

The

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A Time of Change

by

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154 ANWATIN RD
OTTAWA



R. F. Gunn

Hi! This is another letter from Algonquin Park. You will remember that in my last letter I told you about some of the things that had been going on here in the winter. As I said then, in summer there are so many people here that we hardly have time to think. Some day I am going to tell you about that, too, but right now I want to talk about fall — or autumn, if you like big words. Fall is a beautiful and interesting season here, and almost as many people come in the early part of it as in summer just to see the colours, which are quite special because of the mixture of maple trees and evergreen trees.

But now it is November; the leaves have fallen from the maples, the ground has already been white with snow several times, and some of the ponds and smaller lakes are covered by ice. The people have gone back to their homes in towns and cities, and the animals and plants that must stay here have just about finished their preparations for winter, which anybody can see is just around the corner.

In many ways fall is the most important season in the natural world. We could classify the four seasons like this: Winter — survival; Spring — awakening; Summer — living and growing; Fall — making sure that all

Continued next page

these other things happen. Because, if animals and plants and people didn't see to it that they were ready to survive through the winter, many of them would not be alive to awaken in the spring, and those that were would be so weak and run-down that they would have to spend all summer just getting their health back again.

Now, I know that the editor of *The Young Naturalist* can only let me have so much space, and I think I will use most of it this time to write about plants. As we all know by now, plants are the foundation for all other forms of life and we just can't ignore them without getting into trouble. But animals are better news-makers than plants, and I'm sure that by the time I get around to writing another letter, probably this winter, there will be a great deal to tell about them.

We may add much to our enjoyment of fall scenery by noticing which trees produce the different colours. The same trees turn the same colour year after year, and if you know them you can look at a coloured hill far away and say what kind of trees are growing there. For example, the first colour we are likely to see here in Algonquin is bright red, and this will be red maple, the first tree to change colour and the first to lose its leaves. This is followed closely by sugar maple, the leaves of which turn to a reddish orange, the colour of fire. There will still be much red after the red maple leaves have fallen, but then it is likely to be from such shrubs as sumac, viburnum, dogwood, mountain ash, blueberry, and blackberry.

While this fiery show is going on there are still many trees that are all green — dark green from the coniferous (cone-bearing) pines, spruces, firs, cedars, and hemlocks, that do not change colour, and lighter green from poplars and birches. The last two wait until the maples have lost most of their leaves, and then they all turn yellow and we have a very different landscape, the dark greens

of conifers and the yellow of birch and poplar against a leafless maple background. And the show isn't over yet. When the birch and poplar leaves finally go, the tamarac, or larch, comes on the stage all by itself and its needles, or leaves, become a very special golden yellow that lasts right into November.

The tamarac is the only one of our coniferous trees that loses its leaves all at once as the broad-leaved trees do, and many think that the spruces, firs, pines, hemlocks, and cedars just go on year after year with the same



**Staghorn
Sumac**

leaves, but this is not so. They also lose their leaves, but never all at the same time. Like a molting bird, which never loses all its feathers at the same time, these trees lose large numbers of needles each year and replace them with new needle-bearing shoots at the tips of their branches. This is how the tree grows, and if you examine the ground under any coniferous tree you will find a layer of brown needles that have fallen over the years. All except pine lose them a few at a time over a long period, but most of those from pine come off in September and October. You can see from all this how much there is to learn just from watching the fall colours, and I can't think of a more pleasant way to go to school.

All animals that spend the winter

in this climate must prepare themselves ahead of time to avoid freezing or starving in winter. Even those that migrate to warmer places have to put on extra fat to last them through the journey. The ones that hibernate here either store fat on their bodies or food that they can reach when everything is covered with snow. Those that are active all winter grow extra fur or feathers to keep them warm. We are often able to see these changes taking place, but the only noticeable difference between a summer tree and a winter tree is that in winter it has no leaves. Actually the preparations of a tree are more complicated than those of most animals. If we examine the live, moist wood of a living tree or its tender, flexible twigs, we would think they could not escape being frozen solid if the temperature went below zero unless they had some kind of anti-freeze. And that is just what they have.

All summer the tree has been making sugar in its leaves and storing it in its roots, branches, and trunk. First, however, it is changed into starch, as this is better for storage. In the fall, when the leaves are all down, no more sugar can be made, but that which has been stored is changed back into sugar again and fills every living cell in the tree. Sugar will not freeze, so this has the same effect as putting anti-freeze in a car. Herbaceous plants, those that die back to the ground in the fall, produce seeds before they die and the anti-freeze is stored in the seeds. Many of them, just to make sure, also develop a frost-proof root system during the summer, and new plants will sprout from these roots if anything should happen to the seeds.

