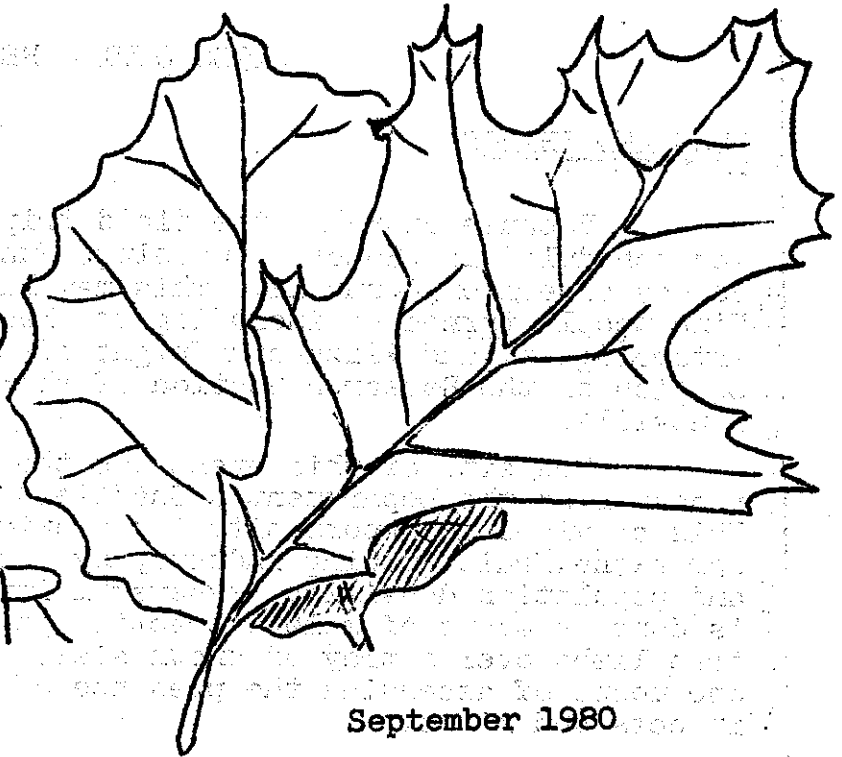


# BLOMIDON NATURALISTS SOCIETY NEWSLETTER



Volume 7, No. 3

September 1980

The BNS Newsletter is published on the equinoxes and solstices.

Editors: Jean Timpa and Larry Bogan

Art/Production: Larry Bogan

Typist: Barbara Gerritse

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, waters, air and stars.

From the BNS Constitution

## FALL PROGRAM

(mark your calendar now!)

### Evening Meetings of the Blomidon Naturalists

Third Monday of the Month  
8 p.m. in Room 241, Beveridge Arts Center  
Acadia University, Wolfville, N.S.

#### October Meeting, 20th

Subject: Wildflowers of Greece  
BY: Susan Rotroff of Mt. Allison University

#### November Meeting, 17th

Subject: General Presentation on the BIRDS & FLOWERS OF NOVA SCOTIA  
BY: Ross Baker, Truro, N. S. (author of "Reflections of a Bird Watcher", Lancelot Press) and Harry Brennan Hopewell, Pictou, Co.

#### December Meeting, 15th

Subject: The Natural History of Kings County Project  
By: Lynn Dixon, Manager of B.N.S. Project

### CHRISTMAS BIRD COUNT

We do not know the exact date yet, but very much need your companionship and help to cover our large area well. Please do not feel you have to be an expert ornithologist - help us carry clipboards and identification books! Be our recording secretaries! For particulars call Peter Smith at 542-2201, Ext. or 542-5998, or Jean Timpa at 542-5678, around December 10th.

1980 OUTING REPORTS

BUGS AND THINGS

Harold Stultz  
Wolfville, N. S.

Because of rain, the field trip entitled "Bugs and Things" that was scheduled for Saturday morning, June 21, had to be postponed to Sunday afternoon, June 22. This may have reduced the number attending. Nine people turned up including the leaders, Harold Stultz, a retired entomologist, and Elizabeth Knight of the staff of the Entomological Section of the Research Station of the Canada Dept. of Agriculture in Kentville.

