Program 17 - "UPON THY BELLY SHALT THOU GO" - January 27, 1941
(Man's Unloved, often Abused Reptile Friends)

SOMETHING TO DO AND TALK ABOUT FIRST

Discuss what we said about reptiles in the broadcasts of December 9 and January 13. Remember that the group of animals called reptiles includes turtles, lizards, alligators, and snakes. They don't look alike, but the plan of structure is similar, as the broadcast points out. People, especially children, are either for reptiles or "agin' 'em". How does your class stand? There are more superstitions about reptiles than about any other animals. Find out if your class knows any of them. Ask the children to make lists of the common snakes and turtles.

DO YOU KNOW THESE WORDS?

cold-blooded hibernation terrapin
molt reproduce

LISTEN FOR THESE IDEAS

1. Why did scientists put snakes, turtles, lizards, and alligators in one group?
2. What kind of food do reptiles eat?
3. Do you think their eating habits are beneficial to us?
4. How do reptiles reproduce?
5. How do they spend the winter?

SOMETHING TO DO AND TALK ABOUT LATER

1. Learn how to handle a snake.
2. Are snakes and turtles more interesting creatures to study or to pelt with stones?
3. What grievance do hunters of water fowl hold against the turtle?
4. How do you make turtle soup?
5. Are reptiles interesting pets?
6. Read "Turtle Eggs for Agassiz" by Dalles Lore Sharp.

Wisconsin School of the Air
Afield With Ranger Mac
January 27, 1941

"UPON THY BELLY SHALT THOU GO"

Hello Boys and Girls:

"Upon thy belly shalt thou go," Most of you could guess quite readily what we are going to talk about today, even though you could not recall that this was the command that the Lord made to the serpent: "Because thou hast done this, thou are cursed above all cattle, and above every beast of the field; upon thy belly shalt thou go, and dust shalt thou eat all the days of thy life." So from that day to this the snake has had a bad reputation in the mind of the average person. We are going to take a glimpse into the life of two common reptiles today. The word reptile comes from the Latin verb "repo" meaning to crawl, and today we are going to talk about some creatures that crawl.

Somewhere in the deep places in the stone wall which I can see from my window at home, some snakes are passing the winter. I am sure of this because occasionally during the summer I saw snakes in the garden, and saw them take refuge from the heat of the midday sun in the cool recesses of the wall. For a snake can no more stand the direct hot rays of the summer sun than it can the cold blasts of winter. You see the snake has no body temperature of its own. It is a cold-blooded creature, and it is warmed or cooled by the earth against which its body is forever pressed. Exposure to the rays of the hot summer sun, would mean certain death, so when it feels the intense heat within its body, it squirms and twists its way into the crevices of a stone wall and lays its body against the cool damp rocks. There it spends the dark hours of the night in wide-eyed sleep, for a snake has no eyelids. In the morning, after the sun has risen over the treetops and the warmth of the sun's rays has removed the chill from the earth, the snake comes out from its shelter, lies on a stone or the bare ground to get the warmth of the morning sun into its sluggish body, then it is ready to start out on an exploration in search of food.

It is true that most boys and girls never think of a snake as a vertebrate - that is a creature with a backbone, or any bones at all. But the next time you visit a museum you look for the skeleton of a snake. You will be surprised to find quite an array of bones. You will find what is left of the leg bones, which would indicate that the snake had legs once upon a time. There is no breast bone, and so the ribs can expand and accommodate large quantities of food. In fact, the snake is the only animal that can swallow objects larger than itself. The snake has an extra bone hinging the upper jaw to the lower, which allows the jaws to expand widely. To allow for more expansion, the lower jaw separates at the middle and so can spread sidewise. The teeth are pointed backward and the prey is thrust backward into the throat and the body by the movement of the jaws - first the upper then the lower, then the upper and then the lower - gradually working the prey into the body. It may take hours for the snake to swallow its victim, like a toad, and in the meantime the head will have become partly digested while the legs are still hanging from the snake's mouth.

