

The

# Young Naturalist

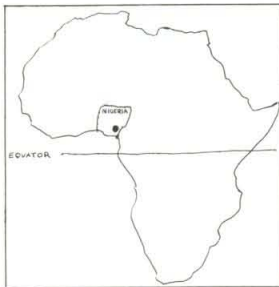


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## Distant Cousin of Man—The Galago



The following is the first in a series of articles by Robert Bateman who spent two years in Eastern Nigeria. This is a tropical rain forest region noted for its many fascinating animals. The Galago or Bushbaby, shown in the sketch, was one of the many different pets kept and observed by Mr. Bateman.

The group of little boys at our back door stood shyly as I inspected their offering. Their coffee-coloured faces looked a little worried as if they wondered whether I would be pleased with what they had brought. It was an old soup tin, the top of which was plugged with a piece of banana leaf.

I pulled the leaf back cautiously. The only thing I knew for certain was that the specimen would be small. It might be a mouse, a giant beetle or even a tiny poisonous snake. I expected something might jump out into my face. Instead, from down in the darkness of the can, a little face looked at me with two large eyes. I felt that I was seeing a leprechaun or some very small person.

After putting the leaf back very gently, I almost laughed for joy. The little boys' faces broke into broad smiles. They were even more pleased when I paid them three times what they expected and told them I would take as many of these little fellows as

See GALAGO — Page 6

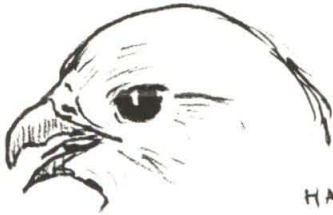
# THE SPECIAL TOOLS ANIMALS HAVE FOR EATING



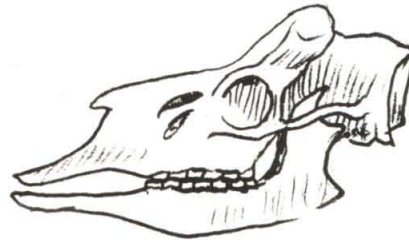
RODENTS, SUCH AS CHIPMUNKS,  
HAVE FRONT TEETH THAT ARE  
SHARP LIKE CHISELS, USED  
FOR GNAWING.



CARNIVORES,  
SUCH AS CATS,  
HAVE SHARP TEETH  
FOR HOLDING PREY,  
AND TEARING AND SHREDDING.



HAWKS HAVE  
STRONG, SHARP  
BEAKS FOR HOLDING  
AND TEARING PREY.



THE DEER FAMILY HAVE  
LARGE, FLAT TEETH FOR  
GRINDING VEGETATION.



THE WOODCOCK HAS A LONG,  
THIN BILL TO PROBE FOR  
WORMS.



FINCHES HAVE  
STRONG, MASSIVE  
BEAKS FOR CRUSHING  
HARD SEEDS.

John Bateman

# Club News



Jack Witt, a student member of the F.O.N., has established a nature club in Chippawa, Ontario. He writes: "We have seven projects underway for bird observation and another one on insect observation. So far we have four bird suet feeders up in the bush. Then we have three areas where we have seed spread out for the birds. We have no club officers as yet; I have conducted all the outings so far. I have observation forms drawn up and also sent for nesting cards which we will use for a bird nesting observation programme. We have some forms for deer sightings which are almost filled. We are an active group of eight and all are interested in helping the wildlife programme in any way possible. We hold four outings a month and more if possible. We go out each Saturday from 9 a.m. to 5 p.m., hoping to discover new things."

Jack adds that this club is not a school one, but made up of a few boys interested in nature. On one of their outings they found an interesting cache of ten dead mice and two dead shrews in the hollow limb of a tree, probably the storehouse of an owl. Some of the club

members are: Jeff Vasbinder, Jim Cameron, Herbert Hart, Kevin Mackay, Mike Cameron and Choney Johnston. They would like to hear from other nature clubs and can be reached at the following address: Chippawa Nature Club, c/o Jack Witt, 232 Church Street, Chippawa, Ontario.

Another club has been started recently, by Mona Hayes in Petrolia, Ontario. We'll tell you more about this club 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.

