



**ORATORICAL—** Winners of Croft Elementary oratorical contest. Mrs Harry Walker, Education Secretary of the IODE presented the IODE trophy to Kristy Moore Grade 5 first place winner. Left to right: Mrs Walker, Mrs Taylor, teacher, Kristy Moore, Gr. 5 1st; Andrea Cameron, Gr. 6, 2nd and Mark Burns, Gr. 5, 3rd.

Grade 5 and 6 students at Croft Elementary

competed in an oratorical contest.

First row seated left to right: Mark Burns Gr. 5, 3rd; Kristy Moore, Gr. 5, 1st; Andrea Cameron, Gr. 6, 2nd.

Second row: Ellen Wilson, Gr. 6, Darin Luke Gr. 6; Denise Gilks, Gr. 6.

Back row: Brian Mullin, Gr. 6, Bruce Woulds, Gr. 5, Mark McKinnon, Gr. 6, Blake Sutherland, Gr. 5.

# Miramichi Wildlife

By Harry Walker



## Serenaded by the beautiful Robin

Now that their nesting season is over, the robins have finished their singing for another year and now only do a bit of chirping. However, in the following poem by Naomi Parks of Newcastle, you will hear the robin sing one last song of the season.

### THE SERENADE

He came and sang at my back door

I heard his cheery call  
The song he sang was beautiful  
And I wanted to hear it all.

So I left my job of sweeping  
And stood the broom aside  
I opened wide the window  
For I knew the work would bide.

He strutted up and down the lawn

His little red breast aglow,  
He cut a splendid figure

Marching to and fro.

Could he be a soldier  
Or a private on the go—  
A silvery note he uttered  
I know—he's Romeo.

And Romeo he was  
For he sang a serenade

Out of the nearby bushes  
There hopped a robin maid.

The cutest bit of feather  
That ever you did see,  
And the last I heard of them  
They were serenading me.

**Naomi I. Parks**  
107 King George H'wy  
Newcastle, N.B.

An unusual little plant, that is quite plentiful in the ditch in front of our cottage at East Point, is the **Round-leafed Sundew**. Like the Pitcher Plant it is carnivorous. It lives in peat bogs or in poor acid

soils which contain very little nitrogen or other plant nutrients. The Sundew makes up for the deficiency in the soil by capturing insects.

Many people have walked over this plant but few people have noticed it since it is very small. It is necessary to get down on one's hands and knees in order to examine this plant and see how interesting and beautiful it is.

### THREE TO SIX INCHES

The Round-leafed Sundew consists of a rosette of small round leaves at the base of a single thin leafless flower stalk. This flower stalk is three to six inches tall and usually has a curl at the top of it. A string of tiny buds are arranged along the top inch or so of this stalk. These open, one at a time, into tiny white or pink flowers.

The most interesting feature of this plant, however, is its fleshy round leaves, which are not more than one quarter inch in diameter. Each leaf is connected to the base of the plant by a leaf stem of less than one inch in length.

### WITH DEWDROPS

Around the edge of each leaf are reddish glandular hairs which exude a sticky juice. This juice forms what looks like a tiny dewdrop on the end of each hair.

These droplets sparkle like tiny jewels in the sunlight. It is in this sticky juice that insects get caught. The plant is incapable of catching large insects and any insects that I have seen caught by them were no bigger than fruit flies.

Once an insect is caught, the hairs gradually curve inward and press the insect against the surface of the leaf where it is digested.

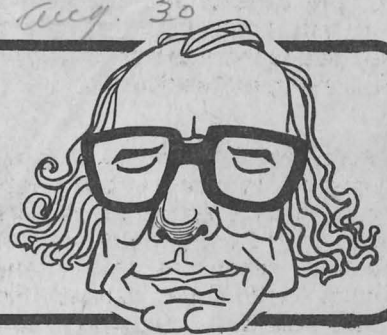
The Sundew grows in moist sunny spots where little else is growing.



# Miramichi Wildlife

Aug. 30/78

By Harry Walker



## Moon's gravitational pull much greater than the sun's

For people who live on the seashore, much of their activities are geared to the height of the tides. Since some of my own activities are regulated by the tides, I have become interested in them and have dug up some information about them. Presuming that you may also be interested in some of this information, I will pass it on to you.

### BY GRAVITATIONAL PULL

As you probably know, the tides are caused by the gravitational pull of the moon and the sun; and even though the moon is very much smaller than the sun, its gravitational pull on the earth is nonetheless, considerably greater because it is so much closer to us.

As a result, the moon contributes about 70% of the gravitational pull that causes the tides, while the sun contributes only 30%. Of course, all of the other stars and planets each have a slight gravitational pull on the earth also, but these are so small that they can be ignored.

### 2 HIGH AND 2 LOW

If we consider the effect of the moon alone, then it will produce two high tides and two low tides every 24 hours and 50 minutes and 28 seconds (the time required for the moon to reach the same height in the sky on two consecutive days).

One high tide will result when the moon is directly overhead and the other one when the moon is on directly the opposite side of the earth. The accepted explanation for this is that the ocean on the side of the earth facing the moon, is closer to the moon than the earth is, and therefore the ocean tends to be pulled away from the earth.

### DIFFICULT TO VISUALIZE

The explanation for the other high tide is a little more difficult to visualize, but it is supposed to result from the earth being pulled away from the ocean, for in this case the earth is closer to the moon than the ocean is.

At the earth's poles there are no tides and as we get farther from the poles, the tides get higher.

When we have a full moon or a

new moon, then the tidal effects produced by the sun and moon reinforce one another to produce extra high high tides and extra low low tides. These are called spring tides.

### 1st & 3rd QUARTERS

When the moon is in its first and third quarters, then the tidal effects of the sun and moon tend to counteract one another to produce relatively small high tides and relatively high low tides. These are called neap tides, and at such times, the position of the crest of the high tide is altered slightly so as to take up a position between the sun and moon.

Frictional drag of the tides on the ocean floor will cause some delay of the tides from the ideal conditions described in the above two paragraphs.

### UNIFORM PATTERN

If the entire earth were covered with an ocean of uniform depth, then the tides would follow a uniform pattern as described above. However, when the tides pile up against a sea coast, then the outline of the coast (and to a lesser extent the contours of the ocean floor) cause great distortions of the tides, both, as to the times they occur, and also as to the heights that they reach.

In some cases, if these altering effects are just right, then they can produce some very unusual effects such as the Tidal Bore at Moncton.

### ONLY ONE TIDE

Some other such effects are seen in parts of the Gulf of Mexico, where there is only one high tide each day instead of two. In Tahiti, where the tides act like a clock and are always 12 hours apart; high tides always being at 12 noon and 12 midnight. Here low tides always being at 6 in the morning and at 6 o'clock in the evening.

Two successive high tides and two successive low tides are generally about the same height; however, in some parts of the world this is not the case, and the reason

for this does not seem to be very well understood.

### LIKE A PENDULUM

Every body of water, such as an arm of the sea, has a natural period of oscillation like a pendulum. If this happens to coincide with the tides, then the tides will be amplified by this effect.

This natural period of oscillation can be illustrated with a tub full of water. If you slap the water on one side of the tub at the proper intervals, then the water will rock up and down, rising on one side of the tub and falling on the other. Each slap will make the water rock more.

On the other hand, if you slap the water at the wrong intervals, then this rocking motion will be broken up. If you now take a tub of different size or shape, then you will find that it has a different period of oscillation than the first one.

In the open ocean, the average difference between high and low tide is only a little over three feet. When the tides reach the shallow waters along the coast, the tidal crest increases in height and the trough deepens.

### HIGHEST TIDES IN THE WORLD

The highest tides in the world are in the Bay of Fundy where they sometimes reach a height of over 60 feet. These high tides are largely caused by the fact that the same large volume of water is being forced into an ever narrowing channel as the tides go up the bay.

Recently I visited Mary Majka's cottage at Mary's Point. On the wall was a clock which pointed to the height of the tide rather than to the hour. Such a clock is just like an ordinary clock except that it is geared slightly differently.

Such a clock, if properly set, will indicate the height of the tides exactly on two occasions during a 28 day period and will be slightly out during the rest of the time. But for all practical purposes it will be right on all of the time.

# Miramichi Wildlife

By Harry Walker



## Phobia surrounding spiders is groundless

Some time ago I received a call from a reader who said that her neighbours had some large grey spiders living in their garage and were wondering if they could be poisonous.

Lately I was talking to Mike Burzynski, a biologist who has been working at Fundy National Park during the past summer.

Mike has gathered a considerable amount of information about spiders for a project at the park. He provided me with much of the information contained in this article.

I asked him if there were any poisonous spiders in New Brunswick. He assured me that the worst possible bite that a person could get from any New Brunswick spider would not be more severe than the sting from a small wasp.

### AN EXCEPTION

The exception to this might be the rare case where someone might happen to have a special allergy to the poison they inject. He also assured me that spiders very seldom bite people and that the phobia that many people have for them is groundless.

All spiders are poisonous to some extent, in that they inject poison into the insects that they catch, but very few species of spiders have enough poison to significantly affect a human and the fangs on many spiders are too weak to penetrate the human skin.

Spiders do not regard people as food, as do mosquitoes and black flies; and therefore, if they happen to walk over a person's hand or any other part of the body, they will not bite, if they themselves are unmolested. However, if they are swatted while passing over a human body, or if they happen to get squeezed between one's clothing and the body, then they will occasionally bite.

### BLACK WIDOW

Even the much feared Black Widow Spider is described in one of my books as "an especially shy creature, not in the least aggressive."

However, this can only refer to its behaviour toward humans, for its name came from the female's habit of eating the male. In the spider world, the females are always larger and more powerful

than the males. In some species the male is a very puny little creature, indeed, compared to the female.

In many species of spider, courtship is a very risky business for the male as he frequently gets eaten.

### COMMON IN SOUTHERN STATES

Black Widow Spiders are common in the southern United States. They are seldom seen as they live in dark, out-of-the way places. Their bite is severe, but death from their bite is rare. They are black and can be distinguished from other spiders by a red hour-glass-shaped mark on the underside of the abdomen. Sometimes it has tiny red spots or stripes on the back. A large female is only about half an inch long.

### ARACHNIDS

Contrary to what many believe, spiders are not insects but rather arachnids. Ticks, mites, and scorpions are also arachnids.

Arachnids differ from insects in the following respects: arachnids have four pairs of legs while insects have three pairs; the arachnids body consists of only two segments, the head and thorax being combined in a single segment called the cephalothorax.

An insect's body, however, consists of three distinct segments: head, thorax and abdomen. Arachnids have no antennae as do insects and the mouth parts of arachnids and insects differ considerably.

### NO WEBS

Most of us, when we think of spiders, think only of those that spin cobwebs. There are many species that never spin cobwebs, although all have spinnerets and are capable of producing silk. The silk is used for various other purposes, such as lining their nest or for making a cocoon in which to place their eggs.

The group of spiders known as wolf spiders simply chase their prey along the ground. They are large or medium sized spiders, have large eyes and good sight. They are most active at night. Another group of spiders, the jumping spiders, are smaller. They are often seen on the outside of buildings. They also have large eyes and capture their prey by jumping on them. They jump very

quickly frontwards, backwards or sideways.

### CRAB SPIDERS

Crab spiders often sit in flowers of the same colour as themselves. They grab any insects that may light on these flowers. They get their name from the fact that they have one pair of legs much longer than the other three pairs. This gives them a crab-like appearance. They also walk sideways like a crab.

Water spiders can walk on top of the water or they can go underwater. When a water spider goes underwater, the hairs on its body traps a certain amount of air and so the spider carries a supply of air with him.

One European species weaves a silk dome beneath the surface of the water. It then carried air from the surface to fill this dome, and then deposits its eggs in it.

### ORB SPIDERS

The group of spiders known as Orb spiders, are the ones that spin webs in which they capture their prey. They have small eyes and poor eye-sight and can see only for a short distance.

They detect when they have caught an insect more by feel than by sight. This is much like a fisherman detects that he has got a bite by the pull on his line.

Different species design their webs differently. Some design their webs very geometrically while others simply make a jungle of random criss-cross threads.

Young spiders, and small spiders of any age, often take long voyages by air. They do this by climbing to the top of a blade of grass or some other pinnacle where they spin a number of threads of silk which dangle from their spinnerets. The wind catches these threads and carries the spider away. This is called "ballooning" and spiders have been caught in nets thousands of feet above the earth. Others have dropped onto the decks of ships hundreds of miles offshore.

There are about 30,000 species of spiders in the world. Mike Burzynski says that there are a couple of species of water spiders in the Maritimes; two or three species of crab spiders; and a great many species of wolf spiders, jumping spiders and orb spiders.



Sept 27/78

# Miramichi Wildlife

By Harry Walker



## Guano—a million dollar industry

I received a couple of reports about the **Cormorants** that Brenda Kingston mentioned two weeks ago. These cormorants have been roosting in a tree along the river, near the end of Kelly Drive. Surprise was expressed that a web footed bird would be roosting in a tree.

These cormorants will almost certainly be of the double-crested variety as this is the common cormorant along the Miramichi, although some **Great Cormorants** are occasionally reported farther out on Miramichi Bay.

The double-crested Cormorant derives its name from the fact that the spring adults have two inconspicuous tufts of feathers, like ears, on either side of the head. These tufts can be seen only at very close range. They disappear entirely shortly after the start of the nesting season.

### SEA RAVEN

Quite appropriately, the name Cormorant originally meant Sea Raven. At a distance the Double-crested Cormorant appears to be as black as a raven, except for a small bare patch on its upper throat and face which is bright orange-yellow. Its bill also may be partly yellow. At close range it is seen to have some brown mixed in with the black of the back and wings.

Immature birds are dull grayish-brown in colour, much lighter on the breast than on the back.

Double-crested Cormorants are

larger than **Ravens** but smaller than Canada Geese. When flying high during migration, they are sometimes mistaken for Canada Geese, as they often fly in a line or a V-shaped formation.

