

MISCELLANEA

LAND UNVANQUISHED¹
PARTS IX-XVI

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PART IX.
SNAKE COUNTRY

Also prominent among the animals of the great Tidewater coastal swamps is the large reptilian tribe, cold-blooded creatures who crawl, swim and lumber through this dimly lighted region. Here we have the vast snake tribe, and we cannot help feeling a chill run down our spines whenever we visualize the members of this crawly bunch in action.

First of all are the pit vipers, so called because of a small hole situated between the eye and the nostril; this hole, or pit, is richly supplied with sensory nerves, a device enabling the snake to locate its warm-blooded prey in darkness. Among the pit vipers are some of our most fearsome snakes, the Eastern Diamondback Rattlesnake, an ominously impressive species sometimes attaining a length of eight feet; the Canebrake Rattlesnake, reaching a record length in excess of six-and-a-half feet; the Eastern Cottonmouth, a large snake, gregarious on water banks, and the Copperhead, who is, at the most, four-and-one-half feet long and is the least dangerous of the pit vipers.

Then, of course, there are water snakes such as the above-named Cottonmouth, preferring a semiaquatic existence along water banks, capturing fish, frogs and other prey dwelling in their own aquatic environment.

There is the Brown Water Snake, a dark brown in color, with square, dark blotches; the Banded Water Snake, whose coloration is an intricate alternation of light-and-dark bands; and the Red-Bellied Water Snake, muddy brown above, and a deep orange on the underpart of its body.

Because of a similarity in color patterns, environment and habits, the harmless Brown and Banded Water Snakes are often difficult to distinguish by the amateur herpetologist from the very dangerous Cottonmouth Moccasin; however, the triangular head, elliptical pupils and heavy body of the pit viper should immediately form certain reliable characteristics for distinction in the field.

Certainly the most handsome are the Eastern King Snakes, shiny black-clad, with large, bold links of creamy white; and the Corn Snake, a beautiful red or orange serpent, with darker blotches. The diet of the King Snake consists of other snakes, as well as snake and turtle eggs, while that of the Corn Snake is mostly rodents. Both are powerful constrictors, and the King Snake when annoyed will attack and overpower serpents larger than itself.

South of Albermarle Sound, in Tyrell and Hyde counties, in North Carolina, is one of the largest and wildest stretches of open swamp on the Atlantic coast. One can drive for miles in places there along the highway without encountering a single house; indeed, I have known many to stop their automobiles in the center of one such place, and after having stood in the middle of the empty highway running through this forbidding wilderness, to exclaim aloud: "This is one of the most desolate spots I've ever seen!"

The physical aspects of this place are odd, even unique: the abundant vegetation below is an alternation of thick bushes, ferns and canes, with black pools and canals; above this thick and deep green vegetation stand short pines and many dead trees; these dead trees are numerous enough to form what I would call "A dead forest." The dark green of the living vegetation contrasts so deeply with the light color of the dead pines and cypresses standing above it that they appear a whitish-gray by contrast, making this region quite picturesque indeed; the fact that Black Vultures often stand immobile like sentinels at the summits of these dead trees, gives an additional note of color to this place. In the lower, more open places, "Great



¹Editors' Note: This completes the manuscript entitled Land Unvanquished; background information and parts I-VIII were published in *Banisteria* Number 29.

Trumpets," or *Sarracenia flava*, a member of the insectivorous pitcher plant family, grow in great abundance; I know of no other place where they grow in such big numbers. In early April, their large, yellow flowers delicately tinted with green, remind one of large, yellow tulips, adding their own original note of color tonality to this strange land. One can readily imagine the particular beauty of the scene by the juxtaposition of plants, trees and birds: there are the yellow, tulip-like blossoms of the Great Trumpets, the dark green vegetation above the whitish-gray, dead trees; and topping it all, the stately, Black Vultures perched atop these dead trees. When viewed on a clear, moonlight night, this region appears particularly eerie.

This Tyrell and Hyde counties region, "Ninety-Four," as it is known by those who have been introduced to it, because Ninety-Four is the number of the U.S. Highway crossing most of it, is one of the richest snake regions in the whole United States. Here reptiles seem to grow larger and are more numerous both in the number of individuals and in their species, than in any other single region of its size. Here we also find our largest Southern Copperhead, measuring forty-two inches in length, likewise our largest Pygmy Rattlers; indeed those pygmies we met in Hyde County were almost too big to be called pygmies. Besides its largeness, another peculiarity of the Pygmy in this region is its coloration: reddish is the ground color in the northern part of the range, while light lavender predominates in its more southern ranges. Most of these observations were made by a Mr. William M. Palmer, great Southern Coastal Plain herpetologist from the North Carolina State Museum at Raleigh, who also believes that the Southern Pygmy is a distinct subspecies from its Northern counterpart. Only one Pygmy has ever been found on the Virginia side of the North Carolina State Line; this immature species was discovered in the Northwest River part of the Dismal Swamp on November 4, 1937, and it bears the reddish ground coloration of the Northern range.

Several species of reptiles and amphibians are found in Hyde and Tyrell counties, south of the Dismal Swamp, which are not encountered in the swamp itself: one, the Eastern Diamondback Rattlesnake, has been reported from both Tyrell and Hyde counties; however, this species must be very rare in this northernmost limit, for we have never met it there during any of our many collecting trips.

Alligators are also to be found in limited numbers in

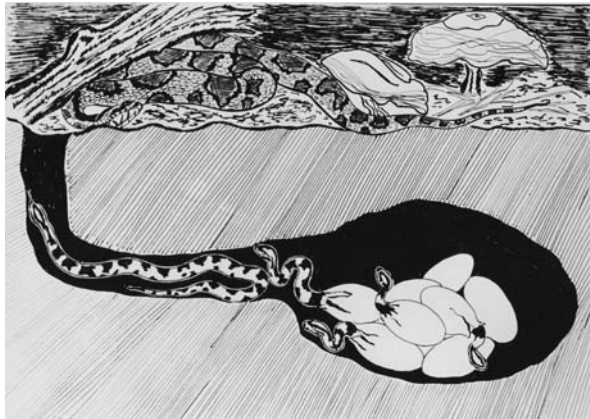
the swamps bordering the Alligator River; once, I personally discovered an Alligator skeleton there.

Here also is found our smallest true toad, the Oak Toad, whose peeping somehow reminds one of a baby chick; and the Little Grass Frog, smallest of the world's small vertebrates, with a total length of from 5/8 to 7/16 of an inch; this little frog was long classified with the chorus frogs in the genus *Pseudacris*, but now that the genus has been revised, it is believed to be a tree frog and is so classified among them in the genus *Hyla*²; if it is a tree frog, it is certainly a primitive one, because its suction pads when contrasted with other tree frogs are not well developed.

The Black Swamp Snake, a small species from ten-to-fifteen inches in total length, shiny black above, with a brilliant orange-red belly, also finds its northern limits in Tyrell and Hyde counties; the Glossy Water Snake, fourteen to twenty-four inches in total length, a definitely aquatic species, whose diet, there is reason to believe, consists mostly of crayfish, and whose best field marks are two distinctly parallel rows of black dots down its belly, and which is so secretive in habit that much more data is needed before it becomes well known; and finally, the handsome Corn Snake. The reason that most of these species do not occur in the Dismal Swamp must be answered by the fact that the presence of such a large body of water as the Albemarle Sound presents a formidable barrier to some of these animals.

In Tyrell County, on a small dirt road at the edge of the forest, is a huge sawdust pile; for years, Corn Snakes have come here to deposit their egg clutches. In early June, the female will deposit her eight or fourteen eggs, maybe in an old Bank Swallow hole near the summit of the sawdust pile, or in some fissure, or in an old toad's burrow, in a round chamber properly provided by the female. Here, the sun's warmth against the sawdust pile itself forms a natural incubator, and the tough but pliable shell shortly shows bulges, as the embryo grows within; by the middle of August, the snakelets pierce this egg envelope. As many as four or five female Corn Snakes will often congregate for a communal egg laying, depositing their clutches of from eight to fourteen eggs close together. On several occasions, I have witnessed this event; one instance, however, I particularly recall: this was on August 18, 1956, at the old sawdust pile in Tyrell County. It was a day of oppressive heat with the humidity and Yellow Flies at their worst. I was digging in the sawdust, following a small hole, when suddenly I began to find clutches of eggs and young Corn Snakes, all close together, separated only by the wall pockets, each one

²The Little Grass Frog has since been returned to the genus *Pseudacris* (see appendix of scientific names).



of which contained an egg clutch, or a bunch of newly-hatched Corn Snakes. During the next few minutes, I did nothing else but dig out eggs and young snakelets until the whole place was literally crawling with them; I counted approximately thirty snakelets and forty eggs!

If you have never been on a collecting trip with a group of herpetologists, both amateurs and professionals, it is definitely something you should do at least once in your lifetime, as it will be an experience you will find both exciting and rewarding; allow me to briefly recount to you here such a snake-hunting trip: the sun was yet high when we reached Highway Ninety-Four, and as our old jalopy chugged along at moderate speed, we could see this strange and desolate landscape rolling by; we could also see the long canal on the right side of the highway with a group of large pseudemid turtles, mostly Yellow-Bellied, often piled on top of one another, basking in the late afternoon warmth. Occasionally, we could see one or two Red-Bellied, a solitary snapper, or again, a Spotted, or Mud Turtle. North America is quite fortunate in having a rich fauna of this interesting reptilian group which were contemporaries of the dinosaurs and have not changed since then. As they lay dozing on a floating log, the Yellow-Bellied group formed a rather interesting composition. They sleep quite lightly, however, and their sense of hearing is exceedingly acute; let one approach the water, and at the slightest sound, they will raise their scrawny, colorfully striped necks in alarm, and with a scraping of carapaces, they will plunge into the inky water with an audible splash.

We sped onward, William Palmer, two young, enthusiastic herpetologists and I. Suddenly, shouts came from the back seat; an area by the edge of the road containing a few logs, bark and some rubbish, was sighted; we quickly brought the automobile to a halt and everyone piled out, snake sticks and all. Bark was turned over, decayed logs split open and broken to pieces. From time to time, a Southern Ring-necked

Snake, a Red-Bellied Snake, a Rough Earth Snake and a serpentine imitation of the earthworm, completely adapted to a life of burrowing, were uncovered from the dank, dark recesses of their respective habitats. All of these diminutive members of the serpentine group, which are of no interest to the general public and whose very existence is generally ignored, are often interesting creatures with unique habits and adaptations.