The site of this event was the area devoted to tree fruits research at the Department's Sheffield Mills farm located at Upper Canard. This provided an opportunity for showing the means by which entomologists serve the fruit growing industry by monitoring the seasonal appearance and population densities of several important orchard insect pests. This is done by means of male attracting pherome traps, by baits and by tapping tree limbs over a tray of known size. The tapping method also provides one means of assessing the presence of arthropod species known to prey on insects and mites.

Samples of insect populations, disclosed by tapping method, were identified and their significance with respect to the production of good quality fruit was discussed.

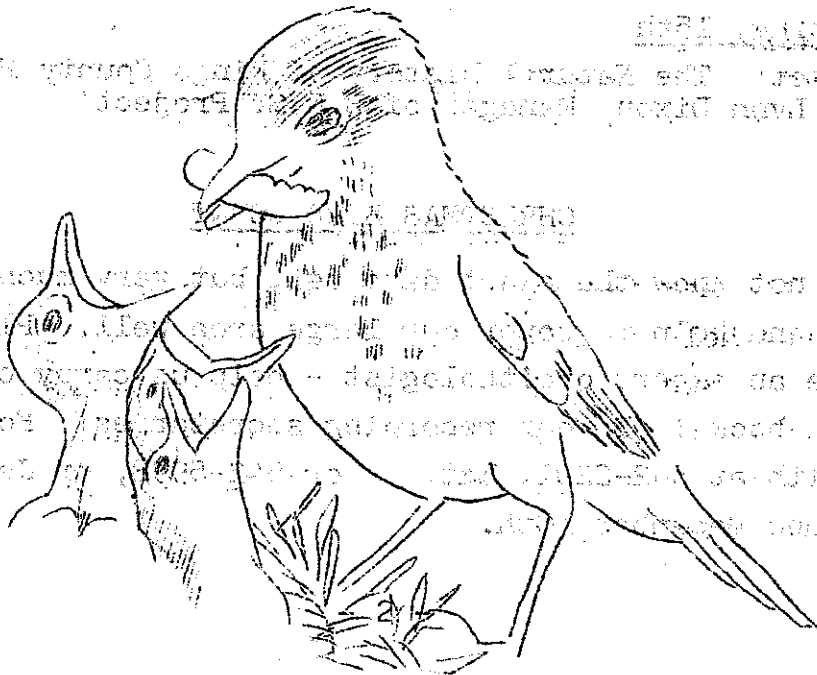
We were fortunate in having Ellis Gertridge, a commercial fruit grower, amongst our group. His comments on the practical advantages to a grower of using traps in his own orchard to monitor codling moth, leaf roller moth, and apple maggot fly populations, as well as on other aspects of pest control, were much appreciated.

HORTON BLUFF FIELD TRIP

July 19, 1980

This was one of the best-attended field trips that the BNS has held. Fifty-three people met at Roy Bishop's home in Avonport on this sunny Saturday. While waiting for the start of the walk, those who arrived early viewed an image of the Sun being projected by a telescope. Several sunspots were noted. The group then proceeded to the shore of the Minas Basin and the area the MicMac Indians referred to as Maktomkus, a word which means black rocks. The cliffs of Horton Bluff and the rock outcrops below the high tide line are composed of dark carboniferous shades, the remains of sediments which were laid down some 330 million years ago.

A variety of fossil imprints were located and described by the trip leaders, Roy Bishop and Sherman Williams. Among these were the long trackway made by a large amphibian, which was copied by the Nova Scotia Museum in 1979. Several smaller footprints, tail marks, and fern stem impressions were noted as the group strolled beneath the black cliffs toward Horton Bluff. An added attraction was a gypsum ship coming in on rising tide to take on gypsum rock at Hantsport.



FIELD TRIP FOR SHOREBIRDS

Aug. 23/80

Jim Wolford  
Wolfville, N.S.

Fifteen people participated on this perfect sunny Saturday morning for a stroll on Evangeline Beach. Twice each day, as the tide ebbs the sandpipers and plovers spread out and forage for crustaceans and worms on the extensive intertidal mudflats; but at high tide the birds are concentrated in roosting flocks, most of them resting on one leg or preening, along the beaches or in open fields on the dykelands (another good spot locally is the new sewage-treatment facility of Wolfville). Therefore, of course, our excursion was purposely planned for high tide. The date chosen was compromise, in order to hopefully see both early and late migrating species as well as large numbers.

