

THE HALIFAX FIELD NATURALIST



No. 99
June to August 2000



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HFN

is incorporated under the Nova Scotia Societies Act and holds Registered Charity status with Revenue Canada. Tax-creditable receipts will be issued for individual and corporate gifts. It is an affiliate of the Canadian Nature Federation and an organisational member of the Federation of Nova Scotia Naturalists, the provincial umbrella association for naturalist groups in Nova Scotia.

OBJECTIVES are to encourage a greater appreciation and understanding of Nova Scotia's natural history, both within the membership of HFN and in the public at large. To represent the interests of naturalists by encouraging the conservation of Nova Scotia's natural resources.

MEETINGS are held, except for July and August, on the first Thursday of every month at 7:30 p.m. in the auditorium of the Nova Scotia Museum of Natural History, 1747 Summer Street, Halifax. Meetings are open to the public.

FIELD TRIPS are held at least once a month, and it is appreciated if those travelling in someone else's car share the cost of the gas. All participants in HFN activities are responsible for their own safety. Everyone, member or not, is welcome to take part in field trips.

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MEMBERSHIP is open to anyone interested in the natural history of Nova Scotia. Memberships are available at any meeting of the society, or by writing to: Membership Secretary, Halifax Field Naturalists, c/o NS Museum of Natural History. New memberships starting from 1 September will be valid until the end of the following membership year. The regular membership year is from 1 January to 31 December. Members receive the HFN Newsletter and notices of all meetings, field trips, and special programmes. The fees are as follows:

Individual	\$15.00 per year
Family	\$20.00 per year
Supporting	\$25.00 per year
FNSN (opt.)	\$ 5.00 per year

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HFN NEWS AND ANNOUNCEMENTS

EDITORIAL

From a naturalist's point of view this summer is gorgeous. The weather warmed up slowly, but gave us a slow parade of flowering trees, from red maples through pink and white magnolias to scented lilacs and now to black locusts, laburnum and linden.

Lindens are attracting night-flying moths again, and the big ones are being reported – Cecropia, Polyphemus and Luna – which must mean something is improving! There are no glossy June bugs, probably because of lawn chemicals, and bats are still absent from the nightly assemblages in Halifax West.

We have been overwhelmed with conservation concerns; management plans are being written for local parks, including Hemlock Ravine and Crystal Crescent. The Brown Spruce Longhorn Beetle, which had been living incognito in Point Pleasant Park for at least a decade, was finally noticed and the resulting uproar screens out many equally important events. A coatimundi is living quietly in the Park treetops, avoiding the choice fruits left for it below (perhaps it eats beetles?), and a purple gallinule is eating earthworms at The Oaks. A garden party, complete with loud band, was planned for the gardens at The Oaks, but it rained on the day, the party moved inside, and the gallinule's ears were spared.

As always, clearcutting is a concern; and we should consider the provincial government's disposition of the remaining crown lands carefully, and keep in touch with our representatives. Another form of clear-cutting is the damage done to deep-sea corals; legal protection and a marine reserve are being proposed for them.

We had the splendid Spring Social, at which Professor Nick Hill reminded us of our importance as recorders of the local flora and fauna, and mused on opportunities to publish our observations. We are lucky here: we have the proceedings of the Nova Scotia Institute of Science, and the North-Eastern Naturalist (published in Maine) as possible outlets, and our own journal has some clout as well.

As naturalists we are in a better position than most people to understand the importance of keeping the use of space in focus with the need for raw materials and jobs.

Information on, and addresses and phone numbers of political representatives can be obtained through the blue pages of the phone book. Appropriate officials and professionals can be found in the same way. This is the time to use them!

— Ursula Grigg

CNF AGM

The Canadian Nature Federation and the Natural History Society of Newfoundland and Labrador are holding a joint AGM in 2000. It will be hosted by the Humber Naturalists in Corner Brook, Newfoundland, from July 12-16, 2000. For more information, contact CNF 2000, Humber Natural History Society, 2A 4th Avenue, Pasadena, NF, A0L 1K0 or <hnhs2000@beothuk.swgc.mun.ca>.

These conferences offer talks and field trips led by local experts. The Newfoundland gathering promises to be a wonderful opportunity to see and learn about the natural wonders of this spectacular province in the company of many fellow naturalists. Mark your calendars now!

HERP ATLAS

Herpetological records will be even more important if we continue to have hot dry summers in which wetlands are drained to provide irrigation for crops. Cards and instructions for recording sightings can be found at the Museum of Natural History, Summer St., Halifax. or the Biology Department, Acadia University, Wolfville, N.S., B0P 1X0, 902-585-1313. Ask for the coloured identification sheet; it's very useful for those who cannot remember which frog wears a black mask, or which one snores and which one wheezes!

TWO CONSERVATION NOTES

Jay Meeuwig, who is the President of the local Chapter of CPAWS, tells us to look out for the management plan which is being prepared for Crystal Crescent Beach. He has heard that it includes provisions for the sorts of overdevelopment which would turn the area into a seaside resort, and may make it possible to charge visitors for entry to this Provincial Park. He asks us to read the management plan very carefully when it appears.

Jay Meeuwig also notes that the Government of Newfoundland and Labrador will permit logging of old-growth forests in the valley of the Main River.

For more information, please contact J.W. Meeuwig. Phone, 902 868-2981; e-mail, <jmeeuwig@attcanada.net



NEW AND RETURNING

Laurie Ann
Betty Burre
Linda Cameron
Francos & Barbara Daggett
Christine Anne Smith
Neil & Heather Taylor
Annette L. Vidito

SPECIAL REPORTS

HEMLOCK RAVINE

On Tuesday, 21 June, we released the draft management plan for Hemlock Ravine to the public for review and comment. Unfortunately it is only available on the internet at the moment. The address is:

[<chebucto.ns.ca/Environment/CPAWS/HRPMP>](http://chebucto.ns.ca/Environment/CPAWS/HRPMP)

If you add [</man-plan.htm>](#), you will manage to skip the 2 intro pages. It can also be reached directly from the main HRM page. There were open houses on Wednesday and Thursday the 28 and 29 of June at Grosvenor Wentworth school, from 7-9 p.m., at which Peter and I talked to anyone interested. We will add links to the maps for the management plan as they become available.

If this reaches you too late for the meetings, please try to obtain the management plan, and give us your opinions. We hope to get this to Council by July 11 (their last meeting before the summer).

The tight turn-around is unfortunate, but we're concerned that if it waits until the fall it'll be delayed until after the election; then who knows!

– Collin Stewart



THE ROLE OF NATURALISTS IN ECOLOGY

Our after-dinner speaker for the Spring Social was Professor Nick Hill, from the Department of Biology at Mount Saint Vincent University. Nick did his early post-doctoral work with Paul Keddy, one of the founders of the Halifax Field Naturalists. He has recently served on the Board of Directors of the Nova Scotia Wild Flora Society. His thought-provoking talk was entitled "The Role of Naturalists in Ecology; or, The Secret Life of Plants".

Nick spoke with concern about the rift that has developed between professional biologists/ecologists and amateur naturalists. He began by emphasising that he wanted to talk about naturalists, not environmentalists; environmentalists often take long views of natural processes, but are short on specifics, whereas naturalists, who may seem narrow or short-sighted in that they focus on particular areas, nonetheless know species, special places, and habitats very well, and over a long period of time.

Naturalists usually display a patience and continuity of interest in pursuing their favourite topics over many years; this again is in contrast with professional biologists, who must often move on to other research areas once their thesis is done or paper published. Biologists could benefit from the knowledge which

naturalists gain by observing specific places and individual species over time, and Nick gave a number of interesting examples of the hidden worlds awaiting exploration.

There are many areas of study, particularly related to rare and endangered species, which are not being addressed by the professionals, but where amateur naturalists could make a real contribution. Among the topics requiring long-term attention: viruses in the ocean; kelp forests; mycorrhizal fungi in forest soil; small mammals as vectors of these fungi; animal-plant relationships; effects of clear-cutting on biodiversity; growth rates of herbaceous plants in undisturbed forests; methods of seed dispersal for forest plants; pollinators of forest plants, and whether they are inhibited by pesticides; germination rates under various conditions; and so on.

