

Blomidon Naturalists Society



WINTER 2008 NEWSLETTER

Volume 35 · Number 4

The primary objective of the Society shall be to encourage and develop in its members an understanding and appreciation of nature. For the purpose of the Society, the word “nature” will be interpreted broadly and shall include the rocks, plants, animals, water, air, and stars.

FROM THE BNS CONSTITUTION



RICHARD STERN

Christmas Nuthatch

The Blomidon Naturalists Society



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THE BLOMIDON NATURALISTS SOCIETY

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BNS Newsletter

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BNS members are encouraged to share unusual or pleasurable nature stories through the pages of the *BNS Newsletter*. If you have a particular area of interest, relevant articles and stories are always welcome. Send them to Jean Timpa:

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**Submission deadline for Spring:
March 10, 2009**

Out and About

Jean Timpa, editor

It is always a pleasure at the end of the year to look back on events that happened under our auspices and muse upon our continued good fortune and accomplishments. This year, thanks to the initiative of Andrew Steeves and Gary Dunfield of Gaspereau Press, the BNS Newsletter has been taken under their wings and made into a proper, grown-up publication. Some days I still have a spell of disbelief that this windfall just came in out of the blue and dropped in our laps. We have a new look to our executive, with a mixture of old and new members. We also celebrate 12 years of publishing the well-known and widely distributed BNS Calendar, which is regularly sent all over the world at Christmas time. And certainly our never-ending supply of varied talks and walks are the heart of our educational philosophy, as well as various publications and other BNS mementos. Finally, the Green Dragon programs offered in conjunction with various town recreation departments are legendary among the young people who attend. Despite severe budgetary cutbacks, the young supervisors of Green Dragon still put on such fascinating programs that children want to come back year after year, sometimes only to be disappointed that the limited space has already been booked by other participants.

I have four wishes for BNS this year:

1. More money than ever to support the Green Dragon camps; I know Harold Forsyth and his committee are already busy working on this necessary funding increase and have some new ideas. If you can help them in any way, please contact Harold at 542-5983. It is sad to know that there are youngsters here in Kings County

- who cannot attend our nature day camps because of a lack of spaces resulting from a lack of funding.
2. More paid-up members in BNS, not only to raise more money through the subscriptions for various functions, but also to bring in new ideas and initiatives. We have about 175 members now, and treasurer Ed Sulis figures that if we could scare up another 30 members we would be in a happier situation.
 3. A new archivist ASAP, so that we do not lose touch with our historical proceedings.
 4. Someone to organize a regular column in the Newsletter to record sightings of interest and importance for future BNS members to peruse and enjoy. Such sightings should include birds, mammals, insects, amphibians and reptiles, astronomical events, and, of course, all sorts of plants.

ACKNOWLEDGEMENTS

Many thanks, gilded with the gold and sparkle of the holiday season, go out to all of you for supporting the workings of BNS in so many different ways. We especially want to thank Rick Whitman, for taking over the presidency of BNS, and Murray Colbo, for coming on the board as a new member-at-large. Thanks for continued writing and illustrating of the Newsletter and our ever-popular calendar. The calendars are selling fast, so if you have not bought a few of them yet, you'd best hurry. Thanks also for bringing new members to our meetings and field trips. New members help keep the per-member cost of the Newsletter under control and, most importantly, they bring fresh ideas for programs and field trips.

CALENDAR COMPLIMENT

Recently a naturalist in Calgary who receives our calendar each year commented to Rachel Cooper that the Blomidon Naturalists Society

Calendar is “a very fine natural-history calendar. Both the excellent selection of photographs and large amount of useful, interesting information make it perhaps the best of its type in Canada.” Merritt Gibson, who began the BNS Calendar in 1997, remarked, “Considering that we compete with professionally prepared nature-related calendars, that is quite a compliment, but I humbly agree.”

NEWSLETTER COMPLIMENT

Rose Malpass also passes along a useful tip: “Very impressed with the new Newsletter. When I am finished with them, I take them to the Kentville Library. Maybe new members will emerge from them.” Most libraries receive a copy of the Newsletter now, but nursing homes and hospitals do not. If you don’t care to hold on to your copy, you may wish to extend this gift.



Executive Notes – Winter 2008

by John Harwood, BNS past president

The society is off to another good year. We have a new president and one new member of the board, neither of whom have served on the executive before, and an enthusiastic group of returning members. I think we can expect lots of good ideas that will keep BNS vibrant and interesting.

We start a new year in reasonable financial shape, despite the current state of the economy. We should be able to continue with all our programs. As Jean has said in her editorial, we could use more members. More members mean more revenue from dues. We have looked at ways to increase membership and have concluded that the only effective way is to ask you to invite friends to come along to a meeting or two in the hope that they might wish to join. Show them a copy of the Newsletter.

Speaking of the Newsletter, the cost of postage remains a problem. Our splendid last edition was very expensive to mail. With the cost of postage due to go up soon we have decided to limit the page count of each edition. This will save a lot and will not significantly reduce the content. Don't let this frighten anyone from submitting an article. If it doesn't make the cut for the current issue, it should make the next one.

Members have suggested that BNS publications, badges, hats, etc., should be more readily available for purchase. From now on, Mary Anne Sulis will have them available at monthly meetings and also at our display at the Sheffield Mills Eagle Watch.

Harold Forsyth will again organize our highly successful Green Dragon young naturalists summer program in 2009. Darrell Slauen-

white, one of your hardworking members of the board, will give Harold a hand.

Many of you will know that Brenda and Bill Thexton maintained the records of this society from the outset until quite recently. The sheer volume of material, which includes copies of every newsletter, indicates the amount of work the Thextons put into its collection and cataloguing. The collection will soon have a new home. Acadia University has agreed to include the BNS collection in its archives at the library. Ed Sulis will look after the transfer of the material to Acadia and will work with their archivist to set it all up. Rules for access and other details will be worked out. When it is up and running we will need a person to keep the collection up to date. The task should not be onerous. Mainly it will involve seeing that newsletters and minutes of meetings are added. It is important that the Thextons' valuable work is continued. If you have a little free time and an interest in the proceedings of the society, please give Ed or any other member of the board a call.

At the most recent meeting of the board, we appointed two vice-presidents. John Belbin has agreed to take on the task again, and Patrick Kelly, our program chair, will share the job with John. You will get a chance to see Patrick strut his stuff at our February meeting, the show-and-tell members' night. If you have something to show or tell about, please let Patrick know. He will put you on the program and make sure the necessary A/v equipment is available for you.

I regret to report that after considerable effort the executive has failed to resolve a long-standing problem. Many of you will know that the New Minas sewage treatment ponds have been a favourite birding hot spot. More than a year ago, the authorities denied access to the site to members of the public, probably because of insurance implications. It was suggested by some members that attempts be made to arrange for access by designated BNS members. Richard Stern undertook the task. After much effort and a good deal of time, Richard concluded that New Minas is not interested in allowing access to the site by anyone. The executive sees no point in pursuing the issue further.

The final note for this edition is about our BNS website. Larry Bogan looks after the site. Please have a look at his article on page 41 about his reworking the website to make it more user friendly and easier to keep up to date. The web address remains the same as before.

CLUB NOTES

Upcoming Events

MEETINGS

Unless otherwise noted, all meetings are held at 7:30 p.m., usually on the third Monday of each month, in the auditorium of the K.C. Irving Environmental Science Centre on University Avenue, Wolfville. Parking is available at Wheelock Dining Hall, along Crowell Drive immediately east of the Irving Centre, at the Acadia Arena, Festival Theatre, the Student Union Building, or on Westwood Avenue. Everyone is welcome.

Monday, January 19, 2009 – *Annual Show and Tell Night*. Open to all. Come to view or bring along slides, pictures, specimens, collections, fossils, videos, computer stuff, favourite books and magazines, or anything that might be of interest to fellow naturalists.

Monday, February 16, 2009 – *Tick Talk: Ticks in Nova Scotia and Some Recent Research*. Like it or not, ticks are now an established part of our fauna throughout Nova Scotia. Ticks have gone from being only a problem and general nuisance in southwestern Nova Scotia to a province-wide issue and, in some cases, an actual risk to human health. Since 2002 the Nova Scotia government has been actively surveying ticks, determining population spread and establishment of new species, and testing ticks for various diseases. Join Jeff Ogden,

field entomologist for the Department of Natural Resources (DNR), and learn how these tiny attention grabbers have made the media hot list and recently changed our outdoor habits.

Jeff Ogden has been with DNR since 1993, working primarily with forest pest insects and insect biodiversity. Recently, he has been pulled into the human health side of things with the emergence of West Nile virus and Lyme disease.

Monday, March 2, 2009 – *Between Forest and Sky*. Alberta has 128 active fire towers that are staffed during the spring and summer to keep a lookout for forest fires. Many of them are located on sites that have no electricity or running water. Sharon Stratton has spent the last seven summers at some of these remote locations working as a fire-tower observer. During times of extreme fire hazard, she spends 11 hours a day on lookout duty. She will be talking about her experiences and showing us some of the beautiful scenery that she has encountered while on the job. [Please note that this is an extra talk. Sharon's December date was cancelled due to weather.]

