5-Wild Animals

ADVENTUROUS YOUNGSTERS are thrilled at the thought of stalking wild animals. It may suggest to them mighty gorillas hidden in trackless jungles or lions prowling over African plains—or perhaps a man-eating tiger that is terrorizing a village in India. They may think of our own North American deer and bears, or even the smaller foxes and wildcats.

Though the animals that occur to them may be of many different kinds, one thing is certain: Each will be four-legged and have fur or hair. For most children—and many parents as well, only this type of beast is an "animal."

True, these beasts are animals, but they are only one type: the mammals.

Aside from mammals, we find in the animal world many creatures without four legs and fur. Among them are birds, fish, snakes, frogs, spiders, and worms. In fact, all living things that have feeling and the power of voluntary motion may properly be termed animals.

"What is the difference, then," the inquiring young mind wonders, "between mammals and other kinds of animals?"

To be considered a mammal, an animal must have three qualities. It must be warm-blooded, which means that its blood remains at nearly the same temperature no matter how hot or cold its surroundings may be. It must have hair or fur on its body. And a baby mammal is always nourished by milk furnished by its mother.

Opportunities to observe wild mammal life at first hand are much less common than those for bird study. At an early age children become familiar, to be sure, with a variety of beasts in their story books—the bears in "Goldilocks," the wolf in "Red Riding Hood," the fox in "Chicken Little"—but this acquaintance is based on fantasy rather than facts. When the youngster begins to grow away from his make-believe world and shows an interest in animals as they really are, he has considerable misinformation to discard as well as facts to learn.

Many Kinds of Mammals

A useful way to simplify the story of the mammals for an older child is to group these animals into their main divisions.

One group consists of flesh-eating ("carnivorous") mammals, such as wolves, foxes, lions, and tigers. A second group is made up of rodents—mice, squirrels, beavers and others with long, sharp front teeth. The third group, the hoofed animals, includes deer and cattle.

Strange water mammals known as manatees and dugongs are in a class by themselves—so are the flying mammals we call bats. Whales are probably the best known of the group known as "cetaceans."

All toothless mammals such as the anteater are included in one group. Finally there are the marsupials, made up chiefly of mammals with pouches in which to carry their babies. The opossum is the one American representative of this group, but the kangaroo of Australia is perhaps the most widely known of the pouched animals.

Flesh Eaters and Plant Eaters
On the basis of their food habits mammals may be divided into two general classes. There are plant eaters (herbivores) and flesh eaters (carnivores). In trying to distinguish one type from the other, a child would pretty much take for granted that the flesh eaters are larger and stronger. But that is not always the case.

Teeth and claws are a better basis for distinguishing between the two groups. You can point out that the flesh eater has sharp enlarged canine teeth, shearing side teeth, and strong, sharp claws.

"GOOD" AND "BAD" ANIMALS

Perhaps you have noticed a tendency on the part of a young child to label certain animals "bad" and others "good." If you query the child you are likely to find that the "bad" animals are those which eat other animals. This habit may well be frightening to a child, who does not see the needs of a carnivorous animal devouring prey in order to sustain life. It is a good idea to point out, at some appropriate moment, that the food habits of both flesh eaters and plant eaters are inborn and not a matter of choice, and that moreover the flesh eaters seldom kill except when they are hungry or defending themselves from attack.

Watch a dog gnaw a bone and you have an excellent illustration of a carnivorous mammal in action. Not only are his incisors sharp and the canine teeth long and strong; the molars are especially designed for cutting.

All members of the cat family are meat eaters. Jaguars and pumas, the largest cat animals on the American continent, are a menace to game and livestock in some areas. You can study their hunting tactics at close range when you watch a house cat stalking a bird. The cat does not run down its prey as a dog would; instead it creeps along stealthily until it is within striking distance, when it takes a final vicious leap. The hunting technique of the big wild cats is exactly the same.
The weasel offers solid proof that you cannot judge an animal's eating habits or its disposition by its size. Though small and slender, the weasel is one of the most aggressive and ferocious of flesh-eating animals. Completely fearless, it sometimes kills animals several times larger than itself and may satisfy its appetite merely by lapping up their blood.

**Hunting for Animal Tracks**

When your child becomes interested in the activities of wild mammals, you can join him in a fascinating hobby: hunting for footprints and identifying them. In bygone days the Indians were expert trackers—but for them it was not a hobby. The game they secured by their expert knowledge of tracking often meant the difference between starving and having enough food.

Today a knowledge of animal tracks is no longer necessary for survival, but it can help satisfy the child's desire to play nature detective. What child is not thrilled at reviving this once important Indian activity—especially if he realizes the early significance of tracking!

**HOW TO IDENTIFY TRACKS**

You may start track-hunting by going to likely places such as muddy stream banks and finding tracks there, identifying them later—or you may first obtain a background for field study from books and observations near home. In your own back yard you may find the tracks of dogs, cats, and squirrels.

A dog's tracks practically duplicate those of a wolf or coyote except that the wolf tracks are usually larger. The tracks of a cat are similar to those of the wildcat and mountain lion except for size. In these tracks only the pads and claws make an imprint.

Bears, skunks, and raccoons make plantigrade tracks, which means that they are practically flat-footed, and the greater part of the foot shows in the tracks. Deer, sheep, moose, and elk make hoofed tracks.

Another clue for identification is that tree-climbing animals normally place their front feet side by side when they jump, whereas animals that stay on the ground rarely show the front feet paired in this way. However, the hind feet of both tree climbing and ground-living animals are generally paired.

Raccoon tracks are particularly intriguing, for this animal's hind foot is long with a well-marked heel and five comparatively short toes that make an impression remarkably like that of a small human foot.

**COLLECTING TRACKS**

Children are eager collectors. If they wish to carry their interest in tracking still further, it is sometimes possible to bring tracks home—in plaster. Making plaster casts of tracks is not a difficult process. Pamphlets or books in your library should provide detailed instructions for preparing such casts.

There are other ways to collect tracks—photographing them or sketching them. Neither you nor your child need be an artist to try this; a very simple sketch will picture a footprint quite graphically.

**TRACKS TELL A STORY**
Tracks can reveal exciting incidents, such as a fox overtaking a rabbit, or a weasel pouncing on a squirrel—or they may depict peaceful animals wandering in search of shelter and food. After a fresh snowfall tracks are particularly clear and easy to follow.

Sooner or later tracks lead you to the haunts where mammal parents bring up their young. Altogether, tracking helps furnish an answer to your child's question: "What do mammals do?" It becomes apparent that securing food and raising families are their major concern.

**How Mammals Talk**

Most children get their first inklings of animal communication when they become familiar with the sounds made by dogs or cats. The dog barks and squeals with pleasure; he growls when he is angry, whines when he is afraid, and howls for the sheer pleasure of hearing his own voice.

The cat mews in friendly conversational tones; it purrs with contentment and yowls when it is hurt, it howls and screams in a fight. Its love serenade is shrill and agonizing—to the human ear.

The mammals of our forests and plains come near to duplicating some of these sounds, and they have other kinds of vocal expression as well. Some mammals roar, some whistle, some scream, some yap, some bleat, others are virtually silent.

One of the more unusual sounds is sufficiently well known so that even children hear about it. This is the call of the moose. Many hunters practice it diligently in the hope of luring one of these massive creatures within gun range. The hunters learn to imitate the female, whose call is like the bawl of a domestic cow. The bull moose, for all his size and strength, usually emits nothing more than a feeble, coughing grunt.

**CRY DANGER!**

To a child it is especially touching to note that frequently the calls and cries of wild animals serve to alert their family to the approach of danger. When the marmot, standing like a sentinel at a lookout post, gives his shrill warning whistle, not only the marmots but mountain sheep and other creatures as well take cover. A bear, a wolf—or a man!—may be approaching.

Shrill, also, is the whistle of the marmot's cousin, the woodchuck. With more abandon than good sense, it whistles and grinds its teeth while trying to escape from an enemy. Gray squirrels give the alarm with a kind of flat rasping bark finally prolonged into a whining snarl.

