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The Riverside Literature Series

[Pg 1]

THE WIT OF A DUCK

AND OTHER PAPERS

BY

JOHN BURROUGHS



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CONTENTS

I. THE WIT OF A DUCK	5
II. AN ASTONISHED PORCUPINE	10
III. HUMAN TRAITS IN THE ANIMALS	14
IV. THE DOWNY WOODPECKER	22
V. A BARN-DOOR OUTLOOK	27
VI. WILD LIFE IN WINTER	47
VII. BIRD LIFE IN WINTER	54
VIII. A BIRDS' FREE LUNCH	63
IX. BIRD-NESTING TIME	70
X. A BREATH OF APRIL	77
XI. THE WOODCOCK'S EVENING HYMN	83
XII. THE COMING OF SUMMER	89

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JOHN BURROUGHS

[Pg 3]

John Burroughs was born April 3, 1837, in a little farmhouse among the Catskill Mountains. He was, like most other country boys, acquainted with all the hard work of farm life and enjoyed all the pleasures of the woods and streams. His family was poor, and he was forced at an early date to earn his own living, which he did by teaching school. At the age of twenty-five he chanced to read a volume of Audubon, and this proved the turning-point in his life, inspiring a new zeal for the study of birds and enabling him to see with keener eyes not only the birds themselves, but their nests and surroundings, and to hear with more discernment the peculiar calls and songs of each.

About the time of the Civil War he accepted a clerkship in the Treasury Department at Washington, where he remained nine years. It was here that he wrote his first book, "Wake-Robin," and a part of the second, "Winter Sunshine." He says: "It enabled me to live over again the days I had passed with the birds and in the scenes of my youth. I wrote the book sitting at a desk in front of an iron wall. I was the keeper of a vault in which many millions of banknotes were stored. During my long periods of leisure I took refuge in my pen. How my mind reacted from the iron wall in front of me, and sought solace in memories of the birds and of summer fields and woods!" In 1873 he exchanged the iron wall in front of his desk for a large window overlooking the Hudson, and the vault for a vineyard. Since then he has lived on the banks of the Hudson in the midst of the woods and fields which he most enjoys, adding daily to his fund of information regarding the ways of nature. His close habit of observation, coupled with his rare gift of imparting to the reader something of his own interest and enthusiasm, has enabled him to interpret nature in a most delightfully fascinating way. He gives the key to his own success when he says, "If I name every bird I see in my walk, describe its color and ways, etc., give a lot of facts or details about the bird, it is doubtful if my reader is interested. But if I relate the bird in some way to human life, to my own life,—show what it is to me and what it is in the landscape and the season,—then do I give my reader a live bird and not a labeled specimen."

[Pg 4]

Mr. Burroughs thoroughly enjoys the country life, and in his strolls through the woods or in the fields he is always ready to stop and investigate anything new or interesting that he may chance to see among the birds, or squirrels, or bees, or insects. His long life of observation and study has developed remarkably quick eyesight and a keen sense of hearing, which enable him to detect all the activities of nature and to place a correct interpretation upon them to an extent that few other naturalists have realized.

When he writes he is simply living over again the experiences which have delighted him, and the best explanation of the rare pleasure that is imparted by his writings to every reader is given in

his own words: "I cannot bring myself to think of my books as 'works,' because so little 'work' has gone to the making of them. It has all been play. I have gone a-fishing or camping or canoeing, and new literary material has been the result.... The writing of the book was only a second and finer enjoyment of my holiday in the fields or woods; not till the writing did it really seem to strike in and become part of me"; and so the reader seems to participate in this "finer enjoyment" of a holiday in the fields or woods, walking arm-in-arm with the naturalist, feeling the influence of his poetic temperament, learning something new at every turn, and sharing the master's enthusiasm.

I

[Pg 5]

THE WIT OF A DUCK

The homing instinct in birds and animals is one of their most remarkable traits: their strong local attachments and their skill in finding their way back when removed to a distance. It seems at times as if they possessed some extra sense—the home sense—which operates unerringly. I saw this illustrated one spring in the case of a mallard drake.

My son had two ducks, and to mate with them he procured a drake of a neighbor who lived two miles south of us. He brought the drake home in a bag. The bird had no opportunity to see the road along which it was carried, or to get the general direction, except at the time of starting, when the boy carried him a few rods openly.

He was placed with the ducks in a spring run, under a tree in a secluded place on the river slope, about a hundred yards from the highway. The two ducks treated him very contemptuously. It was easy to see that the drake was homesick from the first hour, and he soon left the presence of the scornful ducks.

Then we shut the three in the barn together, and kept them there a day and a night. Still the friendship did not ripen; the ducks and the drake separated the moment we let them out. Left to himself, the drake at once turned his head homeward, and started up the hill for the highway.

[Pg 6]

Then we shut the trio up together again for a couple of days, but with the same results as before. There seemed to be but one thought in the mind of the drake, and that was home.

Several times we headed him off and brought him back, till finally on the third or fourth day I said to my son, "If that drake is really bound to go home, he shall have an opportunity to make the trial, and I will go with him to see that he has fair play." We withdrew, and the homesick mallard started up through the currant patch, then through the vineyard toward the highway which he had never seen.

When he reached the fence, he followed it south till he came to the open gate, where he took to the road as confidently as if he knew for a certainty that it would lead him straight to his mate. How eagerly he paddled along, glancing right and left, and increasing his speed at every step! I kept about fifty yards behind him. Presently he met a dog; he paused and eyed the animal for a moment, and then turned to the right along a road which diverged just at that point, and which led to the railroad station. I followed, thinking the drake would soon lose his bearings, and get hopelessly confused in the tangle of roads that converged at the station.

[Pg 7]

But he seemed to have an exact map of the country in his mind; he soon left the station road, went around a house, through a vineyard, till he struck a stone fence that crossed his course at right angles; this he followed eastward till it was joined by a barbed wire fence, under which he passed and again entered the highway he had first taken. Then down the road he paddled with renewed confidence: under the trees, down a hill, through a grove, over a bridge, up the hill again toward home.

Presently he found his clue cut in two by the railroad track; this was something he had never before seen; he paused, glanced up it, then down it, then at the highway across it, and quickly concluded this last was his course. On he went again, faster and faster.

He had now gone half the distance, and was getting tired. A little pool of water by the roadside caught his eye. Into it he plunged, bathed, drank, preened his plumage for a few moments, and then started homeward again. He knew his home was on the upper side of the road, for he kept his eye bent in that direction, scanning the fields. Twice he stopped, stretched himself up, and scanned the landscape intently; then on again. It seemed as if an invisible cord was attached to him, and he was being pulled down the road.

Just opposite a farm lane which led up to a group of farm buildings, and which did indeed look like his home lane, he paused and seemed to be debating with himself. Two women just then came along; they lifted and flirted their skirts, for it was raining, and this disturbed him again and decided him to take to the farm lane. Up the lane he went, rather doubtingly, I thought.

[Pg 8]

In a few moments it brought him into a barnyard, where a group of hens caught his eye. Evidently he was on good terms with hens at home, for he made up to these eagerly as if to tell them his troubles; but the hens knew not ducks; they withdrew suspiciously, then assumed a threatening attitude, till one old "dominic" put up her feathers and charged upon him viciously.

Again he tried to make up to them, quacking softly, and again he was repulsed. Then the cattle in the yard spied this strange creature and came sniffing toward it, full of curiosity.

The drake quickly concluded he had got into the wrong place, and turned his face southward again. Through the fence he went into a plowed field. Presently another stone fence crossed his path; along this he again turned toward the highway. In a few minutes he found himself in a corner formed by the meeting of two stone fences. Then he turned appealingly to me, uttering the soft note of the mallard. To use his wings never seemed to cross his mind.

Well, I am bound to confess that I helped the drake over the wall, but I sat him down in the road as impartially as I could. How well his pink feet knew the course! How they flew up the road! His green head and white throat fairly twinkled under the long avenue of oaks and chestnuts. [Pg 9]

At last we came in sight of the home lane, which led up to the farmhouse one hundred or more yards from the road. I was curious to see if he would recognize the place. At the gate leading into the lane he paused. He had just gone up a lane that looked like that and had been disappointed. What should he do now? Truth compels me to say that he overshot the mark: he kept on hesitatingly along the highway.

It was now nearly night. I felt sure the duck would soon discover his mistake, but I had not time to watch the experiment further. I went around the drake and turned him back. As he neared the lane this time he seemed suddenly to see some familiar landmark, and he rushed up it at the top of his speed. His joy and eagerness were almost pathetic.

I followed close. Into the house yard he rushed with uplifted wings, and fell down almost exhausted by the side of his mate. A half hour later the two were nipping the grass together in the pasture, and he, I have no doubt, was eagerly telling her the story of his adventures.

II

AN ASTONISHED PORCUPINE

One summer, while three young people and I were spending an afternoon upon a mountaintop, our dogs treed a porcupine. At my suggestion the young man climbed the tree—not a large one—to shake the animal down. I wished to see what the dogs would do with him, and what the "quill-pig" would do with the dogs. As the climber advanced the rodent went higher, till the limb he clung to was no larger than one's wrist. This the young man seized and shook vigorously. I expected to see the slow, stupid porcupine drop, but he did not. He only tightened his hold. The climber tightened his hold, too, and shook the harder. Still the bundle of quills did not come down, and no amount of shaking could bring it down. Then I handed a long pole up to the climber, and he tried to punch the animal down. This attack in the rear was evidently a surprise; it produced an impression different from that of the shaking. The porcupine struck the pole with his tail, put up the shield of quills upon his back, and assumed his best attitude of defense. Still the pole persisted in its persecution, regardless of the quills; evidently the animal was astonished: he had never had an experience like this before; he had now met a foe that despised his terrible quills. Then he began to back rapidly down the tree in the face of his enemy. The young man's sweetheart stood below, a highly interested spectator. "Look out, Sam, he's coming down!" "Be quick, he's gaining on you!" "Hurry, Sam!" Sam came as fast as he could, but he had to look out for his footing, and his antagonist did not. Still, he reached the ground first, and his sweetheart breathed more easily. It looked as if the porcupine reasoned thus: "My quills are useless against a foe so far away; I must come to close quarters with him." But, of course, the stupid creature had no such mental process, and formed no such purpose. He had found the tree unsafe, and his instinct now was to get to the ground as quickly as possible and take refuge among the rocks. As he came down I hit him a slight blow over the nose with a rotten stick, hoping only to confuse him a little, but much to my surprise and mortification he dropped to the ground and rolled down the hill dead, having succumbed to a blow that a woodchuck or a coon would hardly have regarded at all. Thus does the easy, passive mode of defense of the porcupine not only dull his wits, but it makes frail and brittle the thread of his life. He has had no struggles or battles to harden and toughen him. [Pg 11]

That blunt nose of his is as tender as a baby's, and he is snuffed out by a blow that would hardly bewilder for a moment any other forest animal, unless it be the skunk, another sluggish non-combatant of our woodlands. Immunity from foes, from effort, from struggle is always purchased with a price. [Pg 12]

Certain of our natural history romancers have taken liberties with the porcupine in one respect: they have shown him made up into a ball and rolling down a hill. One writer makes him do this in a sportive mood; he rolls down a long hill in the woods, and at the bottom he is a ragged mass of leaves which his quills have impaled—an apparition that nearly frightened a rabbit out of its wits. Let any one who knows the porcupine try to fancy it performing a feat like this!

Another romancer makes his porcupine roll himself into a ball when attacked by a panther, and then on a nudge from his enemy roll down a snowy incline into the water. I believe the little European hedgehog can roll itself up into something like a ball, but our porcupine does not. I have tried all sorts of tricks with him, and made all sorts of assaults upon him, at different times,

and I have never yet seen him assume the globular form. It would not be the best form for him to assume, because it would partly expose his vulnerable under side. The one thing the porcupine seems bent upon doing at all times is to keep right side up with care. His attitude of defense is crouching close to the ground, head drawn in and pressed down, the circular shield of large quills upon his back opened and extended as far as possible, and the tail stretched back rigid and held close upon the ground. "Now come on," he says, "if you want to." The tail is his weapon of active defense; with it he strikes upward like lightning, and drives the quills into whatever they touch. In his chapter called "In Panoply of Spears," Mr. Roberts paints the porcupine without taking any liberties with the creature's known habits. He portrays one characteristic of the porcupine very felicitously: "As the porcupine made his resolute way through the woods, the manner of his going differed from that of all the other kindreds of the wild. He went not furtively. He had no particular objection to making a noise. He did not consider it necessary to stop every little while, stiffen himself to a monument of immobility, cast wary glances about the gloom, and sniff the air for the taint of enemies. He did not care who knew of his coming, and he did not greatly care who came. Behind his panoply of biting spears he felt himself secure, and in that security he moved as if he held in fee the whole green, shadowy, perilous woodland world."

