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HALIFAX FIELD NATURALISTS NEWSLETTER

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

NOVEMBER-DECEMBER, 1978



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NUMBER: 18

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 1978-79:

President	Joe Harvey
Vice-President	Anne Linton
Membership Secretary	Will Robertson
Treasurer	Rose Barbour
Past President	Kathy Aldous
Directors	Mike Burke John Robinson Erick Greene

Newsletter: Anne Linton
Mike Burke
Doris Butters
Andrew McLaren

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.

hfn news

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J. Bianchi

Unfortunately for us, Jane Spavold, who has served on the HFN executive and contributed her knowledge of natural history to many HFN activities, is leaving for New Brunswick. Jane will be working in the Provincial Department of Environment, as a plant toxicologist. Good luck, Jane !

Dick McBride, the guest speaker at the November meeting, introduced HFN members to the "world of microbes" an experience that was not only interesting, but fun.

HFN is again having the newsletter printed at the Nova Scotia Museum, beginning with this issue. Our thanks to Louise Cooke for printing the last several issues single-handed!

Here are several references he has passed on to those who wish to continue where he left off.

Because many of our newsletter staff (and readers) are away for the summer, we are going to try producing just one newsletter over this period (June to September), thus reducing the number of newsletters per year from 6 to 5.

FUNGAL SPORES - THEIR LIBERATION AND DISPERSAL -
C.T. Ingold
Oxford University Press, 1971

Available at the MacDonald Science Library, Dalhousie. QK 601 I52.

A technical work for specialists but any "field naturalist" will be able to appreciate the descriptions of diverse spore dispersal mechanisms.

Two new members have joined the executive: they are John Robinson and Erick Greene, both keen naturalists who will be with us (at least) until the end of the year.

THE MOLDS AND MAN: AN INTRODUCTION TO THE FUNGI. -
C.M. Christensen
University of Minnesota Press, 1965.

A good introduction with the emphasis on how fungi influence us - health, economics crops, etc.

In preparation for the election of executive officers at the Annual General Meeting (see below) nominations will be welcomed from the membership up until January 27, 1979. If you know of someone you would like to see on the HFN executive please let us know. Contact: Joe Harvey by phone 424-2042 during the day, or write:

MICROBES AND MAN
John Postgate
Pelican, 1969

A very readable book about bacterial activities in relation to health, food and economics.

Note:

Halifax Field Naturalists
c/o N.S. Museum
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B3H 3A6.

Anyone with a good reason can get a Dalhousie Library card. All field naturalists have a good reason - so, if you don't already have one, apply now.

These are some of the more important considerations but others can be added, especially concerning the methods of application - e.g., What is the rate of application in lb./acre or kg./ha (which are approximately the same numerically, i.e. 1 lb./acre equals 1 kg./ha)? How far is the spray carried? And so on.

Some of these questions can be answered quite precisely, others only in a general way and for some we do not have enough information so we have to fall back on speculation which may prove to be wrong as more information comes in. Let us attempt some answers as best we can.

Tree Species

The samples brought to me included elm and birch and there was the usual complaint about the black sticky stuff on cars parked under linden (lime, basswood) trees. The leaves of the elm were very badly affected in early summer, so badly in fact that many trees grew a second crop later in the year which was not badly affected. The leaves turned brown and brittle and proved to be hollow with the tissue between the upper and lower epidermis eaten away by an insect. No one brought oak although I noticed a few pink galls on one tree in the early summer. Maples, of which there are several species in the city were not affected by any insect this year.

Insect Species

"We have dutch elm disease in Halifax". There must have been a dozen people who said this to me this year. Well, if there is I have not seen it and all the cases I was shown were leaf miner attack. Mark you, we shall get dutch elm disease since no precautions are being taken to keep it under control elsewhere in the province. Only by forming a cordon sanitaire for about 50 km. around the city could the dutch elm disease be kept out and no one is thinking of taking that precaution. Dutch elm disease is a fungal disease of the cambium which is carried from tree to tree by the females of a bark beetle. She makes a tunnel in the bark in which to lay her eggs at the same time leaving spores of the

fungus which kills the tree. There is no cure for dutch elm disease, despite claims to the contrary.

