The Young Naturalist

This is Young Naturalist Year: 1966-67
Do you have a Young Naturalists Club in your school?

YOUNG NATURALISTS CLUB F. O. N.

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HORACE AND HIS FRIENDS

All turtles are reptiles, and all reptiles are cold-blooded. This means that the temperature of their bodies goes up or down with the temperature of the air, or earth, or water around them. Almost all reptiles like it best when their surroundings are quite warm, and this is when they are most active.

A turtle does not have skin all over it and a bony skeleton covered by flesh as other animals do. Its ribs and backbone have grown together and moved to the outside to form the upper shell, or carapace. Its soft underparts are also covered by a smaller shell called the plastron. The two parts are joined on each side by a bridge of the same bony material.

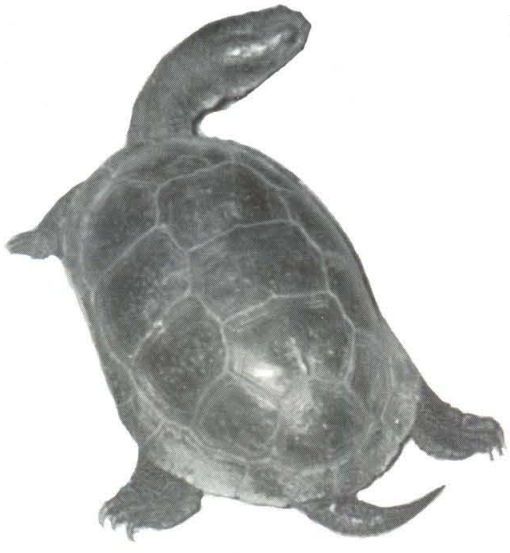
When we breathe, our ribs move in and out like the sides of a bellows. The ribs of a turtle are not able to move like that, and it has had to develop special muscles to draw air into its lungs and push it out again.

Perhaps the greatest benefit that a turtle gets from being so different is the protection provided by its hard, strong shell. When it is threatened by any sort of danger, it draws its head, feet, and tail right in between the top and bottom shell and keeps them there until danger is past. Some kinds of turtle have hinges in the plastron, so they can bend the ends up and really shut themselves in so you can't even find a crack. Except for very small, young turtles, they do not have much to fear from being stepped on. Unfortunately, they can't hold up the weight of a car, and a great many turtles are killed by being run over while trying to cross a road.

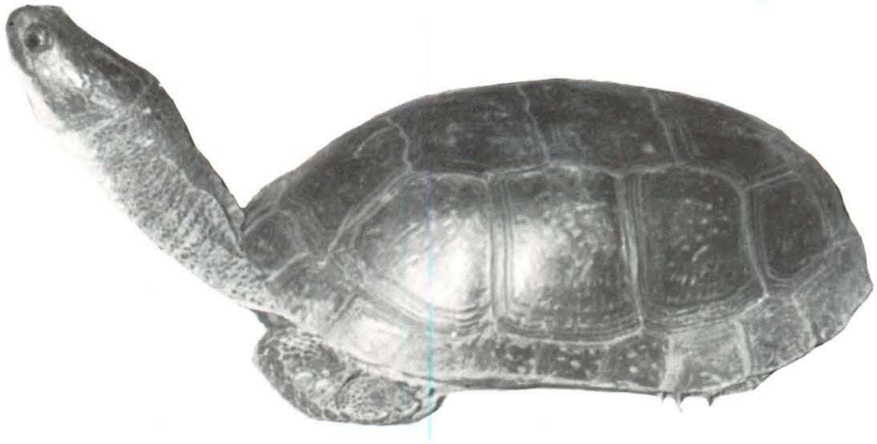
No matter what we may think of the way turtles are put together, it seems to have worked very well for turtles. Fossil records show that they were living here, much the same as they are now, about 200 million years ago, or long before there were any people like us to study them. At present there are about 250 different kinds of turtle, and they are found in almost all parts of the world.

Most of them are quite easy to keep in captivity and they make very interesting pets. They are much less trouble than most animals, but they do require regular attention, and the same rule

See HORACE — Page 2



Ah! There it is!



