The Young Naturalist

YOUNG NATURALISTS CLUB F. O. N.

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The Muskrat Struggles To Survive Winter

So you thought that most animals spend the winter season sleeping peacefully, waiting for the warm spring sun to wake them up!

Let me tell you about a very common North American animal that spends every minute of the winter fighting a desperate battle to stay alive. Its enemies are many, always close at hand.

This animal, the largest member of the North American rat family is called the Muskrat, and is able to claim the tiny Field Mouse and White-footed Mouse as its cousins.

The frigid, bone-chilling cold of our Canadian winter could be an enemy of the Muskrat. Fortunately, this large rat has a very thick fur coat that helps to keep it warm throughout the coldest weather. However, more important to the Muskrat's well-being is a ready supply of food, since unlike the Beaver, it does not store its food for the winter.

During the summer, when everything is growing, the Muskrat is able to eat a varied diet of tender rushes, roots, and grasses, with the occasional fish and young bird if it is lucky. The winter is not so kind, and the roots and underwater grasses can soon be eaten, especially if there are several other Muskrat families living near one another.

The Muskrat has a coat of fur that helps to keep it warm throughout the coldest weather, but food is even more important to its well-being.

To make sure it is always near its food supply, the Muskrat builds a house in shallow water, or on wet, marshy land and leaves itself a rather small, round den in the centre of the house above the water level.

It makes two or three doorways into its house so that it can swim beneath the surface of the water or ice to its favourite underwater patch. In order to stop its "plunge" hole from freezing solid during the winter, the Muskrat places floating rafts of grass in the water.

If food becomes particularly scarce, the Muskrat is able to eat from a huge emergency food chamber it always has on hand. Its house! This large pile of reeds, grasses, and roots cemented together with mud not only keeps it warm, but can also be eaten if it is a particularly lean winter.

The Muskrat also has to keep a wary lookout for another type of enemy — animals such as weasels, otters, and foxes as well as birds of prey like owls and hawks. The average Muskrat that weighs between one and one-half and two pounds is a tempting meal for these animals and birds.

Although it is a powerful fighter, the Muskrat is quite slow and awkward. Its sharp, gnawing teeth are his main de-

See MUSKRAT — Page 2

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The Muskrat builds its house in shallow water, and leaves itself a rather small round den in the centre of the house above the water level.

MUSKRAT — from Page 1

fence weapons, but are no match for the lightning fast moves of the weasel, or the iron grip of the hawk's talons.

As you can see, the Muskrat must greet the spring thaw with a great sigh of relief knowing that he has survived to see another summer.

BARRY GRIFFITHS

The insect group is by far the largest group of animals in the world. Over 600,000 species have been identified, but scientists say this is only ten percent of the insects yet to be discovered.

The class of insects is divided into some 25 orders. One order encompasses moths and butterflies, one the termites; another beetles. The beetles alone include some 250,000 species a number of which are only 1/100 of an inch, while others are about six inches in length.

Bird Sounds of the North

The following is a note by Gilbert G. Faries, an F.O.N. member who lives in Moose Factory, Ontario. Mr. Faries is an Indian who has had the opportunity to live in a tent all the year round and who has much to tell about his experiences.

Indian families live in natural surroundings in close touch with wild animals, birds, plants, waterways, weather, wind and tides. An Indian is, therefore, a born naturalist. The wild animals are characterized in the bedtime stories which used to be told by memory to the children. Adults liked hearing them, too. These stories were in serial form and seemed to have no ending.

The birds were named by their sounds or habits; to really appreciate these Indian names, one must understand the native tongue. It was commonly believed that when a bird sang at night, unless it was a nocturnal type, the song meant the death of a relative or other bad news.