Leaf miners are small insects whose females lay their eggs in or on the leaf with the larvae eating the tissues inside the leaf but leaving the upper and lower epidermis intact. Naturally such grubs are quite small to fit into the narrow space although the leaf bulges as the insect eats away the photosynthetic tissue. Since the epidermis of plants is tough and contains water repellent waxes, once the little grub is ensconced inside the leaf it is almost impossible to kill it with external sprays since they do not reach it. Only systemic insecticides have any effect on the larvae.

There is not ~~one~~ single leaf miner, the life style having been adopted independently in several unrelated insect families; the species which is common on elm is quite distinct from that which attacks birch.

The life cycle of leaf miners is that the females emerge in the spring to lay the first batch of eggs on the young leaves. There may then be several ~~others~~ more or less overlapping generations through the year so that flying adults can be present almost continuously. This complicates their control. Unless you can 'zap' the first females just as they emerge, control is difficult because of the protected habitat of the larvae and the irregular hatching of adults later in the season.

The drops of sticky substance which fall from lindens are composed of a concentrated solution of sugars. The sugars are excreted by an aphid species which is restricted to lindens (not the aphid which attacks roses). The effect on cars and leaves is the same as might be expected from spraying corn syrup on them; they become sticky and a fungus grows on the sugar giving the black appearance, which does not harm the leaves but can be difficult to get off paintwork. The linden aphid is a local irritation rather than a major problem.

Sevin

Sevin is a modern insecticide with a fairly short half life. Persistence is important since this was the downfall of DDT - it stayed around for ages and accumulated in all sorts of unwelcome places. Most of the DDT manufactured is still in existence as such or as its partial breakdown product DDE. Sevin is a great improvement in this respect. Superficially also Sevin seems to decompose to harmless molecules. According to the chemical company which manufactures Sevin it has no adverse effects on humans or domestic animals (excluding goldfish and honeybees.) Its LD50 is very high and there should therefore be no need for worry about its use around houses (LD50 is a commonly-used term referring to an insecticide's potency. An LD50 rating (shortened form of lethal dose 50%) corresponds to the amount of a given spray needed to kill 50% of the animals ~~or plants~~ it is directed at. A mildly toxic spray would have a high LD50, and vice versa).

Superficially Sevin seems to be as near to an ideal insecticide as we have at the moment. So was DDT in its time. What worries me is that in ten years or more it may look very foolish to have used such a substance, but readers will recognise that in this sentence we pass from hard facts to opinions. Here are the boundaries of our knowledge. Certainly the intimate connection between the spray program and housing would seem to me to give cause for concern. Quite recently it has been demonstrated that "Sevin" causes breaks in the chromosomes of plant and animal cells exposed to it. However, we do not yet know the significance of this finding. The systemic insecticides were mentioned earlier. These are absorbed by the plant so that it has poisonous sap and kills any insect eating it. They have the advantage that bees are not killed. Leaf miners and aphids are controlled by systemics much more readily than with external sprays.

The drawback to systemics is their stability. To be effective, they must remain in the environment unchanged for lengthy periods of time. Also they are mostly quite toxic and need very careful handling. They are definitely not the sort of substance to spray around the city.

It is also possible to approach the whole problem from the opposite point of view. The majority of trees in the city are norway maple, there are a few sugar maple, a sprinkling of sycamore maple and a few oak. Birch is not planted along streets and elm is uncommon. The elms which gave concern in the summer were almost all on private property and hence could not be sprayed by the city. The problem can be seen to be a non problem. No maple or oak needs spraying, they are naturally healthy groups. The leaves which I have been sweeping up recently were virtually unmarked by anything. Any spraying of maple trees is make-work, I would rather have the workers paid \$10 per hour and told to play cards.

