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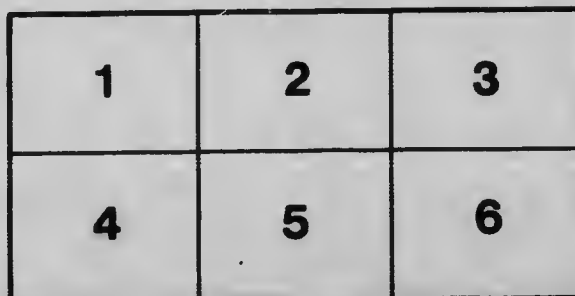
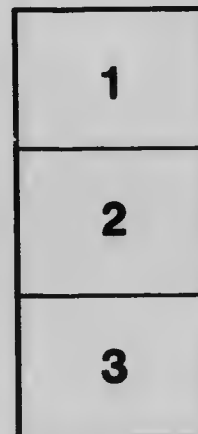
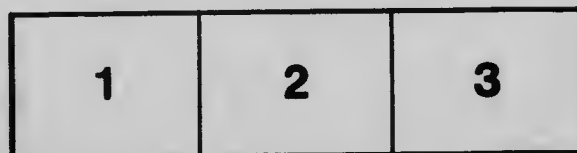
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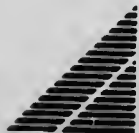
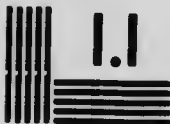
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Number 41

Birds and Bees

BY

JOHN BURROUGHS

TOBONTO

THE MACMILLAN COMPANY
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BIRDS AND BEES

BY

JOHN BURROUGHS



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NOTE

"Bird Enemies" and the "Tragedies of the Nests" are taken from Burroughs's *Signs and Seasons*, "An Idyl of the Honey-Bee" from *Pepacton*, and "The Pastoral Bees" from *Locusts and Wild Honey*.



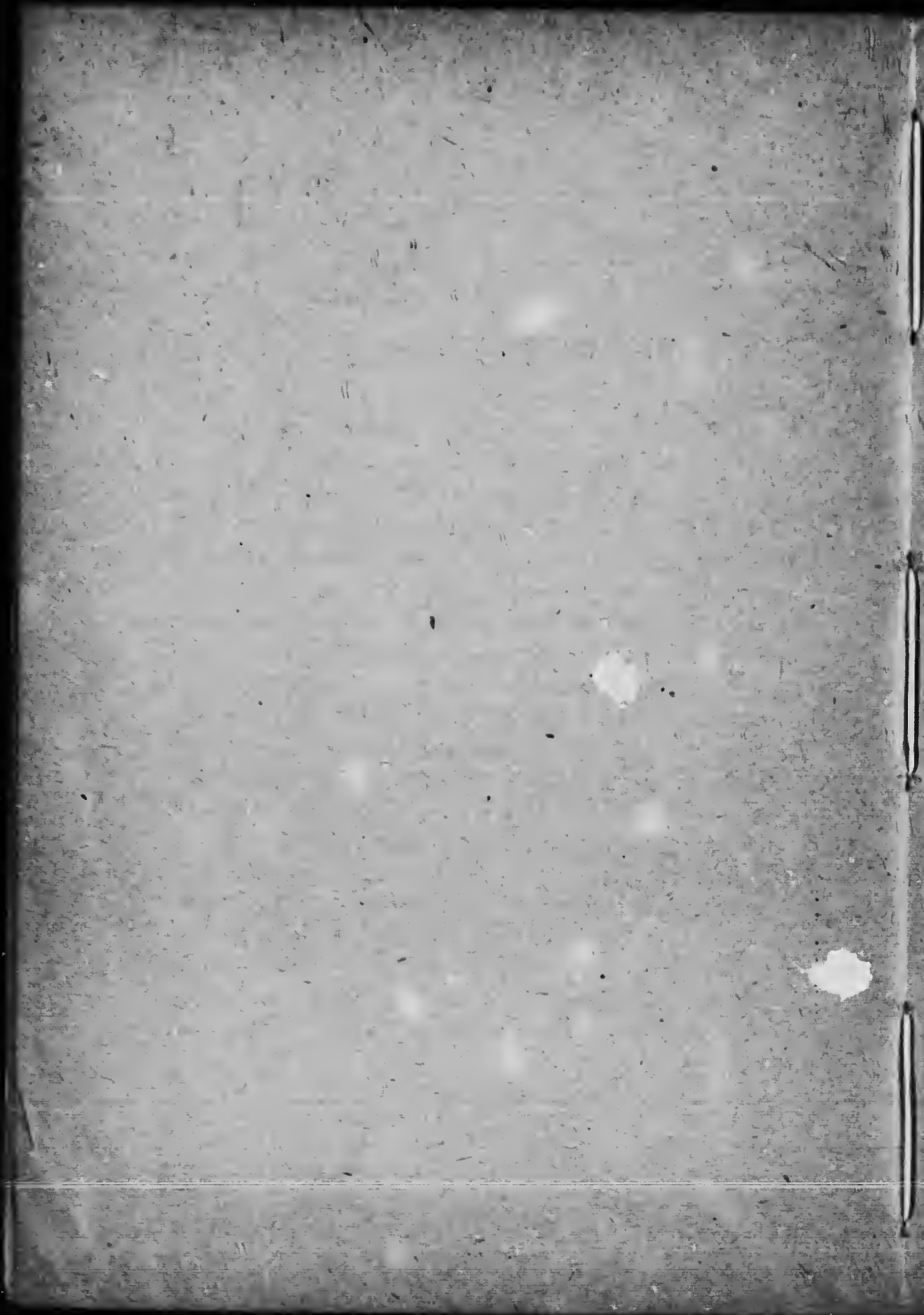
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BIOGRAPHICAL SKETCH

JOHN BURROUGHS was born at Roxbury, New York, on April 3, 1837. His early education was received in the district school, and in the academies of the neighboring villages. He remained in the country, working on the farm and teaching school at various places, until 1863, when he went to Washington, where he obtained employment in the government service. For some time he was chief of the Bureau of Organization in the office of the Comptroller of the Currency, and in 1871 visited England on business connected with that Department. In 1873 he resigned his position, and became receiver of a bankrupt national bank. In 1885 he was appointed a special national bank examiner. Subsequently he gave up active business and retired to his home near Esopus, on the Hudson River, in New York State, where he continues to reside.

Burroughs has been a prolific writer, his works now numbering many volumes. Among the most important are: *Locusts and Wild Honey*, *Wake-Robin*, *Winter Sunshine*, *Pepacton*, *Fresh Fields*, *Birds and Poets*, *Signs and Seasons*, *Indoor Studies*, *Ways of Nature*, and *Whitman: A Study*.



BIRDS



BIRDS

BIRD ENEMIES

How surely the birds know their enemies! See how the wrens and robins and bluebirds pursue and scold the cat, while they take little or no notice of the dog! Even the swallow will fight the cat, and, relying too confidently upon its powers of flight, sometimes swoops down so near to its enemy that it is caught by a sudden stroke of the cat's paw. The only case I know of in which our small birds fail to recognize their enemy is furnished by the shrike; apparently the little birds do not know that this modest-colored bird is an assassin. At least, I have never seen them scold or molest him, or utter any outcries at his presence, as they usually do at birds of prey. Probably it is because the shrike is a rare visitant, and is not found in this part of the country during the nesting season of our songsters.

But the birds have nearly all found out the trick of the jay, and when he comes sneaking through the trees in May and June in quest of eggs, he is quickly exposed and roundly abused. It is amusing to see the robins hustle him out of the tree which holds their nest. They cry "Thief, thief!" to the top of their voices as they charge upon him, and the jay retorts in a voice scarcely less complimentary as he makes off.

The jays have their enemies also, and need to keep an eye on their own eggs. It would be interesting to know if jays ever rob jays, or crows plunder crows;

or is there honor among thieves even in the feathered tribes? I suspect the jay is often punished by birds which are otherwise innocent of nest-robbing. One season I found a jay's nest in a small cedar on the side of a wooded ridge. It held five eggs, every one of which had been punctured. Apparently some bird had driven its sharp beak through their shells, with the sole intention of destroying them, for no part of the contents of the eggs had been removed. It looked like a case of revenge; as if some thrush or warbler, whose nest had suffered at the hands of the jays, had watched its opportunity, and had in this way retaliated upon its enemies. An egg for an egg. The jays were lingering near, very demure and silent, and probably ready to join a crusade against nest-robbers.

The great bugaboo of the birds is the owl. The owl snatches them from off their roosts at night, and gobbles up their eggs and young in their nests. He is a veritable ogre to them, and his presence fills them with consternation and alarm.

One season, to protect my early cherries, I placed a large stuffed owl amid the branches of the tree. Such a racket as there instantly began about my grounds is not pleasant to think upon! The Orioles and robins fairly "shrieked out their affright." The news instantly spread in every direction, and apparently every bird in town came to see that owl in the cherry-tree, and every bird took a cherry, so that I lost more fruit than if I had left the owl indoors. With craning necks and horrified looks the birds alighted upon the branches, and between their screams would snatch off a cherry, as if the act was some relief to their outraged feelings.

The chirp and chatter of the young of birds which

build in concealed or enclosed places, like the woodpeckers, the house wren, the high-hole, the oriole, is in marked contrast to the silence of the fledgelings of most birds that build open and exposed nests. The young of the sparrows, — unless the social sparrow be an exception, — warblers, fly-catchers, thrushes, never allow a sound to escape them; and, on the alarm note of their parents being heard, sit especially close and motionless, while the young of chimney swallows, woodpeckers, and orioles are very noisy. The latter, in its deep pouch, is quite safe from birds of prey, except perhaps the owl. The owl, I suspect, thrusts its leg into the cavities of woodpeckers and into the pocket-like nest of the oriole, and clutches and brings forth the birds in its talons. In one case which I heard of, a screech-owl had thrust its claw into a cavity in a tree, and grasped the head of a red-headed woodpecker; being apparently unable to draw its prey forth, it had thrust its own round head into the hole, and in some way became fixed there, and had thus died with the woodpecker in its talons. ✓

The life of birds is beset with dangers and mishaps of which we know little. One day, in my walk, I came upon a goldfinch with the tip of one wing securely fastened to the feathers of its rump, by what appeared to be the silk of some caterpillar. The bird, though uninjured, was completely crippled, and could not fly a stroke. Its little body was hot and panting in my hands, as I carefully broke the fetter. Then it darted swiftly away with a happy cry. A record of all the accidents and tragedies of bird life for a single season would show many curious incidents. A friend of mine opened his box-stove one fall to kindle a fire in it, when he beheld in the black interior the desic-

cated forms of two bluebirds. The birds had probably taken refuge in the chimney during some cold spring storm, and had come down the pipe to the stove, from whence they were unable to ascend. A peculiarly touching little incident of bird life occurred to a caged female canary. Though unmated, it laid some eggs, and the happy bird was so carried away by her feelings that she would offer food to the eggs, and chatter and twitter, trying, as it seemed, to encourage them to eat! The incident is hardly tragic, neither is it comic.