Sharon Stratton was born and raised in Niagara Falls, Ontario. Her earliest careers and interests involved animals and the outdoors. For her mid-life crisis, she went back to school, graduating from the University of Guelph with a bachelor's degree in biology with a minor in genetics, at 41 years of age. After a brief stint as a neurochemistry lab technician in Omaha, Nebraska, she relocated to Calgary and after five years of applications was finally accepted into the Alberta Sustainable Resources fire-tower program. She now divides her time seasonally, spending summers at her fire tower in the foothills and, until this year, winters as a judicial assistant with the Calgary Courts. Sharon published a book in late 2006 called *Between Forest and Sky: A Fire-Tower Journal*.

Monday, March 16, 2009 – *Museum Hopping: Using Biological Collections to Understand Mammalian Biology and Diversity*. Join Howie Huynh, who recently finished a ten-week-long whirlwind tour of several internationally renowned museums in northeastern North

America (Harvard's Museum of Comparative Zoology, Cambridge; Smithsonian Institution National Museum of Natural History, Washington; American Museum of Natural History, New York; Cornell University Museum of Vertebrates, Ithaca; Canadian Museum of Nature, Ottawa; Royal Ontario Museum, Toronto; Carnegie Museum of Natural History, Pittsburgh). Howie's aim was to work with their mammal collections to collate morphometric and genetic data for his master's thesis. He studied and worked with many species of mammals, some of which, in his opinion, possess some of the most fascinating natural history known to biological science. He returned to Wolfville more knowledgeable and passionate about mammals than ever before.

Howie Huynh is a graduate student in the biology department at Acadia University studying mammalian systematics and conservation genetics with Dr. Don Stewart. He is a youth member of the Blomidon Naturalists Society.

Monday, April 20, 2009 – *The Role of Turbine Characteristics in the Impact of Tidal Power Generation on Pelagic Marine Organisms*. Dr. Mike Dadswell will tell us about research done on the Annapolis Tidal Power Turbine from 1981 to 1996. The purpose of the research was to determine the immediate and long-term impacts on the fishes of the river and estuary. Mike will explain the turbine characteristics of the Annapolis plant along with their effects on organisms. Then he will discuss the turbine characteristics of recent open-concept tidal turbines and their potential effect on marine organisms. In conclusion we will consider the overall potential impact of tidal turbines on the pelagic marine organisms of the Bay of Fundy (fish, seals, whales) in light of their ecology and known marine migrations.

Mike Dadswell is a professor of biology at Acadia University. He is an expert on a number of Atlantic fish and shellfish species as well as aquaculture and tidal turbine impacts on fish. His research and publications include the ocean migration patterns of Atlantic Salmon, American Shad, and Striped Bass; the biology of Atlantic Sturgeon, Shortnose Sturgeon, and Dogfish Shark in Minas Basin and the Bay

of Fundy; and the interaction of fishes and fisheries to anthropogenic changes such as the Canso Causeway and the development of tidal power.

Monday, May 18, 2009 – TBA. Note that this meeting will be held in Beveridge Arts Centre, Room BAC241, as the auditorium in the Irving Centre is booked that evening.

Monday, June 15, 2009 – *Marian Munro, curator of botany at the Nova Scotia Museum of Natural History*. Details will appear in the spring issue.

FIELD TRIPS

Unless otherwise indicated, all field trips will begin at the Wolfville waterfront. Everyone is welcome.

Saturday and Sunday, January 24 and 25, 2009 – *Eagle Watch Weekend 1*. The Sheffield Mills Community Hall will host its annual pancake and sausage breakfast with naturalist displays, films, crafts, and art show. A short drive around the area in the morning will usually offer a sight of more than 100 Bald Eagles and many hawks. Maps and directions can be obtained at the hall or any time at the information post on Middle Dyke Road. For more information, check the website www.eagles.ca or contact Richard Hennigar at 582-3044 or hennigar@xcountry.tv.

Saturday, January 31, and Sunday, February 1, 2009 – *Eagle Watch Weekend 2*. A repeat at the Sheffield Mills Community Hall.

Saturday, February 7, 2009 – *Winter on Snowshoes*. Snow transforms the landscape into stories that unfold as we follow tracks of foxes, mice, and other mammals. A Snowshoe Hare hops along and is pounced on by a Great Horned Owl. Without snow to show us the tracks, wing marks, and perhaps a drop of blood, we would not have

known the drama took place. Soren Bondrup-Nielsen (582-3971) will lead this hike on snowshoes or skis, and we will explore the properties of snow (its insulative value, for example). By studying the characteristic imprints made by different organisms we will interpret the various stories that have unfolded. Meet at the Wolfville waterfront at 10 a.m. for a two- or three-hour, non-strenuous hike at a nearby location to be determined by weather and snow conditions.

Saturday and Sunday, February 7 and 8, 2009 – *Eagle Watch Weekend 3*. A repeat at the Sheffield Mills Community Hall, except that the breakfast will be drinks and muffins.

Saturday, February 21, 2009 – *Orchid Show*. The Valley Orchid Group will have its annual display of orchids in the conservatory of the K.C. Irving Environmental Science Centre at Acadia University from 10 a.m. to 4 p.m. There will be a presentation in the downstairs auditorium about orchid growing and people in the lobby selling orchids along with specialized materials and instructions on how to help them grow well. This is a sure cure for the winter blahs, with only the very best of the best orchids brought for this occasion. You will see plants that you will not believe are real – they are so beautiful, perfect, and complex in their structures. Photographers are welcome and encouraged.

Saturday, March 21, 2009 – *Along the Fundy Shore*, led by Wayne Neily (765-2455, neilyornis@hotmail.com). Focusing on the winter birds of the Bay of Fundy and the ecozones from the Bay to the Annapolis Valley, this will be a joint trip for BNS with the Nova Scotia Bird Society and the Annapolis Field Naturalists. Meet at 9 a.m. in Aylesford, just on the south side of Exit 16 on Highway 101. We will visit the shore at Morden, Margaretsville, Port George, and perhaps Port Lorne and Hampton, before heading back into the Valley to check some sites on the way to Annapolis Royal. Dress warmly with

layers – the Fundy shore can be cold and windy at that time of year – and bring a lunch. Pre-registration is encouraged but not essential.

Saturday, April 25, 2009 – *Herbert River Canoe Trip*. Patrick Kelly (472-2322, patrick.kelly@dal.ca) will be leading this trip. The Herbert River is fairly easy with lots of water at this time of the year, and it covers a great variety of terrain. The trip will be two to three hours long, depending on our pace. Bring life jackets, canoe or kayak, and paddles. If you have access to a life jacket but not a canoe, there will likely be extra room in one of the canoes. Check with the leader to be sure. Meet at the Newport rink parking lot at 9:30 a.m. Take Exit 5 from Highway 101 and follow Highway 14 east for about 10 km to the village of Brooklyn. At the cenotaph, keep left and follow Highway 14 north for just under 1 km. At the intersection (Petro Canada station), Highway 14 turns right. Continue straight on Highway 215 (Note the YIELD sign. You do NOT have the right of way!) The rink is on the right as soon as you exit the intersection. We will be leaving some cars there as we will actually be putting into the river where it is crossed by Highway 14.

BNS FIELD TRIP REPORT

Kingsport Mudflat Critters

by Jim Wolford

OCTOBER 18, 2008 – We had a sunny and cold day for a good low, low tide (tidal amplitude about 14 m). I handed out to the five participants a list of common beach and mud-flat organisms from my teaching days at Acadia, and I showed them Sherman Williams's tide chart for October, which showed the Full Moon on

October 14 and perigee (the Moon's closest monthly approach to Earth) on October 17.

As usual I started at the small sand dune adjacent to the canteen, where I pointed out the marram or dune grass (*Ammophila*) that is so important in binding the sand and resisting erosion of dunes. Then we walked through the small salt marsh protected by the Kingsport wharf. I pointed out the salt-marsh cord grass (*Spartina*) and, all over the wet upper mud flat, oodles of half-inch-long mud snails (*Nassarius*). These snails feed on microscopic algae called diatoms in the mud, and they also scavenge on remains of dead animals or plants.

Then we walked to the north side of the wharf and headed out toward the low-tide zone. Very quickly we discovered lots of white shells of slipper limpets, which are strange sessile, filter-feeding snails in the low-tide zone.

A few more steps got us into lots of meandering trails in the sand, from what I call sand sowbugs and which are closely related to sowbugs or wood lice on land. After a bit of searching we found a couple of sand sowbugs and watched one burrow back into the wet sand.

It didn't take long to discover characteristic signs on the mud surface from various kinds of worms. Most abundant were tiny bumps on the surface from long, skinny *Heteromastus* worms. These relatives of earthworms feed on organic particles that "rain" out of suspension during every high tide; the bumps on the surface represent extra indigestible matter ejected from their burrows (just like earthworms do).

Other worms discovered by surface signs were bamboo worms (*Clymenella*), which build tubes of sand and feed on organic particles (like the *Heteromastus* worms). Two other kinds of worms discovered with my shovel were bloodworms or bait worms (*Glycera*), which are commercially and recreationally used as bait for sport-fishing (mostly exported to the United States), and long, slimy, milky-white ribbon worms (*Cerebratulus*).

We had to search a bit to find some mud shrimps (*Corophium*), mostly because they were very small. These are the primary food for

the oodles of Semipalmated Sandpipers that fatten up on our mud-flats for their nonstop flight to northern South America.

I sieved a tide pool around a rock to show lots of juvenile sand shrimps (*Crangon*).