Indians lived close to the birds in their natural habitat and became very familiar with their calls. For example, birds at migration sound different in spring and fall. You would not notice the difference unless you lived close to them and heard their sounds daily. As the cold weather sets in, the bird sounds become more excited and flight movements resemble trial flights. The geese and shorebirds fill the air with their notes. Only the Indians of the north and people who inhabit the feeding areas really feel the meaning of these events. Alas! to hear the dying notes and witness the dark lines on the horizon to the south as they migrate, is a moving experience. You can long sense the ringing of their notes in your ears even though they may be miles away. You know that this is a message that winter is very near.

GILBERT G. FARIES

The movement of migrating birds, such as the Canada Geese has special significance for Indians of the far north.

Ontario Department of Lands and Forests

THE USE OF TOOLS

Of all the animals man is the only one that has adapted himself fully to the use of tools. His first tools were weapons made from sticks or bones of other animals. Rockets are one of the most recent tools he has developed. Mans tool making skills have helped him survive — and now threaten the race with extinction.

There are a few animals other than humans that use tools.

The woodpecker, or tool-using finch, of the Galapagos Islands, uses a cactus thorn to pry insects from cracks in trees.

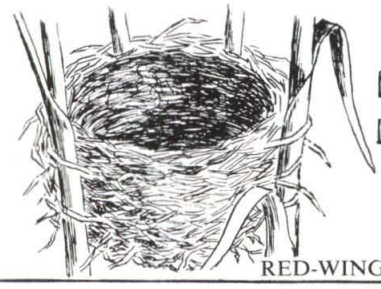
The chimpanzee pokes a twig into a termite mound and eats the insects that cling to it.

The sea otter breaks open a shell-fish with a flat rock.

Egyptian vultures, unable to break ostrich eggs with their beaks, drop stones on them until the egg finally cracks.

John Bateman

MARCH: focus on BIRDS' NESTS



RED-WINGED BLACKBIRD

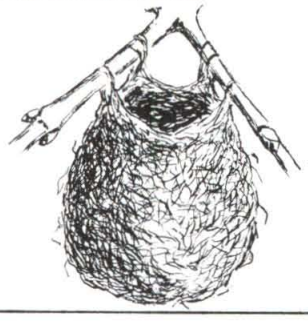
BUILDINGS

BARN SWALLOW

FIELDS AND MEADOWS

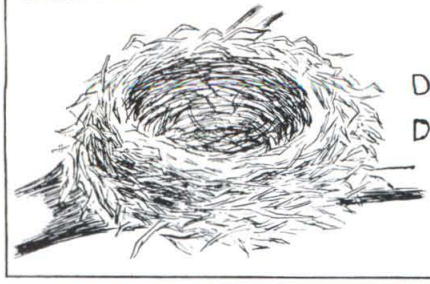
AMERICAN GOLDFINCH

WOODLAND EDGES



BALTIMORE ORIOLE

GARDENS



ROBIN

The winter and early spring is the best time to go out and look for birds' nests. They are easily seen since there are no leaves on the trees and bushes. You will have little difficulty in finding them but your biggest problem will be identifying them. We have to know certain general characteristics to identify them: what materials were used? . . . location? . . . size of nest? The following questions should help you.

1. In which environment has the nest been built?
2. What is its location? . . . on the ground in a bush or tree?
3. What type of nest is it? . . . open, closed; shaped like a cup, saucer or platform?
4. What is its exact position? . . . on a branch; placed in the crotch of a tree?
5. Of what materials is the nest made?

Remember that in the spring and summer when the birds are using their nests they should never be disturbed.

ACTIVITY PROJECTS

We would like to know the results of these activities. Perhaps the activities could be done by your class or by yourself. The results will be published in a future issue of the *Young Naturalist*.

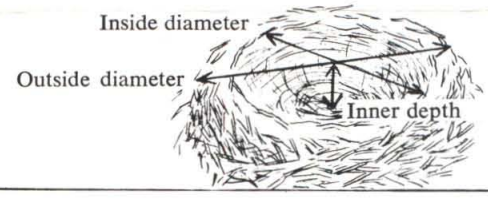
ACTIVITY PROJECT #1

ROBINS

Locate some robins' nests and take the following measurements (to nearest ¼"). What are the averages for . . .