### IN SILENCE

Unlike geese, the whole flock of Cormorants will periodically stop their wings for a short glide.

Unlike geese, Cormorants generally migrate in silence, whereas geese keep up a continual honking.

When flying for short distances, cormorants often fly very low over the water, barely clearing the tops of the waves.

When they alight in the water, they almost disappear as they sink very deep in the water. Often the only part of the Cormorants' body that shows above the surface of the water is its head and its long thin neck.

When it dives for fish, it generally uses its feet for propulsion but it sometimes also uses its wings underwater.

### WINGS PARTLY EXTENDED

Cormorants sometimes perch with their wings partly extended as though trying to dry them. In fact, that is what they are probably doing as their feathers apparently are not as waterproof as are the feathers of most other waterfowl.

Although the Double-crested Cormorant is strictly a fish eater, it is not considered to be a threat to commercial fishermen. Examin-

ation of their stomach contents indicates that they live mainly on fish that are of no economic importance. Studies conducted by Dr Harrison, F. Lewis indicated that trout and salmon were not only distasteful to these cormorants but were also harmful to them.

### FRESH OR SALT WATER

The Double-crested Cormorant may be found on either fresh or salt water. Any other Cormorants to be found in this country are strictly salt water birds.

Fishermen in our area usually refer to Cormorants as "**Black Shags**" and in some places they are called "**Crow Ducks**". The French name for the Double-crested Cormorants is "**Le Cormoran a Aigrettes**".

### MILLION DOLLAR BUSINESS

It is a species of Cormorant, the **Guanay**, that has been mainly responsible for the million dollar guano fertilizer business in Peru. Guano is the accumulated dung from these Cormorants and other sea birds which inhabit the islands off the coast of Peru.

These islands have one of the driest climates in the world, otherwise the guano would have been washed away. As it is, this hardened guano has accumulated for centuries and in some places is a hundred feet thick.

As a fertilizer it is supposed to be 30 times more effective than ordinary farmyard manure.

# Miramichi Wildlife

By Harry Walker



## Snails can travel up to 10 ft an hour

Recently, while back in my old home town of Stayner, Ontario, I went for a walk and came upon a section of sidewalk that was speckled with snails. The pavement was wet at the time as a fine drizzle was falling, and this particular section of the sidewalk ran along beside a thick cedar hedge.

### VERY COLORFUL

These snails were quite colourful as their shells had black, white and yellow stripes which spiralled like the shells themselves. I had never seen snails in such numbers before and so I was curious and tried to find out something about them.

### 50,000 SPECIES

I was not able to identify the particular species that I was looking at as there are about 50,000 known species of snails and slugs. I did, however, learn something about snails in general. Incidentally, slugs are simply snails that have no shells.

If you look down on the top of a snail's shell and follow the spiral from the center outward, you will usually find that the shell spirals in a clockwise direction.

### OCCASIONAL ODD ONES

However, in a few species, the opposite is the case; also, in any particular species, occasional odd

open a tube which would take in a new supply of air. The snail would then sink down to the bottom again. These water snails had lungs, rather than gills. My son, Bruce, has an aquarium and in it he has some snails. These snails do not need to come to the surface for air because they have gills like a fish. Some other species of snails have neither lungs nor gills, but obtain their supply of oxygen through the surface of their body.

### UNUSUAL LIFE CYCLE

One species of sea snail has an unusual life-cycle. Each individual begins life as a male and later develops into a female.

Some snails are eaten. One of these, the Giant or Queen Conch, which is common off the southern coast of Florida, is said to be delicious. It sometimes grows to a length of 10 inches and weight of five pounds.

In France, there are snail farms on which snails are raised to sell on the market. There is an idea for a new business if you can develop a market.

### MEETING

A meeting of the Miramichi Naturalist Club will be on Wednesday, October 11th at 8:00 p.m. at James M. Hill School.

individuals are found whose shells spiral in the opposite direction to what is normal for that species.

Land snails have a pair of long tentacles on the top of their heads, and another shorter pair below these. The snails eyes are located on the ends of the long tentacles, while its sense of smell seems to be centered in the shorter pair.

The snail has only one foot and therefore it has an unusual method of locomotion. A gland at the front of the foot deposits a film of mucus on which the snail moves by means of wave-like contractions of the foot muscles.

### 10 FEET AN HOUR

Running wide open, the snail will travel at a rate of about 10 feet per hour and it cannot travel any faster going downhill than it can going uphill.

When I was a boy, I had no fancy aquarium, but I kept an old discarded wash basin under some shrubs in the backyard. In this I planted native water plants and kept various little creatures that I caught in the creek or in the ponds in the bush. I spent considerable time lying on my belly in front of this basin watching these creatures.

The snails that I had would periodically float to the surface, then twist over on their side and



# Miramichi Wildlife

By Harry Walker



## Cape not red, flesh not blue, it's safe

Mrs Elizabeth Crocket of Newcastle had a Wilson's Snipe in her backyard on Oct. 3. Snipes are fairly common in Strawberry Marsh and some other wet areas outside of town. This is the first time that I have ever seen them so close to any human habitation.

Also, they usually fly off before you can get a good close-up look at them, but the one in Mrs Crocket's yard was very tame, allowing us an excellent view of the rich and beautiful colour pattern of its feathers.

### STAYED ALL DAY

Mrs Crocket said that it had never left her yard at any time during the day.

It had apparently found a good supply of its favourite food, fishworms; and had spent the day probing the lawn with its long thin bill as it searched for them.

I presume that Mrs Crocket's lawn must have been softer and wetter than most lawns or the bird would not have been able to penetrate the ground in this way.

### BLUEBIRDS

On Sept. 28, my daughter Elayne came home from school and reported that she had seen four or five Bluebirds back of Harkin's Junior High School.

This is the first report I have had of Bluebirds in this area this year.

I have seen Bluebirds on only two occasions during the fifteen years that I have lived in Newcastle and both of these sightings were in the month of September.

I saw three Bluebirds above the tracks on Sweeney Lane in late Sept. about 10 years ago, and one near Baie du Vin on Sept. 13, 1975.

John Keating and Sarah Lounsbury, both of Chatham, have each reported seeing a Bluebird in the spring of the year.

### PROTHONOTARY WARBLER

Another unusual sighting that has come to my attention is that of a Prothonotary Warbler seen at Mercury Island near Blissfield by Mr and Mrs L. Page Brown.

This is the first report that I have had of this bird in our area. Through the years there have been a few reports of it in the south-western corner of our province but it seldom reaches this far north.

### MUSHROOMS PLENTIFUL

It is in late September and early October that mushrooms can be found in the greatest numbers and in the greatest variety.

At this time of the year I usually go out and collect some. On Oct. 1, my wife and I took a short walk and came home with enough mushrooms for a couple of meals.

The mushrooms that we gathered were found under alders, but on other years I have usually got my best pickings under tamaracks.

### BOLETES

The mushrooms that we collected belong to the group known as boletes. Boletes are regarded as

one of the safest groups of mushrooms to collect for food.

A bolete is soft and fleshy and has the familiar umbrella shape. Unlike most mushrooms, instead of having ridges or gills on the underside of the cap, they have a relatively smooth surface that is perforated with thousands of small pores.

### SOME POISONOUS

There are many different species of boletes and a few are poisonous but none are deadly. However, there are a couple of very simple rules for avoiding the poisonous ones. If the underside of the cap is **not** red, and if the flesh does not turn blue when it is broken or cut open, then it is safe to eat. There are no such simple rules for determining whether or not a gilled mushroom is edible or not.

### VERY FEW ELIMINATED

By following the above rules, I have eaten boletes that were not definitely identified as to species. I have found very few boletes that need to be eliminated by the two above mentioned rules.

### MEETING

Tonight, Wednesday, 11th at 8:00 the Miramichi Naturalist Club will meet at James M. Hill School, Chatham. Vernon Goodfellow will show slides and talk on the Ocean Horizons Program he attended in Newfoundland this summer. Everyone is very welcome.

# Miramichi Wildlife

By Harry Walker



## Notes on the American Badger

The **American Badger** has a stout body, with short legs, short ears and a short tail. It is silvery gray or yellowish gray on the back and lighter in colour underneath.

Its legs and feet are dark brown or black and it has a very distinctive face pattern made up of very sharply contrasting areas of white and dark brown. It has long claws on its front feet and shorter ones on its hind feet.

### FAST DIGGER

It is one of the fastest diggers in the world, being able to dig its way underground in a matter of seconds. A large male may weigh as much as 25 pounds.

Badgers live in large burrows under-ground. Males live alone except during the mating season in late summer.

Females usually have about four young in late April or May, and these stay with her until the next mating season. At this time, each

## NATURAL HISTORY NOTEBOOK

PRESENTED BY: THE NATIONAL MUSEUM OF NATURAL SCIENCES, OTTAWA

National Museums of Canada

### AMERICAN BADGER

TAXIDEA TAXUS II-26



Badgers are relatively large members of the weasel family, the American badgers being slightly smaller than those found in the Old World. They are equipped with a belly gland that emits a musky odour when the animal is excited. Large males may weigh up to 11.4 kg. (25 lb.)

Badgers are not very agile, and run close to the ground with a trotting movement when pursued. Their normal gait is a leisurely waddle. These animals live in burrows which may be as long as 30 ft. and up to 10 ft. deep, with grass-lined sleeping chambers at the end. In their search for food, most of which is comprised of burrowing rodents, badgers tear up large areas of earth with the powerful digging claws located on their forefeet.

A courageous and powerful fighter, the badger has few natural predators besides man. Once common on the Canadian prairies, its numbers are now greatly reduced. It is also found in the mountain valleys of south-eastern British Columbia and occasionally in the flat, open farmlands of south-western Ontario.

one moves off in a different direction to seek its livelihood all alone.

### TYPES OF FOOD

The American Badgers food consists primarily of ground squirrels, gophers, prairie dogs, rats and mice; but it also eats birds, snakes, snails, insects, and honey.

It catches ground squirrels and other rodents by digging them out of their burrows and the badger may tear up large areas of ground in its search for these creatures.

The badger will sometimes dig into one entrance of a ground squirrel burrow and then enlarge it to within about a foot of the other entrance. It will then block the first entrance and wait underground near the mouth of the second entrance. The returning ground squirrel will then run right into the mouth of the waiting badger.

They were formerly trapped for their pelts but now their pelts are considered of little value.

### WEASEL FAMILY

The badger is a member of the weasel family, but unlike most members of this family, it hibernates during the winter, or rather it does so in the northern parts of its range.

It is not a sound sleeper, however, and during mild spells may occasionally come out of its burrow for a short walk in the snow.

### COUSIN OF THE SKUNK

The badger is related to the skunk, and like it, produces an offensive smelling fluid when excited.

However, the American Badger cannot throw its scent but this is not the case with all badgers. The **Malay Badger**, a small species in Indonesia, throws its scent the

### HUNTS AT NIGHT

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**Steak**  
per lb.  
**1.59**

save  
Sunrise frozen  
2 lb. box  
**.42 Beef burgers**  
Gloucester regular  
1 lb. pkg.  
**.10 Wieners**  
Maple Leaf - 2-3 lb. avg.



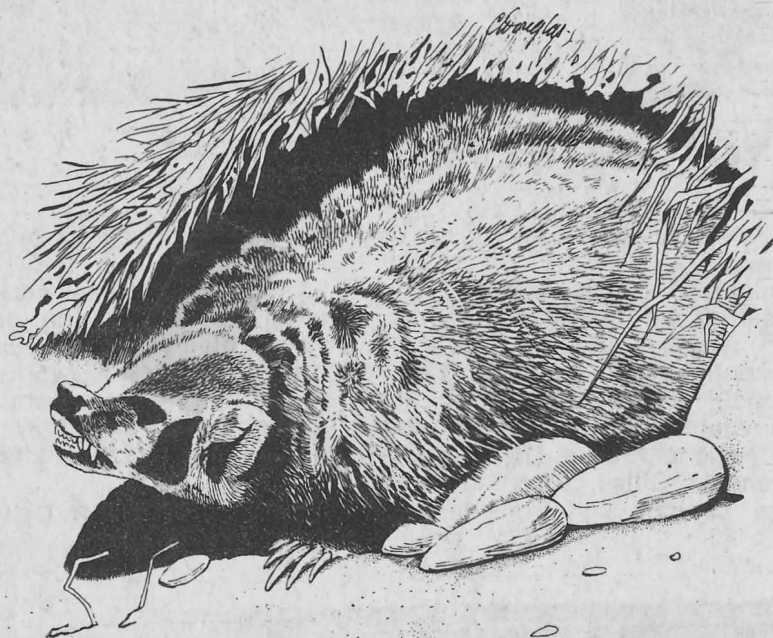
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## HUNTS AT NIGHT SLEEPS ALL DAY

The American Badger lives on open prairies and farmlands but is not found in the bush and does not climb trees. It hunts mainly at night and sleeps during the day.

Its range extends from western Canada down to central Mexico. It is much more rare now than it was formerly, but like many other western mammals and birds, it has extended its range eastward since pioneer days.

This has come about as a result of the bush in the east being cleared for farmland and thus making the countryside much more like the open prairies of the west than was the case formerly. Badgers are now sometimes reported in south-western Ontario.

## NOT POPULAR

Despite the fact that badgers eat many rodents that would otherwise destroy crops and grazing lands, they are still not very popular with farmers and ranchers because of the many holes that they dig.

These holes are a hazard to horseback riders as the horses sometimes stumble into them throwing their riders. They are said to make friendly and intelligent pets.

They were formerly trapped for their pelts but now their pelts are considered of little value.

## WEASEL FAMILY

The badger is a member of the weasel family, but unlike most members of this family, it hibernates during the winter, or rather it does so in the northern parts of its range.

It is not a sound sleeper, however, and during mild spells may occasionally come out of its burrow for a short walk in the snow.