There are many and many interesting things about this wonderful creature, but I think that the most amazing is the way it travels. It is the smoothest, most rhythmic, motion of any living creature; the snake actually flows along like a stream of quick silver. Next summer while on hikes you will see many snakes. Instead of running away from them, watch their movements as they try to get away from you. You will witness a smoothness of motion that is like a wave without wind, or a current of water without a fall. The reason for this is this: the snake has an amazingly large number of vertebrae and ribs, as many as 300 in some snakes. These ribs are connected with crosswise plates or scales on the lower side of the body. Each one of these scales has an edge projecting downward so that it can hold to the earth, or log, or leaves, or anything the snake is traveling over. Sometime next summer, catch a snake, and put it on a marble top table, or a slippery floor, and the poor snake will have a hard time making any progress simply because there is nothing for the plates to hang on to. So a snake walks by

movement of its ribs; it rows on the earth, with each scale for an oar; it bites the dust with the ridges of its body. For cunningness we go to the fox; for keenness of eye to the eagle; for sharpness of claw to the wildcat; for cleverness of defense to the skunk; for wisdom of language to the crow; for sharpness of tooth to the beaver; but for beauty of rhythmic motion we must go to the snake.

Snakes molt; by that I mean they shed their skin. That scaly covering that looks slimy, but is not - has no stretch to it, and as the snake grows the skin does not stretch to allow for that growth. So the snake must grow a new and larger skin beneath the old one to take care of the increased growth. This he does two or three times a year at least. You remember that this is true about the caterpillar, also. When the new skin is ready, the old one becomes loosened. Even the skin covering the eye is loosened and looks milky. At such times the snake is almost blind. When the skin is sufficiently loosened, the snake rubs his head around on the ground until he has broken the connection of the skin around the jaws. Then by crawling among stones or through the grass, the skin is pulled off like a glove. When the dead skin is peeled off, the sight is bright and clear again, and the body smooth and glistening.

But there comes a time when the morning sun no longer warms his body and the earth feels cool beneath his belly, and the air against his extended tongue is cold air, for you know that that forked tongue is the very best means that the snake has of telling what is going on. When the air is cold against that extended tongue and the earth is cold beneath his belly, then a numbness creeps through his coiled length; then he sets forth to find a place for the winter. Slowly he crawls this way and that, until finally he comes to a stone pile or stone wall, and finds a crack made by the frost of some winter. He enters and when he has reached a dark chamber, he is quite sure to find a loose seething mass made by the bodies of other snakes. He loops his body among the coils and becomes one of the mass. Soon his little brain and his whole body become completely

numb, and he goes into his winter's sleep.

I suppose you are interested in how snakes come into this world. Like birds, all snakes come from eggs. These eggs are laid in the ground, under leaves or brush piles and are hatched by the heat of the sun or by heat which comes from the decaying of leaves and othervegetable matter. Sometimes, as in case of our common garter snake, the mother keeps the eggs within her body until the eggs actually hatch. When the young come from the body, it looks as tho they were being born, which, of course, is not true; for that is true of mammals only. The little tropical fish, called guppies, which some folks have in their aquariums, are hatched within the body of the mother and seem to be born alive, just as our common garter snakes are. The eggs of a snake are not pointed like those of birds, round and about the size of a shooter marble, and covered with a leathery covering instead of a brittle shell. The eggs are laid in June and July, 10 to 50 in number, all laid at the same time.

Sometime later on in the year, Ranger Mac is going to tell you how to keep snakes in captivity for study and observation. When you make the acquaintance of the snake you will enjoy its company. Handling a snake is like making your first ski jump. It takes a little nerve to make the first one, but after the first time it becomes a pleasure.