[Pg 13]

III

[Pg 14]

HUMAN TRAITS IN THE ANIMALS

That there is a deal of human nature in the lower animals is a very obvious fact; or we may turn the proposition around and say, with equal truth, that there is a deal of animal nature in us humans. If man is of animal origin, as we are now all coming to believe, how could this be otherwise? We are all made of one stuff, the functions of our bodies are practically the same, and the workings of our instincts and our emotional and involuntary natures are in many ways identical. I am not now thinking of any part or lot which the lower orders may have in our intellectual or moral life, a point upon which, as my reader may know, I diverge from the popular conception of these matters, but of the extent in which they share with us the ground or basement story of the house of life—certain fundamental traits, instincts, and blind gropings.

Man is a bundle of instincts, impulses, predilections, race and family affinities, and antagonisms, supplemented by the gift of reason—a gift of which he sometimes makes use. The animal is a bundle of instincts, impulses, affinities, appetites, and race traits, without the extra gift of reason.

[Pg 15]

The animal has sensation, perception, and power of association, and these suffice it. Man has sensation, perception, memory, comparison, ideality, judgment, and the like, which suffice him.

There can be no dispute, I suppose, as to certain emotions and impulses being exclusively human, such as awe, veneration, humility, reverence, self-sacrifice, shame, modesty, and many others that are characteristic of what we call our moral nature. Then there are certain others that we share with our dumb neighbors—curiosity, jealousy, joy, anger, sex love, the maternal and paternal instinct, the instinct of fear, of self-preservation, and so forth.

There is at least one instinct or faculty that the animals have far more fully developed than we have—the homing instinct, which seems to imply a sense of direction that we have not. We have lost it because we have other faculties to take its place, just as we have lost that acute sense of smell that is so marvelously developed in many of the four-footed creatures. It has long been a contention of mine that the animals all possess the knowledge and intelligence which is necessary to their self-preservation and the perpetuity of the species, and that is about all. This homing instinct seems to be one of the special powers that the animals cannot get along without. If the solitary wasp, for instance, could not find her way back to that minute spot in the field where her nest is made, a feat quite impossible to you or me, so indistinguishable to our eye is that square inch of ground in which her hole is made; or if the fur seal could not in spring retrace its course to the islands upon which it breeds, through a thousand leagues of pathless sea water, how soon the tribe of each would perish!

[Pg 16]

The animal is, like the skater, a marvel of skill in one field or element, or in certain fixed conditions, while man's varied but less specialized powers make him at home in many fields. Some of the animals outsee man, outsmell him, outhear him, outrun him, outswim him, because their lives depend more upon these special powers than his does; but he can outwit them all because he has the resourcefulness of reason, and is at home in many different fields. The condor "houses herself with the sky" that she may have a high point of observation for the exercise of that marvelous power of vision. An object in the landscape beneath that would escape the human eye is revealed to the soaring buzzard. It stands these birds in hand to see thus sharply; their dinner depends upon it. If mine depended upon such powers of vision, in the course of time I might come to possess it. I am not certain but that we have lost another power that I suspect the lower animals possess—something analogous to, or identical with, what we call telepathy—power to communicate without words, or signs, or signals. There are many things in animal life, such as the precise concert of action among flocks of birds and fishes and insects, and, at times, the unity of impulse among land animals, that give support to the notion that the wild creatures in some way come to share one another's mental or emotional states to a degree and in a way that we know little or nothing of. It seems important to their well-being that they should have such a gift—something to make good to them the want of language and mental concepts, and insure unity of

[Pg 17]

action in the tribe. Their seasonal migrations from one part of the country to another are no doubt the promptings of an inborn instinct called into action in all by the recurrence of the same outward conditions; but the movements of the flock or the school seem to imply a common impulse that is awakened on the instant in each member of the flock. The animals have no systems or methods in the sense that we have, but like conditions with them always awaken like impulses, and unity of action is reached without outward communication.

The lower animals seem to have certain of our foibles, and antagonisms, and unreasoning petulancies. I was reminded of this in reading the story President Roosevelt tells of a Colorado bear he once watched at close quarters. The bear was fussing around a carcass of a deer, preparatory to burying it. "Once the bear lost his grip and rolled over during the course of some movement, and this made him angry and he struck the carcass a savage whack, just as a pettish child will strike a table against which it has knocked itself." Who does not recognize that trait in himself: the disposition to vent one's anger upon inanimate things—upon his hat, for instance, when the wind snatches it off his head and drops it in the mud or leads him a chase for it across the street; or upon the stick that tripped him up, or the beam against which he bumped his head? We do not all carry our anger so far as did a little three-year-old maiden I heard of, who, on tripping over the rockers of her chair, promptly picked herself up, and carrying the chair to a closet, pushed it in and spitefully shut the door on it, leaving it alone in the dark to repent its wrong-doing.

[Pg 18]

Our blind, unreasoning animal anger is excited by whatever opposes or baffles us. Of course, when we yield to the anger, we do not act as reasonable beings, but as the unreasoning animals. It is hard for one to control this feeling when the opposition comes from some living creature, as a balky horse or a kicking cow, or a pig that will not be driven through the open gate. When I was a boy, I once saw one of my uncles kick a hive of bees off the stand and halfway across the yard, because the bees stung him when he was about to "take them up." I confess to a fair share of this petulant, unreasoning animal or human trait, whichever it may be, myself. It is difficult for me to refrain from jumping upon my hat when, in my pursuit of it across the street, it has escaped me two or three times just as I was about to put my hand upon it, and as for a balky horse or a kicking cow, I never could trust myself to deal reasonably with them. Follow this feeling back a few thousand years, and we reach the time when our forbears looked upon all the forces in nature as in league against them. The anger of the gods as shown in storms and winds and pestilence and defeat is a phase of the same feeling. A wild animal caught in a steel trap vents its wrath upon the bushes and sticks and trees and rocks within its reach. Something is to blame, something baffles it and gives it pain, and its teeth and claws seek every near object. Of course it is a blind manifestation of the instinct of self-defense, just as was my uncle's act when he kicked over his beehive, or as is the angler's impatience when his line gets tangled and his hook gets fast. If the Colorado bear caught his fish with a hook and line, how many times would he lose his temper during the day!

[Pg 19]

I do not think many animals show their kinship to us by exhibiting the trait I am here discussing. Probably birds do not show it at all. I have seen a nest-building robin baffled and delayed, day after day, by the wind that swept away the straws and rubbish she carried to the top of a timber under my porch. But she did not seem to lose her temper. She did not spitefully reclaim the straws and strings that would persist in falling to the porch floors, but cheerfully went away in search of more. So I have seen a wood thrush time after time carrying the same piece of paper to a branch from which the breeze dislodged it, without any evidence of impatience. It is true that when a string or a horsehair which a bird is carrying to its nest gets caught in a branch, the bird tugs at it again and again to free it from entanglement, but I have never seen any evidence of impatience or spite against branch or string, as would be pretty sure to be the case did my string show such a spirit of perversity. Why your dog bites the stone which you roll for him when he has found it, or gnaws the stick you throw, is not quite clear, unless it be from the instinct of his primitive ancestors to bite and kill the game run down in the chase. Or is the dog trying to punish the stick or stone because it will not roll or fly for him? The dog is often quick to resent a kick, be it from man or beast, but I have never known him to show anger at the door that slammed to and hit him. Probably, if the door held him by his tail or his limb, it would quickly receive the imprint of his teeth.

[Pg 20]

In reading Bostock on the "Training of Wild Animals," my attention was arrested by the remark that his performing lions and tigers are liable to suffer from "stage fright," like ordinary mortals, but that "once thoroughly accustomed to the stage, they seem to find in it a sort of intoxication well known to a species higher in the order of nature;" and furthermore, that "nearly all trainers assert that animals are affected by the attitude of an audience, that they are stimulated by the applause of an enthusiastic house, and perform indifferently before a cold audience." If all this is not mere fancy, but is really a fact capable of verification, it shows another human trait in animals that one would not expect to find there. Bears seem to show more human nature than most other animals. Bostock says that they evidently love to show off before an audience: "The conceit and good opinion of themselves, which some performing bears have, is absolutely ridiculous." A trainer once trained a young bear to climb a ladder and set free the American flag, and so proud did the bear become of his accomplishment, that whenever any one was looking on he would go through the whole performance by himself, "evidently simply for the pleasure of doing it." Of course there is room for much fancy here on the part of the spectator, but bears are in so many ways—in their play, in their boxing, in their walking—such grotesque parodies of man, that one is induced to accept the trainer's statements as containing a measure of truth.

[Pg 21]

IV

THE DOWNY WOODPECKER

I

It always gives me a little pleasurable emotion when I see in the autumn woods where the downy woodpecker has just been excavating his winter quarters in a dead limb or tree-trunk. I am walking along a trail or wood-road when I see something like coarse new sawdust scattered on the ground. I know at once what carpenter has been at work in the trees overhead, and I proceed to scrutinize the trunks and branches. Presently I am sure to detect a new round hole about an inch and a half in diameter on the under side of a dead limb, or in a small tree-trunk. This is Downy's cabin, where he expects to spend the winter nights, and a part of the stormy days, too.

When he excavates it in an upright tree-trunk, he usually chooses a spot beneath a limb; the limb forms a sort of rude hood, and prevents the rainwater from running down into it. It is a snug and pretty retreat, and a very safe one, I think. I doubt whether the driving snow ever reaches him, and no predatory owl could hook him out with its claw. Near town or in town the English sparrow would probably drive him out; but in the woods, I think, he is rarely molested, though in one instance I knew him to be dispossessed by a flying squirrel.

[Pg 23]

On stormy days I have known Downy to return to his chamber in mid-afternoon, and to lie abed there till ten in the morning.

I have no knowledge that any other species of our woodpeckers excavate these winter quarters, but they probably do. The chickadee has too slender a beak for such work, and usually spends the winter nights in natural cavities or in the abandoned holes of Downy.

II

As I am writing here in my study these November days, a downy woodpecker is excavating a chamber in the top of a chestnut post in the vineyard a few yards below me, or rather, he is enlarging a chamber which he or one of his fellows excavated last fall; he is making it ready for his winter quarters. A few days ago I saw him enlarging the entrance and making it a more complete circle. Now he is in the chamber itself working away like a carpenter. I hear his muffled hammering as I approach cautiously on the grass. I make no sound and the hammering continues till I have stood for a moment beside the post, then it suddenly stops and Downy's head appears at the door. He glances at me suspiciously and then hurries away in much excitement.

[Pg 24]

How did he know there was some one so near? As birds have no sense of smell it must have been by some other means. I return to my study and in about fifteen minutes Downy is back at work. Again I cautiously and silently approach, but he is now more alert, and when I am the width of three grape rows from him he rushes out of his den and lets off his sharp, metallic cry as he hurries away to some trees below the hill.

He does not return to his work again that afternoon. But I feel certain that he will pass the night there and every night all winter unless he is disturbed. So when my son and I are passing along the path by his post with a lantern about eight o'clock in the evening, I pause and say, "Let's see if Downy is at home." A slight tap on the post and we hear Downy jump out of bed, as it were, and his head quickly fills the doorway. We pass hurriedly on and he does not take flight.

A few days later, just at sundown, as I am walking on the terrace above, I see Downy come sweeping swiftly down through the air on that long galloping flight of his, and alight on the big maple on the brink of the hill above his retreat. He sits perfectly still for a few moments, surveying the surroundings, and, seeing that the coast is clear, drops quickly and silently down and disappears in the interior of his chestnut lodge. He will do this all winter long, coming home, when the days are stormy, by four o'clock, and not stirring out in the morning till nine or ten o'clock. Some very cold, blustering days he will probably not leave his retreat at all.

[Pg 25]

He has no mate or fellow lodger, though there is room in his cabin for three birds at least. Where the female is I can only conjecture; maybe she is occupying a discarded last year's lodge, as I notice there are a good many new holes drilled in the trees every fall, though many of the old ones still seem intact.

During the inclement season Downy is anything but chivalrous or even generous. He will not even share with the female the marrow bone or bit of suet that I fasten on the maple in front of my window, but drives her away rudely. Sometimes the hairy woodpecker, a much larger bird, routs Downy out and wrecks his house. Sometimes the English sparrows mob him and dispossess him. In the woods the flying squirrels often turn him out of doors and furnish his chamber cavity to suit themselves.