## COUSIN OF THE SKUNK

The badger is related to the skunk, and like it, produces an offensive smelling fluid when excited.

However, the American Badger cannot throw its scent but this is not the case with all badgers. The **Malay Badger**, a small species in Indonesia, throws its scent the same as a skunk.

## IN BUSHLAND

The **European Badger** is somewhat larger and has different face markings than the American Badger; and, unlike the American Badger, it lives in bushland.

Both of these badgers are fierce and courageous fighters, and the term "to badger", meaning to tease or torment persistently, comes from a cruel sport formerly practiced in Britain. A number of dogs were turned loose on a badger which was trapped in a barrel.

## NAME FROM MINERS

Wisconsin got the name Badger State from the fact that early miners there, in order to protect themselves from the cold winters, dug holes into the hills, and in these holes they lived like badgers until spring.

The **Ratel** or **Honey Badger** of Africa and southern Asia has formed a strange partnership with a little bird called the Honey Guide.

The Honey Guide, on finding a bee's nest, utters some high pitched calls which brings the Ratel. The Ratel then tears the nest apart, enabling both the Ratel and the Honey Guide to share in a meal of honey and young bees.

Red-wr  
Cardinal  
Herrin  
Gull O ( (2), Wl (2), Red Northe Mocking Species period, (1979) but this year. Gloucous Dove.

Steak  
per lb.

159

save

42 Beef burgers

Gloucester regular 1 lb. pkg.

10 Wieners

Maple Leaf - 2-3 lb. avg. per lb.

14 Cottage roll

Maple Leaf boneless per lb.

As can be figures, the species can vary greatly from one year to the next.

Unquestionably, the most unexpected bird to make an appearance during the count, was

Miramichi, far exceeded the limits now set by the Department the Environment. This

# Miramichi Wildlife

Oct. 25/78

By Harry Walker



## Camp of adventure at Fogo Is

At the last meeting of the Miramichi Naturalist Club, Vernon and Donna Goodfellow of the South Esk Road showed slides which they had taken on Fogo Island, which is off the north coast of Newfoundland.

The Goodfellows spent two weeks on this island while on the Ocean Horizons Program last August. This program was a nature and conservation course sponsored by the Atlantic Center for the Environment, whose headquarters is at Ipswich Mass.

### "LIVING RIVERS"

This is the same organization that has sponsored the Living Rivers Program at Tabusintac during the last few summers.

Some of the Ocean Horizon's activities included games designed to get the people acquainted or to bring out certain conservation lessons; collecting wild edibles; and hikes along the sea-shore or inland over the hills.

The camp participants were also entertained with sea-shanties played and sung by a native Newfoundlander. A storm with gale-force winds that ripped the main tent apart during the first night there added to the adventure of the camp.

### RUGGED AND BARREN

The landscape of the island is rugged and barren, the vegetation is quite different, making it an interesting place to explore. One of the slides was a picture of a uniquely shaped rock known as "Brimstone Head". We were informed that this is one of the four corners of the earth, or at least the Flat Earth Society considers it as such.

At this same meeting of the Naturalist Club, Vernon Goodfellow was elected as the club's director to the New Brunswick Federation of Naturalists. He replaces Don LeHeup who has moved to Babbitt, Minnesota. Don will be working as resident geologist at a new Amax mine which is to start operations there shortly.

Also at this meeting, our president, Winnie Walker, read the following announcement from a newsletter of the Conservation Council of New Brunswick concerning their annual general meeting, the theme of which is Solid Waste Management.

### NO "AWAY"

"Everyone wants garbage picked up. No one wants it put down near them. It can't be thrown away because there is no 'away'. But there are alternatives to dumps! Sanitary Landfill. Compaction. Composting. Recycling. Incineration.

"These alternatives will be topics for discussion at the annual general meeting to be held on 28th October, 1978 at Mactaquac Lodge. Sessions start at 10 a.m. and conclude that evening after dinner."

"Speakers include Raymond Benoit of the New Brunswick Department of the Environment, a representative from "Is Five", a citizen's organization working on recycling and composting in Toronto, and someone from Environment Canada speaking on incineration and heat recovery. A talk will also be given on what the consumer can do to reduce solid waste.

### MUSHROOM HUNT

"The afternoon sessions will conclude with films on solid waste disposal, continued discussions, and a walk led by Hal Hinds to look for mushrooms. After dinner (with mushrooms for appetizers?), the formal annual general meeting will begin.

"The registration fee (about \$10) will include the program, lunch and coffee breaks. Dinner tickets will also be available at the registration desk. We hope to see you there."

### WILDERNESS AREAS

Also from this same newsletter is the following item concerning the establishment of wilderness areas in our province; a cause toward which the Miramichi Naturalist

Club made a donation earlier this year—

"Late in 1975, a group of concerned persons from government, university and private sectors met to discuss the concept of wilderness areas and their need in New Brunswick.

The ensuing discussions of this group led to the decision that a true wilderness area is needed in New Brunswick and that research and funds would be required to make that a reality.

"Wilderness areas require a lot of space and New Brunswick has no protected 'wilderness area' other than small designated wilderness sections in our multi-use parks.

If New Brunswick continues to industrialize and society continues to increase its demands on natural resources, our options for forest use will quickly to narrow. It is possible that all of the wilderness areas ever to be established in this province will have to be designated in the next few years. It is **now** that we must act.

Virtually every piece of Crown land (approximately 44.4% of New Brunswick) not presently in parkland is under lease by a forest industry. Twenty-two percent of the province is held by large free-hold interest (almost entirely large forest industries.)

"Establishment of a wilderness area will ensure that part of our natural heritage will be maintained for future generations. It will provide visitors with opportunities for recreational activities such as photography, canoeing, hiking and snow-shoeing. The area will also serve to protect wildlife, watershed and water quality, and the genetic stock of trees and other plants.

"One possible location for a wilderness area in New Brunswick, among others' would be the Kennedy Lake area.

"Individuals or groups who are interested in this or any other proposed wilderness area, or wishing to assist with its establishment, may contact Hank Deichman, Box 73, Alma, N.B.



# Miramichi Wildlife

Nov. 1 / 78

By Harry Walker



## Ruby-throated hummingbird

# The smallest bird on Miramichi

As I write this article, I have a dead **Ruby-Throated Hummingbird** lying in front of me. It was given to me by Stewart Kidd more than a year ago. At that time, Stewart was working in the Heath Steele mill and he found it lying on a beam there.

This specimen is still in good condition, even though it was never mounted or treated in any way. Its good condition is probably due to two facts—firstly, its body being so tiny, it no doubt dehydrated before it had a chance to rot; and secondly, like all hummingbirds, it has an unusually tough skin for a bird.

Their tiny size and tough skins are only two of a number of characteristics that makes hummingbirds stand out as being very different from all other birds. Some other such characteristics are:

### BACKWARD FLIGHT

They are the only birds that are capable of backward flight.

Their wingbeat is much faster than that of any other bird, about 55 beats per second.

When they go to sleep, they go into a very torpid condition like an animal in hibernation. When found asleep they may appear to be almost dead.

The outer part of their tongues are tubular making them ideal for sucking nectar out of flowers.

The specimen in front of me measures almost exactly three inches from the tip of the bill to the tip of the tail; and half of this length consists of bill and tail, making the rest of the body only 1½ inches long.

Its back is covered with green iridescent feathers. On its throat is another patch of iridescent feathers that flash a bright ruby colour when the light strikes them at the right angle. This is another distinctive characteristic of all of the many different species of hummingbirds.

### SPARKLE LIKE JEWELS

All are adorned in these brightly coloured iridescent feathers that sparkle like jewels and makes the hummingbirds one of the most beautiful families of birds.

The Ruby-throated Hummingbird is the smallest bird to be found on the Miramichi. There is a smaller species living down in Cuba which measures only a little over two inches.

### SMALLEST IN THE WORLD

It is called the **Bee Hummingbird** and is the smallest bird in the world. On the other extreme is the **Giant Hummingbird of the Andes** which measures over eight inches in length.

Hummingbirds are strictly American birds, and even though there are 319 known species, none are found in the old world.

In America they are found all the way from the southern tip of South America right up into Alaska. Only one species, the Ruby-throated Hummingbird is normally found east of the Mississippi River.

Hummingbirds are most plenti-

RUBY-THROATED

## HUMMINGBIRD

ARCHILOCHUS COLUBRIS II-27



The ruby-throated hummingbird is one of 4 species found in Canada. It occurs across the southern part of this country from Alberta to Nova Scotia.

The hummingbird family contains the smallest of birds and they are so named because of the characteristic humming sound made by their tiny wings. They are capable of rapid forward flight, of remaining stationary in mid-air while feeding at flowers, and even of backward flight for short distances.

Hummingbirds feed on minute insects and flower nectar which they obtain by means of a long, extensible tongue. They are found in gardens, orchards or woodland clearings, where flowers, either wild or cultivated, are present to provide nourishment.

Because of their size, hummingbirds are often mistaken for large hawk moths which also feed at flowers.

## NATURAL HISTORY NOTEBOOK

PRESENTED BY: THE NATIONAL MUSEUM OF NATURAL SCIENCES, OTTAWA

National Museums of Canada

ful in Columbia where 133 different species are found.

### UNDER ITS OWN STEAM

When the Ruby-throated Hummingbird visits a flower, it not only drinks the nectar from it, but it also eats small insects that it finds there. It will also catch some small insects while on the wing and will sometimes drink sap from holes made by sapsuckers.

I have heard a story to the effect that the Ruby-throated Hummingbird migrates by stealing a ride on a wild goose's back. However, this is not true, and the Ruby-throated Hummingbird travels to and from Mexico or southern Florida under its own steam.

### WINTER WREN

I have another very small bird in my freezer. It is a **Winter Wren** that was given to me by Margaret Wheaton of Newcastle. This bird killed itself when it flew against a window in the Wheaton's home.

A Winter Wren is a little brown bird, about 4 to 4½ inches, with a stubby tail which it carries cocked up in an almost vertical position.

Mrs John Foran of Newcastle reported that her son, Bill of Oak Point had caught a dolphin in his

mackerel net.

I contacted Bill and he said that when he first found it in his net, he thought that it was a Killer Whale as it was black and white with a large black dorsal fin.

However, when it was hauled in, he did not know what it was and none of the fishermen in the area had ever seen anything like it.

### WHITE-SIDED DOLPHIN

It was about 5 feet long and would weigh between 75 and 100 pounds. It had a blowhole and a horizontal tail like a whale and an area back near the tail was tan in colour.

When John Bethel saw it, he was able to identify it as an Atlantic **White-sided Dolphin**.

Porpoises have been known to come into the waters around Oak Point and have even come up the Miramichi River on rare occasions.

Apparently dolphins have never been known to enter these waters.

Dolphins and porpoises are closely related but dolphins are distinguished from porpoises by having a short beak whereas porpoises have blunt heads.

The Atlantic White-sided Dolphin can reach a length of 9 feet.

# Letters To The Editor

## Urges Inclusion Of Social Science

Dear Sir:

Enclosed is a copy of a letter which I hope you will publish in your paper along with the following note of explanation.

This letter was sent to Ken Agnew of Moncton in reply to a letter requesting comments on the outline of a course to be set up for Metallurgical Technologists in the Maritimes.

**HARRY WALKER**

276 Heath Court,  
Newcastle, N.B.

Dear Sir:

Thank you for the opportunity to comment on your metallurgical technology syllabus.

My only comment is that you should include several social science courses in your syllabus rather than just one optional course in industrial psychology. The ratio of social workers to engineers and technologists in industry is, as you probably already know, ridiculously low.

Most engineers end up as supervisors, although they are not trained in this capacity at all. This is like giving a man a course in cooking in order to

prepare him to be a mechanic.

In our competitive society, where pride of power rather than service to mankind is to a very large extent the motivating force back of most human endeavor, neurotics often gain positions of power. Industry, if not a prime example of this situation, is at least not separate from it. Under the prevailing system of things, many workers in industry tend to become either hopelessly depressed or openly rebellious, and the worker who feels fulfilled in his job is a rare creature indeed.

Industry may be making much progress in technology,

but socially it is somewhat of a disaster area. Until we make some progress socially, industry is bound to continue in the confused mess it is in today.

I confess that I myself once worked as the mill superintendent at a small mill and did not do very well according to my own standards.

I am not so naive as to expect that a few courses in the social sciences are going to rectify this situation, but at least they should draw attention to the problems. I am aware also that knowledge gained from the social sciences can also be used for unscrupulous purposes.

It is a monumental task to correct this situation, but as a start I suggest that you include some social science course in your syllabus.

**HARRY E. WALKER, B. Sc.**

276 Heath Court,  
Newcastle, N.B.



Nov. 8/78

# Miramichi Wildlife

By Harry Walker



## Grasshoppers high in protein

The proper place for any creature's ears is on its head. Or on second thought, perhaps that statement is just prejudice. The grasshopper's ears are located on the first segment of the abdomen and they probably serve him just as well back there as they would if they were located up front.

Grasshoppers are said to go through an incomplete metamorphosis which means that they do not have a pupa or cocoon stage.

There are many different species of grasshopper and some migratory ones are called locusts.

Grasshoppers are more prolific in countries having dry climates than they are in countries having wet climates.