On our arrival just east of Evangeline Beach, we looked down from the cottages to see a large flock of a few thousand semipalmated sandpipers with lesser numbers of ring-necked semipalmated plovers (confusing names, eh?). These and most of the other shore birds were on their way south from arctic breeding areas, and most of the tiny semipalmated sandpipers apparently make a non-stop flight of 2700 miles over the ocean from here to Surinam in northeastern South America (many then go further, to Brazil, or even to Argentina). Thus, it's hardly surprising that each bird doubles its weight and becomes a butterball in an estimated couple of weeks of feeding here.

After considerable searching, one semipalmated sandpiper that had been dyed yellow was spotted; and a few other banded birds were seen. The colour-marking and banding has been going on in James Bay (southern Hudson Bay) for several years by the Canadian Wildlife Service (see National Geographic, Aug. 1979) and the migratory route has recently been discovered by the sightings of the dyed birds.

I recently learned from Sherman Boates that the semipalmated sandpipers were at peak numbers here in late July and again in early August -- everyone remember that for next year, if you wish to see really large flocks (or better yet, go to Mary's Point in New Brunswick at that time of year! -- see article by Mary Majka in Nature Canada, July/Sept. 1978). Also, P. C. Smith told me that the C.W.S. had a bad year of trapping and banding in 1980; therefore our sighting of a dyed bird was fortunate.

We all walked east on the beach toward Boot Island. We disturbed and passed several smaller flocks of "semi's" (semipalmated sandpipers and plovers) and were entertained by their wheeling flights with abrupt and simultaneous changes of direction. For any of you readers who have not witnessed this, the visual effect on a sunny day of flashing white breasts, then dark backs, then white again, is truly a spectacular phenomenon not to be missed in August every year. Just be sure to go there at high tide; or else the birds will be kilometers away on the mudflats.

A few of us were speculating about their endless twittering notes -- we wondered if they were discussing those large two-legged, peeping-Toms who wouldn't leave them alone! We also were entertained by their one-legged hopping when mildly disturbed.

At the east end of the beach was a flock of black-bellied plovers with dowitchers + godwits + turnstones (see below). We all had good looks at the flying Hudsonian godwits and the handsome ruddy turnstones. We also saw a few marsh hawks involved in aerial maneuvers with ravens, and several double-crested cormorants headed away from or toward Boot Island (but no herons were seen).

My list of shorebirds plus "guesstimates" of numbers seen:

8000 semipalmated sandpipers  
(12 least sandpipers seen next day)  
800 semipalmated plovers  
2 sanderlings  
200 black-bellied plovers (+600 seen in open fields nearby)  
20 dowitchers (probably short-billed)  
10 ruddy turnstones  
3 Hudsonian godwits  
1 greater yellowlegs (5 lesser seen the previous day)  
2 red knots  
5 killdeer } - species that nest locally  
3 willets }

## Field Trip For Shorebirds, cont.

P. S. I returned on September 5th to find:

350 semipalmated sandpipers  
5 least sandpipers  
20 sanderlings  
1 dunlin  
180 black-bellied plovers  
150 semipalmated plovers

Among the semipalmated sandpipers, once again there was a single bird with the belly dyed yellow. But this individual was different from the one we had seen earlier - it had a green band over an aluminum band high on the left leg.

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With the Oct. 4th Field Trip, the planned field trips came to an end. Late Fall and Winter weather will make planning a bit hazardous. However, there are activities which allow for various types of weather. I have no feedback on the wishes of the membership. We mentioned a bicycle trip, cross country skiing; perhaps a photography trip could be included, or something on tree identification in winter - but what can we plan that you would attend?

To make it easier, why not mark the activity you like and send it back to us, or call 582-3206 and let me know.

A. Gerritse,  
Program Chairman

Bicycle Trip \_\_\_\_\_  
Cross Country Skiing \_\_\_\_\_  
Long Walk (general natural history observations) \_\_\_\_\_  
Photography Hike \_\_\_\_\_  
Winter Picnic \_\_\_\_\_  
None of the above, but \_\_\_\_\_

We would like to plan with at least 8 members in favour, who can be expected to participate, so let me know.

## EDITOR'S CORNER

### Acknowledgements

During this past quarter we owe special thanks to the following people for leading field trips: Dr. Harold Stultz and Elizabeth Knight ("Bugs & Things", June 22); Roy Bishop and Sherman Williams ("Carboniferous Creatures", July 19); and Jim Wolford ("Shorebirds", Aug. 23). To the many people who contributed slides and other exhibits to our very successful Members' Night on Sept. 15, to all those who have cheerfully given of their time and talents to make this Newsletter possible, and to all those who contributed Logos, goes our particular gratitude.