Very abundant on rocks in tide pools and on the wet mud in the low-tide zone were plant-like, whitish, bushy colonies of hydroids or hydrozoans. These tiny animals are important micro-predators in this ecosystem (preying on tiny swimming organisms). Another kind of hydroid, a symbiotic genus, is *Sertularia*, colonies of which we found attached to knotted wrack seaweeds.

The only other crustaceans encountered today were lots of parts of dead rock crabs (*Cancer*), and only a few small hermit crabs (*Pagurus*).

All along our walk, we found shells of various clams, such as *Pandora*, false angelwing, razor clam, soft-shelled clam, surf or bar clam, and blue mussel, plus fragments of moon snails (which burrow below the surface and hunt for and prey upon clams) and lots of living periwinkles (which feed on microscopic algae on rocks).

We also found a couple of *Onchidorus* sea slugs under a rock. Sea slugs are snails with no shells, and this species feeds on barnacles, which are incredibly abundant in this ecosystem. We also found another predator on barnacles, namely Atlantic dog whelks (I call them dogwinkles).

Bryozoans were represented by one plant-like skeleton of *Flustra* (which lives subtidally just below the low-tide line).

At the low-tide line, we noticed the change from slack water to a rising tide at 10:25 a.m., only a half-hour after the predicted time for low tide. Also in that zone we saw only a few burrows of razor clams, but were able to dig up a couple of small ones; one of them showed us how it burrows down from the surface, sticking out its active white “foot,” getting a grip on the mud, then standing the shell up vertically before actually burrowing down by worm-like movements of the foot.

On our walk back to the wharf, we found lots of small, crowded

soft-shelled clams in a small salt marsh on the upper part of the exposed beach.

For an excellent reference for the local mudflat critters, I recommend Merritt Gibson's *Seashores of the Maritimes* (Nimbus, 2003).

Finally, I have to add that we kept finding small cut-up pieces of carrots all over the mud flats. I wonder how the indigenous fauna find them as further fodder for the ecosystem? (I imagine the ultra-important mudflat recyclers, namely the unseen bacteria and fungi, probably find them just extra organic matter to be metabolized, digested, and recycled.)

Thanks to Merle and Richard Foot, who kindly offered their hose and water after our walk for cleaning our boots and shovel.

SEEN IN THE WILD

MBBA Thrills on Butler Road

by Rick Whitman

For the past three summers I have been a participant in the Maritime Breeding Bird Atlas. My 10-km-square block is located immediately east of Black River Lake (it includes two slices of the lake) and is roughly divided by Butler / Mines Road, running southwest to northeast through the block. For those in the know, it is block 20LQ97. This would be one of the wilder blocks in Region 16, with essentially one public road crossing it and a handful of human residents at the extreme eastern edge on Mines Road. There is also a network of forestry roads. The purpose of this article is to describe some of my favourite experiences of the past three seasons.

I often manage to reach the block before 7 a.m. On one such morning in June 2006, I was walking on a forestry road more than

3 km north of Butler Road (i.e., back of beyond). It had rained hard within the previous 24 hours but was now dry. As I walked along the sandy road, I suddenly realized I was following a very fresh bear track headed in the same direction. The paw prints, without the claws, were as large as the palm of my hand. I became very alert and continued slowly in the same direction. After hundreds of metres, the road turned to the right and the bear track headed straight off across a clear-cut. As I could see a fair distance across the cut and could see no bear, I was able to relax a little but remained on edge for the rest of the morning. I had to follow the reverse route to get back to my car. As I drove out, about 2 km away I noted a large pile of bear poop in the middle of the road. I got out and placed my hand 2–3 cm above the pile. The heat radiating out of the pile could not be missed! Again, I looked around carefully and retreated to my car.

In 2008, I was on a woods road in the northwest corner of my block, just east of Black River Lake. I was standing still, listening for some bird. It was quiet, with little or no wind. Suddenly, a very definite branch crack occurred off to my left, perhaps 100 m into the woods. I remained still while hearing a few much-less-obvious sounds and perhaps a trace of “snuffling.” I concluded that either a deer or a bear was about to cross the road. Sure enough, perhaps 75 m in front of me, a rather small bear emerged onto the road, immediately turned away from me, took a few steps, looked over his left shoulder, saw me, and went crashing off into the woods across the road. That should have been the end of it, but it wasn’t. I remained still and soon perceived very quiet noises coming back toward me, in the woods, parallel to the road. I saw the bear one more time, when it was just 25–50 m into the woods, directly in from the road and myself. It likely caught my scent then and went crashing away for real. I believe it was a yearling and was just curious about what I was. I carried on with my day as planned. This was the first time I have ever seen a bear in the woods while on foot.

Again in 2006, north of Butler Road, I was listening to a singing Canada Warbler. I knew the species but was determined to see the

bird. I slowly edged across a cut area toward the wooded, wet area where the male had his territory. As he moved around I could never spot him. I was preoccupied, searching for any movement. Suddenly, I became aware of a considerable humming noise not all that far away. I looked up and realized that a mature White Pine, way out there in the middle of nowhere, was a “bee tree.” Yes, it held a large colony of the domestic honeybee. The tree had a long vertical split, and there was a steady traffic of hundreds of bees going in and out. I quietly moved back towards the forestry road and was not stung. The colony was still active in 2007.

Other wildlife I’ve seen in the block include muskrat, beaver, mink, rabbit, and deer. I took particular pleasure in seeing the beaver, mink, and some deer long before they ever saw me. Actually, the one mink (rather close, in a ditch) and certain deer never saw me.

Now let’s have some bird stories, the actual object of the MBBA! One day in June 2006 I heard a noisy bird that I truly did not recognize. When I located the source it turned out to be a nest of Black-backed Woodpeckers. Apparently the older nestlings can be very noisy, although the adults are relatively quiet with their “pic” call. Finding this nest was my greatest thrill that year and something I never would have predicted. Imagine my surprise to find a second nest in 2007. This time I heard the male making the nest cavity on May 14 and was able to follow the nest through to June 24, when the young were again fully grown and noisy. A new clear-cut forestry operation within about 200 m did not deter this pair, even though it started after they had established their nest in an isolated tree stub. There was old, open clear-cut between the nest tree and the new operation. I was somewhat surprised at their tolerance.

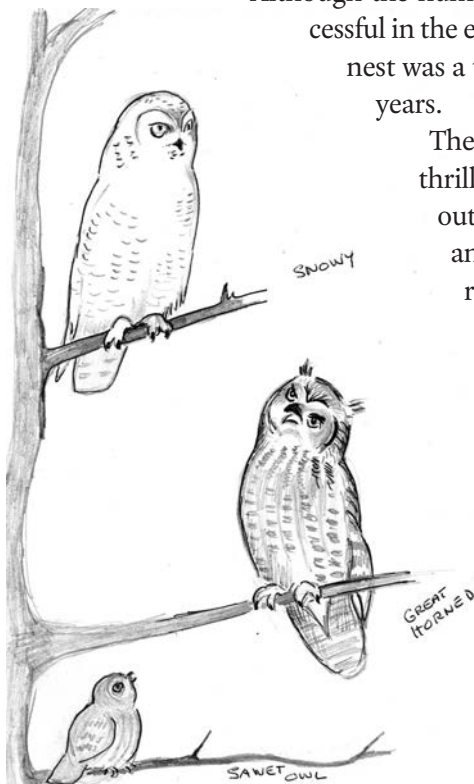
In 2007 I noticed a pair of Evening Grosbeaks in an area of mature White Pines east of Black River Lake. As I watched the female, about as far back into the woods as I could see, I started to suspect she was gathering fine nest-lining material. Sure enough, she flew back toward me, crossed the road, and went to her nest way up in a mature White Pine. I believe the nest was completed, but it was impossible to tell if any eggs were laid. Later the nest seemed abandoned, but

this was the fifth nest record for Nova Scotia, for which I was very pleased.

In 2008 I saw a Yellow-rumped Warbler picking up nest material on the ground. I followed the flight of this female to her nest, also high up in a mature White Pine. Exactly three weeks later, as I stared through my binoculars at this warbler's nest I became aware that I was hearing a hummingbird coming and going every few minutes, somewhere overhead. "What if . . ." I thought to myself. Putting the binocs aside, I soon located a Ruby-throated Hummingbird building her nest in a Red Maple almost directly above me. I never would have seen this nest if I had not been stopped for the warbler nest.

Although the hummingbird nest was unsuccessful in the end, finding this completed nest was a thrill I had dreamed of for years.

These are only my greatest thrills in this MBBA block. Owl outings with Bernard Forsythe and Richard Stern are also right up there for thrills. To date a total of 83 species have been recorded and 35 of these are "confirmed" breeders under the MBBA criteria. I am convinced that I might never have had most of these experiences without the MBBA push.



Nature in Toronto

by Patrick Kelly

On the 2008 Canada Day weekend we went to Toronto so that I could attend the annual meeting for the Royal Astronomical Society of Canada and my wife and I could visit our son and his wife (who was very pregnant at the time). One does not usually think of Toronto in terms of wildlife, with the possible exception of the Metro Toronto Zoo.