Certain birds nest in the vicinity of our houses and outbuildings, or even in and upon them, for protection from their enemies, but they often thus expose themselves to a plague of the most deadly character.

I refer to the vermin with which their nests often swarm, and which kill the young before they are fledged. In a state of nature this probably never happens; at least I have never seen or heard of it happening to nests placed in trees or under rocks. It is the curse of civilization falling upon the birds which come too near man. The vermin, or the germ of the vermin, is probably conveyed to the nest in hen's feathers, or in straws and hairs picked up about the barn or hen-house. A robin's nest upon your porch or in your summer-house will occasionally become an intolerable nuisance from the swarms upon swarms of minute vermin with which it is filled. The parent birds stem the tide as long as they can, but are often compelled to leave the young to their terrible fate.

One season a phoebe-bird built on a projecting stone under the eaves of the house, and all appeared to go well till the young were nearly fledged, when the nest suddenly became a bit of purgatory. The birds kept their places in their burning bed till they could hold

out no longer, when they leaped forth and fell dead upon the ground.

After a delay of a week or more, during which I imagine the parent birds purified themselves by every means known to them, the couple built another nest a few yards from the first, and proceeded to rear a second brood; but the new nest developed into the same bed of torment that the first did, and the three young birds, nearly ready to fly, perished as they sat within it. The parent birds then left the place as if it had been accursed.

I imagine the smaller birds have an enemy in our native white-footed mouse, though I have not proof enough to convict him. But one season the nest of a chickadee which I was observing was broken up in a position where nothing but a mouse could have reached it. The bird had chosen a cavity in the limb of an apple-tree which stood but a few yards from the house. The cavity was deep, and the entrance to it, which was ten feet from the ground, was small. Barely light enough was admitted, when the sun was in the most favorable position, to enable one to make out the number of eggs, which was six, at the bottom of the dim interior. While one was peering in and trying to get his head out of his own light, the bird would startle him by a queer kind of puffing sound. She would not leave her nest like most birds, but really tried to blow, or scare, the intruder away; and after repeated experiments I could hardly refrain from jerking my head back when that little explosion of sound came up from the dark interior. One night, when incubation was about half finished, the nest was harried. A slight trace of hair or fur at the entrance led me to infer that some small animal was the robber. A weasel might have

done it, as they sometimes climb trees, but I doubt if either a squirrel or a rat could have passed the entrance.

Probably few persons have ever suspected the cat-bird of being an egg-sucker; I do not know that she has ever been accused of such a thing, but there is something uncanny and disagreeable about her, which I at once understood, when I one day caught her in the very act of going through a nest of eggs.

A pair of the least fly-catchers, the bird which says *chebec, chebec*, and is a small edition of the pewee, one season built their nest where I had them for many hours each day under my observation. The nest was a very snug and compact structure placed in the forks of a small maple about twelve feet from the ground. The season before, a red squirrel had harried the nest of a wood-thrush in this same tree, and I was apprehensive that he would serve the fly-catchers the same trick; so, as I sat with my book in a summer-house near by, I kept my loaded gun within easy reach. One egg was laid, and the next morning, as I made my daily inspection of the nest, only a fragment of its empty shell was to be found. This I removed, mentally imprecating the rogue of a red squirrel. The birds were much disturbed by the event, but did not desert the nest, as I had feared they would, but after much inspection of it and many consultations together, concluded, it seems, to try again. Two more eggs were laid, when one day I heard the birds utter a sharp cry, and on looking up I saw a cat-bird perched upon the rim of the nest, hastily devouring the eggs. I soon regretted my precipitation in killing her, because such interference is generally unwise. It turned out that she had a nest of her own with five eggs, in a spruce-tree near my window.

Then this pair of little fly-catchers did what I had never seen birds do before; they pulled the nest to pieces and rebuilt it in a peach-tree not many rods away, where a brood was successfully reared. The nest was here exposed to the direct rays of the noon-day sun, and to shield her young when the heat was greatest, the mother-bird would stand above them with wings slightly spread, as other birds have been known to do under like circumstances. ▽

To what extent the cat-bird is a nest-robber I have no evidence, but that feline mew of hers, and that flirting, flexible tail, suggest something not entirely bird-like.

Probably the darkest tragedy of the nest is enacted when a snake plunders it. All birds and animals, so far as I have observed, behave in a peculiar manner towards a snake. They seem to feel something of the same loathing towards it that the human species experiences. The bark of a dog when he encounters a snake is different from that which he gives out on any other occasion; it is a mingled note of alarm, inquiry, and disgust.

One day a tragedy was enacted a few yards from where I was sitting with a book; two song-sparrows were trying to defend their nest against a black snake. The curious, interrogating note of a chicken who had suddenly come upon the scene in his walk, first caused me to look up from my reading. There were the sparrows, with wings raised in a way peculiarly expressive of horror and dismay, rushing about a low clump of grass and bushes. Then, looking more closely, I saw the glistening form of the black snake, and the quick movement of his head as he tried to seize the birds. The sparrows darted about and through the

grass and weeds, trying to beat the snake off. Their tails and wings were spread, and, panting with the heat and the desperate struggle, they presented a most singular spectacle. They uttered no cry, not a sound escaped them; they were plainly speechless with horror and dismay. Not once did they drop their wings, and the peculiar expression of those uplifted palms, as it were, I shall never forget. It occurred to me that perhaps here was a case of attempted bird-charming on the part of the snake, so I looked on from behind the fence. The birds charged the snake and harassed him from every side, but were evidently under no spell save that of courage in defending their nest. Every moment or two I could see the head and neck of the serpent make a sweep at the birds, when the one struck at would fall back, and the other would renew the assault from the rear. There appeared to be little danger that the snake could strike and hold one of the birds, though I trembled for them, they were so bold and approached so near to the snake's head. Time and again he sprang at them, but without success. How the poor things panted, and held up their wings appealingly! Then the snake glided off to the near fence, barely escaping the stone which I hurled at him. I found the nest rifled and deranged; whether it had contained eggs or young I know not. The male sparrow had cheered me many a day with his song, and I blamed myself for not having rushed at once to the rescue, when the arch enemy was upon him. There is probably little truth in the popular notion that snakes charm birds. The black snake is the most subtle, alert, and devilish of our snakes, and I have never seen him have any but young, helpless birds in his mouth.

We have one parasitical bird, the cow-bird, so-called because it walks about amid the grazing cattle and seizes the insects which their heavy tread sets going, which is an enemy of most of the smaller birds. It drops its egg in the nest of the song-sparrow, the social sparrow, the snow-bird, the vireos, and the wood-warblers, and as a rule it is the only egg in the nest that issues successfully. Either the eggs of the rightful owner of the nest are not hatched, or else the young are overridden and overreached by the parasite and perish prematurely. ✓

Among the worst enemies of our birds are the so-called "collectors," men who plunder nests and murder their owners in the name of science. Not the genuine ornithologist, for no one is more careful of squandering bird life than he; but the sham ornithologist, the man whose vanity or affectation happens to take an ornithological turn. He is seized with an itching for a collection of eggs and birds because it happens to be the fashion, or because it gives him the air of a man of science. But in the majority of cases the motive is a mercenary one; the collector expects to sell these spoils of the groves and orchards. Robbing nests and killing birds becomes a business with him. He goes about it systematically, and becomes an expert in circumventing and slaying our songsters. Every town of any considerable size is infested with one or more of these bird highwaymen, and every nest in the country round about that the wretches can lay hands on is harried. Their professional term for a nest of eggs is "a clutch," a word that well expresses the work of their grasping, murderous fingers. They clutch and destroy in the germ the life and music of the woodlands. Certain of our natural history jour-

nals are mainly organs of communication between these human weasels. They record their exploits at nest-robbing and bird-slaying in their columns. One collector tells with gusto how he "worked his way" 5 through an orchard, ransacking every tree, and leaving, as he believed, not one nest behind him. He had better not be caught working his way through my orchard. Another gloats over the number of Connecticut warblers — a rare bird — he killed in one 10 season in Massachusetts. Another tells how a mocking-bird appeared in southern New England and was hunted down by himself and friend, its eggs "clutched," and the bird killed. Who knows how much the bird lovers of New England lost by that 15 foul deed? The progeny of the birds would probably have returned to Connecticut to breed, and their progeny, or a part of them, the same, till in time the famous songster would have become a regular visitant to New England. In the same journal still another 20 collector describes minutely how he outwitted three humming-birds and captured their nests and eggs, — a clutch he was very proud of. A Massachusetts bird harrier boasts of his clutch of the eggs of that dainty little warbler, the blue yellow-back. One season 25 he took two sets, the next five sets, the next four sets, besides some single eggs, and the next season four sets, and says he might have found more had he had more time. One season he took, in about twenty days, three sets from one tree. I have heard of a collector who 30 boasted of having taken one hundred sets of the eggs of the marsh wren in a single day; of another, who took, in the same time, thirty nests of the yellow-breasted chat; and of still another, who claimed to have taken one thousand sets of eggs of different birds

in one season. A large business has grown up under the influence of this collecting craze. One dealer in eggs has those of over five hundred species. He says that his business in 1883 was twice that of 1882; in 1884 it was twice that of 1883, and so on. Collectors vie with each other in the extent and variety of their cabinets. They not only obtain eggs in sets, but aim to have a number of sets of the same bird, so as to show all possible variations. I hear of a private collection that contains twelve sets of king-birds' eggs, eight sets of house-wrens' eggs, four sets of mocking-birds' eggs, etc.; sets of eggs taken in low trees, high trees, medium trees; spotted sets, dark sets, plain sets, and light sets of the same species of bird. Many collections are made on this latter plan. 15

Thus are our birds hunted and cut off, and all in the name of science; as if science had not long ago finished with these birds. She has weighed and measured, and dissected, and described them, and their nests, and eggs, and placed them in her cabinet; and the interest of science and of humanity now demands that this wholesale nest-robbing cease. These incidents I have given above, it is true, are but drops in the bucket, but the bucket would be more than full if we could get all the facts. Where one man publishes his notes, hundreds, perhaps thousands, say nothing, but go as silently about their nest-robbing as weasels. 25

It is true that the student of ornithology often feels compelled to take bird-life. It is not an easy matter to "name all the birds without a gun," though an opera-glass will often render identification entirely certain, and leave the songster unharmed; but once having mastered the birds, the true ornithologist leaves his gun at home. This view of the case may not be 30

agreeable to that desiccated mortal called the "closet naturalist," but for my own part the closet naturalist is a person with whom I have very little sympathy. He is about the most wearisome and profitless creature in existence. With his piles of skins, his cases of eggs, his laborious feather-splitting, and his outlandish nomenclature, he is not only the enemy of the birds, but the enemy of all those who would know them rightly.