III

I am always content if I can bring home from my walks the least bit of live natural history, as when, the other day, I saw a red-headed woodpecker having a tilt with a red squirrel on the trunk of a tree.

Doubtless the woodpecker had a nest near by, and had had some experience with this squirrel as a nest-robber. When I first saw them, the bird was chasing the squirrel around the trunk of an oak-tree, his bright colors of black and white and red making his every movement conspicuous. The squirrel avoided him by darting quickly to the other side of the tree.

[Pg 26]

Then the woodpecker took up his stand on the trunk of a tree a few yards distant, and every time the squirrel ventured timidly around where he could be seen the woodpecker would swoop down at him, making another loop of bright color. The squirrel seemed to enjoy the fun and to tempt the bird to make this ineffectual swoop. Time and again he would poke his head round the tree and draw the fire of his red-headed enemy. Occasionally the bird made it pretty hot for him, and pressed him closely, but he could escape because he had the inside ring, and was so artful a dodger. As often as he showed himself on the woodpecker's side, the bird would make a vicious pass at him; and there would follow a moment of lively skurrying around the trunk of the old oak; then all would be quiet again.

Finally the squirrel seemed to get tired of the sport, and ran swiftly to the top and off through the branches into the neighboring trees. As this was probably all the woodpecker was fighting for, he did not give chase.

V

[Pg 27]

A BARN-DOOR OUTLOOK

I have a barn-door outlook because I have a hay-barn study, and I chose a hay-barn study because I wanted a barn-door outlook—a wide, near view into fields and woods and orchards where I could be on intimate terms with the wild life about me, and with free, open-air nature.

Usually there is nothing small or stingy about a barn door, and a farmer's hay-barn puts only a very thin partition between you and the outside world. Therefore, what could be a more fit place to thresh out dry philosophical subjects than a barn floor? I have a few such subjects to thresh out, and I thresh them here, turning them over as many times as we used to turn over the oat and rye sheaves in the old days when I wielded the hickory flail with my brothers on this same barn floor.

What a pleasure it is to look back to those autumn days, generally in September or early October, when we used to thresh out a few bushels of the new crop of rye to be taken to the grist-mill for a fresh supply of flour! How often we paused in our work to munch apples that had been mellowing in the haymow by our side, and look out through the big doorway upon the sunlit meadows and hill-slopes! The sound of the flail is heard in the old barn no more, but in its stead the scratching of a pen and the uneasy stirring of a man seated there behind a big box, threshing out a harvest for a loaf of much less general value.

[Pg 28]

As I sit here day after day, bending over my work, I get many glimpses of the little rills of wild life that circulate about me. The feature of it that impresses me most is the life of fear that most of the wild creatures lead. They are as alert and cautious as are the picket-lines of opposing armies. Just over the line of stone wall in the orchard a woodchuck comes hesitatingly out of his hole and goes nibbling in the grass not fifty feet away. How alert and watchful he is! Every few moments he sits upright and takes an observation, then resumes his feeding. When I make a slight noise he rushes to the cover of the stone wall. Then, as no danger appears, he climbs to the top of it and looks in my direction. As I move as if to get up, he drops back quietly to his hole.

A chipmunk comes along on the stone wall, hurrying somewhere on an important errand, but changing his course every moment. He runs on the top of the wall, then along its side, then into it and through it and out on the other side, pausing every few seconds and looking and listening, careful not to expose himself long in any one position, really skulking and hiding all along his journey. His enemies are keen and watchful and likely to appear at any moment, and he knows it, not so much by experience as by instinct. His young are timid and watchful the first time they emerge from the den into the light of day.

[Pg 29]

Then a red squirrel comes spinning along. By jerks and nervous, spasmodic spurts he rushes along from cover to cover like a soldier dodging the enemy's bullets. When he discovers me, he pauses, and with one paw on his heart appears to press a button, that lets off a flood of snickering, explosive sounds that seem like ridicule of me and my work. Failing to get any response from me, he presently turns, and, springing from the wall to the bending branch of a near apple-tree, he rushes up and disappears amid the foliage. Presently I see him on the end of a branch, where he seizes a green apple not yet a third grown, and, darting down to a large horizontal branch, sits up with the apple in his paws and proceeds to chip it up for the pale, unripe seeds at its core, all the time keenly alive to possible dangers that may surround him. What a nervous, hustling, highstrung creature he is—a live wire at all times and places! That pert curl of the end of his tail, as he sits chipping the apple or cutting through the shell of a nut, is expressive of his character. What a contrast his nervous and explosive activity presents to the more sedate and dignified life of the gray squirrel! One of these passed us only a few yards away on our walk in the woods the other day—a long, undulating line of soft gray, silent as a spirit and graceful as a wave on the beach.

[Pg 30]

A little later, in the fine, slow-falling rain, a rabbit suddenly emerges into my field of vision fifty feet away. How timid and scared she looks! She pauses a moment amid the weeds, then hops a yard or two and pauses again, then passes under the bars and hesitates on the edge of a more open and exposed place immediately in front of me. Here she works her nose, feeling of every current of air, analyzing every scent to see if danger is near. Apparently detecting something suspicious in the currents that drift from my direction, she turns back, pauses again, works her nose as before, then hurries out of my sight.

Yesterday I saw a rat stealing green peas from my garden in the open day. He darted out of the stone wall six or eight feet away to the row of peas, rushed about nervously among the vines; then, before I could seize my rifle, darted back to the cover of the wall. Once I cautiously approached his hiding-place in the wall and waited. Presently his head emerged from the line of weeds by the fence, his nose began working anxiously, he sifted and resifted the air with it, and then quickly withdrew; his nose had detected me, but his eye had not. The touchstone of most animals is the nose, and not the eye. The eye quickly detects objects in motion, but not those at rest; this is the function of the nose.

[Pg 31]

A highhole alights on the ground in full view in the orchard twenty yards away, and, spying my motionless figure, pauses and regards me long and intently. His eye serves him, and not his nose. Finally concluding that I am not dangerous, he stoops to the turf for his beloved ants and other insects, but lifts his head every few seconds to see that no danger is imminent. Not one moment is he off his guard. A hawk may suddenly swoop from the air above, or a four-footed foe approach from any side. I have seen a sharp-shinned hawk pick up a highhole from the turf in a twinkling under just such conditions. What a contrast between the anxious behavior of these wild creatures and the ease and indifference of the grazing cattle!

All the wild creatures evidently regard me with mingled feelings of curiosity and distrust. A song sparrow hops and flirts and attitudinizes and peers at me from the door-sill, wondering if there is any harm in me. A phoebe-bird comes in and flits about, disturbed by my presence. For the third or fourth time this season, I think, she is planning a nest. In June she began one over a window on the porch where I sleep in the open air. She had the foundation laid when I appeared, and was not a little disturbed by my presence, especially in the early morning, when I wanted to sleep and she wanted to work. She let fall some of her mortar upon me, but at least I had no fear of a falling brick. She gradually got used to me, and her work was progressing into the moss stage when two women appeared and made their beds upon the porch, and in the morning went to and fro with brooms, of course. Then Phoebe seemed to say to herself, "This is too much," and she left her unfinished nest and resorted to the empty hay-barn. Here she built a nest on one of the bark-covered end timbers halfway up the big mow, not being quite as used to barns and the exigencies of haying-times as swallows are, who build their mud nests against the rafters in the peak. She had deposited her eggs, when the haymakers began pitching hay into the space beneath her; sweating, hurrying haymakers do not see or regard the rights or wants of little birds. Like a rising tide the fragrant hay rose and covered the timber and the nest, and crept on up toward the swallow's unfledged family in the peak, but did not quite reach it.

[Pg 32]

Phoebe and her mate hung about the barn disconsolate for days, and now, ten days later, she is hovering about my open door on the floor below, evidently prospecting for another building-site. I hope she will find me so quiet and my air so friendly that she will choose a niche on the hewn timber over my head. Just this moment I saw her snap up a flying "miller" in the orchard a few rods away. She was compelled to swoop four times before she intercepted that little moth in its unsteady, zigzagging flight. She is an expert at this sort of thing; it is her business to take her game on the wing; but the moths are experts in zigzag flying, and Phoebe missed her mark three times. I heard the snap of her beak at each swoop. It is almost impossible for any insectivorous bird except a flycatcher to take a moth or a butterfly on the wing.

[Pg 33]

Last year in August the junco, or common snowbird, came into the big barn and built her nest in the side of the haymow, only a few feet from me. The clean, fragrant hay attracted her as it had attracted me. One would have thought that in a haymow she had nesting material near at hand. But no; her nest-building instincts had to take the old rut; she must bring her own material from without; the haymow was only the mossy bank or the wood-side turf where her species had hidden their nests for untold generations. She did not weave one spear of the farmer's hay into her nest, but brought in the usual bits of dry grass and weeds and horsehair and shaped the fabric after the old pattern, tucking it well in under the drooping locks of hay. As I sat morning after morning weaving my thoughts together and looking out of the great barn doorway into sunlit fields, the junco wove her straws and horsehairs, and deposited there on three successive days her three exquisite eggs.

Why the bird departed so widely from the usual habits of nest-building of her species, who can tell? I had never before seen a junco's nest except on the ground in remote fields, or in mossy banks by the side of mountain roads. This nest is the finest to be found upon the ground, its usual lining of horsehair makes its interior especially smooth and shapely, and the nest in the haymow showed only a little falling-off, as is usually the case in the second nest of the season. The songs of the birds, the construction of their nests, and the number of their eggs taper off as the season wanes.

[Pg 34]

The junco impresses me as a fidgety, emphatic, feather-edged sort of bird; the two white quills in its tail which flash out so suddenly on every movement seem to stamp in this impression. My junco was a little nervous at first and showed her white quills, but she soon grew used to my

presence, and would alight upon the chair which I kept for callers, and upon my hammock-ropes.

When an artist came to paint my portrait amid such rustic surroundings, the bird only eyed her a little suspiciously at first, and then went forward with her own affairs. One night the wind blew the easel with its canvas over against the haymow where the nest was placed, but the bird was there on her eggs in the morning. Her wild instincts did not desert her in one respect, at least: when I would flush her from the nest she would drop down to the floor and with spread plumage and fluttering movements seek for a moment to decoy me away from the nest, after the habit of most ground-builders. The male came about the barn frequently with three or four other juncos, which I suspect were the first or June brood of the pair, now able to take care of themselves, but still held together by the family instinct, as often happens in the case of some other birds, such as bluebirds and chickadees.

[Pg 35]

My little mascot hatched all her eggs, and all went well with mother and young until, during my absence of three or four days, some night-prowler, probably a rat, plundered the nest, and the little summer idyl in the heart of the old barn abruptly ended. I saw the juncos no more.

While I was so closely associated with the junco in the old barn I had a good chance to observe her incubating habits. I was surprised at the frequent and long recesses that she took during school-hours. Every hour during the warmest days she was off from ten to twelve minutes, either to take the air or to take a bite, or to let up on the temperature of her eggs, or to have a word with her other family; I am at a loss to know which. Toward the end of her term, which was twelve days, and as the days grew cooler, she was not gadding out and in so often, but kept her place three or four hours at a time.

When the young were hatched they seemed mainly fed with insects—spiders or flies gathered off the timbers and clapboards of the inside of the barn. It was a pretty sight to see the mother-bird making the rounds of the barn, running along the timbers, jumping up here and there, and seizing some invisible object, showing the while her white petticoats—as a French girl called that display of white tail-feathers.

[Pg 36]

Day after day and week after week as I look through the big, open barn door I see a marsh hawk beating about low over the fields. He, or rather she (for I see by the greater size and browner color that it is the female), moves very slowly and deliberately on level, flexible wing, now over the meadow, now over the oat or millet field, then above the pasture and the swamp, tacking and turning, her eye bent upon the ground, and no doubt sending fear or panic through the heart of many a nibbling mouse or sitting bird. She occasionally hesitates or stops in her flight and drops upon the ground, as if seeking insects or frogs or snakes. I have never yet seen her swoop or strike after the manner of other hawks. It is a pleasure to watch her through the glass and see her make these circuits of the fields on effortless wing, day after day, and strike no bird or other living thing, as if in quest of something she never finds. I never see the male. She has perhaps assigned him other territory to hunt over. He is smaller, with more blue in his plumage. One day she had a scrap or a game of some kind with three or four crows on the side of a rocky hill. I think the crows teased and annoyed her. I heard their cawing and saw them pursuing the hawk, and then saw her swoop upon them or turn over in the air beneath them, as if to show them what feats she could do on the wing that were beyond their powers. The crows often made a peculiar guttural cawing and cackling as if they enjoyed the sport, but they were clumsy and awkward enough on the wing compared to the hawk. Time after time she came down upon them from a point high in the air, like a thunderbolt, but never seemed to touch them. Twice I saw her swoop upon them as they sat upon the ground, and the crows called out in half sportive, half protesting tones, as if saying, "That was a little too close; beware, beware!" It was like a skillful swordsman flourishing his weapon about the head of a peasant; but not a feather was touched so far as I could see. It is the only time I ever saw this hawk in a sportive or aggressive mood. I have seen jays tease the sharp-shinned hawk in this way, and escape his retaliating blows by darting into a cedar-tree. All the crow tribe, I think, love to badger and mock some of their neighbors.