Has anybody seen my tail?

Photos by the author

Courtship Flight of Male Bumblebees

On August 30, 1964 I was loitering in the shade of a large Red Oak tree. This tree is at the edge of the clay cliff that forms the shore of Lake Erie in the southwest corner of Dunn Township, Ontario. The time was 3:00 p.m., the sun was bright and a breeze off the lake was causing a slight swaying of the nearby bushes and the taller grasses. At frequent intervals some large dark insects were seen dashing about in humming flight about a yard from the ground. Less frequently, they interrupted their flights by pausing to light on the tips of panicles of timothy hay. They would perch there with their backs to the sun and their black antennae held straight upward. They would stay in this position for a few seconds and then zoom off in flight, sometimes out over the lake in a curving path which soon brought them back to their temporary perches.

This energetic activity continued for some twenty minutes when I interrupted it by catching five of the insects in a net. They were later identified as male bees of the two species *Bombus fervidus* and *Bombus griseocollis*. Two *Bombus griseocollis* are deposited in the collection of the Department of Agriculture, Ottawa, and the other specimens are in the Department of Zoology, University of Western Ontario.

Being curious about what the bees had been doing, I read up on the habits of these insects in the book "Bumblebees" by J. B. Free and C. G. Butler (*New Nature Series,* 1959) and it soon became clear that I had been witnessing the courtship flight of male bees. These authors point out that males of some kinds of bumblebees lie in wait for queens. Each bee selects an object such as a flower, fencepost or rock, and remains nearby, sometimes hovering in the air and sometimes standing alert on its chosen perch, with antennae erect and wings half spread, as though lurking for prey. When a queen bumblebee or other large insect comes by, the male leaves his post and darts after it. A male will chase any creature about the size of a queen, and, if a stone is thrown into the air the waiting male will dart after it and pursue it to the ground.

The species I was watching, *Bombus fervidus* and *Bombus griseocollis,* are two of the commoner bumblebees in eastern North America. In this instance they had evidently chosen the tips of timothy hay as their waiting places. Only once did I see a male make contact with another insect. It darted away from its accustomed circuit and chased a passing insect into the grass. The two then took off in zooming flight toward the north and disappeared from sight. I could not see if the other insect was another bee, but the male bee was evidently determined to find out for himself.

W. W. Judd

HORACE — from Page 1

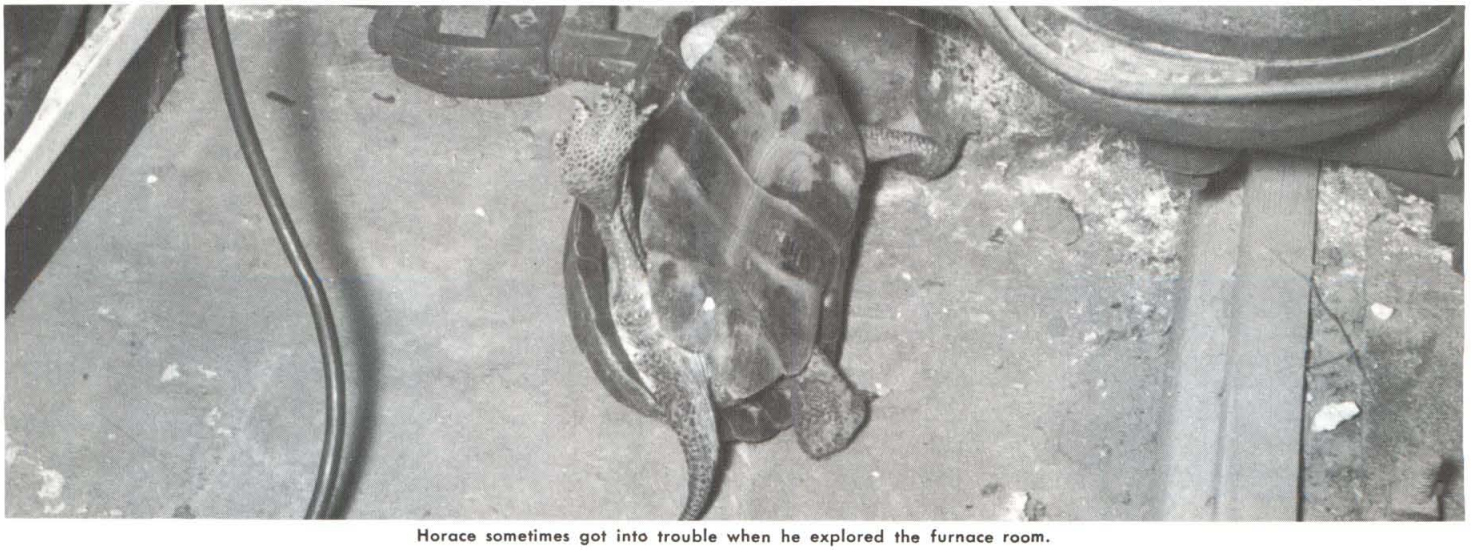
applies to them as to all others: Do not keep any wild creature in captivity unless you are ready to spend enough time on it to keep it comfortable, healthy, and happy.