To take just one of these examples at length: there is real concern that we may be losing plant biodiversity due to clearcutting practices. Clearcutting opens up the forest floor to heat and light, which may bake the seeds of forest plants. We don't know what the long-term viability of these seeds is, or how large the seed bank (the seeds remaining in the soil), may be. Further, many of these plants only germinate in the shade. However, sunlight and warmth are acceptable to many invasive species, such as blackberries, so when true forest plants begin to reappear, they face strong competition from these aggressive species. We don't know how long it takes for native forest plants to restock the forest. If their lateral spread is only, say, 5 yards a year, and the average size of a clearcut is, say, 200 acres, and if the forests are apt to be clearcut every fifty or sixty years, then native plants will never spread back and recolonize the woodland before it is clearcut again.

With the repetition of this cycle the populations and distributions of our native species will inevitably be diminished. But we need accurate observations in these areas before we can make valid recommendations about sustainable forestry practices. Naturalists taking on careful studies in any of these areas would be making a significant contribution. But where would these observations be published? In the past, journals such as *Rhodora*, produced by the New England Botanical Club, and *The Canadian Field-Naturalist*, produced by the Ottawa Field-Naturalists' Club, published articles and notes of observations by amateurs, but they are now so prestigious that it is very difficult for non-academics to be accepted by them.

Perhaps there could be some other avenue. Nick suggested that we need an annual digest of natural history observations in Nova Scotia, but what central body would put it together? The obvious agency is the Museum of Natural History, but it is probably too understaffed to take on such a project. The

Federation of Nova Scotia Naturalists has already provided a marvelous medium for sharing such observations in its electronic listserve, NatureNS, but it has several drawbacks. It is only accessible to those with email, there is no organisation or editorial control, and it does not have a searchable archive.

At this point, HFN members with long memories may recall that Roy John made a similar proposal for an 'Annual Publication of Natural History Events' late in 1993, in newsletter No.73. As conceived by Roy,

this would be "a booklet containing articles on events of importance in our region". It would be produced by the Halifax Field Naturalists, and would include summaries of observations, and status reports, for mammals, birds, herptiles, fish, insects, plants, fossils, etc. Unfortunately, Roy left Halifax before he brought this project into being.

Nick's challenge to us all is to think carefully about what projects we might take on, whether as a club or as individuals, and how we might advance knowledge of natural history in Nova Scotia.

– Patricia L. Chalmers

HFN TALKS

LICHENS: A PARADOX 6 APRIL

Karen Casselman, a noted textile artist, came to the study of lichens through her interests in weaving, and in the use of natural dyes for yarn. In 1980 she published her first book, The Craft of the Dyer: Colour from Plants and Lichens of the Northeast.

While she received expert help in plant identification, her book still contained some errors, and she resolved in future to know more for herself. In the intervening twenty years, she has become a research associate of the N.S. Museum, a skilled lichenologist, and has published and lectured widely. Her interest has expanded to include all of the human uses of lichens, and she has travelled around the world to further her knowledge, and share what she has learned. Her presentation and slides portrayed lichens in the culture of many northern peoples, including the Mi'kmaq, the Saami, the Shetlanders, and the Norse, and also took us to the Faroe Islands, Belgium, Ireland, Sable Island, and even Tasmania.

It is ironic that while lichens have such a long history of use by humans – in medicine, food, cosmetics and pharmaceuticals – they are woefully under-studied and under-recorded. There are fewer books about lichens than about any other area of botany. Most naturalists find them 'difficult', and ignore these fascinating organisms, which are formed by symbiotic relationships between fungi and algae. But there is much we don't know about their distribution and life history, and amateur naturalists could make a real contribution by learning to identify them. For this we need good field guides, and while a major work on all the lichens in North America is nearing completion, we have no popular and accessible work with a regional focus. Karen has long hoped to produce a field guide to the lichens of Nova Scotia, but needs support to publish it.

Throughout her talk, Karen made graceful references to the many people who have assisted her researches: archaeologists, botanists, cemetery restorers, librarians, Saami women, translators, and people in the heritage and cultural tourism fields. Like her favourite plants, she, too, thrives due to mutually beneficial relationships.

– Pat Chalmers

WOLF RESEARCH 4 MAY

Jenny Ryan, who has been with the Shubenacadie pack of wolves since they first took up residence in their forested range near the Wildlife Park, reminisced about the twenty years or so that she had spent working with them.

The pack was brought from Dalhousie University to be observed in as natural surroundings as could be managed. Normal pack structure was soon established, and the wolves bred. An old traditional alliance was formed when local ravens joined them.

The range was big enough for the pack to behave naturally; most parts were out of human sight, but a sunny knoll about 100 metres from the fence allowed them to be watched and was a popular playground. Wolves were not handled or visited by researchers, and most observations were made using a trailer as a hide.

The pack could not hunt, but were fed unromantically on dog food, and sometimes on road-killed deer. Sometimes the wolves hid from researchers, and sometimes researchers hid from wolves. This was particularly true when litters were born, when both parties spent time buried in dens, the humans with cameras and recording gear.

A great deal of good research resulted from the enclosure of this pack. Interactions between individuals and the social structure of the community could be followed throughout the year. Studies of pup development, especially of vocalisations, covered a lot of new ground; apparently pups have a pattern of calls from the start, and 'converse' with their mother and packmates in much the same way as human babies develop speech patterns. Jenny remembered for us the many students who had completed original research there.

Another revelation was the amount of time wolves spent playing, especially when there were young ones around. Males put up with pestering cubs, and were also willing to feed them by disgorging their own meals. At other times, play was directed towards maintaining or improving status in the pack; there was a strict hierarchy, though neighbours were treated tolerantly. One exception occurred when an

attempt was made to add a lone young adult from elsewhere, which had no other chance of joining a pack and leading a natural life. The arrangement did not succeed and the second time the stranger was left in the pen overnight, it was killed.

Jenny's talk was illustrated with slides, both from research sequences, and as snapshots of wolves just being natural. Asked whether the association with ravens was beneficial to the wolves, Jenny said

nobody really knew, but the birds feed on scraps from wolves' kill, and may indicate to the pack where other carcasses are.

The wolves are past breeding now, and only two or three are left. They will stay together as a pack, though possibly not here. Jenny has much to remember.

– Ursula Grigg



FIELD TRIPS

SPRING FLOWERS

DATE: Saturday, April 22

PLACE: Smileys Provincial Park

WEATHER: 6°C; cold and damp!

INTERPRETER: Carl Munden

PARTICIPANTS: 30

I joined the Halifax Field Naturalists field trip for early plants in Smileys Provincial Park, led by Carl Munden. There was a good turnout of 30 people. From the park gate, Carl walked us around in the park, mostly along the Meander River. We observed Toothwort with flower buds not yet open; tiny but abundant plants of Whitlow Grass (*Draba verna*) in bloom; both sexes of Red Maple in flower; a small bed of non-native (planted) Lungwort or 'William & Mary' in bloom; and Willows with open catkins and more Willow Pine-Cone Galls than I've ever seen, a real epidemic. These are caused by harmless gall midges (small flies). Bloodroot plants were not showy because the flowers were not open, thanks to lack of 'promised' sun. It was the same for Coltsfoot, but both species opened up nicely later in the day, perhaps in response to a short sunny break in late morning and/or gradual warming of temperature

The day never really got warm, except for that sunny break. Small Elm trees (American elm?) were also in bloom. The Ironwood or Hop-hornbeam catkins were not yet open. In a spot by the picnic area Carl showed us emerging leaves of Nodding Trillium, Yellow Violets, and Blue Cohosh. Also in the picnic area he showed us two tall stalks from last year's Canada Lilies. Other leaves seen included Garden Columbine, an undetermined species of 'obnoxious' Rose, Water Avens, Buttercups, and Mullein, etc. We noted the difference between the Sensitive and the Ostrich Ferns and found a few very of the stubby bright green edible Fiddleheads emerging. Along the river Clarence Stevens found a few fossils (Brachiopods & Crinoid stems) in some limestone slabs.

After lunch, Carl took Clarence and I about four km downstream from the Park to 'The Hole', a great spot for intervale plants and also Bloodroot, Bellwort, Yellow Violets, and Canada Lily. Oodles of nodding Trilliums showed features of hybridisation with Purple or Red Trilliums, and Carl showed us the spot on the

bottom of the hillside where he found a group of pure Red Trillium plants. Close to the river were a plethora of telltale fruiting stalks from last year's Ostrich Ferns. Across the river from us on the open floodplain were impressive carpets of open Bloodroot flowers, very obvious on the forest floor with very little 'greening' having occurred yet. Two ducks flushed from the riverbank, one of them very vocal, and I'm pretty certain they 'had to be' Wood Ducks.