10 Not the collectors alone are to blame for the diminishing numbers of our wild birds, but a large share of the responsibility rests upon quite a different class of persons; namely, the milliners. False taste in dress is as destructive to our feathered friends as are
15 false aims in science. It is said that the traffic in the skins of our brighter plumaged birds, arising from their use by the milliners, reaches to hundreds of thousands annually. I am told of one middleman who collected from the shooters in one district, in four
20 months, seventy thousand skins. It is a barbarous taste that craves this kind of ornamentation. Think of a woman or girl of real refinement appearing upon the street with her head-gear adorned with the scalps of our songsters!

25 It is probably true that the number of our birds destroyed by man is but a small percentage of the number cut off by their natural enemies; but it is to be remembered that those he destroys are in addition to those thus cut off, and that it is this extra or artificial destruction that disturbs the balance of nature. The operation of natural causes keeps the birds in check, but the greed of the collectors and milliners tends to their extinction.

I can pardon a man who wishes to make a collec-

tion of eggs and birds for his own private use, if he will content himself with one or two specimens of a kind, though he will find any collection much less satisfactory and less valuable than he imagines; but the professional nest-robber and skin collector should be put down, either by legislation or with dogs and shot-guns.

I have remarked above that there is probably very little truth in the popular notion that snakes can "charm" birds. But two of my correspondents have each furnished me with an incident from his own experience, which seems to confirm the popular belief. One of them writes from Georgia as follows: —

"Some twenty-eight years ago I was in Calaveras County, California, engaged in cutting lumber. One day in coming out of the camp or cabin, my attention was attracted to the curious action of a quail in the air, which, instead of flying low and straight ahead as usual, was some fifty feet high, flying in a circle, and uttering cries of distress. I watched the bird and saw it gradually descend, and following with my eye in a line from the bird to the ground saw a large snake with head erect and some ten or twelve inches above the ground, and mouth wide open, and as far as I could see, gazing intently on the quail (I was about thirty feet from the snake). The quail gradually descended, its circles growing smaller and smaller and all the time uttering cries of distress, until its feet were within two or three inches of the mouth of the snake; when I threw a stone, and though not hitting the snake, yet struck the ground so near as to frighten him, and he gradually started off. The quail, however, fell to the ground, apparently lifeless. I went forward and picked it up and found it was thoroughly overcome with fright,

its little heart beating as if it would burst through the skin. After holding it in my hand a few moments it flew away. I then tried to find the snake, but could not. I am unable to say whether the snake was venomous or belonged to the constricting family, like the black snake. I can well recollect it was large and moved off rather slow. As I had never seen anything of the kind before, it made a great impression on my mind, and after the lapse of so long a time, the incident appears 10 as vivid to me as though it had occurred yesterday."

It is not probable that the snake had its mouth open; its darting tongue may have given that impression.

The other incident comes to me from Vermont. 15 "While returning from church in 1876," says the writer, "as I was crossing a bridge . . . I noticed a striped snake in the act of charming a song-sparrow. They were both upon the sand beneath the bridge. The snake kept his head swaying slowly from side to 20 side, and darted his tongue out continually. The bird, not over a foot away, was facing the snake, hopping from one foot to the other, and uttering a dissatisfied little chirp. I watched them till the snake seized the bird, having gradually drawn nearer. As 25 he seized it, I leaped over the side of the bridge; the snake glided away and I took up the bird, which he had dropped. It was too frightened to try to fly, and I carried it nearly a mile before it flew from my open hand."

30 If these observers are quite sure of what they saw, then undoubtedly snakes have the power to draw birds within their grasp. I remember that my mother once told me that while gathering wild strawberries she had on one occasion come upon a bird fluttering

about the head of a snake as if held there by a spell. On her appearance, the snake lowered its head and made off, and the panting bird flew away. A neighbor of mine killed a black snake which had swallowed a full-grown red squirrel, probably captured by the same power of fascination.

THE TRAGEDIES OF THE NESTS

THE life of the birds, especially of our migratory song-birds, is a series of adventures and of hair-breadth escapes by flood and field. Very few of them probably die a natural death, or even live out half their appointed days. The home instinct is strong in birds as it is in most creatures; and I am convinced that every spring a large number of those which have survived the Southern campaign return to their old haunts to breed. A Connecticut farmer took me out under his porch, one April day, and showed me a phoebe-bird's nest six stories high. The same bird had no doubt returned year after year; and as there was room for only one nest upon her favorite shelf, she had each season reared a new superstructure upon the old as a foundation. I have heard of a white robin — an albino — that nested several years in succession in the suburbs of a Maryland city. A sparrow with a very marked peculiarity of song I have heard several seasons in my own locality. But the birds do not all live to return to their old haunts: the bobolinks and starlings run a gantlet of fire from the Hudson to the Savannah, and the robins and meadow-larks and other song-birds are shot by boys and pot-hunters in great numbers, — to say nothing of their danger from hawks and owls. But of those that do return, what perils beset their nests, even in the most favored localities! The cabins of the early settlers, when the country was swarming with hostile Indians, were not

surrounded by such dangers. The tender households of the birds are not only exposed to hostile Indians in the shape of cats and collectors, but to numerous murderous and bloodthirsty animals, against whom they have no defence but concealment. They lead the darkest kind of pioneer life, even in our gardens and orchards, and under the walls of our houses. Not a day or a night passes, from the time the eggs are laid till the young are flown, when the chances are not greatly in favor of the nest being rifled and its contents 10 devoured, — by owls, skunks, minks, and coons at night, and by crows, jays, squirrels, weasels, snakes, and rats during the day. Infancy, we say, is hedged about by many perils; but the infancy of birds is cradled and pillowed in peril. An old Michigan settler 15 told me that the first six children that were born to him died; malaria and teething invariably carried them off when they had reached a certain age; but other children were born, the country improved, and by and by the babies weathered the critical period, 20 and the next six lived and grew up. The birds, too, would no doubt persevere six times and twice six times, if the season were long enough, and finally rear their family, but the waning summer cuts them short, and but few species have the heart and strength to make 25 even the third trial. ▼

The first nest-builders in spring, like the first settlers near hostile tribes suffer the most casualties. A large proportion of the nests of April and May are destroyed; their enemies have been many months without eggs, 30 and their appetites are keen for them. It is a time, too, when other food is scarce, and the crows and squirrels are hard put. But the second nests of June, and still more the nests of July and August, are seldom

molested. It is rarely that the nest of the goldfinch or the cedar-bird is harried.

My neighborhood on the Hudson is perhaps exceptionally unfavorable as a breeding haunt for birds, owing to the abundance of fish-crows and of red squirrels; and the season of which this chapter is mainly a chronicle, the season of 1881, seems to have been a black-letter one even for this place, for at least nine nests out of every ten that I observed during that spring and summer failed of their proper issue. From the first nest I noted, which was that of a bluebird, — built (very imprudently I thought at the time) in a squirrel-hole in a decayed apple-tree, about the last of April, and which came to naught, even the mother-bird, I suspect, perishing by a violent death, — to the last, which was that of a snow-bird, observed in August, among the Catskills, deftly concealed in a mossy bank by the side of a road that skirted a wood, where the tall thimble blackberries grew in abundance, and from which the last young one was taken, when it was about half grown, by some nocturnal walker or daylight prowler, some untoward fate seemed hovering about them. It was a season of calamities, of violent deaths, of pillage and massacre, among our feathered neighbors. For the first time I noticed that the orioles were not safe in their strong, pendent nests. Three broods were started in the apple-trees, only a few yards from the house, where, for previous seasons, the birds had nested without molestation; but this time the young were all destroyed when about half grown. Their chirping and chattering, which was so noticeable one day, suddenly ceased the next. The nests were probably plundered at night, and doubtless by the little red screech-owl, which I know is a denizen of these old

orchards, living in the deeper cavities of the trees. The owl could alight on the top of the nest, and easily thrust his murderous claw down into its long pocket and seize the young and draw them forth. The tragedy of one of the nests was heightened, or at least made more palpable, by one of the half-fledged birds, either in its attempt to escape or while in the clutches of the enemy, being caught and entangled in one of the horse-hairs by which the nest was stayed and held to the limb above. There it hung bruised and dead, gibbeted to its own cradle. This nest was the theatre of another little tragedy later in the season. Some time in August a bluebird, indulging its propensity to peep and pry into holes and crevices, alighted upon it and probably inspected the interior; but by some unlucky move it got its wings entangled in this same fatal horsehair. Its efforts to free itself appeared only to result in its being more securely and hopelessly bound; and there it perished; and there its form, dried and embalmed by the summer heats, was yet hanging in September, the outspread wings and plumage showing nearly as bright as in life. ■

A correspondent writes me that one of his orioles got entangled in a cord while building her nest, and that though by the aid of a ladder he reached and liberated her, she died soon afterwards. He also found a "chippie" (called also "hair bird") suspended from a branch by a horsehair, beneath a partly constructed nest. I heard of a cedar-bird caught and destroyed in the same way, and of two young bluebirds, around whose legs a horsehair had become so tightly wound that the legs withered up and dropped off. The birds became fledged, and finally left the nest with the others. Such tragedies are probably quite common.