## The Most Famous Comet

### COMETS — Part 2

Last month we presented a rather general discussion of comets. This month we will consider a few specific examples in more detail. The most famous comet of all is Halley's Comet named after Sir Edmund Halley an English astronomer of the 18th century who first calculated its orbit around the Sun. This comet requires 76 years to go once around the Sun. It was last seen in 1910 and will make its next appearance in 1986. Appearances of this comet have been recorded at 76-year intervals for nearly 2,000 years! Halley's Comet is one of the largest and brightest of the comets that appear at regular intervals. It is called a periodic comet. During its passage near the Earth in 1910 its tail reached a length of 90,000,000 miles

and, most importantly, the Earth passed through the tail! No peculiar effects were seen in the Earth's atmosphere proving that there is very little material in the tail of a comet. In fact, a comet has been called "the nearest thing to nothing that there is that can still be something"! As a comet travels around the Sun, very drastic and remarkable changes are often observed. This can be illustrated by the photographs of Comet Moorhouse observed in 1908. The photographs were made at intervals of one day, but even in this short time the shape of the tail has changed quite noticeably. At times the tail of a comet has been seen to separate from the head and drift off into space as a new tail is formed! Occasionally a comet

has broken into two or more pieces as it passed near the Sun, thereby forming new comets.

Astronomers hope to increase their knowledge of comets when Halley's Comet arrives in 1986. We hope that it will be possible to send a space rocket through the head of Halley's Comet providing us with a direct sample of the material of which these strange objects are made.

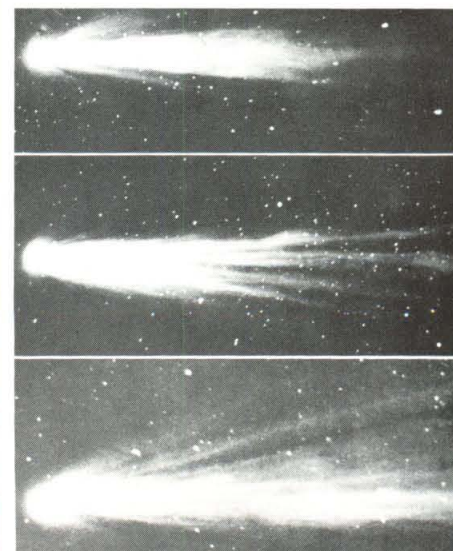
DOUGLAS P. HUBE



Halley's Comet (1910). The bright dot shown is the planet Venus.



Halley's Comet (1910)—close-up of head.



Three views of Comet Moorehouse (1908).

CANADIAN

# Birds of Prey

Hawks and owls are among the world's most magnificent and valuable birds. People used to kill birds of prey on sight until they began to realize that predators have an important job to do. They keep in check the numbers of smaller animals such as mice and other rodents and even birds that without control could become too numerous. All shown, except Swainson's hawk, are found from coast to coast.

The RED-TAILED HAWK is a large, wide-winged soaring hawk that circles lazily over the farmland looking for mice and other small mammals. The PEREGRINE FALCON depends on sheer speed, for it lives on birds. It has been clocked at 165 to 180 m.p.h. in a "power dive." In the last few years, peregrine numbers have dropped alarmingly on both sides of the Atlantic, and scientists fear for their future. Strongest and fiercest of its family, the GREAT HORNED OWL is found almost everywhere in Canada south of the limit of trees. It is an extremely efficient control on rabbit populations, though it will eat anything it can subdue, including skunks and even house cats. Where its range leaves off, the SNOWY OWL takes over. It nests on the arctic barrens, living for the most part on lemmings. Many migrate to southern Canada some winters. SWAINSON'S HAWK, a close relative of the red-tail, is another soaring bird of the western grassland. Its food consists mostly of ground squirrels, gophers, grasshoppers and crickets. As it likes to perch on telephone poles, it is very conspicuous.

The BALD EAGLE is our largest bird of prey. With its black body and gleaming white head and tail, the adult is unmistakable. Bald eagles are scavengers that feed on dead fish. The eagle population has been seriously reduced since the introduction of chemical pesticides, which they apparently absorb through eating contaminated fish.



RED-TAILED HAWK:  
wingspread 4-4½ feet



PEREGRINE FALCON:  
wingspread 3¼-3½ feet



GREAT HORNED OWL:  
wingspread 4-4½ feet



SNOWY OWL:  
wingspread 3¼-5 feet

J.F. LANSLOWNE



BALD EAGLE:  
wingspread 6½-8 feet



SWAINSON'S HAWK:  
wingspread 4-4½ feet

they could bring.

I had my first specimen of a *Galago*, a member of the order of primates which includes lemurs, monkeys, apes and Man. Although this little relative is much more primitive than Man, it is easy to see why he is a not-so-distant cousin.