Even the customarily silent mammals find their voices when they are wounded. The scream of a white-tailed deer struck by a bullet can be heard half a mile away, and a rabbit often gives a piercing squeal when hit. But mammals do not always depend on their voices to express emotion. The cottontail rabbit thumps the ground with a hind foot when he senses danger. The beaver slaps the water with its tail. As for deer and sheep, they stamp with a fore foot when they are frightened.

A museum staff guide has often proved to me that animal sounds have a powerful appeal for children. As he takes visitors through mammal exhibition halls, he demonstrates the cries of the appropriate creatures in a thoroughly uninhibited manner. These calls are enjoyed not only by the group of visitors assigned to him, but by fascinated children who seem to appear from nowhere, all eager to hear what animals sound like.
How Mammals Fight

Warfare in the animal world is not limited to sporadic outbreaks when some creature or other decides to attack its neighbors. Instead, the warfare is constant and unceasing. The need for food drives the meat eaters to prey on other animals, and there seem to be a few that kill for the sake of killing. Among some groups, the males fight it out to win a mate or establish themselves as leader of a herd. Among the most dramatic of mammal battles are those between animals that wear antlers or horns—such as moose, deer, elk, and goats.

A DUEL BETWEEN MOOSE

The instinct of boys for pounding and pummeling each other seems mild indeed compared to a clash between two bull moose. Hostilities may start with a moose striking its antlers against small trees in a way that broadcasts his defiance to all within hearing. Another male rushes out to accept the challenge and the battle is on! Heads lowered, the two giants rush at each other. The impact of the collision may knock one down; if he regains his footing, they charge again.

Each moose tries to stab his enemy with the sharp brow tines that are the vicious part of the antler. The wide flattened areas are useful for defense in warding off blows. Frequently it is a fight to the death for one of the contenders. Sometimes the ending is tragic for both: Their antlers may become so firmly locked together that they are powerless to move, and death by starvation is their fate.

SPECIAL BATTLE TECHNIQUES

Mountain lions, jaguars, and other members of the cat family have four long pointed teeth (canines) as weapons, as well as sharp claws that can be withdrawn into the fleshy foot pads when they are not needed. When your child sees a fight between
two tomcats he can feel that he has witnessed real jungle warfare; they use their teeth and claws in the same way as the big cats.

Squirrels, woodchucks, rats, and other rodents have dependable weapons in their chisel-like front teeth, though rabbits rely chiefly on their strong hind legs with which they can kick savagely. When rabbits fight, each one tries to leap on top of his opponent and kick downward. A deer avoids trouble whenever possible, but if it is cornered it defends itself by striking at the enemy with its front hoofs. The bucks also fight with their antlers.

Horses, burros, and some other hoofed mammals are able to kick with both front and back feet. The grizzly bear has strong, sharp teeth, and its huge front paws can be deadly to an enemy.

THE PORCUPINE'S REARGUARD ATTACK
Sluggish in its movements and reactions, the porcupine is nevertheless no easy prey for other animals. It uses its quills only as a last resort and does not shoot them, but attacks by a backward rush, driving them deep into its foe's flesh. Estimated number of quills for an individual: 25,000!

NOT-SO-SECRET WEAPONS
Some mammals have specialized defensive weapons. The skunk can discharge a notoriously evil-smelling scent that overpowers the enemy with nature's poison gas. Foxes, wolverines, weasels, and some other animals have scent glands more or less like the skunk's and use odor as a defense weapon. But none of these scents is so potent as that of the black and white "wood pussy."

Porcupines, like the skunk, are not aggressive; they are slow moving and stupid. Their quills, however, are splendid equipment for defense. Trapped by an enemy, Porky contracts his skin muscles, causing the quills to stand erect. Then he bunches himself up, raises his tail, flails anything within reach, and drives many of his barbs into the flesh of his opponents. Contrary to popular belief, the porcupine never shoots or throws his quills.

Keeping a Mammal Chart
Man has constantly expanded his knowledge of the world around him by keeping records. You and your child will find your interest in nature stimulated if you keep records of your observations. A chart of personal findings on mammals has many attractive features. It is quite different from a bird calendar, as the four-footed creatures are neither so numerous, so varied, nor so easily seen as the birds.

You may arrange your chart by calendar months or by species of mammals seen, but in either case you will want to record the time and place of your observations. You can start it when you take country walks with your son or daughter and continue it through the years until the child is old enough to jot down later discoveries.

MOTORING IN SEARCH OF MAMMALS

In many regions you can carry on your search for mammals quite successfully by car. In fact, where small children are involved, this method is far more practical than hiking. In some of the national parks, or in places where roads run through field and forest, you may observe a variety of mammals—especially if you drive slowly and travel either in the morning or late afternoon.

One of the greatest thrills my family had during a tour of the United States came in Zion National Park in Utah when a bobcat bounded across the highway. The animal was so close to our car that only a quick use of brakes prevented our hitting it. Shortly afterward we learned from a ranger-naturalist that though bobcats were fairly numerous in the park, one of these animals is not likely to be seen by visitors more than once in twenty years.

VIVID DETAILS

You need not limit your record to animals actually seen; you can also include evidences of them. Have you seen footprints of deer? Have they led to trees scraped by
antlers? Have you found a woodchuck's hole, the burrowings of a mole, or the dug-up turf and smooth incline at the water's edge which proclaims an otter's playground? An account of your experiences may include pictures, tracks, or tufts of hair-an endless variety depending on your inclinations and opportunities. Whatever form your findings take, they become a continuously enriched account of your awareness of the world of nature.

How Mammals Survive the Winter

The rigors of cold weather and the scarcity of food create hardships for mammals in wintertime. However, this is unlikely to impress us as much as the plight of the birds, as mammals are so little in evidence all year round.

One of the few mammals that we are likely to see during all four seasons is the gray squirrel. On cold winter days children can appreciate the practical value as well as the beauty of this creature's fur coat. He may often be seen scampering over the snow; only on the most frigid days does he curl up in his tree trunk nest and cover himself with his bushy tail. He has some food tucked away and hunts industriously for more whenever weather permits.

Even hardier than the squirrel is the cottontail rabbit, which has no cozy retreat. A pile of brush is usually the only protection he seeks. When his favorite grass is no longer available, he nibbles the tender bark of small trees and shrubs, dead leaves, weeds, and flower stalks.

White-tailed deer also endure rugged times. Their winter home is a reasonably sheltered area in a woods. A group of a dozen or more band together and choose a suitable spot-called a "yard" for their headquarters. From this home they make paths to places where they can find food: tender bark and shrubs, lichens, acorns, and moss, for which they dig under the snow.

Wild Mammal Neighbors

SQUIRRELS-NATURES ACROBATS

Of all the wild four-footed animals, the gray squirrel is probably the one most commonly observed by children. He dwells in wooded regions, and also in city parks and suburban areas as well. In fact, these attractive rodents seem to prefer the hazards of civilization to the dangers of the wilds, and their habits vary little whether they live in town or country.

Young Squirrels: Watch for young squirrels about the middle of May. A mother bears four to six infants during March, and she may have a second litter during the summer. She gives her young devoted care. They are born blind and hairless. When they are about six weeks old they begin to climb around the tree branches and nibble at buds and leaves. At eight or nine weeks they have a full coat of fur and are about half grown.

In a year they have almost reached full growth and are able to leap among the branches with astounding agility. The bushy tail is a great help in balancing and making easy landings possible. There is endless entertainment in watching the acrobatics of a gray squirrel. I recall observing one of them leap from a branch of a tree to a long attached wire, and then slide down the wire like a fireman using his pole for speedy descent. The lure was a well-stocked bird-feeding station at the end of the wire!

During cold weather squirrels generally live in a hollow tree, but later in the year they find a suitable location, usually thirty feet from the ground in the crotch of a tree,
and there they construct a nest of dead leaves and sticks. The shape of the nest is a clue to the tenant's identity. A bird's nest is flattened at the top; the squirrel's is rounded. Red squirrels also build nests-sprawling but comfortable ones of bark, twigs, leaves or moss.