A related point of view is to look at the real damage done to the elms and birches. Were they really at death's door? Can a tree lose 50 percent of its leaves and survive? I was asked this question many years ago and I think the answer I gave then is still relevant. "Look", I said, "birches and elms have had leaf miner since at least the mid-Tertiary (30 million years ago), if they were going to be killed by insects it would have happened long ago." What we see today is a balance, it may look unsightly in some years but it is a balance achieved by co-evolution of the plant with the insect. Where there has been no co-evolution as in the case of a disease introduced from another continent the result can be disastrous, eg. chestnut blight introduced from E.Asia early this century, dutch elm disease from Europe

more recently, even human plague of the Middle Ages which probably started as a rodent disease in Central Asia. However, we are not faced with a major introduced disease, just the local insect fauna. The insect populations can be expected to control themselves via the local insect parasites.

Even very minor biological control has been shown to work; the elms in the Public Gardens have not been severely affected for many years even though they form the majority of the trees there. Why not? Well, the gardens are kept neat and tidy by a very efficient clean-up each year and the pupae of the leaf miner are removed with the leaves. Hence there is a very small number of adult insects in the spring and the infection never builds up during the summer. Spraying in the Public Gardens is not needed.

Postscript -

This article has been written as a result of what I regard as an extraordinary piece of local politics. There is apparently now an agreement to blow a potent chemical with a by-no-means pristine record into the air I breathe and on to my house lot ostensibly for the health of some maple trees that I know are already robustly healthy (my street has only maples on it like most streets in Halifax). Not only that but I have to pay for this unnecessary and potentially dangerous act through the local taxes. How such a Kafkaesque situation arose I do not know. Presumably there is so much money around that these extraordinary measures have to be taken to get rid of it. Frankly, I would rather it go to day care.

Local politics are not of course concerned with facts but with how people feel and I can only deduce that the majority of Halifax taxpayers want to have 'Sevin' blown over them and are quite complacent at the prospect.

Hopefully this article will either demonstrate to a few people the apparent uselessness of the spray program or it will stimulate someone else to write a reply which will convert me to the majority which is looking forward to the day when the spray machine comes down their street.

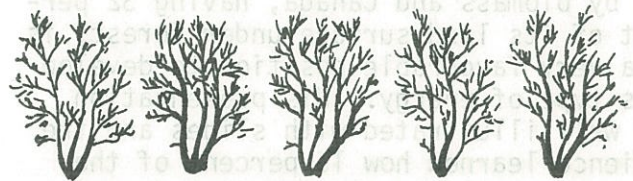
M.J. Harvey

If you are interested in finding out more on the city's approach to spraying or wish to express your views, contact:

Director of City Field
3825 MacKintosh Street
Halifax

or

Hon. Roger Bacon
Minister
N.S. Department of Environment
Joseph Howe Building
Halifax.



The concerns of our readers are gladly received and usually printed, so write them down and send to:

The Editor, HFN Newsletter
c/o Nova Scotia Museum
1747 Summer Street
Halifax

reports

FORESTS FOR ENERGY: The Potential and the Problems for Nova Scotia.

The Nova Scotia Resources Council hosted a symposium on 28 October, 1978, in the Life Sciences Centre of Dalhousie University. The theme was Forest Biomass for Energy Production and the meeting consisted of four invited speakers, chaired by Dr. John Young, and followed by discussion from the floor.

Dr. Ralph Overend of the National Research Council opened the symposium with a national perspective of our increasing dependence on oil and in particular that from the Middle East. He has been seconded to the Department of Energy, Mines and Resources in Ottawa as a Biomass Co-ordinator. Not unnaturally he was proposing substituting imported oil by biomass and Canada, having 32 percent of its land surface under forest, is in a very favourable position to develop this type of energy. His presentation was well illustrated with slides and the audience learned how 15 percent of the fibre processed by the forest industry is currently wasted. Clearly this could help provide the energy used by saw and pulp mills. By the year 2000 Dr. Overend was anticipating energy plantations but until then whole-tree harvesting, by taking the tops as well as the trunks of trees, could provide more fibre from the same acreage of land. Wood fibre could be chipped, converted into wood gas, then synthesis gas and finally methanol. At the present time, this would be marginally more expensive than gasoline but by 1990 it was expected to become competitively priced. By the year 2025, it was anticipated that wood fibre would be 100 percent utilized providing lumber, fuel, chemicals and cattle feed.



