

laugh, an' h'every time Chunky try for get h'up, Johnnie knock 'eem down; an' h'every time 'e knock 'eem down, I'll kick 'eem.

An' bymby Johnnie 'e say, "Dere,

Frenchy, dat's 'nough for de firs' day." An' 'e say, "Now go on de shanty an' get your dinner."

An' I'll go, an' I'll never h'eat de pea soup so good like dat on my life.

OUR GRAY SQUIRRELS: A STUDY.

BY ERNEST INGERSOLL.

DOWN past my window, as I sit writing beside it, falls a twig from the black oak at the corner of the house. Half a minute later another sinks wavering downward, buoyed by its broad leaves, which are green and healthy. This happens in July, far in advance of their natural time to fall. What is the cause? A glance informs me. One of our gray squirrels is out on the end of an overhanging limb, and I am just in time to see him bite off another leafy twig and carry it away. It is evident that he had dropped the other one accidentally. What is he doing? I vault out of the window, and keep him in view as he makes his way nearly to the summit of a tall white oak, where he leaves his branch as a contribution to a half bushel or so of sticks and leaves lodged in a convenient notch. Another squirrel is there, and together they scramble over the mass, packing and entangling it together, and occasionally disappearing into its interior, showing that it is hollow.

I know this pair of squirrels very well. They have been tenants of the grove ever since we came to live in this edge of the city, and though the town has now grown beyond and around us, and the grove is given a perpetual moonlight from the electric lamp on the corner, the trees and bushes remain, nuts and acorns come with each returning autumn, and in midwinter provender is spread upon friendly window-sills.

Almost the only advantage the squirrels have taken of civilization, however, has been to occupy the boxes that my benevolent neighbor, Dr. J. P. Phillips, has put up for them in the trees, which are tenanted more or less all the year round, one family occupying each box and tree by itself as long as it wishes, and putting in its own furniture—a new bedroom set of grass and soft leaves. By midsummer these tenements become so hot and vermin-infested that the squirrels leave

them and construct bowers of leaves, as my friends in the oak were doing when they attracted my attention; and they occasionally inhabit them all winter, when the family nestles into a fluffy mass of loose leaves and grass, forming the centre of the ball, and thus keeps warm.

This squirrel is the one which in the older books is called the Northern gray squirrel, *Sciurus migratorius*, in contrast with the Southern gray squirrel. Several other closely related species have been described from the interior and the Pacific coast, besides the very distinct "fox," "red," "flying," and other sharply distinguished members of the family. Certain differences of size and coat noticeable between types of our gray squirrel from widely separated regions, accompanied by local peculiarities of habit, at first misled naturalists, but only one species is now recognized—*Sciurus carolinensis*.

The first litter of young among the wild gray squirrels is seen in March in the warmer parts of the country, and somewhat later in the more northern States and in Canada. At least one more brood usually follows before winter. Our friends in the grove, however, sure of food and lodging, bring out their broods with little regard to season. One female, which has been known to us for years as the "mother squirrel," seems rarely without a family; and Dr. Phillips assures me that he has known her to bear four litters in a single twelvemonth.

This exhibits the hardihood of these little animals. No weather seems cold enough to daunt them. They endure the semi-arctic climate north of Lake Superior, remain all the year on the peaks of the Adirondacks, where their only food is the seeds of the black spruce, and appear in midwinter in Manitoba; but when a sleet-storm comes, and every branch and twig is incased in ice, then the squirrel stays at home. I remember one such storm which was of unusual

severity and did vast damage. The ice clothed the trees for several days in succession, and the imprisoned animals became very hungry. The doctor and I had swung from tree to tree a line of bridges made of poles, along which the squirrels scampered, no less to their delight than to ours, often leaping one over the other with extraordinary agility and grace when two met on this single-track air-line road.

One of these bridges led to a window-sill in each residence, where food was often spread, and it was amusing to see the circumspection with which, at last, they crept toward it along the icy poles, digging their claws into the glazed surface, and often slipping astride or almost off.

