HALIFAX FIELD NATURALISTS NEWSLETTER

c/o Nova Scotia Museum - JULY-SEPTEMBER, 1979
1747 Summer Street
Halifax, Nova Scotia
B3H 3A6

HALIFAX FIELD NATURALISTS NEWSLETTER

JULY - SEPTEMBER, 1979 NUMBER: 21

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 note of all excursions and special programs.

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1747 Summer Street
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editorial

A WHALE OF A PROBLEM -

(Reprinted from the Evening Telegram, Feb.10, 1979).

Recently the Provincial Minister of Fisheries has argued that whaling should be renewed because there are so many whales that they are depleting capelin stocks. Rural development associations have similarly petitioned for a renewal of whaling because of the costly number of collisions which occur with inshore fishing gear.

At the centre of the problem provoking these views is the humpback whale. Fin, minke, humpback and pothead whales are all common in Newfoundland inshore waters. Each species competes with fishermen, fishing during similar times and in places bound to bring them into occasional conflict with the inshore fishermen. Most of these whale species, perhaps because of feeding methods or superior sensory ability, successfully avoid fishing gear most of the time. Not the humpback. For years the humpback has been damaging fishing gear.

Over the last few years, whales, especially the humpback have become more common in Newfoundland's inshore waters. With this increase in sightings, there has been a dramatic increase in gear damage. This damage has become an unignorable economic hazard to Newfoundland's inshore fisherman and has provoked requests for solutions. However, the problem is complex and simplistic solutions will not work. Our aim in this article is to present some of our views on the problems.

INSHORE FISHING GEAR DAMAGE -

In Newfoundland, over the past four years, however, there has been a substantial increase in the number of humpback sightings and reports of whales, mostly humpbacks, damaging inshore fishing gear. Fishing efforts have been on the increase over this same period and there has been more fishing gear in the water than ever before. While the intensified fishing activity and a slightly larger humpback population may account for a slight increase in sightings and gear damage these two factors are not sufficient to account for the substantial increase in humpbacks reported.

Typically, damage is to cod traps, squid traps, salmon nets, etc., which fish in the upper water depths. However, damage to gill nets was reported at Trinity Bay. All whales are occasionally trouble makers and fishermen report that at times fin, pothead and even blue whales cause damage. Overwhelmingly the humpback is reported to cause the most damage. One observation made repeatedly by fishermen was that with whales so plentiful in inshore waters, collisions with their boats was possible. Several instances of boat/whale collisions were reported in the summer of 1978. A number of fishermen have begun to carry rifles aboard and several reports of actual whale shootings have been received.

The inshore fishermen are economically hard pressed by whale-caused gear damage. In St. Mary's Bay, on the Avalon Peninsula's Southern Shore, fishermen estimate that approximately 90 percent of their cod traps are damaged by humpbacks. The repair cost of such damage averages between $1000 and $3000, not including labor. The real cost of such damage is incurred because fishermen must remove gear from the water during peak fishing periods for repair. Repairs to a cod trap commonly require a week. At the peak of the cod trapping season, a trap could easily catch $1000 to $2000 worth of fish a day. In Trinity Bay, fishermen estimate repair costs to gear in the summer of 1978 at $500,000. Cost of whale-caused gear damage due to down time would be many times that figure.

WHY WHALES COLLIDE WITH FISHING GEAR -

The root of the problem is that whales and fishermen are attracted by the same resources. Distribution of whales and zooplankton or bait show high correlations. Seasonal periods of peak human fishing activity correspond to peaks in whale sightings. Such overlapping activity makes some problems virtually unavoidable. Nothing can be done to change this basic fact. Entanglements even among friends living in such close quarters are inevitable.

The manner in which whales collide with gear indicates that they are not attempting to get fish or bait actually caught in the net.

Typically they are caught in parts of the fishing gear that do not hold fish, indicating that they run into the gear accidentally. The whales little-studied sensory capability may be insufficient at least under certain circumstances to detect the net barriers at sufficient distance to avoid them.

This interpretation of whale/fishing gear collisions is supported by differences in the collision rates in different fishing areas. Where ambient noise levels are high because of surf and bottom conditions, more whale collisions occur . Also where visibility in the water is poor, gear damage is greater.