The turtle in these pictures is a Blanding's turtle that we called Horace, and he lived with us for several months in the Park Museum in Algonquin Provincial Park. Then I thought he might become spoiled by such an easy life, and I turned him loose in a big, watery marsh, where he swam happily away.

Blanding's grows to be quite a large turtle, with a blackish shell up to ten inches long and covered by fine, yellow spots. It has a bright yellow throat, which shows white in the picture, and this makes it easy to identify, even at a distance. It becomes quite tame, and although it makes a hissing noise when it is startled, or if you pick it up, it has never been known to bite anyone. It is supposed to eat some fruit and vegetables as well as meat, and to eat either in the water or on land, but Horace would eat only meat, and only while he was in water. Even the same kind of animals are often different among themselves, just as we are. . . . Horace's favorite food was liver.

Of the nine species of turtle in Ontario, Blanding's is not one of the more common, and its distribution is not well known. Occasional specimens have turned up in many places, and as it has very shy and retiring habits, it may be more common than we think.

Russell J. Rutter



Horace sometimes got into trouble when he explored the furnace room.

Club News

Congratulations to all the children who were in Room Six of C. R. Gummow School, Cobourg, last year! They had a busy time studying natural history, and at the end of the school year they made up a booklet describing their experiences, which they sent to *Club News*. Under the leadership of their teacher, Miss Audrey E. Wilson, they cared for a number of injured birds and mammals, watched tadpoles develop into frogs, and studied insects.

Ted Flay writes: "In our classroom we had guppies, tadpoles, chameleons, a red eft, a Scarlet Tanager, a Turkey Vulture, a baby Jack Rabbit, a Wood Frog, and many more things. Also we had something you seldom see — a flying squirrel."

Most of the animals were released soon after capture, but Miss Wilson looked after the vulture for four months, until its injured wing had healed. Then "Charlie", the Flying Squirrel, was released in Presqu'ile Park.

The class also had a field trip to the Northumberland Forest, where the pupils planted trees and learned something about the techniques used in reforestation.

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

Now is a good time to set up a backyard bird feeding station. A wide variety of feeders is available, but there are many simple feeders that you can make yourself. Among the birds that can be expected at your feeding station are Chickadees, Bluejays and Evening Grosbeaks. If you have suet in your backyard, Downy Woodpeckers will regularly visit it.