The name Bushbaby is very suitable. The eyes are large and facing the front, like our own. The forefeet are like tiny pink hands with thumb and four fingers. As in monkeys, the hind feet also have a "thumb". His body is covered with the softest woolly hair. It is downy, like a baby chick's, rather than flat like the hair of a dog or cat. He is bigger than a mouse, but smaller than a chipmunk.

From reading about Galagos, I knew that they were gregarious (fond of company), arboreal (live in trees) and nocturnal (active at night). During the day they huddle together in groups, perhaps in a hollow tree. At dusk they come out, wide-eyed and alert, and flit from tree to tree in amazing jumps of up to 15 feet. They bounce about like weightless balls of grey down, so tiny that their jumps make no noise and scarcely move the twigs on which they play. The only sound is a high-pitched bird-like twitter. They are searching for their food — fruits, seeds, flowers and insects. Their favourite food is grasshoppers and crickets. They will pause and listen for these, their delicate, paper-thin ears turning and crinkling to pick up the chirp of some nearby night-calling insect.

After the boys left, I took my Bushbaby to his cage. I put his tin inside and removed the leaf doorway. From the back of the tin he watched my every move but made no effort to leave. He waited until evening before venturing out and skipping around on the branches in the cage. Then to my delight he accepted grasshoppers from my fingers. At first he stood on his hind legs, eyes and mouth opened wide, arms and fingers stretched as if to grab and attack me. But when he did attack, he found he was grasping and biting on a luscious big grasshopper. He held it in his hands like a child with a two-foot ice cream cone. He crunched eagerly, contentedly, half



This clump of stunted spruces is the same age as the strong and large White Spruce shown in the photograph to the right.



Photos by J. A. Macfie

This exceptionally large White Spruce is growing on a silted flood plain of the Black Duck River, ten miles from Hudson Bay.

## *Environment Affects Tree Shape*

A tree that is a fine specimen of its kind does not just "happen". Seeds may fall anywhere, but only those that take root in a special set of surroundings, or ENVIRONMENT, favourable to that particular species, can produce large well-formed trees.

The two accompanying photographs show white spruces of approximately the same age, growing within a few miles of each other. The age of the well-formed spruce is being determined with an 'increment borer'. It is a device that removes a thin core of wood from bark to heart so that the annual rings may be counted. This spruce stands less than a dozen miles from Hudson Bay in far northern Ontario. Because the seed from which it sprang fell upon rich soil in a sheltered site, it grew

rapidly and large. The tree stands protected from strong, cold winds in the valley of a river which, during periodic floodings and changes in its course, deposited a thick layer of silt loam on its banks.

The clump of stunted spruces is near the same river, a few miles nearer Hudson Bay and, what is more significant, above the valley on a sterile, sandy beach line left by receding Hudson Bay. Here there is only a paper-thin, acidic soil layer composed of dead lichen and grass. And the bleak sub-arctic wind, which the forlorn group of trees appears to be straining to escape, periodically frost-kills the past summer's growth and twists trunks into grotesque shapes.

JOHN MACFIE

shutting his eyes. After that he accepted more grasshoppers and some milk and honey on a spoon.

Luckily for my first Bushbaby, we soon had companions for him. More tins kept arriving at our back door, some containing as many as four small specimens. Now he had others to play with (and to fight with). They became so tame that they fought with one another for the privilege of climbing on my hand to be fed. The little fellows would scamper up my arm and leap all around my shoulders and head. I would have to grab them when it was time to return them to the cage. My hand would more than enclose the whole body, with the pixie head poking out the top and the squirrel-like tail dang-

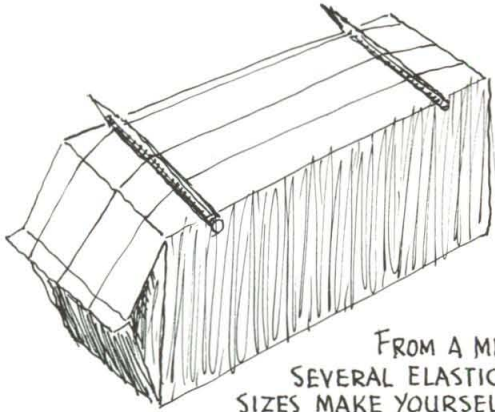
ling below. They did not like to be held and would usually bite, but not so hard as to draw blood or really hurt.

After a session of playing with my Bushbabies, I noticed that my hands smelled and felt a bit damp. Then I remembered that in the wild they urinate on their paws to leave a scent trail through the trees. This helps them find their way back to their hollow tree in the dark. I just happened to be their tree on this occasion.