Wouldn't it be nice if we could anti-freeze ourselves in the fall as plants do, and get away from all that heavy winter clothing? There are animals that can do just that, but we will have to talk about that some other time.

WHO HAS THE STEADIEST HAND?

By W. C. MAY

A great way to have some fun this winter is to construct a device that will tell you instantly which one of your friends has the steadiest hand. Here's how you make it.

1. You will need a block of wood about 6" x 2" x 1".



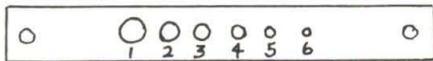
(Diagram 1)

2. Attach a thin piece of metal to the wood with a screw.



(Diagram 2)

3. Drill several different sized holes in a thin piece of metal (about 1" x 4"). Number the holes.



(Diagram 3)

4. Bend this piece of metal at each end and fasten it to the block of wood as shown.



(Diagram 4)

5. Make a probe out of a long, thin nail fastened to a wooden handle.



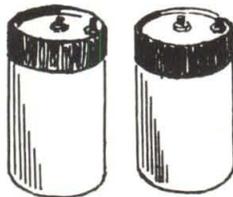
(Diagram 5)

6. Gather together the following things:

A. electrical wire

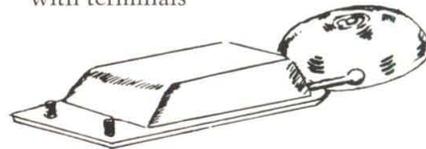


B. 2 - No. 6 dry cells



(Diagram 6)

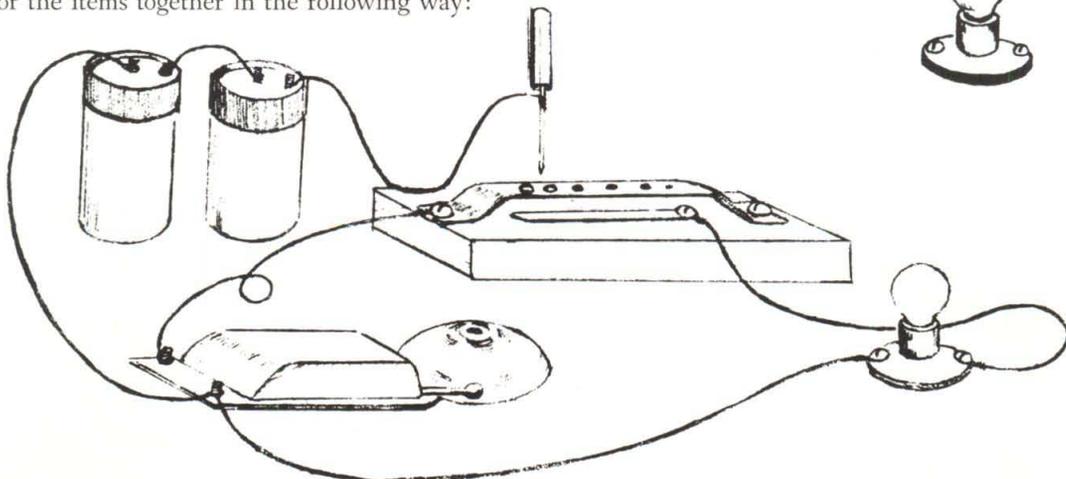
C. An electric bell with terminals



D. An electric light bulb with terminals



7. Put all of the items together in the following way:



Now that you have put everything together, the object of the game is to try and push the metal probe through all the holes *WITHOUT* touching the edge of any holes. When the probe touches the bottom bar the bulb will light, but if it touches the edge of the hole the bell will ring. The holes are numbered so that you can keep score. Have fun!

The Audubon of Canada

(PART I)

What do you really know about our country's pioneer people?

I cannot help but feel that we are missing a great opportunity in not telling young people, through school history courses, about the many fascinating and colourful pioneers who first made homes and farms out of our native Ontario forests. Nor can we ever fully develop a pride in our past and in being Canadian until we do.

If this is done, a prominent place should be given to an outstanding naturalist and artist named William Pope. Well over one hundred and thirty years ago he began painting the native flora and fauna of our province, putting a special emphasis on birds. A few examples of his work accompany this article. They gave to him, after his death, the name of "Canadian Audubon".