[Pg 37]

How much business the crows seem to have apart from hunting their living! I hear their voices in the morning before sun-up, sounding out from different points of the fields and woods, as if every one of them were giving or receiving orders for the day: "Here, Jim, you do this; here, Corvus, you go there, and put that thing through"; and Jim caws back a response, and Corvus says, "I'm off this minute." I get the impression that it is convention day or general training day with them. There are voices in all keys of masculinity and femininity. Here and there seems to be one in authority who calls at intervals, "Haw-ah, haw, haw-ah!" Others utter a strident "Haw!" still others a rapid, feminine call. Some seem hurrying, others seem at rest, but the landscape is apparently alive with crows carrying out some plan of concerted action. How fond they must be of one another! What boon companions they are! In constant communication, saluting one another from the trees, the ground, the air, watchful of one another's safety, sharing their plunder, uniting against a common enemy, noisy, sportive, predacious, and open and aboveboard in all their ways and doings—how much character our ebony friend possesses, in how many ways he challenges our admiration!

[Pg 38]

What a contrast the crow presents to the silent, solitary hawk! The hawks have but two occupations—hunting and soaring; they have no social or tribal relations, and make no show of business as does the crow. The crow does not hide; he seems to crave the utmost publicity; his goings and comings are advertised with all the effectiveness of his strident voice; but all our hawks are silent and stealthy.

Let me return to the red squirrel, because he returns to me hourly. He is the most frisky,

[Pg 39]

diverting, and altogether impish of all our wild creatures. He is a veritable Puck. All the other wild folk that cross my field of vision, or look in upon me here in my fragrant hay-barn study, seem to have but one feeling about me: "What is it? Is it dangerous? Has it any designs upon me?" But my appearance seems to awaken other feelings in the red squirrel. He pauses on the fence or on the rail before me, and goes through a series of antics and poses and hilarious gestures, giving out the while a stream of snickering, staccato sounds that suggest unmistakably that I am a source of mirth and ridicule to him. His gestures and attitudes are all those of mingled mirth, curiosity, defiance, and contempt—seldom those of fear. He comes spinning along on the stone wall in front of me, with those abrupt, nervous pauses every few yards that characterize all his movements. On seeing me he checks his speed, and with depressed tail impels himself along, a few inches at a time, in a series of spasmodic starts and sallies; the hind part of his body flattened, and his legs spread, his head erect and alert, his tail full of kinks and quirks. How that tail undulates! Now its end curls, now it is flattened to the stone, now it springs straight up as if part of a trap, hind feet the while keeping time in a sort of nervous dance with the shrill, strident cackling and snickering. The next moment he is sitting erect with fore paws pressed against his white chest, his tail rippling out behind him or up his back, and his shrill, nasal tones still pouring out. He hops to the next stone, he assumes a new position, his tail palpitates and jerks more lively than ever; now he is on all fours, with curved back; now he sits up at an angle, his tail all the time charged with mingled suspicion and mirth. Then he springs to a rail that runs out at right angles from the wall toward me, and with hectoring snickers and shrill trebles, pointed straight at me, keeps up his performance. What an actor he is! What a furry embodiment of quick, nervous energy and impertinence! Surely he has a sense of something like humor; surely he is teasing and mocking me and telling me, both by gesture and by word of mouth, that I present a very ridiculous appearance.

[Pg 40]

A chipmunk comes hurrying along with stuffed cheek-pouches, traveling more on the side of the wall than on the top, stopping every few yards to see that the way is clear, but giving little heed to me or to the performing squirrel. In comparison the chipmunk is a demure, preoccupied, pretty little busybody who often watches you curiously, but never mocks you or pokes fun at you; while the gray squirrel has the manners of the best-bred wood-folk, and he goes his way without fuss or bluster, a picture of sylvan grace and buoyancy.

All the movements of the red squirrel are quick, sharp, jerky, machine-like. He does nothing slowly or gently; everything with a snap and a jerk. His progression is a series of interrupted sallies. When he pauses on the stone wall he faces this way and that with a sudden jerk; he turns round in two or three quick leaps. So abrupt and automatic in his movements, so stiff and angular in behavior, yet he is charged and overflowing with life and energy. One thinks of him as a bundle of steel wires and needles and coiled springs, all electrically charged. One of his sounds or calls is like the buzz of a reel or the whirr of an alarm-clock. Something seems to touch a spring there in the old apple-tree, and out leaps this strident sound as of spinning brass wheels.

[Pg 41]

When I speak sharply to him, in the midst of his antics, he pauses a moment with uplifted paw, watching me intently, and then with a snicker springs upon a branch of an apple-tree that hangs down near the wall, and disappears amid the foliage. The red squirrel is always actively saucy, aggressively impudent. He peeps in at me through a broken pane in the window and snickers; he strikes up a jig on the stone underpinning twenty feet away and mocks; he darts in and out among the timbers and chatters and giggles; he climbs up over the door, pokes his head in, and lets off a volley; he moves by jerks along the sill a few feet from my head and chirps derisively; he eyes me from points on the wall in front, or from some coign of vantage in the barn, and flings his anger or his contempt upon me.

[Pg 42]

No other of our wood-folk has such a facile, emotional tail as the red squirrel. It seems as if an electric current were running through it most of the time; it vibrates, it ripples, it curls, it jerks, it arches, it flattens; now it is like a plume in his cap; now it is a cloak around his shoulders; then it is an instrument to point and emphasize his states of emotional excitement; every movement of his body is seconded or reflected in his tail. There seems to be some automatic adjustment between his tail and his vocal machinery.

The tail of the gray squirrel shows to best advantage when he is running over the ground in the woods—and a long, graceful, undulating line of soft silver gray the creature makes! In my part of the country the gray squirrel is more strictly a wood-dweller than the red, and has the grace and elusiveness that belong more especially to the sylvan creatures.

The red squirrel can play a tune and accompany himself. Underneath his strident, nasal snicker you may hear a note in another key, much finer and shriller. Or it is as if the volume of sound was split up into two strains, one proceeding from his throat and the other from his mouth.

If the red squirrels do not have an actual game of tag, they have something so near it that I cannot tell the difference. Just now I see one in hot pursuit of another on the stone wall; both are apparently going at the top of their speed. They make a red streak over the dark-gray stones. When the pursuer seems to overtake the pursued and becomes "It," the race is reversed, and away they go on the back track with the same fleetness of the hunter and the hunted, till things are reversed again. I have seen them engaged in the same game in tree-tops, each one having his innings by turn.

[Pg 43]

The gray squirrel comes and goes, but the red squirrel we have always with us. He will live where the gray will starve. He is a true American; he has nearly all the national traits—nervous energy, quickness, resourcefulness, pertness, not to say impudence and conceit. He is not

altogether lovely or blameless. He makes war on the chipmunk, he is a robber of birds' nests, and is destructive of the orchard fruits. Nearly every man's hand is against him, yet he thrives, and long may he continue to do so!

One day I placed some over-ripe plums on the wall in front of me to see what he would do with them. At first he fell eagerly to releasing the pit, and then to cutting his way to the kernel in the pit. After one of them had been disposed of in this way, he proceeded to carry off the others and place them here and there amid the branches of a plum-tree from which he had stolen every plum long before they were ripe. A day or two later I noted that they had all been removed from this tree, and I found some of them in the forks of an apple-tree not far off.

[Pg 44]

A small butternut-tree standing near the wall had only a score or so of butternuts upon it this year; the squirrels might be seen almost any hour in the day darting about the branches of that tree, hunting the green nuts, and in early September the last nut was taken. They carried them away and placed them, one here and one there, in the forks of the apple-trees. I noticed that they did not depend upon the eye to find the nuts; they did not look the branches over from some lower branch as you and I would have done; they explored the branches one by one, running out to the end, and, if the nut was there, seized it and came swiftly down. I think the red squirrel rarely lays up any considerable store, but hides his nuts here and there in the trees and upon the ground. This habit makes him the planter of future trees, of oaks, hickories, chestnuts, and butternuts. These heavy nuts get widely scattered by this agency.

One morning I saw a chipmunk catch a flying grasshopper on the wing. Little Striped-Back sat on the wall with stuffed pockets, waiting for something, when along came the big grasshopper in a hesitating, uncertain manner of flight. As it hovered above the chipmunk, the latter by a quick, dexterous movement sprang or reached up and caught it, and in less than one half-minute its fanlike wings were opening out in front of the captor's mouth and its body was being eagerly devoured. This same chipmunk, I think it is, has his den under the barn near me. Often he comes from the stone wall with distended cheek-pouches, and pauses fifteen feet away, close by cover, and looks to see if any danger is impending. To reach his hole he has to cross an open space a rod or more wide, and the thought of it evidently agitates him a little. I am sitting there looking over my desk upon him, and he is skeptical about my being as harmless as I look. "Dare I cross that ten feet of open there in front of him?" he seems to say. He sits up with fore paws pressed so prettily to his white breast. He is so near I can see the rapid throbbing of his chest as he sniffs the air. A moment he sits and looks and sniffs, then in hurried movements crosses the open, his cheek-pockets showing full as he darts by me. He is like a baseball runner trying to steal a base: danger lurks on all sides; he must not leave the cover of one base till he sees the way is clear, and then—off with a rush! Pray don't work yourself up to such a pitch, my little neighbor; you shall make a home-run without the slightest show of opposition from me.

[Pg 45]

One day a gray squirrel came along on the stone wall beside the road. In front of the house he crossed an open barway, and then paused to observe two men at work in full view near the house. The men were a sculptor, pottering with clay, and his model. The squirrel sprang up a near-by butternut-tree, sat down on a limb, and had a good, long look. "Very suspicious," he seemed to think; "maybe they are fixing a trap for me"; and he deliberately came down the tree and returned the way he had come, spinning along the top of the wall, his long, fine tail outlined by a narrow band of silver as he sped off toward the woods.

[Pg 46]

VI

[Pg 47]

WILD LIFE IN WINTER

To many forms of life of our northern lands, winter means a long sleep; to others it means what it means to many fortunate human beings—travels in warm climes; to still others, who again have their human prototypes, it means a struggle, more or less fierce, to keep soul and body together; while to many insect forms it means death.

Most of the flies and beetles, wasps and hornets, moths, butterflies, and bumblebees die. The grasshoppers all die, with eggs for next season's crop deposited in the ground. Some of the butterflies winter over. The mourning cloak, the first butterfly to be seen in spring, has passed the winter in my "Slabsides." The monarch migrates, probably the only one of our butterflies that does. It is a great flyer. I have seen it in the fall sailing serenely along over the inferno of New York streets. It has crossed the ocean and is spreading over the world. The yellow and black hornets lose heart as autumn comes on, desert their paper nests and die—all but the queen or mother hornet; she hunts out a retreat in the ground and passes the winter beyond the reach of frost. In the spring she comes forth and begins life anew, starting a little cone-shaped paper nest, building a few paper cells, laying an egg in each, and thus starting the new colony.

[Pg 48]

The same is true of the bumblebees; they are the creatures of a summer. In August, when the flowers fail, the colony breaks up, they desert the nest and pick up a precarious subsistence on asters and thistles till the frosts of October cut them off. You may often see, in late September or early October, these tramp bees passing the night or a cold rain-storm on the lee side of a thistle-head. The queen bee alone survives. You never see her playing the vagabond in the fall. At least I never have. She hunts out a retreat in the ground and passes the winter there, doubtless in a torpid state, as she stores no food against the inclement season. Emerson has put this fact into

his poem on "The Humble-Bee":—

"When the fierce northwestern blast
Cools sea and land so far and fast,
Thou already slumberest deep;
Woe and want thou canst outsleep;
Want and woe, which torture us,
Thy sleep makes ridiculous."