Finally, on our way to Windsor along a gated woods road just off Wentworth Road, Carl showed us a nice, flowering Daphne bush and reminded us that all parts of the plant are deadly poisonous!

–Jim Wolford

Wildflower Plants

Sensitive Fern

Ostrich Fern

Bellwort

Canada Lily

Nodding Trillium

Purple Trillium

Willow

Ironwood

Elm

Buttercups

Garden Columbine

Blue Cohosh

Bloodroot

Whitlow Grass

Toothwort

Water Avens

Rose

Red Maple

Yellow Violet

Daphne

Lungwort

Mullein

Coltsfoot

Onoclea sensibilis

Matteucia struthiopteris

Uvularia sessilifolia

Lilium canadense

Trillium cernuum

T. erectum

Salix spp.

Ostrya virginiana

Ulmus americana?

Ranunculus sp.

Aquilegia vulgaris

Caulophyllum thalictroides

Sanguinaria canadensis

Draba verna

Dentaria diphylla

Geum rivale

Rosa sp.

Acer rubrum

Viola pubescens

Daphne mezereum

Pulmonaria officinalis

Verbascum thapsus

Tussilago farfara

Wildflower Birds

Wood Duck

Aix sponsa



UNIACKE ESTATE LICHENS

DATE: Sunday, April 30

PLACE: Uniacke Estate Park

WEATHER: Light rain/showers early a.m.

INTERPRETER: Karen Leigh-Casselmann

PARTICIPANTS: 43

Fortythree 'want-a-be' and experienced lichenologists trekked along the Old Post Road on Uniacke Estate following Karen Leigh-Casselmann this sunless Sunday morning. Many among us had enjoyed Karen's report on lichens at the Halifax Field Naturalists April meeting, and wanted to experience her vast knowledge in the field. She has been interested in lichens for about 15 years, and is currently very busy making revisions to her thesis on this subject. Karen also uses the lichens to dye wool beautiful colours. Information on this subject may be found in her books Craft of the Dyer, and Lichen Dyes: A Source Book.

Lichens are not moss and are not a plant. They have no leaves, roots, flowers, or stems. They can be found at any altitude from sea level to the highest mountains. Lichens are a symbiotic association between two quite different organisms: algae and a fungus. The algae and the fungus live together for the good of them both. The algae provide carbohydrates, i.e. food and vitamins to the fungus; and the fungus collects the water and provides protection. These two parts together form the thallus. Under sunny conditions they can lose water and become dry and crisp ;in less than an hour. When this thallus is dry, the plant goes into a state like hibernation; as the water content falls, photosynthesis ceases and respiration then stops. During this condition great extremes of heat and cold can be endured without killing off the lichen. It remains inactive until remoistened or the rains return and the thallus gets wet, then it can quickly absorb up to about 35 times its own weight in water.

The whole lichen grows at a rate ranging from one millimetre or less per year for crust (crustose) lichens up to a few centimetres a year for the most rapidly growing leafy (foliose) or shrubby (fruticose or pendant) lichens. Sometimes lichens are confused with moss because they look a lot like it. Reindeer moss (*Cladonia*), which gets its name from the reindeer using it for food, is actually a lichen, not a moss.

Some people believe that lichens growing on the trees means that the trees are very old and dying; this is not so. The lichens have just chosen this area to be in because the air must be free of pollutants and the surrounding environment must be suitable with the correct amount of shade and adequate moisture to sustain life. Unlike mosses, lichens do not take anything from the tree or whatever they attach themselves to, they have no roots, and therefore do not absorb moisture or food from their hosts. Lichens have tiny hairs, called rhizines, which they use to attach themselves to the tree or stone.

These rhizines occur on the

underside of many foliose lichens and appear as a dense, black to light brown thin cord. Many cemetery headstones are covered in lichens. Lichens can absorb the minerals from the stone that are dissolved by rain but they do not harm the stones. If you really needed to remove the lichens from the stone you would only have to cover the stone with a plastic bag for a period of time. The lichens will then die and can be brushed off. Lichens are often used as an indicator to determine if the air is pure. Likewise, they have been analyzed in polluted areas and provide important information as to the amount and type of pollutants. Lichens have been used in areas of nuclear accidents to determine the extent of the contamination. The elements absorbed from rainwater and air become concentrated in the thallus, with no means of excreting them. Studies had been conducted on sulphur dioxide levels around cities in Wales and England and it was found that the higher the levels of sulphur dioxide the lower the presence of lichens. Another study examined levels along bus routes and determined that the more buses that used the route the less lichen grew there.

Lichens have been known to be of use in many other ways over the years. Making bread, insulation in buildings, and insulation between the inner and outer boot, diapers, Henna (hair dye), expensive perfumes, antibiotics and home remedies are other uses. Reindeer moss is used in the spring for a tonic in many Scandinavian countries. We cannot forget to mention many peoples' favorite, 'Old man's beard' (*Usnea barbata*) which is also a favorite of many birds for nest building.

However, it is important to note that many people have a reaction to handling the lichens. Some people are extremely sensitive and their hands break out after handling them. Therefore, ingesting them should be done with extreme caution, although they are not complex as are mushrooms and tend not to be poisonous, a person could have a severe reaction.

Lichens are very much understudied. Karen believes that we should first learn the genus name and not worry about the species. If we can identify that one is a *Cladonia*, for example, that is enough to start. Most lichen do not have a common name, but are known only by Latin names. It used to be believed that plants that resembled something were a cure for that certain organ. The Latin names often remind us of this belief. We use as an example *Lobaria pulmonaria*, which looks like our lung tissue when it is turned over. It is known to have been used as a cure for what ails the lungs. Also, *Peltigera canina*, was known as dog lichen because it was used on dog ailments.

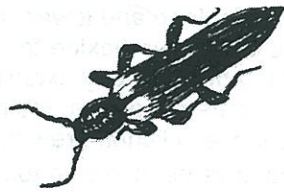
I found real beauty in the patterns made by a small liverwort on the trees. This is a fine reddish thread-like patterned growth, which I found on several birch trees in this Park.

Many thanks to Karen for a very interesting trip, and to Marion Sensen and to Dr. Wolfgang Maass who helped to answer questions.

– Elizabeth Keizer

Lichens Species

Cladina rangiferina
Cladonia coniocraea
Cladonia verticillata
Hypogymnia physodes (has lips)
Hypogymnia tubulosa (has tubes)
Leptogium spp.
Lobaria pulmonaria (resembles lung tissue)
Lobaria scrobiculata
Parmelia squarrosa (has furry rhizines)
Parmelia sulcata (common on trees in museum yard)
Platismatia glauca (corsage lichen)
Tuckermanopsis ciliaris (look at lobe edges under lens)
Usnea spp.
Usnea strigosa (flying saucers)
Collema sp.
Graphis soupta
Lobaria quircizans
Ochrolichia spp.
Pyrenula nitidula
Liverwort



INTERTDAL MUD TRIP

DATE: 21 May

PLACE: Kingsport Wharf and Grand Pre Beach

WEATHER: sunny and warm, a perfect day for it

INTERPRETER: Jim Wolford

PARTICIPANTS: about 40, including a reporter from the Kentville Advertiser

This trip was requested by the Halifax Field naturalists and offered to the Blomidon Naturalists as well. We had an extremely mediocre low tide. There were several enthusiastic youngsters, good at finding things, and one found us a very dead small skate (ray) at lunchtime.

I passed out several sheets of information first: Sherman Williams's ingenious monthly summary of the tide-times and amplitudes for the Minas Basin (see his website for updates); a list of common intertidal critters and seaweeds; and a recent article by Sherman Bleakeney about his visit to an Alien Landscape, namely the Kingsport lowest intertidal zone, during an extremely low, low tide (the opposite of our tide today), almost exactly one year ago.

At the Kingsport Wharf parking lot is a small dune with Marram Grass (*Ammophila*). To the north are impressive but rapidly eroding sandstone cliffs extending to Longspell Point and beyond to Blomidon.

