

The

This is Young Naturalist Year: 1966-67
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Young Naturalist



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Winter Visitor-The Northern Shrike

Although there are many different kinds of shrike found throughout the world, only two species may be seen wild in Canada. The larger of these two species is the Northern Shrike.

A Northern Shrike is about the size of a small Robin. The shrike is grey on the top of the head, the back of the neck, the back, and the upper rump. The lower rump and the scapular

feathers that border the upper side of the wing are white. The wings, tail, and the broad band through the eye and cheek are black. The wings, and all but the innermost tail feathers are boldly marked with white. The underparts are dull white. The feathers of the underparts have very fine grey bars that are so thin and light that they look as if they had been drawn with a pencil.

Although it is possible that some Northern Shrikes may nest in South-central portions of Ontario, the main breeding range is northern Ontario and other parts of northern Canada and Alaska. It is during the late fall, winter and early spring that the Northern Shrike comes into southern Ontario. At this time of year shrikes may be quite conspicuous, as they often sit on high exposed perches. Shrikes may often be identified by shape alone. Although similar in general shape and bulk to the familiar Robin, the shrike has shorter legs, a relatively larger head, a thicker bill, and often holds its tail stiffly out from the body.

The Northern Shrike has also been confused with the Gray Jay, but the jay has little or no white or black in the wings and tail, and has a bold white forehead, and a blackish patch on the back of the neck.

The only bird that is really similar to the Northern Shrike is its smaller relative, the Loggerhead Shrike. Log-



Painting by the author

The Northern Shrike eats mainly mice and voles during the winter. In summer, shrikes eat many insects, especially grasshoppers and crickets.

See SHRIKE — Page 2



Sketch by Paul Geraghty

The bones of the Gray Fox are occasionally found on the sites of old Indian villages in Ontario. The animal disappeared for many years and is still rare.

The Mystery of the Gray Fox

When the Indians were hungry they ate whatever they could get. Their food supply was not regular by any means, and so when we excavate old village sites we find the bones of many kinds of creatures. The Gray Fox is an interesting example.

When the white man began to explore Ontario, no Gray Foxes were reported and likely they were not present here. Of course the Red Fox was and still is fairly common at certain times and places. The two kinds are not merely different in colour but are separate species. The Gray Fox is very common in some parts of the United States of America. Some of the bones of the two species are different and so archaeologists have been able to show that the Gray Fox was present here at one time. This is done by identifying bones found in Indian midden heaps, or as we would say today, garbage dumps.

The Gray Fox, in addition to having a gray appearance to its upper parts, has a strip of black fur along the middle of its back and the top part of its long, bushy tail. The black on the back is not readily seen, being somewhat diffused, but is distinct on the tail. It is not by any means as agile as a squirrel, but the Gray Fox does climb to a much greater extent than our common Red Fox.

About thirty years ago, Gray Foxes began to make very occasional appearances in Ontario. They have since been reported from west of Lake Superior and inland from Lake Ontario and Lake Erie. They are still extremely rare in our Province. Why they disappeared, and then returned, no one knows. How mysterious! If you ever see a fox in a tree, try to note its colour as just described.

A. A. OUTRAM

SHRIKE — from Page 1

gerhead Shrikes usually go farther south in the winter than southern Ontario, so that you can be fairly sure (but not positive) that a shrike seen in any part of Ontario during the cold months is a Northern. The main difference between the slightly smaller Loggerhead Shrike and the Northern Shrike is that the black mask of the Loggerhead meets over the bill, but the mask of the Northern does not.

Shrikes are often called "butcher-birds". This is because they normally eat insects and other small animals that they hang in a crotch between two twigs, or thrust onto the sharp point of a thorn or barb-wire spike.

You might not think so predatory a bird as the Northern Shrike is a songbird, but it is. The song of the Northern Shrike is made up of melodic gurgling and bubbling noises, with a few harsh notes and clear whistles. The Northern Shrike sometimes imitates the songs or calls of other kinds of birds. Unlike most of our songbirds, both the male and the female Northern Shrike will sing. They do not seem to limit their singing exclusively to one time of year, but may break into song during the winter, as well as during the nesting season.

The nest of the Northern Shrike is very big and bulky, and yet it is normally very well hidden in the dense foliage of a spruce or other evergreen. Twigs, mosses, lichens, grasses, leaf and weed stems, feathers and fur have all been recorded as materials used either in the construction of the nest itself, or in the thick lining that protects the baby shrikes within. Normally four to six eggs are laid, although smaller and greater numbers have been recorded.