In the tree-tops, where they rush and leap at full speed, they are by no means safe from falling, but usually manage to catch hold somewhere, often by only a single toe, apparently, yet are able to lift the body up, like gymnasts, to a firmer foothold. Their strength is remarkable, especially in the region of the great hams, whose development accounts for the really astonishing jumping powers these animals possess.

Should they fall clear to the ground, as sometimes happens, they alight right side up like a cat, and seem none the worse for the accident. The feet are wide-spread in such a case, and the loose skin over the ribs is stretched and flattened out very perceptibly. It would seem only a step from that condition to the parachute with which the flying-squirrel is provided; but if the development of this formation in the latter came about through natural selection, it must have begun very long ago, for Cope has found a fossil (*Allomys*) which he considers representative of the flying-squirrel type as far back as the Jurassic.

The spring and early summer is most



"THEY HAD VERY PRETTY WAYS."

uniformly the season of reproduction, and this is the period when we see least of our pets. The mothers are awaiting the birth of their annual or perhaps semiannual broods, and spend most of their time at rest in their homes, while all the males of the grove go wandering away to visit other temporary bachelors. To call them *temporary husbands* would be nearer truth, however, for, so far as we can discover, the mating is only for a single season, and as soon as gestation begins the mothers become vixenish, and not only turn their husbands out of doors, but expel them from the premises.

Usually four kittens arrive in one litter, blind and helpless, and during the first month remain within the nest, closely attended by the mother, who permits no other squirrel—even the presumed mate—

to come near her. Each family, in fact, pre-empt a tree, and their sense of property is so strong that usually a trespasser will depart with little resistance, as if conscious of being where he has no right. Old males will sometimes kill their young, so that the mother does well to keep all at a distance.

At the end of a month the young are half grown, and begin to scramble awkwardly about their doorway, yet the mother won't let them leave the nest until she thinks they are fully ready.

One morning in the middle of October I observed that a family of four young squirrels was venturing forth from a box just outside my study window. They were not more than six weeks old, and were very timid. It was not often that more than two or three would appear at once, and one of these seemed much farther advanced than the rest, while another was very babyish. Their prime characteristic was inquisitiveness. What a fine and curious new world was this they had been introduced to! How much there was to see! How many delightful things to do! They ceaselessly investigated everything about them with minute attention, and had very pretty ways, such as a habit of clasping each other in their arms around the neck. They frequently scratched and stroked one another. Once I saw one diligently combing another's tail with his fore feet. Young red squirrels, of which we also had a family or two, play somewhat differently, having a peculiar way of regularly boxing with their fore paws.

Gradually they gain strength and confidence, and then you will see how far the liveliness of the young can surpass even the tireless activity of old squirrels. Both old and young are exceedingly fond of play, springing from the ground as if in a high-jumping match, and turning regular summersaults in the grass; but the most amusing thing is this: Finding a place where the tip of a tough branch hangs almost to the ground, they will leap up and catch it, sometimes with only one hand, and then swing back and forth with the greatest glee, just like boys who discover a grape-vine in the woods or a dangling rope in a gymnasium. These and many similar antics seem to be done "just for fun."

The kittens continue to be nursed by the mother until they have grown to be

almost as heavy as herself. It seems impossible that her system can stand such a drain—in fact she does grow weak and thin—and my neighbor, who has been an extremely close observer of their economy for several years, has come to the conclusion that the mother weans the kittens gradually by giving them food which she has regurgitated, or, at any rate, has thoroughly chewed up in her own mouth.

No animal is more motherly than one of these parent squirrels, and it is delightful to watch her behavior when the newly grown brood has begun to make short excursions, and is undergoing instruction. All the other families in the grove take an interest in the proceedings, and chatter about it at a great rate; but if one comes too near and attempts any interference in the instruction, he is likely to be driven away most vigorously by the jealous mother. Every morning lessons in climbing and nut-hunting are given, and pretty scenes are enacted. The pride of the little mother as she leads her train out on some aerial path is very noticeable. They are slow and timid about following. Squirrels must learn to balance themselves on the pliant limbs by slow degrees. It is many a long day after they are able to chase one another up and down and under and around a rough oak trunk in the liveliest game of tag ever witnessed before they can skip about the branches and leap from one to the other with confidence in their security. The patient mother understands this, and encourages them very gently to "try, try again." I remember one such lesson. The old one marched ahead slowly, uttering low notes, as if to say: "Come on, my dears. Don't be afraid!" Every little while she would stop, and the two well-grown children following would creep up to her, and put their arms around her neck in the most human fashion, as if protesting that it was almost too hard a task.