### A Special Thanks

To Roy Bishop who has given of his talents and patience, to edit, illustrate, produce and mail out the Newsletter for the past several years. Feeling a little too busy he has begged off further duties, working up a new course, and Head-of-the-Physics Department responsibilities at Acadia University.

We are most fortunate to have Larry Bogan (a former BNS Secretary-Treasurer, long-time President and production and artistic editor of the Newsletter) quickly volunteer to fill this vacancy.

## LOGO CONTEST

The Contest closed September with approximately one dozen submissions. After a most difficult judgement session by the Executive, it was finally decided that a Logo by Lynn Dixson will represent our organization. We hope to present it to the membership in next month's Newsletter.

## A Book to Look For

BNS member and Chairman of Acadia's Biology Department, Dr. Merritt Gibson, has written a book that many naturalists will be interested in. The book, "Winter Nature Notes for Nova Scotians", published by Lancelot Press of Hantsport, is a guide the winter hiker and skier. It is just being released this month, so watch for it at the book stores. The book is illustrated (Twila Robar, artist) and is divided into three sections; birds, mammals, and trees and shrubs. We'll try to have a review of this book next issue.

## BNS NEWSLETTER DEADLINE

December 21

Now that the rush of vacationing and gardening is almost over, won't you please sit down and write even a few lines about some interesting phenomena of natural history you observed? Before the Christmas rush starts! I feel that too many of the same people are doing all of the writing. We'd all enjoy reading articles by new contributors as well as the old guard! Send material to: Jean Timpa, Box 1382, Wolfville, N. S. BOP 1X0, or give it to Jean or Larry at meetings, or call 542-5678 for any quick, last minute observations.

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## D U E S

This Newsletter will be sent to those members who are in good standing. New members, or those wishing to rejoin, should send their name and address and \$4.00 (\$1.00 for members under 16 years of age) to Roy Bishop, Avonport, N. S. BOP 1B0.

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## B N S P R O J E C T ' 8 0

Feel confident, BNS members, that money has been well spent on the Summer Youth Employment Project. Most of the groundwork involved with the Naturalist Guide is done. This included numerous interviews and field trips, and library research that took a solid month of work. The Project employees were Lynn Dixson, Donnie Zinck, Dale Frail, Ann Odell and Debbie Williams.

At present, drafts of all sections or chapters are complete and a catalog of reference material has been compiled. The task is not finished however, as illustration, layout and the publishing aspects were not given much attention. With continued support from the membership and from the community at large, the BNS Naturalist Guide to Kings County can be a reality in the near future.

Plan to attend the December BNS get-together and see in living colour the adventurous outings and activities of the BNS summer project workers, including such highlights as My Close Encounter at Black Hole, and How I Forgot My Fear of Flying!!!

Lynn Dixson

Dale A. Frail  
Centerville  
Kings Co., N. S.  
BOP 1JO

TO THE MEMBERS OF THE BLOMIDON NATURALIST SOCIETY:

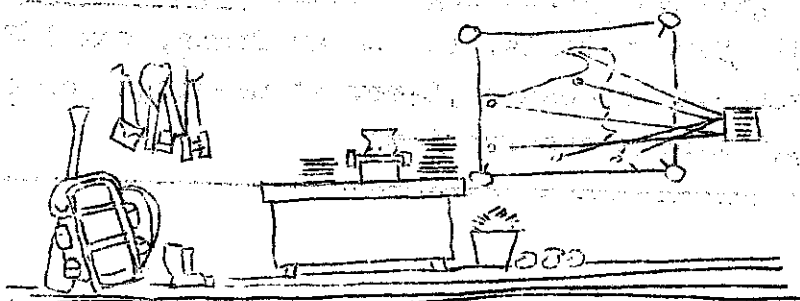
I would like to take this opportunity to thank you for allowing me to work on the B. N. S. Summer Project '80. I am sure I am speaking for my fellow workers when I say this Summer was an extremely rewarding and satisfying one.

A special thanks is extended to all those individuals who gave of their time and resources to the project. Their cooperation and encouragement gave us the will to continue, when the task of compiling the vast quantity of information available seemed impossible.