As luck would have it, the conference was being held at York University and our son lives in an apartment building at the south boundary of the university, which is at the northern boundary of the Metro Toronto area. We were staying at a nearby motel, and I decided to bus and walk to the conference. The first “wild” animal I saw was a Grey Squirrel, the first of many. (No need to worry – I didn’t bring any back with me!) They are amazingly agile, and more than once I was reminded of the first time I saw one running along the phone lines in Montreal and thinking, “What is that cat doing up there?”

My next encounter was a bit more unusual. Apparently the campus at York is well known for its Groundhogs. I saw several large burrows (under stairways and at the edges of green spaces) and managed to see a few of the rodents, including one that lazily walked across a pathway only a few metres in front of me. I’m guessing that they are quite used to students.

On the second day there, while walking through a rather controversial residential development named The Village, I saw another member of the rodent family. A rat. I’m not really sure what kind of rat it was, as I use “rat” the way a non-birder would use “duck.” It was munching on something in the mowed grassy strip between the side-

walk and the curb. It, too, barely gave me a second look as I walked past it. Given that I was not that far from the notorious intersection of Jane and Finch, I figured it might be armed, so I just moved right along. (Actually, we went to a Dairy Queen there late one night, and I went through that area every day on the bus and it seemed like a normal place to me.)

The last mammals, for which I was totally unprepared, were the rabbits. They could have been hares; I'm not sure which term is correct, but once dusk came, "rabbit" seemed more applicable. They sprouted up in the grassy areas all over the campus. Running across roads, hopping out from under buses, they seemed to be everywhere. What was interesting was that they had the same effect that moose do in Newfoundland. The locals just ignore them, and the visitors stop and look every time they see a new one.

There were some birds of note. A small pond on the campus harboured a large group of Canada Geese. Though they usually walk away if you get too close, I was told that they can be aggressive, and the students that cut through that area usually give them wide berth.

One of the side trips organized for the conference was a trip to the Ontario Science Centre. Two long escalators go from the upper part of the centre to the lower galleries. They run down the side of a small wooded ravine, and the windows have pictures of all the birds that can be seen in the woods outside. There was quite a selection to see, but you had to look quickly, as the escalators didn't allow you to stop.

To finish up, the motel we stayed at was on Norfinch Drive, just north of Finch Avenue, and adjacent to Highway 400, the main highway out of Toronto leading north to Barrie and cottage country. Immediately north of the motel was a broad, grassy power-line corridor running east-west (you should have no trouble finding it on Google maps). My wife spent some time in our room during the daytime and got great enjoyment watching a kestrel hunting in the grassy area from one of the hydro towers. Who would have guessed?

Shipwrecked: The Life of a Parasite

by Dave Shutler

PART 4 – BUILDING A BETTER SHOTGUN

I have been prosing about the difficulties facing a shipwrecked parasite that wants to have its genes spread from one host island to another, and I left off prosing about how a parasite that sprays hopeful propagules (eggs, etc.) at the right time and the right place is less wasteful than a parasite with a pure “shotgun” strategy of spreading propagules everywhere all the time.

As the shotgun analogy implies, some propagules fail to hit the target and are wasted. If you’ve seen pollen blowing from evergreen cones or coating tranquil bodies of water, you can appreciate that profuse waste can occur. But as long as propagules are cheap and the location of other host islands is unpredictable, this may be the best strategy. However, as you might imagine, some parasites are less passive about letting chance help their propagules reach the next island and may do better by being more frugal with their investments. This might occur if new host locations are predictable, either spatially or temporally. Under these circumstances, selection might favour a more refined, less wasteful, version of a shotgun: a sharpshooter, aiming with well-timed precision so that fewer propagules miss the target.

In some cases, visual cues provide targeting information to parasites. For example, some freshwater mussels in river channels start firing propagules if a fish’s shadow is detected. The mussel propagules grab onto the passing fish’s gills and develop into glochidia: larval parasitic mussels. Glochidia become embedded in the gills and undergo development until they are ready to drop off (often upstream) into the riverbed as mussels-in-the-making. If adult

mussels let river currents decide where to deposit offspring (i.e., downstream), the amount of available freshwater habitat to successive generations would eventually disappear, and the ultimate larvae would end up in a high-sodium-diet ocean (where they would die). Instead, glochidia hop fish trains upstream to low-sodium-diet locales. (Using fish to carry offspring upstream has been a successful strategy for millions of years, but humans began damming rivers and preventing fish movements, damning several species of freshwater mussel to extinction).

Smell is likely the most common way that parasites aim their rifles. In aquatic systems, the bouquet of a fine snail or fish mucous may be irresistible to an armed parasite. Or perhaps a well-aged frog slime. In terrestrial habitats, carbon dioxide provides the proper accompaniment to blood; a single whiff from some hapless, breathing, vertebrate entity makes some ticks lose their grip on vegetation (or makes them jump with gustatory glee), which might mean they end up on a hapless, breathing, vertebrate entity. The vertebrate entity can either stop breathing or resign itself to some serious scratching. The latter outcome is more frequent.

An even further refinement of a rifle strategy is a guided missile system. A stimulus such as a smell may cause release of either (or both) the trigger and the targeting mechanism. A parasite may use a guided missile system once a host is in detection range; at this point, guidance systems can become exceptionally picky. For example, some viruses attach only to specific arrangements of cell surface proteins (the molecules involved offer a distinct 3-D map of positive and negative electrical charges that can be not only host-specific but also specific to certain cell types within an individual host). The attachment part of a virus has to have the opposite 3-D map of charges arranged in a fairly similar manner to lock on sufficiently tightly so that, like an oil well tower, the virus can drill into the host cell and inject its nefarious nucleic acids. From our perspective, a lung cell and throat cell might look very similar, but to a virus one might be a princess's bed with a pea under it, the other a king-sized bed bereft of subterranean legume seeds.

Similar to a virus's precise targeting, malaria parasites track down the specific microscopic channels in host cell membranes through which they slide inside like amoebae. The poor host cell needs those channels to get essential nutrients and so is the proverbial fish in the barrel for the parasite. Flukes also use guided missiles: their aquatic stages from eggs, miracidia, swim following chemical cues to pursue and enter nearby snails; the larvae (cercariae) that emerge from snails may use chemical cues to find and penetrate fish, frogs, ducks, or humans.

Guided missiles use a lot of energy to twist and turn in pursuit of hosts; parasite missiles are dwarfed by their targets, and the former die of exhaustion if they have to swim too long or hard to catch up. Some propagules may have only a few hours to complete their journey, and they may be desperate. Desperation can lead to mistakes; swimmers' itch is the consequence of desperate cercariae, mostly intended for ducks, attacking human legs. Although these cercariae are doomed, our immune system gets worried and attacks the cercariae anyway, leading to the itch. The parasites don't care about how we reacted, but they might be upset that their offspring ended up in the wrong place. Are there ways to improve on guided missiles?

BNS FIELD TRIP REPORT

Tannery Hollow Nature Trail

by Jim Wolford

NOVEMBER 9, 2008 – On this very warm (about 20 °C) afternoon George Forsyth led 16 people on this trail just southwest of Hennigar's Farm Market in Greenwich. The trail initially follows the south shore of Tannery Pond, where there were about 40 Mallards, plus one male Black Duck and one male hybrid Mallard x Black

Duck. Among other birds seen or heard were 20+ American Robins flying around, a Pileated Woodpecker, Blue Jay, and a Black-capped Chickadee.

George started by showing us the forest trees, which now were mostly leafless, and describing the differences between similar species: White Ash, White Birch, Shadbush (or Indian Pear or Juneberry or Saskatoon), Sugar Maple and Norway Maple, Pin Cherry and Black Cherry, Balsam Fir, White Spruce, Red Oak and English Oak and Swamp White Oak (the latter two species still had lots of leaves), American Beech (still with many leaves), Eastern Larch (a.k.a. Tamarack or Hackmatack or “juniper”), Red Pine and Scots Pine and White Pine, Glossy (or Shiny) Buckthorn and Common Buckthorn (with dark berries). George showed us a nice woodland of large planted Sugar Maples on a steep slope that used to have a natural skating pond at its bottom before Highway 101 was built nearby.

Other plants and critters of interest were Multiflora Rose, a willow species with twig galls caused by unknown insects, goldenrod ball galls (larva or pupa of the fly seen in one), thistle with a multi-compartmented stem gall (with insect larvae in cavities), an open dandelion-like flower with what looked like two very inactive small bees in its centre, Downy Alder trunks with Woolly Alder Aphids that were covered with brightly white stringy masses of wax (I read that these woolly aphids alternate infesting alder with maples, the sexual stages of the life cycle taking place on the latter), and a single Seven-spot Lady Beetle (one of our very common alien species that seem to have gotten abundant at the same time as the disappearance of native ladybug species). In an open meadow someone found a silken spherical mass of eggs from an unidentified spider.

Nancy Nickerson showed us a bright yellow fungus called Lemon Drops on a branch on the ground. I'm sure that Nancy could provide a list of the various other fungi she noticed during the walk, such as puffballs that were still shedding their spores when squeezed.

I found dark greenish/brownish/blackish colonies of liverworts (possibly *Frullania*) on White Ash and another tree trunk.

George walked us through most of the large property, and we

ended up in an area of apple orchard plus peach orchard plus greenhouses (for the peaches in winter) plus a mowed “golf course,” for which people can pay \$10 at the market and get a ball and club to play farmers golf. We helped ourselves to various kinds of apples while George described the process of grafting for each variety and other aspects of apple husbandry.