In early August of the past year I saw a queen bumblebee quickly enter a small hole on the edge of the road where there was no nest. It was probably her winter quarters.

If one could take the cover off the ground in the fields and woods in winter, or have some magic ointment put upon his eyes that would enable him to see through opaque substances, how many curious and interesting forms of life he would behold in the ground beneath his feet as he took his winter walk—life with the fires banked, so to speak, and just keeping till spring. He would see the field crickets in their galleries in the ground in a dormant state, all their machinery of life brought to a standstill by the cold. He would see the ants in their hills and in their tunnels in decaying trees and logs, as inert as the soil or the wood they inhabit. I have chopped many a handful of the big black ants out of a log upon my woodpile in winter, stiff, but not dead, with the frost, and brought them in by the fire to see their vital forces set going again by the heat. I have brought in the grubs of borers and the big fat grubs of beetles, turned out of their winter beds in old logs by my axe and frozen like ice-cream, and have seen the spark of life rekindle in them on the hearth.

[Pg 49]

With this added visual power, one would see the wood frogs and the hylas in their winter beds but a few inches beneath the moss and leaf-mould, one here and one there, cold, inert, biding their time. I dug a wood frog out one December and found him not frozen, though the soil around him was full of frost; he was alive but not frisky. A friend of mine once found one in the woods sitting upon the snow one day in early winter. She carried him home with her, and he burrowed in the soil of her flower-pot and came out all right in the spring. What brought him out upon the snow in December one would like to know.

[Pg 50]

One would see the tree-frogs in the cavities of old trees, wrapped in their winter sleep—which is yet not a sleep, but suspended animation. When the day is warm, or the January thaw comes, I fancy the little frog feels it and stirs in his bed. One would see the warty toads squatted in the soil two or three feet below the surface, in the same way. Probably not till April will the spell which the winter has put upon them be broken. I have seen a toad go into the ground in late fall. He literally elbows his way into it, going down backwards.

Beneath rocks or in cavities at the end of some small hole in the ground, one would see a ball or tangle of garter snakes, or black snakes, or copperheads—dozens of individual snakes of that locality entwined in one many-headed mass, conserving in this united way their animal heat against the cold of winter. One spring my neighbor in the woods discovered such a winter retreat of the copperheads, and, visiting the place many times during the warm April days, he killed about forty snakes, and since that slaughter, the copperheads have been at a premium in our neighborhood.

Here and there, near the fences and along the borders of the wood, these X-ray eyes would see the chipmunk at the end of his deep burrow with his store of nuts or grains, sleeping fitfully but not dormant. The frost does not reach him and his stores are at hand. One which we dug out in late October had nearly four quarts of weed-seeds and cherry-pits. He will hardly be out before March, and then, like his big brother rodent the woodchuck, and other winter sleepers, his fancy will quickly "turn to thoughts of love."

[Pg 51]

One would see the woodchuck asleep in his burrow, snugly rolled up and living on his own fat. All the hibernating animals that keep up respiration, must have sustenance of some sort—either a store of food at hand or a store of fat in their own bodies. The woodchuck, the bear, the coon, the skunk, the 'possum, lay up a store of fuel in their own bodies, and they come out in the spring lean and hungry. The squirrels are lean the year through, and hence must have a store of food in their dens, as does the chipmunk, or else be more or less active in their search all winter, as is the case with the red and gray squirrels. The fox puts on more or less fat in the fall, because he will need it before spring. His food-supply is very precarious; he may go many days without a morsel. I have known him to be so hungry that he would eat frozen apples and corn which he could not digest. The hare and the rabbit, on the other hand, do not store up fat against a time of need; their food-supply of bark and twigs is constant, no matter how deep the snows. The birds of prey that pass the winter in the north take on a coat of fat in the fall, because their food-supply is so uncertain; the coat of fat is also a protection against the cold.

[Pg 52]

Of course, all the wild creatures are in better condition in the fall than in the spring, but in many cases the fat is distinctly a substitute for food.

The skunk is in his den also from December till February, living on his own fat. Several of them often occupy the same den and conserve their animal heat in that way. The coon, also, is in his den in the rocks for a part of the winter, keeping warm on home-made fuel. The same is true of the bear in our climate. The bats are hibernating in the rocks or about buildings. The muskrats are leading hidden lives in the upper chambers of their snow-covered houses in the marshes and ponds or in the banks of streams, feeding on lily-roots and mussels which they get under the ice.

The lean, bloodthirsty minks and weasels are on the hunt all winter. Our native mice are also active. That pretty stitching upon the coverlet of the winter snow in the woods is made by our white-footed mouse and by the little shrew mouse. The former often has large stores of nuts hidden in some cavity in a tree; what supply of food the latter has, if any, I do not know. In the winter the short-tailed meadow or field mice come out of their retreat in the ground and beneath stones and lead gay, fearless lives beneath the snow-drifts. Their little villages, with their runways and abandoned nests, may be seen when the snow disappears in the spring. Their winter life beneath the snow, where no wicked eye or murderous claw can reach them, is in sharp contrast to their life in summer, when cats and hawks, owls and foxes, pounce upon them day and night. It is only in times of deep snows that they bark our fruit-trees.

[Pg 53]

We have in this latitude but one species of hibernating mouse—the long-tailed jumping mouse, or kangaroo mouse, as it is sometimes called from its mode of locomotion. Late one fall, while making a road near "Slabsides," we dug one out from its hibernation about two feet below the surface of the ground. It was like a little ball of fur tied with a string. In my hand it seemed as cold as if dead. Close scrutiny showed that it breathed at intervals, very slowly. The embers of life were there, but slumbering beneath the ashes. I put it in my pocket and went about my work. After a little time, remembering my mouse, I put my hand into my pocket and touched something very warm and lively. The ember had been fanned into a flame, so to speak. I kept my captive in a cage a day or two and then returned it to the woods, where I trust it found a safe retreat against the cold.

VII

[Pg 54]

BIRD LIFE IN WINTER

The distribution of our birds over the country in summer is like that of the people, quite uniform. Every wood and field has its quota, and no place so barren but it has some bird to visit it. One knows where to look for sparrows and thrushes and bobolinks and warblers and flycatchers. But the occupation of the country by our winter residents is like the Indian occupation of the land. They are found in little bands, a few here and there, with large tracts quite untenanted.

One may walk for hours through the winter woods and not see or hear a bird. Then he may come upon a troop of chickadees, with a nuthatch or two in their wake, and maybe a downy woodpecker. Birds not of a feather flock together at this inclement season. The question of food is always an urgent one. Evidently the nuthatch thinks there must be food where the chickadees flit and call so cheerily, and the woodpecker is probably drawn to the nuthatch for a similar reason.

Together they make a pretty thorough search,—fine, finer, finest. The chickadee explores the twigs and smaller branches; what he gets is on the surface, and so fine as to be almost microscopic. The nuthatch explores the trunks and larger branches of the trees; he goes a little deeper, into crevices of the bark and under lichens. Then comes Downy, who goes deeper still. He bores for larger game through the bark, and into the trunks and branches themselves.

[Pg 55]

In late fall this band is often joined by the golden-crowned kinglet and the brown creeper. The kinglet is finer-eyed and finer-billed than even the chickadee, and no doubt gathers what the latter overlooks, while the brown creeper, with his long, slender, curved bill, takes what both the nuthatch and the woodpecker miss. Working together, it seems as if they must make a pretty clean sweep. But the trees are numerous and large, and the birds are few. Only a mere fraction of tree surface is searched over at any one time. In large forests probably only a mere fraction of the trees are visited at all.

One cold day in midwinter, when I was walking through the snowless woods, I saw chickadees, nuthatches, and woodpeckers upon the ground, and upon roots and fallen branches. They were looking for the game that had fallen, as a boy looks for apples under the tree.

The winter wren is so called because he sometimes braves our northern winters, but it is rarely that one sees him at this season. I think I have seen him only two or three times in winter in my life. The event of one long walk, recently, in February, was seeing one of these birds. As I followed a byroad, beside a little creek in the edge of a wood, my eye caught a glimpse of a small brown bird darting under a stone bridge. I thought to myself no bird but a wren would take refuge under so small a bridge as that. I stepped down upon it and expected to see the bird dart out at the upper end. As it did not appear, I scrutinized the bank of the little run, covered with logs and brush, a few rods farther up.

[Pg 56]

Presently I saw the wren curtsying and gesticulating beneath an old log. As I approached he disappeared beneath some loose stones in the bank, then came out again and took another peep at me, then fidgeted about for a moment and disappeared again, running in and out of the holes and recesses and beneath the rubbish like a mouse or a chipmunk. The winter wren may always be known by these squatting, bobbing-out-and-in habits.

As I sought a still closer view of him, he flitted stealthily a few yards up the run and disappeared beneath a small plank bridge near a house.

I wondered what he could feed upon at such a time. There was a light skim of snow upon the

ground, and the weather was cold. The wren, so far as I know, is entirely an insect-feeder, and where can he find insects in midwinter in our climate? Probably by searching under bridges, under brush heaps, in holes and cavities in banks where the sun falls warm. In such places he may find dormant spiders and flies and other hibernating insects or their larvæ. We have a tiny, mosquito-like creature that comes forth in March or in midwinter, as soon as the temperature is a little above freezing. One may see them performing their fantastic air-dances when the air is so chilly that one buttons his overcoat about him in his walk. They are darker than the mosquito,—a sort of dark water-color,—and are very frail to the touch. Maybe the wren knows the hiding-place of these insects.

[Pg 57]

With food in abundance, no doubt many more of our birds would brave the rigors of our winters. I have known a pair of bluebirds to brave them on such poor rations as are afforded by the hardhack or sugarberry,—a drupe the size of a small pea, with a thin, sweet skin. Probably hardly one per cent. of the drupe is digestible food. Bluebirds in December will also eat the berries of the poison ivy, as will the downy woodpecker.

Robins will pass the winter with us when the cover of a pine or hemlock forest can be had near a supply of red cedar berries. The cedar-bird probably finds little other food in the valley of the Hudson and in New England, yet I see occasional flocks of them every winter month.

Sometimes the chickadees and nuthatches, hunting through the winter woods, make a discovery that brings every bird within hearing to the spot,—they spy out the screech owl hiding in the thick of a hemlock-tree. What an event it is in the day's experience! It sets the whole clan agog.

[Pg 58]

While I was walking in the December woods, one day, my attention was attracted by a great hue and cry among these birds. I found them in and about a hemlock-tree,—eight or ten chickadees and four or five red-bellied nuthatches. Such a chiding chorus of tiny voices I had not heard for a long time. The tone was not that of alarm so much as it was that of trouble and displeasure.

I gazed long and long up into the dark, dense green mass of the tree to make out the cause of all this excitement. The chickadees were clinging to the ends of the sprays, as usual, apparently very busy looking for food, and all the time uttering their shrill plaint. The nuthatches perched about upon the branches or ran up and down the tree trunks, incessantly piping their displeasure. At last I made out the cause of the disturbance,—a little owl on a limb, looking down in wide-eyed intentness upon me. How annoyed he must have felt at all this hullabaloo, this lover of privacy and quiet, to have his name cried from the treetops, and his retreat advertised to every passer-by!

I have never known woodpeckers to show any excitement at the presence of hawk or owl, probably because they are rarely preyed upon by these marauders. In their nests and in their winter quarters, deeply excavated in trunk or branch of tree, woodpeckers are beyond the reach of both beak and claw.

[Pg 59]

The day I saw the winter wren I saw two golden-crowned kinglets fly from one sycamore to another in an open field, uttering their fine call-notes. That so small a body can brave the giant cold of our winters seems remarkable enough. These are mainly birds of the evergreens, although at times they frequent the groves and the orchards.

How does the ruby-crowned kinglet know he has a brilliant bit of color on his crown which he can uncover at will, and that this has great charms for the female? During the rivalries of the males in the mating season, and in the autumn also, they flash this brilliant ruby at each other. I witnessed what seemed to be a competitive display of this kind one evening in November. I was walking along the road, when my ear was attracted by the fine, shrill lisp and piping of a small band of these birds in an apple-tree. I paused to see what was the occasion of so much noise and bluster among these tiny bodies. There were four or five of them, all more or less excited, and two of them especially so. I think the excitement of the others was only a reflection of that of these two. These were hopping around each other, apparently peering down upon something beneath them. I suspected a cat concealed behind the wall, and so looked over, but there was nothing there. Observing them more closely, I saw that the two birds were entirely occupied with each other.