Thank you,

Dale Frail

P. S. If there are any problems or matters you wish to discuss with me, please do not hesitate to contact me.



#### PARENT DESTROYS OWN YOUNG

August 15, 1980

Robie W. Tufts  
Wolfville, N. S.

The July-August issue of the BIRDWATCHERS' DIGEST (published in Ohio, U.S.A.) carries a story about a parent Phoebe that was actually seen pecking at its four newly-hatched young in the nest and eventually dumping them to the ground below. Seeking an explanation, the observer reported the incident to a high-ranking biologist in the area, Dr. H. B. Thordoff, who was reminded that the period of about a week, from the time the eggs hatched until the bizarre killing took place, was unseasonably cold and wet. The theory Dr. Thordoff evolved was this: - the parents, due to the adverse weather cited, were unable to provide sufficient insect fare to meet the nutritional requirements of their ravenous young. The parents noted that their offspring were becoming weak and unresponsive. Under Nature's rigid and unalterable laws only the fittest are allowed to survive, and the parents had reacted instinctively. We were told that this pair of Phoebes nested again, successfully.

The foregoing was read by me with more than casual interest. This, because of a similar incident which occurred in my own garden back in 1970, an acceptable explanation of which has eluded me ever since. It concerned a pair of Catbirds which had chosen their nest site in a thick English thorn tree a few feet directly above my driveway. On June 20, by mere chance, I noted three dead naked young Catbirds lying on the ground directly below the nest, and moments later I found a fourth in the grass a few yards away. Their bodies were limp, an indication they had died very recently. No parent birds were in evidence. Who was the culprit?



Parent Destroys Own Young, cont.

It certainly was no natural predator, furred or feathered, for it would have eaten them. The thorny branches made the nest virtually inaccessible to any ill-disposed human predator. There was only one conclusion; the parent birds themselves had dumped the youngsters out of the nest, dead or alive. But why?

The incident was brought to the attention of local 'birders' and given much thoughtful discussion, but no mutual agreement was ever reached. While inclement weather was not a factor, as it was believed to have been in the case of the Phoebes, Dr. Thordoff's submission regarding the natural reaction of the parents to ailing young in the nest is enlightening and doubtless correct. In the case of the Catbirds, the possibility occurs to me that the parents had unwittingly brought them contaminated food such as grubs that had died from poison spray. Whatever may have been the cause, I am now convinced that the young Catbirds were sick, and that their parents in disposing of them as above described, were merely following the dictates of Nature's laws.

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BIRD NEST SURVEY 1980

Bernard Forsythe  
Wolfville, N. S.

Another very successful nesting season has ended. Now comes the work of filling out nest cards from the notes taken at the nest site. Although I find that part tedious, it does remind me of all the pleasant hours spent in the woods and fields of our area.

There has been an increase in the meadow vole population that has attracted many owls, especially Long-eared and Short-eared Owls. With more owls around it was easier to locate nests. Also I am pleased with the way owls have been accepting my artificial nest sites. Three of my Barred owl boxes were used as well as Great Horned Owls on one nest platform and Long-eared Owls on another nest platform at Canard.

Usually I observe nests with as little interference as possible. However, after finding an unusual situation at one Raven nest, I decided to try an experiment. The nest was built the first week in March. It was a normal nest, and I began once or twice a week visits to count eggs. Each time an adult would flush from the nest and scold me, but the nest was always empty. On April 20, she was still sitting on the empty nest, while by this time my other Raven nests held young. Why not help her out in the egg department? The Crow is not a protected species, and I think most people will agree that we have enough crows around. Crow eggs look like Raven eggs only a little smaller. So, on April 21, six eggs were taken from a Crow nest and placed in the empty Raven nest. Three days later, as I approached the nest, I could see her on it and was excited to think that she had accepted the crow eggs. To my surprise when I looked into the nest it was empty! There was no sign of them in or below the nest. The Ravens must have eaten them. She continued to sit on the empty nest, with her mate close by, until at least May 4, the last day I saw them at the nest.

Our smaller songbirds are still having their problem with Cowbirds in this area. I finally located an active Magnolia Warbler nest and a Black-throated Green Warbler nest this year. Both of them held Cowbird eggs.