Another possibility is that whale collisions with fishing gear may be due to simple "mistakes". Many whale encounters with fishing gear seem to be a result of this effect. Even though animals are able to detect targets or signals, they often have accidents due to inattention or due to preoccupation with other activities. Many whale encounters with fishing gear seem to be a result of this effect. The mesh size and material of nets which occasionally catch whales are easily detectable by the same animals under optimal conditions. Whales may collide with fishing gear for reasons similar to those which cause us to trip over chairs - carelessness and inattention.

At present we simply do not know why whale/fishing gear collissions should occur. It is certain that such collisions are not in the whales'best interest. Whales, perhaps with assistance, would avoid the nets if possible. The idea that whaling would minimise such collisions by reducing the number of whales does not solve the basic problem.

THE HUMPBACK: ENDANGERED TROUBLEMAKERS.

The humpback whale stock of the North Atlantic has been brought to the edge of extinction in this century. In 1898, commercial whaling became established in Newfoundland and by 1916, the number of humpbacks was reduced to a few dozen animals. Except for the war years, whaling efforts resulted in a more or less steady harvest of other large whales, even though the humpback harvest had dropped considerably. The population during this period increased to harvestable numbers by the late 1940s. However, by 1952, renewed whaling activity had re-decimated the population until only an unharvestable population of 800 animals remained. Since 1970, all stocks of humpback whales have been on the endangered species list, and are under the protection of the International Whaling Commission. At present, in the North Atlantic, only few humpbacks are taken annually by native whalers in the Caribbean and West Greenland. The last census of this population taken in 1972 resulted in an estimate of 1,000 to 1,500 animals. Assuming a steady rate of growth (five per cent), the 1979 North Atlantic stock should consist of a maximum of 1,200 to 2,000 animals. Such a population size is by no means large enough to provide a sustainable yield adequate to warrant commercial whaling.

Federal fisheries and oceans, under the direction of Dr. Keith Hay, has just begun a new whale census program of Northwest Atlantic whale stocks. As a result of this work it is possible that some revisions in the estimates of whale stocks would occur. However, it is unlikely that the stocks of large whales would show dramatic increases.

REASONS FOR INSHORE WHALE INCREASES

One possible explanation is that sightings of increased inshore whale food cycles have driven these animals inshore in pursuit of food. In the summer of 1978 there was a total absence of capelin on the South Coast of Newfoundland; because of the lack of capelin, the codfish catches also declined here and whales were less common. Government scientists and foreign

fishermen were unable to even find the previously well-defined South-east Shoal capelin stock. In the fall of 1978 the capelin fishery conducted by the foreign deepsea trawler fleet on and near the Belle Island Bank had to be discontinued because of the small size of the individual capelin in the catch. It is not the humpback that is depleting the capelin stock. The entire population of humpback whales in North Atlantic take an amount of capelin equal to less than four percent of the commercial catch of capelin in any year. Men and whales compete for the same resource - the capelin. When foreign nations are granted licences to catch capelin in Canada's 200-mile economic zone, they must fish at least 25 miles offshore. Although there is an inshore fishery by Canadians for export to Japan, this has only recently become of any importance and does not take nearly the same magnitude of capelin as the off-shore foreign fleet. The humpback, not subject to government restrictions, simply fishes where the best catches are obtained. Lack of capelin in a traditional fishing area induces whales to look elsewhere for food.

Encouraging inshore feeding by whales for the last three years have been the abundance of local mackerel stocks. Also during this time, squid have been unusually abundant in our inshore waters. The abundance of these species serves to attract whales. Fin whale and Minke whale populations are presumed to be in better condition than the humpbacks and increases in the sightings of these other whales adds credibility to this argument.

Our best estimate for the recent inshore increase in whales is based on bait cycles. Other accounts seem less possible. If the increase in inshore whales is based on bait cycles, then it is reasonable to expect that when abundance of the various bait stocks change the whale/gear collision problem will be somewhat reduced as whales distribute in their more typical pattern throughout the Grand Banks. That such natural changes should, in part, alleviate the problem argues strongly against such irreversible solutions as renewed whaling. But such ups and down in bait cycles will not solve the problem completely. More remains to be done. Research to develop low cost devices which will make fishing gear more easily detectable by whales is necessary. Also some modification of current fishing technology may be required to develop nets which resist whale damage.