The Northern Shrike is a handsome, bold species of bird well worth looking for during the cold months of winter when he makes his appearance in southern Ontario. If you keep your eyes open while driving through the countryside, or on a winter hike, you may very well see one of these interesting and attractive birds.

BARRY KENT MACKAY

Club News



The Toronto Junior Field Naturalists' Club met on September 30 and 277 members were enrolled—a record registration for a first fall meeting. Among these were five members of one family. Gregory Dovlet of the entomology group joined for the eighth year, a certain sign of the club's popularity! More members are expected to enrol at the next meeting, to be held on November 2.

The September meeting was a general one. A film was shown, Walt Disney's "Bear Country", and the leaders of the various special interest groups introduced themselves and talked about the programmes they planned for the coming months. Former club members lead several of the groups; Michael Singleton is in charge of the popular reptile and amphibian group, Robert Lamb leads the entomology group, and two former members, James Rice and James MacKin-

tosh, lead the mammal group. A new group this year is ecology, led by Miss Mary Markham. Other special interest groups are geology and mineralogy, fossils, ornithology, and botany. Each group plans its own field trips, and the ornithology group held its first outing on October 15.

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.

BARBARA WILKINS

GALAXIES - The Largest Star Groupings

Galaxies are the largest groupings of stars known in the universe. Several billion galaxies could be photographed with earth-based telescopes and each of these galaxies may contain from a few hundred thousand up to several hundred billion stars. In addition to stars, most galaxies also contain clouds of glowing gas and dark dust. One of the largest known galaxies is our own—the Milky Way.

The Milky Way is called a spiral galaxy because it consists of a large, bright central grouping of stars around which swirl several spiral arms. There are other galaxies that appear fuzzy in photographs and possess no spiral arms, very few bright stars and no clouds of gas. Examples of both types of galaxy are shown in the accompanying photographs.

Galaxies may occur singly in space, in pairs, or in clusters containing as many as a thousand members. The Milky Way is a member of a cluster which contains seventeen galaxies.

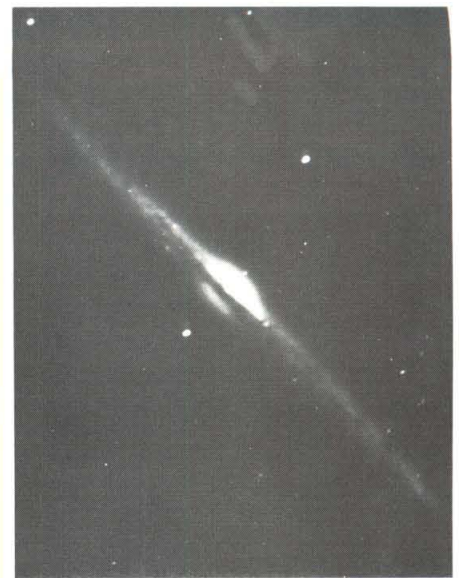
Although galaxies are extremely

large and therefore very bright, most are so far away that a large telescope is required to see them. In fact, only four galaxies are visible to the naked eye and two of these cannot be seen from the Northern Hemisphere.

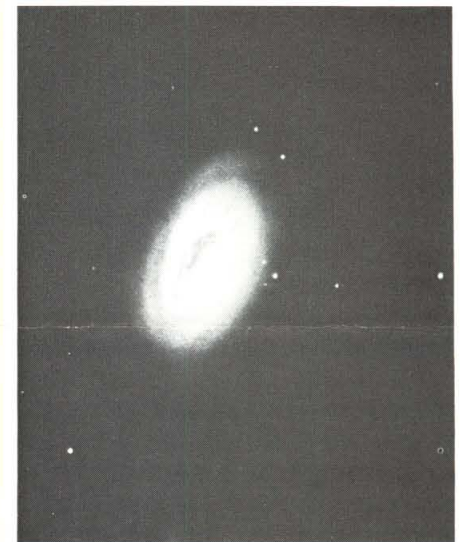
DOUGLAS P. HUBE



M33, a very bright spiral galaxy.



A spiral galaxy viewed edge-on.



Note dust cloud in centre of galaxy.



M-31, one of the largest galaxies.

CANADIAN

Woodpeckers

There are over 200 woodpeckers in the world; 12 are found in Canada. The typical woodpecker has a stout, chisel-shaped bill with which it excavates nesting holes and digs out its favorite food, wood-boring insects. It has stiff tail feathers to help prop it against the tree trunk. Most woodpeckers have long barbed tongues with which they "spear" their insect prey, though some (such as the sapsuckers) have brushy tongues, the better to deal with liquid food. Woodpeckers rarely harm a healthy tree; indeed they act as "tree surgeons," cleaning out infected areas. Sometimes their drumming on hollow limbs is a form of signalling.