More bark was torn from tree trunks, more logs demolished, until it looked as though a band of Wild Hogs had been digging away at the ground, logs and stumps, searching for food. The snake tribe probably thought doomsday had arrived. Lucky indeed were those who escaped the overflowing zeal of our young naturalists. We stopped many more times and began to tear away at bark and logs and to dig into the forest floor. The number of reptiles in our collection mounted. Once we heard the excited call of "Black Swamp Snake!" Before one of our young naturalists could snatch it, we all rushed together to see for ourselves this little, black, shiny snake, with its bright orange belly, twisting on a split open log; so far, this was our prize catch of the day, and the third recorded of this species in its northernmost range.

The sun, a golden disc, slowly descended behind the trees, standing in dark silhouettes against the sulphur-colored sky. Night came, and with it, the call of the Chuck-Will's Widow. Now the real collecting would begin by headlights: we began driving very slowly up and down Highway Ninety-Four, and other country roads, with the high beam of our headlights on. Two of us took turns sitting on each of the front fenders, keeping our eyes peeled for reptiles along the edges of the road.

It is a well-known fact that both reptiles and amphibians love to cross tar-surfaced highways at night, especially after a warm, Summer rain: nobody knows the exact reason for it, but since they seem to prefer tar surfaces, it is highly probable that heat is retained in such surfaces. As a direct result of such a practice, both reptiles and amphibians are a number one casualty to night highway motor traffic.

From time to time, someone would shout, "Snake ho!" The jalopy was halted as quickly as possible, and everyone would leap out with flashlights, snake bags, hooks and other collecting paraphernalia. Sometimes it was a Cottonmouth, a Copperhead, a Mud Snake, or a Red-Bellied Water Snake; on two such occasions, a pair of beautiful, adult Corn Snakes were captured. It often happened that the automobile was not brought to a halt quickly enough, and we had to back up for a considerable distance; then we were very lucky if the

snake hadn't disappeared into the weeds before our arrival. Once in a while the headlights would pick up the amber eyes of wild animals by the roadside; we could see them dancing in the tall grass just before they took off for the forest. Once we saw a young Bobcat with arched back, standing on a fungied log for a few seconds before he bounced away into the darkness of the thick brush.

Night collecting also has its disappointments: we made many useless stops for such things as an old discarded fanbelt, an old piece of rag, a chunk of rubble, a stick, or a simple branch; our names for these were "Fanbelt snake," "Rag snake," etc.

Once we had the extreme pleasure of coming upon a large Pigmy Rattlesnake: again everyone piled out of the car while advice was shouted in the darkness; "Careful, don't get bitten now!" or "Let me handle this one, I've had more experience!" During this time, the snake, blinded by all of those lights in his eyes, lay coiled up on the roadway, mouth open, fangs bared and ready to strike until its head was firmly pinned against the tar surface of the road, and it was quickly grabbed by its neck, just back of its head, and thrown into an open collecting bag. Then the whole happy crew of herpetologists would climb back into the broken-down jalopy and drive on down the road, singing and cracking jokes until their next encounter. It was certainly a lucky trip and the reptiles were plentiful.

Now we came close to great Lake Mattamuskeet, located at the end of Highway Ninety-Four, a haven for ducks, Whistling Swans, Snows and Canada Geese. Around a half mile from the lake itself, a long, coiled snake, smack in the middle of the highway, was reflected in our headlights; this time it was a seventy-inch-long, greenish Rat Snake. It was an interesting discovery because this curious variation is peculiar to this region. Rat snakes, genus *Elaphe*, comprise the Corn Snake, the Yellow Rat Snake and the Black Rat Snake; all are excellent climbers and all prey extensively on small rodents.

It was nearly three o'clock in the morning. Monotonous drones of katydids filled the air. A thick mist hung over the lake. By this time, we were somewhat exhausted, so it was decided that we should camp by the lake shore. Blankets and sleeping bags were brought out, and each one selected a spot and stretched out. A fairly strong breeze was blowing, so we counted on it to keep the mosquitoes away. I don't know how long I slept, but I suddenly awoke with an unpleasant sensation and with big welts all over my arms and face. The breeze had died down, and myriads of mosquitoes had descended upon us. I made a beeline

for the car, rolled up all of the windows and stretched out; I was soon joined by another camper; the others stated they were brave enough to withstand the attack. Nothing is more accursed or unpleasant than a mosquito; simply to hear one buzzing nearby is enough to cause me to scratch.

The next morning, we were indeed a ragged bunch of herpetologists as we departed for the Pine Barrens of Morehead City, in North Carolina. As we left, great, tall, Blue Herons on long legs were fishing by the shores of the big lake. A gentle breeze was softly whistling through the Long-Leafed Pines, and the high-pitched trills of the Indigo Buntings fiercely arose from the shrubbery.

We finally did arrive in the Pine Barren area of Morehead City. The landscape here was mostly composed of Long-leafed Pines, the enormous cones of which littered the ground; there was also some heavy grass and bushes, mixed with open, sandy spots. The first signs of reptilian life in the immediate vicinity were the tracks of a Six-lined Racerunner, who left imprints of his tiny feet and tail on the sand. We spent most of the first day collecting but found very little; but what we did find, however, was of interest: we managed to locate one Scarlet Snake, a small banded red-and-white species, with a pointed snout, usually found in or near soil suitable for burrowing; it was a species generally hard to find, therefore much sought after by collectors, and a Crowned Snake: the Crowned Snake, the smallest species in the Great Swamps, is usually from eight-to-ten inches long, possessing poison glands and tiny, grooved fangs in the rear of its jaws. Since its minute teeth can scarcely puncture human skin, its venom is only effective on insects. Just as we were about to leave, I happened to turn over a small log near a bog, and coiled under it was a large Yellow-lipped Snake at least eleven inches long; due to its secretive habits, this species is a fairly rare one among collectors, and I was elated to find it. We decided to call it a day.

One should visit these Pine Barrens in early Spring, when the sweet-scented Vernal Irises thrust forth their blooms; I don't believe there is anywhere a wild flower so attractive and delicate: its petals are blue, faintly tinted with violet and purple, with a golden heart. At this time, its grass-like leaves had not yet matured and were mere buds, so that the flower alone stood on its short stalk, sharply contrasting with its background of white sand, or a rustic carpet of leaves.

So we did finally take our reluctant leave in the crepuscule, just as the Hoary Bats began their swift, erratic flights above the trees.

PART X.
FOREST COMBAT

In the Great Dismal Swamp of Virginia, as elsewhere in nature, the strong rule the weak; so the Scarlet King Snake wages a relentless war upon lizards, his main food item.

Deep inside the dark swamp, just before the flaming, Summer sun finally disappeared for the day, he saw the last ephemeral display of brilliant colors in the western horizon. He slid slowly out from under the bark of an old log where he hid during the day. In the fast gathering dusk, lightning bugs glittered and shadows under the big trees deepened. The night air entering his lungs gave the Scarlet King Snake a sense of euphoria. During the early morning hours and also in the late afternoon, he had grown accustomed to lazily stretching out on an old log; under the sun's warmth, he lay in a condition of semi-torpor; the sun's rays felt very good on his slim body. As the brisk night air sharpened his instincts, however, he grew restless, for he was primarily a night hunter.

Four days ago he had dined on a Broad-Headed Skink, two days of which had been spent digesting his unlucky victim; now the sharp pangs of hunger assailed him, and he truly realized that there would be no rest for him until this basic craving, presently gnawing at his vitals, was completely satisfied. Thus urged on, he silently glided through the fallen branches matting the forest floor. Now and then, he would flick out his forked tongue, feeling every strange object he met: this tongue of his was like a delicate and highly sensitive hand; it was also a hypersensitive olfactory nerve, keeping the snake in absolute contact with his surroundings.

He passed through a certain clearing where the toads were known to hold musical concerts characterized by those high-pitched, tremulous tones of theirs and came to the base of a large pine tree. Deep in a cavity behind the pine bark, an old lizard peacefully slumbered. The Scarlet King Snake came quite close to the old lizard's hiding place. He could even feel the nearness of the lizard, and his tongue flicked frantically, informing him of the lizard's exact position. He slowly and stealthily crawled into the cavity where the lizard slept; then his body coiled upon itself like a steel spring, with every muscle tense; during all this time, the lizard had not even awakened. The Scarlet King Snake suddenly uncoiled with the speed of lightning, and his wide-open jaws tightly fastened in the middle of the lizard's body; a violent struggle at once ensued, and these two adversaries came out into

the open, furiously rolling over and over each other. With time's passage, the battle seemed to be both heedless and exhaustless, their identities being lost in a mad flurry of wiggling bodies. Only death itself could separate them now.

The old lizard, after several vain attempts, finally seized the body of the snake in his own powerful jaws; the Scarlet King Snake felt a mounting pain coursing through his great length, but this pain only served to further aggravate his terrible combat fury: he began to wrap his powerful body of constriction about the lizard; the lizard relaxed for a brief moment, losing his grip on the snake; the snake immediately seized this golden opportunity, and his jaws took a firm hold on the lizard's head.

As he thrashed madly about, the death terror arose instantly within the lizard; but the needle-sharp teeth of the snake, all of which curved inward, made it absolutely impossible for the lizard to break free.

The mortal combat was closing; the lizard was weakening. The loosely articulated and much more movable bones of the snake's head had stretched to accommodate the passage of its prey, and already, half of the lizard's body had disappeared into the snake. As he expired in his death throes, a few jerks coursed through the lizard's body.

As the monotonous drone of the Tree Crickets rang out in the forest, the Scarlet King Snake had, by now, completely swallowed his victim; and as he moved back to his secret retreat, he could already feel the sluggishness of digestion overtaking him. Part of the unfortunate lizard's tail still hung from his mouth.

An Opossum moved in the darkness. Evening Bats were squeaking in the somber sky.

PART XI.
LOST IN THE WILDERNESS

The man was but a casual visitor in the great swamp, and his mind was so busy with those rather meticulous details of nature, he completely overlooked certain reference points which he would later on need to ascertain such a thing as his own geographical location; indeed, he was oblivious to all things save those oft-curious ways of natural history; such as, for instance, the fact that the Sweet Bay Magnolias, which had earlier spread their leaves, were now in full bloom; he noted how their strong fragrance soared skyward. The invisible Wilson's Warblers were singing through the inattentive wilderness.

At the highway's edge, he saw three Ruby-Throat Hummingbirds hovering among the Trumpet Vines,

pausing here and there in mid-air to gather the nectar from their coral flowers; he carefully noted how one male displayed his iridescent, fan-feathered, ruby throat. He left the highway and walked toward the hummingbirds. He paused a second, wonder and amazement written all over his face, as he watched the crazy antics of these tiny birds. Then he faded away into the density of that interlaced, Summer-green woods.

Leaving that highway was certainly not to him a conscious act: the forest wasn't his element, indeed, had never been: yet the utterly ridiculous, even fantastic notion of anything happening to him never entered his head. All he knew then, or cared about, was a Wild Bee's drone, a bird's song, and those curious, Green Anolis running over the tops of fern leaves, flattening themselves at his approach.