Before the advent of civilization in this country, the oriole probably built a much deeper nest than it usually does at present. When now it builds in remote trees and along the borders of the woods, its nest, I have noticed, is long and gourd-shaped; but in orchards and near dwellings it is only a deep cup or pouch. It shortens it up in proportion as the danger lessens. Probably a succession of disastrous years, like the one under review, would cause it to lengthen it again beyond the reach of owl's talons or jay-bird's beak.

The first song-sparrow's nest I observed in the spring of 1881 was in the field under a fragment of a board, the board being raised from the ground a couple of inches by two poles. It had its full complement of eggs, and probably sent forth a brood of young birds, though as to this I cannot speak positively, as I neglected to observe it further. It was well sheltered and concealed, and was not easily come at by any of its natural enemies, save snakes and weasels. But concealment often avails little. In May, a song-sparrow, that had evidently met with disaster earlier in the season, built its nest in a thick mass of woodbine against the side of my house, about fifteen feet from the ground. Perhaps it took the hint from its cousin, the English sparrow. The nest was admirably placed, protected from the storms by the overhanging eaves and from all eyes by the thick screen of leaves. Only by patiently watching the suspicious bird, as she lingered near with food in her beak, did I discover its whereabouts. That brood is safe, I thought, beyond doubt. But it was not; the nest was pillaged one night, either by an owl, or else by a rat that had climbed into the vine, seeking an entrance to the house. The mother-bird, after reflect-

ing upon her ill-luck about a week, seemed to resolve to try a different system of tactics and to throw all appearances of concealment aside. She built a nest a few yards from the house beside the drive, upon a smooth piece of greensward. There was not a weed or a shrub or anything whatever to conceal it or mark its site. The structure was completed and incubation had begun before I discovered what was going on. "Well, well," I said, looking down upon the bird almost at my feet, "this is going to the other extreme indeed; now, the cats will have you." The desperate little bird sat there day after day, looking like a brown leaf pressed down in the short green grass. As the weather grew hot, her position became very trying. It was no longer a question of keeping the eggs warm, but of keeping them from roasting. The sun had no mercy on her, and she fairly panted in the middle of the day. In such an emergency the male robin has been known to perch above the sitting female and shade her with his outstretched wings. But in this case there was no perch for the male bird, had he been disposed to make a sunshade of himself. I thought to lend a hand in this direction myself, and so stuck a leafy twig beside the nest. This was probably an unwise interference; it guided disaster to the spot; the nest was broken up, and the mother-bird was probably caught, as I never saw her afterwards. ■

For several previous summers a pair of king-birds had reared, unmolested, a brood of young in an apple-tree, only a few yards from the house; but during this season disaster overtook them also. The nest was completed, the eggs laid, and incubation had just begun, when, one morning about sunrise, I heard loud cries of distress and alarm proceed from the old

apple-tree. Looking out of the window I saw a crow, which I knew to be a fish-crow, perched upon the edge of the nest, hastily bolting the eggs. The parent birds, usually so ready for the attack, seemed overcome with grief and alarm. They fluttered about in the most helpless and bewildered manner, and it was not till the robber fled on my approach that they recovered themselves and charged upon him. The crow scurried away with upturned, threatening head, the furious king-birds fairly upon his back. The pair lingered around their desecrated nest for several days, almost silent, and saddened by their loss, and then disappeared. They probably made another trial elsewhere.

The fish-crow only fishes when it has destroyed all the eggs and young birds it can find. It is the most despicable thief and robber among our feathered creatures. From May to August it is gorged with the fledgelings of the nest. It is fortunate that its range is so limited. In size it is smaller than the common crow, and is a much less noble and dignified bird. Its caw is weak and feminine — a sort of split and abortive caw, that stamps it the sneak-thief it is. This crow is common farther south, but is not found in this State,¹ so far as I have observed, except in the valley of the Hudson.

One season a pair of them built a nest in a Norway spruce that stood amid a dense growth of other ornamental trees near a large unoccupied house. They sat down amid plenty. The wolf established himself in the fold. The many birds — robins, thrushes,

¹ *This State*. John Burroughs lives near Esopus, on the Hudson, in New York State.

finches, vireos, pewees — that seek the vicinity of dwellings (especially of these large country residences with their many trees and park-like grounds), for the greater safety of their eggs and young, were the easy and convenient victims of these robbers. They plundered right and left, and were not disturbed till their young were nearly fledged, when some boys, who had long before marked them as their prize, rifled the nest.

The song-birds nearly all build low; their cradle is not upon the tree-top. It is only birds of prey that fear danger from below more than from above, and that seek the higher branches for their nests. A line five feet from the ground would run above more than half the nests, and one ten feet would bound more than three-fourths of them. It is only the oriole and the wood pewee that, as a rule, go higher than this. The crows and jays and other enemies of the birds have learned to explore this belt pretty thoroughly. But the leaves and the protective coloring of most nests baffle them as effectually, no doubt, as they do the professional oölogist. The nest of the red-eyed vireo is one of the most artfully placed in the wood. It is just beyond the point where the eye naturally pauses in its search; namely, on the extreme end of the lowest branch of the tree, usually four or five feet from the ground. One looks up and down and through the tree, — shoots his eye-beams into it as he might discharge his gun at some game hidden there, but the drooping tip of that low horizontal branch — who would think of pointing his piece just there? If a crow or other marauder were to alight upon the branch or upon those above it, the nest would be screened from him by the large leaf that

usually forms a canopy immediately above it. The nest-hunter, standing at the foot of the tree and looking straight before him, might discover it easily, were it not for its soft, neutral gray tint which blends so thoroughly with the trunks and branches of trees. Indeed, I think there is no nest in the woods — no arboreal nest — so well concealed. The last one I saw was pendent from the end of a low branch of a maple, that nearly grazed the clapboards of an unused hay-barn in a remote backwoods clearing. I peeped through a crack and saw the old birds feed the nearly fledged young within a few inches of my face. And yet the cow-bird finds this nest and drops her parasitical egg in it. Her tactics in this as in other cases are probably to watch the movements of the parent bird. She may often be seen searching anxiously through the trees or bushes for a suitable nest, yet she may still oftener be seen perched upon some good point of observation watching the birds as they come and go about her. There is no doubt that, in many cases, the cow-bird makes room for her own illegitimate egg in the nest by removing one of the bird's own. When the cow-bird finds two or more eggs in a nest in which she wishes to deposit her own, she will remove one of them. I found a sparrow's nest with two sparrow's eggs and one cow-bird's egg, and another egg lying a foot or so below it on the ground. I replaced the ejected egg, and the next day found it again removed, and another cow-bird's egg in its place; I put it back the second time, when it was again ejected, or destroyed, for I failed to find it anywhere. Very alert and sensitive birds like the warblers often bury the strange egg beneath a second nest built on top of the old. A lady, living in the

suburbs of an Eastern city, one morning heard cries of distress from a pair of house wrens that had a nest in a honeysuckle on her front porch. On looking out of the window, she beheld this little comedy — comedy from her point of view, but no doubt grim tragedy from the point of view of the wrens: a cow-bird with a wren's egg in its beak running rapidly along the walk, with the outraged wrens forming a procession behind it, screaming, scolding, and gesticulating as only these voluble little birds can. The cow-bird had probably been surprised in the act of violating the nest, and the wrens were giving her a piece of their minds.

Every cow-bird is reared at the expense of two or more song-birds. For every one of these dusky little pedestrians there amid the grazing cattle there are two or more sparrows, or vireos, or warblers, the less. It is a big price to pay — two larks for a bunting — two sovereigns for a shilling; but Nature does not hesitate occasionally to contradict herself in just this way. The young of the cow-bird is disproportionately large and aggressive, one might say hoggish. When disturbed it will clasp the nest and scream, and snap its beak threateningly. One hatched out in a song-sparrow's nest which was under my observation, and would soon have overridden and overborne the young sparrow, which came out of the shell a few hours later, had I not interfered from time to time and lent the young sparrow a helping hand. Every day I would visit the nest and take the sparrow out from under the pot-bellied interloper and place it on top, so that presently it was able to hold its own against its enemy. Both birds became fledged and left the nest about the same time. Whether the race was an even one after that, I know not.

I noted but two warblers' nests during that season, one of the black-throated blue-black and one of the redstart, — the latter built in an apple-tree but a few yards from a little rustic summer-house where I idle
5 away many summer days. The lively little birds, darting and flashing about, attracted my attention for a week before I discovered their nest. They probably built it by working early in the morning, before I appeared upon the scene, as I never saw them
10 with material in their beaks. Guessing from their movements that the nest was in a large maple that stood near by, I climbed the tree and explored it thoroughly, looking especially in the forks of the branches, as the authorities say these birds build in a
15 fork. But no nest could I find. Indeed, how can one by searching find a bird's nest? I overshot the mark; the nest was much nearer me, almost under my very nose, and I discovered it, not by searching, but by a casual glance of the eye, while thinking of
20 other matters. The bird was just settling upon it as I looked up from my book and caught her in the act. The nest was built near the end of a long, knotty, horizontal branch of an apple-tree, but effectually hidden by the grouping of the leaves; it had three eggs,
25 one of which proved to be barren. The two young birds grew apace, and were out of the nest early in the second week; but something caught one of them the first night. The other probably grew to maturity, as it disappeared from the vicinity with its parents
30 after some days.

The blue-back's nest was scarcely a foot from the ground, in a little bush situated in a low, dense wood of hemlock and beech and maple, amid the Catskills, — a deep, massive, elaborate structure, in which the

sitting bird sank till her beak and tail alone were visible above the brim. It was a misty, chilly day when I chanced to find the nest, and the mother-bird knew instinctively that it was not prudent to leave her four half incubated eggs uncovered and exposed for a moment. When I sat down near the nest she grew very uneasy, and after trying in vain to decoy me away by suddenly dropping from the branches and dragging herself over the ground as if mortally wounded, she approached and timidly and half doubtingly covered her eggs within two yards of where I sat. I disturbed her several times to note her ways. There came to be something almost appealing in her looks and manner, and she would keep her place on her precious eggs till my outstretched hand was within a few feet of her. Finally, I covered the cavity of the nest with a dry leaf. This she did not remove with her beak, but thrust her head deftly beneath it and shook it off upon the ground. Many of her sympathizing neighbors, attracted by her alarm note, came and had a peep at the intruder and then flew away, but the male bird did not appear upon the scene. The final history of this nest I am unable to give, as I did not again visit it till late in the season, when, of course, it was empty.