The spectacular crow-sized PILEATED WOODPECKER is found in most forested parts of Canada. It prefers evergreens or mixed woods; in the east it has a liking for beech trees. Large oval or oblong holes are clues to its presence. The tiny DOWNY WOODPECKER, Canada's smallest, may be found almost anywhere there are trees. It is a regular customer at backyard feeding stations in winter, and especially likes suet. "Tapping" for sap and for the insects it attracts, the YELLOW-BELLIED SAPSUCKER sometimes drinks too much sap that has begun to ferment, and falls to the ground in a stupor. Perhaps the handsomest of all is the RED-HEADED WOODPECKER of the southeast, which is becoming scarce these days because of the disappearance of its nesting holes in rotten orchard trees and old fence-posts.

"Clean" farming can be hard on birds. The BLACK-BACKED THREE-TOED WOODPECKER is a bird of the northern evergreen forests, but many winter in the settled parts of the country, often feeding on trees killed by Dutch elm disease. LEWIS' WOODPECKER of the far west sometimes feeds on the wing, catching insects in mid-air like a flycatcher. Most woodpeckers have a bouncing, "roller-coaster" flight, but this one flies straight ahead, like a small crow. WILLIAMSON'S SAPSUCKER is a bird of the mountain evergreens. The brown, barred female is so unlike the male that for many years they were thought to be two different species. There are two kinds of FLICKER in Canada: the yellow-shafted in the east, the red-shafted in the west. No other Canadian woodpeckers commonly feed on the ground, probing lawns for grubs.

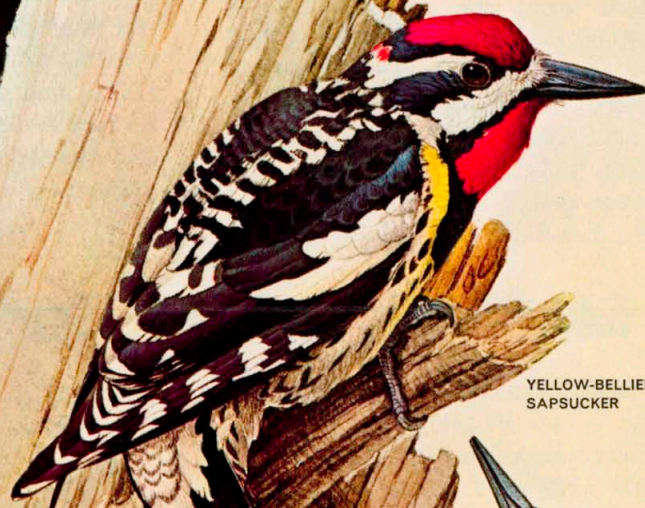
Note: all birds illustrated are males.



PILEATED WOODPECKER



DOWNY WOODPECKER



YELLOW-BELLIED SAPSUCKER



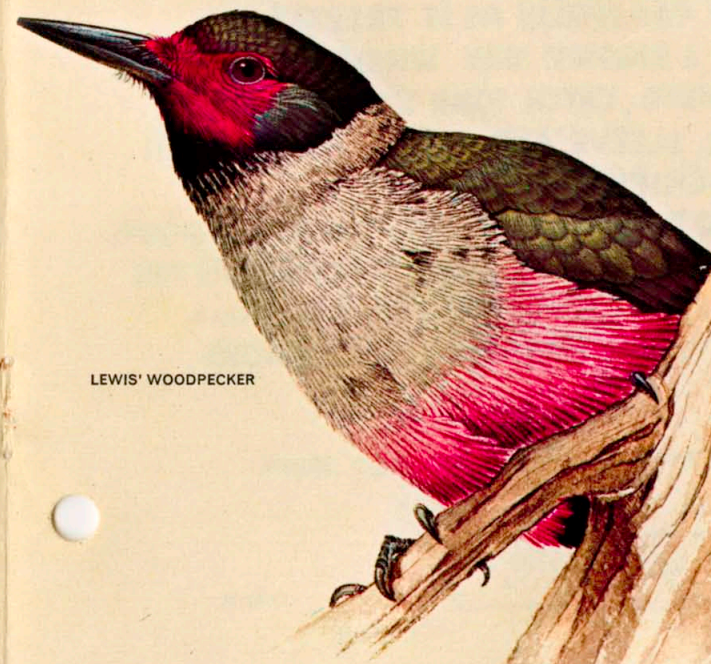
RED-HEADED WOODPECKER



BLACK-BACKED THREE-TOED WOODPECKER



WILLIAMSON'S SAPSUCKER



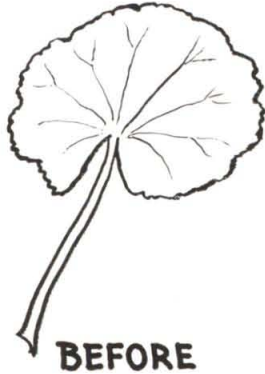
LEWIS' WOODPECKER



YELLOW-SHAFTED FLICKER

J.F. LANSLOWNE

WHY DO OUR PLANTS DIE IF THEY FREEZE



BEFORE

?