BNS FIELD TRIP REPORT

Cloud Lake Canoe Trip

by Patrick Kelly

AUGUST 2, 2008 – Just when you think you have things down to a routine, life has a way of reminding you that you still have to think on the fly. Such was the case with this trip. While we drove through some light rain on the way from South Berwick to the lake itself, the weather forecast promised things would improve. That kept up our record of great weather for these trips. The surprises both turned out to be of the manmade variety.

The first occurred when we stopped at the bridge just before the main lake. The beaver pond is always worth checking out, and it was not long before we were also checking out the flat tire on the van that held two of the canoes. As there was no spare tire, after a short discussion we decided to shuttle one of the “stranded” canoes to the starting point. I would loan my car someone else to take the tire to Greenwood for repairs. Upon their return they would start in Frog Lake and meet us at some point on that lake.

So far so good. At least until we approached the lake and noticed all of the new directional signs. When we got to the parking area the entire place was in use by the armed forces, who were doing some sort of water-based training exercises. We ended up having to put

in at the far north end of the lake, making for a much longer trip to the portage.

The trip down the length of Cloud Lake was quite pleasant. We were accompanied several times over the entire trip by loons, and on more than one occasion were able to hear them calling to each other. We saw several other notable birds during the trip, including Common Mergansers and a Gray Catbird, and we had a nice view of an Osprey.

We made the portage to Frog Lake and found a few locations where a strange bright-orange mushroom was growing from the mound at the base of ferns. The small pond that leads from the end of the portage to Frog Lake also held a pleasant surprise. The southern end was covered with the blooms of white water lilies.

We stopped at the cabin for lunch and then proceeded down the west arm of Frog Lake, where we met up with the canoes (another of our group had decided to start at the end point) that had come the other way. The tire was repaired and the fleet, now reassembled, headed back to the pickup point. It was a wonderful day, and I would encourage anyone who enjoys being on the water to come on a future trip. Just make sure you have a spare tire so you can enjoy the full day.

BNS FIELD TRIP REPORT

Frog Lake Canoe Trip

by Patrick Kelly

OCTOBER 4, 2008 – We had a small group for this trip: myself, Doug Guptill (who brought his brand new sea kayak; this was only his second trip in it), and Rick and Paul, who also have a canoe-loving dog. The weather was quite nice, which has been the case with



Paddlers on Frog Lake

every BNS trip to this area. The colours of the trees were a bit past their prime but still made for a great backdrop.

Instead of going to Cloud Lake, this trip was to Frog Lake, which is also in the Cloud Lake Wilderness Area. The biggest problem was that I had the 16-foot canoe by myself, and the wind was coming down the lake. Sitting in the front seat and rowing backward was too awkward and slow, and kneeling in the middle made for wet knees and an awkward stance. Rick, who has done a lot of canoeing, solved the problem by putting three large rocks in the front of the canoe to keep it down in the water. It was not nearly as bad after that. I was still the slowest, but at least it was manageable.

We made it down to the stillwater at the south of the lake, where a stream flows out, the water eventually ending up in the LaHave River. What a beautiful spot! To one side, if one were to bring a foam pad, was a large granite rock just right to lie on and read a book (but not during bug season). The stream that runs out has a beaver dam on it as well as a path likely made from people fishing in the area. We had our meal there and then headed back.

On our way out, the wind had picked up but was at least at our backs. I decided to ditch the extra weight, figuring that the extra surface area would catch more wind. To my surprise, instead of acting like a weathervane, with the canoe aligned with the wind, I went back down the lake with the canoe at a 45-degree angle to my direction of travel. At least I was able to keep up this time!

NATURAL HISTORY

American Goldfinch Study

2007–08

by Bernard Forsythe

Many American Goldfinches nested in old fields and roadsides in the Wolfville area during 2007 and 2008, taking advantage of the abundance of wildflower seeds in the area. This is an account of the outcome of the goldfinch nests I located. All records were submitted to the Maritime Nest Record Scheme.

—2007—

CLUTCH SIZES OF 25 NESTS FOUND

4 nests with 6 eggs total 24 eggs

10 nests with 5 eggs total 50 eggs

4 nests with 4 eggs total 16 eggs

total 90 eggs

In seven nests the number of eggs is unknown, as they were either predated during the egg stage or the nest was found after the eggs had hatched.

NUMBER OF YOUNG FLEDGED FROM 16 NESTS

3 nests fledged 5 young total 15 young
7 nests fledged 4 young total 28 young
4 nests fledged 3 young total 12 young
2 nests fledged 2 young total 4 young
total 59 young

CAUSE OF NINE NEST FAILURES

5 nests failed during the egg stage: 4 nests predated, 1 nest egg failed to hatch. 4 nests with young failed: 3 nests predated, 1 nest young dead in nest.

AVERAGE NUMBER OF YOUNG PRODUCED PER NEST

Young fledged from 16 successful nests = 3.7 young per nest
Young fledged from 25 attempted nestings = 2.4 young per nest

—2008—

CLUTCH SIZES OF 29 NESTS FOUND

1 nest with 7 eggs total 7 eggs
5 nests with 6 eggs total 30 eggs
10 nests with 5 eggs total 50 eggs
3 nests with 4 eggs total 12 eggs
1 nest with 3 eggs total 3 eggs
total 102 eggs

For nine nests the number of eggs is unknown, as the nests were either predated during the egg stage or the nest was found after the eggs had hatched.

NUMBER OF YOUNG FLEDGED FROM 20 NESTS

2 nests fledged 6 young total 12 young
6 nests fledged 5 young total 30 young
11 nests fledged 4 young total 44 young

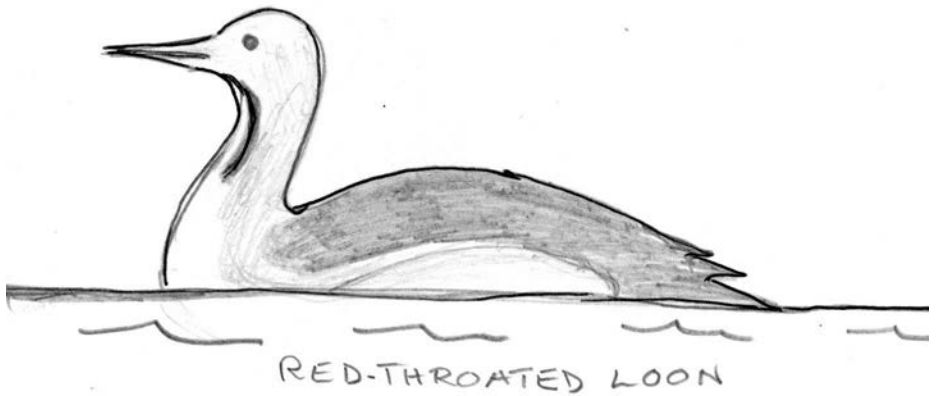
ed Loon. The Red-throated Loon is only about half the size of our resident Common Loon. Under certain light conditions, a road from above can look like water; a loon landing on what it thinks is water would be unable to fly from the road, as it needs to run over water to begin flight. It was agreed that I would take the loon to saltwater the next day.

At high tide the next morning, beside the Guzzle, north of the Grand Pre dikes, I placed the stranded loon at the water's edge. It swam a short distance, stopped, and gave three "mewing" calls. This gave me a good feeling, as it seemed to be saying "thank you." As it moved out into the basin, it drank water, dived, and stretched up, flapping its wings. All signs of good health. It swam out and joined three other Red-throated Loons in the Guzzle.

There were flocks of Snow Buntings, Horned Larks, a Lapland Longspur, an American Pipit, and a Northern Harrier over the Grand Pre dikes, plus six Dunlin and a Black-bellied Plover at the Guzzle. With the tide rising over the salt marsh, I began to walk the dike wall back towards Palmetter's farm. A Snowy Owl flushed



YELLOW-BREADED
CHAT



from the marsh, over the dike wall, circled back, and flew over water towards Starrs Point.

Rick Whitman joined me after dinner for birding at the east end of Oak Avenue and the trails along the steep bank next to the railway tracks. In no time we found a bright Yellow-breasted Chat, a first for Rick. He also heard a Cardinal and I found a Hermit Thrush among the many Robins in the Multiflora Rose bushes. We found a Black-capped Chickadee very upset in the branches of a fallen dead spruce tree along the bank. As we watched the chickadee, I spotted its problem: a well-hidden Northern Saw-whet Owl. A short distance further on, we flushed a large bird soon attacked by a mob of crows. It was a Great Horned Owl, my third owl for the day. In the evening I had hoped to see my backyard Barred Owls to make it a four-owl day. However, it was a couple more evenings before they visited our yard. From a birder's point of view, late November birding could not be improved.