The painter of these beautiful pictures, and many more like them, was born nearly 160 years ago in southern England. His father was a well-to-do farmer near Maidstone where he grew fruit and hops. He gave his son William an excellent education which included training in sketching and painting in London.

Most of what we know to-day

about William Pope has been learned from reading his diaries, which tell in considerable detail about the animals he observed and hunted, as well as the way the Pioneer settlers lived in Upper Canada.

From the time he was a small boy Pope roamed over his father's and neighbouring farms, and it was at this time he developed his keen interest in the outdoors and a lasting love for the mystery and beauty of the natural world around him.

As he grew older he carried either a fishing rod or a gun with him, and became a very expert and accomplished hunter. By the time he had completed his schooling however, hunting in England was beginning to seem tame to him and he complained of the restrictions of the English game laws of that time. Like all young men he was no doubt becoming restless for new adventure and a desire to travel beyond his (native) homeland.

He mentioned hearing great tales of the plentiful game and dusky Indians that roamed the forests of Canada, and so it is not surprising to read of his decision, when twenty-three years of age, to sail for Upper Canada to explore this new and in-



William Pope (1811-1902)

By H. B. Barrett

triguing country for himself.

On Good Friday, March 28th, 1834, our friend William paid 35 guineas for a berth on the packet ship "Ontario" leaving London, England, that day for New York. The ship had a gross weight of only 500 tons. In it were nearly 200 passengers and crew, as well as a cow, sheep, pigs, "fowls" and several dogs. William took a young hunting dog, named Pinto, with him.

He reported on icebergs, sea birds, and fair winds for two full weeks when they had sailed to within three days of land-fall at New York. Then, however, storms and gale force winds overtook them and the journey eventually stretched out to six full weeks. He seemed to have enjoyed it thoroughly, reporting in his journal on the commotion caused by pigs falling below decks on the passengers, the pleasant company of several young ladies, and the many sea birds. He used small pork-baited hooks to catch and study the petrels or "Mother Carey's Chickens" which accompanied the ship.

Perhaps the most interesting way to report to you from our adventurer's journal would be by comparison: — his period of 1834 with ours of to-

day; 1969-70.

Immediately I hear you say "six weeks from London to New York?", and you think to yourself a ship today crosses easily in under six days, and a jet aircraft in under six hours.

Let us briefly look at the great sophisticated city of New York today, and compare it with the small cluttered city of frame and brick houses and warehouses as seen by William Pope.

He landed in a downpour of rain and "steered for the nearest tavern" for a good meal of roast beef, plum pudding, and a glass of fine ale. He later admired the spirited horses of the Americas which were much smaller than the heavy draft horses of England, and, he felt, better groomed and cared for. The streets were often not paved, and the sidewalks were of wood. They were so cluttered with barrels and cases it was hard to walk along them and if you were not careful you might be knocked over by the large numbers of hogs which were running loose everywhere. They did, however, clean up a great deal of garbage which the inhabitants threw into the streets.

To be continued



THE COUGAR — OUR LARGEST NATIVE CAT



Written and illustrated
By Don Foxall

The cougar, largest of our native cats, once roamed throughout most of Canada, occupying a range about the same as that of the deer. As the land was settled and cleared for farms, the cougars were exterminated or driven back into the more remote areas until they are now common only in rugged mountainous regions of the west. They were believed to have disappeared from the east about 100 years ago, although there seems to have been some survivors in isolated pockets in New Brunswick. Recently, there have been a few reported sightings in Ontario.

Cougars have been the victims of an unrelenting effort to eliminate them from their range. Occasionally an individual cougar will obtain a taste for domestic livestock. Unfortunately, the actions of this one animal cause men to condemn all cougars. These are often the actions of a cougar that cannot obtain its natural prey because of old age or injuries. By *nature* cougars are shy

retiring animals that avoid humans as much as possible and are not given to unprovoked attacks on humans as some misleading reports would have us believe. The cougar is also known as a mountain lion, panther, puma and catamunt in different parts of the country.

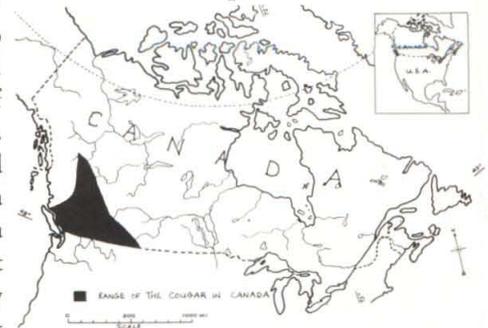
Cougars feed mainly on deer and serve as a natural control over these very abundant animals. In one area where the cougars were eliminated the deer multiplied very rapidly until they overpopulated their range and outgrew their food supply. Many deer died of starvation and the over-browsed forest and topsoil was so severely damaged that the area could never again support the number of deer that had lived there before.