At first, he found walking between the large trees to be easy because there was no underbrush; the ground, which was littered with Cypress needles, was soft and damp. "I'll check myself in a minute to see where I am," he said; but he certainly had no thoughts of any impending trouble.

He rested by a creek, and over its sleepy, black water, Spanish Moss hung down in long, gray clusters. In the center of this creek, a dainty Wood Duck with a golden-green head and back, and a chestnut breast, swam with his head bobbing up and down in a sort of rhythmic beat. The duck seemed to him a strange apparition because of its one, red eye fixed calmly on him.

All the usual, woodland noises suddenly ceased, and he realized that it was that time of day before noon when every beast quickly grew still. Despite the obvious fact that he was now in the deep unknown in which there was nothing save that oppressive stillness, he had, as yet, no soaring fears or empty solitude; this was so new to him, so why not enjoy a thrill?

He did, however, start a kind of left-handed retreat to safety by going in the direction of what he thought to be the highway: he walked for what appeared an infinitely long time, but he saw no signs of the highway, not even a break in the trees; so he continued his advance, telling himself, lulling himself into the belief that he should have reached the highway long ago. But when he kept seeing those tall rows of Canes surrounding him like some hostile army, he knew at last and had to admit to himself the fact that he must be lost!

At first, he guarded himself against panic, against throwing himself in a kind of senseless fury against the stalks and vines, letting them tear his clothing to shreds

and against letting those microscopic, Red Bugs fall on his skin and itch so he'd have to scratch himself: all of these things would cause him to use his energy so needed to get out of this place. Yes, it was far better for him to sit down somewhere right now and to think this thing out in a logical manner; one question, however, crept into all of this logic of his: "Why did I leave that highway? Was it just to satisfy my own curiosity, or to see what was behind that curtain of Trumpet Vines, or to trespass where others had not?" He cursed himself with these questions, but now it was too late for questions!

Three Turkey Vultures flew way up on the sky, rising higher and higher, until they disappeared into the blue. Heavy beads of perspiration dropped from his forehead. Tired and a bit tormented by the unhappy turn of events, he sat down on a log, but he wasn't able to remain there long because legions of mosquitoes immediately started to cover up his face and hands.

That pitiless eye of heaven, the sun, had reached and passed its zenith, and by now found him moving onward he knew not where; he had to move, to move anywhere, with that funny-looking twig always waving about his face to keep off the Yellow Flies and mosquitoes.

He stepped over a large log only to recoil with a shock: a big Cottonmouth lashed at him, barely missing his leg; even though it took nearly all of his remaining strength, he rolled that heavy log over on the still-writhing snake.

He craved water, so he scraped away the mantle of green scum spread over an unseen, murky pool he was about to step into, and he avidly drank of it. Overhead a bird with fiery breast whistled on: it was the Yellow-Breasted Chat; its peculiar whistle impregnated the awful stillness with morbidity.

Nightfall found him covered with mud and listening to the din of tree frogs. As he lay tired and dirty against a rotten tree stump, vowing at whatever the cost to sleep, he heard a crash amid the surrounding underbrush: he saw by the light of the full, silver moon, two finely-antlered deer standing there in the clearing. He finally did close his tired eyes in sleep, forgetting altogether his growing concern about that thickly encompassing jungle.

When he awoke the next morning, the east was red with dawn, and the bird with the breast of flame whistled again. He quickly recalled that he had been almost two full days without food in this land of green gloom, this most savage land; so he drank once more of that murky water with its covering of green scum, which he slowly pushed back; he drank in long gulps

like some thirsty, wild animal. He sought the cool shade of the countless trees, yet those merciless mosquitoes were there, too!

He was hungry enough to eat some wild berries, which were certainly bitter, but they also filled his empty stomach. He saw a frog jumping in the grass: he instantly fell upon it, firmly holding it by its hind legs while he killed it. He cleaned out its insides, skinned it and proceeded to chew up its unlucky hide. In his efforts not to vomit it up, this raw frog meat made him swallow very hard. Then he ate some snails that he had earlier dug up under a nearby log. He ate everything without appetite, not from any desire on his part, only out of sheer necessity.

The wilderness mused and brooded, and the immitigable canebrake rose again before him, the trackless, the harsh wilderness against which he was now fighting for his life.

A Tufted Titmouse became annoyed because a White-Tail Deer, while drinking at the pool, got too close to her nest in an abandoned Downy Woodpecker's hole; so the little titmouse raised her pointed crest and began to chatter angrily. The deer, with antlered head, paid no heed to such titmouse chattering until he saw a large, Black Bear, followed by a tiny cub, coming into the pool to bathe and drink; the deer immediately ran for cover.

The nightshades fell. Despite the fact that he had eaten, he was still weak; and he began to develop what some might call a real anxiety regarding his situation. True, he could think, but not so clearly as before; his will to survive was still intact, but it was a will power somewhat diluted by his own physical weakness.

Under the pale, crescent moon, Flying Squirrels, which had emerged from their dead tree holes, opened their parachutes and glided from tree to tree. They were certainly having fun until the sinister Screech Owl made the scene with his spine-shivering notes of doom. The Screech Owl immediately grabbed off a Flying Squirrel in mid-air, holding onto his victim with one, firm talon, he quickly made off into the moonlight with the screaming squirrel; all because his owlets had to be fed. Long after this particular incident occurred, he could plainly hear the mad, weird laughter of Mister Night-Prowling Screech Owl, coming from his address in a dead, White Oak tree.

He heard a high-pitched squeak almost beyond the range of human audibility; he knew then that the Long-Tailed Shrew was again on the loose: this smallest of mammals trotted about nervously on minute feet. His long, thin snout was always twisting up and down, searching, searching with his keen scent; and so keen

was this scent of his that his tiny eyes were of little real value to him. The shrew's appetite was insatiable: every bug, worm and spider within reach was instantly gobbled up, leaving our little friend still hungry.

The shrew finally came upon a centipede who didn't care to be eaten right then. The centipede quickly employed his large mandibles, but the shrew, darting like an arrow in flight, eluded them and crushed the centipede's head. The headless centipede continued this now hopeless struggle with the coordination of its efforts scattered. The crafty shrew, the smallest and most energetic mammal, simply swallowed one by one the countless segments of his enemy, enjoying all the while his latest meal ticket.

The only thing that deterred the shrew from his path of wrath and hunger was the mating call of the female shrew; when he heard this, he was off like a shot to other, more pleasant pursuits.

As he watched these various animals going about the deadly business of their daily existence, he began to learn something from nature: the smart, the more cunning and the strong, yes, above all, the stronger, survive; and the weak ones perish; their flesh makes the earth that much richer for the survivors who now walk on it. "Nature is seldom mild," he slowly repeated to himself. So he became that much more determined to be raw enough to fight his way, by hook or crook, out of his hellhole. It was with such a thought that he fell into a deep sleep, only to awaken from it later on after having an awful nightmare, during the course of which he dreamed he was wading around in a black lagoon full of Cottonmouths; he naturally awoke sweating and screaming out loud, "Snakes, snakes!" weaker than before with sheer fright. He calmed himself later on simply because there was no one else there to do it for him.

He pushed onward again through the humidity and the green density of early dawn. He now found himself dragging his feet; each step was becoming harder to take. It was too late and he was much too tired when he first saw that rattlesnake: he could feel the sting of being bitten, but he really didn't understand what had happened until he felt the authentic pain of the poison as it shot up his left leg, growing more and more unbearable by the second. He remembered then that he had a pocketknife; he took it out of his right pocket and made a crossed incision just above his left ankle where the twin fang marks were two red dots on a white backdrop of flesh. He sucked out the poison and spat it from his mouth onto the damp ground; he performed this function with a gesture of contempt; why, he couldn't tell. His tears of blind agony blurred almost

everything, but he still found the raw guts to smash with his heavy boots, the flat, hammerhead of that sinister rattlesnake!

As his breathing grew more and more labored, he heard the Mourning Doves cooing, and high above the green glade, two Snowy Egrets flew majestically and leisurely upward to the sun. "I'll try to catch one of them" he shouted until the forest, that cruel, green forest echoes and re-echoed with his vain, senseless cries. "Maybe they can show me a way out of this place," he said, not believing then what he said.

He plunged with renewed energies, springing from he knew not where, through that dense cover of vines, canes and briars, everything and anything that stood in his path; he was determined to catch one of those two wonderful, white birds. Then he saw before his eyes that which he once thought he'd never see again, the highway: there it was, hard and bright white in the harsh, morning sunshine; he fell down upon its baking surface, kissing it; and he heard the distant rumble of an approaching truck.

PART XII.

STRANGE NORTH CAROLINA BOGS

The sun rose swiftly, hovering over a large, white cloud hanging low in the sky. The heat, which had become unbearable, now turned into an inferno, as the sun's rays bore down on us. The tar surface of Route Number Two, eight miles south of Wilmington, North Carolina, shimmered in this intense heat. We had reached the mysterious Peat Bogs of the Wilmington area, and our bodies, which were covered with mosquito bites, itched painfully; the Yellow Flies also attacked us in savage hordes, but we kept swatting them methodically from our faces, muttering in hopeless anger.

On the right side of Route Number Two, the sand dunes stretched for half-a-mile, and the land forming them was of a peculiar whiteness; on these sand dunes, dwarfed oaks and pines were growing.

Then, after half-a-mile, the sand dunes abruptly ended; and in their places, were very large, round depressions in the earth several miles in circumference. On the other side, across each of these large, round earth depressions, were more sand dunes; this continued endlessly. Each of these curious, earth depressions was a Peat Bog.

Amazing insect-catching plants grew inside of these Peat Bogs; they grew in a little world of their own there amid the perpetual greenness of the peat moss and ferns covering the bogs themselves. The green cover of the

Peat Bogs was rendered greener still by the whiteness of the sand dunes, so that it appeared to be a dark green; this dark green color was broken in places by brilliant spots, and these spots were the reflected surface of small, stagnant ponds. Upon the black-ink surface of these same ponds, grew the Marsh Marigolds; their yellow blooms resembled gems placed on black velvet.

All about the small ponds, Cattails stood as straight as cadets on dress parade, and beyond them were the Venus Flytraps, this strange and famous member of the plant world: they grew in compact clusters, and the crimson of their leaves strongly suggested scattered rose petals on the green peat moss; then we understood, as never before, the fascination this plant exerted over some insects. With the magnificent surges of Spring, and with the new sap flowing freely through them, they could feel that deep tempo of life violently beating once more; and they stood poised and waiting for any insect that they could wantonly grasp in the clutches of their traps. Although insectivorous plants, like all other plants, they contain chlorophyll and are able to obtain their energy from the sun, the soil on which they thrive is acid and deficient in nitrogen, so that they must snare insects in order to make up for this deficiency.