[Pg 60]

They behaved exactly as if they were comparing crowns, and each extolling his own. Their heads were bent forward, the red crown patch uncovered and showing as a large, brilliant cap, their tails were spread, and the side feathers below the wings were fluffed out. They did not come to blows, but followed each other about amid the branches, uttering their thin, shrill notes and displaying their ruby crowns to the utmost. Evidently it was some sort of strife or dispute or rivalry that centred about this brilliant patch.

Few persons seem aware that the goldfinch is also a winter bird,—it is so brilliant and familiar in summer and so neutral and withdrawn in winter. The call-note and manner of flight do not change, but the color of the males and their habits are very different from their color and habits in summer. In winter they congregate in small, loose flocks, both sexes of a dusky yellowish brown, and feed upon the seeds of grasses and weeds that stand above the snow in fields and along fences.

Day after day I have observed a band of five or six of them feeding amid the dry stalks of the evening primrose by the roadside. They are adepts in extracting the seed from the pods. How pretty their call to each other at such times,—*paisley* or *peasely*, with the rising inflection!

The only one of our winter birds that really seems a part of the winter, that seems to be born of

[Pg 61]

the whirling snow, and to be happiest when storms drive thickest and coldest, is the snow bunting, the real snowbird, with plumage copied from the fields where the drifts hide all but the tops of the tallest weeds,—large spaces of pure white touched here and there with black and gray and brown. Its twittering call and chirrup coming out of the white obscurity is the sweetest and happiest of all winter bird sounds. It is like the laughter of children. The fox-hunter hears it on the snowy hills, the farmer hears it when he goes to fodder his cattle from the distant stack, the country schoolboy hears it as he breaks his way through the drifts toward the school. It is ever a voice of good cheer and contentment.

One March, during a deep snow, a large flock of buntings stayed about my vineyards for several days, feeding upon the seeds of redroot and other weeds that stood above the snow. What boyhood associations their soft and cheery calls brought up! How plump and well-fed and hardy they looked, and how alert and suspicious they were! They evidently had had experiences with hawks and shrikes. Every minute or two they would all spring into the air as one bird, circle about for a moment, then alight upon the snow again. Occasionally one would perch upon a wire or grapevine, as if to keep watch and ward.

Presently, while I stood in front of my study looking at them, a larger and darker bird came swiftly by me, flying low and straight toward the buntings. He shot beneath the trellises, and evidently hoped to surprise the birds. It was a shrike, thirsting for blood or brains. But the buntings were on the alert, and were up in the air before the feathered assassin reached them. As the flock wheeled about, he joined them and flew along with them for some distance, but made no attempt to strike that I could see.

[Pg 62]

Presently he left them and perched upon the top of a near maple. The birds did not seem to fear him now, but swept past the treetop where he sat as if to challenge him to a race, and then went their way. I have seen it stated that these birds, when suddenly surprised by a hawk, will dive beneath the snow to escape him. They doubtless roost upon the ground, as do most ground-builders, and hence must often be covered by the falling snow.

VIII

[Pg 63]

A BIRDS' FREE LUNCH

One winter, during four or five weeks of severe weather, several of our winter birds were pensioners upon my bounty,—three blue jays, two downy woodpeckers, three chickadees, and one kinglet,—and later a snowbird—junco—appeared.

I fastened pieces of suet and marrow-bones upon the tree in front of my window, then, as I sat at my desk, watched the birds at their free lunch. The jays bossed the woodpeckers, the woodpeckers bossed the chickadees, and the chickadees bossed the kinglet.

Sometimes in my absence a crow would swoop down and boss the whole crew and carry off the meat. The kinglet was the least of all,—a sort of "hop-o'-my-thumb" bird. He became quite tame, and one day alighted upon my arm as I stood leaning against the tree. I could have put my hand upon him several times. I wonder where the midget roosted. He was all alone. He liked the fare so well that he seemed disposed to stop till spring. During one terrible night of wind and snow and zero temperature I feared he would be swept away. I thought of him in the middle of the night, when the violence of the storm kept me from sleep. Imagine this solitary atom in feathers drifting about in the great arctic out-of-doors and managing to survive. I fancied him in one of my thick spruces, his head under his tiny wing, buffeted by wind and snow, his little black feet clinging to the perch, and wishing that morning would come.

[Pg 64]

The fat meat is fuel for him; it keeps up the supply of animal heat. None of the birds will eat lean meat; they want the clear fat. The jays alight upon it and peck away with great vigor, almost standing on tiptoe to get the proper sweep. The woodpecker uses his head alone in pecking, but the jay's action involves the whole body. Yet his blows are softer, not so sharp and abrupt as those of the woodpecker. Pecking is not exactly his business.

He swallows the morsel eagerly, watching all the time lest some enemy surprise him in the act. Indeed, one noticeable thing about all the birds is their nervousness while eating. The chickadee turns that bead-like eye of his in all directions incessantly, lest something seize him while he is not looking. He is not off his guard for a moment. It is almost painful to observe the state of fear in which he lives. He will not keep his place upon the bone longer than a few seconds at a time lest he become a mark for some enemy,—a hawk, a shrike, or a cat. One would not think the food would digest when taken in such haste and trepidation.

[Pg 65]

While the jays are feeding, swallowing morsel after morsel very rapidly, the chickadees flit about in an anxious, peevish manner, lest there be none left for themselves.

I suspect the jays carry the food off and hide it, as they certainly do corn when I put it out for the hens. The jay has a capacious throat; he will lodge half a dozen or more kernels of corn in it, stretching his neck up as he takes them, to give them room, and then fly away to an old bird's-nest or a caterpillar's nest and deposit them in it. But in this respect the little kettle cannot call the big pot black. The chickadee also will carry away what it cannot eat. One day I dug a dozen or more white grubs—the larvæ of some beetle—out of a decayed maple on my woodpile and placed

them upon my window-sill. The chickadees soon discovered them, and fell to carrying them off as fast as ever they could, distributing them among the branches of the Norway spruces. Among the grubs was one large white one half the size of one's little finger. One of the chickadees seized this; it was all he could carry, but he made off with it. The mate to this grub I found rolled up in a smooth cell in a mass of decayed wood at the heart of the old maple referred to; it was full of frost. I carried it in by the fire, and the next day it was alive and apparently wanted to know what had brought spring so suddenly.

[Pg 66]

How rapidly birds live! Their demand for food is almost incessant. This colony of mine appear to feed every eight or ten minutes. Their little mills grind their grist very rapidly. Once in my walk upon the sea beach I encountered two small beach birds running up and down in the edge of the surf, keeping just in the thin, lace-like edging of the waves, and feeding upon the white, cricket-like hoppers that quickly buried themselves in the sand as the waters retreated. I kept company with the birds till they ceased to be afraid of me. They would feed eagerly for a few minutes and then stop, stand on one leg and put their heads under their wings for two or three minutes, and then resume their feeding, so rapidly did they digest their food. But all birds digest very rapidly.

My two woodpeckers seldom leave the tree upon which the food is placed. One is a male, as is shown by his red plume, and the other a female. There is not a bit of kindness or amity between them. Indeed, there is open hostility. The male will not allow the female even to look at the meat while he is feeding. She will sidle around toward it, edging nearer and nearer, when he will suddenly dart at her, and often pursue her till she leaves the tree. Every hour in the day I see him trying to drive her from the neighborhood. She stands in perpetual dread of him, and gives way the instant he approaches. He is a tyrant and a bully. They both pass the night in snug chambers which they have excavated in the decayed branch of an old apple-tree, but not together.

[Pg 67]

But in the spring what a change will come over the male. He will protest to the female that he was only in fun, that she took him far too seriously, that he had always cherished a liking for her. Last April I saw a male trying his blandishments upon a female in this way. It may have been the same pair I am now observing. The female was extremely shy and reluctant; evidently she was skeptical of the sincerity of so sudden a change on the part of the male. I saw him pursue her from tree to tree with the most flattering attention. The flight of the woodpecker is at all times undulating, but on such occasions this feature is so enhanced and the whole action so affected and studied on the part of the male that the scene becomes highly amusing. The female flew down upon a low stump in the currant-patch and was very busy about her own affairs; the male followed, alighted on something several rods distant, and appeared to be equally busy about his affairs. Presently the female made quite a long flight to a tree by the roadside. I could not tell how the male knew she had flown and what course she had taken, as he was hidden from her amid the thick currant-bushes; but he did know, and soon followed after in his curious exaggerated undulatory manner of flight. I have little doubt that his suit was finally successful.

[Pg 68]

I watch these woodpeckers daily to see if I can solve the mystery as to how they hop up and down the trunks and branches without falling away from them when they let go their hold. They come down a limb or trunk backward by a series of little hops, moving both feet together. If the limb is at an angle to the tree and they are on the under side of it, they do not fall away from it to get a new hold an inch or half inch farther down. They are held to it as steel to a magnet. Both tail and head are involved in the feat. At the instant of making the hop the head is thrown in and the tail thrown out, but the exact mechanics of it I cannot penetrate. Philosophers do not yet know how a backward-falling cat turns in the air, but turn she does. It may be that the woodpecker never quite relaxes his hold, though to my eye he appears to do so.

Birds nearly always pass the night in such places as they select for their nests,—ground-builders upon the ground, tree-builders upon trees. I have seen an oriole ensconce himself for the night amid the thick cluster of leaves on the end of a maple branch, where soon after his mate built her nest.

My chickadees, true to this rule, pass the arctic winter nights in little cavities in the trunks of trees like the woodpeckers. One cold day, about four o'clock, while it was snowing and blowing, I heard, as I was unharnessing my horse near the old apple-tree, the sharp, chiding note of a chickadee. On looking for the bird I failed to see him. Suspecting the true cause of his sudden disappearance, I took a pole and touched a limb that had an opening in its end where the wrens had the past season had a nest. As I did so, out came the chickadee and scolded sharply. The storm and the cold had driven him early to his chamber. The snow buntings are said to plunge into the snow-banks and pass the night there. We know the ruffed grouse does this.

[Pg 69]

IX

[Pg 70]

BIRD-NESTING TIME

The other day I sat for an hour watching a pair of wood thrushes engaged in building their nest near "Slabsides." I say a pair, though the female really did all the work. The male hung around and was evidently an interested spectator of the proceeding. The mother bird was very busy bringing and placing the material, consisting mainly of dry maple leaves which the winter had made thin and soft, and which were strewn over the ground all about. How pretty she looked, running over the ground, now in shade, now in sunshine, searching for the leaves that were just

to her fancy! Sometimes she would seize two or more and with a quick, soft flight bear them to the fork of the little maple sapling. Every five or six minutes during her absence, the male would come and inspect her work. He would look it over, arrange a leaf or two with his beak, and then go his way. Twice he sat down in the nest and worked his feet and pressed it with his breast, as if shaping it. When the female found him there on her return, he quickly got out of her way.

But he brought no material, he did no needful thing, he was a bird of leisure. The female did all the drudgery, and with what an air of grace and ease she did it! So soft of wing, so trim of form, so pretty of pose, and so gentle in every movement! It was evidently no drudgery to her; the material was handy, and the task one of love. All the behavior of the wood thrush affects one like music; it is melody to the eye as the song is to the ear; it is visible harmony. This bird cannot do an ungraceful thing. It has the bearing of a bird of fine breeding. Its cousin the robin is much more masculine and plebeian, harsher in voice, and ruder in manners. The wood thrush is urban and suggests sylvan halls and courtly companions. Softness, gentleness, composure, characterize every movement. In only a few instances among our birds does the male assist in nest-building. He is usually only a gratuitous superintendent of the work. The male oriole visits the half-finished structure of his mate, looks it over, tugs at the strings now and then as if to try them, and, I suppose, has his own opinion about the work, but I have never seen him actually lend a hand and bring a string or a hair. If I belonged to our sentimental school of nature writers I might say that he is too proud, that it is against the traditions of his race and family; but probably the truth is that he doesn't know how; that the nest-building instinct is less active in him than in his mate; that he is not impelled by the same necessity. It is easy to be seen how important it is that the nesting instinct should be strong in the female, whether it is or not in the male. The male may be cut off and yet the nest be built and the family reared. Among the rodents I fancy the nest is always built by the female.

Whatever the explanation, the mother bird is really the head of the family; she is the most active in nest-building, and in most cases in the care of the young; and among birds of prey, as among insects, the female is the larger and the more powerful.