### DRILLS HOLE

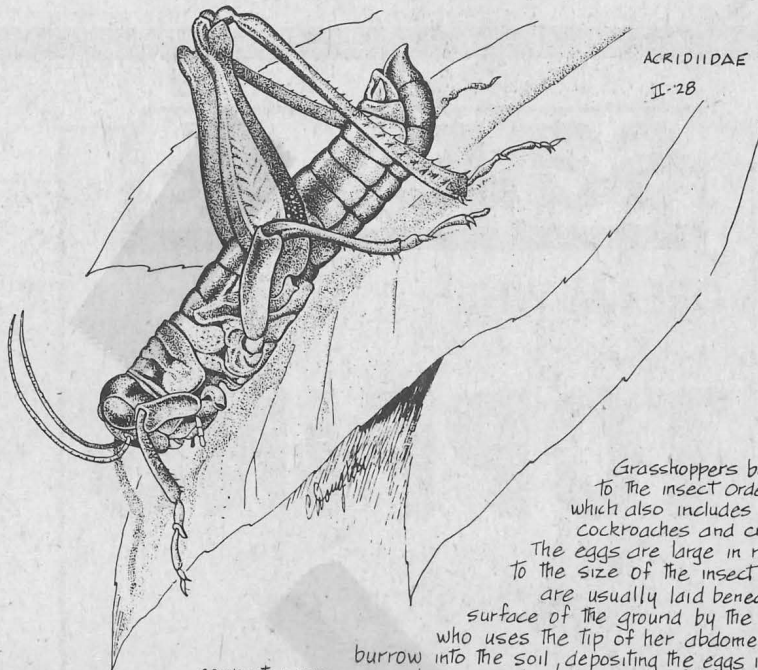
By means of an organ known as an ovi-positor, which is located at the end of the female grasshopper's abdomen, she drills a hole in the ground, and in this hole she deposits her eggs. This is generally done in late fall. As a general rule, most of these eggs do not hatch. There are a variety of reasons for this, such as unfavourable weather conditions, or the fact that some of the eggs become parasitized by other insects. However, when conditions are favourable and most of the eggs hatch, then the result is a grasshopper or locust plague. Such plagues have occurred at time on Canada's western prairies and in the mid-western states.

From 1930 to 1950 grasshoppers were very plentiful in Saskatchewan and crops were severely damaged by them. Estimates of the annual damage in that province alone sometimes ran as high as \$33,000,000.

### GRASSHOPPER PLAGUES

But the grasshopper plagues on this continent seem to have been mild in comparison to some of the plagues that have occurred in parts of Africa and the Middle East. Some of these plagues have been awesome spectacles indeed. Flights of locusts have been described as blotting out the sun and the whirring of their wings as producing a roar. Apparently they arrive very suddenly and in unbelievable numbers. One moment there are no grasshoppers and the next moment everything is covered with them. Such hordes of locusts have been described as devouring practically every bit of green vegetation in the space of a

## GRASSHOPPER



Grasshoppers belong to the insect order which also includes cockroaches and crickets. The eggs are large in relation to the size of the insect and are usually laid beneath the surface of the ground by the female who uses the tip of her abdomen to burrow into the soil, depositing the eggs in compact masses, or pods, surrounding them with a frothy substance which causes the earth particles to set like a cement wall around the pod. Thus protected, the young remain until the warm days of spring, when they struggle to the surface and eventually progress, through a series of moults, to the adult stage. "Locust" is the common name for several species of short-horned grasshoppers that often increase suddenly in numbers and undertake mass migrations, leaving desolation and famine in their wake. Locusts were one of the 10 plagues visited upon Pharaoh as recounted in the Book of Job.

## NATURAL HISTORY NOTEBOOK

National Museums of Canada

PRESENTED BY: THE NATIONAL MUSEUM OF NATURAL SCIENCES, OTTAWA

couple of days.

Locust invasions sometimes occurred in the Bible lands and locusts were one of the plagues visited on King Pharaoh at the time that he held the children of Israel in bondage. In the Book of Joel we read the following promise "I will restore to you the years that the locust hath eaten."

### LOCUSTS ARE TASTY

Many of the people of Africa and the Middle East make the best out of a bad situation. They eat the locusts and find them tasty. Smith's Bible Dictionary records some of the recipes used to prepare them. Some people grind them, then mix them with flour and water, and make them into cakes; the Libyans dry them in the sun and eat them with milk; others pull

off their legs and wings and roast them. Locusts are also fried in butter, stewed, boiled, smoked or salted before being eaten.

### VERY NUTRITIOUS

Grasshoppers are supposed to be very nutritious, one pound of grasshoppers containing as much protein as three pounds of steak.

One week from tonight, on Wednesday, November 15th, there will be a meeting of the Miramichi Naturalist Club at Miramichi Valley High School at 8:00 p.m. Mary Majka of Caledonia Mountain will be the guest. Mary Majka will be well known to many of you. A few years ago she had a regular nature program on the Moncton, TV Station. Everyone is invited whether member or not.

# Miramichi Wildlife

By Harry Walker



## Mary Majka at naturalists' meet

The small dark subspecies of the Timber Wolf or Grey Wolf which formerly occurred in New Brunswick disappeared from the province about 100 years ago.

Today wolves are almost completely restricted to uninhabited areas, but at one time they had a very extensive range. In early pioneer days wolves ranged throughout almost all of Canada and the United States, being absent only from some islands and some extreme desert areas in the southwestern states. Formerly they were also common in Great Britain and throughout most of Europe. Surprisingly, the only place in the southern hemisphere where wolves were found was on the Falkland Islands.

### LARGEST WOLF 197 LBS.

Wolves are equally at home in the forest, on the prairies or Arctic barrens, or in the mountains. The various species and subspecies of wolves vary considerably in size and colour, but are all very similar otherwise. The smaller wolves always occurred in the more southern regions and the larger ones in the northern regions. The largest wolf on record was shot near Mt. McKinley in Alaska and weighed 197 pounds.

Despite all the frightening stories about wolves, the truth seems to be wolf attacks on human beings are extremely rare. They will however attack domestic livestock and therefore they posed a threat to early pioneer farmers.

### HUNT IN PACKS

Wolves travel and hunt in packs

of from 2 to 14. Each pack has its own territory and often has a favourite hunting runway of perhaps a hundred miles in length. The pack passes up and down this runway, passing the same point on it at regular intervals.

Wolves are primarily meat eaters and prefer big game, but, like dogs, they will on occasions eat almost anything. They may go for days without food, but they will also, at times, eat up to one fifth of their own body weight at one meal.

### MATE FOR LIFE

Wolves mate for life. The den or lair may be a cave, a hole dug into the ground, a thicket, or a hollow log. There are usually three to nine pups to a litter. The mother does not leave the pups while they are nursing, her mate bringing to her all of her food during this period. If the mother happens to die before the pups are old enough to hunt, then the father takes over and cares for them.

Recently I received a letter from Mrs Victoria MacDonald of Bartibogue Bridge who included two snapshots of some young birds which her children had found this spring in a field near their home. After having their pictures taken, these baby birds were again released, and the mother bird, who had remained near by, led them away.

These birds were Kildeers and as Mrs MacDonald mentions in her letter, they have been increasing in numbers in recent years; in fact they have been greatly increasing in numbers throughout all of the

Maritime provinces. The first definite record of them nesting in New Brunswick was at St. Andrews in 1946; but now they nest throughout the province, in any place where there is sufficient open country.

### IN OPEN FIELDS

The Kildeer is a member of the Plover family; and the plovers, along with the sandpipers, make up most of the birds that we refer to as shorebirds. However, the Kildeer, unlike most members of this group of birds, does not live up to the name "shore bird" very well. It is more likely to be found in open fields than to be found on the shore. It prefers areas with very little vegetation or at least very short vegetation, such as plowed fields, shortly cropped pasture fields and gravel pits.

The Kildeer is generally brown above and white below. Some distinguishing marks to look for are—two very sharply defined black bands across the upper breast, a white patch on the forehead and a cinnamon or rusty area on its upper tail and rump. Most of this rusty area is hidden when the wings are folded but it is quite obvious when the bird flies off or when it tries to lead you away from its eggs or young. The Kildeer may even play this broken wing act just to lead you away from her favourite haunts, even when there are no eggs or young in the area.

The Kildeer is a noisy and excitable bird and gets its name from its loud, shrill call "Kildeer, Kildeer". It has a number of other calls including "Cry-a-bay-bee".

The Kildeer makes no nest but simply lays its four speckled eggs on the bare ground. When the young emerge from the eggs, they are beautiful little things as they are covered with down like a little chicken. They are able to run as soon as they dry off after hatching. They run fast and the four little chicks do not stay together but are often quite widely separated from one another. The parent birds must have a full time job keeping track of them all.

The Kildeer is one of the earliest birds to arrive back in the spring. The earliest date that I have recorded it here at Newcastle is March 25 in 1973. On a couple of other years I have recorded it on March 28.

I grew up in a farm area where Kildeers were a familiar bird to everyone, but hearing their calls in the early spring always thrilled me. Not only were they a sign of spring, but their calls sounded so wild and free. They were sounds that seemed to belong to another world, a world wild and remote, far from the usual activities of man, and the thought of such places always stirred my imagination.

### MEETING TONIGHT

Don't forget the meeting of the Miramichi Naturalist Club tonight, November 15th, at Miramichi Valley High School at 8:00 p.m. Mary Majka, a well known naturalist, author and TV personality will be the guest speaker. Everyone welcome.

## WOLF

CANIS LUPUS II-29



The wolf has been associated with the northern races of man for centuries & remains, even today, as a creature of folklore and superstition. The coloration of wolves varies greatly, from snow white to coal black and all intermediate degrees of cream, grey and brown.

A large male wolf may measure over 2 m. in total length and stand almost 1 m. high at the shoulders. Their weight can vary from 26 to 80 kg 57/175 lb. The largest wolves are found in north-western Canada.

These animals have a well-developed social hierarchy, the pack leader usually being the largest and strongest dog, followed by younger or senile males, then the leader's mate, the other females and finally the pups in order of strength. All members of the pack accept responsibility for the care and training of the young, even to the extent of "babysitting" if both parents are away hunting. There have been very few cases of authentic wolf attacks on humans in North America, and in those rare instances, it is believed that mistaken identity was the cause.



Nov 22/78

# Miramichi Wildlife

By Harry Walker



## Ravens do flip overs in flight

### RAVEN

CORVUS CORAX II-30

Aggressive, clever and inquisitive, this large, black bird is well distributed in the northern hemisphere. In Canada it is chiefly restricted to the more uninhabited areas of the country.

The raven is omnivorous, but tends to be predatory, and its diet embraces a wide variety of animal and vegetable matter.

One can distinguish it from the common crow by its larger size, its voice - a peculiar 'craaw' - and its wedge-shaped tail.



with two dogs sitting in the middle of them.

#### PAID NO ATTENTION

What seemed so strange to me, was, that the Ravens and the dogs paid so little attention to one another and co-existed as though they were all of the same species.

Incidentally, at that time, I had never seen the Miramichi, but there were several people working there that came from this area. Fred and Margaret Somers, who originally came from around Sunny Corner, worked there. Also the late Irvine Allison of Boom Road and the late Louis Doyle of Bartibogue worked there.

#### THE CROW

The Raven and its smaller relative the Crow, have very similar eating habits; but nonetheless, in most parts of the world, as civilization has advanced, the Raven has disappeared; while the Crow, on the other hand, was increased in numbers.

However, this is not true for all parts of the world, for here in New Brunswick, the Raven has substantially increased in numbers during recent years.

#### HOW THEY DIFFER

Most people have difficulty in distinguishing between Ravens and Crows but they differ in the following respects:

The Raven's tail is rounded or wedge shaped, whereas the Crow's tail is relatively straight across the end. However, this difference is apparent only when the birds are in flight and they must be flying almost directly overhead as well in order to see this difference.

Their voices are different and this is one of the most useful tools in recognizing them. The Raven croaks whereas the Crow utters a clear "caw, caw". The Raven has a few other calls as well.

One sounds like water being poured from a bottle while another sounds something like a bell. This latter call is heard most frequently in the mating season, which is late winter; and it seems strange to hear such notes coming from a Raven.

#### UNUSUAL AEROBATICS

Also during the mating season, Ravens perform some unusual aerobatics and it is not uncommon to see them flip over on their backs while in flight; crows never do this. Also, Ravens tend to soar more than Crows do.

Ravens are considerably larger than Crows, although at a distance this is not much help in distinguishing them.

Also, at close range, it can be seen that the Raven's bill is thicker and heavier than the Crow's and the Raven's throat has a ragged appearance due to some long pointed feathers growing there, whereas the Crow's throat is smooth.

#### FEW DURING WINTER

Very few Crows stay in the Miramichi area during the winter, whereas the Ravens are permanent residents.

Any animals killed along our highways are soon spotted by Ravens or Crows and eaten by them.

Ravens are among the earliest birds to nest and eggs have been found in their nests as early as the latter part of March here in New Brunswick.

## NATURAL HISTORY NOTEBOOK

National Museums of Canada

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The **Raven** is an intelligent, resourceful and extremely hardy bird. Not only is it able to survive in the extreme cold of the Arctic winter but it is also able to survive in the extreme heat of the Sahara Desert.

It has a wide distribution in both the old and the new world. In America it is found all the way from the northern most tip of Ellesmere Island, the most northern point in Canada, south through the mountains to Nicaragua in Central America.

#### DON'T MIGRATE

The Raven does not migrate and it is one of the very few birds to remain in the high Arctic during the severest winter months. The only other land birds to be found so far north in Canada at this time of the year, are the **Rock Ptarmigan** and the **Snowy Owl**; and normally the only sea bird is the **Black Guillemot** or **Sea Pigeon**. Apparently during some winters, a few **Eider Ducks** also stay this far north, and in Greenland, a species of **Redpoll** also remains.

#### COPING WITH THE PROBLEM

It is surprising that any bird is able to survive in the dark and dismal cold of these regions when the sun does not even show itself above the horizon. However, Peter Freuchen, in his book "The Arctic Year" describes some of the ways in which the Raven copes with this problem.

provide it with food. It stays close to Inuit settlements to eat the offal left from seals and other animals killed by these people.

The Raven also follows the Polar Bear and when the bear waits at a seal's blowhole, the Raven lingers close by. The Polar Bear generally eats only the hide and the blubber of the seal, which means that plenty of meat is left over for the Raven.

#### FOLLOWS DOG SLEDS

The Raven also follows dog sleds and picks up anything that is dropped including the dog's excrement. It will also follow Caribou herds and eat their excrement.