Following is a list of the 219 nests recorded. About one half dozen of them were shown to me by others so that I would record them, such as the Northern Oriole nest in New Minas and the Mockingbird nest found by Bob Fraser in Windsor. The Mockingbird is not common in Nova Scotia, and only 3 or 4 nests have been found. Also the outcome of a few nests is unknown, because I did not have the time to revisit them.

| No. Found | Species                  |       | No. Found | Species                |           |
|-----------|--------------------------|-------|-----------|------------------------|-----------|
| 1         | Double-crested cormorant | s     | 2         | Blue Jay               | 2f        |
| 1         | Great Blue Heron         | s     | 11        | Common raven           | 5s;5f;1?  |
| 4         | Goshawk                  | 2s;2f | 31        | Common crow            | 15s;8f;8? |
| 1         | Sharp-shinned hawk       | s     | 1         | Black-capped chickadee | f         |
| 1         | Marsh hawk               | f     | 1         | Boreal chickadee       | f         |
| 1         | American Kestrel         | s     | 1         | Mockingbird            | s         |

Bird Nest Survey 1980, cont.

| No. Found | Species                      | S/F      | No. Found | Species                   | S/F      |
|-----------|------------------------------|----------|-----------|---------------------------|----------|
| 1         | Hooded Merganser             | f        | 1         | Gray Catbird              | f        |
| 1         | Common Merganser             | f        | 20        | American Robin            | 8s;9f;3? |
| 4         | Ring-necked Pheasant         | 1s;3f    | 1         | Hermit Thrush             | s        |
| 1         | Killdeer                     | s        | 1         | Swainson's Thrush         | f        |
| 2         | Great Black-backed Gull      | 2s       | 2         | Veery                     | 1s;1f    |
| 2         | Herring Gull                 | 1s;1?    | 4         | Cedar Waxwing             | 3s;1f    |
| 1         | Rock Dove                    | f        | 10        | Starling                  | 5s;5f    |
| 2         | Great Horned Owl             | 2s       | 1         | Northern Parula Warbler   | s        |
| 4         | Barred Owl                   | 3s;1f    | 5         | Yellow Warbler            | 1s;2f;2? |
| 8         | Long-eared Owl               | 6s;2f    | 1         | Magnolia Warbler          | f        |
| 5         | Short-eared Owl              | 4s;1f    | 1         | Yellow-rumped Warbler     | s        |
| 2         | Chimney Swift                | 2s       | 2         | Chestnut-sided Warbler    | s        |
| 3         | Belted Kingfisher            | 3s       | 2         | Ovenbird                  | 1s;1f    |
| 3         | Common flicker               | 2s;1f    | 1         | Common Yellowthroat       | s        |
| 1         | Pileated Woodpecker          | f        | 3         | American Redstart         | 2s;1f    |
| 1         | Yellow-bellied sapsucker     | f        | 2         | House Sparrow             | 1s;1?    |
| 1         | Hairy Woodpecker             | ?        | 5         | Red-winged Blackbird      | 4s;1?    |
| 2         | Downy Woodpecker             | 2s       | 1         | Northern Oriole           | s        |
| 1         | Eastern Kingbird             | s        | 7         | Common Grackle            | 4s;2f;1? |
| 1         | Eastern Phoebe               | f        | 10        | Brown-headed Cowbird      | 3s;6f;1? |
| 9         | Alder Flycatcher             | 3s;6f    | 1         | Rose-breasted Grosbeak    | s        |
| 1         | Eastern Wood Pewee           | s        | 3         | American Goldfinch        | 2s;1f    |
| 2         | Tree Swallow                 | 1s;1f    | 4         | Dark-eyed Junco           | 1f/3?    |
| 3         | Bank Swallow                 | 3s       | 1         | White-throated Sparrow    | s        |
| 5         | Barn Swallow                 | 3s;1f;1? | 6         | Song Sparrow              | 4s;1f;1? |
| 1         | Black-throated Green Warbler | s        | 1         | Ruby-throated Hummingbird | f        |

S A B L E I S L A N D

John S. Erskine

(Part 1 of 3 parts)

(From the Journal of Education, March 1955)

Sable Island is the emergent part of a great sand-bar about one hundred miles southeast of Canso. At high tide the island is about twenty miles long and up to three-quarters of a mile wide. It runs nearly east and west in a shallow crescent, concave to the north, and consists of two lines of dunes, those on the north being much the higher, and a low undulating central valley with ponds of fresh or brackish water and one great salt lake, Wallace Lake or "the lagoon". The fresh water which fills the ponds is rainwater which has soaked into the sand and, being of less density than sea-water, rides on top of the salt water which permeates the island at sea-level. Wallace Lake is said to be now about eight miles long, only a fraction of its former great size, and the sea enters the lake readily at the south side where the dune is reduced to a few hummocks. In the eastern end the dunes are higher, newer-looking and more waterless.