The protected side of the wharf has a small saltmarsh, through which we walked to get to the mud

of the receding tide. There were zillions of Mud Snails (*Nassarius*), which are omnivorous scavengers and also eat the microscopic mud algae called diatoms. The snail abundance is a testimony to the incredible productivity of this ecosystem – much of the production is exported via the giant tides as far as who knows where? Certainly to the Fundy whales and further.

Also there on the mud surface were wall-to-wall tiny piles (castings) of indigestible materials from the tubes of buried polychaetes worms, the marine equivalent of earthworms. Later I dug some of these up with my shovel - *Heteromastus*, with no common name (like most intertidal critters), are very skinny and fragile segmented worms that we could see in the cracks of the dug mud. Other worms seen included the larger pink bloodworms or baitworms (*Glycera*), which are commercially dug and exported for fish bait to as far away as the Carolinas; large white flat slimy nemertine worms (*Cerebratulus*); and bamboo worms (*Clymenella*) in tubes of sand.

In the middle intertidal zone east of the wharf were some tall poles, which had been used in the spring to support a gill net for estuarine fishes (gaspereaux, flounders, skates, etc.).

On the upper intertidal sand were lots of serpentine tracks made by a whitish, flat, marine sowbug (*Chiridotea*), an isopod crustacean like a sowbug on land. Crawling on the wet surface of mud, not sand, were the famous mud shrimps (*Corophium*) – the well studied main prey for the hordes of Semipalmated Sandpipers in July-September. I showed *Corophium*'s U-shaped burrows with the shovel.

We found numerous shells of various snails and clams, and later dug up some very small soft-shelled clams (*Mya*) in the upper intertidal zone. Other shells, some with living molluscs in them, included slipper shells (*Crepidula*); periwinkles (*Littorina*); dogwinkles (*Thais*) - I showed a mussel shell with a dogwinkle's small hole drilled through it; basket shells, (another *Nassarius* species); moon snails (*Lunatia*) - and I showed a clam shell with the bevelled large hole of one of these predators; razor shells (*Ensis*); pandora (*Pandora*); surf clam (*Spisula*); false angel-wing (*Petricola*) – these burrow in soft sandstone or firm clay.

Apparent carcasses of rock crabs turned out to be mostly cast-off skins or exoskeletons shed during the moulting process – a healthy sign of growing crabs.

In shallow tide pools we saw lots of small hermit crabs (*Pagurus*) in their snail shell homes (usually basket shells); many mostly small sand shrimps (*Crangon*); swimming and crawling amphipod crustaceans (gammarids); tadpole-like hooded shrimps (cumaceans); tiny coils of sediment, castings from the feeding of more polychaete worms below the surface; and an eel-like rock gunnel, common under intertidal rocks.

There were lots of blue mussels (*Mytilus*) on a large flat outcrop of sandstone well north of the wharf, and

oodles of barnacles (*Balanus*) with and on them. How many readers know that barnacles are crustaceans, i.e., that each is a shrimp-like critter standing on its head in the shell and opening up to flick out hairy legs for filter-feeding during high tide? They are very tough, being exposed by the low tides for several hours, twice a day, all year long!

Seaweeds seen included rock-weeds (*Ascophyllum*, *Fucus*); sea-lettuce (*Ulva*, *Enteromorpha*); laver or nori (*Porphyra*); and others washed in from subtidal waters, e.g., dulse (*Rhodymenia* or *Palmaria*).

I tried to show some plant-like colonies of a hydroid, *Obelia* (newer name *Laomedea*) hanging under some large sandstone formations, but they were extremely uncommon this year for some reason. Hydrazoans are cousins of jellyfish and sea anemones – they have stinging cells for catching small animals in the water and for defence – look them up in a seashore field guide or introductory zoology textbook. On a good low tide we would have seen uncountable feathery colonies on the mud and rocks.

After the trip, one participant wandered north on to Longspell Point and found a big nest of sticks, containing large nestlings, at the base of the sandstone cliff. I checked this a week later and it was a very picturesque raven's nest, set into a recess in the rock, sculptured by water over hundreds or thousands of years.

The field trip plan included a very rapid drive then to Grand Pré, with the hope of walking to some 4000-year-old fossil stumps of trees of an old forest – but they were flooded. Those who still have a 1999 BNS calendar can see a picture of Sherman Bleakeney standing next to one of these barnacle-covered stumps. We still had a good time on the shore at north-east Grand Pré, alias The Guzzle, and were rewarded by viewing Black Swallowtail butterflies along the dyke, and a few Semi-palmated Plovers and Least Sandpipers on the flats. On any low tide it's an easy walk toward the seaward point of Boot Island to find a few of the many old stumps.

I love to show off the mud, and its creatures without common names. Perhaps we can look ahead next year and pick a big low tide in order to see Bleakeney's Alien Landscape of wall-to-wall living razor clams, cruising moon snail predators, lots of sponges, etc. I'll also offer a slide show on Yummy Muds any time!

– Jim Wolford

FNSN AGM BIRDING

DATE: Sunday, 4 June

PLACE: Port Williams

WEATHER: Sunny and warm

INTERPRETER: Harold Forsyth

PARTICIPANTS: 30+

Sunday morning of the FNSN AGM 2000 dawned bright and clear for our bird-watching stint along a railway track near Port Williams. We hiked off, down the railway tracks lined with Horsetail, Chokecherry, and Eastern Red Oak. We stopped to spot a Yellow Warbler, and heard a Veery's melodious call.

Leaving the tracks, we veered off into richer territory and saw Wild Lily-of-the-Valley, beautiful small clumps of purple violets, and heard a Chestnut-sided Warbler and a Pheasant's rusty call. Harry showed us a very large (at least 15-feet deep!) old Eagle's nest in an immense White Pine on the edge of a well-established stand of Pines and Spruces. We stayed for awhile to watch the well-developed young Bald Eagle waiting for a parent to bring it some food.

A dog greeted us at this field with territorial barking, but sensed we were up to no real harm. We heard a common Yellowthroat as we entered the wood and saw Purple Hawkweed, Clintonia, English Hawthorn, and Japanese Barberry (reflecting the proximity of landscaped grounds). This wood led us to the farm-machinery dump at the back of an apple orchard. From there Harry took us into a deep stand of spruce with an open needle-littered floor where we came upon a lone plant of the squash family and a low-growing juniper! In the distance crows were noisily mobbing something they didn't like, and we heard a Pheasant again. Next, through a stand of immense, 300-year-old healthy White Pines and over a carpet of Sarsaparilla and Partridgeberry; past a Pheasant-kill; across the tracks again and into a Beech wood; we we heard an Eastern Wood-Peewee, an Ovenbird, and saw and heard a Red-eyed Vireo. Also heard were a Black-throated Green Warbler, a Thrush, frogs, another Veery, and a Blue Jay.

As we returned to our B&B, a magnificent Rough-legged Hawk was circling lazily over the green of the river flats in the bright morning sun.

– Stephanie Robertson



Birds

Rough-legged Hawk	Buteo lagopus
Bald Eagle	Haliaeetus leucocephalus
Ring-necked Pheasant	Phasianus colchicus
Eastern Wood-Peewee	Contopus virens
Blue Jay	Cyanocitta cristata
American Crow	Corvus brachyrhynchos
Thrush	Turdus sp.
Veery	Catharus fuscescens
Red-eyed Vireo	Vireo olivaceus
Yellow Warbler	Dendroica petechia
Black-throated Green Warbler	D. virens
Common Yellow-throated Warbler	D. dominica
Chestnut-sided Warbler	D. pensylvanica
Ovenbird	Seirus aurocapillus

Plants

Horsetail	<i>Equisetum</i> sp.
Spruce	<i>Picea</i> sp.
White Pine	<i>Pinus strobus</i>
Juniper	<i>Juniperus communis</i>
Japanese Barberry	<i>Berberis thunbergii</i>
American Beech	<i>Fagus grandifolia</i>
Red Oak	<i>Quercus rubra</i>
Violets	<i>Viola</i> sp.
Chokecherry	<i>Prunus virginiana</i>
English Hawthorn	<i>Crataegus monogyna</i>
Sarsaparilla	<i>Aralia nudicaulis?</i>
Partridgeberry	<i>Mitchella repens</i>
Purple Hawkweed	<i>Hieracium</i> sp.?
Clintonia	<i>Clintonia borealis</i>
Wild Lily-of-the-Valley	<i>Maianthemum canadense</i>



BLOMIDON PROVINCIAL PARK

DATE: Saturday, 3 June

PLACE: Blomidon Provincial Park

WEATHER: Sunny and warm

INTERPRETER: Jim Wolford

PARTICIPANTS: 28

By the time of this afternoon trip, the very cold morning damp weather had changed to bright and welcome sun. Jim led our convoy along the North Mountain Ridge to the Blomidon Park. It hadn't yet officially opened for the season, but we and a large group of Scouts, who were already there, had obtained special permission to go and 'do our thing'!