**Squirrels and Food:** As you watch a squirrel bury a nut in the ground, you may well ask yourself: Will he ever find it again? It would be a mistake to think that all the nuts that are buried get dug up afterward. This is especially true in the wilds where food is plentiful; and for this reason the squirrel makes a valuable contribution to replanting the forests.

However, in regions where winter food is scarce the clever little rodent recovers more of the stored nuts. It is believed that the squirrel is guided to the right locality by memory, and to the exact spot by a keen sense of smell which can penetrate through several inches of snow.

Aside from nuts, squirrels enjoy the seeds from apples, pears, and other fruit, mushrooms, corn, and wheat. Sometimes they raid birds' nests for eggs or fledglings, though they are guilty of such raids less often than red squirrels. An overabundance of peanuts is unhealthy for squirrels, but a few added to tree nuts or other foods are a nourishing addition to their diet.

**RABBITS—NATURE'S INDESTRUCTIBLES**

If you are familiar with the story of Peter Rabbit's adventures in Mr. McGregor's garden you have an excellent basis for understanding this rodent's fate in life. He is the Pursued; his daily routine is one escape after another. In addition to being a victim of almost every flesh-eating mammal and bird, he is also a favorite target for sportsmen.

How Rabbits Survive: Yet although they are the prey of countless enemies, rabbits are fast breeders and continue to exist in great numbers. As we observe them we see two further features which help account for their survival: the long ears that detect the enemy's approach from a distance, and the long, muscular hind legs which propel a rabbit away from danger with remarkable speed.

A further aid to the rabbit's flair for self-preservation is its extremely keen sense of smell: Its nostrils twitch constantly to catch every scent in the air. The rabbit's whiskers serve as trusted feelers, its eyes are large and bright. It has strong front cutting teeth, and with its split upper lip makes most efficient use of them.

In summer, the rabbit's fondness for cabbage and lettuce makes it the plague of gardeners. It also feeds on grass, clover, and other herbs. During the winter, when green leaves are scarce, it gnaws bark from trees and nibbles buds from shrubs.

There are many varieties of rabbits. Aside from those living in the wild state, there are others raised by thousands of people either for a hobby or for extra income. I once knew a rabbit that began its career as an Easter pet. Later on its young owner kept it at his family's store, where the rabbit was trained to snip with its front teeth the cord used to tie packages. This novel performance stimulated business considerably!

Rabbits and Hares: It is sometimes confusing, especially to a child, to hear a rabbit called a hare. Ostensibly "hare" is just another word for "rabbit." Yet actually this is not the case. Rabbits resemble hares in appearance, though they differ in some of their habits. Hares are larger in size.

Rabbits are born blind and hairless and completely dependent on their mother's care. She pulls fur from her own body with her teeth and paws to line the nest. When
she goes foraging for food she covers the young with fur and grass. This serves as a blanket and also as camouflage. Our tame rabbits are all descendants of wild rabbits of Europe.

The babies of the hare are born with their eyes open and are able to take care of themselves in three weeks or less. The jack rabbit is a hare, despite its common name, which is derived from its long jackass-like ears. Its shoulder height is as much as twelve inches and it can make leaps of from twelve to twenty feet with its long powerful hind legs.

MICE AND RATS-PETS AND PESTS

Among parents and children there are two schools of thought about mice. As far as the adult is concerned, these rodents are pests to be exterminated whenever possible. As the child sees it, mice are engaging, clever pets that can be kept without entailing a great amount of work for their owner.

The House Mouse: The house mouse, originally a native of Asia, is responsible for much of the dislike visited on the whole tribe. Through its ability to stow away wherever food is kept, this creature infiltrated into Europe and later on came to this country. Although this mouse usually makes its home in houses or barns, it sometimes nests under cornstalks or in grain fields.

Indoors it uses the space between plaster and outer walls for runways, or else it travels between ceiling and floor. With its strong gnawing teeth it can easily cut through wood, cardboard, or almost any obstacle but metal. The mother mouse makes her nest out of cloth, paper, or whatever pliable material she can find.

The Harvest Mouse: Wandering across country fields you may catch sight of a mouse which resembles the house mouse so closely that you might think it was the same creature. However, the outdoor species is probably a harvest mouse, content to find its food under natural conditions. It works the year round for its living, seeking in summertime greens, fruits, berries, and a variety of seeds. It stores some seeds in its
nest or underground, and in the winter it tunnels under the snow, if need be, to its hidden supplies.

Other Members of the Mouse Family: If you part the grass in the fields and find hard-packed little roadways about an inch wide, you have probably come upon the meadow mouse's "communication system" between burrows. Again, in wintertime, the tiny animal footprints you find in the snow often prove to be those of the meadow mouse.

The most attractive and interesting of wild mice is the white-footed or deer mouse. Look for it in the woods where a log, a broken rock, or merely grass provides its shelter. It is an excellent climber and occasionally makes its home in a bird's nest that has been deserted.

BEAVERS-SOCIABLE BUILDERS

In many areas where it was once threatened with extinction the beaver, now protected by law, again enlivens the landscape. When you are in the vicinity of beaver homes you can play a game that never fails to arouse youthful enthusiasm in nature exploring:

"Who will find one first?"

Competition ends when you or your young companion catch sight of a beaver home—a rounded mass of sticks and mud rising like a miniature island out of a lake. This is where a beaver family lives!

The Beaver's Home: You can see the exterior of a beaver lodge and admire the structure of the dams they build to cause water to flood around it; but you cannot investigate the interior.
If you could look inside you would see that the home is made up of one large room or several smaller ones. In either case you would notice openings in the floor. The beaver comes and goes through these, reaching land by an underwater route. As the areas in the lodge around the floor openings are wet and cold, the main floor is slightly raised, somewhat like a step. The sleeping quarters are snugly lined with wood fibers, chewed fine, or with grass. In wintertime the mud plaster of the lodge freezes, and the walls become so strong that even a bear cannot break through.

The Beaver's Building Methods: A popular myth about the beaver's building technique is that he uses his large flat-ribbed tail as a trowel to pat down mud. Actually he works with his fore feet-sometimes with the side of his head-to push and poke mud into place. Another belief about beavers is that they use their tails as "trailers" to convey grass, earth, and stones to the building site; but such claims have always lacked proof.

We do know that beavers carry these materials in their front paws or in the mouth. The tail does seem to be useful in helping a beaver steer and propel its body in the water. Another use for the tail, as we have learned, is that by slapping it against the surface of the water the beaver is able to warn his companions of approaching danger.

The Sociable Beaver: Beavers form sociable family circles. They enjoy being together, and when a family outgrows its lodge they may construct new homes along nearby shores until a large settlement develops. If, on the other hand, overpopulation results in a food shortage in the immediate neighborhood, the generation of two-year-olds starts off in search of a building site for a new colony. When young beavers are not occupied learning the serious business of tree-cutting, engineering, and building, they like to play and frolic, sometimes getting underfoot while the adults are at work.

Muskrats are also builders.
Muskrats also use mud in building their homes, but they mix it with roots and stems of plants, for they live in marshes and shallow water areas. Beginning the construction of a lodge in shallow water, they pile layer upon layer of rushes and mud until the heap is large and reaches a height of four or five feet above the surface of the water. Then the muskrat, working under water, chews and digs into this stack from the bottom, until he hollows out a space above the water line large enough to house himself and his family.

Near towns and villages you are much more likely to run across muskrat homes rather than beaver lodges. Muskrats seem to be undisturbed by the sights and sounds of civilization, whereas the more retiring beaver prefers wilder regions. Muskrats make use of swamps and streams as nature provides them, and they also take advantage of man-made ponds. Despite their ingenuity, however, they have never learned to construct their own dams, as beavers do.

