leaflet is printed. In that case it would be appropriate to publish the more extended lists and observations in the HFN Newsletter so that the comments would be, as it were, on file and available for later reference.

In order not to leave people floundering with difficulties in identifying things, which is always one of the biggest problems, we hope to make available:-

a) facilities at the N.S. Museum where handbooks and named specimens will be available;

b) a number of 'experts' who will be available to advise on particular groups of plants, animals or rocks.

As appropriate, the experts can either be invited to visit the locality or specimens may be collected and suitably preserved for identification later.

While we do not need to be absolutely rigid about it there should be a reasonably uniform format adopted so that the leaflets cover essentially the same sort of detail in the same sequence. Following is the suggested outline for the guides.

ITEMS TO BE INCLUDED IN THE GUIDES TO NATURAL AREAS -

1. Name of the locality, with brief instructions of how to get there, e.g. Route number, distance from nearest city, etc.

2. General statement of what the area shows. An appreciation of the whole landscape expressing enthusiasm if anything is particularly well shown.

3. Map of the area. The map should be copies from a 1:50,000 or 1:25,000 survey map. To this base the habitats, footpaths and items of particular interest may be added.

4. The habitats of the area should be described in some detail. For each habitat there should be one or more paragraphs giving the essential features which are most obvious to the initial visitor. Other paragraphs could deal with interesting but specialised or less obvious facts of observation or history or unusual species. There should be a sequence of treatment from the obvious and immediately apparent features, to the less apparent or specialised items.

5. Species lists. For large or complex areas there could be a plant species list for each habitat. The obvious or especially interesting species should be identified and listed alphabetically by their scientific name with the common name, if any, in parenthesis. In addition, some indication of how common a species is is useful and the letters, d, f, o, and r after the name can be used to indicate whether they are dominant, frequent, occasion or rare. Bird lists are probably best sub-divided into several parts separating migrants from residents. It is more important to discover which birds are nesting than to see every migrant which flies over the area.

   Species lists are of course things which accumulate over a period of years. Initially we need only the common species for the purpose of the guides and in fact too much detail can be offputting. The really detailed work which some of you will probably do can be published in the HFN Newsletter from which it can be duplicated if the occasion arises where a more detailed description is needed.

March, 1980