In late winter, when more light returns to the Arctic, **lemmings** will sometimes come up on top of the snow, and the Raven will catch some of these. In the summer, Ravens often live or nest near sea bird colonies, and will eat the eggs and young birds from this colony.

#### IN THE EARLY SIXTIES

Back in the early sixties I worked at a pilot plant of the Anaconda Iron Ore Company at Skibi Lake in northern Ontario.

This plant was situated in almost unbroken wilderness and during the winter a large flock of Ravens gathered at the back of the cook-house.

The cook threw all of his scraps out to these birds and they became almost as tame as chickens.

There were also two dogs at the time which ate these scraps and





## Ravens do flip overs in flight

### RAVEN

CORVUS CORAX II-30

Aggressive, clever and inquisitive, this large, black bird is well distributed in the northern hemisphere. In Canada it is chiefly restricted to the more uninhabited areas of the country.

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One can distinguish it from the common crow by its larger size, its voice - a peculiar 'craaw' - and its wedge-shaped tail.



with two dogs sitting in the middle of them.

#### PAID NO ATTENTION

What seemed so strange to me, was, that the Ravens and the dogs paid so little attention to one another and co-existed as though they were all of the same species.

Incidentally, at that time, I had never seen the Miramichi, but there were several people working there that came from this area. Fred and Margaret Somers, who originally came from around Sunny Corner, worked there. Also the late Irvine Allison of Boom Road and the late Louis Doyle of Bartibogue worked there.

#### THE CROW

The Raven and its smaller relative the Crow, have very similar eating habits; but nonetheless, in most parts of the world, as civilization has advanced, the Raven has disappeared; while the Crow, on the other hand, was increased in numbers.

However, this is not true for all parts of the world, for here in New Brunswick, the Raven has substantially increased in numbers during recent years.

#### HOW THEY DIFFER

Most people have difficulty in distinguishing between Ravens and Crows but they differ in the following respects:

The Raven's tail is rounded or wedge shaped, whereas the Crow's tail is relatively straight across the end. However, this difference is apparent only when the birds are in flight and they must be flying almost directly overhead as well in order to see this difference.

Their voices are different and this is one of the most useful tools in recognizing them. The Raven croaks whereas the Crow utters a clear 'caw, caw'. The Raven has a few other calls as well.

One sounds like water being poured from a bottle while another sounds something like a bell. This latter call is heard most frequently in the mating season, which is late winter; and it seems strange to hear such notes coming from a Raven.

#### UNUSUAL AEROBATICS

Also during the mating season, Ravens perform some unusual aerobatics and it is not uncommon to see them flip over on their backs while in flight; crows never do this. Also, Ravens tend to soar more than Crows do.

Ravens are considerably larger than Crows, although at a distance this is not much help in distinguishing them.

Also, at close range, it can be seen that the Raven's bill is thicker and heavier than the Crow's and the Raven's throat has a ragged appearance due to some long pointed feathers growing there, whereas the Crow's throat is smooth.

#### FEW DURING WINTER

Very few Crows stay in the Miramichi area during the winter, whereas the Ravens are permanent residents.

Any animals killed along our highways are soon spotted by Ravens or Crows and eaten by them.

Ravens are among the earliest birds to nest and eggs have been found in their nests as early as the latter part of March here in New Brunswick. They usually build their nest on a rock ledge or high up in a coniferous tree.

## NATURAL HISTORY NOTEBOOK

National Museums of Canada

PRESENTED BY: THE NATIONAL MUSEUM OF NATURAL SCIENCES, OTTAWA

The **Raven** is an intelligent, resourceful and extremely hardy bird. Not only is it able to survive in the extreme cold of the Arctic winter but it is also able to survive in the extreme heat of the Sahara Desert.

It has a wide distribution in both the old and the new world. In America it is found all the way from the northern most tip of Ellesmere Island, the most northern point in Canada, south through the mountains to Nicaragua in Central America.

#### DON'T MIGRATE

The Raven does not migrate and it is one of the very few birds to remain in the high Arctic during the severest winter months. The only other land birds to be found so far north in Canada at this time of the year, are the **Rock Ptarmigan** and the **Snowy Owl**; and normally the only sea bird is the **Black Guillemot** or **Sea Pigeon**. (Apparently during some winters, a few **Eider Ducks** also stay this far north, and in Greenland, a species of **Redpoll** also remains.

#### COPING WITH THE PROBLEM

It is surprising that any bird is able to survive in the dark and dismal cold of these regions when the sun does not even show itself above the horizon. However, Peter Freuchen, in his book "The Arctic Year" describes some of the ways in which the Raven copes with this problem.

To a very large extent it seems to rely on the larger mammals to

provide it with food. It stays close to Inuit settlements to eat the offal left from seals and other animals killed by these people.

The Raven also follows the Polar Bear and when the bear waits at a seal's blowhole, the Raven lingers close by. The Polar Bear generally eats only the hide and the blubber of the seal, which means that plenty of meat is left over for the Raven.

#### FOLLOWS DOG SLEDS

The Raven also follows dog sleds and picks up anything that is dropped including the dog's excrement. It will also follow Caribou herds and eat their excrement.

In late winter, when more light returns to the Arctic, **lemmings** will sometimes come up on top of the snow, and the Raven will catch some of these. In the summer, Ravens often live or nest near sea bird colonies, and will eat the eggs and young birds from this colony.

#### IN THE EARLY SIXTIES

Back in the early sixties I worked at a pilot plant of the Anaconda Iron Ore Company at Skibi Lake in northern Ontario.

This plant was situated in almost unbroken wilderness and during the winter a large flock of Ravens gathered at the back of the cook-house.

The cook threw all of his scraps out to these birds and they became almost as tame as chickens.

There were also two dogs at the camp which ate these scraps and it was a common sight to see this flock of Ravens behind the kitchen



# Miramichi Wildlife

By Harry Walker



## Shows slides of winter season

Many of you will remember Mary Majka (pronounced Mica) as she formerly had a regular nature program on the Moncton TV station. Also, she has written a book about Fundy National Park where she worked as a naturalist, and has contributed articles to a number of magazines and other publications.

### AN ADVISORY BOARD

Presently, she is on the Editorial Advisory Board for Owl Magazine, the Canadian outdoor and wildlife magazine for children.

At the last meeting of the Miramichi Naturalist Club, held on Nov. 15 at the Miramichi Valley High School, Mary Majka gave us a beautiful slide presentation, mostly of shots taken in the vicinity of the two Majka residences, the one on top of Caledonia Mountain, and the other at Mary's Point on the Bay of Fundy.

### BEAUTIFUL WINTERTIME

Before showing us any of her slides, Mary told us that most of the ones that she would be showing us were pictures that had been taken in the wintertime.

Mary said she wanted to change our attitude toward winter and show us that it was a beautiful time of the year and a season to be

enjoyed as much as any other season of the year.

### GREW UP IN POLAND

She, herself, grew up in Poland and she says that the people there had a more positive attitude toward winter than we do in this country. She also claims that most people who become accustomed to four seasons in the year, find it very monotonous to live in a country where it is summer all of the time.

### MOUNTAINS IN WINTER

The Majkas spend their winters on Caledonia Mountain which is the highest point in Albert County and consequently gets more snow than the surrounding area; and they spend their summers at their cottage on Mary's Point. Mary says that the Crocuses are often in bloom at Mary's Point when there is still five feet of snow on the top of the mountain.

She also says that when they built their home on Caledonia Mountain 18 years ago, everyone thought that they were crazy as they would be snowed in much of the time; but even though they are sometimes snowed in for as much as four days at a time and can only get out on snowshoes, nonetheless they very much enjoy spending

their winters there.

### HUSBAND A PATHOLOGIST

Mary's husband Mieczyslaw (Mike) is a pathologist at Moncton Hospital. He is also well known at the Miramichi Hospital in Newcastle and the Hotel Dieu Hospital in Chatham, as he formerly made frequent trips to these hospitals to do autopsies.

Their two sons, Chris and Mark are both at university, Chris at Dalhousie and Mark at UNB.

The photography in Mary's slides was excellent and it seems that she sees beauty in everything around her, in the things that most of us take for granted, and in little things that most of us pass by without noticing.

### BRAINWASHED

I am afraid that many of us have become brain-washed into believing that we must do something spectacular in life in order to gain recognition. What we desperately need, is to learn to recognize and appreciate what is good and beautiful in the simple everyday that surround all of us. All the little events that take the course of our ordinary lives.

Dec 6 / 78

# Miramichi Wildlife

By Harry Walker



## Whale, largest animal in world

### NATURAL HISTORY NOTEBOOK

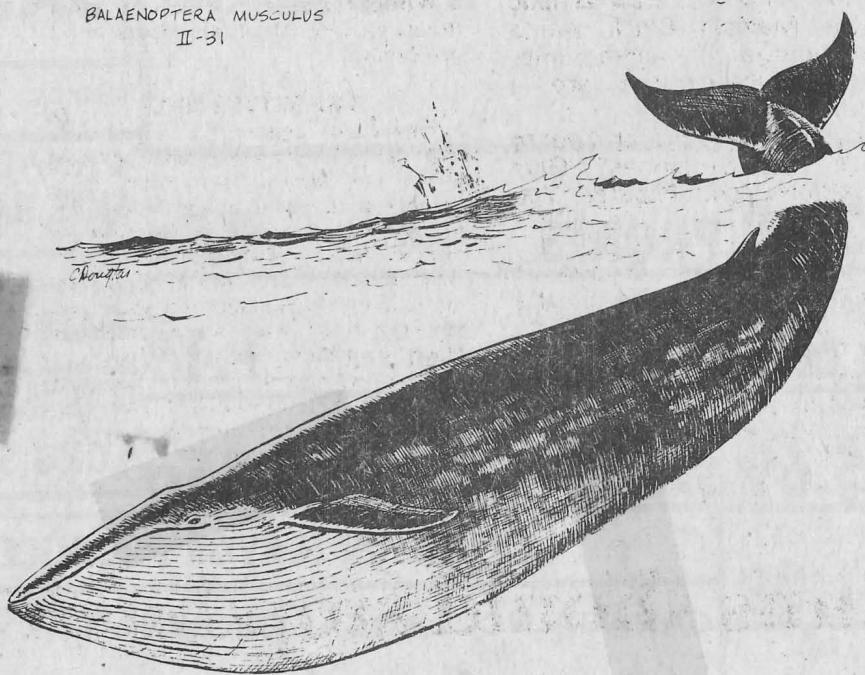
National Museums of  
Canada

PRESENTED BY: THE NATIONAL MUSEUM OF NATURAL SCIENCES, OTTAWA

## BLUE WHALE

BALAENOPTERA MUSCULUS  
II-31

The largest creature ever known to have existed on this planet is the present-day blue whale. The largest dinosaur attained a length of about 72 ft. and weighed about 36 tons. Today's blue whale, larger even than its ancestors, may reach a total length of 100 ft. and weigh 145 tons.



This giant animal is placid and shy by nature. On the surface, its normal cruising speed is about 12 knots, but it is capable of attaining 20 knots in short bursts. The maximum reported depth reached by the species is 194 fathoms, and it is capable of remaining submerged for 50 minutes, but 10 to 15 minutes is the usual time beneath the surface. The life span of a blue whale is about 30 years. The calves measure 7m (23 ft) at birth and weigh about 2 metric tons. By the time they are a year old the youngsters measure about 18m (58 ft). Blue whales comprised about 90% of the whaling industry's total catch during the early part of this century. In 1931 more than 30,000 of these majestic creatures were killed. Since then, the blue whale population has declined, until, by the year 1971, despite belated conservation measures, only 3,000 blue whales were thought to exist in the world's seas.

The Blue Whale is the largest animal living in the world today and it is larger than any animal that ever existed here in the past. It may reach a length of 100 feet and a weight of 145 tons. The largest of the dinosaurs only weighed about one-quarter this amount.

#### TWO MAIN GROUPS

The whales can be divided into two main groups or suborders; the toothed whales, and the baleen or whalebone whales. The Blue Whale belongs in the latter group. In place of teeth, the baleen whales have long thin plates of whalebone attached along the edge of the upper jaw.

These plates, which may measure as much as 3½ feet in length, are frayed into bristles along their edges, and a whale may have as many as 800 of these plates in its mouth. When the whale's mouth is closed, these plates fold backwards into the mouth; but when its mouth is open, they hang downwards all around the edge of the mouth and form an effective strainer.

#### LIVE ON PLANKTON

Despite their immense size, the

baleen whales live on very small animals and plants known as plankton and these abound in polar waters. To obtain his food, the whale takes in a mouthful of water and then forces it out through the whalebone plates, thus straining out the plankton in it. In the summer a Blue Whale eats about a ton of plankton every day, but in the winter, when it is living in the less productive waters farther from the poles, it must be satisfied with less.

#### SIBBALD'S RORQUAL

The Blue Whale is also referred to as the **Sibbald's Rorqual**. Rorquals are a family of whales that have pleats or ridges, like those on an accordion, running longitudinally along the underside of their bodies.

These pleats extend from the lower lip to a point about halfway back the whale's body. The rorqual can open these pleats to form an immense pouch on the bottom of his mouth, like the pouch on the underside of a pelican's bill. This enables the Rorqual to take in an even larger mouthful of water than would otherwise be possible and this increases his capacity to strain

plankton from the water. All rorquals are baleen whales but not all baleen whales are rorquals.

#### IN ALL OCEANS

The **Blue Whale** is found in all oceans of the world but it is more plentiful in the colder waters. When in tropical waters, they are plagued with many parasites; whale lice, copepods, barnacles, and lampreys. In these waters they also become covered on the underside with a film of yellow coloured diatoms, and this has given rise to the name of Sulphur Bottomed Whale.

Most whales swallow everything whole, and although the Blue Whale is the largest of the whales, it has an oesophagus (throat passage) of only five inches in diameter. It is therefore incapable of swallowing anything very large.