This loving-kindness is extended to other young squirrels whenever no question of family rivalry interferes.

In spite of this I do not believe that, generally speaking, the gray squirrel is a very intelligent animal or has much brain power, though he is not wholly stupid. It took our squirrels a very short time to learn that cracked nuts of several varieties, grains of corn, and other food were to be had on the window-sills. The squirrels know, furthermore, that the nuts

are placed there from the inside, and if, as occasionally happens, the sill is empty, they will often stand up and tap upon the glass, as if to attract notice to their hunger. Moreover, they know very well when meal hours come round, and will present themselves at the windows pretty regularly, since they have learned to expect

to our presence, while they will raise a great clamor whenever a stranger walks about under the trees. More than this, they know the doctor's horse and carriage, and pay no attention to it, but become excited whenever another vehicle enters the premises. They will stay quietly eating on the window-sill while one of us sits



“THE LIVELIEST GAME OF TAG EVER WITNESSED.”

more than ordinary attention then, even when the meal is occasionally omitted, so that no noise of preparation could have apprised them of the time. The doctor has had a few come timorously to take corn from his fingers, as the same squirrels on Capitol Hill, in Richmond, and in some other city parks will do from almost any one. I should add, however, that my neighbor and some others have a somewhat higher idea of their mental capabilities than I have formed.

It is plain that they recognize all of us as acquaintances from their indifference

just inside the glass, but if they see a visitor in the room will almost invariably seize a nut and scamper away as fast as they can go. Furthermore, their actions convince us that when, as often happens in midsummer, Dr. Phillips meets one of our squirrels in some far-away street, the little animal recognizes him, and shows its confidence in his accustomed kindness.

Though these squirrels have few enemies, they have never lost their wariness. Sometimes a tremendous clamor will break out in the tree-tops—a mixture of sharp ch-r-r-rs and whines, easily intelligible

as notes of alarm and indignation. These usually mean that a strange dog or cat is somewhere near. No hawks or owls (save the little screech-owl) ever come to disturb them, and, of course, none of the wild-cats, weasels, or large serpents which kill them in the wild forest is here to molest or make them afraid, yet the population of the grove never seems to increase, though the eight or ten pairs more than double their numbers every six months.

The explanation is that the young leave us on coming to maturity. As a rule, their family had moved from the house where they were born to new quarters as soon as the young could take care of themselves, and here a new litter would soon be forth-coming.

These family flittings are often amusing spectacles. Sometimes the mother transports her kittens when blind and hairless, carrying them in her teeth; but generally she waits until they are able to travel. I recall one instance where early in the morning a mother had got her kittens down from the old nest to the end of a bridge that ran across to the chinquepin, in which her new home was to be. But to go out on that bridge was too much for the youngsters. She would run ahead, and one or two of them would creep after her a few yards, then suddenly become panic-stricken and scramble back. Again and again did the little mother, with endless patience and pains, counsel and entice them, until at last one was induced to keep a stout heart until he was safely over. Then ensued another interval of chattering and repeated trials and failures, and so the second and third were finally got across. It was now noon, and the poor squirrel looked quite fagged out, her ears drooped, her fur was ruffled, her movements had lost their *verve*, her tail hung low, and her cries became sharp and short. Her patience was exhausted. Instead of tenderly coaxing the last one of the four, she scolded at him, driving rather than leading the terrorized youngster along the shaky cable, and when it had reached the further tree, she seized it in her mouth, and fairly shoved it through the door of the new box.