OTTERS-SHY BUT LIKABLE

Few creatures are as wary of man as the otter. Even when your nature trails extend far beyond cities and town, you may fail to catch a glimpse of this attractive animal. But though otters remain unseen, you can still find evidence of their whereabouts by looking closely along the banks of streams and lakes. There will be footprints in the mud that borders their favorite fishing waters.

Otters Outswim Fish: Otters are remarkably swift and agile in the water: They catch the fish they delight to eat, literally outswimming them! Yet young otters are anything but "born swimmers." They live quietly at first, feeding on their mother's milk. When they are old enough she takes them for their first swimming lesson. By way of encouraging a baby she has it climb on her shoulders; then she dives into the water, often swimming with the baby still clinging to her. Lessons may continue throughout the summer until the young otters are as big as cats. Painstaking practice finally turns the pupils into first-class swimmers.

The Otters' Playful Habits: An otter family keeps together for at least a year, and all its members, parents as well as youngsters, know how to have fun the way boys and girls do. A pastime the otters favor, for example, is for two of them to pull at opposite ends of a stick, tug-of-war fashion. They romp and roll like puppies, clawing up the turf and throwing the clods about. Their greatest fun comes from sliding. They love to chute-the-chute on their stomachs down steep river banks into the water, and will keep this up in one place until it becomes very slippery. In wintertime they toboggan down snow-covered hills.

MOLES-NATURE'S EXCAVATORS

You do not have to go far a field for evidence of moles. All too often unsightly ridges appear in your garden or lawn which proclaim that these strange, near-blind underground mammals have been tunneling there. But though they live near human dwellings, moles are seldom seen. This endows them with a rather mysterious quality for a child, who quite naturally wonders how an animal can dig up the ground while it is actually under it.

How the Mole Burrows: When the mole is digging, it braces itself with one of its short powerful front paws while the other pushes the soil upward—this is how the ridges that disfigure your lawn are created. To make deeper tunnels, the mole scoops the earth under its body and pushes it as far back as possible with its back feet. Every now and then the mole turns a somersault and then proceeds in the opposite direction, shoveling...
the accumulated pile of dirt along until it comes to a vertical tunnel excavated on a
previous occasion. Here the mole forces the dirt up into the open, forming the proverbial
"molehill."

The mole's nest, lined with grass and leaves, is some six to twelve inches below
the surface of the ground. A main passageway leads from the nest to a series of tunnels
extending in all directions. Most of these tunnels lead in turn to hunting grounds where
worms and grubs abound; but one tunnel is reserved for an emergency exit when
danger threatens.

PRAIRIE DOGS-MASTER ENGINEERS

The chubby rodents known as prairie dogs—they were misnamed by early
pioneers in the plains region—are also remarkable excavators. We do not have a clear
picture of just how they carry out their elaborate digging operations, but we know that
each prairie dog family has a burrow of its own consisting of a main shaft which goes
straight down about fourteen feet. Horizontal tunnels branch out from the shaft to the
animals' sleeping quarters.

Other vertical shafts rise from some of the horizontal tunnels and are probably
used as safety zones in case the lower levels are flooded. The burrows are grouped
together in large colonies, sometimes called "towns." There is reason to believe that
some of these towns once had a million or more inhabitants!

Tall Tales: Many fantastic stories have been told about a cozy alliance between
prairie dogs, burrowing owls, and rattlesnakes for sharing the same burrows in friendly
fashion. It is true that these mammals, birds, and reptiles do inhabit the same western
regions; but that is all there is to the alliance. The owls dig holes for themselves—though
they may put a prairie dog's burrow to use under favorable circumstances; and a
rattlesnake may occupy the burrow of either animal. It is a most unwelcome intrusion,
however, probably resulting in the loss of the young of the rightful home owners.

THE WARY MARMOT

Prairie dogs are related to the golden-mantled marmots which are so numerous
in some of our western national parks where they have lost much of their fear of people.
Even so, you may see a group eating while one animal stands guard. Whenever this
lookout senses danger it gives a single sharp whistle and all scurry for cover.
Nevertheless, marmots combine some curiosity with their caution, and if you are able to
give a near-imitation of their whistle, you can frequently get quite close to one for better
observation or for picture-taking.

THE STRIPED GOPHER

Still another prairie dweller that makes excellent burrows is the striped gopher.
Some, apparently used only for shelter, are short. There are also longer burrows that
end in nests where the young are born. Adjoining rooms serve as storehouses for a
large supply of winter grain.

Prospectors prize the gopher and other burrowers as good "pardners" because
the dirt thrown up around the opening of a tunnel by the animal provides them with
underground soil samples. The prospector pans such dumps for gold traces.

RACCOONS-INGRATIATING AND INQUISITIVE

If you have a camper son or daughter you may be startled one of these days by
the introduction into your home of a bright-eyed pointed-faced creature with long, bushy
fur. This will be a raccoon that your youngster has adopted during the summer and could not bear to leave behind. Provided there is enough space for a roomy pen, it is possible to keep a raccoon in captivity successfully—though not all raccoons lend themselves to a domestic routine.

Not a Finicky Eater: The raccoon relishes many different kinds of food. It prowls the woods at night, raiding birds' and squirrels' nests for babies, eggs, or even adults. The black markings across the raccoon's face, suggestive of a bandit's mask, seem most appropriate for such nighttime excursions. The raccoon enjoys fish, catching them by a nimble technique which involves lying in wait at the edge of a stream and hooking out with its paw to seize victims that swim within reach. It also pounces on bugs and reptiles, and enjoys all kinds of fruits and vegetables.

Raccoons have a fascinating way of using their front paws as hands. If a raccoon is allowed in a house it must be watched closely, as it can open latches and will unhesitatingly try to climb on anything at all. The curiosity of this animal is boundless.

SKUNKS—FRIENDLIER THAN YOU THINK

There is another wild mammal an enthusiastic young camper may wish to bring home: the skunk. As it is best known for the obnoxious odor it can give off, this animal is likely to meet with a frosty reception. It may be, however, that the camp counselors have already had the skunk's scent glands removed. Most owners of skunks do have such an operation performed on their pets, and this is best done while the creature is still quite young.

A skunk makes a friendly, easygoing pet. A small cage will do for its headquarters; but if the cage is out-of-doors the sides must be carried well below the surface of the ground. Skunks are expert burrowers and can easily dig their way to
freedom through an ordinary earth floor. They can be housebroken, and they often render excellent service in catching mice.

OTHER PETS

Guinea Pigs: If you adopt a skunk, a raccoon, or a related wild animal, you will have a lively hobby to share with your youngster. That old-time favorite among mammal pets, the guinea pig, is perhaps a more conservative choice. Given proper care, it is practically odorless, and easy to feed. However, its habit of breaking out in a shrill whistling sound may be disconcerting if you live in a city and must keep your pets in an apartment or a garage.

Hamsters: Hamsters are comparative newcomers to the ranks of furry pets. These rodents look like fat-faced stubby-eared squirrels, but are smaller. They have no specialized tastes in food and are free from unpleasant odors. Friendly and winning in their ways, hamsters retain some of the interesting habits of wild creatures such as hoarding food until they are ready to consume it. Many a hamster has a routine of packing food into the cheek pouches that extend over its shoulders. It carries the food to a hiding place and tucks it away; then at night—for it tends to indulge in nighttime activity—the hamster digs up the buried food and nibbles away contentedly. It is not, by the way, a native American, but an import from Eurasia.

BEARS-NOTED GOURMETS

Nursery stories present such an appealing picture of Mother Bear, Daddy Bear, and Baby Bear that a child is all too likely to think of this closely knit family group as being true to life. Let's look at the facts.

The mother-and-baby bear relationship does really exist in nature, but as far as Daddy is concerned, we shall have to remove him from the scene if we are to be faithful to the facts. He actually goes off by himself, taking no responsibility for feeding,
protecting, or educating the young: The mother does it all. In this respect bears differ from wolves, foxes, and coyotes—in each of those families the father does his full share when it comes to bringing up the children.