Mr. Fred Buckley, an engineer who has pioneered engineering projects in the paper industry and has worked as Manager of Special Projects for the Nova Scotia Power Corporation followed with a detailed analysis of projects to use gas producers and diesel engines to generate electricity in Nova Scotia. It was then that the audience realized how long it took to make such projects operational and profitable. The example considered has been under development for about six years but so far about four times as much has been spent on testing the plant than it cost to initially make it. Eventually it is possible that Nova Scotia could have ten 15-20,000 kilowatt generating units using wood fuel and feeding electricity into the existing power lines.

My role was to stand in for Dr. Manley from Prince Edward Island. I tried to review the issue from the perspective of the forest resource and pointed out that we were discussing the intensive, industrialized harvesting and processing of wood fibre. This involved either shorter rotations, clear-cutting, and whole-tree harvesting or the establishment of plantations.

We considered first the extent and existing uses of hardwoods within the province as softwoods are already being heavily overcut. We also looked at the history of logging in the Province. Trees have been harvested since 1605 and very heavily since 1800. The industry has already shifted its operations from species to species as they have been successively overcut.

Several problems that might be encountered with the intensive utilization of hardwoods were discussed including species shifts from shade tolerant to lower quality, shade intolerant hardwoods, the problem of excessive coppice growth after clearcutting, nutrient losses in frequent clear-cutting and whole-tree harvesting and some of the ecological consequences of reduced organic matter in the soil.

We concluded that the onus should be placed on any whole-tree chipping proponent to demonstrate how the nutrients removed in harvest would be replaced to the forest ecosystem. This being particularly important on shallow, nutrient deficient sites with a low cation exchange capacity such as those in much of Nova Scotia. We also considered that we needed a forest policy for hardwoods so that the better quality 'tolerant' stands could be protected and properly managed.

The fourth speaker was Dr. Pete Ogden, formerly a member of the Nova Scotia Environmental Control Council. He pointed out that the Province had formerly been the shipbuilding capital of the world and had produced timbers twelve inches square at 60 feet from the ground. No such trees exist in the Province today.

He indicated that the nutrient inputs to the forest were almost entirely from precipitation and were very small, about

1.7 kg. ha⁻¹ yr⁻¹ of potassium,
1.2 kg. ha⁻¹ yr⁻¹ of calcium,
2.0 kg. ha⁻¹ yr⁻¹ of magnesium,
2.5 kg. ha⁻¹ yr⁻¹ of nitrogen and
-.2 kg. ha⁻¹ yr⁻¹ of phosphorus.

These would be rapidly depleted by whole-tree harvesting on short rotations.

Dr. Ogden also discussed the problem of long distance pollution which causes acidic rain of pH = 4.1, a figure a little lower than that necessary for fish reproduction. It is possible that 15 percent of the lakes of the Province have become sterile and that the sulphuric acid in the precipitation is removing more nutrients by leaching from the forest ecosystem. He then discussed the opportunities offered by spreading treated human effluent or sewage sludge on cut-overs. He recommended high pressure spraying of 10 percent solids by tanker-trucks. As citizens in the Province are currently becoming increasingly indignant about the unsanitary disposal of this material spraying it on forest land would serve two objectives.

After discussion from the floor and a total of over three hours debate all participants felt that biomass for energy had potential but that the problems will require a lot of careful research before they are overcome.