## SABLE ISLAND, cont.

The old Main Station of maps and botanical records lies near the western end where the sea has cut across the single dune. Some houses, the flag-station and the barn remain, but the lifeboat-sheds and the roll-ways have been undermined and collapsed by the encroachment of the sea. The present Main Station has been established around the wireless station two miles to the east and consists of a few frame houses and several black Quonset huts. Some of these house the staff and others are storehouses for the year's supplies which are landed by surfboat from the supply-ship in August. Two miles farther east is the meteorological station, a single modern residence with a few surrounding sheds.

Then, about three miles from the extreme eastern end, are the "East Light" (a wooden lighthouse) and, in the shelter of a dune, the small frame house of the light-house keeper. Even more conspicuous at this point is the towering hull of a freighter wrecked on the far side of the island some years ago.

At low tide the island is said to be about forty-five miles long. This I report from hearsay for during my short visits visibility generally varied from twenty yards to one mile. On the northern side low tide exposes merely a few yards more of fairly steep beach and brings the outer bars near to the surface, but on the southern shore the sand-flats seem to extend for miles, although the sound of distant breakers confirms the surveyors' statement that here, too, is a triple line of bars.

Sable Island was long famous for its wrecks, and this for a number of reasons. For one, the island is low and difficult to see even in clear weather, while its sandpits are dangerous for many miles east and west. Also, it is along the line of meeting of the Labrador Current and the Gulf Stream which swirl around the island in a gigantic eddy, the speed of which is sufficient to throw navigators miles out in their reckonings. These currents, one warm, one cold, produce frequent fogs, and, as the island is almost on the outer edge of the continental shelf, it is exposed to the full fury of Atlantic gales. Because of all these dangers life-saving stations have been kept on the island continuously for a century and a half. Today however, radar, wireless direction-finding and storm-warnings have reduced the losses almost to zero, and the life-saving installations may be due for reorganization.

Variations of temperature are rather less than on the mainland. St. John records a maximum of 77° and a minimum of 5°F. for the years 1898-1901 inclusive, and recently neither of these extremes has been exceeded. Rainfall is much as on the mainland, but the wind is excessive, averaging eighteen miles per hour throughout the year. Even on very calm days one sees patches of brilliance and shadow scurrying up the wind-tunnels among the dunes, little whirlpools of sand in motion, and when the great gales blow, this sand has the force of birdshot. Bottles that have lain about for a year are frosted on the surface by the friction, and great hills are undermined and shifted in a few hours. The tattered vegetation is subjected to burying, sand-blasting and a frequent salt spray from the sea.

### Physical History

Geologists have not agreed upon the origin of Sable Island. Goldthwait suggests the analogy of the double sandbars that link pairs of the Magdalen Islands but admits that there are no known planed-off islands to initiate such a formation. Others have suggested that the sand has been swept together by the fairly rapid currents which eddy around this spot. A third possibility would have been a great drumlin or moraine now sifted into sand and not yet scattered.

The first description of the island is from French sources of 1633 and describes it as being forty miles in "circumference" and much longer than wide. This would be true today. A student of the island, S.D. MacDonald was indignant at this and estimated that if erosion had been constant the island at that date must have been two hundred miles long and eight hundred feet high. The figures on which he based his theory have been gathered by Patterson. They report the destruction from the west end of: four miles, 1814; four miles, 1820; eleven miles in the 30 years before 1851, according to Joseph Howe; three miles, 1881-3; and I was told of another three miles lost in the 1930's. Of the original nine miles west of Wallace Lake thirty-three have been washed away and six are left. These are typical Sable Island statistics.

SABLE ISLAND, cont.

The charts tell a different story, although their gloss is often as confusing. Two surveys, made independently in 1766 and in 1770, show the island to have measured twenty-four miles in a straight line from tip to tip. I have not found a copy of the chart of 1828. In 1850 Capt. Bayfield, a famous maker of maps, surveyed the island and found that it had lost two miles from the west end and had gained nothing on the east end since 1828. Another author says that this survey shows that the island has lost six miles from the west end and had gained five miles on the east. The chart shows the island then to have been twenty-three miles from tip to tip. In 1899 the Geological Survey again mapped the island, and their chart shows it to have been twenty-four miles from tip to tip. I have seen no more recent survey. What is obvious from the charts as well as from descriptions is that the island has narrowed progressively throughout this period. Today few places can be more than half a mile wide.