The complexity and severity of the problem facing whales and fishermen requires more than simple-minded approaches. A thorough study is needed to evaluate the actual and potential economic losses. Means must be found through scientific research to inexpensively keep whales out of fishing gear without interfering with fish-catching capability. Further research and development is needed to devise methods and equipment for extracting whales from fishing gear in the shortest time possible, by fishermen themselves, so that fishing activity can resume without delay. We are confident that through a simultaneous effort in these appreaches we can minimise the damage that fishermen and whales have been inflicting on each other.

The unignorable increase whale/gear collisions in recent years poses a new threat to the humpback. Fishermen are being asked to individually bear the financial burden of a reasonable conservation policy with which they have so far concurred. However, many of them are finding this situation intolerable and may unilaterally take steps to remedy it. The humpback is protected for the benefit of all of us.. It is not unreasonable to expect that the financing of the protection be shared by all of us. Unless steps are taken to minimise the damage whales cause and to prevent the cost of the damage resting on the fishermen, the humpback faces a pressing threat to its existence.

by
Jon Lien and Bora Merdsoy,
Dept. of Psychology,
Memorial University of New foundland, St. John's, Nfld.

THE WHALE RESEARCH GROUP - MEMORIAL UNIVERSITY, NEWFOUNDLAND -

Last year in Newfoundland, millions of dollars in fishing gear were estimated to have been lost due to whale entanglement

A Whale Research Group, stationed at Memorial University in St. John's has received funding from the Department of Fisheries and Oceans to investigate the problem and come up with workable solutions. The two-year project is focusing on the questions of why whales collide with gear, how it can be prevented and how to untangle whales from fishing gear when they do become entrapped. Working closely with the fishermen, the Memorial team headed by Jon Lien and Bora Merdsoy, have developed several types of alarm devices which when attached to gear may prove successful in deflecting whales.

The following insight into the work involved in this project was submitted by Bora Merdsoy.

HUMPBACK'S PLIGHT -

My alarm clock is screaming furiously to announce the new day. It is 3:00 a.m. and five minutes later I am sitting in the "entrapment" truck which Jon Lien has driven in from his home in Portugal Cove. This one-ton truck is laden with an inflatable boat, motors, gas, diving gear, our special knives, "whale inflator", cutting grapnels, cameras, sound recording equipment and miscellaneous. "Another day, another whale" I remark as I reach for the coffee thermos which Jon has filled at home an hour ago.

After picking up Scott Wilson, our volunteer backup diver, we make it to Trepassey by 5:30. The fisherman are already on board their 55' longliner and help us load it. We cast off for a two hour steam to a site where another humpback, in a seemingly endless series, has inadvertently stumbled into the maze of twine, ropes, anchors and floats called a coldtrap. We find out that the whale picked up the leader of the trap from the shore-end and somehow rolled it around itself until it could no longer reach its built-in snorkel to life-sustaining air. No sign of the whale is apparent from the surface so I don my sea-soaked wet-suit and jump in for a closer look. Twenty feet down, a ball of twine and rotting fish envelops the once magnificent mammal. Closer approach reveals that the whale is at an angle, more or less standing on its tail on the bottom. It is a 36 foot-long male. It is difficult to make out any detail of it behind its death shroud of black twine, though a few bubbles are seen escaping from its mouth. These probably result from the fermentation of its gut contents.

This is the field test for the prototype of the "whale inflator". While normally, a dead whale will float up after a few days, a fresh kill is often heavy enough to remain sunk, so must be blown up with compressed air in order to allow surface crews to work on it. The inflator is a failure in the water.

The syringe-shaped end of half inch steel conduit is not sharp enough to penetrate the skin, especially when a weightless person is trying to push it in. I surface and climb aboard one of the numerous vessels now in the area. An hour and gallons of sweat are spent pulling on ropes and twine, just to bring the whale up high enough that Jon is able to insert the inflator tip into the body cavity. I hook up the 80 foot long airline to a diving tank and crack the valve open. This one last breath brings most of the whale high enough in the water so we can start pulling away the ropes and twine. The real work now starts. We must clear the carcass away without damaging the gear any more than it already is, so we are reluctant to cut anything. Finally, all the gear is worked down towards the flukes and the fluke stock is clear. Our specialised equipment is getting the field test. We find our flensing knife is excellent for chopping through tailstocks. Two hours of steady chopping with all hands taking turns, breaks the bulk of the whale clear of gear. Before the carcass drifts too far, we push it with our Zodiac into an isolated cove and make it fast with lines at dark. This is necessary for two reasons. Keith Hay of Fisheries and Oceans will want to conduct a necropsy to take tissue samples and vital measurements. Also we don't want to "rescue" this whale from someone else's gear. The next day is spent bringing aboard the tail and the rest of the trap for assessment of damage and repairs.