The **Sperm Whale** is said to be the only whale that is capable of swallowing a man, being the only whale with an oesophagus large enough to accommodate him.

#### WARM BLOODED UNLIKE FISH

Whales are warm blooded animals unlike fish. They have a smooth hairless skin, and underneath this skin is a layer of blubber. This layer acts as insulation to keep the whale warm. It is this layer of blubber which makes the whale so valuable to the whaling industry, since it is from this blubber that whale oil is produced.

During the early part of this century, the Blue Whale was the main species hunted by whales and it constituted about 90% of the catch, however, today, its numbers have been reduced to only a very small fraction of what they were 100 years ago.

#### 80 BARRELS OF OIL

In former times, many products were produced from the whale. An average Blue Whale would produce 80 barrels of oil while some would produce much more than that. Whale oil was used to manufacture margarine and other edible oils, soap, cosmetics, paints, glycerin (used in the manufacture of munitions) and many other things.

It was also used as fuel for lamps and street lights. The whalebone or baleen was used to make bustles and was also used as stiffeners in corsets, collars, fans, and similar items. Whale meat was eaten in many countries. Apparently the meat has a texture and a flavour that is much closer to that of beef than to that of fish.

#### NATURALIST CLUB MEETING

The next meeting of the Miramichi Naturalist Club will be held at 8:00 p.m. on Wednesday, Dec. 13 at the James M. Hill Memorial High School in Chatham.

Corporal Larry Cochrane of the RCMP who together with Constable Roch Garneau, is responsible for enforcement of the Migratory Bird Convention Act, will be our guest at this meeting.



# Miramichi Wildlife

By Harry Walker



## Naturalists meet tonight at JMH

About two years ago I wrote an article about the beaver and the information contained in that article was given to me by Bob Lefebvre of Cassilis. Recently I was in touch with Bob again and got some additional information.

### BELOW, NOT UNDERNEATH

In the earlier article I made one mistake. When Bob said that the beaver's toilet was below the house, he meant that it was downstream from the house, whereas I took this to mean underneath the house.

The toilet is always in one particular place and it is not only downstream from the house, but it is also downstream from the winter food supply.

Bob has camped beside beaver houses and the following are his own first-hand observations of their behaviour,—

### FIRST HAND

When they commence their nights' activities; one big beaver, who seems to be in charge, comes out and climbs up on top of the house. It then calls the rest of the colony out, and a period of chattering and squeaking follows. At this point they sound like a group of kids at play.

After this follows a period of silence, after which can be heard a tree fall over in one direction and perhaps another one over in another direction.

### ON LOOKOUT

While the rest of the beavers are working, the one on top of the house acts as a sentry, and if it sees or hears anything unusual, it slaps the water with its flat tail.

This is a danger signal that brings all of the beavers back to the house in a hurry. Otherwise, the beavers work for an hour or an hour and a half and then are called back by their leader who, this time, makes some squeaky sounds.

### TAKE A BREAK

They then take about half an hour break, and, after this, resume their work again.

This pattern of working and resting continues, more or less, all night. Bob believes that the beavers understand one another and have a means of communication.

He does not know for sure whether it is always the same beaver that is in charge or not, but it is always a large one.

### DIG CANALS

If a sufficient supply of poplar is not handy to the beaver pond, the beavers will sometimes dig canals in which to float their logs back to the pond. They may also build a smaller dam above the main one in order to facilitate the transportation of wood from farther up the stream, in which case, they will have to drag it over this little auxiliary dam. Bob describes poplar as being to a beaver, what candy is to a kid.

### 17" PER YEAR

He says that a beaver's teeth grow at the rate of 17 inches per year, and therefore it must keep gnawing in order to wear them down; otherwise, it would die. When a beaver's house is approached, one can often hear them clicking and grinding their teeth.

## NATURAL HISTORY NOTEBOOK

PRESENTED BY: THE NATIONAL MUSEUM OF NATURAL SCIENCES, OTTAWA

National Museums of Canada

## BEAVER

CASTOR CANADENSIS II-32

Our national symbol, the Canadian beaver was also the country's first natural resource to be exploited, and at one time beaver pelts were the unit of currency in the new land. The beaver population was almost wiped out by 1930, but conservation measures since then have restored their numbers to relatively healthy levels.

Beavers have a well-developed social hierarchy in which the family is the basic unit, and the female the central figure in each family. The usual family group consists of the adults, the kits, and the yearlings of the previous year, bringing the average family group to 10 or 12 individuals. Adult weight varies between 15 and 35 kg, with the average being about 20 kg (44 lb).

The bear, wolf, coyote, fisher, wolverine, otter and lynx prey upon the beaver, who is, nevertheless, a powerful antagonist when at bay. Their lodges, made of tangled sticks and caked mud offer protection that even black bears have difficulty in breaking through.



Beaver dams are usually about 50 m. in length, 2 m. high and about 3 m. through the base. Their dams help to maintain water levels in forest streams, thus providing habitat for fish and waterfowl.

### 9 FT. HIGH, 200 FT. LONG

The largest beaver dam that Bob has ever seen was on the Little Sevogle River about 30 years ago. It was about 9 feet high and about 200 feet long, and a deer trail ran along the top of it.

This was back in the days when deer were very plentiful and he saw as many as 20 deer cross along the top of this dam in one day. It was in the fall of the year, and the deer were coming from the higher ground to their yarding area in the lowlands on the other side of the river.

### 137 IN 31 DAYS

A series of dams extended for several miles above this main dam and Bob says that he caught 137 beavers in the space of 31 days along a five mile stretch of stream there, and got as many as 17 in one day. These pelts drew an average price of \$9 but the same quality of pelts today would bring at least \$25 per pelt.

### SCARRED BY OTTERS

Bob says that he catches very few beavers that do not have some

large slices cut out of their tails. He believes that these are scars inflicted by Otters that swim up behind them and grab them by the tail.

Since the beaver is a good fighter, a large one can usually fight an otter off, but many beaver kittens are eaten by them. He says that in areas where Otter are plentiful, very few kittens are found compared to the number of adults.

He once saw the tracks of an Otter leading to a beaver colony and the pelt of a beaver kitten left on the ice. The pelt was rolled up and cleaned out, almost as if done by a trapper.

Tonight, Wednesday, Dec. 13, there will be a meeting of the Miramichi Naturalist Club at 8:00 p.m. in the James M. Hill Memorial High School in Chatham. Corp. Larry Cochrane of the RCMP will be our guest.

He, together with Const. Roch Garneau, is responsible for enforcement of the Migratory Bird Convention Act and also the Canada Shipping Act as applied to small vessels.



# Miramichi Wildlife

By Harry Walker



## Christmas bird count Saturday

The **Brown Bullhead** is also known as the **Mud Pout**, **Horned Pout**, or **Barbotte Brune**.

Many salmon fishermen of the Miramichi might despise this fish since it is easily caught and does not put up much of a fight; but, if you happen to have a muddy pond, and if you are interested in doing some fish farming, then this is a species that should interest you.

It is ideal for this purpose for a number of reasons—it is extremely hardy, will eat almost anything, is easily caught, has few bones, and is very good eating.

It is able to thrive in polluted waters where any other fish would die. It has even been known to live for weeks at a time in the mud after the water in its pond or stream has dried up.

It eats both plant and animal material. It eats worms, snails, frogs, leeches, insects, and their larvae, crayfish, garbage, fish-eggs, and other fish. It protects its own eggs and young, however.

### PREPARE NEST

Bullheads prepare a nest for their eggs. This is usually in a depression under rocks, roots, or logs. It may even be in an old muskrat hole or in an old pail or similar piece of garbage. Sometimes a shallow depression is dug out in the open.

In this nest the Bullhead lays its eggs which may number 2000 or more. These eggs may hatch in less than a day or, on the other hand, they may not hatch for another 10 days.

(After hatching, the young Bullheads swim around together in a dense school with the male or both parents, accompanying them.

### ALSO HAWAII

From what I can gather from the literature, the Bullhead's original range was in the fresh waters of eastern North America, extending from Manitoba and New Brunswick on the north, to Texas and Florida in the south. However, it has been introduced into many other areas where it has now established itself. It is now found in many areas along the Pacific coast and in Europe, and also in Hawaii.

The Bullhead lives in slow moving streams with muddy bottoms, and in muddy lakes and ponds, hence the name Mud Pout. Most of the streams in New Brunswick are not suitable for Mud Pout and I have never heard of it being in our area.

### CHARACTERISTICS

Some characteristics of the Bullhead are:

It has no scales.

It has a single sharp spine in its dorsal fin, and another one in each of its pectoral fins; and if the Bullhead is not handled properly, it can spear you or scratch you.

It has four pairs of barbels or whiskers on its face. It feeds mainly at night, and the barbels act as feelers. The Bullhead depends on these more than on its eyes to find food. Perhaps that is why it will usually swallow the hook no matter what it is baited with.

### ALF MITCHELL

An old friend of mine, Alf Mitchell of Gatchell, Ontario, told

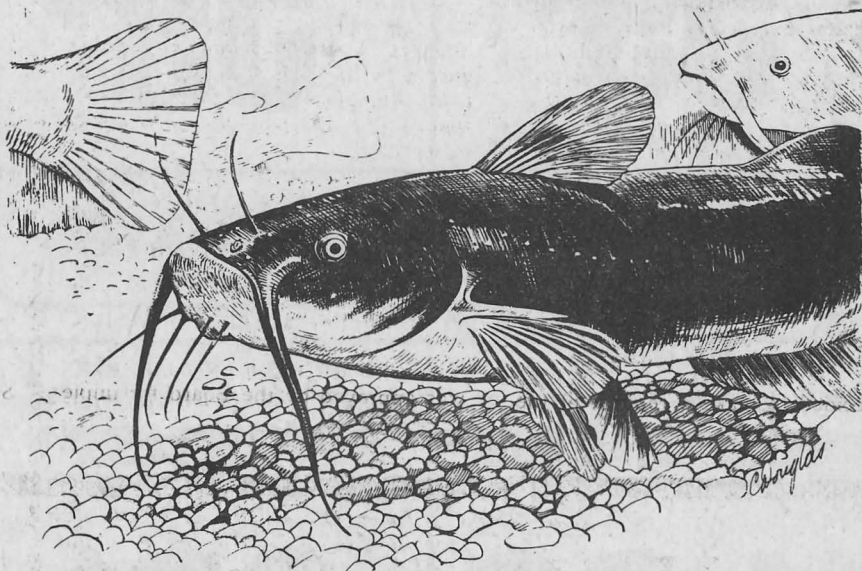
## NATURAL HISTORY NOTEBOOK

PRESENTED BY: THE NATIONAL MUSEUM OF NATURAL SCIENCES, OTTAWA

National Museums of Canada

### BROWN BULLHEAD

CTALURUS NEBULOSUS II-33



Usual length of this moderate-sized bullhead is 20 to 36 cm. (8-14 in.) Distribution is restricted to the fresh waters of eastern and central North America. Released in Germany in the early 1900's and from there to England, many European countries & the U.S.S.R. Maximum age is 6-8 years.

Nests are usually shallow depressions in a mud or sandy bottom, in which the eggs are deposited. Feeding is done mainly at night, on or near the bottom, and food, including waste and offal is searched out largely by means of the barbels. Particularly resistant to domestic and industrial waste, and in some heavily polluted streams near Montreal was the only species found. The flesh is firm, reddish to pink in colour, and quite delicious.

me that he has caught Bullheads with no more equipment than a knotted string. The Bullhead would hang onto one of these knots long enough to be hauled out of the water.

I went fishing for Mud Pout, once in my life, many years ago. It was in a large area of dead water along the side of the Sault Ste. Marie River in Ontario. I went with Bert MacLashan and his sister Jessie of Sault Ste. Marie, and a couple of their friends.

### FEEDS AT NIGHT

Since the Mud Pout is a night feeder, we waited until dark before setting out. When we arrived, the five of us got into a small flat bottomed boat, which means we were a little crowded.

We caught about 30 Mud Pout that night, and the biggest trick

was to land them into the boat without anyone getting speared with their spines.

Each time a fish was hooked, a certain amount of havoc was produced within the boat, but we managed to get through the evening without getting swamped.

After landing with our catch, we buried some potatoes in the sand and roasted them by building a bonfire on top of them. The fish that we caught were not big, about 8 to 10 inches but they were good eating and that is the only time that I have eaten Mud Pout.

On Saturday, Dec. 23, the Miramichi Naturalist Club will be conducting their annual Christmas Bird Census. If you would like to take part in this count, get in touch with me, or, if you have a bird feeder that you would like to report on for this day, contact Edith Boudreau 773-4734.



# Miramichi Wildlife

By Harry Walker



## Rope ladder, broomstick & spoon

There are two subspecies of Bald Eagle in North America and both have been known to occur in New Brunswick. The northern subspecies nests here and may be seen here during any month of the year. The southern subspecies formerly visited New Brunswick and other parts of the Maritimes during the summer months but it never nested here.

### RAISED IN FLORIDA

Most of these visitors were raised in Florida, and, until about 30 years ago, they came here in considerable numbers. However, this southern race has now almost completely disappeared from the Atlantic coast. It was slightly smaller than its northern cousin and its disappearance was caused primarily by the use of DDT and other insecticides. This southern race, unlike the northern one, does its nesting during the winter months.

Back in the forties, a Canadian named Charles Broley made quite an extensive study of the Bald Eagles in Florida. Broley had been a bank manager in Winnipeg, and when he retired at the age of 60, he started this project. As Broley conducted it, it was a very strenuous and hazardous undertaking, especially for a man of his age who had spent most of his life in an office. An interesting account of some of his experiences while conducting this project is given in Roger Tory Peterson's book "Birds Over America."