AFTER

COMPARE A FRESH GREEN LEAF WITH ONE THAT HAS BEEN FROZEN AND THAWED. USE YOUR MAGNIFYING LENS.

WHY DO BOTTLES OF WATER BURST WHEN THEY FREEZE?

TRY FREEZING WATER IN JARS OF DIFFERENT SIZES, SHAPES AND WITH DIFFERENT LEVELS OF WATER. FILL SOME TO THE TOP. PUT COVERS ON SOME.



SUGGESTION: TIE A PLASTIC FREEZER BAG AROUND EACH JAR TO PREVENT GLASS FROM SCATTERING!



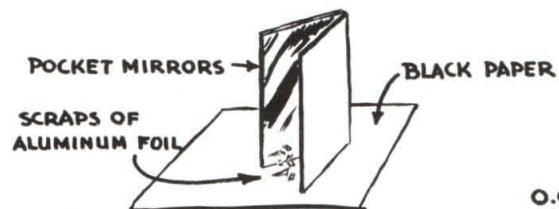
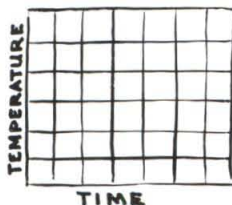
WHY DOES SALT MELT THE ICE ON OUR SIDEWALKS?

SOME THINGS TO OBSERVE

TRY THIS EXPERIMENT

1. PUT SEVERAL HANDFULS OF SNOW IN AN EMPTY FOOD CAN. ADD COLD WATER TO $\frac{1}{2}$ FILL THE CAN. STIR THE MIXTURE CONSTANTLY AND RECORD THE TEMPERATURES EACH MINUTE UNTIL AFTER ALL THE SNOW HAS MELTED.
2. REPEAT WITH A SIMILAR SNOW-AND-WATER MIXTURE BUT AFTER TWO MINUTES ADD 2 TABLESPOONS OF COMMON SALT AND CONTINUE READING TEMPERATURES. MAKE A GRAPH.

1. WATCH AN ICICLE FORMING AND NOTE EXACTLY HOW IT GROWS.
2. SOME VERY COLD DAY SET OUT A PIE PLATE OF WATER AND WATCH IT VERY CAREFULLY AS IT FREEZES.
3. ON A SNOWY DAY WHEN THERE IS NO WIND, CATCH SOME SNOWFLAKES ON YOUR SLEEVE AND STUDY THEM UNDER A MAGNIFYING GLASS.
4. USE 2 POCKET MIRRORS PLACED AS SHOWN AND SOME SMALL CLIPPINGS OF ALUMINUM FOIL TO MAKE 6-POINTED SNOWFLAKE DESIGNS WHEN YOU LOOK BETWEEN THE MIRRORS.



O.G.R.

PREPARING FOR WINTER

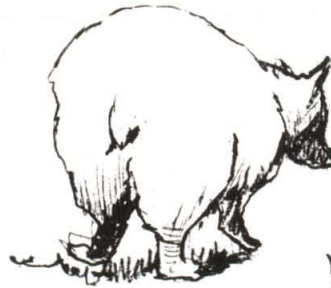


MOST INSECTS, LIKE THE GRASSHOPPER, LAY EGGS TO HATCH IN THE SPRING, THEN DIE.

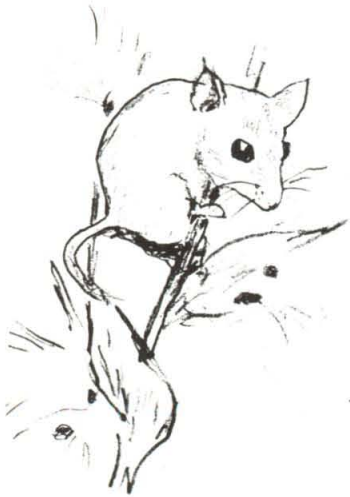
SOME, LIKE THE QUEEN BUMBLEBEE, HIBERNATE.