Removing live whales is much simpler, efficient and rewarding.

The recent dramatic increase in inshore sightings of whales and the concurrent increase in inshore fishing effort spells problems for the endangered humpbacks. Fishing has become a lucrative business and there are many new entries into this age-old trade. At the same time, the lack of whalebait* (capelin) on the offshore banks and/or

* In Newfoundland, the term "bait" is synonymous with "food".

the abundance of squid and mackeral inshore has brought fisherman and whales into conflict. We feel it an intolerable loss each time a humpback dies due to gear entanglement. At the same time fisherman are financially burdened with yet another hazard from the sea. If a person's trap is made inoperative because of a whale, that person is losing time from fishing and a few days of time lost at a critical period during the season could mean the difference between sink or swim.

With our project this summer, we are attempting to define the problem biologically and financially and at the same time come up with solutions which will benefit fisherman and whales. Our most promising approach so far has been to provide whale navigation aids for fisherman to install on their gear. These devices will alert potential stumblers of the presence and location of gear. We are trying a number of different devices - all of which have to be inexpensive, effective, and will not scare away fish. We are hoping that the analysis of our data will yield information on which of our devices is most effective and we shall then concentrate on improving this device. Meanwhile, we are obliged to provide fishermen the service of freeing their gear of whales. Our on-the-spot studies in such rescue operations will also give us a substantial data base to better understand the entrapment problem.

Bora Merdsoy.

NEWFOUNDLAND WHALE WATCHERS' PROGRAM -

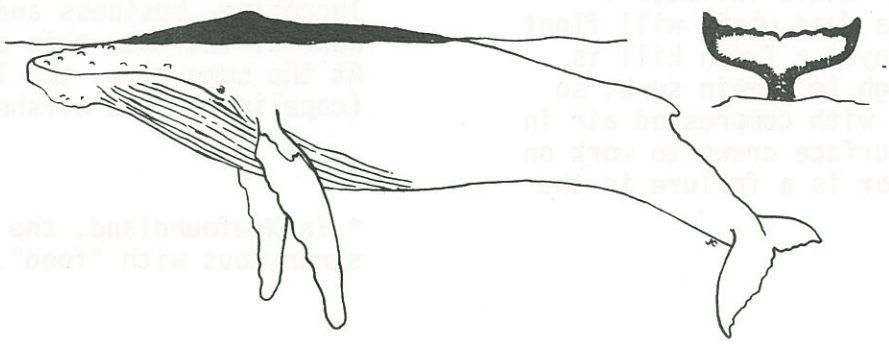
In an effort to obtain information on the stocks of whales and their zoogeography, we have this year instituted a whale watchers' program in Newfoundland. Some one hundred participants will be reporting whale sightings to us. Along with sighting records, those watchers who are equipped with cameras will endeavour to take photographs of the ventral side of the flukes of humpback whales. From these photographs we are able to identify individuals and can get an idea of local migrations. This information will also help us estimate numbers of humpbacks as the data can be treated as "capture-recapture" and be statistically treated to get an idea of numbers.

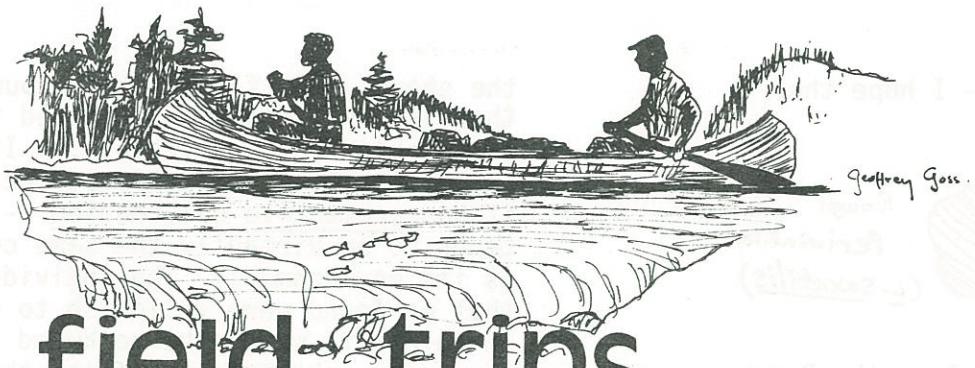
A catalogue of identified humpback individuals has been produced by Steve Katona and Scott Kraus. Most of their photographs are from New England waters.