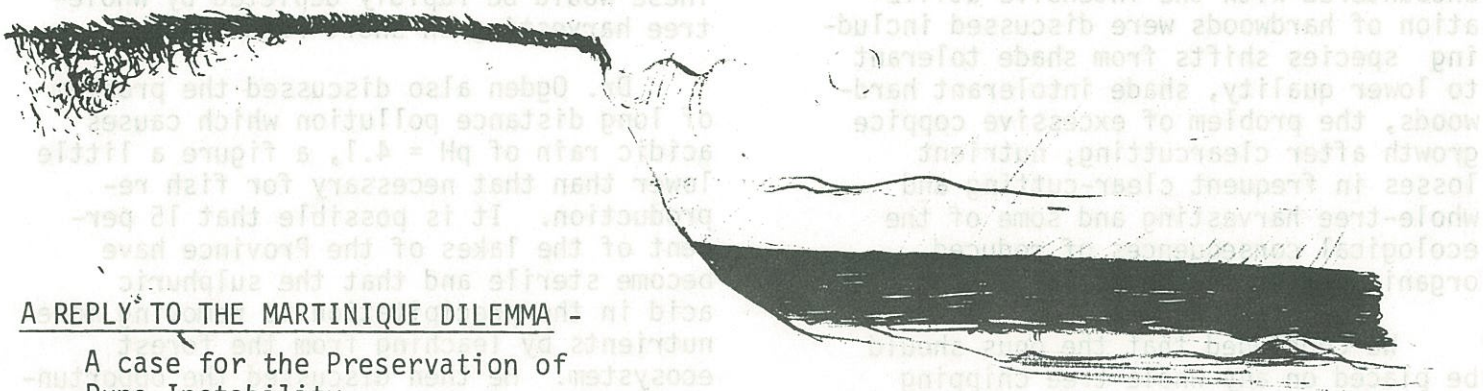


Barry Goldsmith
Dept. of Biology
Dalhousie University
Halifax, N. S.

Martinique Beach is one of the finest beaches on Nova Scotia's eastern shore. By 1977 intensive and uncontrolled recreational use had caused serious degradation of the dunes and their stabilising vegetation. In conjunction with the Nova Scotia Department of Lands and Forests, HFN became involved in efforts to restore some stability to the dune system. Our contribution involved

rebuilding a damaged section of the dunes with brush barriers (see HFN Newsletter #11)

Despite our initial success however, over the following winter, storms swept away the brush barriers and part of the neighbouring dunes they were meant to protect. Such is the nature of beach systems perhaps, as this follow-up article by Winnie Cairns explains.



A REPLY TO THE MARTINIQUE DILEMMA -

A case for the Preservation of Dune Instability.

Historically and naturally, barrier beaches and coastal dunes are unstable systems. A look at any older atlas will quickly show the dramatic changes that occur. Within the space of a few hundred years (and often far less) sandspits change shape and position, harbour mouths shift, barachois ponds appear and disappear, dunes come and go. Some of these changes in coastal geography and topography have indeed been triggered by human activities (intentional or otherwise), but a far more powerful agent of coastal engineering is the combination of wind and water. We generally have little difficulty in understanding and accepting the right of these natural forces to wear away cliff faces; why then, do we so quickly rush to prevent them from taking their toll in dunes?

A dune develops from the accumulation of wind-blown sand. If marram grass becomes established it helps to hold and trap more sand and the dune grows; when sand stops accumulating the marram no longer thrives. By this stage of dune development other plants such as bayberry, wild rose and white spruce may have

colonised the dune and given it a measure of permanence. But if the marram deteriorates and is not succeeded by other vegetative cover the dune will decline. Blow-outs may occur and the loose sand will be shifted about by the wind. These grains of sand may simply be resculpted into a new dune growing on the same site or they may be transported elsewhere, leaving behind a breach in the dune chain which may be washed over by spring tides.

As naturalists, we should not be alarmed by a breach in a dune system. If we look up and down the coast we will find barrier beach and dune systems at all stages of development, maturity and decline. A dune system along an outer beach cannot be preserved "intact" for posterity, for that would be to ignore the dynamics of the situation. Cyclic instability is an inherent component in the character of a coastal dune system. If we remove this element the system becomes stabilised, changed into something else; and we no longer have the dynamic dune system characteristic of the outer beach. To preserve such a system we must recognise and accept the "right" of the dunes on the outer beach