Occultation of Saturn, October 16th

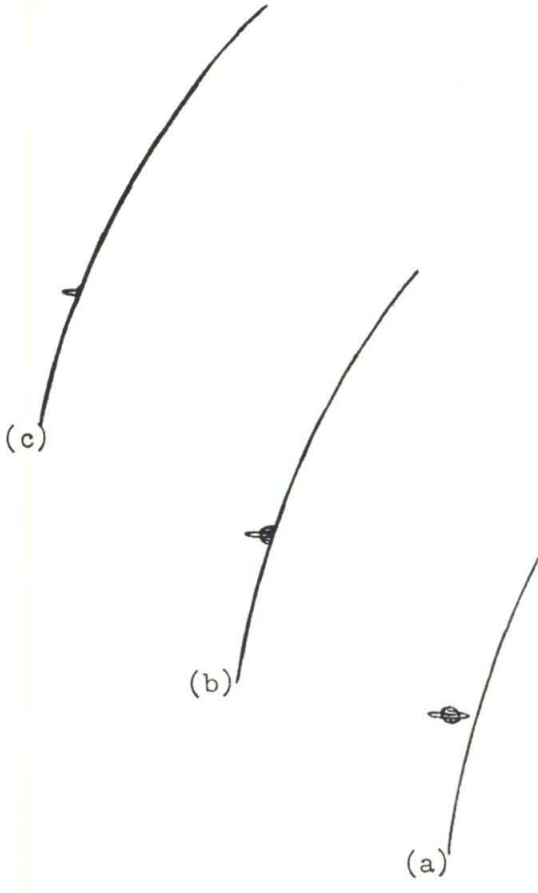
The Moon moves eastward through the sky, relative to the stars, at a rate of approximately one lunar diameter each hour. On rare occasions the Moon passes in front of a fairly bright star and, on even rarer occasions, passes in front of a planet. These phenomena are called "lunar occultations" and on October 16th, people in most parts of Canada will be able to see an occultation of the planet Saturn. This event will occur in the early evening and will be well worth viewing through binoculars or through a small telescope.

The beginning and end of the occultation are called "immersion" and "emersion" respectively. Saturn will be hidden behind the Moon for a little more than one hour. Immersion occurs at 1851EST and emersion at 1956 EST (times correct to within five minutes for observers in all parts of Ontario).

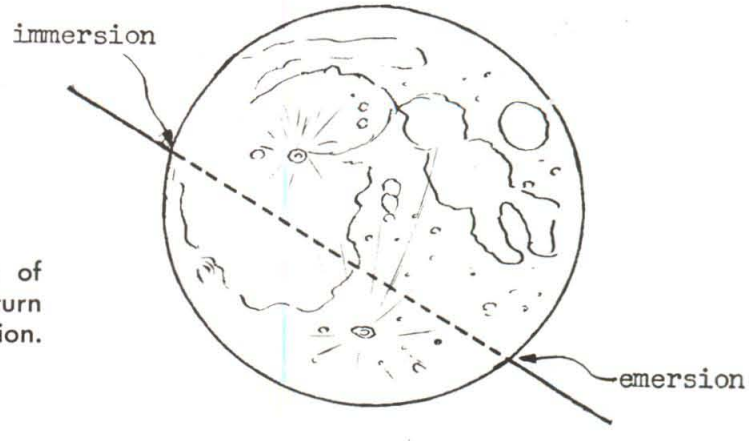
On October 16th the distance between Earth and Moon is 249,000 miles and between Earth and Saturn is 787,000,000 miles.

NOTE: There will be a total eclipse of the Moon in the early morning hours of October 18th. Total eclipse begins at 0445EST and ends at 0546EST.

DOUGLAS P. HUBE



Telescopic appearance of Saturn at immersion behind the moon.



Relative motions of the Moon and Saturn during occultation.