The wood thrush whose nest-building I have just described, laid only one egg, and an abnormal-looking egg at that—very long and both ends of the same size. But to my surprise out of the abnormal-looking egg came in due time a normal-looking chick which grew to birdhood without any mishaps. The late, cold season and the consequent scarcity of food was undoubtedly the cause of so small a family.

Another pair of wood thrushes built a nest on the low branch of a maple by the roadside, where I had it under daily observation. This nest presently held three eggs, two of which hatched in due time, and for a few days the young seemed to prosper. Then one morning, I noticed the mother bird sitting in a silent, meditative way on the edge of the nest. As she made no move during the minute or two while I watched her, I drew near to see what was the matter. I found one of the young birds in a state of utter collapse; it was cold and all but lifeless. The next morning I found the bird again sitting motionless on the rim of the nest and gazing into it. I found one of the birds dead and the other nearly so. What had brought about the disaster I could not tell; no cause was apparent. I at first suspected vermin, but could detect none. The silent, baffled look of the mother bird I shall not soon forget. There was no demonstration of grief or alarm; only a brooding, puzzled look.

I once witnessed similar behavior on the part of a pair of bluebirds that were rearing a brood in a box on a grape post near my study. One day I chanced to observe one of the parent birds at the entrance of the nest, gazing long and intently in. In the course of the day I saw this act several times, and in no case did the bird enter the box with food as it had been doing. Then I investigated and found the nearly fledged birds all dead. On removing them I found the nest infested with many dark, tough-skinned, very active worms or grubs nearly an inch long, that had apparently sucked the blood out of the bodies of the fledglings. They were probably the larvæ of some species of beetle unknown to me. The parent birds had looked on and seen their young destroyed, and made no effort to free the nest of their enemy. Or probably they had not suspected what was going on, or did not understand it if they beheld it. Their instincts were not on the alert for an enemy so subtle, and one springing up in the nest itself. Any visible danger from without alarmed them instantly, but here was a new foe that doubtless they had never before had to cope with.

The oriole in her nest-building seems more fickle than most other birds. I have known orioles several times to begin a nest and then leave it and go elsewhere. Last year one started a nest in an oak near my study, then after a few days of hesitating labor left it and selected the traditional site of her race, the pendent branch of an elm by the roadside. This time she behaved like a wise bird and came back for some of the material of the abandoned nest. She had attached a single piece of twine to the oak branch, and this she could not leave behind; twine was too useful and too hard to get. So I saw her tugging at this string till she loosened it, then flew toward the elm with it trailing in the air behind her. I could but smile at her thrift. The second nest she completed and occupied and doubtless found her pendent-nest instinct fully satisfied by the high swaying elm branch.

One of our prettiest nest-builders is the junco or snowbird; in fact, it builds the prettiest nest to be found upon the ground, I think—more massive and finely moulded and finished than that of the song sparrow. I find it only in the Catskills, or on their borders, often in a mossy bank by the roadside, in the woods, or on their threshold. With what delicate and consummate art it is

insinuated into the wild scene, like some shy thing that grew there, visible, yet hidden by its perfect fitness and harmony with its surroundings. The mother bird darts out but a few yards from you as you drive or walk along, but your eye is baffled for some moments before you have her secret. Such a keen, feather-edged, not to say spiteful little body, with the emphasis of those two pairs of white quills in her tail given to every movement, and yet, a less crabbed, less hasty nest, softer and more suggestive of shy sylvan ways, than is hers, would be hard to find.

[Pg 75]

One day I was walking along the grassy borders of a beech and maple wood with a friend when, as we came to a little low mound of moss and grass, scarcely a foot high, I said, "This is just the spot for a junco's nest," and as I stooped down to examine it, out flew the bird. I had divined better than I knew. What a pretty secret that little footstool of moss and grass-covered earth held! How exquisite the nest, how exquisite the place, how choice and harmonious the whole scene! How could these eggs long escape the prowling foxes, skunks, coons, the sharp-eyed crows, the searching mice and squirrels? They did not escape; in a day or two they were gone.

Another junco's nest beside a Catskill trout stream sticks in my memory. It was in an open grassy place amid the trees and bushes near the highway. There were ladies in our trouting party and I called them to come and see the treasure I had found.

[Pg 76]

"Where is it?" one of them said, as she stopped and looked around a few paces from me.

"It is within six feet of you," I replied. She looked about, incredulous, as it seemed an unlikely place for a nest of any sort, so open was it, and so easily swept by the first glance.

As she stepped along, perplexed, I said, "Now it is within one yard of you." She thought I was joking; but stooping down, determined not to be baffled, she espied it sheltered by a thin, mossy stone that stood up seven or eight inches above the turf, tilted at an angle of about that of one side of a house-roof. Under this the nest was tucked, sheltered from the sun and rain, and hidden from all but the sharpest eye.

X

[Pg 77]

A BREATH OF APRIL

I

It would not be easy to say which is our finest or most beautiful wild flower, but certainly the most poetic and the best beloved is the arbutus. So early, so lowly, so secretive there in the moss and dry leaves, so fragrant, tinged with the hues of youth and health, so hardy and homelike, it touches the heart as no other does.

April's flower offers the first honey to the bee and the first fragrance to the breeze. Modest, exquisite, loving the evergreens, loving the rocks, untamable, it is the very spirit and breath of the woods. Trailing, creeping over the ground, hiding its beauty under withered leaves, stiff and hard in foliage, but in flower like the cheek of a maiden.

One may brush away the April snow and find this finer snow beneath it. Oh, the arbutus days, what memories and longings they awaken! In this latitude they can hardly be looked for before April, and some seasons not till the latter days of the month. The first real warmth, the first tender skies, the first fragrant showers—the woods are flooded with sunlight, and the dry leaves and the leaf-mould emit a pleasant odor. One kneels down or lies down beside a patch of the trailing vine, he brushes away the leaves, he lifts up the blossoming sprays and examines and admires them at leisure; some are white, some are white and pink, a few are deep pink. It is enough to bask there in the sunlight on the ground beside them, drinking in their odor, feasting the eye on their tints and forms, hearing the April breezes sigh and murmur in the pines or hemlocks near you, living in a present fragrant with the memory of other days. Lying there, half dreaming, half observing, if you are not in communion with the very soul of spring, then there is a want of soul in you. You may hear the first swallow twittering from the sky above you, or the first mellow drum of the grouse come up from the woods below or from the ridge opposite. The bee is abroad in the air, finding her first honey in the flower by your side and her first pollen in the pussy-willows by the watercourses below you. The tender, plaintive love-note of the chickadee is heard here and there in the woods. He utters it while busy on the catkins of the poplars, from which he seems to be extracting some kind of food. Hawks are screaming high in the air above the woods; the plow is just tasting the first earth in the rye or corn stubble (and it tastes good). The earth looks good, it smells good, it is good. By the creek in the woods you hear the first water-thrush—a short, bright, ringing, hurried song. If you approach, the bird flies swiftly up or down the creek, uttering an emphatic "chip, chip."

[Pg 78]

[Pg 79]

In wild, delicate beauty we have flowers that far surpass the arbutus: the columbine, for instance, jetting out of a seam in a gray ledge of rock, its many crimson and flame-colored flowers shaking in the breeze; but it is mostly for the eye. The spring-beauty, the painted trillium, the fringed polygala, the showy lady's-slipper, are all more striking to look upon, but they do not quite touch the heart; they lack the soul that perfume suggests. Their charms do not abide with you as do those of the arbutus.

These still, hazy, brooding mid-April mornings, when the farmer first starts afield with his plow, when his boys gather the buckets in the sugar-bush, when the high-hole calls long and loud through the hazy distance, when the meadowlark sends up her clear, silvery shaft of sound from the meadow, when the bush sparrow trills in the orchard, when the soft maples look red against the wood, or their fallen bloom flecks the drying mud in the road,—such mornings are about the most exciting and suggestive of the whole year. How good the fields look, how good the freshly turned earth looks!—one could almost eat it as does the horse;—the stable manure just being drawn out and scattered looks good and smells good; every farmer's house and barn looks inviting; the children on the way to school with their dinner-pails in their hands—how they open a door into the past for you! Sometimes they have sprays of arbutus in their buttonholes, or bunches of hepatica. The partridge is drumming in the woods, and the woodpeckers are drumming on dry limbs.

[Pg 80]

The day is veiled, but we catch such glimpses through the veil. The bees are getting pollen from the pussy-willows and soft maples, and the first honey from the arbutus.

It is at this time that the fruit and seed catalogues are interesting reading, and that the cuts of farm implements have a new fascination. The soil calls to one. All over the country, people are responding to the call, and are buying farms and moving upon them. My father and mother moved upon their farm in the spring of 1828; I moved here upon mine in March, 1874.

I see the farmers, now going along their stone fences and replacing the stones that the frost or the sheep and cattle have thrown off, and here and there laying up a bit of wall that has tumbled down.

There is rare music now in the unmusical call of the phoebe-bird—it is so suggestive.

The drying road appeals to one as it never does at any other season. When I was a farm-boy, it was about this time that I used to get out of my boots for half an hour and let my bare feet feel the ground beneath them once more. There was a smooth, dry, level place in the road near home, and along this I used to run, and exult in that sense of lightfootedness which is so keen at such times. What a feeling of freedom, of emancipation, and of joy in the returning spring I used to experience in those warm April twilights!

[Pg 81]

I think every man whose youth was spent on the farm, whatever his life since, must have moments at this season when he longs to go back to the soil. How its sounds, its odors, its occupations, its associations, come back to him! Would he not like to return again to help rake up the litter of straw and stalks about the barn, or about the stack on the hill where the grass is starting? Would he not like to help pick the stone from the meadow, or mend the brush fence on the mountain where the sheep roam, or hunt up old Brindle's calf in the woods, or gather oven-wood for his mother to start again the big brick oven with its dozen loaves of rye bread, or see the plow crowding the lingering snow-banks on the side-hill, or help his father break and swingle and hatchel the flax in the barnyard?

When I see a farm advertised for rent or for sale in the spring, I want to go at once and look it over. All the particulars interest me—so many acres of meadow-land, so many of woodland, so many of pasture—the garden, the orchard, the outbuildings, the springs, the creek—I see them all, and am already half in possession.

[Pg 82]

Even Thoreau felt this attraction, and recorded in his Journal: "I know of no more pleasing employment than to ride about the country with a companion very early in the spring, looking at farms with a view to purchasing, if not paying for them."

Blessed is the man who loves the soil!

XI

[Pg 83]

THE WOODCOCK'S EVENING HYMN

The twilight flight song of the woodcock is one of the most curious and tantalizing yet interesting bird songs we have. I fancy that the persons who hear and recognize it in the April or May twilight are few and far between. I myself have heard it only on three occasions—one season in late March, one season in April, and the last time in the middle of May. It is a voice of ecstatic song coming down from the upper air and through the mist and the darkness—the spirit of the swamp and the marsh climbing heavenward and pouring out its joy in a wild burst of lyric melody; a haunter of the muck and a prober of the mud suddenly transformed into a bird that soars and circles and warbles like a lark hidden or half hidden in the depths of the twilight sky. The passion of the spring has few more pleasing exemplars. The madness of the season, the abandon of the mating instinct, is in every move and note. Ordinarily the woodcock is a very dull, stupid bird, with a look almost idiotic, and is seldom seen except by the sportsman or the trampler along marshy brooks. But for a brief season in his life he is an inspired creature, a winged song that baffles the eye and thrills the ear from the mystic regions of the upper air.

[Pg 84]

When I last heard it, I was with a companion, and our attention was arrested, as we were skirting

the edge of a sloping, rather marshy, boulder-strewn field, by the "zeep," "zeep," which the bird utters on the ground, preliminary to its lark-like flight. We paused and listened. The light of day was fast failing; a faint murmur went up from the fields below us that defined itself now and then in the good-night song of some bird. Now it was the lullaby of the song sparrow or the swamp sparrow. Once the tender, ringing, infantile voice of the bush sparrow stood out vividly for a moment on that great background of silence. "Zeep," "zeep," came out of the dimness six or eight rods away. Presently there was a faint, rapid whistling of wings, and my companion said: "There, he is up." The ear could trace his flight, but not the eye. In less than a minute the straining ear failed to catch any sound, and we knew he had reached his climax and was circling. Once we distinctly saw him whirling far above us. Then he was lost in the obscurity, and in a few seconds there rained down upon us the notes of his ecstatic song—a novel kind of hurried, chirping, smacking warble. It was very brief, and when it ceased, we knew the bird was dropping plummet-like to the earth. In half a minute or less his "zeep," "zeep," came up again from the ground. In two or three minutes he repeated his flight and song, and thus kept it up during the half-hour or more that we remained to listen: now a harsh plaint out of the obscurity upon the ground; then a jubilant strain from out the obscurity of the air above. His mate was probably somewhere within earshot, and we wondered just how much interest she took in the performance. Was it all for her benefit, or inspired by her presence? I think, rather, it was inspired by the May night, by the springing grass, by the unfolding leaves, by the apple bloom, by the passion of joy and love that thrills through nature at this season. An hour or two before, we had seen the bobolinks in the meadow beating the air with the same excited wing and overflowing with the same ecstasy of song, but their demure, retiring, and indifferent mates were nowhere to be seen. It would seem as if the male bird sang, not to win his mate, but to celebrate the winning, to invoke the young who are not yet born, and to express the joy of love which is at the heart of Nature.