We are interested in recruiting volunteer whale watchers and/or fluke photographers from Nova Scotia. For further information please write:

Whale Research Group
Psychology Department
Memorial University of Nfld.
St. John's, Newfoundland
A1B 3X9.

HUMPBACK WHALE *(Megaptera novaeangliae)*

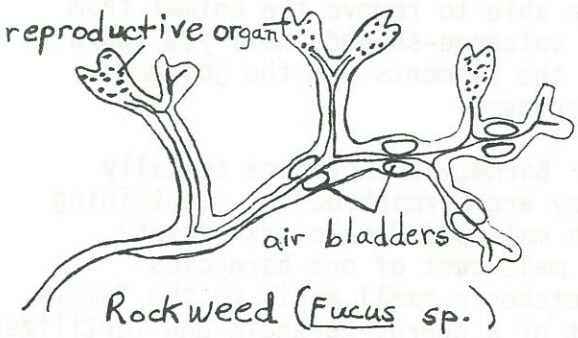




field trips

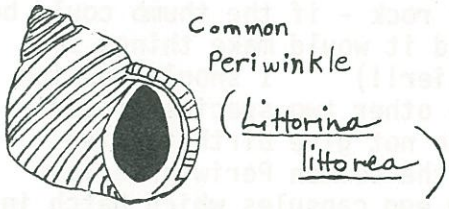
A VISIT TO CRANBERRY COVE - June 24, 1979.

Cranberry Cove is located just before the turnoff to Peggy's Cove on Hammonds Plains side. The purpose of the trip was to acquaint people with the organisms of the rocky shore. After parking beside the rocks we descended a footpath and immediately encountered a number of species of brown seaweed, mainly rockweed or Fucus. A typical piece of brown seaweed was examined and two things were noted: rockweed has air sacs or air bladders to buoy the plant up when the tide returns. On some species they are large and go "pop" when they are stepped on. Secondly, rockweed has reproductive sacs which are typically yellow in colour with numerous little bumps on them. When broken open a jelly-like material was observed inside,



and it is this material which contains the sex products which are released during reproductive periods.

Mention the word "periwinkle" and those who have heard of the word at all will tell you that this is a small snail which can be boiled and eaten (that is, after first removing the shell). Well, our coast contains three species of periwinkle and all were found at Cranberry Cove. All the species were somewhat similar in shape, and sometimes their distributions overlap. They are herbivorous molluscs, which means that they slowly move along the rocks scraping away at the algae coating, as well as actually taking "bites"out of seaweed. They have an extremely tiny tongue or radula which is used to slowly rasp back and forth on the algae like a very small file. This radula is too small to be seen by the unaided eye.



The Common or Edible Periwinkle (Littorina littorea) is perhaps the most noticeable because it can grow to the largest size. They were easy to find on the rocks. Collect enough of them, boil them in water for a minute or two to release the animal from the shell, place the meat in a frying pan along with a little cooking oil and parsley, and you have quite a tasty treat. One of our members

collected a bagful - I hope they were good !

The second species, the Rough Periwinkle (Littorina saxatilis) is smaller than the Common Periwinkle and tends to have a more pronounced spire (point) on the shell. The shell is rough to the touch with numerous parallel lines which spiral around the shell. The amazing thing about this species is that it gives birth to live shelled young, and these were demonstrated to the people present. Sexes are separate in the periwinkles and the female can often be larger than the male. If you take one of the larger shells (a few millimetres high) and break it open carefully, you are likely to find the soft brood pouch inside which can contain hundred of very tiny coiled shells just visible to the unaided eye. I placed a number of these on the tip of my thumb as best I could to show to the members (actually it's very difficult to pass one's thumb around to a group of people while one is standing on a slippery rock - if the thumb could be unscrewed it would make things so much easier!!) I should mention that the other two species of periwinkle do not give birth to live young; the Common Periwinkle lays floating egg capsules which hatch in about one week, and the Smooth Periwinkle lays its eggs in small jellied masses on rockweed.