**The Playful Bear Cub:** Bear cubs are not handicapped by the father’s absence, as the mother takes care of their needs in the most competent fashion. At birth the twin cubs of a black bear are blind, almost hairless and not much larger than rats. By the time they leave the winter retreat where they were born, they have become saucy, fun-loving creatures with fluffy hair and sharp claws. They box and wrestle, play hide-and-seek, and try all sorts of tricks on their mother.

Sometimes she loses patience with them and boxes their ears. For all that, she guards them jealously and the only time she is ever really dangerous to human beings is when her cubs are with her.

You may see black bears in some of our national parks; their desire for food from tourists has overcome their natural shyness. One lesson they learn well in the wilderness is to be ever wary of humans and other possible enemies. Mother bear teaches the cubs to swim and to climb trees to escape danger. She shows them how to tear apart rotted stumps and mop up swarming ants with the tongue. She demonstrates how to catch mice, how to slap a frog out of water, and how to raid a tree in which bees have stored honey.

**The Bear’s Sweet Tooth:** Bears are noted for being gourmets. Black bears live chiefly on vegetables, but they also dig for roots and bugs and catch grasshoppers and crickets. They enjoy all kinds of fruit, blueberries being their favorite; and like all bears, they are so fond of honey that they will risk the vengeance of furious swarms of bees to tear open and rob a bee tree.

Some black bears add meat to this diet, but it is said that when other food is plentiful they will not show the slightest interest in freshly killed deer or sheep. Grizzly bears are flesh eaters: They hunt deer and wapiti (an especially large deer), and will...
even attack cattle and horses. Small game is their usual prey, however, and a grizzly will hunt mice tirelessly, digging them out of the grass with his huge paws.

**The Bear’s Long Sleep:** It is probable that in prehistoric times great cave bears, like the "cave men," made good use of dens and caves for shelter and safety. Nowadays bears are chiefly interested in dens as places to sleep in during the winter months.

A female bear chooses a particularly snug retreat, for it is during the long, cold-weather rest period that her babies are born. In the spring she leaves her winter headquarters, taking her cubs with her. From then on, all outdoors is her home. Black bears and grizzlies usually seek out a natural cave or partially uprooted tree that will shelter them—but if need be, they dig a hole under some steep embankment.

![Fox](image)

**FOXES AND WOLVES**

Unlike the bears, foxes remain together in family groups. While the young are growing up, both parents take care of them in their underground den. The red fox digs its own burrow, often supplementing the living room with a pantry and then building a tunnel to connect the food storage room with the main burrow. Though a fox family leaves its cozy home during warm weather, it may return to the same winter address year after year.

Gray foxes do not regularly dig homes; they dwell in natural cavities in rocks or in hollow trees.

**The Wolf’s Home:** The wolf is also partial to dens. Sometimes a wolf digs a short burrow in the ground; a large hollow log or an excavation under a tree stump will also serve his purpose, and in rock-strewn regions he often adopts a natural cave.

Coyotes are more ambitious when it comes to constructing a home. Not content with general living quarters among secluded rocks or brush, the mother digs a nursery den, and she may also have a separate resting den where she can retire to "get away from it all." Not to be outdone, the male digs a den of his own to use while his mate is caring for the young.
LYNXES AND BOBCATS-MORE BALLYHOO THAN FEROCITY

The oversized bobtailed cat known as the lynx is frequently heard but rarely seen. This animal prefers night prowling to daytime hunting and is therefore hardly ever seen by man; but its yowls are all too familiar to campers in northern regions and visitors to some of the national parks who are trying to doze off to sleep. Though its call sounds terrifying, the lynx usually seeks no larger game than the hare or smaller rodents. On rare occasions a lynx may leap from a tree branch or ledge to kill a deer or an antelope.

Bobcats, unlike lynxes, are not confined to the North. Bobcat trails may be seen in Arizona deserts or on Canadian snow-covered plains. "Fighting like a wildcat" suggests the most vicious kind of battle but, like the lynx, bobcats usually prey only on rabbits, other small rodents, and ground-nesting birds.

DEER-APPEALING CREATURES

Thanks to the classic story of Bambi, many children take a sympathetic interest in the white-tailed deer. The young deer, or fawn, makes an interesting contrast with some other mammal babies, such as the blind and helpless bear cubs. As infants, deer are weak and wobbly, but they can see immediately and before long they are anxious to explore their surroundings. The mother, or doe, scolds them, warning against such activity; if necessary, she bunts them on the head to make them stay put.

A fawn's spotted coat blends effectively with its surroundings. This enables it to protect itself by merely lying still and relying on camouflage. Once the mother has taught this lesson to her fawns, she can leave to seek food; but she returns several times a day to nurse them. If an enemy is nearby, she will deliberately attract attention to herself to save the fawns.

The Buck's Antlers: The father of the deer family, the buck, is a handsome, impressive animal. The buck's crowning glory, his antlers, are shed every year, and he proceeds to grow a new pair. Considering the thousands of antlers discarded every year, your child might well expect the woods to be carpeted with them. Some antlers are found, to be sure; but many are eaten by porcupines, mice, and rabbits for their mineral content, while others disintegrate after sufficient weathering.

Adventures in Park and Zoo

The mammals of American field and woodland have first claim on our children's interest; these animals are part of the American scene, and their colorful variety always suggests some fascinating detail to absorb our attention. Yet, somehow, there is a greater enchantment about the exotic animals of faraway places. Thrilling as it is to see a shy, graceful creature like the deer in our native woods, we often feel it would be a more exciting experience to stalk elephants and other big game in Africa.

Such expeditions are out of the question for most of us. But not altogether. There are little safaris we can make close to home. A visit to the zoo is a delightful way to make the acquaintance of strange animals from every part of the world. Throughout the United States and Canada there are a number of fine zoos and zoological parks where animals from Asia, Africa, Australia and the other continents may be seen in the space of a single afternoon.

SHOWMEN AND SHOW-OFFS

Every zoo has sights and sounds that take us completely out of the daily round of humdrum living. But to get the most fun out of a visit to the zoo, you must have one or more youngsters along with you. You will enjoy their reactions, their curiosity, their
astonishment. For a visit to the zoo is fun—as much fun as the circus, and often very much like the circus if you see the animals at feeding time, or in the spring when frisky babies enliven many cages.

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RAUCOUS BUT AMIABLE

The well-named howler monkey, a talented climber and swinger, relies on its prehensile tail, which in effect serves as a fifth paw, or hand. At the zoo, the howler performs amazing acrobatic feats, every now and then pausing thoughtfully to pick tidbits out of a crony's hair.

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Some animals, the natural showmen and show-offs, are entertaining at all times. The sea lions with their graceful diving, their awkward waddling, their hoarse yawps, their bent for deadpan horseplay, and their efficient if not elegant eating habits, are great favorites. All children are delighted with the tail-swinging antics of the monkeys and some of their droll attitudes which caricature humans. The huge elephant with his fantastic trunk and his dignified, patient look; the tigers and leopards with their air of sleek power, and drowsy laziness; the giraffes with their incredibly long necks and the camels with their bumpy backs—all these and many other inhabitants of the zoo are natural-born showmen and show-offs that children love to watch.

Your child's enjoyment of a visit to the zoo stimulates him to learn more about the animal world. Many exhibits have labels or placards giving specific information about the animals. And before going on a visit, you can prepare yourself at home with some background reading—one of the purposes of this chapter is to supply you with it. Thus you will be well equipped to furnish details about the animals or offer interesting information at the strategic moment.

MONKEYS-HIGH-SPIRITED PERFORMERS

It is a good idea to make the Monkey House the first stop on your zoo tour: There is a special appeal in these volatile animals and their endearing ways which often remind us of human beings in miniature. The monkeys also show to good advantage because cages are less confining for them than for the great apes such as the gorilla and the orangutan.

The Rhesus Monkey: As you watch a family of rhesus monkeys chasing each other, chattering and occasionally screaming, it is easy for you to picture them in their
native jungles of India. They behave there pretty much the same way, quarreling and screeching at each other one moment, then suddenly quieting down and grooming each other’s fur. Thousands of rhesus monkeys are brought to the United States each year to be placed in zoos or to be used for medical research.