1. Inside diameter?
2. Outside diameter?
3. Inner depth?
4. Height above ground?

In what kind of environment did you find the nest?
What materials did the robin use?



ACTIVITY PROJECT #2

ALL BIRDS

1. How many different types of nests can you locate? Describe each one in the following manner.

   A. Height above ground
   B. Environment
   C. Materials used
   D. Inside diameter
   E. Outside diameter
   F. Inner depth

2. What birds do you think built the nests?

WHO BUILT ME?

I am made of grass, leaves, small twigs, moss, bark, hair, and pine needles. I often contain a snakeskin or a strip of cellophane. My cup is usually about 3" in diameter and I can be found in a hole in a tree or old stump. Sometimes I use a nesting box that you can put up for me.

The first three young naturalists to correctly identify me and send their answer to the F.O.N. Office will receive for their school resource centre *A Field Guide to Bird's Nests*. Be sure to include name and address of your school. PLEASE MAIL ALL REPLIES AND RESULTS To: Mr. B. GRIFFITHS, c/o Federation of Ontario Naturalists, 1262 Don Mills Rd., Don Mills, Ontario.

EDITOR'S NOTE: This continuing series is designed to provide information and activity ideas for teachers who want to encourage their pupils to become actively involved in nature study as an exciting feature of their outdoor education program. Text by Barry Griffiths and Gerald McKeating, sketches by Don Foxall.

Club News

The Federation of Ontario Naturalists is holding its Annual Meeting in Toronto this year, on April 26th and 27th, and members of the Toronto Junior Field Naturalists' Club are hoping to make table decorations for the Saturday night banquet. They also plan to set up displays at the meeting, with each group illustrating the projects it has undertaken during the year. The three hundred and sixty members of the club are divided into eleven special interest groups for older children, and seven general groups for eight to ten year olds. Most groups are filled to capacity, with the new astronomy group one of the most popular. This group has made several visits to the McLaughlin Planetarium to view the excellent rotunda displays, hear lectures by the Planetarium staff and attend the show in the Star Theatre. The mammal group has had a winter outing, and the bird group held its annual Christmas Census; more about this in a later issue of the *Young Naturalist.*