It is probable that in their wild state, before their forest range was restricted and men began to slaughter them, all the arboreal squirrels were able by longevity and rapid increase to more than keep pace with the deaths in their ranks. Their

natural term of life probably approaches twenty years. We have known continuously for eight years one female who was apparently an old mother when she came, and is yet hale and hearty. During this time she has regularly produced at least two broods a year. At such a rate squirrels would multiply until they overbalanced the ratio of numbers assigned them by nature. Accounts by early writers show that they must formerly have been amazingly numerous. Godman says that the gray-coat was a fearful scourge to colonial farmers, and that Pennsylvania paid £8000 in bounties for their scalps during 1749 alone. This meant the destruction of 640,000 within a comparatively small district. In the early days of Western settlement regular hunts were organized by the inhabitants, who would range the woods in two companies from morning till night, vying as to which band should bring home the greater number of trophies; the quantities thus killed are almost incredible now.

Out of these excessive multitudes grew those sudden and seemingly aimless migrations of innumerable hosts of squirrels which justly excited wonder half a century ago. Thousands upon thousands, of this species usually, would suddenly appear in a locality, moving steadily in one direction. These migrations occurred only in warm weather, and at intervals of about five years, and all that I have been able to find notes upon were headed eastward. Nothing stopped the column, which would press forward through forests, prairies, and farm fields, over mountains and across broad rivers, such even as the Niagara, Hudson, and Mississippi. This little creature hates the water and is a bad swimmer, paddling clumsily along with his whole body and tail submerged. A large part, therefore, would be drowned, and those which managed to reach the opposite shore were so weary that many could be caught by the hand. Of course every floating object would be seized upon by the desperate swimmers, and thus arose the pretty fable that the squirrels ferried themselves over by launching and embarking upon chips, raising their tails as sails for their tiny rafts.

The motive which impelled the little migrants to gather in great companies from a wide area, and then in a vast coherent army to begin a movement, and continue it steadily in one direction for

hundreds of miles, is hard to discover. It did not seem to be lack of food, for they were always fat. The migration was leisurely performed, too—never in too great a hurry to prevent feasting upon any fields of corn or sometimes of unripe grain that came in the way. Such a visitation, therefore, was like a flight of devouring locusts, one chronicler alleging that the sound they made in the maize in stripping off the husks to get at the succulent kernels was equal to that of a field full of men at harvesting. There is no difficulty, moreover, in judging of the effect such migrations would have in restoring equilibrium in sciurine population, since, of the surplus which started, few survived long, and the remnant at last faded away among the Alleghanies or in some other distant locality without seeming to increase the number of squirrels there.

The curiosity and gayety of the gray squirrel are perhaps his strongest personal characteristics. Nothing unusual escapes his attention, and he is never satisfied until he knows all about it. He is the Paul Pry, the news-gatherer, of the woods.

When a new building is in course of erection in or near the grove, the workmen no sooner leave it than half a dozen squirrels go over and under and through it, examining every part. If I trim away branches and lay them in a heap, or repair a fence, or do anything else, Mr. Gray inspects it thoroughly the moment my back is turned; and when once the house was reoccupied after a long vacancy, we caught the squirrels peering in at the windows and hopping gingerly to the sill of each open door, to make sure the matter was all right.

It is most amusing to watch them on these tours of inspection. Two or three times a day each one makes the rounds of the premises, racing along the fences, and into one tree after another, as if to make certain that nothing had gone

wrong. He will halt on the summit of each post, rear up, and look all about him; or, if his keen ears hear an unwonted sound, will drop down upon all-fours, ready to run, his tail held over his back like a silver-edged plume, twitching ner-



"HE WILL HALT ON THE SUMMIT OF EACH POST."

ously and jerking with each sharp utterance, as though it were connected with his vocal organs by a string. "All his movements," said Thoreau, "imply a spectator."

Their tails, which are flat, and have the wavy hair growing laterally from a careful parting along the muscular middle, are subjects of great pride. They are no doubt useful as a wrapper in cold weather, and certainly assist the agile acrobats as a balancing-pole; but that they are highly appreciated as ornaments is very plain from the abashed demeanor of their owners when a portion of the brush is lost. The generic name *Sciurus* (from which comes "squirrel," through the French) is derived from Greek words meaning a creature which sits under the shadow of its tail; and the



FATAL CURIOSITY.

name *shade-tail* is in use in the South today. We might appropriately translate the Greek in this case as designating "an animal whose tail puts all the rest of him into the shade."