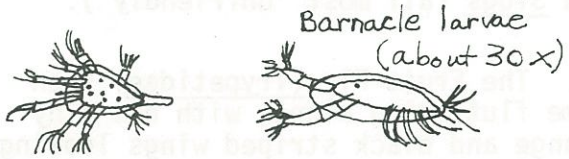
Our third periwinkle, the Smooth Periwinkle (Littorina obtusata) is just what the name implies. It is not as obvious as the other two on the shore, but if one pokes around the various strands of rockweed the periwinkle becomes visible. It is difficult to see at first because it has protective colouration - it tends to be virtaully the same colour as its environment. The individuals that we found were yellowish to green in colour to match the rockweed that they were inhabiting. Of the three species, it has the lowest spire - it almost looks flat-topped.

Barnacles were quite plentiful on the rocks - they look like white miniature volcanoes. They appear to be quite boring creatures. You can stare at one exposed on the rocks for hours and not see it move. But when they are covered by water, you get a whole new perspective on barnacles.

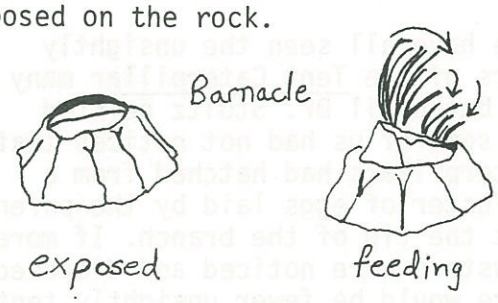
Barnacles are classified with the lobsters, crabs, shrimps, crayfish, amphipods and others in the group known as the arthropods. Certainly a barnacle does not look like a lobster but they all possess the same basic structure. They have a segmented body and the limbs are attached to the body by moveable joints. If you were able to remove the animal from its volcanoe-shaped shell you would see the segments and the jointed appendages.

Barnacles reproduce sexually (they are hermaphrodites, containing both male and female sex organs). The male part of one barnacles stretches a small penis to the female part of a nearby barnacle and fertilizes

the eggs. Larvae develop and are released into the water. The larvae undergo a metamorphosis into another type of larvae which then search for places to anchor. The larvae settle onto the rock upside down (it lands head first) and builds itself a white calcium carbonate (limestone) shell composed of a series of plates resulting in a volcano shape.



To see the barnacles feeding, a number of us had to be quite acrobatic - it involved lying on one's belly on a flat rock and peering into the water, being careful not to slip off the rock or be used as a target by sea gulls. The barnacles cooperated by putting on a fine display of feeding. Their legs, containing very fine hairs, emerge from the shell and quickly sweep water down towards their mouths inside the shell. They strain the water for bits of animal and plant material. When the tide goes out and uncovers a barnacle, two plates, similar to two halves of a sliding door, cover the animal inside its shell to prevent it from drying out. This is why one cannot observe the animal when it is exposed on the rock.



It looks like I am getting carried away in my description, so I will briefly mention the remaining shore fauna that were seen.

Sometimes on pieces of rockweed one can see little tiny white spirals measuring about one millimetre across or less - millimetre across or less - these are the limestone shells of tubeworms (Spirorbis sp.)They use the weaweed as an anchor while they feed on the plankton in the water. The spiral shell has a hole in the end through which the worm protrudes.

A tide pool is a body of water left behind on the rocks when the tide has gone out. Quite a variety of marine life can be seen in them. In one tide pool a number of us were playing" with three to four green crabs (somehow we got the impression that they did not want to be played with!). Sometimes, in the cracks between large boulders we were able to see colourless sea anemones about one cm high. When they were prodded we could see the arms retract into the body and the anemone became a blob. After a period of time they opened again when they thought that the "enemy" was gone.

It was a very enjoyable trip, with one drawback - the presence of quite a number of oil blobs on the rocks. It was disheartening.

Mike Burke.

PARASITISM IN INSECTS WORKSHOP -
Thursday, July 5, 1979
and
ENTOMOLOGICAL FIELD TRIP -
Sunday, July 8, 1979

At our regular meeting on Thursday, July 5, Dr. Donald Stoltz presented a workshop on parasitism in insects, and on Sunday, July 8, followed up by leading an entomological field trip to Mount Uniacke. Both sessions were extremely interesting and introduced us to a world of intricate relationships of which some of us had been unaware.