**Swinging by the Tail:** The woolly monkey is one of the largest of the species native to South America. When you see one at the zoo, it is interesting to contrast its antics with the gambols of the rhesus. You can observe the woolly monkey swing daringly from branches or bars by its tail. No matter how long you watch the rhesus, it will never duplicate this feat. The point is that the woolly monkey is one of the species that has a prehensile tail—a "grasping" tail that functions in effect as a fifth limb or extra hand.

Only the monkeys of Central and South America have a prehensile tail. The species with the longest tail of the monkey tribe live in India, and of course this tail is not prehensile. As for the howler monkey, its prehensile tail is "different"—the fur is missing from the inner portion near the tip.

It is curious that many of the larger monkeys are afraid of the water; not so the rhesus, which is a good swimmer.

As for tastes in food, monkeys thrive on a leafy diet and on such fruit as apples and bananas. Those living in the natural state augment this diet in one way or another. The South American squirrel monkey, for example, eats insects, and possibly young birds.

Despite their general reputation for amiability, not all monkeys are good pet or exhibition material. One of the most attractive species, the lion-tailed monkey, is likely to turn savage if removed from its native forests in western India. Even the Indians, who have a way with animals, cannot keep the lion-tailed monkey in captivity successfully.

**THE BIG APES**

**Gorillas-Shy and Retiring:** When you see the gorillas behind the bars at the zoo, they impress you as fierce and vicious. Sometimes a gorilla acts that way as well—spitting at its admiring audience and carrying on as if trying to pull the cage apart. In their natural surroundings, however, the disposition of these animals is quite different. While they may occasionally attack men or animals in self-defense, they are by nature shy and retiring and prefer to stay clear of trouble whenever possible.

On their native grounds, gorillas roam about in small family groups in search of the vegetables, toots and fruit on which they feed. Though they can stand upright as humans do, and their babies often walk that way, older gorillas always walk on all fours.

Their great strength notwithstanding, gorillas-like many wild animals-have rather frail health. In the wild state they are distressed by jungle-bred worms which bring on intestinal troubles; in captivity gorillas are very susceptible to colds and pneumonia.

**Chimpanzees-Intelligent and Comical:** The chimpanzee is as widely known for its intelligence as for its comical antics. It can be taught all sorts of tricks and—what is more impressive—it often shows actual reasoning powers. Like the gorillas, chimpanzees dwell in Africa and they also live on fruit and vegetables. They are, however, much smaller than gorillas. An adult male rarely attains more than 175 pounds, while a gorilla may reach six hundred or more.
Chimps can walk upright but—again like the gorillas—they usually travel on all fours with their hands curled into fists. Though their hands resemble those of humans, chimpanzees lack manipulative powers—particularly in the thumbs.

**Orangutans—Slow and Deliberate**: "Man of the Woods" and "Wild Man" are alternative renderings for the orangutan's Malay name. This big ape of Borneo and Sumatra lives almost entirely among leafy branches and, despite its bulk, swings with great agility from one tree to another. Though it is capable of moving speedily, it is usually slow and deliberate. A big male orang weighs two hundred pounds or more.

**Elephants—Largest Land Animals**

Children love elephants. This animal is interesting to observe for many reasons: its huge size, its amazing trunk, its tusks from which ivory is obtained, its status as a living relic of the great mammoths that roamed the earth many ages ago, and its wise, benign expression that reminds us of some distinguished elder statesman.

Having been told that the elephant is the largest land mammal, a child may be puzzled by its tough, wrinkled skin.

"I thought all mammals had fur or hair," he may tell you. "But the elephant's a mammal and look at him."

Indeed, this skeptical attitude is well taken, for adult elephants are almost completely devoid of hair. You have to look closely to see even a bit of it on their hide. A
young elephant, however, is covered with a fuzzy coat. Several other beasts, such as the adult rhinoceros and hippopotamus, follow this pattern of being nearly hairless.

**The Elephant's Trunk:** Elephants at the zoo are particularly fascinating because we are allowed to feed them and thus see in action the amazing "nose" which serves them as arm, hand, and fingers. The size and muscular strength of an elephant's trunk make it possible for him to carry heavy, bulky objects; the fingerlike tabs that project from the end of the trunk enable him to pick up an object as small as a peanut and swing it through a great arc into his mouth. At the end of an African elephant's trunk there are two tabs of about equal length. An Indian elephant has only one tab.

Elephants of Africa and India can also be distinguished by size. As a rule the African species grow considerably larger than the Indian variety and their ears are much larger. In the jungles of west Africa, however, there are elephants that are an exception to this rule. These elephants are often described as pygmies or dwarfs, as they average considerably less in size than most African elephants.

**Training an Elephant:** You see the Indian elephants far more frequently in zoos and circuses than the African species; the Indian animals, aside from being smaller, are obtained more easily and can be trained more rapidly. For thousands of years the natives of eastern India have been skilled in the training of elephants, and the knack has been handed down from father to son.

An important factor in their success lies in the use of the human voice: The trainer first wins his charge's trust by softly chanting an "elephant song," after which he bribes the beast with its favorite foods. (Wild elephants eat leaves and grass—perhaps half a ton in a single day!—but they relish sweet fruits and other dainties. In the zoo they are fed mostly on hay and grain.)

Besides drilling some elephants for circus performance, the natives of India train others for use in hunting and for carrying heavy materials—an important consideration in a land lacking machinery. In ancient days elephants played an impressive role in warfare as forerunners of the modern giant tank. The most famous instance of their military use was in Hannibal's great victory over the Romans at Cannae after he had brought these huge creatures across a pass over the Alps. In time elephants fell out of military favor because they were too easily terrified by the noise and violence of battle.

Elephants have always excited a great deal of interest and many curious beliefs have grown up about them. One of these is that elephants are afraid of mice! There seems to be no scientific evidence for this notion. Another fallacious idea is that elephants live a century or more. Scientists believe that the life span of these giant mammals is about the same as that of human beings—from sixty to eighty years.

**Hippos —"RIVER HORSES"**

Next in size to the elephant is the grotesque African hippopotamus, which may achieve a weight of four tons—or more! It is perhaps this creature's very ugliness that makes it appealing to children. Though the hippo performs no stunts, they watch it with absorbed interest.

**The Hippo in the Water:** The hippopotamus spends a great deal of time in the water, which must always be provided in its enclosure. In the wild state the hippo seeks out the calm waters of a tropical river where it browses on water plants as it swims or floats. (The name hippopotamus means "river horse.") When frightened, a hippo takes to flight by sinking to the river bottom, where it can walk easily and quickly. Ten minutes is
about the longest it can stay under water, and when it comes to the surface it usually
spouts a column of air from its nostrils.

A mother hippo often rides her baby on her back in the water, and the young one
clings there even when they go below the surface! Once your child realizes the extent to
which hippos are water animals, he may see the advantage of their peculiarly placed
eyes, ears, and nose. All these features are at about the same level on top of the
animal's huge flat head. Thus the hippo need keep only a small part of its head above
water in order to see, hear, and breathe at times when all the rest of its body is
submerged.

THE UNPREDICTABLE RHINO

Like the elephant, the rhinoceros is native to both Africa and India. You can tell
the African "black" rhino by its two horns; the large Indian rhino has only one horn.
Rhinos spend much of their time sleeping and browsing on twigs. They have remarkably
keen senses of smell and hearing and they are quickly alert to danger. They may charge
an enemy with surprising agility or do a' right-about-face and gallop away. Poor eyesight
makes their actions especially unpredictable. They were once much more plentiful than
they are today, for hunters have greatly reduced the numbers of these "nose-horns" (the
literal meaning of "rhinoceros").

THE BIG CATS

Tigers and lions appeal strongly to the average child because of his affection for
pussy cats. A small cub appears as gentle and playful as a kitten, and even an adult-
particularly a tiger-suggests a giant "tabby."