The excessive inquisitiveness I have described often gets them into trouble, and is taken advantage of by their enemies. A wise serpent will coil himself at the foot of a tree where squirrels are playing, and will slowly wave his tail or display his red tongue, sure that the squirrel will see him. No doubt they know him for what he is—a deadly enemy; but they cannot resist a nearer look at the curious object and that extraordinary motion. Whining, ch-r-r-r-ing, bark-

ing, they creep down the tree trunk. The snake lies motionless, his glittering eyes fixed upon the excited little quadruped. Step by step, impelled by a fatal desire to learn more about that fascinating thing in the grass, Bunny steals forward—and is lost!

In winter they are more active, if anything, than in summer, racing about the trees at a furious rate, as if invigorated to fresh activity by the keen air. Yet the book-writers insist that their habit is otherwise, and have described extensively their alleged hibernation. Certainly *our* squirrels do not hibernate nor become torpid in winter. During the twenty years they have been under observation here in

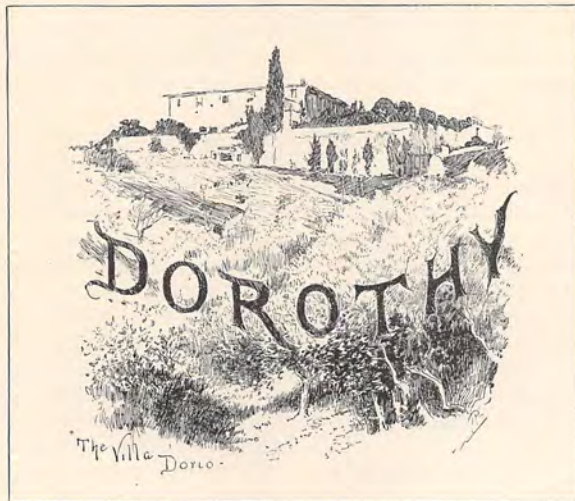
New Haven there has never been a day—excepting very sleety ones, perhaps—when they did not appear.

The same denial must be made in respect to the hoards of food reported laid up for winter use. Our grays store no "hoards" in the ordinary sense of the word, though both our red and our ground squirrels do so.

What the gray squirrels do is this: as soon as nuts and acorns begin to ripen in the autumn, they gather them with great industry, and bury them one by one, separately. They do this diligently and furtively, attracting no more attention than they can help. Hopping about in the grass until they have chosen a place, a hole, perhaps two inches deep, is hastily scraped out, the nut is pushed to the bottom and covered up. The animal then stamps down the earth and hurries away.

They never bury the food given them or found in the summer, but in the fall will save and bury along with their wild provender the nuts and occasionally grains of corn taken from the window-sills.

Whether any of these are dug up before midwinter I do not know; I think not. The squirrels wander off into the woods when the mast is ripe, and get fat upon the oily food. But when this harvest is over, and their stores must be drawn upon, their ability in discovering them is wonderful. They seem to know precisely the spot in the grass where each nut is buried, and will go directly to it; and I have seen them hundreds of times, when the snow was more than a foot deep, wade floundering through it straight to a certain point, dive down, perhaps clear out of sight, and in a moment emerge with the nut in their jaws.



BY CONSTANCE FENIMORE WOOLSON.

I.

AS it was Saturday, many visitors came to the villa, Giuseppe receiving them at the open door, and waving them across the court or up the stone stairway, according to their apparent inclination, murmuring as he did so: "To the garden; the Signora North?" "To the salon; the Signora Tracy?" with his most inviting smiles. Dorothy probably was with Mrs. North in the garden. And ev-

erybody knew that the tea and the comfortable chairs were upstairs. The company therefore divided itself, the young people as far as possible, the men who like to appear young, and the mothers who have heavier cares than the effects of open-air light on a middle-aged complexion, crossing the paved quadrangle to the north hall, while the old ladies, and the ladies (not so old) who detest gardens, ascended the stairs, accompanied