25

Years pass without my finding a brown-thrasher's nest; it is not a nest you are likely to stumble upon in your walk; it is hidden as a miser hides his gold, and watched as jealously. The male pours out his rich and triumphant song from the tallest tree he can find, and fairly challenges you to come and look for his treasures in his vicinity. But you will not find them if you go. The nest is somewhere on the outer circle of his song; he is never so imprudent as to

take up his stand very near it. The artists who draw those cosy little pictures of a brooding mother-bird with the male perched but a yard away in full song, do not copy from nature. The thrasher's nest I found 5 was thirty or forty rods from the point where the male was wont to indulge in his brilliant recitative. It was in an open field under a low ground juniper. My dog disturbed the sitting bird as I was passing near. The nest could be seen only by lifting up and 10 parting away the branches. All the arts of concealment had been carefully studied. It was the last place you would think of looking, and, if you did look, nothing was visible but the dense green circle of the low-spreading juniper. When you approached, the 15 bird would keep her place till you had begun to stir the branches, when she would start out, and, just skimming the ground, make a bright brown line to the near fence and bushes. I confidently expected that this nest would escape molestation, but it did not. 20 Its discovery by myself and dog probably opened the door for ill-luck, as one day, not long afterwards, when I peeped in upon it, it was empty. The proud song of the male had ceased from his accustomed tree, and the pair were seen no more in that vicinity.

25 The phoebe-bird is a wise architect, and perhaps enjoys as great an immunity from danger, both in its person and its nest, as any other bird. Its modest, ashen gray suit is the color of the rocks where it builds, and the moss of which it makes such free use 30 gives to its nest the look of a natural growth or accretion. But when it comes into the barn or under the shed to build, as it so frequently does, the moss is rather out of place. Doubtless in time the bird will take the hint, and when she builds in such places will

leave the moss out. I noted but two nests, the summer I am speaking of: one, in a barn, failed of issue, on account of the rats, I suspect, though the little owl may have been the depredator; the other, in the woods, sent forth three young. This latter nest was most charmingly and ingeniously placed. I discovered it while in quest of pond-lilies in a long, deep, level stretch of water in the woods. A large tree had blown over at the edge of the water, and its dense mass of upturned roots, with the black, peaty soil filling the interstices, was like the fragment of a wall several feet high, rising from the edge of the languid current. In a niche in this earthy wall, and visible and accessible only from the water, a phœbe had built her nest and reared her brood. I paddled my boat up and came alongside prepared to take the family aboard. The young, nearly ready to fly, were quite undisturbed by my presence, having probably been assured that no danger need be apprehended from that side. It was not a likely place for minks, or they would not have been so secure.

I noted but one nest of the wood pewee, and that, too, like so many other nests, failed of issue. It was saddled upon a small dry limb of a plane-tree that stood by the roadside, about forty feet from the ground. Every day for nearly a week, as I passed by I saw the sitting bird upon the nest. Then one morning she was not in her place, and on examination the nest proved to be empty — robbed, I had no doubt, by the red squirrels, as they were very abundant in its vicinity, and appeared to make a clean sweep of every nest. The wood pewee builds an exquisite nest, shaped and finished as if cast in a mould. It is modelled without and within with equal neatness and art, like the nest

of the humming-bird and the little gray gnat-catcher. The material is much more refractory than that used by either of these birds, being, in the present case, dry, fine cedar twigs; but these were bound into a shape as rounded and compact as could be moulded out of the most plastic material. Indeed, the nest of this bird looks precisely like a large, lichen-covered, cup-shaped excrescence of the limb upon which it is placed. And the bird, while sitting, seems entirely at her ease. Most birds seem to make very hard work of incubation. It is a kind of martyrdom which appears to tax all their powers of endurance. They have such a fixed, rigid, predetermined look, pressed down into the nest and as motionless as if made of cast-iron. But the wood pewee is an exception. She is largely visible above the rim of the nest. Her attitude is easy and graceful; she moves her head this way and that, and seems to take note of whatever goes on about her; and if her neighbor were to drop in for a little social chat, she could doubtless do her part. In fact, she makes light and easy work of what, to most other birds, is such a serious and engrossing matter. If it does not look like play with her, it at least looks like leisure and quiet contemplation. ■

There is no nest-builder that suffers more from crows and squirrels and other enemies than the wood-thrush. It builds as openly and unsuspectingly as if it thought the whole world as honest as itself. Its favorite place is the fork of a sapling, eight or ten feet from the ground, where it falls an easy prey to every nest-robber that comes prowling through the woods and groves. It is not a bird that skulks and hides, like the cat-bird, the brown-thrasher, the chat, or the cheewink, and its nest is not concealed with the same

art as theirs. Our thrushes are all frank, open-mannered birds; but the veery and the hermit build upon the ground, where they at least escape the crows, owls, and jays, and stand a better chance to be overlooked by the red squirrel and weasel also; while the robin seeks the protection of dwellings and out-buildings. For years I have not known the nest of a wood-thrush to succeed. During the season referred to I observed but two, both apparently a second attempt, as the season was well advanced, and both failures. In one case, the nest was placed in a branch that an apple-tree, standing near a dwelling, held out over the highway. The structure was barely ten feet above the middle of the road, and would just escape a passing load of hay. It was made conspicuous by the use of a large fragment of newspaper in its foundation — an unsafe material to build upon in most cases. Whatever else the press may guard, this particular newspaper did not guard this nest from harm. It saw the egg and probably the chick, but not the fledgeling. A murderous deed was committed above the public highway, but whether in the open day or under cover of darkness I have no means of knowing. The frisky red squirrel was doubtless the culprit. The other nest was in a maple sapling, within a few yards of the little rustic summer-house already referred to. The first attempt of the season, I suspect, had failed in a more secluded place under the hill; so the pair had come up nearer the house for protection. The male sang in the trees near by for several days before I chanced to see the nest. The very morning, I think, it was finished, I saw a red squirrel exploring a tree but a few yards away; he probably knew what the singing meant as well as I did. I did not see the in-

side of the nest, for it was almost instantly deserted, the female having probably laid a single egg, which the squirrel had devoured.

If I were a bird, in building my nest I should follow the example of the bobolink, placing it in the midst of a broad meadow, where there was no spear of grass, or flower, or growth unlike another to mark its site. I judge that the bobolink escapes the dangers to which I have adverted as few or no other birds do. Unless the mowers come along at an earlier date than she has anticipated, that is, before July 1, or a skunk goes nosing through the grass, which is unusual, she is as safe as bird well can be in the great open of nature. She selects the most monotonous and uniform place she can find amid the daisies or the timothy and clover, and places her simple structure upon the ground in the midst of it. There is no concealment, except as the great conceals the little, as the desert conceals the pebble, as the myriad conceals the unit. You may find the nest once, if your course chances to lead you across it and your eye is quick enough to note the silent brown bird as she darts quickly away; but step three paces in the wrong direction, and your search will probably be fruitless. My friend and I found a nest by accident one day, and then lost it again one minute afterwards. I moved away a few yards to be sure of the mother-bird, charging my friend not to stir from his tracks. When I returned, he had moved two paces, he said (he had really moved four), and we spent a half hour stooping over the daisies and the buttercups, looking for the lost clew. We grew desperate, and fairly felt the ground all over with our hands, but without avail. I marked the spot with a bush, and came the next day, and with

the bush as a centre, moved about it in slowly increasing circles, covering, I thought, nearly every inch of ground with my feet, and laying hold of it with all the visual power that I could command, till my patience was exhausted, and I gave up, baffled. I began to doubt the ability of the parent birds themselves to find it, and so secreted myself and watched. After much delay, the male bird appeared with food in his beak, and satisfying himself that the coast was clear, dropped into the grass which I had trodden down in my search. Fastening my eye upon a particular meadow-lily, I walked straight to the spot, bent down, and gazed long and intently into the grass. Finally my eye separated the nest and its young from its surroundings. My foot had barely missed them in my search, but by how much they had escaped my eye I could not tell. Probably not by distance at all, but simply by unrecognition. They were virtually invisible. The dark gray and yellowish brown dry grass and stubble of the meadow-bottom were exactly copied in the color of the half-fledged young. More than that, they hugged the nest so closely and formed such a compact mass, that though there were five of them, they preserved the unit of expression, — no single head or form was defined; they were one, and that one was without shape or color, and not separable, except by closest scrutiny, from the one of the meadow-bottom. That nest prospered, as bobolinks' nests doubtless generally do; for, notwithstanding the enormous slaughter of the birds during their fall migrations by Southern sportsmen, the bobolink appears to hold its own, and its music does not diminish in our Northern meadows.

Birds with whom the struggle for life is the sharpest

seem to be more prolific than those whose nest and young are exposed to fewer dangers. The robin, the sparrow, the pewee, etc., will rear, or make the attempt to rear, two and sometimes three broods in a season; but the bobolink, the oriole, the king-bird, the goldfinch, the cedar-bird, the birds of prey, and the woodpeckers, that build in safe retreats, in the trunks of trees, have usually but a single brood. If the bobolink reared two broods, our meadows would swarm
10 with them.

I noted three nests of the cedar-bird in August in a single orchard, all productive, but all with one or more unfruitful eggs in them. The cedar-bird is the most silent of our birds, having but a single fine note,
15 so far as I have observed, but its manners are very expressive at times. No bird known to me is capable of expressing so much silent alarm while on the nest as this bird. As you ascend the tree and draw near it, it depresses its plumage and crest, stretches
20 up its neck, and becomes the very picture of fear. Other birds, under like circumstances, hardly change their expression at all till they launch into the air, when by their voice they express anger rather than alarm.