Lions and tigers are the two biggest members of the cat family. Some kinds of
tiger grow considerably larger than others. The Bengal tiger, one of the best known, may
be twelve feet long and weigh more than five hundred pounds. The Siberian tiger, which
is even larger, also has longer, heavier hair to protect it in the cold northern forests
where it lives.

Tigers-"Ten Pounds of Meat a Day": A mother tiger has two to four babies in a
litter. In a zoo, tiger babies are sometimes raised by human foster parents who feed
them milk from nursing bottles. In captivity they sleep, purr, play, and chase their tails like the kittens that are so dear to the hearts of children. In the natural state young tigers start killing small game by the time they are seven months old. They stay with their family about two years.

The usual diet of a tiger is wild game, such as deer, but many prey on sheep, cattle, and other domestic animals. Occasionally a tiger turns man-eater and becomes a serious menace to the community. Well-fed tigers in a zoo are usually peaceable and contented. It takes about ten pounds of meat a day to keep them that way!

![Leo the Lion](image)

**LIONS-NOT SO LIONHEARTED**

A lion may also become a man-killer, but it is more usual for him to avoid humans whenever possible. By day, lions like to rest quietly in shady places; at night, they are on the alert, seeking such game as zebra and antelope. The cliches "king of beasts" and "brave as a lion" help keep alive the idea that lions are the most daring and courageous of all the animals. But, though they look the part, they do not really live up to it.

According to Frank Buck, the famous "Bring 'em Back Alive" animal collector, a tiger is often self-confident enough to take on a more powerful foe—a water buffalo, for example—but a lion rarely tries to overpower any animal that is a match for it. Mr. Buck discovered, furthermore, that lion cubs are more tame than tiger cubs, and that older lions are more amenable to the company of humans than tigers are.

A male lion is far more handsome than his mate, because of the great ruff around his neck. A lioness may have as many as six cubs in one litter. They are completely helpless at first, as their eyes do not open for about a week. Sometimes they suffer from the once-common childhood ailment of rickets, and teething may give them a great deal of trouble.
GIRAFFES—WALKING SKYSCRAPERS

Children are naturally fascinated by the giraffe, the world's tallest animal, because of its long neck. A youngster who already knows something about anatomy may wonder whether this ungainly animal has more than the normal number of vertebrae from head to shoulders. It does not, however. It has the usual seven neck vertebrae—they are simply longer than those of other mammals.

The long neck makes it possible for the giraffe to feed on the leaves of trees. It can manage to reach its head down to a pool for drinking water, but it depends for most of its liquid nourishment on the moisture on leaves. As you may have guessed, the giraffe can cover ground speedily with its long legs, and has been known to go over thirty miles an hour. The giraffe reputedly is silent, but at times it does produce a sound somewhat like a cow's moo.

CAMELS—AVID WATER DRINKERS

The camel is another one of those animals that interest children because of a physical peculiarity. At some zoos children need not content themselves with looking at a camel; they may ride on the animal as well. Thus they can come to know something of the sensation of a desert traveler as he progresses over the sands on camel-back. Of course the youngsters do not have a chance to appreciate how this useful animal weathers a sandstorm in its natural surroundings. The camel can close its nostrils against the flying sand, and in addition its double row of eyelashes offers excellent
protection for its eyes. A one-humped dromedary in good form can travel nearly a hundred miles a day.

Going Without Water: The accomplishment for which camels are most noted—the ability to do without water—seems more improbable than ever if you see them drinking. When a supply is available, a camel will drink six or seven gallons of water a day! A camel bearing a heavy load cannot go without drink for much more than three days; but records show that some animals have survived for several weeks without water. At such times the camel draws upon moisture stored in its stomach walls and actually "drinks from the inside." The one-humped camel is still a valued beast of burden in Africa and the Arab lands.

The Two-humped Camel: The two-humped Bactrian camel grows a far heavier coat than the dromedary. Its native land is Central Asia, where many people depend on their camels not only for transportation but also for food (they drink the milk and eat the meat) and for clothing (made from the hair). In the spring a camel looks disreputable as its winter coat peels off in ragged patches. Flabby humps are a sign of poor physical condition, as the hump provides a storehouse of reserve nourishment which the animal draws upon when food is scarce.

ZOO BEARS-SURPRISINGLY TIMID

Children enjoy watching bears because they are reminded of their beloved teddy bears. At the zoo, aside from the familiar native North American black bear, you may also see several more spectacular or unusual species.

The Alaskan Brown Bear: A large zoo may be able to exhibit the biggest bears in the world—the Alaskan brown bear. Some of them weigh fifteen hundred pounds or
more. Despite their great power and tremendous claws, they are timid rather than daring and attack only when cornered or wounded. As in the case of other bears, the cubs are amazingly tiny compared to the adults. A baby bear weighs about a pound and a half at birth.

The Polar Bear: Some polar bears are as heavy as the Alaskan brown bear, though the average male is not over nine hundred pounds. This bear does not have the timidity of most species. It is a hunter that preys upon fish, seals, walrus, and it will stalk a man in the same way that it pursues the large mammals. The polar bear mother, like all bear mothers, is a conscientious guardian and teacher of her cubs. She frequently offers them a unique towing service in the water, allowing them to grip her tail with their teeth!

The Grizzly Bear: You may look with some awe at the grizzlies, as they have won a reputation as the most ferocious of all bears. Books about the lives of the American pioneers and frontiersmen contain many accounts of struggles with grizzlies. If wounded or fearful for their cubs, they may kill a man—but they do not go out of their way to hunt him. Grizzlies live chiefly on fruit, berries, insects, fish, and small mammals.

THE GIANT PANDA—CHILDREN'S FAVORITE

Few zoos are in a position to exhibit so rare an animal as the giant panda, but wherever it is shown, this strikingly marked black and white mammal makes an immediate hit with children. Not until 1937 was a giant panda captured alive. It was a baby, and had many of the appealing ways of a human baby. It romped in a play pen, took milk from a nursing bottle, and when it was tired it whimpered like a human infant. It was named Su-Lin, which has been translated as "a little bit of something mighty cute."

Since the time of Su-Lin's introduction into the United States, more than a dozen giant pandas have been captured and brought from their homes in western China to zoos in the United States and Europe. An unfortunate aspect of the pandas' scarcity is that when one of them dies, it is not easily replaced. Although this animal's appearance reminds us of a bear, it is more closely related to the raccoon. In the wild state the panda
is believed to live on bamboo leaves and stems; in a zoo corn-meal mush, nourishing if less exotic, forms a large part of its diet.

"THE BLACK-AND-WHITE BEAR"
In its toddler stage the giant panda is playful and appealing—one of the zoo’s outstandingly popular performers. But the grown-up giant panda, which weighs about three hundred pounds, does not relish captivity and is apt to be surly, not to say downright bad-tempered.

ODDITIES FROM AUSTRALIA

Among the most remarkable creatures in our zoos are several near-extinct Australian animals. Even in Australia these believe-it-or-not animals can generally be seen only in zoos.

Animals in the Wild

Platypus-Scrambled Mammal: The strangest of these strange creatures is perhaps the platypus, which has a bill like a duck’s and grows to a length of about eighteen inches. It is considered a mammal because it feeds its young on its own milk, and because it has hair and is warm-blooded. But the platypus lays eggs, and the temperature of its blood changes to some extent, depending on the weather. Most curious of all, the nursing technique of the mother platypus is highly unorthodox: Milk oozes from special pores in her skin and clings to her fur, from which the babies lap it up. The platypus is considered one of the most primitive of mammals—in some ways it is very close to the reptiles.

The Kangaroo’s Built-in Baby Carriage: Children have always been intrigued by the kangaroo and its built-in baby-carriage features. This animal is the largest and most spectacular of the marsupials—a kind of mammal remarkable for having small, undeveloped babies that spend their first weeks-or months-in a pouch on the mother’s abdomen.

Usually a kangaroo mother has only one baby at a time and the infant stays in the nursery pouch for five or six months. After that the baby pokes its head out and often hops out to explore on its own; when it gets tired or hungry, it quickly dives back again.