[Pg 85]

When I reached home, I went over the fourteen volumes of Thoreau's Journal to see if he had made any record of having heard the "woodcock's evening hymn," as Emerson calls it. He had not. Evidently he never heard it, which is the more surprising as he was abroad in the fields and marshes and woods at almost all hours in the twenty-four and in all seasons and weathers, making it the business of his life to see and record what was going on in nature.

[Pg 86]

Thoreau's eye was much more reliable than his ear. He saw straight, but did not always hear straight. For instance, he seems always to have confounded the song of the hermit thrush with that of the wood thrush. He records having heard the latter even in April, but never the former. In the Maine woods and on Monadnock it is always the wood thrush which he hears, and never the hermit.

But if Thoreau's ear was sometimes at fault, I do not recall that his eye ever was, while his mind was always honest. He had an instinct for the truth, and while we may admit that the truth he was in quest of in nature was not always scientific truth, or the truth of natural history, but was often the truth of the poet and the mystic, yet he was very careful about his facts; he liked to be able to make an exact statement, to clinch his observations by going again and again to the spot. He never taxes your credulity. He had never been bitten by the mad dog of sensationalism that has bitten certain of our later nature writers.

Thoreau made no effort to humanize the animals. What he aimed mainly to do was to invest his account of them with literary charm, not by imputing to them impossible things, but by describing them in a way impossible to a less poetic nature. The novel and the surprising are not in the act of the bird or beast itself, but in Thoreau's way of telling what it did. To draw upon your imagination for your facts is one thing; to draw upon your imagination in describing what you see is quite another. The new school of nature writers will afford many samples of the former method; read Thoreau's description of the wood thrush's song or the bobolink's song, or his account of wild apples, or of his life at Walden Pond, or almost any other bit of his writing, for a sample of the latter. In his best work he uses language in the imaginative way of the poet.

[Pg 87]

Literature and science do not differ in matters of fact, but in spirit and method. There is no live literature without a play of personality, and there is no exact science without the clear, white light of the understanding. What we want, and have a right to expect, of the literary naturalist is that his statement shall have both truth and charm, but we do not want the charm at the expense of the truth. I may invest the commonest fact I observe in the fields or by the roadside with the air of romance, if I can, but I am not to put the romance in place of the fact. If you romance about the animals, you must do so unequivocally, as Kipling does and as Æsop did; the fiction must declare itself at once, or the work is vicious. To make literature out of natural history observation is not to pervert or distort the facts, or to draw the long bow at all; it is to see the facts in their true relations and proportions and with honest emotion.

[Pg 88]

Truth of seeing and truth of feeling are the main requisite: add truth of style, and the thing is done.

XII

[Pg 89]

THE COMING OF SUMMER

Who shall say when one season ends and another begins? Only the almanac-makers can fix these dates. It is like saying when babyhood ends and childhood begins, or when childhood ends and

youth begins. To me spring begins when the catkins on the alders and the pussy-willows begin to swell; when the ice breaks up on the river and the first sea-gulls come prospecting northward. Whatever the date—the first or the middle or the last of March—when these signs appear, then I know spring is at hand. Her first birds—the bluebird, the song sparrow, the robin, the red-shouldered starling—are here or soon will be. The crows have a more confident caw, the sap begins to start in the sugar maple, the tiny boom of the first bee is heard, the downy woodpecker begins his resonant tat, tat, tat, on the dry limbs, and the cattle in the barnyard low long and loud with wistful looks toward the fields.

The first hint of summer comes when the trees are fully fledged and the nymph Shadow is born. See her cool circles again beneath the trees in the field, or her deeper and cooler retreats in the woods. On the slopes, on the opposite side of the river, there have been for months under the morning and noon sun only slight shadow tracings, a fretwork of shadow lines; but some morning in May I look across and see solid masses of shade falling from the trees athwart the sloping turf. How the eye revels in them! The trees are again clothed and in their right minds; myriad leaves rustle in promise of the coming festival. Now the trees are sentient beings; they have thoughts and fancies; they stir with emotion; they converse together; they whisper or dream in the twilight; they struggle and wrestle with the storm.

"Caught and cuff'd by the gale,"

Tennyson says.

Summer always comes in the person of June, with a bunch of daisies on her breast and clover blossoms in her hands. A new chapter in the season is opened when these flowers appear. One says to himself, "Well, I have lived to see the daisies again and to smell the red clover." One plucks the first blossoms tenderly and caressingly. What memories are stirred in the mind by the fragrance of the one and the youthful face of the other! There is nothing else like that smell of the clover: it is the maidenly breath of summer; it suggests all fresh, buxom, rural things. A field of ruddy, blooming clover, dashed or sprinkled here and there with the snow-white of the daisies; its breath drifts into the road when you are passing; you hear the boom of bees, the voice of bobolinks, the twitter of swallows, the whistle of woodchucks; you smell wild strawberries; you see the cattle upon the hills; you see your youth, the youth of a happy farm-boy, rise before you. In Kentucky I once saw two fields, of one hundred acres each, all ruddy with blooming clover—perfume for a whole county.

The blooming orchards are the glory of May, the blooming clover-fields the distinction of June. Other characteristic June perfumes come from the honey-locusts and the blooming grapevines. At times and in certain localities the air at night and morning is heavy with the breath of the former, and along the lanes and roadsides we inhale the delicate fragrance of the wild grape. The early grasses, too, with their frostlike bloom, contribute something very welcome to the breath of June.

Nearly every season I note what I call the bridal day of summer—a white, lucid, shining day, with a delicate veil of mist softening all outlines. How the river dances and sparkles; how the new leaves of all the trees shine under the sun; the air has a soft lustre; there is a haze, it is not blue, but a kind of shining, diffused nimbus. No clouds, the sky a bluish white, very soft and delicate. It is the nuptial day of the season; the sun fairly takes the earth to be his own, for better or for worse, on such a day, and what marriages there are going on all about us: the marriages of the flowers, of the bees, of the birds. Everything suggests life, love, fruition. These bridal days are often repeated; the serenity and equipoise of the elements combine. They were such days as these that the poet Lowell had in mind when he exclaimed, "What is so rare as a day in June?" Here is the record of such a day, June 1, 1883: "Day perfect in temper, in mood, in everything. Foliage all out except on button-balls and celtis, and putting on its dark green summer color, solid shadows under the trees, and stretching down the slopes. A few indolent summer clouds here and there. A day of gently rustling and curtsying leaves, when the breeze almost seems to blow upward. The fields of full-grown, nodding rye slowly stir and sway like vast assemblages of people. How the chimney swallows chipper as they sweep past! The vireo's cheerful warble echoes in the leafy maples; the branches of the Norway spruce and the hemlocks have gotten themselves new light green tips; the dandelion's spheres of ethereal down rise above the grass: and now and then one of them suddenly goes down: the little chipper, or social sparrow, has thrown itself upon the frail stalk and brought it to the ground, to feed upon its seeds; here it gets the first fruits of the season. The first red and white clover heads have just opened, the yellow rock-rose and the sweet viburnum are in bloom; the bird chorus is still full and animated; the keys of the red maple strew the ground, and the cotton of the early everlasting drifts upon the air." For several days there was but little change. "Getting toward the high tide of summer. The air well warmed up, Nature in her jocund mood, still, all leaf and sap. The days are idyllic. I lie on my back on the grass in the shade of the house, and look up to the soft, slowly moving clouds, and to the chimney swallows disporting themselves up there in the breezy depths. No hardening in vegetation yet. The moist, hot, fragrant breath of the fields—mingled odor of blossoming grasses, clover, daisies, rye—the locust blossoms, dropping. What a humming about the hives; what freshness in the shade of every tree; what contentment in the flocks and herds! The springs are yet full and cold; the shaded watercourses and pond margins begin to draw one." Go to the top of the hill on such a morning, say by nine o'clock, and see how unspeakably fresh and full the world looks. The morning shadows yet linger everywhere, even in the sunshine; a kind of blue coolness and freshness, the vapor of dew tinting the air.

Heat and moisture, the father and mother of all that lives, when June has plenty of these, the

[Pg 90]

[Pg 91]

[Pg 92]

[Pg 93]

increase is sure.

Early in June the rye and wheat heads begin to nod; the motionless stalks have a reflective, meditative air. A little while ago, when their heads were empty or filled only with chaff and sap, how straight up they held them! Now that the grain is forming, they have a sober, thoughtful look. It is one of the most pleasing spectacles of June, a field of rye gently shaken by the wind. How the breezes are defined upon its surface—a surface as sensitive as that of water; how they trip along, little breezes and big breezes together! Just as this glaucous green surface of the rye-field bends beneath the light tread of the winds, so, we are told, the crust of the earth itself bends beneath the giant strides of the great atmospheric waves.

[Pg 94]

There is one bird I seldom hear till June, and that is the cuckoo. Sometimes the last days of May bring him, but oftener it is June before I hear his note. The cuckoo is the true recluse among our birds. I doubt if there is any joy in his soul. "Rain-crow," he is called in some parts of the country. His call is supposed to bode rain. Why do other birds, the robin for instance, often make war upon the cuckoo, chasing it from the vicinity of their nests? There seems to be something about the cuckoo that makes its position among the birds rather anomalous. Is it at times a parasitical bird, dropping its eggs into other birds' nests? Or is there some suggestion of the hawk about our species as well as about the European? I do not know. I only know that it seems to be regarded with a suspicious eye by other birds, and that it wanders about at night in a way that no respectable bird should. The birds that come in March, as the bluebird, the robin, the song sparrow, the starling, build in April; the April birds, such as the brown thrasher, the barn swallow, the chewink, the water-thrush, the oven-bird, the chippy, the high-hole, the meadowlark, build in May, while the May birds, the kingbird, the wood thrush, the oriole, the orchard starling, and the warblers, build in June. The April nests are exposed to the most dangers: the storms, the crows, the squirrels, are all liable to cut them off. The midsummer nests, like that of the goldfinch and the waxwing, or cedar-bird, are the safest of all.

[Pg 95]

In March the door of the seasons first stands ajar a little; in April it is opened much wider; in May the windows go up also; and in June the walls are fairly taken down and the genial currents have free play everywhere. The event of March in the country is the first good sap day, when the maples thrill with the kindling warmth; the event of April is the new furrow and the first seeding;—how ruddy and warm the soil looks just opened to the sun!—the event of May is the week of orchard bloom; with what sweet, pensive gladness one walks beneath the pink-white masses, while long, long thoughts descend upon him! See the impetuous orioles chase one another amid the branches, shaking down the fragrant snow. Here the rose-breasted grosbeak is in the blooming cherry tree, snipping off the blossoms with that heavy beak of his—a spot of crimson and black half hidden in masses of white petals. This orchard bloom travels like a wave. In March it is in the Carolinas; by the middle of April its crest has reached the Potomac; a week or ten days later it is in New Jersey; then in May it sweeps through New York and New England; and early in June it is breaking upon the orchards in Canada. Finally, the event of June is the fields ruddy with clover and milk-white with daisies.

[Pg 96]

TRANSCRIBER'S NOTES

Title page: Changed typo "Cambridg" to "Cambridge."

Table of Contents/Chapter VIII: Retained punctuation error in chapter title.

Page 18: Added missing period to sentence: "The bear was fussing ... to burying it."

Page 30: Changed typo "suddenly" to "suddenly."

Pages 31, 79, 95: Retained inconsistent spellings of highhole/high-hole.

Pages 32 & 58: Retained inconsistent spellings of treetops/tree-tops.

Page 38: Changed single quote to double quote in sentence: "Here, Jim, you do this ... thing through".

Chapter XII: Changed typo "IIX" to "XII."

*** END OF THE PROJECT GUTENBERG EBOOK THE WIT OF A DUCK AND OTHER PAPERS ***

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