We parked on a wide and windy grassy sward, choked with the lovely little white flowers of Wild Strawberry overlooking Blomidon Bay, and commenced down the Joudrey Trail.

Our first sighting was a few Trilliums, one in deep red-purple flower; also, Ostrich Fern, Baneberry, and Sarsaparilla. Further on we passed several well-established patches of Wild Leeks; then a Hobblebush and Starflowers along the shade-dappled path. The two children with us found a few slugs, and we saw both the Beech Fern and the Christmas Fern. Rattlesnake Root, Clintonia, and False Solomon Seal were lining the trail, while several of us were

beginning to struggle with the mosquitoes and blackflies now that we were away from the windy parking field.

Goldenrod, Twisted Stalk, and Toothwort led us to our first bird calling – an Ovenbird. Hay-scented Fern and Wild Solomon Seal accompanied the trilling of a Black-throated Green Warbler and a Black and White Warbler as well. American Beech, Striped Maple, Hazlenut, and a young Dogwood, were the bush and tree cover; while Bunchberry, Oxalis, Rosy Twisted Stalk again, Dewberry, and False Lily-of-the-Valley were dotted along the sides. We saw immense wasp-galls (or possibly viral, fungal, and/or bacteria-caused growths) on Maple. bA eautiful lichen, *Lobaria pulmonaria*, was seen as well. One of the youngsters discovered an old piece of branch covered with the distinctive, almost neon blue-green of the Cup Fungus.

Small stands of Sensitive Fern, Royal Ferns, and Sedges led us to the edge of the famous Fairy Shrimp pond. This pond completely dries up in high summer, and becomes a dense stand of Royal Fern.

Here, Jim net-swept a good sampling of the water for us to examine in an enamelled tray. The fascinating Fairy Shrimp, with their constantly undulating bright orange legs (where their gills are), greeny-yellow bodies, and bright black eyes, are very colourful and interesting characters who swim on their backs; these creatures are related to the 'Sea Monkeys' seen advertised in magazines, and are resistant to both freezing and drying. We had tadples of Wood Frogs, and also the very tiny ones of Spring Peepers. A baby Yellow-spotted Salamander with rapidly fanning tiny gills had been caught; also a water flea, a flatworm, a red water mite, a beetle larva, and a damsel fly larva.

The blackflies and mosquitoes were attacking in hordes now, and repellent was shared all around. There were very many large, green-algae-hued gelatinous egg clusters in the pond, and Jim gathered one for us to view the tiny Yellow-spotted Salamander growing in each egg! Water striders were seen as well, as we began to make our way up the trail to a small look-off point.

A Red Elderberry, a White Aster, a Currant, and a young Mountain Ash were spotted while we listened to the songs of both the Blue-headed (Solitary) and Red-eyed Vireos; the latter was seen up in the foliage as well. Also seen and heard was the tireless persistence of a male Purple Finch.



After we left the Park, Jim took us to view a beautiful waterfall with balsalt-like rock formations, where we heard the peaceful cooing of a Mourning Dove in the shady ravine. We also spotted a Black-throated Green Warbler on a power line here, with its greenish-grey back and its bright yellow head with the characteristic black throat and chin. The convoy continued to the roadside Blomidon look-off where I heard my first bubbling Veery song, and that springtime favourite _ the Song Sparrow, echoing up from the far-away green fields and hillside trees below.

Just past Canning Jim took us to a rather new Bald Eagle's nest where we had a long and excellent view through his viewing scope of an adult and its fairly well-developed offspring sharing an unseen kill in their eyrie. We had passed a small dyked pond on the way with a swimming Muskrat; they love to take up residence in the rich corn fields, and all the small ponds and sluiceways in this rich agricultural area make excellent habitat for them.

Blomidon Ferns

Hay-scented Fern	<i>Dennstaedtia punctilobula</i>
Northern Beech Fern	<i>Phegopteris connectilis</i>
Ostrich Fern	<i>Matteucia struthiopteris</i>
Christmas Fern	<i>Polystichum acrostichoides</i>

Blomidon Flowering Plants

Baneberry	<i>Actaea</i> sp.
American Beech	<i>Fagus grandifolia</i>
Beaked Hazelnut	<i>Corylus cornuta</i>
Toothwort	<i>Cardamine diphylla</i>
Starflower	<i>Trientalis borealis</i>
Wild Currant	<i>Ribes</i> sp.
Dewberry	<i>Ribes hispidus</i>
Wild Strawberry	<i>Fragaria virginiana</i>
Mountain Ash	<i>Sorbus</i> sp.
Dogwood	<i>Cornus</i> sp.
Bunchberry	<i>C. canadensis</i>
Maple	<i>Acer</i> sp.
Striped Maple	<i>A. pensylvanicum</i>
Wood Sorrel	<i>Oxalis</i> sp.
Sarsaparilla	<i>Aralia nudicaulis?</i>
Hobblebush	<i>Viburnum alnifolium</i>
Red Elderberry	<i>Sambucus racemosa</i>
Goldenrod	<i>Solidago</i> sp.
Tall White Aster	<i>Aster umbellatus</i>
Rattlesnake Root	<i>Prenanthes racemosa</i>
SedgeFamily	Cyperaceae
Wild Leek	<i>Allium tricoccum</i>
Clintonia	<i>Clintonia borealis</i>
False Solomon's Seal	<i>Smilacina racemosa</i>
Wild Lily-of-the-Valley	<i>Maianthemum canadense</i>
Purple Trillium	<i>Trillium erectum</i>
Rosy twisted-stalk	<i>Streptopus roseus</i>

FIRST ANNUAL SPRING SOCIAL, UNIACKE MUSEUM PARK SUN., 7 MAY

Halifax Field Naturalists' First Spring Social was masterminded by Marie Moverley, and it was a blast. The cold wet windy weather, and some cold wet feet, didn't matter. Some 50 people signed up for the party, and most of them came for a nature walk – a choice of two – the Red Spruce Trail with Patricia Chalmers, or the Wetlands Trail with Peter Payzant.

There was only a hint of spring, a few fern croziers pushing up, some late Mayflowers, and swelling buds on trees and bushes. We heard a Ruby-crowned Kinglet, but all other other birds were sensibly under cover. Some of us went on towards a knoll with big Red Spruces, but the road came to an end, and nobody knew the way, so we waded back down the path, which had become a stream from the last two rainy days. We did not discover what had become of the Wetlands Trail party, until we all met at St. Paul's Parish Hall.

Peter and Linda Payzant had made up a couple of contests for us to solve; one was a natural history quiz, and the other a general knowledge test asking us to identify surprising ingredients in common products. The answers were illustrated by an elegant array of stuffed furs and feathers, weeds in pots, and of course the products containing mystery ingredients.

We gathered at the tables for roast beef dinners, or very adequate vegetarian entrées. Listening to Nick Hill speak in praise of naturalists and their importance to all aspects of ecology, we felt replete and justified.

Prizes won at the Spring Social

Mystery Ingredients prize– a compass, won by Sue Thomas;

Natural History prize– a small portable microscope, won by Susan Lilley;

Door Prize – a hand-powered flashlight, won by Phyllis Hall.

Many thanks to Marie and all of her helpers for organising the first of what we plan to be an annual event!

– Ursula Grigg



NATURAL HISTORY

KING PHILIP CAME OVER ...

FROM GENEVA, SWITZERLAND: Kingdom, Phylum (plural, Phyla), Class, Order, Family, Genus (plural, Genera), Species! This is the mnemonic students learn to remind them of the hierarchies of living organisms.

Until somebody invented a universal system for naming animals and plants, it was very difficult to discuss them and be sure that everyone was talking about the same thing. (That yellow brush-like flower that blooms early? Dandelion? Pissenlit? Coltsfoot?)