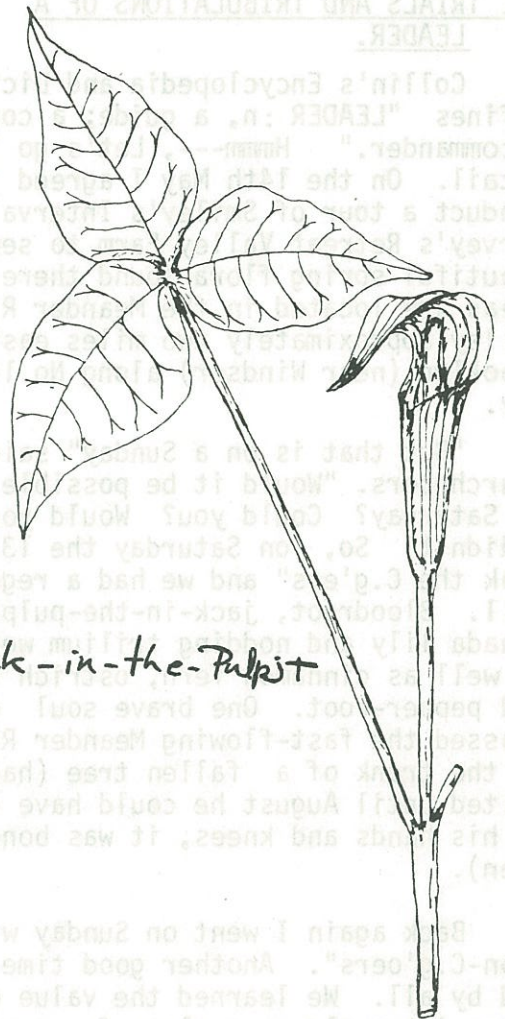
to be breached, washed over, levelled and rebuilt as directed by the interplay of sand, wind and sea.

As ecologists we should be quick to note that a beach system of alternating dunes and washovers provides a more diverse habitat than a monoculture of marram on an uninterrupted dune chain. The habitat provided by washovers and adjacent sparsely vegetated dune slopes forms the preferred breeding ground of the Piping Plover, a species currently declining throughout its range and at present numbering only about 300 to 350 pairs in eastern Canada. Several pairs of Piping Plovers now nest annually at Conrad's Beach, thanks to the gravelly spit created as a result of human alterations to the area. At Cadden Beach on the south shore some 30 pairs of plovers are nesting on an extensive washover beach formed when overgrazing by cattle helped bring about the destruction of the barrier dune system there.

And so the point I wish to make is that dune systems should be permitted to operate according to their own dynamics, without a help or hindrance of human interference. If a dune does become breached, either through human or more natural causes, the sensible thing to do is to leave it alone. Past experiences have shown that efforts at dune restoration generally have little or no effect anyway. However, in adopting such a hands-off policy, it will be as important to effectively control human activities that might accelerate dune decline as to resist the temptation to plug the gaps and "save" the dunes. Although some of our efforts in management and mis-management of the barrier beach/dune complex may have improved habitat in certain ways, we know so little about this type of coastal engineering that at present we are best advised to leave the job to nature.

Winnie Cairns.

Jack-in-the-Pulpit



The request for jokes got an unwitting response from our friends in Parks Canada. Visiting Gros Morne National Park I eagerly scanned the leaflet on Hiking provided by the Visitor Centre to discover what new goodies were offered since my visit in 1972. One new hike is the Berry Hill Trail described as leading

"..up Berry Hill in a spiral fashion, giving you a 360° view of the Coastal Plain, the sea and the mountains. The climb is well worth the view."

Now boys, let's read that last sentence again slowly. I know that these days physical fitness over-rides all other considerations, even views, but is that really the way round you wanted to express it?

M.J.H.

THE TRIALS AND TRIBULATIONS OF A LEADER.

Collin's Encyclopedia and Dictionary defines "LEADER :n, a guide; a conductor; a commander." Hmmm---, Let's go into detail. On the 14th May I agreed to conduct a tour of Smiley's Intervale and Harvey's Retreat Valley Farm to see the beautiful spring flora found there. Both areas are located in the Meander River Valley approximately two miles east of Brooklyn (near Windsor) along No.14 highway.

"But that is on a Sunday" said the Churchgoers. "Would it be possible to go on Saturday? Could you? Would you mind?" I didn't! So, on Saturday the 13th, I took the C.g'ers" and we had a regular ball. Bloodroot, jack-in-the-pulpit, Canada lily and nodding trillium were seen as well as cinnamon fern, ostrich fern and pepper-root. One brave soul even crossed the fast-flowing Meander River on the trunk of a fallen tree (had he waited until August he could have done it on his hands and knees, it was bone dry then).