Dr. Stoltz is studying the role played by certain viruses carried by the Ichneumon Fly in the relationship between host and parasite. He brought to the workshop live specimens of ichneumon wasps and their prey, enabling us to watch the wasp laying its eggs on the host larvae. We examined other larval specimens more closely under a microscope.

On the field trip which followed Dr. Stoltz started by showing us Mountain Ash leaves bearing Sawfly larvae which were serving as host for eggs of the Tachinid Fly. The eggs adhere to the skin of the Sawfly caterpillar and when the eggs hatch the larvae burrow into the caterpillar feeding on and eventually killing it. This process is sometimes aborted by the moulting of the caterpillar before the eggs hatch.

Turning over logs revealed the hiding places of numerous fascinating nocturnal feeders such as the black Ground Beetle (Carabidae) whose larvae prey on other insects and should be classed as "friendly" by the gardener even if it occasionally eats an earthworm by mistake. Among its companions in the dark we found Sowbugs, Millipedes and Slugs (all most "unfriendly").

The Fruit Fly (Trypetidae) then came fluttering along, with his tiny orange and black striped wings looking too attractive to be the cause of those horrid maggots often found at the heart of a luscious apple we have been enjoying. Close after him appeared a dainty little member of the Hemiptera family looking like a tiny pale green shield, and to be classed among the "gardener's friends" unlike some other members of his clan.

We observed some of the interesting ways larvae hide from their enemies and bad weather. Blades of grass neatly folded over and sealed into a pouch revealed a mass of spider eggs. A gall on a shrub twig was shown to be both larder and shelter of a wasp larvae which had induced the twig to produce the gall by injecting a growth hormone.

We have all seen the unsightly shelters of the Tent Caterpillar many times, but until Dr. Stoltz pointed it out some of us had not noticed that the caterpillars had hatched from a tiny cluster of eggs laid by the parent moth at the tip of the branch. If more egg clusters were noticed and disposed of there would be fewer unsightly tents. The Tent Caterpillar is not without its enemies however, and we were shown three kinds of parasites also in the tent feeding on its builders.

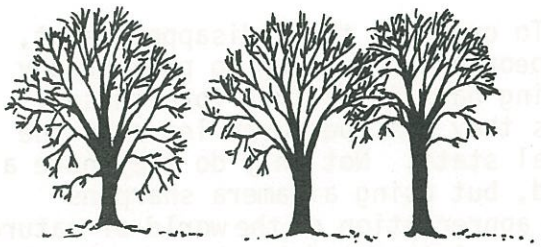
Our next find was the Spittlebug which spends its youth in a mass of froth made of juices extracted from the host plant. When the adult emerges it looks rather like a leafhopper.

We learned to distinguish between lepidopterous larvae which raise the head when disturbed, and fly larvae which raise the rear end. Sawfly favour Mountain Ash and Larch, laying large numbers of eggs on the edges of the leaves, the resulting larvae eating their way to the centre of the leaf ultimately denuding the tree.

The pleasant meadows of Uniacke House proved a rich source of interesting specimens for the plant lovers in the group as well as for the entomologists, and we were all looking so intently at the small flowers and insects that we failed - until after finishing our lunch - to notice that we were seated on the far side of a large sign which read "No Picnicking". However, like all good naturalists, we left nothing behind but our thanks so no harm was done.

Both the indoor and the outdoor sessions of this program on entomology were most interesting and we thank Dr. Stoltz for helping us to see a few more of the intricate strands in the "web of life".

Maud Godfrey.



book review

PHOTOGRAPHY FOR THE JOY OF IT -

Living in Nova Scotia, we as field naturalists are blessed with many opportunities to enjoy the countryside. Large areas of unspoiled land are within short distances of city or town. We have a tremendously interesting coastline. There are river valleys containing rare and interesting wild flowers, still growing undisturbed in their special habitats. In the woods we have mushrooms and lichens. For those who are interested in birds there are many sites suitable for observing them.

In spite of the benefits we receive from our trips into the field we are faced with a great disadvantage. We must leave everything behind us when we return home. If picked, wildflowers soon wilt and if pressed, lose their form and colour. If everyone helped themselves, the rare ones would soon be extirpated. All wild things are the same. Gather them and their beauty is soon gone.