Cougars are very powerful and agile but they cannot outrun a healthy deer. They have to rely on a long, stealthy stalk and a short burst of speed to capture their quarry. They are successful only on about one out

of every three attempts. So you can see the odds are in favour of an alert, wary deer escaping.

Cougars grow to a length of 6-8 ft. and may weigh from 80-200 lbs. Males are usually considerably larger than females. Colour varies from grizzled grey through buff and cinnamon to dark brown. The backs of their ears and tips of their long tails are black.

This magnificent, graceful animal is invaluable in maintaining the natural balance between predator and prey animals and deserves our admiration and protection.



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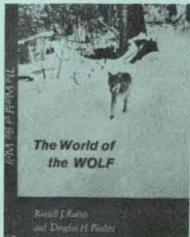
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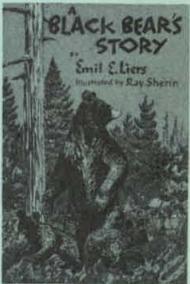
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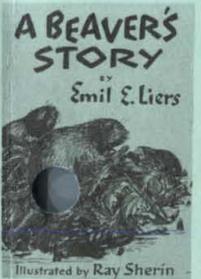
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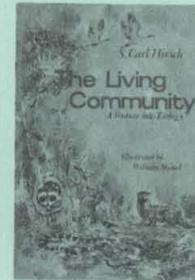
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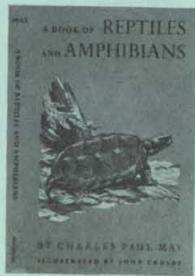


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By CHARLES P. MAY, Illustrated by JOHN CROSBY
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Here, for the young reader, are twenty-eight animals who make their home in Canada, some of them familiar and friendly, others strange and unfriendly, all fascinating.

Mr. May presents his facts in a style that is appealing for quite young readers. His text is beautifully complemented by the illustrations of John Crosby.

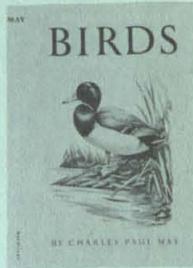
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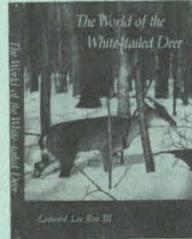
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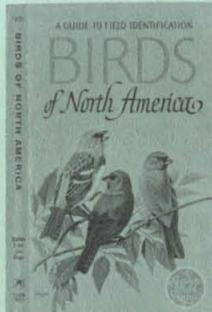
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16. A SECOND BOOK OF CANADIAN ANIMALS
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Mr. May explains exactly where in Canada you should look for the twenty-six animals he describes in this book. He tells how they live and what they do, describing their particular habits in an easy style that children will readily understand.

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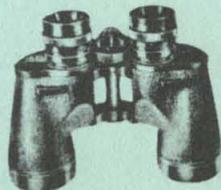
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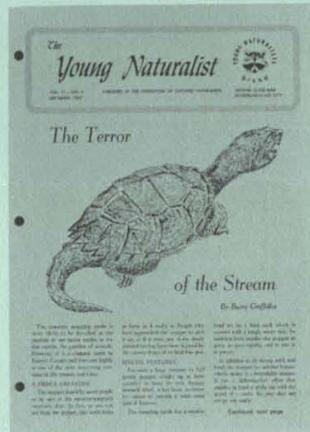
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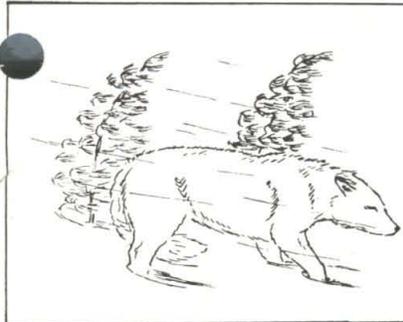
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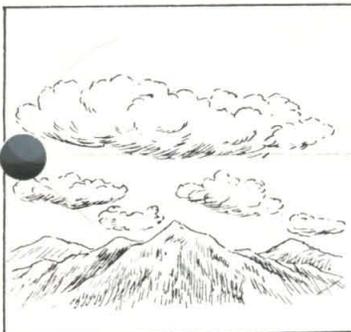
THIS MONTH: focus on WEATHER



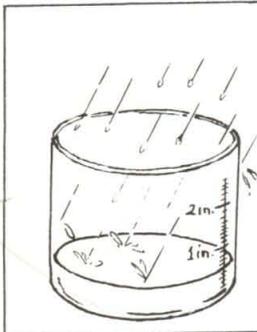
1. Wind Speed
Use Beaufort Scale, record in miles per hour or knots (the sailors nautical mile or 6,080.20 feet per hour). You can locate this scale in your encyclopedia.