*Dr. Gordon Hewitt:
Naturalist & Conservationist*

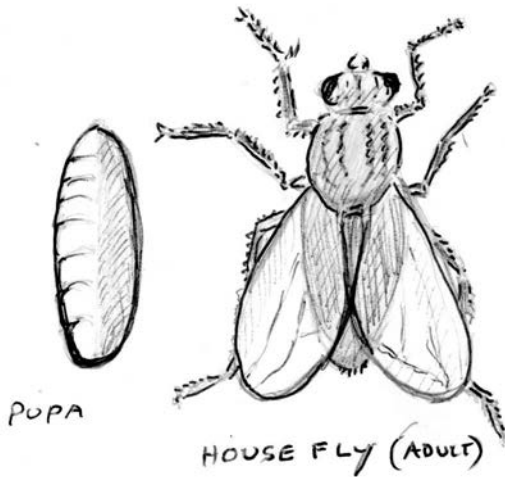
by Merritt Gibson

In the early 1900s Gordon Hewitt was an outstanding Canadian biologist, conservationist, author, and administrator. He was born in England in 1885, received his education (D.Sc.) at the University of Manchester, and moved to Ottawa where he became the dominion entomologist of Canada in 1909. In October 1911, at Trinity United Church in Canning, Nova Scotia, he married Elizabeth Borden, daughter of Sir Frederick Borden and his first wife, Julia Clark.

One of his first achievements as dominion entomologist was to help draft, and then guide through parliament, the Destructive Insect and Pest Act. This act encouraged research, which in turn identified a number of insect problems related to agriculture and forestry. It also established inspection and control services. Another result was that it made economic entomology a recognized field. In 1915, Hewitt became president of the American Association of Economic Entomologists.

When Dr. Hewitt arrived in Ottawa, the entomology service was a small unit within the experimental farm. Under his leadership it grew into four divisions at Ottawa and twelve laboratories across Canada. Its purpose was to “watch, research, combat, and forestall insect injury to forests and crops.”

Hewitt published 130 scientific papers, many on studies of insects related to agriculture, forests, and medicine. He also wrote departmental publications on such varied topics as honeybees and the Larch Sawfly. The housefly was one of his major interests. In 1914 he published and illustrated a 386-page book, *The House-fly, Musca*



domestica Linn., *Its Structure, Habits, Development, Relation to Disease and Control*. I have Hewitt's personal copy of *The House-fly*. The margins are filled with his handwritten notes; apparently he was planning a revision of his book.

At that time countries such as France and England launched programs to eradicate the housefly. Dr. Hewitt developed his own plan and presented it to the Royal Society of London in 1913. His plan was to enlist the help of entomologists around the world, asking them to encourage all people throughout their countries to kill a housefly on St. George's Day, 1914. On writing about this plan several years ago, I dubbed it "The St. George's Day Massacre."

Dr. Hewitt was described as a resolute crusader for the well-being of wildlife. He was especially interested in the development of game and bird sanctuaries. Point Pelee, as one of many examples, attracted large numbers of birds and birders during migration periods. But at that time it was not officially recognized, and the birds were not protected. The many friends of Point Pelee wanted this changed. They enlisted Hewitt's support, and he helped prepare and guide through Parliament the proposal making Point Pelee a national park.

The Migratory Bird Treaty (1916, 1918) between the United States and Canada at first received little support in Canada. Again, Hewitt

was a member of the negotiating team that made the treaty more acceptable to Canada. In recognition, the Royal Society for the Protection of Birds awarded Hewitt its Gold Medal.

During his career Gordon Hewitt served as president of the Entomological Society of Ontario in 1913, was admitted to the Royal Society of Canada in 1914 and appointed secretary of the Advisory Committee on Wildlife Protection in 1916, and became president of the Ottawa Field-Naturalists' Club in 1918.

Dr. Hewitt's hobby was gardening. He especially enjoyed growing plants developed by his colleague Isabella Preston (1881–1965), of the Department of Horticulture at the Experimental Farm in Ottawa. She developed many new plant species, now known as the Preston lilacs, Preston roses, Preston lilies, and Preston irises. Today, thanks to Hewitt, several older homes in Canning enjoy displays each spring of Isabella Preston flowers.

In February 1920 Hewitt attended meetings of the federal Commission of Conservation in Montreal and became seriously ill. He died of pneumonia on February 29, 1920, at the age of 35. The Entomological Society of Canada still recognizes him with its C. Gordon Hewitt Award, presented for "outstanding achievement in entomology."

In 1916 Dr. Hewitt had accepted the position of Canada's representative on the international Commission for the Protection of Nature, and this topic became one of his passions. During the last four years of his life he worked on a new book, *The Conservation of the Wild Life of Canada*. After he died his wife wrote an introduction and had the book published in 1921. It was one of the first books on conservation published in Canada. It was reprinted in 1972. In this book Hewitt writes on such topics as the "Value of Wild Life," "The Buffalo," "Birds in Relation to Agriculture," "Reserves for Game and Wild Life in Canada," and "Individual and Community Effort in Conservation." His recommendations are as important today as they were in 1921.

After he died Mrs. Hewitt returned to Canning, where she operated the farms owned by her father, Sir Frederick Borden, who had

died in 1917. Mrs. Hewitt died in 1948. She and Dr. Hewitt are buried in Hillaton cemetery, overlooking Canning.

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1. Entry by Paul W. Riegert in *Dictionary of Canadian Biography*, vol. 14, 1998.
2. Chrono-biographical sketch by Charles H. Smith, 2005, online at www.wku.edu/~smithch/chronob/HEWT1885.htm

CLUB NOTES

www.blomidonnaturalists.ca

Updated

by Larry Bogan

The Blomidon Naturalists Society website first appeared in about 1998. I wrote it in the standard tagged hypertext mark-up language (HTML) using a text editor. The number of pages have increased over the years to include the Wolfville Christmas bird count, hiking-trail maps, and other events and items of interest to the club. Editing and additions are still being done by the same awkward method: text editing with file transfer to the server.

The pages reside on a server (computer attached to the Internet) located in the Horton High School and managed by the Glooscap Online Society. Being on the Nova Scotia educational network, it has the address <http://www.go.ednet.ns.ca/nbns/index.html>. We have a registered domain name (*blomidonnaturalists.ca*), which gets you to the first page of the website by using the address *www.blomidonnaturalists.ca*.

Besides the awkward editing, another limitation is that we can't

use our domain name to directly access other pages on the site. We also have only one “ednet” e-mail address, which we don’t use, and we cannot use our domain name for e-mail.

Hopefully, by the time you read this, the BNS pages will have been put on a commercial web host. The pages will part of the *nature1st.net* pages on the host *webhostingpad.com* (www.nature1st.net/bns). Web pages of other similar organizations will be here also; the Minas Astronomy Group (MAG) for example, at <http://mag.nature1st.net>.

The advantage of the web host is that it includes a resource of Internet software to create a wide variety of useful functions beyond simple html pages. This system will allow for calendars, event scheduling, easy editing, comments, picture galleries, forums, e-newsletters, and more.

This web host allows e-mail addresses and e-mail list servers associated with our domain name. For example, announcements for BNS functions will be sent via *members@blomidonnaturalists.ca*. Board members will be able to communicate among themselves with *board@blomidonnaturalists.ca*.

This move will be a big help to me as administrator because it means that some of you can help create the content for web pages. I can give you a username and password with permission to edit web pages in an easy-to-use web-based editor. I want to hand over content management to others. That is the way it should be, since I do not have all the information of what is happening in the club. I would also be happy to hand the administration task to one of you.

Please look at the new site, and if you can help with content, let me know. You can find me at *larry@bogan.ca* or *admin@nature1st.net* or *admin@blomidonnaturalist.ca*

An Invader from Space

By Roy Bishop

On the evening of November 20, 2008, the skies over Saskatchewan and Alberta were lit for several seconds by a very bright meteor, or fireball. Many security cameras captured the object, a flickering, blindingly bright bolide, trailing a dim red stream of debris as it fragmented, dimmed, and disappeared over the horizon.

In addition to the Sun and planets, the Solar System contains vast numbers of smaller bodies, including asteroids and comet nuclei (diameters ranging from hundreds of kilometres to a kilometre or less) and smaller clumps of metal, rock, and ice with sizes ranging down to specks of dust. Each year some 10,000 tonnes of space debris collide with Earth.

Objects that collide with Earth do so with a minimum speed of 11 km/s, the speed that a distant body, initially not moving relative to Earth, gains in falling toward Earth. The maximum impact speed, 73 km/s, equals the sum of 42 km/s (the maximum speed that a body can have in the vicinity of Earth – any higher and it would long ago have escaped the Solar System) plus Earth’s orbital speed of 30 km/s (assuming a head-on collision), plus about 1 km/s more due to Earth’s gravity attracting the 72 km/s body.

Thus the speed of a meteor entering Earth’s atmosphere lies between 11 and 73 km/s. The associated kinetic energy ranges between 14 and 630 times that of the explosive energy of the same mass of TNT, solely because of the speed of the meteor. Thus it is no wonder that friction with the atmosphere causes meteors to glow brightly. The usual “shooting stars” are roughly pea-sized and disintegrate completely high in the atmosphere, 70 to 120 km above the

ground, leaving only gas and dust, the latter settling to the ground hours, days, or even months later.

The November 20 fireball was a large boulder, probably a few metres in diameter before it ran into our planet. Atmospheric friction heated its surface to incandescence and caused it to break into numerous smaller fragments. However, the interiors of the larger stony fragments remained cool because, despite the white-hot conditions that charred and ablated their surfaces, the few seconds spent entering Earth's atmosphere was too brief for the blistering heat to penetrate into the interior of the fragments. Thus the larger fragments survived the blast-furnace conditions of atmospheric entry, cooled, and slowed to perhaps only 100 to 200 km/h in the last few kilometres before impact with the ground. They would have arrived out of the night sky, dark and unseen, with a hissing sound followed by a "thud" when they landed on farmland near Lloydminster, Saskatchewan, on the evening of November 20.