WOODLORE
FOR THE NATURALIST

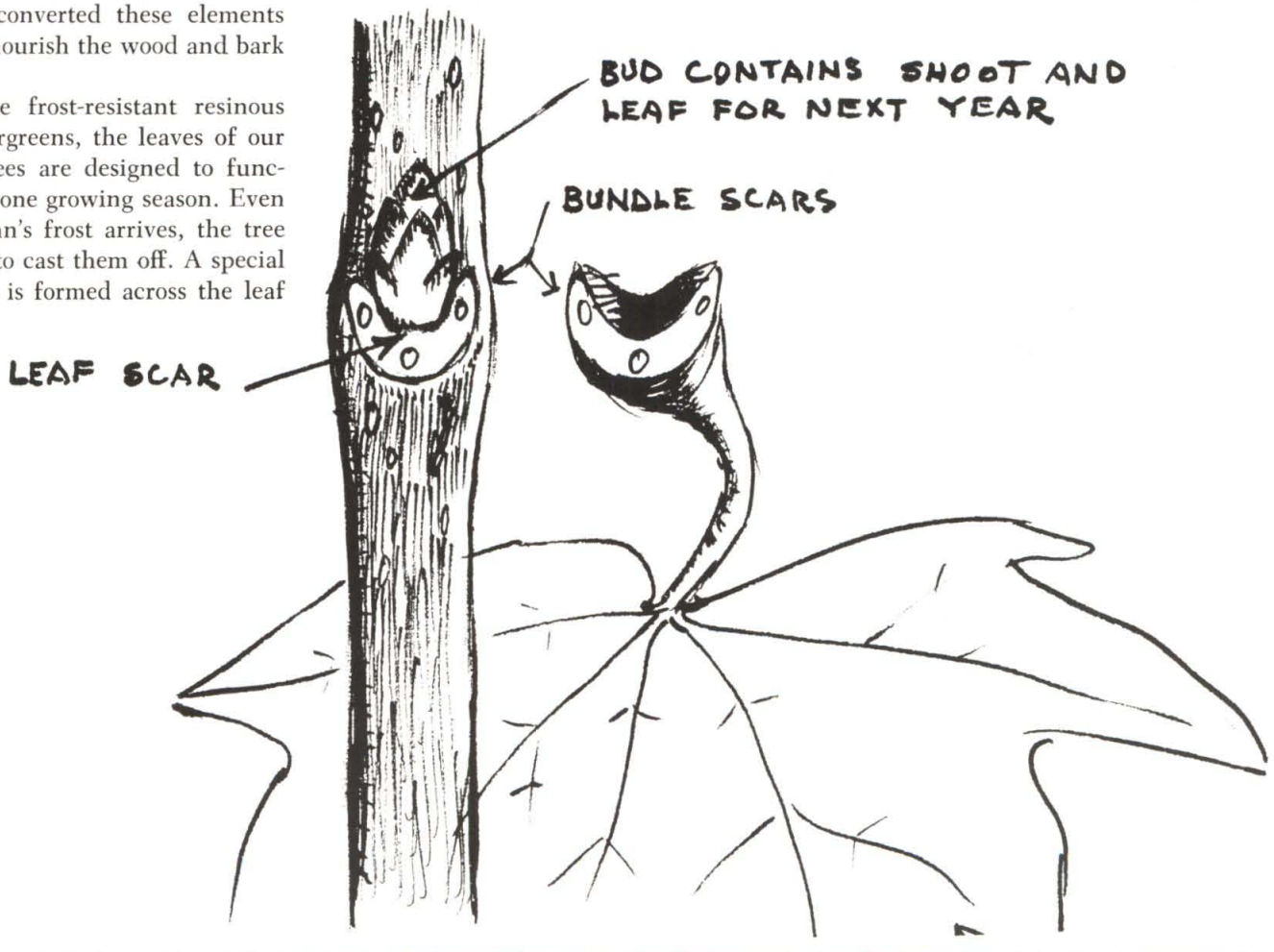
— John Macfie —

Why Leaves Fall

Each autumn or "fall", the leaves of deciduous trees wither and drop to the ground. Their function of manufacturing food ends with the summer growing season, and the tree sheds them. During the summer, the leaves drew energy from the sun and air, mixed it with water and nutrients brought up through the roots from the soil. The leaves then converted these elements into food to nourish the wood and bark of the tree.

Unlike the frost-resistant resinous leaves of evergreens, the leaves of our deciduous trees are designed to function only for one growing season. Even before autumn's frost arrives, the tree is preparing to cast them off. A special layer of cells is formed across the leaf stalk where it joins the twig. Once formed, these cells separate readily. All that now holds leaf and twig together are the leaf's veinlets, gathered together in the leaf stalk to enter the twig in a few — often only about three — conduit-like "bundles". The leaf ceases to live and it withers. Only a breeze is required to break the bundles of dead veins, and the leaf falls. A corky layer of cells protects the "leaf scar" left on the twig. The characteristics of the leaf scar are reliable clues to winter tree identification.

A fallen leaf is not lost to the forest. It decays and joins the soil to nourish other trees, or perhaps the one from which it fell.



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