The circular leaves of the Venus Flytrap were like spring traps mounted on narrow, radiating arms. Along the outer margin of each leaf blade composing these traps was a row of stout teeth. Whenever a butterfly hovered over them, or an ant touched any of the three sensitive hairs which were in the center of each leaf blade, the two halves of the leaf sprang shut, folding along the midrib, bringing together the two rows of teeth, so that the insects were held fast; the Venus Flytrap would then remain closed until they were thoroughly digested: this might take from two days to a week, depending on the size of its quarry.

These Venus Flytraps were operated by an ingenious mechanism: each leaf blade had two types of cell layers; on the upper surface of the leaf blade was a layer of live cells, which when turgid, exerted a downward pressure on a corky, springy layer of dead cells located on the lower surface of the leaf blade. Whenever an insect came into close contact with the sensitive hair on the leaf blade, it caused the upper layer of cells to lose their turgidity, and the corky, dead layer of cells on the lower surface, having no longer any pressure bearing against it, acted as a spring and snapped shut the trap. This whole, intricate mechanism depended on osmosis, which is the diffusion of a liquid through a living membrane, and is one of the most essential processes in the growth of plants.

Besides the Venus Flytrap, other insectivorous plants were also waiting for their quarries: there were the Trumpet Plants, and among the darkened trunks of the short pines which had recently been burned by a devastating fire, they erected hundreds of yellowish-green tubes which stood from two-to-three feet high; within the interiors of most of these tubes were countless victims, and these victims were insects of varying orders and species, ranging from Hemiptera, craneflies and moths; although in some of the tubes, the only victims were of a small species of longhorn beetle. The poor insects, which had been enticed into the Trumpet Plant and trapped by its sticky, sugary fluid lining its tubes, were lost forever within its great depth; innumerable little bristles, pointing downward, made it impossible for any of them to escape in any direction. Their fate was to drown in the water that the plants collected during rains and which partly filled their tubes. In due time, the external digestive juices of the plant would partly dissolve the insects, and they would be absorbed by its living tissues. Some of these plant tubes were so filled with partly digested insects that they exuded unpleasant odors. The only tubes containing no insects at all were those inhabited by certain long-legged spiders of the genus *Tetragnatha*, who had found a home and a place to make a living.

In the shadow of the Peat Bog, was yet another species of curious, insectivorous plant known as the "Pitcher Plant." The green leaves of the Pitcher Plant were more or less suffused with purple and had their margins united so as to form quaint, little pitchers. These little pitchers were similar to the long tubes of the Trumpet Plants in that they were also living traps, traps giving a prey no quarter.

The red flower of the Pitcher Plant, mounted on its long stalk, gently swayed in a lazy south wind; and a Mourning Dove repeated its plaintive notes for approximately half-an-hour; then a Bittern, with a rush of his powerful wings, rose from a Cattail thicket. It was about an hour before dusk, and its nearness could be felt over all the land. The yellow-green tubes of the Trumpet Plants appeared as rather odd objects made of light-colored celluloid, and towering above them were the somber silhouettes of burned pines.

The most bizarre, the most astounding plant or animal is sometimes quite inconspicuous: we had, thus far, been totally unaware that the ground beneath our feet was literally covered with Sundews. These little boy herbs of the insectivorous plant world, so minute in their green surroundings, defied the attention of even the cleverest observer. The sparkling dew which covered them glistened sharply under the receding

evening light, and in the shadows, a common crab spider walked rapidly. Throughout the day, the crab spider lay in ambush among the wild rose petals, moving stealthily upon insects coming to feed on its nectar; it stalked its victims with its powerful, specialized forelegs, then sucked its body juices until the victim grew limp and died, and finally discarded the empty carcass to the four winds.

But now, being impelled by some unknown, natural force, the crab spider advanced rapidly, climbing with great dexterity over the grass blades obstructing its passage. He halted, feeling with his palpi for a brief moment, then hesitated as if he could sense the nearness of an imminent danger he couldn't fully comprehend; he then proceeded on his way and began to ascend the Sundew stem. As he reached the paddle-shaped leaves, what had once appeared to be a harmless dew, was now, in reality, a sticky fluid which served to entice and to trap the Sundew's victims.

At first, the crab spider became only slightly entangled in the sticky fluid; and there was a violent struggle on his part to get free, but this was in vain because it only served to get him that much more entangled. Already, the many little, red tentacles covering the Sundew's leaf had moved with a slow but sure grip over their prey. The fear of death was now deep within the crab spider, and he made frantic efforts to free himself from these now-closing tentacles; but their relentless grip altered not, indeed would not relent until the spider was reduced to a putrefied ooze to become completely absorbed later on into the plant's own hungry, living cells. At last, the spider's struggling stopped, and the Sundew's little, white flowers moved by the gentle evening breeze, nodded with a kind of nonchalant innocence.

Darkness rapidly crept over the bog, and a light fog began to form above its floor. The crests of the sand dunes made gigantic shadows under the light purple sky, and above the sand dunes themselves stood some dead trees with their grotesque forms and smooth trunks glistening in the moonlight; they appeared as so many white ghosts.

PART XIII. LAND OF THE ALLIGATOR AND PIGMY RATTLER

Some distant tree frogs mysteriously spoke, "Na-Naa-Haha-Aaa!" a very low cry, yet piercing; in the still, dewy morning of this wasteland, these echoes sounded even stronger. While far out in the water, fishes quietly swam. Suddenly, birds were singing out

loud and clear with their ringing voices, and the brush itself became aflame with golden sunshine. As he was warbling on a twig, a male Painted Bunting's varied color scheme of bright red, green and indigo metallic sheens glowed in the early morning light. Bank Swallows were high up in the sky, and by the edge of the river, Foxtails were knocking their heads together in the wind. The Spatter Docks, so full of golden pollen, were very yellow on the dark water. Egrets and herons stood erect in the sunshine, and a huge caterpillar, with a painted tail and white bands, twisted nervously on a blade of grass. The Hummingbird Moth drowsily flew, and turtles bounced into the water with loud splashes. Snakes came out along the banks to sun themselves.

We moved into the woods, crossed the low ground and entered the sand dune region.

There was Robby, who was six years old, and who had been born and raised on the borders of this wilderness; at six, he knew more about the wilderness and its creatures than many of those three times his own age. He knew all about reptiles, birds and mammals, and could distinguish the differences between species among the countless insects: Robby, who to be sure, didn't know their Latin names, but who certainly knew a good deal about their natural ways and habitats; a born naturalist himself, their Latin names would come to him later on in life.

Less than an hour ago, Robby had expertly caught a six-foot Coachwhip without once getting bitten by this non-poisonous, yet fierce and extremely fast reptile; one simply cannot imagine how swift this snake is on the ground until one has seen it in action, but little Robby got a good start on him, and he didn't stand a chance! If only the reader could have seen Robby sprinting along like some rabbit over the sand dunes, then suddenly plunging on his quarry, then standing there later on the dune, grinning like a possum, holding fast to this prize! Sam, also a member of our party and himself a bird lover, was afraid of snakes and dared not approach Robby until the Coachwhip was secure inside a bag; then Sam returned to his bird watching, while the rest of us hunted Pigmy Rattlesnakes. Later on, Robby spotted our very first Pigmy Rattlesnake in a tree stump; and our party spent the best part of the morning demolishing old tree stumps; we found a total of five Pigmy Rattlesnakes.

Then we all returned to camp, built a campfire, and while fighting the blowing sand and smoke, cooked ourselves some steaks and sat around the now-smoky fire eating steaks full of sand grains, as we talked of snakes, insects and of the fauna of the locality in general.

Later on that same afternoon, we all went to the

bogs to gather Venus Flytraps, Sundews and Pitcher Plants for the museum collection; it was sunset when we returned to camp. Four of our party trailed behind me: Maurice, Sam, Robby and Larry came up the narrow path carrying on their shoulders cardboard boxes full of Venus Flytraps and Sundews; the wilderness closed in behind them.

I sat silently, watching the sunset over the dunes. Robby's father spoke to me, "Hey, how 'bout goin' Alligator hunting tonight? I've got the gear, flashlight and all."

"That's a good idea," I answered; so we immediately attached the boat trailer behind the car and started down the highway; we drove in darkness through what seemed to me an endless archway of trees; in an hour, we arrived at our destination. From the darkness, came the hoarse, melancholy, weird and anguished sounds and sighs of night birds. In the center, was that lonely highway; and on either side of it, the swamp, infinite, indomitable; while above our heads, the waning moon and that suspiring song of the wind; and the long Spanish Moss covering the trees trembled. Coming from the depths of the dense jungle itself, were the strange mating calls of a dozen different frog species, also the fluent and fluid song of the Chuck-Will's-Widow; these were night voices fusing with the impenetrable jungle itself until they were a part of it. I listened motionless to all of this while contemplating the waning moon. The bloodthirsty mosquitoes craved my hide.

We finally launched our boat. We saw all around us glistening water, and reflected in it were the shadows of low-hanging Spanish Moss. All was calm and quiet. There were only a few ripples on the surface of the still water caused by the movements of our paddles. We moved onward in darkness. We passed huge Cypressess and Gums with their branches twisted into all sorts of shapes.

Then, suddenly, we heard a strange, continuous buzz which gained in volume and intensity as we drew closer to its source. We turned the flashlight on it, and in a large hole in the trunk of a gigantic Cypress tree, thousands of Wild Bees were busy on honeycombs. Robby's father hastily marked this spot for our future reference, while I insisted that we depart from these ominously buzzing insects as quickly as possible.

As the boat continued its steady progress, I could see that we were now in much more open country, as the creek suddenly became a much larger body of water.

Larry's flashlight quickly picked out two big, phosphorescent eyes in the tall reeds near the riverbank; then there were two more, and still another

pair! The Alligators there in the reeds were quiet as death itself, and we came close enough to see them floating with their armor-plated backs and heads partly above the surface of the water; there was something about them antediluvian in appearance.

The waning moon dipped behind a cloud. Those phosphorescent globes that were an Alligator's eyes continued to peer into the darkness, and the whistle of the Chuck-Will's-Widow came at longer and more irregular intervals.

Robby's father corrected his little son: "Durn it, why can't you paddle just a little faster? And quit makin' so much fuss with that paddle!"