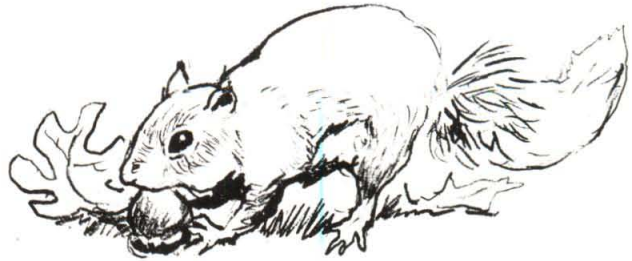
DECIDUOUS TREES LOSE THEIR LEAVES. THESE TREES MUST CONSERVE MOISTURE WHICH THE LEAVES WOULD DISPERSE THE FROZEN GROUND IS VERY DRY.



THE BLACK BEAR EATS TILL HE IS FAT AND HIBERNATES FOR MOST OF THE WINTER.



SQUIRRELS AND MICE GATHER NUTS AND SEEDS TO LAST THEM THROUGH THE WINTER



JOHN BATEMAN

WOODLORE FOR THE NATURALIST

— John Macfie —

The Tracks of The Deer Family

Deer, moose and caribou, all members of the "deer" family, have basically similar feet. All walk on only two of their toes, the nails of which form hooves. But their hooves and legs differ in detail in a manner that reflects how and where each animal lives.

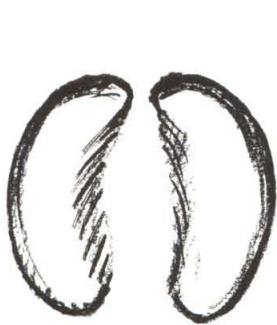
CARIBOO The woodland caribou of Ontario's far north is a lichen eater and a restless traveller whose wanderings take it through evergreen forests, over broad muskegs and across lakes and rivers. Its large, round feet are effective shovels for digging through snow to get food and water. The snowshoe-like feet allow the animal to walk over bogs that would mire a man. Thick, strong legs and broad

feet make it a ready and rapid swimmer. A caribou's home range covers hundreds of square miles.

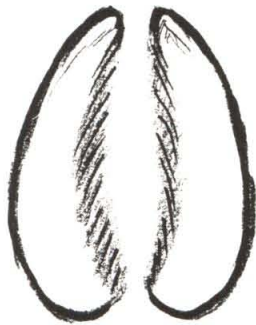
MOOSE The long-legged moose may be said to walk on stilts that enable it to wade into deep snow and boggy ponds to feed. Large, pointed feet and powerful legs make it a strong swimmer and a formidable fighter. Its home range covers a few square miles.

DEER The slender legs and tiny feet of the white-tailed deer serve well for brief, rapid flight. The feet provide the chief means of defence against enemies, but do not serve for sustained travel over difficult ground. Its short legs and tiny feet are hopeless in deep snow. It is obviously not

fully at home in what we know as Ontario's "deer range". The white-tailed deer evolved in a milder climate, and entered Central Ontario only after man's removal of the original forest. New growth created an abundance of food, and the deer managed to survive our winters by retreating to dense evergreen stands where accumulation of snow on the ground is light. Though it will take to water if hard pressed by a pursuer, the deer is a reluctant and slow swimmer in contrast to its paddle-footed cousins. A deer's home range is measured in acres, although it may migrate up to a few miles to and from winter shelter.



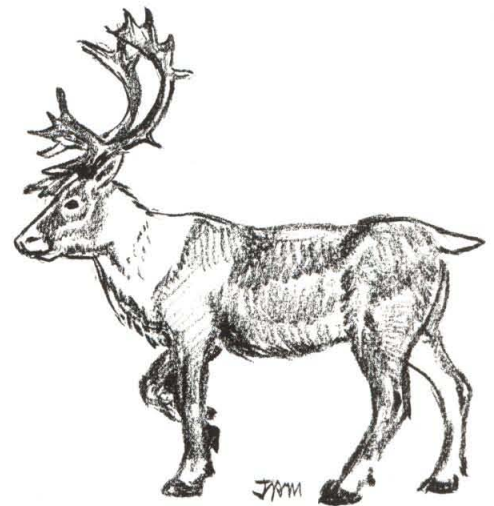
CARIBOU
LARGE, CIRCULAR



MOOSE
LARGE, LONG
POINTED



DEER
SMALL, NARROW
POINTED



THE CARIBOU IS BEST EQUIPPED FOR TRAVEL. IT MAY COVER 50 MILES OR MORE IN A DAY.

SHAPE AND RELATIVE SIZE OF "DEER" TRACKS

(about 1/3 natural size)

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