25 I have referred to the red squirrel as a destroyer of the eggs and young of birds. I think the mischief it does in this respect can hardly be overestimated. Nearly all birds look upon it as their enemy, and attack and annoy it when it appears near their breeding
30 haunts. Thus, I have seen the pewee, the cuckoo, the robin, and the wood-thrush pursuing it with angry voice and gestures. A friend of mine saw a pair of robins attack one in the top of a tall tree so vigorously that they caused it to lose its hold, when it fell

to the ground, and was so stunned by the blow as to allow him to pick it up. If you wish the birds to breed and thrive in your orchard and groves, kill every red squirrel that infests the place; kill every weasel also. The weasel is a subtle and arch enemy of the birds. It climbs trees and explores them with great ease and nimbleness. I have seen it do so on several occasions. One day my attention was arrested by the angry notes of a pair of brown-thrashers that were flitting from bush to bush along an old stone row in a remote field. Presently I saw what it was that excited them — three large red weasels, or ermines, coming along the stone wall, and leisurely and half playfully exploring every tree that stood near it. They had probably robbed the thrashers. They would go up the trees with great ease, and glide serpent-like out upon the main branches. When they descended the tree they were unable to come straight down, like a squirrel, but went around it spirally. How boldly they thrust their heads out of the wall, and eyed me and sniffed me, as I drew near, — their round, thin ears, their prominent, glistening, bead-like eyes, and the curving, snake-like motions of the head and neck being very noticeable. They looked like blood-suckers and egg-suckers. They suggested something extremely remorseless and cruel. One could understand the alarm of the rats when they discover one of these fearless, subtle, and circumventing creatures threading their holes. To flee must be like trying to escape death itself. I was one day standing in the woods upon a flat stone, in what at certain seasons was the bed of a stream, when one of these weasels came undulating along and ran under the stone upon which I was standing. As I remained motionless, he thrust

out his wedge-shaped head, and turned it back above the stone as if half in mind to seize my foot; then he drew back, and presently went his way. These weasels often hunt in packs like the British stoat. When I was a boy, my father one day armed me with an old musket and sent me to shoot chipmunks around the corn. While watching the squirrels, a troop of weasels tried to cross a bar-way where I sat, and were so bent on doing it that I fired at them, boy-like, simply to thwart their purpose. One of the weasels was disabled by my shot, but the troop was not discouraged, and, after making several feints to cross, one of them seized the wounded one and bore it over, and the pack disappeared in the wall on the other side.

15 Let me conclude this chapter with two or three more notes about this alert enemy of the birds and the lesser animals, the weasel.

A farmer one day heard a queer growling sound in the grass; on approaching the spot he saw two weasels 20 contending over a mouse; each had hold of the mouse pulling in opposite directions, and were so absorbed in the struggle that the farmer cautiously put his hands down and grabbed them both by the back of the neck. He put them in a cage, and offered them bread and 25 other food. This they refused to eat, but in a few days one of them had eaten the other up, picking his bones clean and leaving nothing but the skeleton.

The same farmer was one day in his cellar when two rats came out of a hole near him in great haste, 30 and ran up the cellar wall and along its top till they came to a floor timber that stopped their progress, when they turned at bay, and looked excitedly back along the course they had come. In a moment a weasel, evidently in hot pursuit of them, came out of

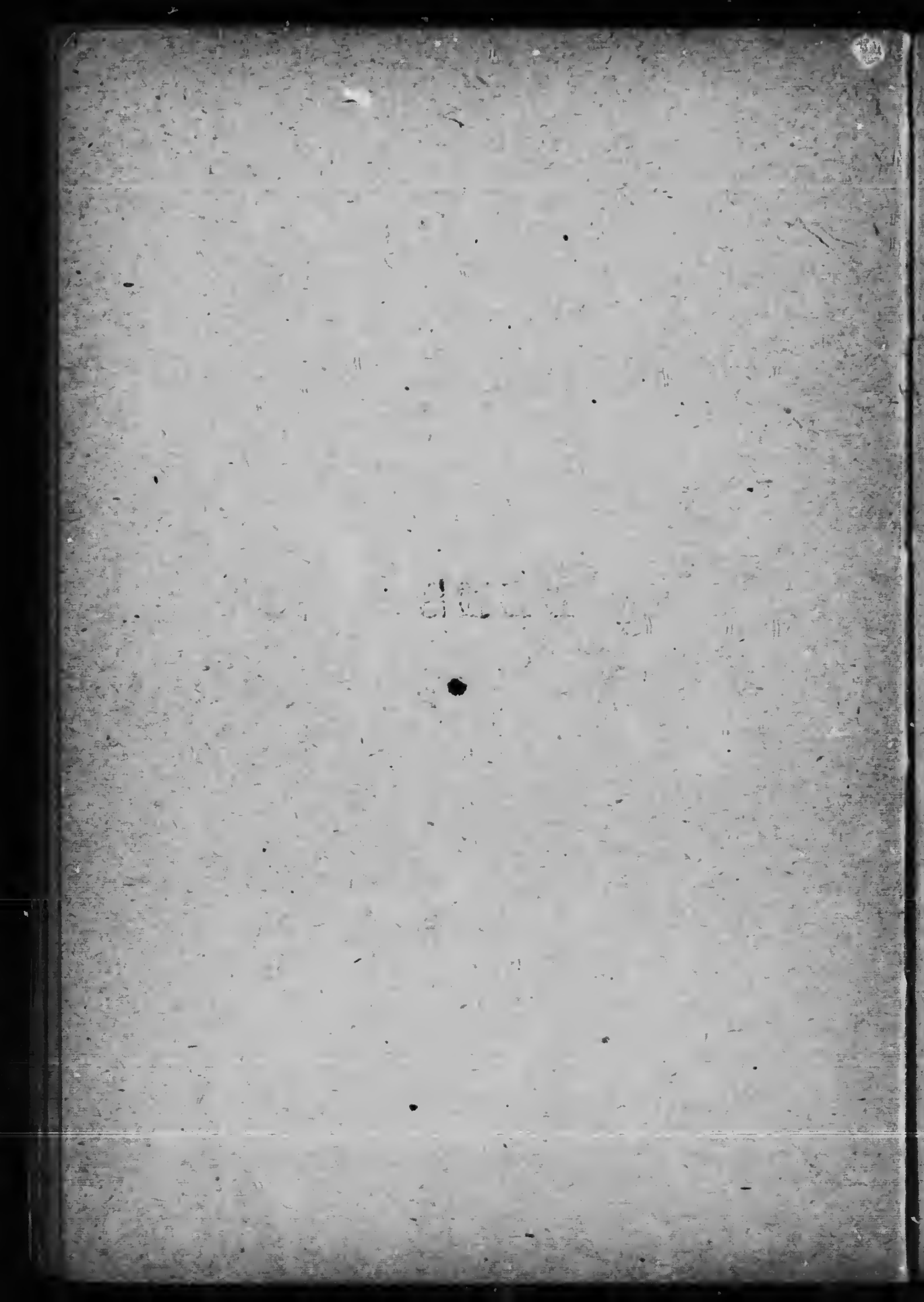
the hole, and seeing the farmer, checked his course and darted back. The rats had doubtless turned to give him fight, and would probably have been a match for him.

The weasel seems to track its game by scent. A hunter of my acquaintance was one day sitting in the woods, when he saw a red squirrel run with great speed up a tree near him, and out upon a long branch, from which he leaped to some rocks, and disappeared beneath them. In a moment a weasel came in full course upon his trail, ran up the tree, then out along the branch, from the end of which he leaped to the rocks as the squirrel did, and plunged beneath them.

Doubtless the squirrel fell a prey to him. The squirrel's best game would have been to have kept to the higher tree-tops, where he could easily have distanced the weasel. But beneath the rocks he stood a very poor chance. I have often wondered what keeps such an animal as the weasel in check, for weasels are quite rare. They never need go hungry, for rats and squirrels and mice and birds are everywhere. They probably do not fall a prey to any other animal, and very rarely to man. But the circumstances or agencies that check the increase of any species of animal or bird are, as Darwin¹ says, very obscure and but little known.

¹ Darwin. Charles Darwin (1809-1882), the great English naturalist.

B E E S



BEEES

AN IDYL OF THE HONEY-BEE

THERE is no creature with which man has surrounded himself that seems so much like a product of civilization, so much like the result of development on special lines and in special fields, as the honey-bee. Indeed, a colony of bees, with their neatness and love of order, their division of labor, their public spiritedness, their thrift, their complex economies and their inordinate love of gain, seems as far removed from a condition of rude nature as does a walled city or a cathedral town. Our native bee, on the other hand, 10 "the burly, dozing humble-bee," affects one more like the rude, untutored savage. He has learned nothing from experience. He lives from hand to mouth. He luxuriates in time of plenty, and he starves in times of scarcity. He lives in a rude nest or in a hole in 15 the ground, and in small communities; he builds a few deep cells or sacks in which he stores a little honey and bee-bread for his young, but as a worker in wax he is of the most primitive and awkward. The Indian regarded the honey-bee as an ill-omen. She was 20 the white man's fly. In fact, she was the epitome of the white man himself. She has the white man's craftiness, his industry, his architectural skill, his neatness and love of system, his foresight; and above all, his eager, miserly habits. The honey-bee's great 25 ambition is to be rich, to lay up great stores, to possess

the sweet of every flower that blooms. She is more than provident. Enough will not satisfy her; she must have all she can get by hook or by crook. She comes from the oldest country, Asia, and thrives best in the most fertile and long-settled lands.

Yet the fact remains that the honey-bee is essentially a wild creature, and never has been and cannot be thoroughly domesticated. Its proper home is the woods, and thither every new swarm counts on going; and thither many do go in spite of the care and watchfulness of the bee-keeper. If the woods in any given locality are deficient in trees with suitable cavities, the bees resort to all sorts of make-shifts; they go into chimneys, into barns and out-houses, under stores, into rocks, and so forth. Several chimneys in my locality with disused flues are taken possession of by colonies of bees nearly every season. One day, while bee-hunting, I developed a line that went towards a farm-house where I had reason to believe no bees were kept. I followed it up and questioned the farmer about his bees. He said he kept no bees, but that a swarm had taken possession of his chimney, and another had gone under the clapboards in the gable end of his house. He had taken a large lot of honey out of both places the year before. Another farmer told me that one day his family had seen a number of bees examining a knot-hole in the side of his house; the next day, as they were sitting down to dinner, their attention was attracted by a loud humming noise, when they discovered a swarm of bees settling upon the side of the house and pouring into the knot-hole. In subsequent years other swarms came to the same place.