Quietly creeping up, we came closer and closer to the gators. I was at the bow of the boat with my noose ready on the end of a long stick, while Larry held the flashlight in the Alligator's eyes. I could now feel my own heart beating fast with excitement as we drew very close to one of the big beasts. I almost had my noose around its neck, but still the beast, blinded by the flashlight in his eyes, didn't move! Now the noose was around its neck, yet it seemed to feel nothing! Then I yanked the noose very fast with a backward and upward motion; there was a strong pull on the noose, and everything seemed to break loose at once! The Alligator pulled, so Sam and I also pulled! Finally, after much effort on our part, the beast was brought into the boat. There was a great twisting and flopping of his powerful tail, as the Alligator broke loose inside of the boat: everyone in the boat grabbed something; two of us caught hold of the Alligator's head and the rest of us grabbed for his now-swishing tail. At last, the eight-foot-long, twisting gator was brought under control and dumped, securely tied, into a burlap sack. The boat became steady again, but all of the commotion had driven most of the Alligators beneath the surface of the water.

In about half-an-hour, another pair of those same glowing eyes were spotted in the tall reeds; and once more we slowly advanced on the Alligator, I with my noose ready! Someone made a slight noise in the water with his paddle, and the Alligator with a bubbling sound, disappeared into the abysmal depths; I could then hear Robby's father, who had become infuriated by this latest failure, heatedly cursing out someone in the darkness.

As we paddled through the reeds, schools of Mulletts, who frequently swam just below the surface, became frightened by our approach and jumped from the water into the air, some accidentally falling into our boat; before it was all over, there were at least two dozen Mulletts flopping about at the bottom of the boat, and these we placed in a bag for later use. We also

stopped once in a while to catch one or two large Bullfrogs. The air had become chilly, and the voice of the Chuck-Will's-Widow was now strangely silent. We all felt somewhat cold and uncomfortable in our damp clothing, so we made for the shore.

Once safely on shore, the flames of our log fire leaped up and brightly lighted our clearing while we fried Mulletts and Bullfrogs impaled on the ends of sticks held over the flames. Larry, who had gone somewhere in the deep woods, quickly returned with a bag of apples; so we ended up with fried Mulletts, Bullfrogs and apples for dessert. It was now two o'clock in the morning: on all sides, the trackless wilderness scared and mused; and the night sounds gradually diminished. After a restful period spent around the campfire, we were once more prepared to paddle away through reeds and swamp.

At the base of a Cypress tree, Robby's piercing eyes noticed a big, nest-like structure made of roots, twigs and leaves, containing many baby Alligators; some of them with their long snouts and large, topaz, narrow-pupilled eyes protruding out of their leathery shells: we counted, in all, twelve baby Alligators. I was personally both delighted and excited over this important discovery because it was my first Alligator nest.

Frolicsome nighttime fires, whether they be those of a type of phosphorescent fungi, glowworm, or the fingers of moonlight lingering at the calm water's edge where the reeds tremble in sharply accented shadows, or if they be the flowing eyes of some animal full of dancing, amber fire, bring into the landscape such fleeting tonalities that are so faint and so subtle, mere words cannot do them proper justice; the faintest hues, which do so much to enliven the breathing darkness and cause it to appear even deeper than it really is, are those soft colors of the night which only the accustomed eye can detect.

The moon reappeared very rapidly, and with her thin beams, she illuminated the forest with her wan light. The trees, silhouetted out of all proportion to their true size, expanded their gloomy branches until they seemed like the ferocious tentacles of some giant octopus. All appeared to slumber, and the mild Summer breeze did scarcely caress one with its own subtle breath.

Quite unexpectedly, the echoing call of the Great-Horned Owl abruptly tore through the silence; it was a call both terrifying and majestic. I saw him perched at the very top of a dead oak tree; his shadow, reflected in the moonlight, appeared dismal to me. The two great phosphorous discs that were his eyes added a tone of ferocity to the scene. The owl suddenly plunged down, cutting the very air with his noiseless wings; all at once,

his shadowy form was swallowed up in the obscurity of the pine thicket: then again, he quickly reappeared, and just as quickly, disappeared. I heard the agonizing cry of a Muskrat who had unwisely fallen prey to the owl's sharp claws. "Be on the alert, oh rabbits, mice and other mammals, for the master of the night is on his hunt!"

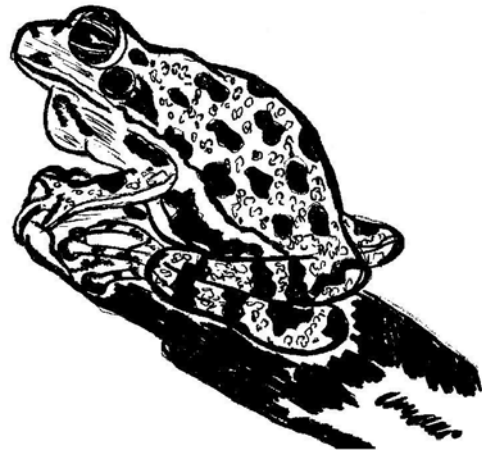
Onward we paddled into the endlessly pale moonlight, until all of my crouched companions seated in the boat bore about them a spectral look. Again, more Alligator eyes were sighted, and we cautiously approached, our paddles barely making a sound. Now the floating body of another, larger Alligator was caught in the beam of our flashlight; it was, by far, the biggest we had seen; it appeared to be at least ten feet long, but the moment we came within reach of it, it quickly plunged under water. We searched up and down the creek for half-an-hour, finally locating its eyes in those tall reeds, only to have it plunge once more under water! This game of hide-and-seek continued for around an hour-and-a-half, with the sly Alligator always plunging under just as I was prepared to pass my noose about it. On several other occasions, we saw its antediluvian form resting upon the silty bottom of amber waters, too far down for the possibility of capture: at last, in high disgust, we gave up this unequal chase.

We passed under a low bridge, and as we entered its low arch, birds suddenly began to fly all over us; we grabbed at pure random; turning on our flashlight, we saw that we were holding two Kingfishers and several Barn Swallows who had been soundly sleeping there. The Kingfishers began uttering their hard, piercing notes, also biting the fingers of their new tormentors. After having carefully observed these beings of the avian world, we very kindly turned them all loose.

As we arrived at our departure point, dawn crept over the land; so we loaded the captured Alligators into the truck and made our way back to camp: at first, due to the heavy fog, we didn't drive too fast; but gradually, as dawn advanced in the sky, the fog lifted, and we could now see the thick woods on both sides of the road, with an egret still in her full nuptial plumage, gracefully walking among the trees. Because Sam wanted a picture of one, on our return trip, we stopped over in the great marsh to observe a Marsh Hawk's nest; we also saw some Otters playing by the shoreline.

PART XIV. LATE SUMMER RAIN

It rains and the big woods dissipate into a gray shadow. The jungle beats with mysterious life. A Snowy Egret with a long neck and a yellow beak,



stands erect, immobile like some stone statue as its white silhouette reflects and lengthens in the inky water. Cypress knees project above the surface in grotesque rows. Everywhere, twisted roots lie mixed atop the alluvial soil. Behind the Snowy Egret, tender, green pine needles stand out in bold relief. Underneath rotten logs, worms and larvae twist around, and dead trees precariously oscillate in the warm wind.

It rains and beneath the gray mist, the somber foliage shudders. The monotonous voices of the Barking Tree Frogs beat a sort of cadence to the silence; their voices are indeed a part of such silence and solitude. The forest seems to breathe deeply. White Lilies in the shadows appear whiter still, and their petals are faintly suffused with green. Large Cottonmouths lie coiled up upon the lagoon's shore, while still others are swimming with sinuous movements, their heads trailing above the surface like small periscopes. On the soft earth are the tracks of bears, wildcats, possums, coons, Otters, Mink and of numerous smaller animals. In the dissolution of dead branches and leaves, numberless insects employ complex metamorphoses. There is also that dismal buzzing of millions of pairs of mosquito wings vibrating together in perfect unison and mixing their sound with that of the drizzling rain.

It rains and the melancholy song of the rain echoes in the solitary, great woods. A Red-Crested Woodpecker drums away, then just as quickly ceases his drumming as a bear noiselessly passes, then drums again. The strident, laughing call of the Pileated Woodpecker rings out in these gloomy swampland alleys; and through the canebrake's density, an Eastern Diamond-Back Rattlesnake, who carries more than twelve rattles on his tail's end crawls heavily and very slowly. Fungi, such as Amanita and Russula, pierce through the damp humus with their bright colors; and on such a mossy carpet as this, a small reptile banded

with scarlet, yellow and black, both wiggles and vibrates his small, black, forked tongue: this living jewel is the Coral Snake whose fangs bear the name of death. The bushes tremble; there is a momentary presence of a fallow light, and the ghostly wildcat with fiery eyes has already disappeared. Among the grasses bordering the river, the amber eyes of Alligators reflect upon the water that small portion of remaining light.

It rains and the great swamp is gradually annihilated by a mist that engulfs the gray effluvium, the bottomless horizon.

I peer into the gray day and unload my sleeping bag that is now soaked through and useless; hoping that it will dry out later on, I hang it on a high branch. My arm is heavy with a bag of snakes I'm currently holding; in the other hand, I hold my precious snake hook which I used in capturing them. Steve, my companion on this trip, also holds a bag containing our prize possessions: two large Banded Rattlesnakes and one Diamond-Back Rattlesnake; each time these snakes are moved about too briskly (which is often) we can both hear their dry rattling.

Steve keeps on saying to me, "Look over there!" and I look where he points; but I can't, as yet, see anything; he keeps right on pointing, saying all the while, "Over there, over there!"

Now I'm slowly but surely beginning to distinguish a gray snake on a gray branch: in fact, everything from the Spanish Moss to the tree trunk, its branches and the horizon itself, are all very gray. Since it is a non-poisonous, Brown Water Snake, I grab it with my bare hands; it makes a vicious attempt to bite me, but I firmly hold it by its neck; I can feel, through my hand, the growing strength of its powerful body as it continues to struggle for freedom. Steve holds the bag open as I drop the Brown Water Snake into it, along with the other non-poisonous species already in there, such as: three Red-Bellied Water Snakes, two Banded Water Snakes, twenty Brown Water Snakes, one Rainbow Snake, one King Snake and two Corn Snakes; the Rainbow, Corn and King snakes are there only until we can find another bag for them.

Steve keeps on talking all the time: "Say, that last one was sure a big snake; it's not often you see one like him."

"I'd say 'bout five feet long," I reply.

So we discover ourselves moving once more through the gray day, with the rain now falling in precipitation; I can feel the unpleasantness of water dripping down my back, while Steve trails behind, sagging under the weight of his wet clothing; his hair plastered down against his head and the little rivulets of water coursing down his face give him the appearance

of a Trappist monk.

At last, we reach the highway where yesterday we parked our automobile; it is indeed time, for now, the rain becomes a real deluge. It does feel good to change into some dry clothes after a day and a night spent in the wet and soggy woods. After a meager meal of cheese and bread, we both roll into our blankets and extinguish the kerosene lamp.