Back again I went on Sunday with the "Non-C.g'oers". Another good time was had by all. We learned the value of this river intervale as a place for recreation and as a nature preserve. Parts of it should be carefully protected.

Once again I volunteered to act as leader, this time for the proposed visit to Tancook Island on August 26th. This trip too, was fraught with some organizational difficulties, being originally scheduled for the Sunday and then changed to Saturday. Leaving the Museum at 9.30 A.M., we raced to Chester to get the 10.45 ferry to the island, only to find the newsletter had quoted the sailing time for Sunday. On Saturday it is 1.00 P.M. So we drifted around Chester and did some shopping, having lunch on a wharf instead of on the island,

We finally got underway and it was a most glorious day for a boat trip on Mahone Bay. The weather was perfect. For the record, those who did go on the Sunday could not even get on the ferry. It is only allowed to carry 75 passengers

and was filled to capacity 20 minutes before sailing time. Something to remember in future!

Once ashore, some went their own ways, but I led a group of die-hards across the island towards Southwest Cove, a rather interesting little place. The island was bone dry from the summer drought and even the famous cabbages were brown. We had to walk on the newly graded government road and were soon covered with dust as a gang of hoodlums in a beat-up old Volkswagon raced by us a number of times and nearly gave us "the works".

With the forth-coming provincial election in view, we had fun in naming the new road. Liberal Lane, Regan's Road and Brown's Boulevard were names that were suggested - what I called the driver of the "Beatle" was unrecorded.

In the swamp at Southwest Cove, great burr reed, sedges, cat-tails and various types of wild flowers were gathered and identified. Jason VanHoughten found a road-killed garter snake which was later preserved and put in pickle for him at the Museum Science Lab, through the kindness of John Gilhen.

Finally, at 6 o'clock, somewhat weary but quite happy, we all trooped aboard the ferry for the trip back to Chester (calling at Little Tancook on the way), and we enjoyed another lovely cruise. On the return trip some interesting birds were seen. Those with binoculars spotted an osprey, several ducks, some low-flying cormorants as well as gulls and terns.

Although, as I boarded the ferry at Tancook, I had a feeling of contentment, and would gladly do it again, I was inclined to quibble with the dictionary's definition of "leader". I felt more like a shepherd who had tried to herd a flock of sheep -- without the aid of a dog!

Tim Randall

WILD FLOWERS OF BRITAIN by Roger Phillips,
published by Pan Books, London,
192 pp.

I think that of all my books, one of the most elegant is Edith Holden's The Country Diary of an Edwardian Lady. Just recently however, I've acquired another book, equally elegant, although entirely different in concept and style. It is Wild Flowers of Britain, by Roger Phillips. In this new book, over one thousand species of flowers are identified by means of photographic reproduction. Large plates of full-colour illustrations, 18 x 26 cm in size, show typical specimens of flowers, 10 or more to a page, arranged for easy identification. Information on the month and date the pictures were taken are provided with each plate. A 1cm circle is also included to indicate relative size.



Barberry : European shrub
escaped in Nova Scotia.

book

review

The superb quality of the plates was obtained by using large format film, both whole-plate (6½ ins. x 8½ ins.) and 4 ins. x 5 ins., in special cameras. The plants, lying on a neutral background, were photographed by electric flash giving a three dimensional effect that is quite striking. Some specimens are so realistic, one is tempted to pick them up!

Although British flowers are the subject of this book, many of them are to be found in Nova Scotia, and as botanical and common names are given in a comprehensive index, it could be easily used in conjunction with the Flora of Nova Scotia by Roland and Smith.

Wild Flowers of Britain is available in Halifax at Classic Books, Scotia Square and the Book Room, Granville Street, at \$11.95. A beautiful gift for Christmas.

Tim Randall.

NEWS FLASH !!!

Another exceptional book by Roger Phillips is now available in Halifax. Called Trees of North America and Europe, again published by Pan Books, London, 224 pp. at \$10.95, it can be found at both the Book Room and Classic Books.