Apparently, every swarm of bees before it leaves

the parent hive sends out exploring parties to look up the future home. The woods and groves are searched through and through, and no doubt the privacy of many a squirrel and many a wood mouse is intruded upon. What cozy nooks and retreats they do spy out, so much more attractive than the painted hive in the garden, so much cooler in summer and so much warmer in winter!

The bee is in the main an honest citizen; she prefers legitimate to illegitimate business; she is never an outlaw until her proper sources of supply fail; she will not touch honey as long as honey-yielding flowers can be found; she always prefers to go to the fountain-head, and dislikes to take her sweets at second hand. But in the fall, after the flowers have failed, she can be tempted. The bee-hunter takes advantage of this fact; he betrays her with a little honey. He wants to steal her stores, and he first encourages her to steal his, then follows the thief home with her booty. This is the whole trick of the bee-hunter. The bees never suspect this game, else by taking a circuitous route they could easily baffle him. But the honey-bee has absolutely no wit or cunning outside of her special gifts as a gatherer and storer of honey. She is a simple-minded creature, and can be imposed upon by any novice. Yet it is not every novice that can find a beehive. The sportsman may track his game to its retreat by the aid of his dog, but in hunting the honey-bee one must be his own dog, and track his game through an element in which it leaves no trail. It is a task for a sharp, quick eye, and may test the resources of the best wood-craft. One autumn when I devoted much time to this pursuit, as the best means of getting at nature and the open-air exhilaration, my eye became

so trained that bees were nearly as easy to it as birds. I saw and heard bees wherever I went. One day, standing on a street corner in a great city, I saw above the trucks and the traffic a line of bees carrying off sweets from some grocery or confectionery shop.

One looks upon the woods with a new interest when he suspects they hold a colony of bees. What a pleasing secret it is; a tree with a heart of comb-honey, a decayed oak or maple with a bit of Sicily¹ or Mount Hymettus² stowed away in its trunk or branches; secret chambers where lies hidden the wealth of ten thousand little freebooters, great nuggets and wedges of precious ore gathered with risk and labor from every field and wood about.

But if you would know the delights of bee-hunting, and how many sweets such a trip yields besides honey, come with me some bright, warm, late September or early October day. It is the golden season of the year, and any errand or pursuit that takes us abroad upon the hills or by the painted woods and along the amber-colored streams at such a time is enough. So, with haversacks filled with grapes and peaches and apples and a bottle of milk, — for we shall not be home to dinner, — and armed with a compass, a hatchet, a pail, and a box with a piece of comb-honey neatly fitted into it — any box the size of your hand with a lid will do nearly as well as the elaborate and ingenious contrivance of the regular bee-hunter — we sally forth. Our course at first lies along the highway, under great chest-

¹ *Sicily.* The island of Sicily, especially the beautiful plain of Enna in the centre, was celebrated in ancient times for the quality of its honey.

² *Mount Hymettus.* A mountain in Greece about two miles from Athens, still famous for its bees and honey.

nut-trees whose nuts are just dropping, then through an orchard and across a little creek, thence gently rising through a long series of cultivated fields towards some high, uplying land, behind which rises a rugged wooded ridge or mountain, the most sightly point in all this section. Behind this ridge for several miles the country is wild, wooded, and rocky, and is no doubt the home of many wild swarms of bees. What a gleeful uproar the robins, cedar-birds, high-holes, and cow blackbirds make amid the black cherry-trees as we 10 pass along. The raccoons, too, have been here after black cherries, and we see their marks at various points. Several crows are walking about a newly sowed wheat field we pass through, and we pause to note their graceful movements and glossy coats. I have seen no bird 15 walk the ground with just the same air the crow does. It is not exactly pride; there is no strut or swagger in it, though perhaps just a little condescension; it is the contented, complacent, and self-possessed gait of a lord over his domains. All these acres are mine, he says, 20 and all these crops; men plough and sow for me, and I stay here or go there, and find life sweet and good wherever I am. The hawk looks awkward and out of place on the ground; the game birds hurry and skulk, but the crow is at home and treads the earth 25 as if there were none to molest or make him afraid.

The crows we have always with us, but it is not every day or every season that one sees an eagle. Hence I must preserve the memory of one I saw the last day I went bee-hunting. As I was laboring 30 up the side of a mountain at the head of a valley, the noble bird sprang from the top of a dry tree above me and came sailing directly over my head. I saw him bend his eye down upon me, and I could hear the

low hum of his plumage, as if the web of every quill in his great wings vibrated in his strong, level flight. I watched him as long as my eye could hold him. When he was fairly clear of the mountain, he began that sweeping spiral movement in which he climbs the sky. Up and up he went without once breaking his majestic poise till he appeared to sight some far-off alien geography, when he bent his course thitherwards and gradually vanished in the blue depths. The eagle is a bird of large ideas, he embraces long distances; the continent is his home. I never look upon one without emotion; I follow him with my eye as long as I can. I think of Canada, of the Great Lakes, of the Rocky Mountains, of the wild and sounding sea-coast. The waters are his, and the woods and the inaccessible cliffs. He pierces behind the veil of the storm, and his joy is height and depth and vast spaces.

We go out of our way to touch at a spring run in the edge of the woods, and are lucky to find a single scarlet lobelia lingering there. It seems almost to light up the gloom with its intense bit of color. Beside a ditch in a field beyond we find the great blue lobelia (*Lobelia siphilitica*), and near it amid the weeds and wild grasses and purple asters the most beautiful of our fall flowers, the fringed gentian. What a rare and delicate, almost aristocratic look the gentian has amid its coarse, unkempt surroundings. It does not lure the bee, but it lures and holds every passing human eye. If we strike through the corner of yonder woods, where the ground is moistened by hidden springs and where there is a little opening amid the trees, we shall find the closed gentian, a rare flower in this locality. I had walked this way many times before I chanced upon its retreat; and then I was following a line of beea.

I lost the bees but I got the gentians. How curiously this flower looks, with its deep blue petals folded together so tightly — a bud and yet a blossom. It is the nun among our wild flowers, a form closely veiled and cloaked. The buccaneer bumble-bee sometimes 5 tries to rifle it of its sweets. I have seen the blossom with the bee entombed in it. He had forced his way into the virgin corolla as if determined to know its secret, but he had never returned with the knowledge he had gained.*

10
After a refreshing walk of a couple of miles we reach a point where we will make our first trial — a high stone wall that runs parallel with the wooded ridge referred to, and separated from it by a broad field. There are bees at work there on that golden-rod, and it requires 15 but little manœuvring to sweep one into our box. Almost any other creature rudely and suddenly arrested in its career and clapped into a cage in this way would show great confusion and alarm. The bee is 20 alarmed for a moment, but the bee has a passion stronger than its love of life or fear of death; namely, desire for honey, not simply to eat, but to carry home as booty. "Such rage of honey in their bosom beats," says Virgil.¹ It is quick to catch the scent of honey in the box, and as quick to fall to filling itself. We now 25 set the box down upon the wall and gently remove the cover. The bee is head and shoulders in one of the half-filled cells, and is oblivious to everything else about it. Come rack, come ruin, it will die at work. We step back a few paces, and sit down upon the ground so as 30

¹ Virgil. The great Latin epic poet (70 B.C.—19 B.C.), the author of the *Aeneid*. Virgil also wrote the *Georgics*, pastoral poems, the fourth of which deals with the bee.

to bring the box against the blue sky as a background. In two or three minutes the bee is seen rising slowly and heavily from the box. It seems loath to leave so much honey behind, and it marks the place well. It mounts aloft in a rapidly increasing spiral, surveying the near and minute objects first, then the larger and more distant, till having circled about the spot five or six times and taken all its bearings, it darts away for home. It is a good eye that holds fast to the bee till it is fairly off. Sometimes one's head will swim following it, and often one's eyes are put out by the sun. This bee gradually drifts down the hill, then strikes away towards a farm-house half a mile away, where I know bees are kept. Then we try another and another, and the third bee, much to our satisfaction, goes straight towards the woods. We could see the brown speck against the darker background for many yards. The regular bee-hunter professes to be able to tell a wild bee from a tame one by the color, the former, he says, being lighter. But there is no difference; they are both alike in color and in manner. Young bees are lighter than old, and that is all there is of it. If a bee lived many years in the woods it would doubtless come to have some distinguishing marks, but the life of a bee is only a few months at the farthest, and no change is wrought in this brief time.

Our bees are all soon back, and more with them, for we have touched the box here and there with the cork of a bottle of anise oil, and this fragrant and pungent oil will attract bees half a mile or more. When no flowers can be found, this is the quickest way to obtain a bee.

It is a singular fact that when the bee first finds the hunter's box, its first feeling is one of anger; it

is as mad as a hornet; its tone changes, it sounds its shrill war trumpet and darts to and fro, and gives vent to its rage and indignation in no uncertain manner. It seems to scent foul play at once. It says, "Here is robbery; here is the spoil of some hive, maybe my own," and its blood is up. But its ruling passion soon comes to the surface, its avarice gets the better of its indignation, and it seems to say, "Well, I had better take possession of this and carry it home." So after many feints and approaches and dartings off with a loud angry hum as if it would none of it, the bee settles down and fills itself.

It does not entirely cool off and get soberly to work till it has made two or three trips home with its booty. When other bees come, even if all from the same swarm, they quarrel and dispute over the box, and clip and dart at each other like bantam cocks. Apparently the ill feeling which the sight of the honey awakens is not one of jealousy or rivalry, but wrath.

A bee will usually make three or four trips from the hunter's box before it brings back a companion. I suspect the bee does not tell its fellows what it has found, but that they smell out the secret; it doubtless bears some evidence with it upon its feet or proboscis that it has been upon honey-comb and not upon flowers, and its companions take the hint and follow, arriving always many seconds behind. Then the quantity and quality of the booty would also betray it. No doubt, also, there are plenty of gossips about a hive that note and tell everything. "Oh, did you see that? Peggy Mel came in a few moments ago in great haste, and one of the upstairs packers says she was loaded till she groaned with apple-blossom honey which she deposited, and then rushed off again

like mad. Apple-blossom honey in October! Fee, fi, fo, fum! I smell something! Let's after."