As I lay there in a semi-trance-like sleep induced, no doubt, by the monotonous beating of the rain against the metal rooftop of the car, it was as if I could hear the vast forest speaking, softly whispering: "Man was not yet born, but already, I was the forest, the forest old, yet continually young; young again with each new Springtime bringing the rising sap and the spreading of new, green leaves.

"I can recall the time when Indian tribes roamed through my endless density, who were hunting my deer and my bear with their stone-pointed arrows; one can still see the evidences of their hunting expeditions, marked by the scattered arrowheads yet to be found there. All this was in that happy time when I extended in an almost unbroken alluvial swamp right to the tip of Florida.

"Now, however, highways and canals have been built, crossing my density. All this began soon after the arrival of men with light skins who came ashore on what was then a new continent, not yet known as the United States. These light-skinned men were indeed strange beings, the like of whom I'd never seen before. Unlike the Indians who came before them, who sought to adapt themselves to their environment, these strangers sought only to change their environment to suit their own whims. He began to attack the trees that he used to build houses and barns. He drained large pieces of land and began to plow under the humus that had, through the years, been formed by decomposing leaves.

"The time, however is not far in the past when I covered vast areas now inhabited by man: how long ago was that? Two hundred years, perhaps; two hundred years, for both man and beast, is an eternity; but for trees, who are several times centenarians, it is hardly the time for a few generations!

"When, at last, the murmur of the young trees seems to cease, the older ones continue to speak of the ancient past: they relate a time when Passenger Pigeons flew in such enormous columns they obscured the horizon and how they came crashing through the trees in masses to roost at evening, how branches broke under their weight.

"They also speak of the great panther, or Mountain Lion, who once kept down the deer population; but the

panther no longer slinks in the dense briers; gone, too, is the Ivory Bill Woodpecker and the Carolina Parakeet who used to cavort in gay, colorful groups; alas, all are forever gone! Even the Bobcat has almost vanished, except in some of the more remote areas, where its soft paws still mark the black mud.

“Despite man’s many encroachments I am still a vast land unvanquished. I am the indispensable forest, regulator of water, purifier of air through that secret work of the leaves known as ‘Photosynthesis.’

“I vibrate and sing like the softest harp. I am a deep temple with millions of colonnades. I am an asylum of peace dear alike to both philosopher and poet. I am still the forest eternal and unvanquished!”

PART XV. BEAR HUNT

The first rows of the cedar grove, so deep and so cool, began just beyond the clearing, after which came the canebrake at least four miles in extent, in which also grew a variety of hard timber. Before us was the motionless canal, and on the other side of it, dense woods for twenty-five miles before the first highway broke through them, and beyond that, still more dense woods.

At eleven o’clock in the morning, because of the distance, the first staccato call of the lead hound was indistinctly heard near the highway; and immediately after this, the other hounds also bayed. Nothing more was heard until the afternoon, when all of the hounds again bayed; they were obviously on a cold trail. In order to obliterate his own scent, the bear must have passed through the first clearing near the highway, then taken off through the low, wet ground; that old bear certainly was cunning! The hounds were badly deceived for sometime; we sat there by the canal listening to them run all over the first clearing; however, after a while, the old lead hound crossed the wet ground and once more picked up the bear’s scent; it wasn’t long before the other hounds followed their leader.

While all of this activity was taking place, the old bear remained hidden in the canebrake at the cedar grove’s edge, standing motionless above the short canes, contemplating his surroundings with calm assurance; his subtle olfactory sense had promptly informed him of the dogs’ presence. With his hair erect, his ears trembling, he was waiting and listening to the calls of the hounds. The old bear, who had been hunted many times before this, was almost invincible: before coming to rest, he had described a large circle five miles in circumference, crisscrossed it, then traced

several smaller, concentric circles; it took the hounds quite a while to figure out this maze.

Steve, my faithful companion on this particular trip, stood among the Cattails at the canal’s edge with a mane of black hair almost like the bear’s, holding the big, double-barreled shotgun, waiting and hoping to get a glimpse of the elusive bear.

As the hunt continued, some of the younger hounds often got lost on other trails, but the old lead hound was never distracted; he was hunting the bear and no other animal; his regular calls rallied the other, dispersed hounds.

A Red-Tailed Hawk with a majestic sweep of both wing and tail, alighted on a nearby branch; I kept very still and observed this large and powerful bird of prey.

There was a certain crispness in the air which had come with the approach of Fall: the leaves, however, were still green; they would not change much, for in the great swamps there is seldom that vivid display of color so characteristic of cooler climates. The leaves usually appear to wither without taking on different color tones. Winter comes quite suddenly, and despite that certain crispness, it was still relatively warm. Even if Fall couldn’t be told by the color of the land, there was a certain melancholy feeling all about us: perhaps it was the lack of song, for most of the birds were silent; indeed, outside of a few, scattered gunshots heard during the morning hours, the woodland was quiet.

Several Great Purple Hairstreaks of a later brood were zigzagging about a clump of Spice Bushes, forming a sort of last, vestigial aspect of Summer life; the Great Purple Hairstreak has the most brilliant, changeable coloring of any of our butterflies. The species occurs throughout the southern half of the United States, having spread northward from Central America and Mexico. Its larvae exist on a diet of Mistletoe leaves.

Quite suddenly, twigs began to crack like whips in the stillness; and the first, gaunt hound with long, flopping ears and a wagging tail covered with rusty spots, appeared with his nose to the ground. The hound expertly sniffed a clump of grass, took a few backward steps, then returned to this same clump of grass, moving his head back and forth; he turned around a small bush, then again returned to that same clump of grass; then after suddenly making a quick decision on all of his reflections, he bayed and was off into the cedar grove; the rest of that thin bunch with their flopping ears followed.

The bear, who stood in the short canes without moving, was alerted by the hounds’ clamor: he advanced silently through the thick curtain of canes and briers, coming out about a hundred feet from where

Steve stood in the Cattails; it was then that I heard the twin blasts of the shotgun, but the bear was too far away and his thick hide was hardly grazed by the buckshot. He swam across the canal and disappeared into the dense woods. We recalled our hounds and put them on a fresh scent on the other side of the canal that we crossed on a big log. The hunt continued all the rest of the afternoon, with that old cunning and invincible bear leading the hounds astray each time on false trails; it developed into a real match between the bear and the experienced, old lead hound.

Later on that same afternoon, we saw the old bear again: this time he was running across an open field on the wet ground, with the hounds close behind; however, they were much too far away for any of us to get in another good shot at him. This time he again outmaneuvered his pursuers by swimming across a small lake; the dogs, who knew better than to follow him into the water, circled the shoreline; but the old bear had reached the opposite shore first and had slipped away another time.

Now we all followed this hunt much more closely because we knew that our quarry was tiring. That old invincible bear, after his crossing of the lake, had walked along the trunk of a big, fallen tree which stood a few feet above ground; for awhile, even the old experienced lead hound had lost the scent. We had hunted this old bear for many a year, but each time, the old one had outsmarted us and our dogs; with each new year had come our strong desire that this would be our lucky break and that we would eventually outsmart him after all.

The wind brought to us from afar the muffled sounds of more barking and again there was silence, then this barking commenced a second time and seemed to come nearer to us; we now realized that the hounds were very close to the bear. The barking became stationery, had more continuity to it and grew stronger than ever. The old bear, who had run all day long, was now utterly tired and was making his last stand against the dogs. We figured that he must be about a mile away, on the other side of the low ground. Dashing through the woods and canes, and tripping over stumps and dead branches, we ran in the direction of the barking hounds. When, at last, we arrived upon the scene, we found the old bear to be an imposing spectacle indeed as he stood there erect on his hind legs with his forelegs spread apart in the air, ready to slice wide open with those razor-sharp claws of his the first dog to even dare to come close to him. The hounds, harassed by the long hunt and torn by the briers, were much infuriated by the bear's closeness: they howled with anger, baring their teeth and growling. There was

that old bear standing up there holding himself so proudly erect, and behind him, the sun was slowly sinking into the western horizon: it was all arranged in such a dramatic way that the figure of the bear was rendered in bold relief against that big, red globe, the eternal sun; all of which caused the bear to appear larger than life to the naked eye: and that gang of baying hounds kept encircling him.

Finally, one of the younger hounds jumped toward the bear; with a swipe of his left, front paw, he sent the hound flying into the air with a howl. The pack of dogs immediately stepped back as one; only the old hound alone didn't move: he remained in the bushes, simply flattening himself against the ground, waiting with fiery eyes, waiting for the right moment to pounce at his enemy's throat.

It had been a long and a good hunt; somehow we felt that Old Invincible had earned his freedom for that day: we began to call off the hounds, to say the least, a most difficult job: however, we finally managed to tear them every one away from the old bear and to place leashes on their collars and to drag them off. The young bitch who had been so intent upon attacking the bear, now had a long, deep, red gash across her back; she walked with her tail between her legs; we knew that we must attend to her wound as soon as we reached camp. We just didn't have the heart to shoot down that old bear in cold blood; after all, what would the big swamps be like without the supreme thrill of chasing Old Invincible each Fall?

PART XVI. FALL AND WINTER

The sun's rays beat down but not so fiercely as before; though warm waves could still be occasionally felt, there were days of cool weather; however, these would be replaced again by heat, as soon as the cool waves blew away from the sea and were lost as they scattered over the still-hot earth; nevertheless, the sun's intensity was subtly waning. Over the sprawling mystery of the great swamp, Summer's cycle had closed; and some of the turtles, among them the Spotted and Little Musk, laid their final batches of eggs in rotten stumps.

The "Ka-ka-kowp-kowp," of the elusive Yellow-Billed Cuckoo was no longer heard; and for the first time, this bird, so hard to see because of its secretiveness, could be more easily seen as it was observed flying rapidly from cover into the open, then back again to cover, as it became more gregarious in readiness for its trip to South America.

Summer colors were rapidly fading; there was,

however, one, last effect of Summer's effort: mushrooms, many of which had grown more or less erratically throughout the Summer, were now blooming in a multitude of varied colors and species. In the dimness of that forestland, there grew on a very fragile, high stalk the immaculately white Death Angels, the most deadly organism of the vegetable world, against whose potent poison there is not yet any well-defined antidote; this very delicate but most deadly of the higher fungi, grew in several varieties: the Lemon Yellow Amanita, which is almost identical to the Death Angel variety except for the faint lemon yellow mixed in the ground color, and the Deadly Amanita, faintly suffused with olive brown; these three fatal varieties of the mushroom family grew either singly or in small groups.

Then there were the boleti, with a heavy foot and pores under their caps instead of gills. The Death Trumpets were black and resembled a trumpet.