I attended a party sometime ago at which the placecards were turtles. On the underside of the turtle the name was written, so we had to turn the turtles over to find our places. Of course, they were not real turtles. They were made out of the half shell of a walnut. Into this half shell was pushed a gum drop. Cloves were used for legs, and a toothpick was thrust through the gum drop on which a raisin was placed for head and one for the tail. The shell was stained brown with little irregular rectangles painted on the top to make it look like the markings on the shell of a box turtle. It looked like a turtle and was an interesting idea.

The turtle belongs to the same group of creatures as the snake; so does the alligator and crocodile and the lizard - all reptiles. But the turtle is to me one of the most curious creatures living in our climate. Most every one likes the turtle. Maybe it is because it won our friendship when we read the story of the race between the hare and the tortoise, and any one who has seen the picture "Snow White and the Seven Dwarfs" certainly became, then and there, a friend to this shell animal. I understand that the live turtle which posed for the part in the picture is still wandering about the Disney Studio.

The first thing we notice about the turle is its hard shell. The 'house' or shell of the turtle is made up of separate pieces of bone; a central row along the back and the others arranged around on both sides. These are really pieces of skin of the back changed to bone. Some of our ribs are directly under the skin of the back, and if this skin should harden into a bone-like substance, the ribs would lie flat against it just as they do in case of the turtle. We may wonder about the ribs of a turtle being on the outside of the body, but on second thought we learn that this is almost as true of us as it is of these reptiles; except that in the turtle the shoulder bones and the pelvic bones, which we call the hips, are all inside the ribs. This is the only animal with a backbone, only vertebrate, of which this is true. You feel of your shoulder blades or look at a human skeleton and you will find that the second, third, fourth, fifth and sixth pairs of ribs are beneath the shoulder bone, but this is not true of the turtle. You have heard that a turtle grows to a ripe old age. They grow slowly, but they grow for a long time. Some of the sea turtles live to be 400 years old, older than elephants, and I suppose many of our turtles live to be 50 years old. There is a way you can tell the age of a turtle. It is a common experience for many of our Trailhitters to count the rings of a tree to determine the age of the tree. You do a similar thing to determine the age of a turtle. The shell of the turtle is made up of pieces. Each piece grows by the addition of rings of horn at the joints. You count the rings of horn on any one piece,

which is not an easy task with the naked eye, and you can determine the age of the turtle. This is true of the turtles that live in the cold climates where they are compelled to hibernate during the winter. They stop growing during hibernation and when they start growing the next spring, this makes a distinct ring. If you were to cut your initials on the back of a turtle, as some people do, in a few years you would find the initials all spread out.

Every year, in June, the mother turtle leaves the water and takes a little journey on the land in search of a place to lay her eggs. She is quite particular about the place for it must be a sunny spot, a sandy spot, and have good drainage. Sometimes this search takes her across our highways, and that is why we see the squashed remains of so many turtles on our roads in June. When she finds a place to suit her, she hollows out a hole five or six inches deep and then deposits all of her eggs at one time. If she laid one a day as birds do, it would take her several weeks, for she lays from twenty to forty eggs. These eggs are very good to eat. Racoons like them and so do people, when they can find them freshly laid. When the eggs are all in the hole she covers them very carefully to leave no sign of the presence of her treasure. Then she returns to the water and gives no further thought about the fate of her offspring. In August or early September the eggs hatch, and the little youngsters, about the size of a nickel, do some grand scratching to dig out.

Our snapping turtle is about as fierce an animal as we have. They eat most everything, except when in captivity, where they go a whole year sometimes without food. It is almost impossible to raise ducks on ponds that have snapping turtles, for they will seize the foot or leg of a duck, particularly the young ones, pull the bird under water and hold it there until it drowns, then make a meal of it.

Snapping turtles eat plenty of fish also. A snapping turtle will lie at the bottom of a pond or lake, looking like a water-soaked log. From the tip of

its tongue it has two extensions that look like wiggling worms. Attracted by these the fish swim up to grasp them and, quick as an eye-wink, are seized by the cruel mouth of the snapper.