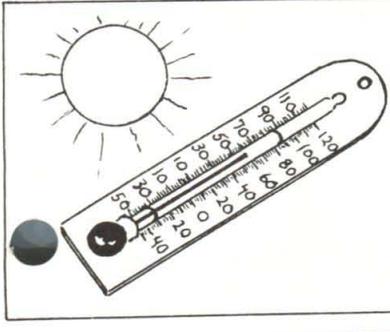
2. Wind Direction
Easily observed and always given as the point of the compass from which the wind is coming.



3. Cloud Type
You will need to look up a cloud chart in an encyclopedia for this, so you can recognize the different types — use the proper names.



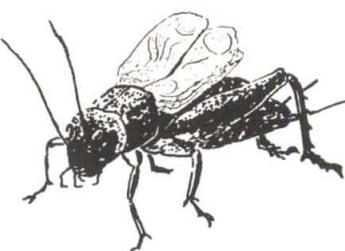
4. Precipitation
Measured by the amount falling (in a stated period) into a cup or tin can (e.g. $\frac{3}{8}$ " in a day). The type of precipitation must be recorded, rain, sleet, hail or snow.



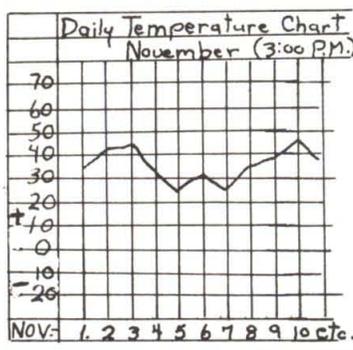
5. Temperature
Make a guess then listen to a radio report or check with a thermometer and see how close you can come. You will soon start to be close and will learn to allow for the wind's effect upon the 'feel' of the temperature.

With a little practice most of the basic weather information can be collected without instruments of any kind. If you do have a thermometer and a compass (or can determine direction by any other means) you could provide ALL of the basic data collected by proper weather recording stations. Let's take a look at the information required by the weather forecaster, sailor or pilot.

ACTIVITY PROJECTS



ACTIVITY PROJECT #1
In summer listen for the chirping of a cricket. Count the number of chirps in 14 seconds and add 40 to your count. The answer will be the temperature in degrees fahrenheit.



ACTIVITY PROJECT #2
Record the temperatures for a given place at set times each day for a month and then plot a *Monthly Temperature Report* on squared (graph) paper. If you have a thermometer at school you can check and see how accurate you have become.