### TOP OF HIGHEST TREE

The Bald Eagles in Florida generally place their nest on the top of the highest tree in the immediate area, usually a pine with only a few limbs near the top of it. Broley climbed these trees and banded the eaglets that he found in the nests. In the space of ten years, Broley banded over 1000 eaglets and usually there would be two eaglets to a nest. Some of these nests could be reached with a motorized vehicle; but, in other cases, Broley had to pack his 40 pounds of climbing gear for long distances through scrub forest in order to reach them.

His climbing gear consisted of a rope ladder, some other pieces of rope, a broomstick with a spoon attached to the end of it, and a 5½ foot iron rod with a big hook on one end of it and a smaller hook on the other end of it. Attached to the ladder was a long piece of rope, and attached to this in turn, was a long piece of string, at the end of which was a lead weight.

By placing the lead weight in the spoon on the end of the broomstick, Broley was able to throw it over the lowest limb of the tree and then pull his ladder into position and secure it by tying the rope at ground level. Having reached the lowest limb, he was then able to climb from limb to limb with the aid of short pieces of rope.

### NEXT PROBLEM

The next problem was to get over the rim of the immense nest which usually flared out in all directions from the trunk. To accomplish this, Broley placed the large crook on the end of the iron rod, over the rim of the nest, and then put his foot in

the small crook at the other end of it.

When Broley reached the nest, his troubles were far from over. The young eaglets were not always eager to be banded and Broley bore many scars as a result. Sometimes the eaglets took off over the edge of the nest, and in some cases, landed on the ground a quarter of a mile away. Broley always hunted for these eaglets until he found them and then replaced them in their nests before leaving.

### 90% FISH

Ninety percent of the Bald Eagle's diet consists of fish and most of these fish are dead ones that are found lying on shore. It sometimes robs the Osprey of its catch and it occasionally catches one alive itself. The other 10% of its diet consists of mammals, birds, and offal but it eats these only when the supply of fish is insuf-

ficient for its needs. It has been known to kill Great Blue Herons, Brown Pelicans, Herring Gulls, Great Black-backed Gulls, and various species of ducks. Many of the ducks taken, are ones that are found wounded in the marshes after the hunting season is over. On the other hand Bald Eagles have been known to nest directly over a chicken pen without ever molesting the chickens.

Strangely enough, Great Horned Owls, although they are much smaller birds, will sometimes drive Bald Eagles from their nests and then take over these nests for themselves.

The adult Bald Eagle is brown with a white head and tail. Juveniles are brown all over. The head and tail feathers of the juveniles gradually become whiter until they attain full adult plumage at four years of age.

## NATURAL HISTORY NOTEBOOK

PRESENTED BY: THE NATIONAL MUSEUM OF NATURAL SCIENCES, OTTAWA

National Museums of Canada

## BALD EAGLE

*Haliaeetus leucocephalus* II 34



This majestic bird is found across all of southern Canada, but is commonest on the Pacific coast. The adult can be distinguished by its white head and neck, which takes about 4 years to attain.

Adult males have a body length of 75/85cm (30" to 34") and a wingspread of from 180/213cm (72" to 85"), females slightly larger.

The bald eagle is a scavenger rather than a predator, subsisting mainly on fish. It is most commonly found along the sea coasts where cast-ups provide most of its food. It occasionally makes its own kills, and, when fish are not available, it may take a few birds.

Bald eagle numbers have declined, but populations appear to be holding their own in Canada in recent years.



# Miramichi Wildlife

by Harry Walker



Two officers of the RCMP, Cpl. Larry Cochrane and Cst. Roch Garneau, were guests at the last meeting of the Miramichi Naturalist Club. Cpl. Cochrane originally came from Birtle, Manitoba and Cst. Garneau from Plessisville, Quebec, but both now live in Douglastown.

These two officers are responsible for enforcement of the Migratory Bird Convention Act, and the Canada Shipping Act as applied to small vessels. They have a large area to look after, all of the eastern New Brunswick.

There are only five such officers responsible for covering the whole of the province. However Cpl. Cochrane says that they get assistance and excellent co-operation from other members of the RCMP, from fisheries officers, and from forest rangers; all of whom have the authority to enforce the Migratory Bird Convention Act.

Cpl. Cochrane outlined their work and broke it down according to the months of the year.

He spoke to us primarily in connection with their work of enforcing the MBC Act.

From January to March most of their work consists of inspecting the premises of people holding or applying for taxidermy or aviculture permits.

A taxidermy permit cost \$10 and the taxidermist can ordinarily mount only game birds and game animals. When he does a job, he must record the name of the species, the of the person who brought the specimen for mounting, and the hunting permit number of the hunter who shot it.

## PERMISSION FOR MOUNTING

In order to mount a protected species of migratory bird, he must first obtain permission from the Canadian Wildlife Service at Sackville. About the only condition under which such permission will be granted is to donate the mounted bird to a museum or university. The same applies to non-migratory protected species except that in this case permission must be obtained from the Dept. of Natural Resources in Fredericton.

Cpl. Cochrane says that they encounter few cases where taxidermists break these laws.

## ELIMINATING ABUSE

Aviculture permits are permits to keep wild birds in captivity, and in this area, applies almost exclusively to ducks and geese. These permits were free until recently, but now cost \$10. By charging for these permits Cpl. Cochrane says that they have eliminated most of those people who abused their privilege and did not properly care for their birds.

The aviculturist must keep a record of the number of eggs that his birds lay, how many hatch, and how many of these survive. He must also record the number of birds bought and sold. All such dealings must be with other people who have aviculture permits. No wild birds are allowed to be captured and kept in captivity although Cpl. Cochrane says that these birds must have originally started from wild stock sometime in the the past.

enforcement of the Canadian Shipping Act, but in the fall again, it mainly revolves around illegal hunting practices.

There are always some hunters who cannot wait for the hunting season to begin and so there are always some of these who get caught.

When the regular hunting season begins, a number of things must be checked. Are bag limits exceeded? Have any protected species been taken? Has there been any hunting in baited areas? Are the hunters using unplugged shotguns?

Ponds that have been baited for ducks can often be spotted from helicopters as the corn shows up on the bottom of them. Any such ponds that are found are posted with "No Hunting" signs and anyone caught hunting in these places are charged.

It is illegal to hunt in New Brunswick, or in most other places, with a shotgun that will hold more than three shells. However, many shotguns manufactured with the capacity to hold five shells and are then sold with a plug in the chamber which reduced their capacity to three shells. In this province it is illegal to remove this plug.

Snowmobiles and dune buggies have made formerly inaccessible areas, accessible to poachers. However, Cpl. Cochrane says that their department is also well equipped. They have a land rover, equipped with 4-wheel drive, winch, and heavy bumper; a fast jet-propelled motor boat designed so that it can pass over submerged rocks and logs with a minimum chance of being damaged; a helicopter; two snowmobiles; and a portable two-way radio system.

## GENERATIONS OF POACHING

Most poachers have grown up in areas where birds, lobsters, and deer have been taken at will for generations. These people feel that they have a right to poach. The fine for taking migratory birds out of season is only \$10 to \$25. The poachers gun may or may not be confiscated, but usually it is not. Any decoys that are using, and any birds that they have shot, are confiscated. If anyone is convicted of poaching, he cannot obtain a hunting licence for one full year from the date of conviction.

The penalty for poaching birds is too small to be much of a deterrent and Cpl. Cochrane says that they sometimes catch the same poachers two or three times in the same season. The Migratory Bird Convention Act was drawn up by the federal governments of Canada and the United States back in 1916. It is difficult to have the fines raised, because any changes that are made to the act, must be by agreement between the two countries. Cpl. Cochrane says that he does not know what the solution is; but nonetheless, he also says that he finds the work very rewarding.

At this same meeting the new 1979 executive for the Miramichi Naturalist Club was selected and is as follows:-

President - Vernon Goodfellow of the South Esk Road.

Vice-President - Jack Scot of Nordin.

Secretary - my dear wife, Winnie Walker of Newcastle.

Treasurer - Timmy Clarke Ferry Road.



Convention Act.

Cpl. Cochrane outlined their work and broke it down according to the months of the year.

He spoke to us primarily in connection with their work of enforcing the MBC Act.

From January to March most of their work consists of inspecting the premises of people holding or applying for taxidermy or aviculture permits.

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During the duck hunting season, some hunters are required to send one wing from each bird shot, to the Canadian Wildlife Service. The wings from all those shot in the Atlantic Provinces are sent to the office in Sackville. All these wings must be sorted and classified as to the species, sex, and age.

#### 40,000 WINGS

For the Atlantic Provinces there are about 35 or 40 thousand such wings to be sorted each year. Cpl. Cochrane says that by the time this job is performed, the odour from these wings is not all that pleasant.

During the latter part of March, and during the month of April, most of their work is connected with the poaching of sea-ducks. Most of the ducks that are poached at this time of the year are Scoters. Some of the poachers wear white coveralls and travel to near the edge of the sea-ice on snowmobiles. Here they build blinds out of ice blocks. Others hunt from boats.

The sea-ducks that these poachers catch have a fishy taste and they are not relished by most people, but these poachers have discovered ways of cooking them so as to render them quite palatable.

During the summers months Cpl. Cochrane and Cst. Garneau's work deals primarily with

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# Miramichi Wildlife

by Harry Walker



## Christmas bird count results

On Saturday, Dec. 23, members of the Miramichi Naturalist Club conducted their annual Christmas Bird Count. These counts are confined within the area outlined by a circle, 15 miles in diameter, and centered on the Centennial Bridge. The area covered therefore, extends approximately from the Bartibogue bridge in the east to the Anderson bridge in the west.

### THREE PARTIES

Three parties of observers scoured the countryside for birds during the day of the count, while others recorded the birds seen at their feeders.

Observers, taking part in the field, were, -Jane Arsenault, Jimmy Clark, and Doug Underhill, all of Ferry Road; Vernon Goodfellow of the South Esk Road; Jack Scott of Nordin; Colin Cadogan of Chatham; and Ian, Lyle, and Harry Walker of Newcastle.

Those submitting feeder reports were, -Edith Boudreau, Phyllis Crowe, Mrs. Gordon Steeves, Mrs. Jac Van Leevwen, and Margaret Adams, all of Chatham; Mike Coster, Mrs. Graham Crocker, Lem McDonald, and Margaret Wheaton, all of Newcastle; Mrs. Robert Bransfield of Douglastown; Mrs. Percy Anderson of Nordin; Thomas Flynn of Douglasfield; Theresa Ross of Lower Newcastle; Irene Loggie of Napan; and Hazen Lobban of Loggieville.

### LIST OF BIRDS

The following list of birds represents the combined effort of all of the above mentioned people. They are recorded here in order of decreasing abundance. The number in brackets is the corresponding number of birds seen on last years count conducted on Dec. 26, 1977.

House Sparrow 495 (875), Evening Grosbeak 198 (3), Rock Dove or Pigeon 155 (91), Snow Bunting 136 (1), Blue Jay 91 (119), Common Redpoll 86 (67), Starling 84 (175), Raven 69 (47), Black-capped chickadee 42 (59), Pine Grosbeak 17 (60), Gray Jay 10 (5), Bohemian Waxwing 9 (10), Boreal Chickadee 5 (2), Hairy Woodpecker 4 (2), Pileated Woodpecker 3 (0), Great Black-backed Gull 3 (337), Crow 3 (10), Tree Sparrow 2 (2), Common Grackle or Blackbird 2 (6), Robin 2 (0), Ruffed Grouse 2 (4), Sharp-shinned Hawk 1 (1), Rusty Blackbird 1 (0), Downy Woodpecker 1 (2), Northern Three-toed Woodpecker 1 (0), Red-winged Blackbird 1 (1), Cardinal 1 (0).

Herring Gull 0 (505), Glaucous Gull 0 (4), Common Merganser 0 (2), White-throated Sparrow 0 (2), Red-breasted Nuthatch 0 (1), Northern Shrike 0 (1), Mockingbird 0 (1).

Species seen during the count period, (Dec. 16, 1978 to Jan. 1, 1979) but not on the count day, this year, were, -Herring Gulls, Glaucous Gulls, and a Mourning Dove.

the female Cardinal reported by Mrs. Percy Anderson. When this one was reported, I, myself had never before seen a Cardinal. However, on Dec. 30, one week after the count, my son Ian and I saw this one; which, Mrs. Anderson says, has been visiting her feeders regularly for some time now.

Other surprises were the three Pileated Woodpeckers, two on the Chaplin Island Road, and one in the Wellfield Settlement; the Northern Three-toed Woodpecker seen along the Loggieville to Baie Du Vin highway; the Rusty Blackbird seen among the horses in the yard back of the old pumphouse at Morrison's Cove; and the Mourning Dove seen in Bushville during the count period.

One of the Robins was eating apples in a tree near Joe Delano's place on the Old King George Highway, and the other was at Michael Holohan's place on the Chaplin Island Road. The Red-winged Blackbird was at Margaret Adam's bird feeder. Another Red-wing has been coming to Mrs. Graham Crocker's feeder but it did not show up on the count day. The flock of 9 Bohemian Waxwings were feeding in an apple tree at Ervin Carruther's place at Ferry Road.

Birds, conspicuous by their absence, were the various species of sea gulls, which in former years have been recorded in large numbers during these counts. Part of the reason for this has been the closure of the Newcastle dump where many gulls formerly hung out during the winter months. However, on this particular day, gulls seemed to be unusually scarce. On other recent days, they have been observed in considerably greater numbers. At this time of year, gulls seem to spend their nights in the open water farther out in Miramichi Bay but forage up the river during the day. On previous Christmas Bird Counts, I have noticed that all of the gulls are flying up river in the early morning, but are all heading down river again just before dark.

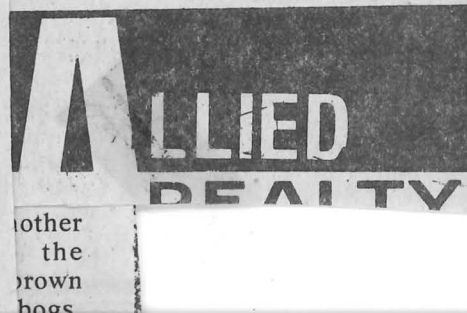
Closure of the Newcastle dump also helps to explain the drop in House Sparrow and Starling populations.