There were several attempts at a simple system, but all failed until Carolus Linnaeus (1707-1778) started on the plants of his native Sweden and neighbouring Lapland. He referred to each kind as a species, and gave it a two-word name, of which the last referred to some feature or attribute (such as *officinalis*, -e, meaning useful; Linnaeus did not overlook garden vegetables), and the first name was usually shared with other plants that looked similar, based on the form of the reproductive organs, primarily the stamens. The form of the name was Latin, though the root words might be Greek. The first time he used each name, Linnaeus wrote a short description of the species in Latin, and pressed a specimen.

One of the first names he translated was his own, for he was born Carl Linné. But Latin was the international language of educated people, and by using it for species names, Linnaeus made the information available to the whole educated world of his time. The Linnean system has developed since then, but we haven't changed much. The basic unit is still the species, based on a breeding population of similar organisms. Each species has a Latin name (or binomial) which always comprises a capitalised genus name and a trivial or species name. The author's surname often follows this in print, and in some disciplines the year of publication follows that. So we have *Taraxacum officinale* Andr., the useful dandelion, not to be confused with *Taraxacum erythrospermum* Weber, the red-seeded dandelion. This genus is so wide-spread that I have never understood how anyone but Linnaeus could have named it! Each species is supported by a written description, no longer always in Latin, and one or more specimens are deposited in a designated Museum, to be the standard with which specimens from other places are compared.

Linnaeus's lifetime spanned years of exploration, colonial expansion, and scientific advance; Halifax was founded in his lifetime. Travellers sent collections back to their home countries, and to Linnaeus in Sweden. He had extended his binomial system to animals and minerals by then and was ready for the task. Thus many North American flora and fauna bear the initial L., indicating that Linnaeus named

them. He is the only person for whom a single letter serves to identify his work worldwide.

Linnaeus's work made possible Darwin's 'Theory of Evolution', which appeared in 1859 (Darwin's dates were 1809-1882, and he sailed with the Beagle and made and described his collections from 1831-1836).

Once the groundwork was done, the classification of living organisms proceeded fast, and the higher taxa (each hierarchical group can be called a taxon) were assembled. Several similar Genera can be grouped to form a Family; several Families form an Order, several Orders form a Class, several Classes form a Phylum, and several Phyla form a Kingdom. Investigation of these relationships is the science of systematics, practised by systematists. The people who tackle the job from the other end, taking unknown specimens and identifying them from Kingdom to Species, are taxonomists, practising taxonomy!

Systematics is a human concept; organisms flout the neat divisions we propose. Some taxa contain very few species, and a whole taxon may be virtually omitted, while other taxa contain bewilderingly many! In the latter case, it is usual to divide the taxon; for example, the Flora of Nova Scotia records that the Family Asteraceae (which used to be Compositae) contains more than 15,000 species, so has been divided into 10 tribes - one of which includes dandelions.

There are species with more than one form, and these may be given subspecies names. An example is the local garter snake, known as *Thamnophis sirtalis sirtalis*. Most naturalists, and this publication, use the species as their unit and leave it at that, although it's very tempting when the subunits can be distinguished by colour!

Scientists who like to turn one species into several are known as splitters; those who like to combine similar species together are lumpers. They are both frequently pettifoggers... Hush!

This is not a static field; there is still much debate on relationships and species boundaries, especially as fossils are added, and as species descriptions are stretched to include molecular maps. International Codes of Botanical or Zoological Nomenclature were established in the nineteenth century, with committees to run them; new codes are issued about every twenty years. A similar body is being set up to arbitrate the naming of micro-organisms, which have had a different history (some are identified only by their chemical reactions).

So this is the basis of the universal names of organisms; quite easy to remember if you don't forget King Philip.

- Ursula Grigg

ALMANAC

This almanac is for the dates of events which are not found in our programme: for field trips or lectures which members might like to attend, or natural happenings to watch for, such as eclipses, comets, average migration dates, expected blooming seasons etc. Please suggest other suitable items.

Last summer, at a halfway place where I often stop to rest, I came upon a patch of wild strawberries ... ; not wild ones, exactly, but tame ones gone wild and better for it. It was a sultry afternoon, and I was hot and thirsty. Hidden as they were down among knee-high timothy and wild carrot and vetch, I nearly missed them. The glint of scarlet gave them away. Gratefully, I hand-over-handed the cool luscious fruit into my mouth. My bike stood nearby. A breeze came up, grass swished, aspen leaves pattered, birds warbled, a bee droned past. A summer moment to hoard against the winter solstice.

– Gary Saunders: “My rediscovery of bicycling”, in *Alder Music* (1989)

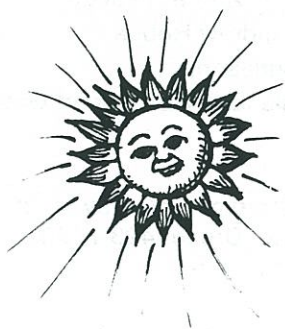
NATURAL EVENTS

- 16 June** Full Moon – this is the ‘Strawberry Moon’.
- 20 June** Summer Solstice at 22:46 ADT: Summer begins in the Northern Hemisphere.
- 15 July** Canada’s “Parks Day” - look for events at local parks.
- 16 July** Full moon - this is the ‘Buck Moon’.
- 26 July** Moon, Jupiter and Saturn are nicely positioned in the pre-dawn sky.
- 5-12 Aug.** Hottest days of summer (average daily maximum is 22.5° C).
- 11/12 Aug.** Perseid Meteor showers peak; most visible after moonset at 3:30 a.m.
- 13 Aug.** Temperatures start decreasing.
- 15 Aug.** Full moon – this is the ‘Corn Moon’.
- 13 Sept.** Full moon – this is the ‘Harvest Moon’.
- 22 Sept.** Autumnal Equinox at 14:24 ADT: Fall begins in the Northern Hemisphere.
- 30 Sept.** Average date for first frost in Halifax (i.e. Environment Canada says that there is only a one in ten chance that we will have frost before this date). Look forward to 210 days of frosty weather.



– Sources: Atmospheric Environment Service, Climate Normals 1951-80 Halifax (Shearwater A) N.S.; Colombo’s Canadian Global Almanac, 1997 & 2000; Royal Astronomical Society of Canada’s Observer’s Handbook 2000; and the personal observations of the compiler.

SUNRISE AND SUNSET ON LATE SPRING THROUGH LATE SUMMER SATURDAYS



3 June	5:31	20:55	1 July	5:33	21:03
10 June	5:29	20:59	8 July	5:38	21:01
17 June	5:28	21:02	15 July	5:43	20:57
24 June	5:30	21:04	22 July	5:50	20:51
			29 July	5:58	20:43
5 Aug.	6:06	20:34	2 Sept.	6:38	19:49
12 Aug.	6:14	20:24	9 Sept.	6:46	19:36
19 Aug.	6:22	20:13	16 Sept.	6:55	19:22
26 Aug.	6:30	20:01	23 Sept.	7:03	19:09
			30 Sept.	7:11	18:56

– courtesy of David Lane, Burke-Gaffney Observatory, Saint Mary’s University

ORGANIZATIONAL EVENTS

Blomidon Naturalists Society: Indoor meetings take place on the third Monday of the month at Room 241 in the Beveridge Arts Centre, Acadia University, 7:30 p.m. Field trips usually depart from the Robie Tufts Nature Centre, Front St., Wolfville. For more information go to <<http://www.go.ednet.ns.ca/~bns/home.htm>>.

- 19 June** “A Full Year of Birding in Pugaskwa (puk-a-sah) National Park”; a talk by Soren Bondrup-Nielsen.
- 24 June** “A Walk Around the Cleveland Property”, with the Wolfville Group of the N.S. Nature Trust.

Burke-Gaffney Observatory: Public shows at the Burke-Gaffney Observatory at Saint Mary's University are held every Saturday from June through September; tours begin at either 9:00 p.m. or 10:00 p.m. (depending on when it gets dark). For more information, phone 496-8257; or <<http://apwww.stmarys.ca/bgo/>>.