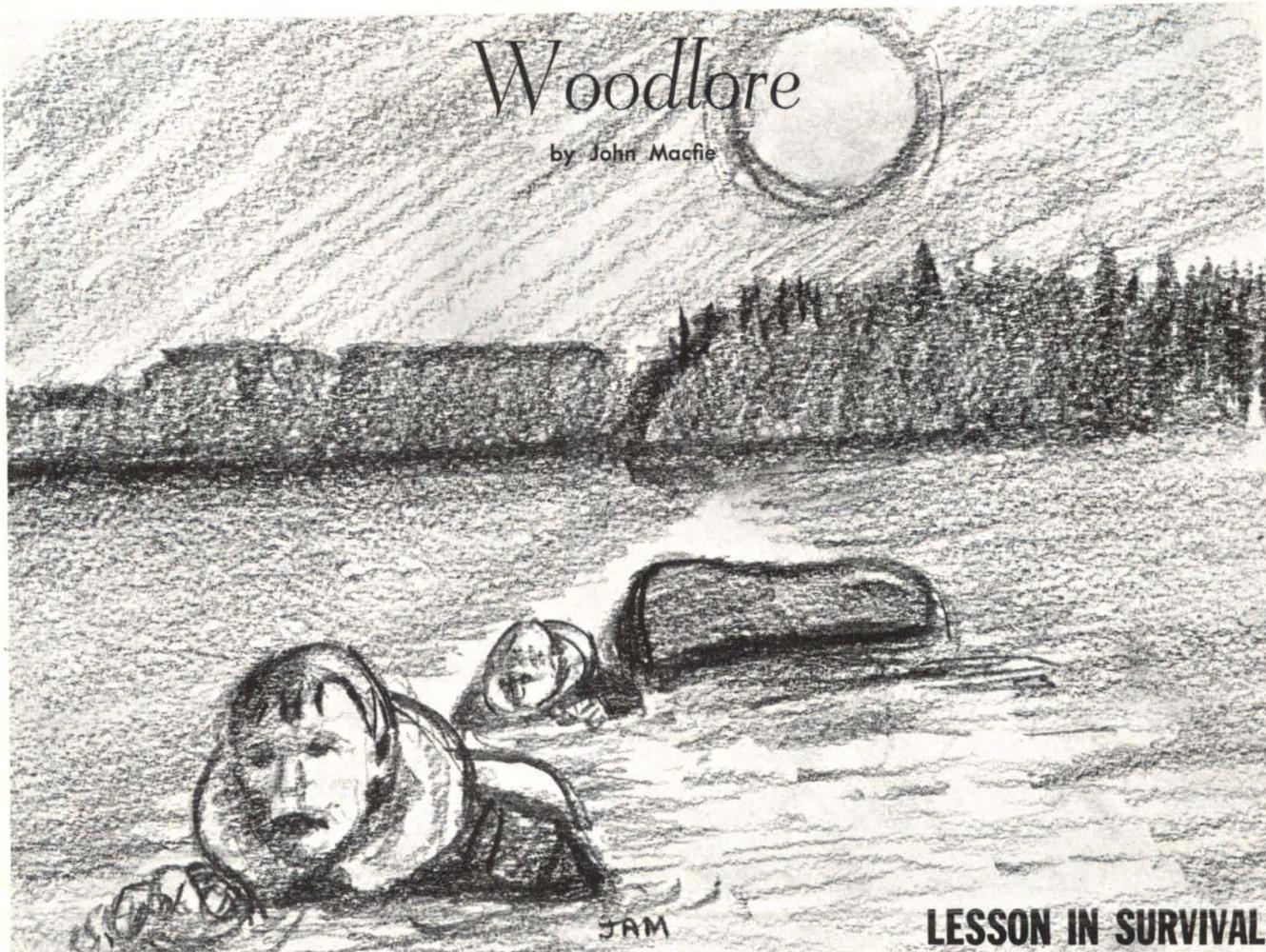


ACTIVITY PROJECT #3
From your daily observations can you relate the activities of any animals to the weather? Do the birds react to the weather in any way? Have you looked at Gulls or Squirrels in this connection? What about the insects?

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 Don Baldwin, Science Master, Upper Canada College, sketches by Don Foxall.

Woodlore

by John Macfie



LESSON IN SURVIVAL

Two of my friends once broke a cardinal rule of water safety, and so saved their lives. As they canoed across a deserted lake well past midnight on a freezing November night, a frozen mitt slipped on the ice-sheathed shaft of a paddle causing the paddler to lurch heavily to one side, capsizing the canoe.

They managed to extricate themselves from their desperate situation first because they had taken the precaution of carrying life preservers, a "must" in cold weather canoeing, and second because when faced with disaster they took stock of their position, reasoned where their best chance of survival lay, and then resisted a compelling urge to give up while pursuing their chosen course to a successful end.

With rescue out of the question it was clear that the rule "stay with your overturned craft" could only result in ultimate unconsciousness and death in the icy water. They helped each other put on their life preservers, then began the long swim to the nearest shore. They did not shed any of their bulky cold weather clothing; in cold water, clothing acts the same as a scuba diver's "wet suit", encasing the swimmer in a layer of slightly warmed water, conserving precious body heat. Without life preservers it would of course have been necessary to strip down to gain freedom to swim.

To make a long, cold story short, after fighting off periodic episodes of a strangely comfortable drowsiness, the stronger of the two reached land first,

then ran and stumbled through the bush in freezing clothing to their parked vehicle in which he drove with scarcely functioning hands and feet to summon help. A search party arrived in time to rescue his nearly perished companion where he had dragged himself ashore. At that point the ordeal was over, except for two severe cases of the common cold.

This experience contains a valuable lesson in survival. First it underlines the wisdom of taking all reasonable precautions before setting out on a difficult wilderness or water trip. More important, it demonstrates the importance, when an emergency arises, of analyzing the situation with a cool head and flexible mind, then persevering in applying the most logical solution to the problem.

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