The many security camera images obtained of the November 20 fireball enabled astronomers to deduce approximately where debris from the meteor could have landed. On November 29, several meteorites were found littering the predicted impact area, some frozen in a slough. Hundreds more are probably scattered over several square kilometres in that vicinity. More details of that remarkable shower of stones from the sky will likely be revealed in the coming months.

Many such events occur every year, but nearly all go unnoticed because they land in the oceans or in other uninhabited regions. How many times has each of us walked past a weathered stone or fragments of rusted metal that fell to Earth in a blaze of light a century ago, or a hundred centuries ago? A portion of the dust of the Earth came from the heavens.

The First Firefly

by John Belbin

It was June 20 and late in the evening of a warm day. I happened to be facing the picture window in my living room. I thought I saw a speck of light *on* the window. I paid special attention to it, thinking “This is silly; there are no cars anywhere nearby, the moon isn’t up, and it can’t be that pesky neighbour’s cat because he can’t climb half-way up a huge window. I must be seeing things in my old age.”

I turned most of the lights in the room off and the gleam came again, bright, flickering, and a yellowish-green colour. A few seconds later it was repeated in a different location. I could now see the outline of a “bug” on the window when the glow stopped.

I felt very confused; a discussion with friends only the day before had led to the definite opinion that fireflies don’t appear before August. Yet, I walked to the window and there it was. A long, narrow beetle, about 2 cm long. Seen from the underside it had two distinct sections on the tail area, and as I watched, first one then the other flickered slightly.

The trembling flicker was repeated, giving off a faint light. And then it happened: both sections lit up with a brilliance (seen from a range of 3 cm) that was incredible. No fluorescent lamp of similar size could have put out so much light.

I was immediately struck by the very obvious green hue of the light, something I had never noticed when watching fireflies flitting by up and down the nearby brook. I’d always assumed the light to be yellow.

I was treated to many repeat performances while the deluded bug crawled over my window and hopelessly shone his light into my

home. Always the full light was preceded by nervous flickering of one or both sections at barely perceptible levels. Sometimes these “tests” would grow stronger, and often there was a pause of several seconds. It looked for all the world like an animated fluorescent lamp with a faulty starter; it flickered on and off until the charge was strong enough to get going.

It was quite amusing to notice how several other nondescript “bugs” – also attracted to the window by my lights – became drawn to the firefly for the short periods when it displayed. They would crawl right over to it. Does the light have a nuisance value as well as a sexual signal for these insects? Eventually the firefly left. I had the feeling that it was exhausted and had still not realized the futility of its efforts.

This incident happened some ten years ago. I discovered the notes when clearing up after my recent move from Kingston to Hantsport. No fireflies yet in the new location. In writing this up I was bemused to realize that I don’t know any more about fireflies now than I did then.

WEATHER

Fall Weather 2008

by Larry Bogan

As you can see from the table, the autumn weather in the Valley was pretty normal. We essentially had our usual mild and pleasant autumn. Only November was a bit warmer than average. Precipitation is the most variable from year to year, and that is the case here, but the season as a whole received 90 percent of its normal precipitation.

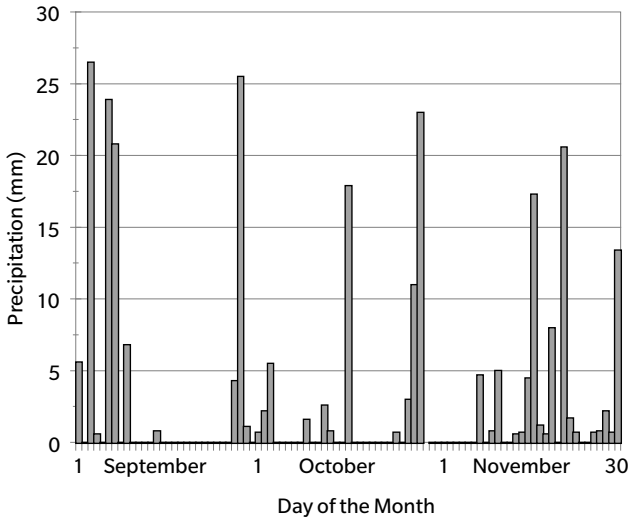
The precipitation did change from being wetter than normal by 26 percent in September to drier by 28 percent in November. The big event of the autumn was the heavy snowfall during the last week of November. That was a record breaker. On November 23 we had 34 cm on the ground, which exceeded the previous record depth for November of 23 cm in 1964. The average snowfall for a November is only 9 cm. Although November did not have a lot of precipitation (despite the large snow fall), it seemed wet because we had some precipitation in 19 of the 30 days of that month, as you can see in the precipitation chart.

In the temperature chart, you can see that November had much wider swings in temperature than the rest of the season. In one week near the end of the month the temperature ranged from 19 °C to -12 °C. The early part of the season had a slow, gentle decrease in temperature with no wide variations. The first killing frost held off until the first week in November for most of the Valley.

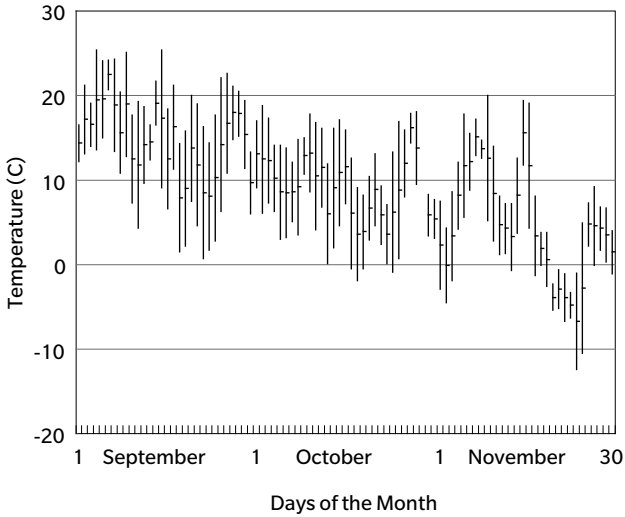
	Temperature			Precipitation	Bright Sunshine
	Max (°C)	Min (°C)	Mean (°C)	Total (mm)	(h)
September	19.9	9.6	14.7	116	163
(47 yr. average)	(20.0)	(9.4)	(14.7)	(87)	(170)
October	13.9	4.4	9.2	69	162
(47 yr. average)	(13.8)	(4.7)	(9.3)	(96)	(157)
November	8.4	0.6	4.5	84	83
(47 yr. average)	(7.6)	(0.1)	(3.9)	(117)	(78)
Season	14.1	4.9	9.5	269	408
(47 yr. average)	(13.8)	(4.7)	(9.3)	(300)	(405)

Source: Food & Horticultural Research Centre, Kentville, NS

**Daily Precipitation
Sept, Oct, Nov 2008 – Kentville, NS**



**Max, Min, Mean Daily Temperatures
Sept, Oct, Nov 2008 – Kentville, NS**





ASTRONOMY

What's In The Sky?

by Roy Bishop

It was in the sky. Did you see it? In the last installment of this column, and on the November page of the 2008 BNS Natural History Calendar, I described the spectacular conjunction of the three brightest objects in the night sky – Moon, Venus, and Jupiter – that would occur on the first day of December. I hope you saw the magical celestial triangle in the fading twilight that evening. The spectacle was one that is seen perhaps only two or three times in a lifetime. The weather cooperated in the Wolfville area, but the Atlantic side of Nova Scotia, including Halifax, was under clouds. The photo above was taken by Larry Bogan that evening from his home west of Kentville.

A New Year's Eve Quartet – In the southwestern sky on the last day of 2008, three planets and the crescent Moon decorate the fading twilight. Venus is beside the Moon. Far down to the lower right near the horizon are the other two – Jupiter and Mercury, barely a degree apart. Mercury is the dimmer, to the lower left of Jupiter. The best time to look is between 5:15 and 5:30 p.m. Shortly after 6:00 p.m. Jupiter and Mercury set, leaving only the Moon and Venus, until they set after 8:30 p.m. If you are fortunate enough to see the New Year's Eve quartet, note that you are viewing the inner Solar System: the twilight glow of the Sun, Mercury, Venus, Earth (the planet under your feet), and the innermost moon of the Solar System. Next comes Mars (not visible) and then Jupiter, the innermost of the four giant planets.

The Winter Evening "Star" – The very bright, star-like object in the southwestern evening sky during January, February, and early March is Venus. Venus is very bright because 1. it is relatively close to Earth; 2. the sunlight illuminating Venus is more intense than where we are located; and 3. Venus is covered with white clouds. Venus has been approaching Earth since it passed behind the Sun last June. It reaches its greatest angular distance east of the Sun on January 14, its greatest brightness in mid-February, and then begins to fade slightly as it turns more and more of its night side toward Earth. In early March binoculars will reveal Venus's tiny, thin crescent. Venus finally laps Earth, passing between the Sun and us on March 27, and enters the early morning sky, where it remains for most of the remainder of 2009.

January 3 (early Saturday morning), Meteor Shower – The Quadrantid meteor shower, one of the strongest of the year, nears its peak as dawn approaches on the moonless morning of Saturday, January 3. It is still dark at 6 a.m., but if you want to observe the Quadrantid meteors for an hour or more in a dark sky you should start at 5 a.m.

or earlier. Obviously a clear sky is required, but it helps greatly to be far from the light pollution of towns and yard lights. Dress warmly!