Friends of McNabs Island: for more information call Dusan Soudek at 422-1045 or Mike Tilley at 465-4563; or <<http://chebucto.ns.ca/Environment/FOMIS/>>

Nova Scotia Bird Society: Indoor meetings take place on the fourth Thursday of the month, October to April, at the Nova Scotia Museum of Natural History, 8:00 p.m. For more information, phone 852-2428 (recording), or Fulton Lavender at 455-4966; or <<http://chebucto.ns.ca/Recreation/NS-BirdSoc/>>.

18 June "Cumberland/Colchester Counties" with Fulton Lavender, 455-4966.

5 Aug. "Mahone Bay" with James Hirtle, 688-1696.

19 Aug. "Matthews Lake" with David Young, 656-2225.

20 Aug. "The Hawk, Cape Sable Island" with Murray Newell, 745-3340.

1-4 Sept. "Bon Portage Island" with Joan Czapalay, 422-6858, or 348-2803.

22 Sept. "NSBS monthly meeting, on Brier Island", contact Carl Haycock 839-2960. Meeting will be held on Friday evening, followed by field trip(s) on Saturday.

23 Sept. "Fundy Pelagic Trip" with Carl Haycock, 839-2960.

Nova Scotia Lighthouse Preservation Society: Organizes visits to lighthouses, including boat trips to islands. For more information, phone Dan Conlin, 424-6442; or <<http://www.ednet.ns.ca/educ/heritage/nslps/>>

29-30 July "Seal Island" with Kathy Brown.

Nova Scotia Museum of Natural History: For more information about programmes, phone 424-6099, or 424-7353; or <<http://www.ednet.ns.ca/educ/museum/mnh/>>.

until 15 Sept. "Millenium Bug Exhibit"

June-Sept. "Butterfly Pavilion with Live Tropical Butterflies"

1 July "Butterfly Social"

1 July "Bat Walk at Smiley's Provincial Park", with Andrew Hebda.

7 July "Carboniferous Fossil Rock at Hantsport", with Deborah Skilliter.

19 July "City Birds", with Fred Scott

26 July "Botanical Ramble in Point Pleasant Park", with Alex Wilson.

31 July "Seaweed Scramble at Sandy Cove", with Carolyn Bird.

1 Aug. "Family Butterfly Hike", with Derek Bridgehouse.

2 Aug. "Botanical Ramble through the Public Gardens", with Alex Wilson.

11 Aug. "Walk on the Wet Side at Lawrence House Museum", with Andrew Hebda.

2 Aug. "Stream Saunter at Salt Springs Provincial Park", with Andrew Hebda.

19 Aug. "Family Fossil Walk at Newport Landing", with Debra Burseson.

20 Aug. "Walking Tour of Rocks, Minerals and Fossils of Five Islands", with Robert Grantham.

10 Sept. "Taylor Head Rock Walk" with museum geologists.



Nova Scotia Wild Flora Society: Meets fourth Monday of the month, September to May, at the Nova Scotia Museum of Natural History, 7:30 p.m. For more information, phone Heather Drope, 423-7032.

26 June "Evening Walk in Fleming Park" with Heather Drope, 423-7032.

15 July "Brier Island Flora", with Anne Mills, 422-4332.

5 Aug. "Coastal Plain Flora at Ellenwood Provincial Park", with Carl Munden.

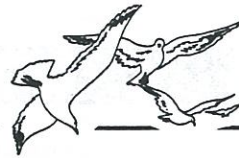
6 Aug. "Coastal Plain Flora at Wilson's Lake", with Carol Jacquard.

Royal Astronomical Society of Canada (Halifax Chapter): Meets third Friday of each month at the Nova Scotia Museum of Natural History, 8:00 p.m. For more information, <<http://halifax.rasc.ca/>>.