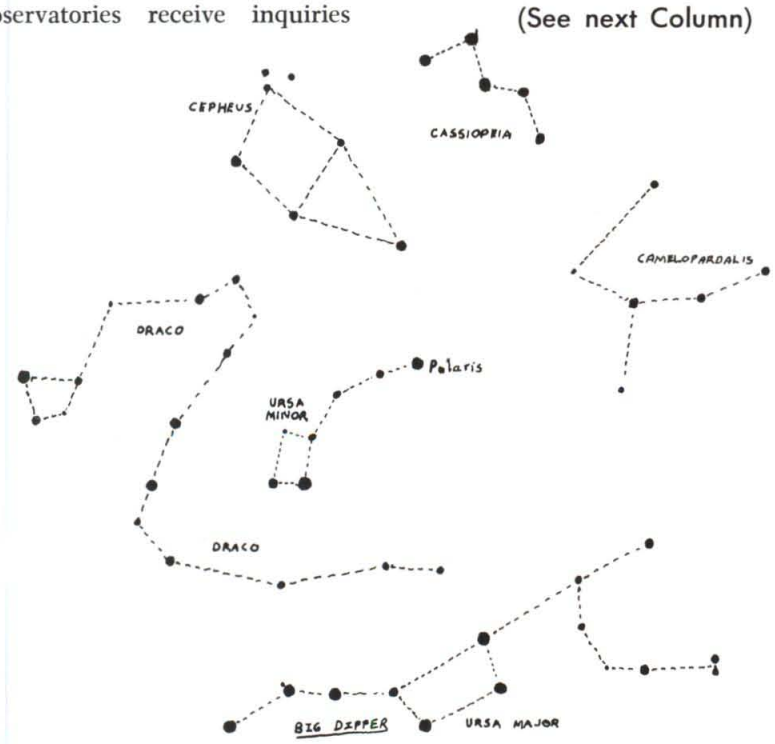
BARBARA WILKINS

Many boys and girls have organized a natural science club in their school or classroom. If you have such a club, you are invited to share your experiences with others by reporting your activities in this column. We would be pleased to have pictures of your outings and projects. Be sure to describe your activities fully, giving the names of the leaders and assistants. Write to Mrs. Barbara Wilkins, Editor of Club News, 213 Rosedale Heights Drive, Toronto 7, Ontario.

Does the Sky Move?

From time to time planetariums and observatories receive inquiries from people who ask about bright

(See next Column)



The Big Dipper and Polar Constellations

SKY — from second column

slowly-moving objects in the sky. When advised that they have seen a planet or perhaps a bright star, they reply "But it moved!" Of course it moved, for the stars reflect the motions of the Earth, and the nightly path of the stars should be as familiar as the daily journey of the Sun. Here are some simple experiments which will allow you to see these movements for yourself.

First find a spot from which you have a good view of the northern horizon. Locate the North Star (Polaris) and the Big Dipper. Note the time and sketch the Big Dipper showing its position relative to the horizon and the North Pole. Do the same one hour later. You will see that the Big Dipper has moved anti-clockwise about the pole. This direction is westward, the direction of the daily or diurnal motion which is simply a reflection of the Earth's eastward rotation on its axis.

A month later if you were to repeat the observation at the same time you would find that the position of the Big Dipper had changed. For the same time it would appear to have rotated further west. You can measure this westward drift of the stars. Find a spot from which you can locate a bright easily recognizable star as it passes behind a tree, chimney or other landmark. Note the time of appearance or disappearance of the star. If your watch or clock is accurate you will find the star reaches the same point about 4 minutes earlier each night. This can be explained as an apparent eastward movement of the sun among the stars which is caused by the real eastward motion of the Earth about the Sun. The rotation of the Earth measured with respect to the Sun is a combination of the Earth's true rotation and its revolution about the Sun. The true rotation measured with respect to the stars is $23^{r}\ 56^{m}\ 04^{s}$. How close can you come to this?

THOMAS CLARKE

WOODLORE
FOR THE NATURALIST

John Macfie

Animals May Starve In Deep Snow

Snow affects the lives of all of us in Ontario. Skiers like a lot of it, but the man who drives a long distance to work dreads a heavy snowstorm. He is happiest in one of our periodic "open" winters. For most wild animals the amount and kind of snow is a matter of life and death.