### NO OPEN WATER

This year, there was practically no open water in our count area, and therefore, there were no ducks recorded. On previous Christmas Bird Counts, there has sometimes been fairly large patches of open water near such places as the Boise Cascade mill and the Chatham thermal plant; and, on these counts, there were usually one or two species of ducks recorded.

Birds that have been seen on earlier Christmas Bird Counts in this area, but which have not been recorded on either of the last two, include, -Red-breasted Mergansers, Common Goldeneye (Whistlers), Black Duck, Canada Goose, Cooper's Hawk, Snowy Owl, Bald Eagle, Spruce Grouse, Iceland Gull, Brown Creeper,

Miramichi Naturalist Club on Wednesday, Jan. 17 at 8:00 p.m. in the Miramichi Valley High School in Newcastle. Peter Pearce of the Canadian Wildlife Service, Wildlife Toxicology Department, at Fredericton, will be speaking about the effects of the budworm spray on some of our wildlife. Some of the information on this subject was gathered by the group of biologists who spent the past summer at Bernie Williams camp in Sevogle.





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## NUMBER VARIES GREATLY

As can be seen from the above figures, the numbers of some species can vary greatly from one year to the next.

Unquestionably, the most unexpected bird to make an appearance during the count, was

the female Cardinal reported by Mrs. Percy Anderson. When this one was reported, I, myself had never before seen a Cardinal. However, on Dec. 30, one week after the count, my son Ian and I saw this one; which, Mrs. Anderson says, has been visiting her feeders regularly for some time now.

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## NATURALISTS MEET WEDNESDAY

There will be a meeting of the

Miramichi Naturalist Club on Wednesday, Jan. 17 at 8:00 p.m. in the Miramichi Valley High School in Newcastle. Peter Pearce of the Canadian Wildlife Service, Wildlife Toxicology Department, at Fredericton, will be speaking about the effects of the budworm spray on some of our wildlife. Some of the information on this subject was gathered by the group of biologists who spent the past summer at Bernie Williams camp in Sevoile.

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# Miramichi Wildlife

by Harry Walker



## Shy marten is easy to catch, favorite dinner is squirrels

Before writing this article, I had a talk with Bob Lefebvre of Cassilis who was able to provide me with the following information about the Marten.

The Marten and the Sable are the same animal. It is a member of the weasel family. Its body is about the size of that of a mink, but its legs are longer and therefore its body higher than that of a mink. Also, since its body and tail are more heavily furred than that of a mink, it has the appearance of being a somewhat larger animal.

### DARKEST PELTS BEST

The Marten's fur is fine and soft. Its colour is generally brown with the tail being somewhat darker than the body; however, the shade of brown varies greatly from a pale brown to almost black. Bob says that the darkest pelts are the most valuable ones. There is always a pale orange patch on the throat.

The marten's ears and eyes are larger and more prominent than those of a mink.

The tracks of a mink and a marten are similar but the Marten's feet are larger and more heavily furred. Also, the Marten generally takes larger jumps than does a mink.

Unlike the mink, which is always found in, or near, the water, the Marten lives on the land and in the trees. Bob says that it is always in heavy timberland and prefers areas in which spruce, balsam fir, or hemlock are predominate.

The Marten will have anywhere from one to five young in a litter. These are born in late April, either in a rock den, or in a hollow log.

### MOVE IN FALL

Bob says that Martens will often move from one area to another in the fall of the year. At one time he thought that when they did this they were looking for food, but now he believes that they just move because of their roaming instinct, or because they are looking for better living conditions. He has known them to move out of areas where food was plentiful. Last year he trapped an area which had not been trapped for 25 or 30 years and caught 28 martens. This year, signs indicated that there were still plenty of martens in the area but most of them left before the trapping season and he got only five. Later he found them plentiful in an area about 10 miles away and figured that they had moved there.

## AMERICAN MARTEN

MARTES AMERICANA II. 35



This member of the weasel family with the long, lustrous fur was once found in a broad belt across forested northern North America, but excessive trapping and destruction of their habitat has depleted their numbers till today they remain only in pockets. Their insatiable curiosity and appetite, often mistaken for tameness, made them rather easy victims for all sorts of traps. The males are solitary and pugnacious, associating with the females only in the mating season, which occurs in July and August. The young are born and raised in grass-lined nests in hollow trees, or in cavities in the rocks. Considered to be tree dwellers, martens, in fact, spend considerable time on the ground and are excellent swimmers, even under water. Their principal source of food is mice, but squirrels, snowshoe hares and pikas are also popular, as well as a variety of fruits and berries in summer, insects, and some carrion.

The signs that Bob goes by are, their tracks in winter, and their droppings in the summer. Apparently Martens have the habit of leaving their droppings on flat rocks. The fisher also does this, but its droppings are larger and very often contain porcupine quills. The fisher habitually feeds on porcupines, and Bob says that nature, in some mysterious way, seems to have protected it against their quills. He says, that when skinning a fisher, one will often encounter porcupine quills which have penetrated the skin but that these quills never seem to work their way to any appreciable depth into the flesh.

### SQUIRRELS FAVORITE

#### FOOD

The Marten's favourite food seems to be squirrels, but it also eats a great many mice, and also some rabbits, partridges, and small birds. Although it is primarily a carnivore, it nonetheless eats a lot of berries when these are available and remains of it can be seen in their droppings. Marten's will remain near berry patches throughout the berry season.

Although the Marten is shy and avoids areas of human habitation, nonetheless, it has never learned to fear a trap of any

kind and is an animal that is especially easy to catch. Bob says that when a group of men are working in the bush, martens seldom show themselves. However, after the men leave in the evening, martens often come out and search the area either out of curiosity or in search of food. If the men are returning to the same area day after day, they may catch a glimpse of a Marten as they are returning to the area on the occasional morning.

Kevin Woods, who is now living in the northern part of British Columbia, but who has recently been home visiting his parents, Mr. and Mrs. Eddie Woods of Newcastle, has been trapping martens out in B.C. and he also says that they are easily trapped and that they can be very easily cleaned right out of an area. He traps them by placing a conibear trap at each end of a long narrow box, at the center of which has been placed the bait. He says that he sometimes returns to find two martens caught, one in each of the two traps.

In my last article I announced that there would be a meeting of the Miramichi Naturalist Club on Wednesday, Jan. 17; however, that meeting was postponed until this coming Wednesday, Jan. 24. It will be held in the Miramichi Valley High School in Newcastle, starting at 8:00 p.m. All are welcome.



Jan 26/79

# Miramichi Wildlife

by Harry Walker



On a recent visit with Gladys MacLean of Whitneyville, I gathered some new and interesting ideas about various things.

At the time that my wife and I visited Miss MacLean, her sister and brother-in-law, Doris and Les Bear of Seattle, Washington, were also visiting with her and so we had the pleasure of meeting them also. The Bears have lived for many years in Alaska and have only very recently moved from there to Seattle. While in Alaska they lived in both Anchorage and Fairbanks.

## BICYCLE TRAILS

One unique convenience that has been provided for the citizens of Anchorage is its bicycle and skiing trails. The university and all of the schools are connected to other parts of the city with bicycle trails and all new roads being built having bicycle trails built beside them. In the winter, these bicycle trails become ski trails.

I have done some bicycling on the Miramichi but find it rather hazardous. It is not possible to bicycle between Newcastle and Chatham without using the main roads which are too narrow and busy for such purposes. A bicycle ride between these two towns would be much more relaxing and enjoyable if a bicycle trail connected them. Also I think that many more people would be inclined to use bicycles if such a trail existed, thus giving people some healthy exercise. Also such a trail would help to stimulate interest in nature; for, when on a bicycle, you are much closer to nature than you are when riding in a car. You can see and hear more, and can stop to observe things without being a hazard to other traffic and without being in danger of getting run over.

## HUGE CABBAGES

The Bears told us about the incredible size to which certain vegetables will grow in Alaska. They were given a 35 pound cabbage, which was much too big for them and which they therefore split up among several of their neighbours. They laughed about one salad recipe

that called for four zucchini squash. Their zucchinis were 3 or 4 feet long and several inches in diameter. I have read about the tremendous rate of growth that takes place during the short summers in Alaska and the Yukon and have wondered what the reason for this is.

## HONEY AND SOURDOUGH

The Bears told us about the homemade honey which the people of Alaska wake to pour over their sourdough pancakes. This honey is made from clover blossoms, sugar, water, and a small amount of alum. My wife has a cookbook called "Out of Old Nova Scotia Kitchens" by Marie Nightingale which includes a similar recipe for homemade honey except that rose-petals are included as an extra ingredient.

Miss MacLean served us Chamomile tea and Mountain Ash berry jelly, both of which we had never tasted before. She explained that jelly made from Mountain Ash berries alone is rather bitter and strong but I found it quite tasty myself. The Mountain Ash berries apparently contain a great deal of pectin and if some of them are thrown in with other fruits when making jelly, they will not only add flavour but will also help the resulting juice mixture to jell. She said that she had made some jelly from a mixture of wild apples and Mountain Ash berries and that it had had a delicious flavour.

## FLOUR FROM LAMBSQUARTERS

Miss MacLean also gathers lambsquarters after they have gone to seed and have started to ripen. These she dries in the sun and then stores them for winter use. The seeds are stripped from the stalks and used to replace some of the flour in any recipe that calls for flour. She also dries Red Clover heads and crumbles these up to use in muffins and in other baking recipes. When doing this she removes the hard stem from the center of the flower heads.

Miss MacLean was bothered

with bats in the attic of her house. She tried many different methods to get rid of them but nothing worked until she hung burdocks lengthwise along the inside of the peak of the roof and then the bats left. She later found one bat stuck to the burdocks but all of the others just disappeared.

Gladys and Doris MacLean grew up in Strathadam and were members of a family of nine children. They said that their father Jared MacLean was very interested in nature and often took them on nature hikes. Obviously he succeeded in passing this interest on to these two daughters.

Gladys MacLean spent 17 years in India as a missionary and also worked for a time with chinese refugees in Hong Kong.

July 2/79

# Miramichi Wildlife

by Harry Walker



At a meeting of the Miramichi Naturalist Club held at MVHS on the evening of Jan. 24, Ken Murray and John Green, two foresters with Acadia Forest Products, showed slides and spoke to us about forestry operations in New Brunswick.

In their slides they showed us examples of both good and bad forestry practices, and emphasized that woods harvesting operations that do the least environmental damage invariably turn out to be the ones that are in the long run, the most economical.

It is encouraging to hear this, and I would like to add, that similarly it is becoming quite obvious that any economic and technical planning that fails to take into account the social well being of the workers and the community is also short-sighted economically. Last summer I was talking to professor Sulis (phonetic spelling) of the University of Waterloo in Ontario about this problem. He said that in future, engineers are going to be required to study more of the humanities and social sciences, and also that they will be required to evaluate engineering projects from the viewpoint of what their environmental and social impact in the community will be.

Getting back to our meeting, one slide showed the debris left behind by one harvesting machine and we were told that this operation proved expensive for the company concerned as the government made them clean up the mess and salvage the wood that had been wasted. The machine used in this operation worked well in certain woods operations in the southern United States, but apparently a harvester that is designed for one type of forest does not necessarily work well in another type.

## MUCH WIDER

Haulage roads were formerly made much wider than they are now. These narrow roads are cheaper to build and they disturb the environment less.

Slides were shown of an operation on a large hillside. Here, harvesting was done in a terraced manner in order to keep the damage caused by erosion to a minimum. As an added safeguard against erosion, the trees on the top of the hill were being left to be harvested in some future operation.

New harvesting equipment is being designed with a view to

minimizing environmental damage. Such equipment has wide tires so that it has less tendency to leave deep ruts in the ground and at the same time it does not bog down so easily in soft ground.

## WASHED INTO RIVER

These foresters admitted that in the past, Acadia has been responsible for a lot of fine wood fiber being washed into the Miramichi River but they said that this is no longer the case. This material, which is not suitable for paper making, is now being stockpiled and they expect that in the near future, it will be used to make a valuable mulch for gardens and farms. They also said that the only chemical being used at the Acadia mill is Hydrogen Peroxide and that any of this that might get into the river will quickly break down into water and oxygen.

## TOXIC CHEMICALS

Vernon Goodfellow pointed out that some toxic chemicals are derived from wood bark and that some of these get into the rivers from pulp mills. He also stated that 70% to 80% of the pollution in New Brunswick's rivers is caused by pulp mills.

Ken Murray says that only about 15% of the wood cut by Acadia is cut with company machines and that the other 85% is cut by men with chain saws. About half of this wood is used in their own pulp mill, and about half of it is sold to other wood product industries. They have tried to salvage wood after forest fires but not very successfully. The bark is difficult to remove from these trees, and it is difficult to remove all of the charred wood. Worms move into these burnt-over areas very quickly and start tunnelling into and devouring this wood. We were shown one slide, taken three weeks after a fire, which showed how these worms were already at work.

## COOPERATION

Acadia works in co-operation with Bob Currie, the Regional Biologist, who approves their plans from a wildlife point of view. He will also sometimes request that they cut trees out of a deer yard. The reason for such a request would be that the deer have insufficient food.

The deer will habitually return to the same yard for winter even though the food is gone. Since the deer will only venture about 100

yards into a clearing, only small openings are made in the bush, leaving plenty of cover close by. New growth soon springs up in these clearings, thus providing browse for them.

We learned that budworms prefer to eat fir and that next on their list comes white and red spruce. However, if all of these are devoured from an area the budworms will attack black spruce, jack-pine, and hemlock.

Present regulations in the province require operators to leave 500 feet of bush on either side of all main streams and 200 feet on either side of all secondary streams.

We were invited to come and view Acadia's wood cutting operations or their mill if we so desired.