On going ashore on Sable Island I was struck immediately by the extreme looseness of the sand. On the dunes, and even on the damp beach, one sank almost ankle-deep. I noticed that the waves came up to the beach but did not run back again; instead, they sank into the sand. It occurred to me that this would be reasonable if the sand-grains were rounded. I did not think to collect sand from the beach, but I had plenty on the roots of my plants, and I have drawn and measured samples and compared them with three other lots of quartz sand. The samples were collected by passing a slide of unsorted sand under the microscope and measuring and drawing each grain as it appeared in the field. Measurements are in microns. The rotundity quotient is the result of dividing the longest diameter of each grain by the shortest diameter, each line to pass through approximately the center of the grain. Measurements are based on the average of ten grains of which only the first five are pictured.

| <u>Origin of Sand</u>            | Maximum | Minimum | Average | Rotundity |
|----------------------------------|---------|---------|---------|-----------|
| Lake Mockingigh, Hants Co.       | 667     | 238     | 442     | .58       |
| Sand Lake, Outram, Annapolis Co. | 2125    | 119     | 539     | .56       |
| Cape North Corner, Victoria Co.  | 646     | 204     | 423     | .48       |
| Sable Island                     | 1105    | 425     | 624     | .80       |

Only the roundness and the minimum measurements of the Sable Island grains seem to be significant. This roundness of the grains must affect the building up of the island. A sphere presents the maximum average cross-section to forces from all directions, and has the minimum average surface touching other surfaces, and has the smallest area of surface for its volume. Waves passing over sand will lift such spherical particles most readily and will also drop them most readily. Waves of water will be accompanied by slower waves of sand, the bars, which will move towards the shore and break at last upon the beach. Winds from north or south will be pressed upwards by the coastal dunes and, increasing in velocity, will funnel the beach-sand upward. On passing the dunes they will lose speed and will drop it again. So the dunes will move slowly inland. The smallest sand particles will be carried farthest and many will be blown altogether out of the area of the bank. Larger particles which fall soon into the sea will be brought back again by the waves until in time they are worn down into smaller ones and so lost. Thus the total bulk of the island diminishes.

Patterson pointed out that periods of erosion alternated with periods of stability, and he attributed the erosion of the island chiefly to the wind which carried away hundred-foot sandhills in a single gale. Macoun disagreed with this and considered the wind to be the builder and the sea the destroyer. I consider the sea and the wind to be both builders and both destroyers, the sea being the more powerful in each category.

Macoun also thought that Sable Island had never had trees and was incapable of harbouring them. However, the government carried out a huge experimental afforestation of the island in 1901. Dr. Saunders visited the coasts of Brittany to get information about the trees hardiest on the coastal sands there, the soils of Sable Island were analyzed and fertilizers were sent out. Everything was done to make the project a success, except small-scale experiment. Then more than eighty thousand trees and shrubs were planted and thirty pounds of pine-seed scattered. By 1913 the plantings were reduced to seventy-seven survivors; in 1927, according to a lifeboat man, one pine-tree growing flat to the ground, was still to be seen; and in 1952 there remained only one small shrub of buckthorn. Gussow and St. John found heather, introduced accidentally in the afforestation, and it is possible that the hollyshrubs now scattered over the west end of the

SABLE ISLAND, cont.

island may have come in with the trees, for Macoun did not see them.

Today anti-erosion schemes are again afoot, and it is possible that the extensive use of *Rosa rugosa* and tamarisks might reduce the shifting of the island sands and speed the building up of dunes. A reduction of the number of ponies to the point where the sand-grasses again found it possible to seed might help to bind the high dunes on the inner side. But such measures should be justified only by their effect upon the amenities of the island. They will not lengthen its life by one per cent.

(to be continued)

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C A T T A I L    F L A P J A C K S

Majorie Knowles  
Kentville, N. S.

Two cups pollen  
Two cups flour  
four teaspons baking powder  
1 teaspoon salt  
two eggs  
1 cup milk  
1½ cups water  
1 Tablespoon sugar or syrup  
bacon drippings

Mix well and fry in a greased pan.