The kangaroo can jump over a five-foot fence with ease, and may even leap more than twice that height. In Australia, the animal has been trained to be a skillful boxer. It is a vegetarian, and lives about ten or fifteen years. Smaller types of kangaroos
are known as wallabies.

THE CURIOUS KANGAROO
As a relic of prehistoric times, the kangaroo has traits that are off the beaten track in our own prosaic era. Its offspring, only an inch long—or less—at birth, is not strong enough to suck milk. However, the milk is pumped automatically to the infant. The largest kangaroos are about five feet high.

The Koala-Nature's Teddy Bear: The appeal of the koala is much the same as that of the giant panda—it looks like the work of a toy designer. In fact, some people believe that the koala inspired the long-popular "teddy bear." (The "teddy" part of the name is supposed to have been in honor of Theodore Roosevelt.) Like the kangaroo, the koala is a marsupial. A newborn baby is less than an inch long, and it stays in the mother's pouch for about two months. After emerging, the baby clings to the fur on the mother's back, riding there until it becomes quite a heavy load.

SEA LIONS AND SEALS-NATURE'S CLOWNS
It is the easily tamed and trained sea lions that you usually see in zoo and circus. They are born show-offs. In the zoo their feeding-time antics never fail to draw a large and admiring crowd. Children and grown-ups alike chortle with delight at the nonchalant way in which the sea lion holds his mouth wide open and catches the fish thrown to him by the keeper across the length of the pool. The sea lion is also an expert circus performer, balancing a large ball on his nose, "answering" questions, and "playing" musical instruments.

"What is the difference between a sea lion and a seal?" you may wonder as you watch the frolicking acrobatic water mammals at the zoo.

Though many people use the names interchangeably, sea lions differ somewhat from true seals. To recognize a sea lion, look for ears at the sides of his sleek head. They are small but distinguishable. True seals have no external ear structure. Sea lions
are also unique in their ability to turn their hind flippers forward and under, making possible a fairly rapid if awkward progress over land.

Under natural conditions sea lions spend considerable time on shore, and there the babies are born. The mothers take them to shallow water to teach them how to swim and catch fish. Sea lions live only along the Pacific coast. The common seal is found along the shores of both the North Atlantic and North Pacific Oceans. The common seal (known also as the harbor seal) is notably tame and friendly with humans, and has a strong sense of curiosity.

**WALRUSES-TIMID GIANTS**

Most children will look forward eagerly to seeing a walrus in the flesh. The walrus is a mighty creature often weighing a ton or more and reaching a length of about ten feet. Its name is derived from the Scandinavian for "whale horse," an allusion to its size and the fact that it lives both on the land and in the sea. The walrus gives no lively performance as seals do; its appearance is a show in itself. The bristly whiskers and the male's fantastically elongated upper canine teeth—they sometimes reach a length of thirty inches!—enhance the formidable impression made by the walrus.

For all their size and power, walruses are rather timid and try to avoid trouble. They live in herds, and if one member is attacked, all the rest rush to its defense. They can fight fiercely if they have to, making good use of their tusks, and a mother never hesitates to show fight if an enemy approaches her "baby." The walrus has an unearthly bellow that is in keeping with its appearance.

**BATS AND NATURE'S RADAR SYSTEM**
Each season half a million people visit Carlsbad Caverns in New Mexico. They are almost as interested in the bats they may see there as in the cave itself. Each afternoon hordes of the flying mammals come out, literally darkening the sky as they set out in quest of food. It is estimated that there are millions of bats in this colony. They are the little brown bats, of which there are more than two dozen kinds in the United States.

Bats are not good zoo exhibition subjects because they sleep in the daytime. Aside from roosting at Carlsbad and other, smaller, caves, the little brown bat takes refuge in hollow trees and under the roofs or eaves of houses. Your child may shudder, as many adults do, at the thought of a bat's approach. It is a pity that so many superstitions have grown up about these creatures of darkness. Despite their sinister appearance they are really useful animals, as they eat large numbers of insects-catching them in mid-flight.

Occasionally bats do become entangled in a human being's hair. Such incidents are accidental—never intentional. As a matter of fact the bat rarely flies into things, thanks to its own special radar system. As it flies it emits high-pitched squeaks—far too shrill to be caught by the human ear. The sound waves hit any nearby solid objects and bounce back, a signal to the bat to swerve aside.

A Four-foot Wingspread: The "flying fox," the world's largest bat, lives in India and on tropical islands of the Pacific. Its wingspread measures more than four feet from tip to tip. The flying foxes live on fruit and leave their tree roosts at night to fly to orchards or wild fruit trees, often traveling many miles to their goal. Because of their potential danger to fruit, none of these bats may be brought into the United States, even for a zoo.

Blood-sucking Bats: The vampire bat is the one kind of bat that really deserves a place in horror tales; it actually lives on the blood of animals and humans. At dusk these vampire bats, which dwell in Mexico and tropical South America, begin their hunt for cattle, wild creatures, or human beings who are susceptible to attack through living in unscreened homes.

A bite from the vampire bat's sharp teeth is not painful—nor would it be harmful except that sometimes this bat is infected with a disease that is transmitted to the victim and usually proves fatal. The vampire laps the blood as it flows from the wound.

Mammals in Maps, Games, Stamps, and Art

Your visit to a zoo is an end in itself because of the pure pleasure it yields in direct, enjoyable experience. Yet such visits can take on lasting meaning in a child's life if you can unobtrusively associate each animal with its natural home. In this way the child's mind forms a clear idea of the wildlife of different countries and continents. Some zoos group the animals in exhibits—such as the Plains of Africa—where mammals that are natural neighbors are seen together; but in many zoos it is necessary to point out these associations yourself.

Of course, the how and the when of imparting such information will depend on the child's age and interest and receptivity. The best method is doubtless one that involves some active participation by the child. Keeping a scrapbook of animal pictures is fun at almost any age, and it provides a good starting point for talking and learning about animals.

MAMMAL MAPS

Most children are fascinated by a map that pictures a continent in outline with its animals or plants shown in the approximate area where they are most commonly found.
Elaborate maps of this kind are available; but children will enjoy making simple maps of their own—perhaps after an expedition to the zoo—which will mean more to them because they have created the maps themselves.

**ANIMAL LOTTO**

One of the pleasantest ways for very young children to become familiar with animals is to play games involving them, such as Animal Lotto. In this game more than fifty mammals, with identifying names, are pictured on master cards; the players try to match them by drawing individual pictures of the animals from the "stock pile."

**PLACE CARDS FOR PARTIES**

For a four-year-old's birthday we used an idea for place cards which enabled the youngsters to seat themselves without assistance. From colored cardboard we cut silhouettes of elephants, kangaroos, giraffes, and other animals, in duplicate. Each child was given one of these, and the duplicate was set as his place card on the table. When refreshment time arrived, there was much excitement over matching up the animals, and the children had a happy sense of accomplishment in recognizing each silhouette.

**ANIMALS ON STAMPS**

For older children a stamp collection helps create a link with animals of the world; many countries depict their characteristic and famous animals on stamps. The elephant, camel, leopard, giraffe, horse, tiger and antelope are but a few of the animals represented. A child’s interest in animals may create a desire to collect stamps, or, contrariwise, stamp collecting may develop a desire on the child's part to know more about the animals.

**ANIMALS IN ART**

The limitless field of art suggests another way in which two different interests may mutually stimulate one another. Almost every youngster enjoys drawing familiar animals, and many children favor some animal that they will draw tirelessly, again and again. Aside from this, the great world of art opens up an enormous field of animal drawings, pictures, and statues that will delight children. Very often these works of art will impinge on other interests of a child. Think of the rock paintings of prehistoric man, Egyptian sculpture, Assyrian reliefs, Chinese jade figures, the art of the North American Indians, the Aztecs, the Negroes of Africa. All have used animals in their art. An interest in art will intensify a youngster's interest in animals and give him a source of lifelong pleasure.