January 10 (Saturday evening), Largest Full Moon – The largest, brightest Full Moon of 2009 rises at 4:21 p.m. on January 10, rides high in the sky all night, and does not set until 8:22 the next morning. At Acadia University that evening, in the theatre of Huggins Science Hall, there will be a public talk introducing 2009 as the International Year of Astronomy (IYA).

February 27 (Friday evening), Moon & Venus – In the evening twilight the crescent Moon and Venus, 2 degrees apart, will decorate the western sky. Look between 6:30 p.m. and 9 p.m. Try photographing the pair in the twilight before the sky becomes dark. A tree or other silhouette in the distant foreground can add a special artistic touch to the scene.

March 8 (Sunday), ADT and Saturn – Clocks spring ahead by one hour this morning as Atlantic Daylight Time (ADT) replaces Atlantic Standard Time (AST). Also, Earth arrives on the same side of the Sun as Saturn today, placing Saturn “at opposition.” Saturn rises near sunset, is well placed for telescopic observations during the middle of the night, and sets near sunrise. Saturn will continue to be well placed for observing through April and May. During this spring, Saturn’s rings are tilted only a few degrees from edge-on, making Saturn look like an olive on a toothpick.

March 20 (Friday), Equinox – Spring arrives officially at 8:45 a.m. this morning, although the cold, southward-flowing Labrador current will keep our weather on the cool side until May. The counterclockwise rotation of Earth’s northern hemisphere continually swings Atlantic Canada out in front of the cold, southward-flowing current from the coast of Greenland and the Labrador Sea, a type of relative motion known as the Coriolis Effect.

April 26 (Sunday), the Moon, Pleiades, and Mercury – After 9:15 p.m., for half an hour in the fading evening twilight, low in the west-north-western sky is a pretty sight: the slender crescent Moon beside the famous Pleiades star cluster, while about three degrees directly below shines the elusive planet Mercury. Use binoculars! Mercury is well placed in that part of the twilight sky during the last half of April. Mercury remains near the Pleiades from April 26 into the first few days of May but dims rapidly and becomes lost in the solar glare by May 10.

CLUB NOTES

Financial Report – 2008

by Ed Sulis, treasurer

(See facing page)



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BLOMIDON NATURALISTS SOCIETY

Box 2350 Wolfville, Kings County, NS, B4P 2N5

STATEMENT OF INCOME, EXPENDITURES AND NET WORTH FOR BNS YEAR 2007 / 2008 ENDING 30 SEPTEMBER 2008
AND BUDGET FOR 2008 / 2009

	Description	Budget for	Actual for	Budget for	
		2007 / 2008	2007 / 2008	2008 / 2009	
	INCOME				
1	Advertising	200.00	0.00	200.00	1
2	Book / Crest Sales (miscellaneous from previous write downs)	250.00	186.00	200.00	2
3	Blomidon Naturalist Society Fees	3,600.00	3,468.00	3,660.00	3
4	Within the View of Blomidon: Sold 371 total (2009 sell 25)	4,769.00	425.00	500.00	4
5	Calendars: in 2008 sold 596 (2009 sell 570)	11,000.00	8,849.00	8,550.00	5
6	Hat Sales: Sold 24 total (2009 sell 10)	225.00	99.00	150.00	6
7	Donations (Calendar and other)	3,000.00	3,333.00	3,500.00	7
8	Nature Nova Scotia (25 dues + 5.00)	250.00	125.00	150.00	8
9	Grants and donations for Young Naturalists	10,000.00	12,648.00	12,000.00	9
10	Interest / Dividends (See cash in Endow. & G.I.)				10
11	Other				11
12	HST Rebate	800.00	0.00	2,000.00	12
13					13
14		34,094.00	29,133.00	30,910.00	14
15					15
16	EXPENDITURES				16
17					17
18	Administration (includes Craft Fair)	500.00	315.17	600.00	18
19	Awards and Meetings (includes speaker costs)	800.00	550.00	550.00	19
20	Calendars	7,100.00	5,995.26	5,500.00	20
21	Nature Nova Scotia (as above+ 100.00 BNS membership)	350.00	290.00	250.00	21
22	Memberships in other organizations	150.00	0.00	200.00	22
23	Nature Displays	700.00	442.93	300.00	23
24	Newsletter	3,400.00	3,282.83	4,100.00	24
25	Within the View of Blomidon	2,836.00	0.00	0.00	25
26	Investments	0.00	0.00	0.00	26
27	BNS Hats	1,128.00	0.00	0.00	27
28	Transfers to Endowment or G.I.	5,800.00	0.00	4,000.00	28
29	Young Naturalists	14,000.00	19,586.53	14,000.00	29
30					30
31		36,764.00	30,462.72	29,500.00	31
32					32
33	Excess; (or -) Income over Expenditures	-\$2,670.00	-\$1,329.72	\$1,410.00	33
34					34
35	Net Worth as of 30 September 2008				35
36					36
37	Bank Account (5207570)			\$3,127.95	37
38	Endowment Fund (54YL48A)	Cash: 1,302.39	Securities: 31,303.00	\$32,605.39	38
39	General Investment (55MH41A)	Cash: 718.62	Securities: 5,638.00	\$6,356.62	39
40	Within the View of Blomidon (Sold 23 in 2007 / 2008)	Sold: 371 total	Inventory 629 @ \$11.30	\$7,100.00	40
41	Hats	Sold: 24 total	Inventory 120 @ \$8.55	\$1,026.00	41
42				\$50,215.96	42
43	Notes:				43
44	1. Paid memberships in 2008 is 176 : Honorary 16 : Newsletter mailing is approximately 230 copies.				44
45	2. Young Naturalists 2008 includes approximately \$5600 from 2007 due to late invoices from 2007.				45
46	3. Outstanding income for 2008 includes HST rebate of \$800 and Young Naturalists holdback of \$900 from Human Resources Canada (both are estimates and if paid will occur in 2009)				46

SOURCES OF LOCAL NATURAL HISTORY

Compiled by the Blomidon Naturalists Society

TOPIC	SOURCE	OFFICE OR HOME TELEPHONE
Amphibians & Reptiles	Sherman Bleakney	H: 542-3604
	Jim Wolford	H: 542-9204
Astronomy	Roy Bishop	H: 542-3992
	Sherman Williams	H: 542-5104
	Larry Bogan	H: 678-0446
Birds – General	Bernard Forsythe	H: 542-2427
	Richard Stern	O: 678-4742 H: 678-1975
	Gordon & Judy Tufts	H: 542-7800
	Jim Wolford	H: 542-9204
	Jean Timpa	H: 542-5678
Butterflies & Moths	Jean Timpa	H: 542-5678
Fish & Wildlife	NS Department of Natural Resources	O: 679-6091
Flora: <i>General Fungi</i>	Ruth Newell	O: 585-1355 H: 542-2095
	Nancy Nickerson	O: 679-5333 H: 542-9332
Hawks & Owls	Bernard Forsythe	H: 542-2427
Indian Prehistory & Archeology	James Legge	H: 542-3530
Mosses & Ferns	Ruth Newell	O: 585-1355 H: 542-2095
Mammals	Tom Herman	O: 585-1358 H: 678-0383
Rocks & Fossils	Geology Dept., Acadia University	O: 585-2201
Seashore & Marine Life	Sherman Bleakney	H: 542-3604
	Jim Wolford	H: 542-9204
	Michael Brylinsky	O: 585-1509 H: 582-7954

BLOMIDON NATURALISTS SOCIETY

2009 Membership Fees & Order Form

Members of the Blomidon Naturalists Society receive four issues of the BNS newsletter annually. As a registered charity, BNS issues receipts for all donations. Members may also join Nature Nova Scotia through BNS and will receive FNSN News, the federation newsletter. (Neither BNS nor NNS membership is tax deductible.)

No.	Membership classification	Price	Total
_____	Individual adult	\$20.00	\$_____
_____	Family (number of family members _____)	\$20.00	\$_____
_____	Junior (under 16 years)	\$1.00	\$_____
_____	Nature Nova Scotia membership	\$5.00	\$_____

Items for Purchase

_____	2008 BNS Calendar	\$15.00	\$_____
_____	Natural History of Kings County	\$14.00	\$_____
_____	Nature Walks: Within the View of Blomidon	\$20.00	\$_____
_____	Annotated checklist of Kings County birds	\$5.00	\$_____
_____	Blomidon Naturalist crest	\$5.00	\$_____
_____	Blomidon Naturalist hat	\$15.00	\$_____
_____	Screensaver: 10 years of BNS calendar photos	\$10.00	\$_____

Postage & handling \$_____

(Orders \$15 or less = \$3 \$16 to \$50 = \$6 over \$50 free)

Tax-deductible donation \$_____

TOTAL \$_____

Name: _____

Address: _____

Postal Code: _____

Tel: _____ E-mail: _____

Name of donor (for gift subscription): _____

Membership fees are due January 1 of the current year. Please send cheques or money orders made out to Blomidon Naturalists Society in payment of membership fees and other purchases to:

Ed Sulis, 107 Canaan Avenue, Kentville, NS B4N 2A7





RICHARD STERN

BNS 2009 Winter Solstice party