— compiled by Patricia L. Chalmers



HALIFAX TIDE TABLE



July-juillet

August-août

September-septembre

Day	Time	Feet	Metres	jour	heure	pieds	metres	Day	Time	Feet	Metres	jour	heure	pieds	metres	Day	Time	Feet	Metres	jour	heure	pieds	metres
1	0130	0.0	0.0	16	0210	0.7	0.2	1	0300	-0.3	-0.1	16	0250	0.7	0.2	1	0415	0.3	0.1	16	0330	1.0	0.3
SA	0725	5.9	1.8	SU	0815	5.2	1.6	TU	0855	6.2	1.9	WE	0900	5.6	1.7	FR	1005	6.2	1.9	SA	0935	5.9	1.8
SA	1345	1.0	0.3	DI	1420	1.6	0.5	MA	1525	0.7	0.2	WE	1505	1.6	0.5	FR	1650	0.7	0.2	SA	1600	1.0	0.3
SA	1930	6.6	2.0	DI	2010	5.6	1.7	ME	2105	6.6	2.0	ME	2105	5.6	1.7	VE	2225	5.9	1.8	SA	2155	5.6	1.7
2	0225	-0.3	-0.1	17	0245	0.7	0.2	2	0350	-0.3	-0.1	17	0325	0.7	0.2	2	0505	0.7	0.2	17	0410	1.0	0.3
SU	0820	5.9	1.8	MO	0850	5.2	1.6	WE	0945	6.2	1.9	TH	0935	5.6	1.7	SA	1045	5.9	1.8	SU	1015	5.9	1.8
DI	1445	1.0	0.3	LU	1455	1.6	0.5	ME	1620	0.7	0.2	TH	1540	1.3	0.4	SA	1740	1.0	0.3	SU	1645	1.0	0.3
DI	2025	6.6	2.0	LU	2050	5.6	1.7	ME	2155	6.2	1.9	JE	2140	5.6	1.7	SA	2305	5.6	1.7	DI	2235	5.6	1.7
3	0315	-0.3	-0.1	18	0315	0.7	0.2	3	0445	0.0	0.0	18	0400	0.7	0.2	3	0555	1.3	0.4	18	0455	1.3	0.4
MO	0915	6.2	1.9	MO	0930	5.2	1.6	TH	1030	6.2	1.9	TH	1010	5.6	1.7	FR	1130	5.9	1.8	MO	1050	5.9	1.8
LU	1540	1.0	0.3	TU	1530	1.6	0.5	TH	1720	1.0	0.3	FR	1625	1.3	0.4	SU	1835	1.3	0.4	MO	1740	1.0	0.3
LU	2120	6.6	2.0	MA	2130	5.6	1.7	JE	2245	5.9	1.8	VE	2220	5.6	1.7	DI	2355	5.2	1.6	LU	2320	5.6	1.7
4	0410	-0.3	-0.1	19	0350	0.7	0.2	4	0535	0.3	0.1	19	0440	1.0	0.3	4	0650	1.6	0.5	19	0550	1.6	0.5
TU	1005	6.2	1.9	MO	1005	5.2	1.6	FR	1115	5.9	1.8	SA	1045	5.6	1.7	LU	1210	5.6	1.7	MA	1135	5.9	1.8
MA	1640	1.0	0.3	WE	1605	1.6	0.5	FR	1815	1.0	0.3	SA	1710	1.3	0.4	MO	1925	1.3	0.4	TU	1840	1.3	0.4
MA	2210	6.2	1.9	ME	2205	5.6	1.7	VE	2335	5.6	1.7	SA	2255	5.2	1.6	LU				MA			
5	0505	0.0	0.0	20	0430	0.7	0.2	5	0630	0.7	0.2	20	0525	1.0	0.3	5	0040	4.9	1.5	20	0005	5.2	1.6
WE	1055	5.9	1.8	TH	1040	5.2	1.6	SA	1200	5.9	1.8	SU	1120	5.6	1.7	TH	0740	2.0	0.6	WE	0655	1.6	0.5
ME	1740	1.0	0.3	TH	1650	1.6	0.5	SA	1910	1.3	0.4	SU	1805	1.3	0.4	TU	1300	5.2	1.6	WE	1225	5.6	1.7
ME	2305	5.9	1.8	JE	2245	5.2	1.6	SA				DI	2340	5.2	1.6	MA	2020	1.6	0.5	ME	1945	1.3	0.4
6	0605	0.3	0.1	21	0510	1.0	0.3	6	0020	5.2	1.6	21	0610	1.3	0.4	6	0140	4.6	1.4	21	0100	4.9	1.5
TH	1145	5.9	1.8	TH	1115	5.2	1.6	SU	0725	1.0	0.3	MO	1200	5.6	1.7	WE	0835	2.0	0.6	TH	0800	2.0	0.6
JE	1845	1.0	0.3	FR	1740	1.6	0.5	DI	2005	1.3	0.4	MO	1900	1.3	0.4	WE	1355	4.9	1.5	TH	1320	5.6	1.7
JE	2355	5.6	1.7	VE	2320	5.2	1.6	DI				LU			ME	2115	1.6	0.5	JE	2045	1.0	0.3	
7	0700	0.7	0.2	22	0555	1.0	0.3	7	0115	4.9	1.5	22	0025	4.9	1.5	7	0245	4.6	1.4	22	0210	4.9	1.5
FR	1235	5.6	1.7	SA	1155	5.2	1.6	MO	0815	1.3	0.4	TU	0705	1.6	0.5	TH	0935	2.3	0.7	FR	0910	2.0	0.6
VE	1940	1.3	0.4	SA	1835	1.6	0.5	LU	2100	1.3	0.4	MA	2000	1.3	0.4	JE	1500	4.9	1.5	FR	1430	5.2	1.6
8	0050	5.2	1.6	23	0005	4.9	1.5	8	0215	4.6	1.4	23	0120	4.9	1.5	8	0405	4.6	1.4	23	0335	4.9	1.5
SA	0755	0.7	0.2	SA	0640	1.3	0.4	TU	0910	1.6	0.5	WE	0810	1.6	0.5	FR	1030	2.3	0.7	SA	1015	1.6	0.5
SA	1325	5.6	1.7	SU	1235	5.2	1.6	MA	2155	1.3	0.4	WE	1345	5.6	1.7	FR	1610	4.9	1.5	SA	1545	5.6	1.7
SA	2040	1.3	0.4	DI	1930	1.6	0.5	MA				ME	2100	1.0	0.3	VE	2300	1.6	0.5	SA	2250	0.7	0.2
9	0145	4.9	1.5	24	0050	4.9	1.5	9	0325	4.6	1.4	24	0225	4.9	1.5	9	0510	4.6	1.4	24	0450	5.2	1.6
SU	0850	1.0	0.3	MO	0735	1.3	0.4	WE	1005	2.0	0.6	TH	0910	1.6	0.5	SA	1120	2.3	0.7	SA	1115	1.3	0.4
DI	1425	5.2	1.6	MO	1320	5.2	1.6	ME	1540	4.9	1.5	TH	1450	5.6	1.7	SA	1710	4.9	1.5	SU	1700	5.6	1.7
DI	2135	1.3	0.4	LU	2025	1.3	0.4	ME	2245	1.3	0.4	JE	2200	1.0	0.3	SA	2345	1.3	0.4	DI	2345	0.7	0.2
10	0255	4.6	1.4	25	0145	4.6	1.4	10	0435	4.6	1.4	25	0345	4.9	1.5	10	0600	4.9	1.5	25	0550	5.6	1.7
MO	0940	1.3	0.4	TH	0825	1.3	0.4	TH	1100	2.0	0.6	TH	1020	1.6	0.5	SA	1205	2.0	0.6	MO	1215	1.0	0.3
LU	1525	5.2	1.6	TU	1415	5.2	1.6	TH	1640	4.9	1.5	FR	1600	5.6	1.7	SU	1800	5.2	1.6	MO	1800	5.9	1.8
LU	2225	1.0	0.3	MA	2120	1.3	0.4	JE	2335	1.3	0.4	VE	2305	0.7	0.2	DI				LU			
11	0405	4.6	1.4	26	0255	4.6	1.4	11	0535	4.6	1.4	26	0455	5.2	1.6	11	0030	1.3	0.4	26	0040	0.3	0.1
TU	1035	1.6	0.5	WE	0925	1.3	0.4	FR	1155	2.0	0.6	SA	1125	1.3	0.4	MO	0640	5.2	1.6	MA	0640	5.9	1.8
MA	1620	5.2	1.6	WE	1515	5.6	1.7	FR	1735	5.2	1.6	SA	1710	5.9	1.8	LU	1245	1.6	0.5	TU	1310	1.0	0.3
MA	2320	1.0	0.3	ME	2220	1.0	0.3	VE				SA			LU	1845	5.6	1.7	MA	1855	6.2	1.9	
12	0505	4.6	1.4	27	0405	4.9	1.5	12	0025	1.0	0.3	27	0005	0.3	0.1	12	0110	1.0	0.3	27	0135	0.3	0.1
WE	1130	1.6	0.5	TH	1030	1.3	0.4	SA	0625	4.9	1.5	TH	0600	5.6	1.7	TH	0720	5.2	1.6	WE	0725	6.2	1.9
ME	1710	5.2	1.6	TH	1620	5.9	1.8	SA	1240	2.0	0.6	SU	1225	1.0	0.3	TU	1325	1.6	0.5	WE	1400	0.7	0.2
13	0010	1.0	0.3	JE	2320	0.7	0.2	SA	1825	5.2	1.6	DI	1810	6.2	1.9	MA	1925	5.6	1.7	ME	1945	6.2	1.9
TH	0600	4.9	1.5	28	0510	5.2	1.6	13	0105	1.0	0.3	28	0100	0.0	0.0	13	0145	1.0	0.3	28	0220	0.3	0.1
TH	1220	1.6	0.5	FR	1135	1.3	0.4	SU	0710	4.9	1.5	MO	0655	5.9	1.8	WE	0755	5.6	1.7	TH	0810	6.2	1.9
JE	1800	5.2	1.6	FR	1720	5.9	1.8	DI	1910	5.6	1.7	MO	1320	1.0	0.3	WE	1400	1.3	0.4	TH	1445	0.7	0.2
14	0055	1.0	0.3	VE				SA				LU	1905	6.2	1.9	ME	2000	5.6	1.7	JE	2030	6.2	1.9
FR	0645	4.9	1.5	29	0020	0.3	0.1	14	0140	1.0	0.3	29	0150	0.0	0.0	14	0220	0.7	0.2	29	0305	0.7	0.2
VE	1305	1.6	0.5	SA	0610	5.6	1.7	MO	0750	5.2	1.6	TU	0750	6.2	1.9	TH	0830	5.9	1.8	FR	0850	6.2	1.9
VE	1845	5.6	1.7	SA	1235	1.0	0.3	LU	1355	1.6	0.5	MA	2000	6.6	2.0	TH	1440	1.3	0.4	FR	1535	0.	

NATURE NOTES

June 20: A Purple Gallinule is vacationing at 'The Oaks', at the south end of Robie St. It is about as big as a chicken, gorgeously coloured, and with long feet for walking over marshes. It comes from the southern United States. It seems to be living on earthworms. Fortunately the day of Dr. Ozmon's farewell party was wet, so the bird did not have to share the site with several hundred people and a band!

A Coatimundi is living in Point Pleasant Park; this is an arboreal animal related to the raccoon; it has a pointed snout and a long ringed tail. Nobody knows how long it has been there, but it probably came from the docks. Live traps baited with fruit are being set out for it, but it is elusive.

April 6: Regina Maass reported a Night Heron near the North West Arm. Woolly bears (Caterpillars) have been seen.

May 4: members began to report butterflies; a little brown one was reported, and Lesley Butters saw a Spring Azure on the Medway. Pat Chalmers reported bloodroot and yellow violets blooming at Smiley's Park, and trilliums in bud. Joan Czapalay reported a Mourning Dove on Sheriff Hall, and Regina Maass saw six in Jollimore.

June 1: Observations beginning to increase

Peter Payzant saw Tiger Swallowtails a week late; also Pine Elfin, a good crop this year.

Lesley Butters saw a beetle larva in Point Pleasant Park, in a big hole under the bark of a red spruce.

Joan Czapalay saw ferns growing in Shubie Park, including Lady Fern.

Regina Maass reported a Wood Duck on Albion Pond, and drakes on Frog Pond; she wonders if there is a duck in the nesting box?

An osprey was fishing over the North West Arm, for largish fish – either mackerrel or pollack.

Bernard Forsythe saw Rhodora in bloom on the way in from Wolfville. Tony MacKay saw a bald eagle trying to catch a duck. Bernard remarked that this behaviour is commoner in winter.

We would still like to get in touch with the naturalist who reported seeing a walrus at the harbour mouth earlier this year!

! NEXT DEADLINE !

1 SEPTEMBER FOR SEPTEMBER ISSUE

contributions to the Editor, HFN
c/o NS Museum of Natural History
Please phone 455-8160 to alert the Editor