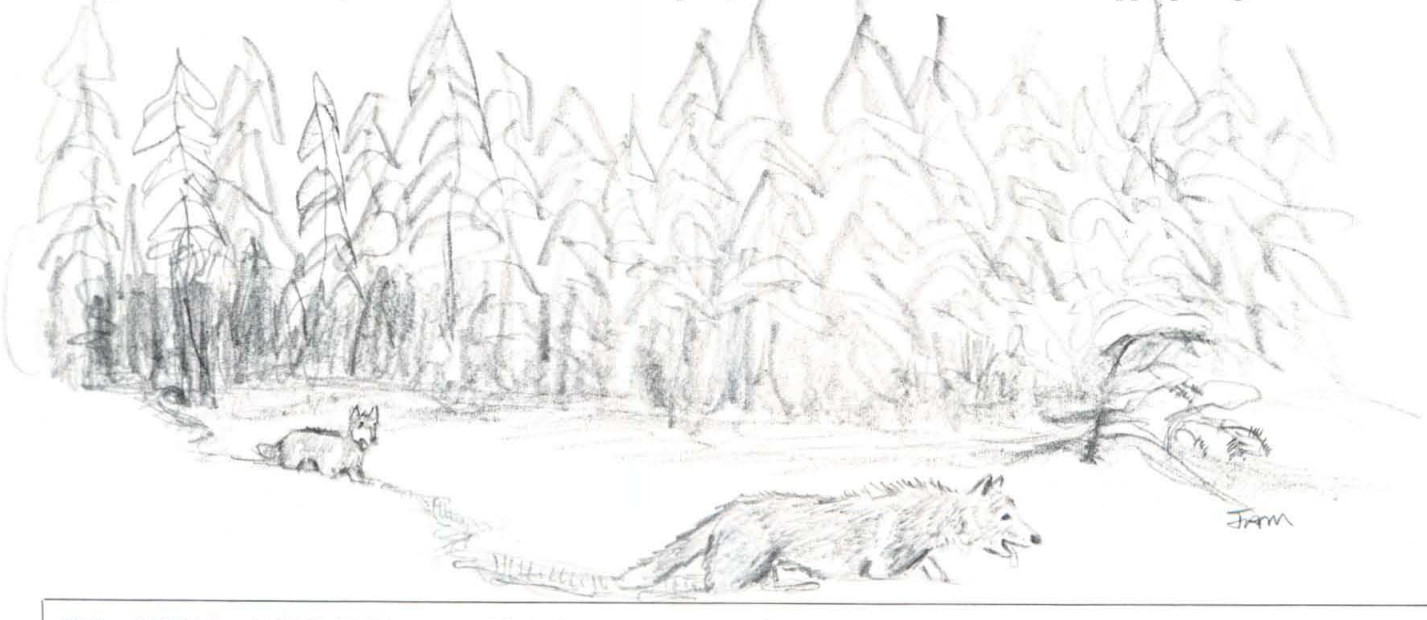
Very deep, loose snow broadens the safe sub-surface world of the small rodent, and raises rabbit trails to a level where browse is more plentiful. On the other hand deer, and in extreme cases even moose, are severely limited in their travels by deep snow, and death by starvation may result.

The fortunes of the predators that depend on these vegetation-eaters for their livelihood are likewise affected by snow. Take, for example, the case of the Timber Wolf. Contrary to popular belief he does not always have things his own way. Wolves have good times and bad, and either may occur in winter, depending on the nature of the snow cover.

Good times come with deep, hard-surfaced snow, either crusted by a thaw or hammered to hardness by sub-zero winds. True, mice will be harder to dig out then, but now the Timber Wolf is on an even footing with the Snowshoe Hare, and large herbivores like deer and moose, breaking through the crust, are at a distinct disadvantage. But deep, fluffy snow means hungry days or weeks for the wolf. Think of a time when you watched a big dog floundering in deep snow, and try to imagine it running down a long-legged or snowshoe-footed meal. With each day that the condition persists, the wolf gets weaker and less able to hunt.

Hanging in my home is the magnificent silver-black pelt of a six foot-long Hudson Bay wolf. This animal, and the four other equally large members of its pack, were shot with a .22 calibre rifle by Charlton Slipperyjack, an Albany River Indian. Northern Indians keep two pairs of snowshoes, small for hard, late winter snow and large for loose snow. Chancing upon the trench-like trail of the wolf pack in the notoriously deep snow of the winter of 1955-56, Slipperyjack turned to follow it swiftly on his big snowshoes, and hardly a mile ahead he overtook the exhausted beasts cowering in the snow. Days without food and the smothering snow had killed their will to flee or fight.

In that winter, I heard of at least two other Indians who walked down packs of wolves. Under ordinary circumstances it is next to impossible to hunt down a wily wolf on foot. Winter is also a hard season for northern Indians, and a bonanza of four or five prime Timber Wolf skins considerably brightens the winter darkness in a trapping lodge.



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