There were those species which grew on the ground and those which grew on tree trunks: among those growing on tree trunks was the Hedgehog Hydnum, a species which does not tally with one's conception of a true mushroom; it strongly resembles a fair-sized, creamy white ball with downward growing spines on it. The Oyster Mushroom bears the name of that luscious bivalve because of a fancied similarity to it. Less common is the *Hydnum caput-medusae*: freely translated, this scientific name literally means, "Head of the Medusa"; the wavy appearance of the slender spines of this particular mushroom recall to one those snaky locks of Medusa herself, hence the name. Also growing on tree trunks were other bracket fungi whose fruiting bodies were as hard as the wood itself.

Among the ground dwelling varieties were the Bright Capped russulae, outside of the immensely large group of boleti, one of the biggest families of higher fungi. Many of the russulae species are very difficult to distinguish one from another: there were the collybiae, *Collybia radicata*, a species with a thin, tall stalk; so tall, in fact, in proportion to the plant itself that the least air current causes it to vibrate all over.

One mushroom, *Clitopilus abortivus*, exhibited two forms of the fruiting body: one form, the abortive form, somewhat resembled a puff ball; while the normal form was an attractive mushroom.

I could continue with this description of the endless variety to be found among the higher fungi, however, this is not a book on mushrooms; so allow me to simply state here that the number of species seems infinite.

In this modern age of deep-sea diving, we often hear much about the wonders of those colorful ocean depths; let me say right here that the multicolored fungi

are, in my own estimation, as colorful as anything to be found among the barrier reefs. As a matter of fact, the coral mushroom very much resembles the sea corals: *Clavaria fusiformis*, a coral mushroom, shoots like tongues of flame from the mossy beds of the cool woodland; indeed, mushrooms are the true colors of the deep woods, and in those gloomy depths of the swampland, their bright tonalities often carry with them a certain spookiness.

The attractive mushroom itself, as we know it, is not the main part of the plant; it is only the fruiting body. Mushrooms reproduce by means of spores which are generally formed on the gills, or in tubes under the cap, as in the case of the boleti; these spores are very tiny and have been known to exist at high altitudes, having been carried there by the wind currents; as a result of this, mushrooms are very widely distributed. The mushroom plant itself, known as "Mycelium," is a vine often forming a vast network; the Mycelium is formed by the germination of spores.

Mushroom hunting can be a most interesting avocation and is not without its rewards from a gastronomic and scientific viewpoint.

The mushroom is a vegetable that centuries ago graced the tables of the caesars. There are, however, no set rules by which the poisonous and the edible species can be distinguished within the same genus; one must first really know the species; rest assured that knowing the many species is a study which can be followed with thorough intellectual enjoyment.

Around the middle of September, a hurricane passed over the big swamps with a furious velocity: the wind whistled dismally as it felled trees and stripped them of their branches, and the driving rain mercilessly beat down upon the soil. In this dark tempest, some birds flew erratically in their blind flight; the Sooty Tern, fleeing the storm's violence, was brought into the Tidewater area for the first time from Florida's Dry Tortugas. The Raccoons and squirrels, safe in their tree holes, awaited the hurricane's passage; however, many not so fortunate animals were flooded out in their own retreats as the water level rose everywhere.

The tempest finally abated, and on the morning of the third day, the sun shone; the sky was once more blue; freshly broken branches and leaves littered the forest floor. Some of the most secretive creatures of the very deep, such as the Sirens, Amphiuma and the Mud Snakes, disturbed by the hurricane, had come up out of their profound hiding places; we found several of these remarkable amphibians and reptiles in shallow ditches by the roadside. After the hurricane, the weather didn't regain its former warmth; the land gradually cooled off,

and the Cottonmouths began to seek the higher ground.

In the big swamp, where the Wood Ducks nested in the Springtime and the large, old Gum Trees and Cypresses erected their massive trunks, the Cottonmouths began to leave their grass-covered logs where they had spent the Summer and to swim for shore. At the line of demarcation, where the low ground stopped, on which the water in places stood hip-deep, the high ground began; here were captured in no less than an hour's time, fifteen of these large, semi-aquatic reptiles. This was the only period of the year during which I observed any great amount of aggressiveness in these rather placid and lazy reptiles; in fact most of those individuals picked up at the time gave a good fight. On one such occasion, a large snake coiled under some fern leaves, lashed at me without provocation, and I stepped backward in the nick of time. By then, the water itself had considerably cooled off; I sighted a Cottonmouth on the surface, who, when chased, sought the banks where it tried to hide, rather than to plunge beneath the surface; this wasn't true of the water snakes, who seemed to be more tolerant of the drop in water temperature. So the Cottonmouths were migrating to higher ground, seeking suitable places to hibernate.

Most reptiles and amphibians that were scarce after the arrival of hot weather, now began to move about more freely; it is a well-known fact that cold-blooded animals, whose body temperatures vary with their surroundings, cannot stand extremes in heat or cold. In the midst of the Summer heat, most of them hide, going into a state of lethargy known as "Aestivation," a state similar to hibernation; Summer's lethargy is not so profound as Winter's, because in the Summer, rainy periods will bring them out.

Most reptiles were now on the move as they sought hiding places before the coming of Winter. One day, while strolling at the forest edge, I came upon a snake which might have been curious had it been watched by one uninitiated into some of the eccentricities of nature: at my approach, this snake began to flatten and to spread his body as wide as he could; he raised his head and began to flick his tongue and to viciously twist around like a cobra. The snake continued this most remarkable and unique performance by which, no doubt, he hoped to intimidate me. When I refused to give ground, this extraordinary snake suddenly changed his technique and now rolled on his back and lay motionless; he stuck out his tongue, feigning death. I walked over to the reptile and placed him on his belly, but he immediately rolled over on his back again; I several more times attempted this with the same end



result, so intent was the snake upon faking death.

I had met for the first time the amazing Hog-Nosed Snake. The diet of this snake consists almost entirely of toads. The poison glands in the toad's skin have no effect on this particular snake. The Hog-Nosed Snake, in order to better swallow these toads, who puff up when attacked in order to keep from being swallowed, possesses two rear fangs to puncture the puffed up toad, another truly remarkable characteristic of this amazing reptile.

Leaves of the Red Maple and Sweet Gum trees turned crimson, and some of the oak leaves turned copper; outside of this, there was an absence of color. Reptiles were quite active, and there were reports from many places of the finding of at least one Canebrake Rattlesnake; this most quiet and elusive of all the rattlers seemed to be encountered most in the late Fall.

Birds were in migration: the first to depart was the Ruby-Throated Hummingbird; one Autumn night, these dainty and exquisite little birds set out across the Gulf of Mexico, heading straight for Yucatan and Central America, on an incredible, non-stop journey of not less than five hundred miles. Groups of Bank and Barn Swallows congregated on electric wires during the afternoon where they seemed to be holding a kind of conference in soft voices; then suddenly, they, too, were off! One evening, as I happened to be walking by the great marsh, I saw a large number of Tree Swallows flying in small groups of from fifteen-to-twenty each, very low to the ground, on their way to some exotic land; the early evening glow accentuated the metallic sheen of their plumage. One by one, these brave migrators of the avian world departed. Fall activities of the reptiles diminished.

In early evening, as one contemplated the varied forms of moss-laden Cypresses under the delicate rose-pink autumnal sky, one really knew that Winter was almost upon us, and that it would take yet another Springtime to restore the life cycles of this vast, unvanquished land, to restore that new, yet eternal, cycle which would begin with the blooming of the Bloodroot, the Yellow Adder's Tongue, the Carolina Jasmine and the Coral Honeysuckle.

Toward the end of October, cold winds began to blow in from the sea as the Indian Summer vanished. November came with its damp winds and cold rains. So the eternal forest was now still and without one voice, musing in its solitude.

"Oh silent forest, where are your Summer thrills, those calls of Hooded Warblers? Now that the warblers have all gone, you seem plunged into melancholia! It is, indeed, a contagious melancholia that penetrates my whole being until I become a part of this forest mood; it is a most restful mood; I would gladly give up everything just to feel this most wonderful Fall Melancholia, which moves me with each new breath of crisp, Autumn air, and just to watch a golden leaf twirling in the erratic breeze!"

Now the days grew noticeably shorter; darkness crept up much faster. Winter's cold weather had finally set in with a firm footing, and ducks were speeding on their journey from the North: in the early dusk, Pintails, Mallards, Redheads, Canvasbacks and Green-Winged Teals alighted in the marshes among the reeds. One could also see large flights of Canadian Geese who had returned to their favorite marshes; these familiar Canadian Geese who, although they had been gone so long, seemed actually a part of these same marshes; indeed, so much so that it was difficult now to visualize these marshes without them! I was happy to see again their "V" formations in the sky, for there is nothing quite like the rushing sound of hundreds of pairs of wings and the soft, nasal honks of a flock of wild geese in the twilight; it is true poetry and wild life artistry which I hope many will be able to enjoy for generations yet to come, for in so many places today, it has already become one of those aesthetic heritages of our natural world denied to thousands, a sad thing indeed.

The Snow Geese arrived later and I could once more see their large flocks circling and twirling around the marsh; nothing can be quite so spectacular as a flock of these great, white birds with black wing tips, as they soar about before alighting; as they passed through the light rays, their full colors came into play, just before they alighted with a majestic swoop. Thousands of these birds often alight over an open area where the

reeds have been burnt off each year by the conservation department so they may obtain an easier subsistence from the plant roots.

But the most majestic bird to arrive from the North was the Whistling Swan; these usually arrived in smaller flocks than either the Canadian or Snow Geese. Swans are certainly among the most graceful of birds, and it was a great thrill to watch them with their long, thin necks and their upper wing feathers raised over their backs as a sail, riding as if asleep upon the dark blue water.

The small dove which I had rescued after it had fallen from its flimsy nest in early June, was still with us and was now almost a full-fledged member of the Department of Natural History at the Norfolk Museum, or so one would have thought as it sat there on the back of a chair near my desk, industriously preening its feathers. At first, it had been a small, clumsy ball, hardly feathered at all, with a big, soft bill which had to be fed various seeds from my own mouth to replace its mother's "Pigeon milk." It was a helpless, tiny bird, making a lot of peeping sounds; and it required much attention and cuddling: now, however, it had grown to be a pert and sassy bird, who was the very picture of elegance; this same bird, when a clumsy fledgling, couldn't get enough petting; now it wouldn't allow anyone to handle it because it couldn't stand to have its feathers disarranged! Even though it was aloof, it was still a most friendly and gentle bird; and I could never cease admiring this slender and lovely thing daintily picking seeds on the museum's patio. At the slightest rustling of leaves, or any other strange movement or noise, it would promptly fly into the air with whistling wings; and it would alight on my shoulder where it would grow calmer as it preened its feathers and pecked my ears.