To overcome their disappointment, many people are turning to photography to bring back in picture form those things they must perforce leave in the natural state. Not only do they have a record, but using a camera sharpens their appreciation of the world of nature. For those interested in photography, I would like to draw attention to a book on the subject, the title of which heads this write-up; Photography For The Joy of It by Freeman Patterson.

Written by a master photographer, this book is recommended reading for both the novice and the advanced amateur. The necessary technical information is clearly and simply stated and by following it, one could become quite a successful photographer. I know this writer personally and while I regard him highly for his skill as a photographer, I admire him more for his philosophy and his outlook on the world around him. He has a masters degree in divinity and taught religious studies before becoming a full-time professional photographer. His training shows clearly in the pages of his book.

The 68 illustrations are taken from his own slides and each is accompanied by a brief descriptive text. I'd like to quote two of the most meaningful examples.

" Photographers talk about "creating images, but I'm not certain that anybody ever created anything with a camera. Perhaps it is more accurate to say that God creates, and that some human beings discover. Discovery is not accidental. We discover only when we make ourselves ready to receive. Some photographers seek discovery by mastering the machinery of the craft: cameras, lenses, films, lighting, exposure, and design, are their primary concerns. But I think that photography begins somewhere else."

"It begins with wildflowers, or kids, or sunrises, or motorcycle gangs or gothic cathedrals, or falling in love, or growing old. It begins with the things that matter to you. And it ends, with visual statements that express what matters to you about these things. The cameras and films are merely tools."

If you are interested in bringing back records from your country walks of rare flowers that must never be picked, or birds that would not survice in captivity, study this book and learn a richly rewarding way of life.

The pictures which give Freeman a "kick" may not all be to your particular liking, but they are all excellent photographs. A careful study of them will certainly make you a better photographer, and I hope, a better Field Naturalist!

The book concludes with fifty useful tips on photography. It is available in both hard and soft cover.

PHOTOGRAPHY FOR THE JOY OF IT.

by FREEMAN PATTERSON.

Van Nostrand, Rheinhold Ltd., Toronto, 1977.

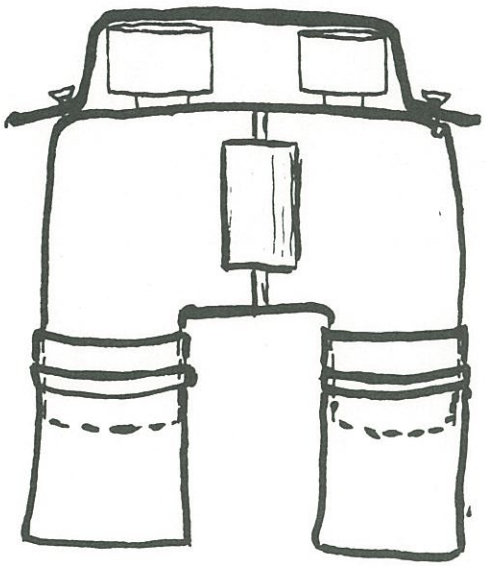
RAINY-DAY BINOCS -

A truly dedicated bird-watcher will watch birds in any weather, and will gladly suffer wind, rain and storm to pursue his favourite hobby. However, those essential companions, his binoculars, may not survive the weather quite so well. Binoculars are useless when their lenses are covered by rain water, and attempts to clean the optics with a Kleenex or shirt-tail never fully succeed and may actually damage the lens surfaces.

I think I have devised a better solution. The basic raw material is rubber from inner tubes (you can salvage this from truck-tire blow-outs along our major highways). Two squares of rubber wrapped around the projecting front lenses and secured with elastic bands, will form admirable lens hoods that keep the lenses dry under most conditions. The rear lenses can be covered by a strap of rubber stretched between the anchor points of the neck straps. I use a section of bicycle inner tube here, but a flat strap should work just as well.

The front lens shades can be left in place permanently, whereas the eyepieces can be covered or uncovered in a second with the rubber strap. Not only does this system keep my binocs dry and useable in foul weather, but it also protects the lenses from dirt, scratches and physical shock.

David Cairns



This is the official newsletter of the Halifax Field Naturalists, published every two months through the courtesy of the Nova Scotia Museum. We welcome articles from members or non-members; reports of field trips, nature notes, book reviews, observations, highlights from other publications, notices, drawings, anything pertaining to natural history

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.

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