Wietske Gradstein is a new member of the H.F.N. and has provided, in the following article, some interesting information on the structure of conservation groups in the Netherlands.

THE I.V.N. IN THE NETHERLANDS -

Last April (1978) I made a study of the "I.V.N." or "Instituut Voor Natuur-beschermingseducatie" (Institute of Conservation Education) in the Netherlands. I remember the activities of the IVN and the excellent way in which they were able to involve people in "faraway" communities. Of course the IVN cannot be used as an example for conservation education in Nova Scotia since the situation here is too different from the situation in Holland: Holland has, with the same size as Nova Scotia, 14 million inhabitants, the entire country is either cultivated or inhabited and the people are comparatively very conscious of the environment. Yet it seems to me of interest to Nova Scotian naturalists and conservationists to know what the IVN is and how it works. I hope that some of its features may cause new ideas.

The IVN was founded in 1960 with the main objective: to create a sound public opinion in conservation matters. It was not meant to be a naturalists club - naturalists could turn to one of the large nationwide naturalists societies. Neither was it meant to be a conservationist club - that was taken care of by action groups and local conservation clubs, whose actions by the way are coordinated by a well-organized, influential and partly subsidized national organization (Foundation Nature and Environment). The members of the IVN did and still do direct their efforts not to themselves, not to the environment but to the general public.

Right from the start the IVN had districts, branches and members which it took from a large country-wide conservation club. Each branch approached

the new objective in a different way, mostly with the same kind of work as done by the museum in Nova Scotia (exhibits, schoolwork, propaganda, etc.). It is beyond my intentions to give a detailed description of the work done by all different branches although I have most of the information in my possession (in Dutch), but I will give the three main activities that form the basis of the work of the IVN.

1. Simple nature walks close to the community, where people are shown the need for conservation. Subjects: nature, ecology, dangers to nature and ecology (poisons, leveling-off of species-diversity). These walks are guided by "nature guides" (see below) and are open to the general public or done for school classes (mostly grades 4, 5 and 6).
2. Education of "Nature Guides". Courses are offered at many locations throughout the country and every year at different locations so that everybody can choose a course close to his or her home. The courses are open to the general public provided that the students have some field knowledge and are positively interested in conservation education. The teachers are local experts preferably with a teacher's certificate in science. The course is meant to add background knowledge (mostly theoretical) to the already present field knowledge and to give instruction in teaching conservation. Subjects of the course are (there is even a handbook): nature vs. cultivation; ecology and energy cycling; flora, vegetation and fauna; seasons; biotopes; and the use of instruments (binoculars, magnifying glasses) and books (flora and other guides); planning and the organisation of conservation. These courses are extremely popular and a high percentage of the graduates stay active in IVN work.

- 3. Conservation work camps.
Objectives: to do conservation work that otherwise would not be done (no cheap labour!) and to teach kids about the work involved in running a nature reserve. I attended one of these camps in 1963. We constructed a bicycle path and cleared large stretches of heather of young spruce trees. These camps are for children age 13 and up and are always filled to capacity.

This is a brief description of the three basic activities of the Institute for Conservation Education in the Netherlands. For more information or details I can be contacted at 835-9272. In the meantime I hope to learn more about the natural history of Nova Scotia and I would

be delighted if I could eventually be able to pass this new information on to other people in addition to my concern for nature conservation.

Wietske Gradstein

My contact person at the head office of the IVN is:

D.H. Huitzing
Landelijk Bureau I.V.N.
Plantage Middenlaan 41
Amsterdam.

Material in my possession:

Vademecum "project landscape-map", Handbook for Education of Nature-Guides, a publication for municipalities, two issues of the magazine, some miscellaneous items.

Membership in the Halifax Field Naturalists is open to anyone interested in the natural history of Nova Scotia. Former members are encouraged to renew their memberships and new members are always welcome. Membership fee is five dollars annually, family membership seven dollars.

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

Halifax Field Naturalists new _____ renewal _____

Name _____

Address _____ Postal Code _____

Occupation or interests _____

A REMINDER TO MEMBERS: 1978 MEMBERSHIPS EXPIRE DECEMBER 31, PLEASE RENEW NOW FOR 1979.