During the second week in December, a new bird arrived in Tidewater, the Fulvous Tree Duck: this was the first time this species had been sighted so far North; they were first observed in the great marshes of Back Bay, near the North Carolina State Line, then at Knotts Island in small groups of from eight-to-fourteen individuals. One of the peculiarities of this particular duck was that it did much more gliding than the average duck; in flight, they somewhat reminded one of a hawk. All of these things add up to the one great advantage of being located in the Tidewater area, being so to speak, almost in the center of the great bird flyways; every Winter one sees birds entirely new to this area.

December moved in with a cold, North wind, and there were periods of much frost. Muskrats had a hard

time in the marshes, and so did the Nutria, that huge South American rodent, distant kin to the muskrat, an escapee from the fur farms, who has established himself quite well over most of Tidewater.

Hawks began to arrive from the North: Duck Hawks, Rough-Legged Hawks, Sharp-Shinned Hawks, and even a few Saw-Whets and Snowy Owls; the last two mentioned, though not regular visitors here, came as far as Southern Virginia when their food supply up North became scarce.

One day in mid-December, I experienced the thrill of seeing a Goshawk take off from the top of a dead Cedar Tree which it had selected as a lookout point near an open field so as to watch for its quarry. The Goshawk stayed for the best part of December, so I had an excellent opportunity to observe it several times. After this, I saw the remains of doves and quails almost every time I crossed this open field where the Goshawk had its lookout point.

The Cooper's Hawk, which is a smaller replica of the Goshawk, is a far more familiar sight in the Tidewater area; however, it is no-less fierce than its larger cousin. The Sharp-Shinned Hawk is also very similar to the other two hawks already mentioned; these three belong to a genus known as "*Accipiter*." They are all swift, savage, fearless and merciless and are great destroyers of other birds; this gives hawks in general a bad name, which is most unfortunate, since hawks generally are more beneficial than harmful.

During the long Winter months when reptiles and other fauna and flora are all asleep, I spend most of my time bird watching. Most hawks and owls hunt for rats and mice in the open fields bordering the big swamp; corn and other leftover crops in such fields form a good Winter reserve for these rodents which, in turn, form a basic supply of victims for the wintering hawks and owls.

Once, in late December, I had the opportunity to watch a Loggerhead Shrike in action: I was walking in an open field several hundred feet from the woods, along a barbed wire line bordered by a short pine thicket and some bushes, a very typical environmental set-up for a shrike. A glacial breeze was blowing from the North, when my attention was centered on a bird of familiar attitude; a quick look through my field glasses corroborated immediately my belief that it was a Loggerhead Shrike. I watched this bird for more than an hour as it went through certain typical movements: It would generally hold itself on the barbed wire in a horizontal position with an occasional up-and-down motion of its tail. The shrike kept its eyes constantly on the ground. The bird suddenly dived, then flew close to

the ground for several seconds; it had spotted a Field Mouse. When its prey was reached, it extended its white-bordered tail and wings to their fullest spread, giving the bird a graceful appearance; then it ran along the ground, furiously pecking at its prey.

After having subdued the Field Mouse, the shrike ate the front half of the mouse and impaled the remainder of him on a spine. On another occasion, I saw this same bird repeat this performance; and after each evolution, the bird returned to its perch on the barbed wire. This shrike wasn't wild and seemed undisturbed by my presence; I was able to approach it rather closely several times. Because of certain rather typical habits, the shrike is easily recognized in the field.

By the end of December, heavy snows fell on the big swamp; it doesn't often snow in the mid-Atlantic swampland, but when it does, the snow falls in large flakes, and soon the whole land disappears under a great, white mantle. Generally, after a few days, a big thaw follows and everything underfoot becomes mire. During that year, however, there were unusual frosts, so the snow lasted for an unusually long period, more than two weeks, and the forest edge was like a row of skeletons on a white mantle piece; thus did the whole land sleep under such a mantle, totally unlike the semitropical area to which one had become so accustomed.

Through such northern blizzards, a long bird laboriously pushed southward from Alaska where its food supply had become exhausted; it was a sustained flight, with the bird stopping only for the necessary rest, then pushing onward again through blinding snowstorms, guided only by its own primitive instincts; all known landmarks had disappeared in those thick snowflakes. Then one day, after this long flight, there arrived in a large, open field at the edge of the Dismal Swamp of Southern Virginia, a bird of most noble appearance: black, with greenish-yellow legs and black claws; for the balance of the Winter, this bird soared and hunted in our open fields: it was a Harlan's Hawk, and it came all the way from Western Canada.

Once more I stood, as of old, at the edge of this great wilderness, looking at the dark tree line and the white snow; large snowflakes again began to fall rapidly, and to my left, I saw the prints of a wildcat forming black shadows on the soft, snowy carpet as they disappeared into the briers where the silent beast was now in hiding. I just stood there, not moving, feeling those soft flakes falling on my face; and I thought of these great swamps, my wilderness, fast disappearing before man's rapid advance. Yesterday

untouched, vast, virgin; today retreating more and more before the plow: already one glade, one canebrake, one brier patch have been each one eliminated by the plow. One timbered area fallen under the ax; one low, wet swamp drained by a canal; all such places, once good swampland, now numerous aquatic life breed there no more, where the Cottonmouths can no longer live; these beasts are today constantly retreating before a man-made drought that leaves them strangled.

Appendix.

Scientific names of fungi, plants, and animals mentioned in the text of Land Unvanquished, Parts IX-XVI

(compiled by Steve Roble, with assistance
from Rob Simpson on Fungi)

Fungi

Death Angels	<i>Amanita virosa</i> (probably)
Lemon Yellow Amanita	<i>Amanita citrina</i> (probably)
Deadly Amanita	<i>Amanita brunnescens</i> (probably)
Death Trumpets	<i>Craterellus cornucopioides</i> (= <i>C. fallax</i>)
Oyster Mushroom	<i>Pleurotus ostreatus</i>
Hedgehog Hydnum	<i>Hericium erinaceus</i>

Plants

Yellow Adder's tongue	<i>Ophioglossum vulgatum</i>
Long-Leafed Pine	<i>Pinus palustris</i>
(Bald) Cypress	<i>Taxodium distichum</i>
"cedar grove" (presumably Atlantic White Cedar)	<i>Chamaecyparis thyoides</i>
Cedar Tree (= Eastern Red Cedar)	<i>Juniperus virginiana</i>
Cattail; reeds	<i>Typha angustifolia</i> and/or <i>Typha latifolia</i>
Cane (and canebrake)	<i>Arundinaria gigantea</i>
Foxtail	<i>Alopecurus carolinianus</i>
Spanish Moss	<i>Tillandsia usneoides</i>
Brier (= Greenbrier)	<i>Smilax</i> spp.
Vernal Iris	<i>Iris verna</i>
Wild Iris	<i>Iris virginica</i>
White Oak	<i>Quercus alba</i>
Mistletoe	<i>Phoradendron leucarpum</i>
Spatter dock	<i>Nuphar advena</i>
White (Water) Lily	<i>Nymphaea odorata</i>
Marsh Marigold	<i>Caltha palustris</i>
Sweet Bay Magnolia	<i>Magnolia virginiana</i>
Spice Bush	<i>Lindera benzoin</i>
Bloodroot	<i>Sanguinaria canadensis</i>
Great Trumpets; Trumpet Plant	<i>Sarracenia flava</i>
Pitcher Plant	<i>Sarracenia purpurea</i>
Sundew (with "paddle-shaped leaves")	<i>Drosera intermedia</i>
Venus Flytrap	<i>Dionaea muscipula</i>
Sweet Gum	<i>Liquidambar styraciflua</i>

Red Maple	<i>Acer rubrum</i>
Gums; Gum Tree	<i>Nyssa aquatica</i> and/or <i>Nyssa biflora</i>
Carolina Jasmine	<i>Gelsemium sempervirens</i>
Trumpet Vine	<i>Campsis radicans</i>
Coral Honeysuckle	<i>Lonicera sempervirens</i>

Invertebrates

Red Bug (= Chigger)	<i>Trombicula alfreddugesi</i>
Tree Cricket	<i>Oecanthus</i> sp.
Great Purple Hairstreak	<i>Atlides halesus</i>
Hummingbird Moth	<i>Hemaris thysbe</i>
Yellow Fly	<i>Diachlorus ferrugatus</i>
Wild Bee (= Honey Bee)	<i>Apis mellifera</i>

Fish

Mullet	<i>Mugil cephalus</i>
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Amphibians

Amphiuma	<i>Amphiuma means</i>
Sirens	<i>Siren intermedia</i> and/or <i>Siren lacertina</i>
Oak Toad	<i>Bufo quercicus</i>
Little Grass Frog	<i>Pseudacris ocularis</i>
Barking Tree Frog	<i>Hyla gratiosa</i>
Bullfrog	<i>Rana catesbeiana</i>

Reptiles

Alligator	<i>Alligator mississippiensis</i>
Mud Turtle	<i>Kinosternon subrubrum</i>
Little Musk Turtle (= Stinkpot)	<i>Sternotherus odoratus</i>
Spotted Turtle	<i>Clemmys guttata</i>
Red-Bellied Turtle	<i>Pseudemys rubriventris</i>
Yellow-Bellied Turtle	<i>Trachemys scripta scripta</i>
(Snapping Turtle); "snapper"	<i>Chelydra serpentina</i>
Broad-Headed Skink	<i>Eumeces laticeps</i>
Six-lined Racerunner	<i>Aspidoscelis sexlineata</i>
Green Anolis	<i>Anolis carolinensis</i>
Mud Snake	<i>Farancia abacura</i>
Rainbow Snake	<i>Farancia erytrogramma</i>
Eastern King Snake	<i>Lampropeltis getula getula</i>
Scarlet King Snake	<i>Lampropeltis triangulum elapsoides</i>
Hog-Nosed Snake	<i>Heterodon platirhinos</i>
Corn Snake	<i>Elaphe guttata</i>
Black Rat Snake (= Eastern Ratsnake)	<i>Elaphe alleghaniensis</i>
Yellow Rat Snake	<i>Elaphe alleghaniensis</i>
Black Swamp Snake	<i>Seminatrix pygaea</i>
Southern Ring-necked Snake	<i>Diadophis punctatus punctatus</i>
Red-Bellied Snake	<i>Storeria occipitomaculata</i>
Worm Snake ("serpentine imitation of the earthworm")	<i>Carphophis amoenus</i>
Crowned Snake	<i>Tantilla coronata</i>
Rough Earth Snake	<i>Virginia striatula</i>
Scarlet Snake	<i>Cemophora coccinea</i>
Yellow-Lipped Snake	<i>Rhadinea flavilata</i>