When they went to sleep for the day, they would all crowd into one tin leaving the others empty. There they would sleep in a gregarious bundle until another night of food and play.

ROBERT BATEMAN

# WHAT IS THE CAUSE OF SOUND?



FROM A MILK CARTON AND SEVERAL ELASTICS OF DIFFERENT SIZES MAKE YOURSELF A "GUITAR". FIND HOW THE SIZE OF THE ELASTIC AFFECTS THE NOTE THAT IS PRODUCED WHEN YOU PLUCK IT. HOW CAN YOU MAKE ONE STRING PRODUCE SEVERAL DIFFERENT NOTES WITHOUT CHANGING ITS "STRETCH"? CAN YOU PLAY A SIMPLE TUNE ON YOUR "GUITAR"?

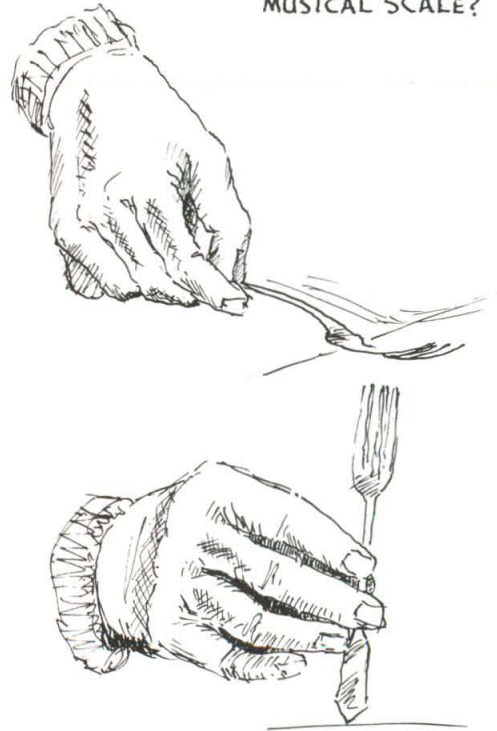


CAN YOU MAKE A "STEAMBOAT WHISTLE" WITH A POP BOTTLE? DO ALL BOTTLES MAKE THE SAME NOTE? WHAT HAPPENS TO THE NOTE WHEN WATER IS PUT IN A BOTTLE?

CAN YOU ARRANGE 8 BOTTLES WITH WATER IN THEM TO GIVE THE NOTES OF THE MUSICAL SCALE?



SWING THE HANGING SPOON SO THAT IT STRIKES THE EDGE OF A TABLE. TRY SPOONS OF DIFFERENT SIZES. TRY 2 OR 3 AT ONCE. WHAT SOUNDS DO THEY RESEMBLE?



STRIKE A COMMON FORK AGAINST A TABLE, THEN HOLD IT AGAINST THE TABLE AS IN THE LOWER PICTURE. SEE IF YOU CAN MATCH THE NOTE ON A PIANO.

# WOODLORE

## FOR THE NATURALIST

John Macfie

### *How to Tell Rabbit Browsing from Deer Browsing*

Deer and rabbits rely on the same food source in winter, the succulent shoots of trees and shrubs that grew in the previous summer. Since both animals seek the shelter of ever-green woods and generally favour the same nourishing species of plants, they compete to some extent with one another.

Deer have the advantage of greater reach, but even tall shrubs may bend under a burden of snow

to provide food and shelter for burrowing rabbits.

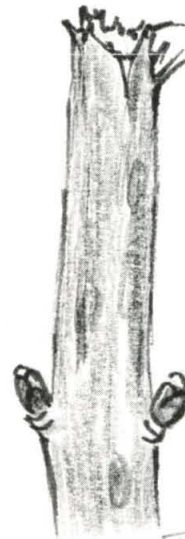
In winter, tracks and droppings usually show clearly whether browsing is being done by rabbits or deer. But game managers, who sometimes assess winter wildlife populations by measuring food use at the close of winter, must be able to distinguish between rabbit and deer browsing by evidence left on the browsed twig. The clue lies in

how the animal removed the portion to be eaten.

Rabbits have both upper and lower front teeth (incisors) which they use to gnaw off the shoot. This leaves a clean cut, much like that of a knife, usually at an angle to the cross-section of the twig. A deer on the other hand, possesses only lower incisors, and it must break off the shoot. The point of separation has a ragged, torn appearance.



TWIG GNAWED OFF  
BY SNOWSHOE  
RABBIT



TWIG BROKEN OFF  
BY DEER

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