In about half an hour we have three well-defined lines of bees established — two to farm-houses and one to the woods, and our box is being rapidly depleted of its honey. About every fourth bee goes to the woods, and now that they have learned the way thoroughly they do not make the long preliminary whirl above the box, but start directly from it. The woods are rough and dense and the hill steep, and we do not like to follow the line of bees until we have tried at least to settle the problem as to the distance they go into the woods — whether the tree is on this side of the ridge or in the depth of the forest on the other side. So we shut up the box when it is full of bees and carry it about three hundred yards along the wall from which we are operating. When liberated, the bees, as they always will in such cases, go off in the same directions they have been going; they do not seem to know that they have been moved. But other bees have followed our scent, and it is not many minutes before a second line to the woods is established. This is called cross-lining the bees. The new line makes a sharp angle with the other line, and we know at once that the tree is only a few rods into the woods. The two lines we have established form two sides of a triangle of which the wall is the base; at the apex of the triangle, or where the two lines meet in the woods, we are sure to find the tree. We quickly follow up these lines, and where they cross each other on the side of the hill we scan every tree closely. I pause at the foot of an oak and examine a hole near the root; now the bees are in this tree and their entrance is on the upper side near the ground, not two feet from the hole I see

into, and yet so quiet and secret is their going and coming that I fail to discover them and pass on up the hill. Failing in this direction, I return to the oak again, and then perceive the bees going out in a small crack in the tree. The bees do not know they are found out and that the game is in our hands, and are as oblivious of our presence as if we were ants or crickets. The indications are that the swarm is a small one, and the store of honey trifling. In "taking up" a bee-tree it is usual first to kill or stupefy the bees with the fumes of burning sulphur or with tobacco smoke. But this course is impracticable on the present occasion, so we boldly and ruthlessly assault the tree with an axe we have procured. At the first blow the bees set up a loud buzzing, but we have no mercy, and the side of the cavity is soon cut away, and the interior with its white-yellow mass of comb-honey is exposed, and not a bee strikes a blow in defence of its all. This may seem singular, but it has nearly always been my experience. When a swarm of bees are thus rudely assaulted with an axe, they evidently think the end of the world has come, and, like true misers as they are, each one seizes as much of the treasure as it can hold; in other words, they all fall to and gorge themselves with honey, and calmly await the issue. When in this condition, they make no defence and will not sting unless taken hold of. In fact, they are as harmless as flies. Bees are always to be managed with boldness and decision.

Any halfway measures, any timid poking about, any feeble attempts to reach their honey, are sure to be quickly resented. The popular notion that bees have a special antipathy towards certain persons and a liking for certain others has only this fact at the bottom of it; they will sting a person who is afraid of them

and goes skulking and dodging about, and they will not sting a person who faces them boldly and has no dread of them. They are like dogs. The way to disarm a vicious dog is to show him you do not fear him; it is his turn to be afraid then. I never had any dread of bees and am seldom stung by them. I have climbed up into a large chestnut that contained a swarm in one of its cavities and chopped them out with an axe, being obliged at times to pause and brush the bewildered bees from my hands and face, and not been stung once. I have chopped a swarm out of an apple-tree in June and taken out the cards of honey and arranged them in a hive, and then dipped out the bees with a dipper, and taken the whole home with me in pretty good condition, with scarcely any opposition on the part of the bees. In reaching your hand into the cavity to detach and remove the comb you are pretty sure to get stung, for when you touch the "business end" of a bee, it will sting even though its head be off. But the bee carries the antidote to its own poison. The best remedy for bee sting is honey, and when your hands are besmeared with honey, as they are sure to be on such occasions, the wound is scarcely more painful than the prick of a pin. Assault your bee-tree, then, boldly with your axe, and you will find that when the honey is exposed every bee has surrendered and the whole swarm is cowering in helpless bewilderment and terror. Our tree yields only a few pounds of honey, not enough to have lasted the swarm till January, but no matter: we have the less burden to carry.

In the afternoon we go nearly half a mile farther along the ridge to a corn-field that lies immediately in front of the highest point of the mountain. The view is superb; the ripe autumn landscape rolls away

to the east, cut through by the great placid river; in the extreme north the wall of the Catskills stands out clear and strong, while in the south the mountains of the Highlands bound the view. The day is warm and the bees are very busy there in that neglected corner of the field, rich in asters, flea-bane, and golden-rod. The corn has been cut, and upon a stout, but a few rods from the woods, which here drop quickly down from the precipitous heights, we set up our beehox, touched again with the pungent oil. In a few moments a bee has found it; she comes up to leeward, following the scent. On leaving the box she goes straight towards the woods. More bees quickly come, and it is not long before the line is well established. Now we have recourse to the same tactics we employed before, and move along the ridge to another field to get our cross line. But the bees still go in almost the same direction they did from the corn stout. The tree is then either on the top of the mountain, or on the other or west side of it. We hesitate to make the plunge into the woods and seek to scale those precipices, for the eye can plainly see what is before us. As the afternoon sun gets lower, the bees are seen with wonderful distinctness. They fly towards and under the sun and are in a strong light, while the near woods which form the background are in deep shadow. They look like large luminous motes. Their swiftly vibrating, transparent wings surround their bodies with a shining nimbus that makes them visible for a long distance. They seem magnified many times. We see them bridge the little gulf between us and the woods, then rise up over the tree-tops with their burdens, swerving neither to the right hand nor to the left. It is almost pathetic to see them labor so, climbing the mountain

and unwittingly guiding us to their treasures. When the sun gets down so that his direction corresponds exactly with the course of the bees, we make the plunge. It proves even harder climbing than we had anticipated; the mountain is faced by a broken and irregular wall of rock, up which we pull ourselves slowly and cautiously by main strength. In half an hour, the perspiration streaming from every pore, we reach the summit. The trees here are all small, a second growth, and we are soon convinced the bees are not here. Then down we go on the other side, clambering down the rocky stairways till we reach quite a broad plateau that forms something like the shoulder of the mountain. On the brink of this there are many large hemlocks, and we scan them closely and rap upon them with our axe. But not a bee is seen or heard; we do not seem as near the tree as we were in the fields below; yet if some divinity would only whisper the fact to us, we are within a few rods of the coveted prize, which is not in one of the large hemlocks or oaks that absorb our attention, but in an old stub or stump not six feet high, and which we have seen and passed several times without giving it a thought. We go farther down the mountain and beat about to the right and left and get entangled in brush and arrested by precipices, and finally as the day is nearly spent, give up the search and leave the woods quite baffled, but resolved to return on the morrow. The next day we come back and commence operations in an opening in the woods well down on the side of the mountain, where we gave up the search. Our box is soon swarming with the eager bees, and they go back towards the summit we have passed. We follow back and establish a new line where the ground will permit; then another and still another, and yet

the riddle is not solved. One time we are south of them, then north, then the bees get up through the trees and we cannot tell where they go. But after much searching, and after the mystery seems rather to deepen than to clear up, we chance to pause beside the old stump. A bee comes out of a small opening, like that made by ants in decayed wood, rubs its eyes and examines its *antennæ*, as bees always do before leaving their hive, then takes flight. At the same instant several bees come by us loaded with our honey 10 and settle home with that peculiar low complacent buzz of the well-filled insect. Here then is our idyl, our bit of Virgil and Theocritus,¹ in a decayed stump of a hemlock tree. We could tear it open with our hands, and a bear would find it an easy prize, and a rich one, too, 15 for we take from it fifty pounds of excellent honey. The bees have been here many years, and have of course sent out swarm after swarm into the wilds. They have protected themselves against the weather and strengthened their shaky habitation by a copious use of wax. 20

When a bee-tree is thus "taken up" in the middle of the day, of course a good many bees are away from home and have not heard the news. When they return and find the ground flowing with honey, and piles of bleeding combs lying about, they apparently 25 do not recognize the place, and their first instinct is to fall to and fill themselves; this done, their next thought is to carry it home, so they rise up slowly through the branches of the trees till they have attained an altitude that enables them to survey the 30 scene, when they seem to say, "Why, *this* is home."

¹ *Theocritus*. A Greek poet who lived in Sicily and Egypt about 300 B.C. He wrote many Idyls, but only a few of all his works have survived.

and down they come again; beholding the wreck and ruins once more they still think there is some mistake, and get up a second or a third time and then drop back pitifully as before. It is the most pathetic sight of all, the surviving and bewildered bees struggling to save a few drops of their wasted treasures.

Presently, if there is another swarm in the woods, robber-bees appear. You may know them by their saucy, chiding, devil-may-care hum. It is an ill wind that blows nobody good, and they make the most of the misfortune of their neighbors; and thereby pave the way for their own ruin. The hunter marks their course and the next day looks them up. On this occasion the day was hot and the honey very fragrant, and a line of bees was soon established S. S. W. Though there was much refuse honey in the old stub, and though little golden rills trickled down the hill from it, and the near branches and saplings were besmeared with it where we wiped our murderous hands, yet not a drop was wasted. It was a feast to which not only honey-bees came, but bumble-bees, wasps, hornets, flies, ants. The bumble-bees, which at this season are hungry vagrants with no fixed place of abode, would gorge themselves, then creep beneath the bits of empty comb or fragments of bark and pass the night, and renew the feast next day. The bumble-bee is an insect of which the bee-hunter sees much. There are all sorts and sizes of them. They are dull and clumsy compared with the honey-bee. Attracted in the fields by the bee-hunter's box, they will come up the wind on the scent and blunder into it in the most stupid, lubberly fashion.

The honey-bee that licked up our leavings on the old stub belonged to a swarm, as it proved, about half

a mile farther down the ridge, and a few days afterwards fate overtook them, and their stores in turn became the prey of another swarm in the vicinity, which also tempted Providence and were overwhelmed. The first-mentioned swarm I had lined from several points, 5 and was following up the clew over rocks and through gulleys, when I came to where a large hemlock had been felled a few years before and a swarm taken from a cavity near the top of it; fragments of the old comb were yet to be seen. A few yards away stood another 10 short, squatty hemlock, and I said my bees ought to be there. As I paused near it I noticed where the tree had been wounded with an axe a couple of feet from the ground many years before. The wound had partially grown over, but there was an opening there that 15 I did not see at the first glance. I was about to pass on when a bee passed me, making that peculiar shrill, discordant hum that a bee makes when besmeared with honey. I saw it alight in the partially closed wound and crawl home; then came others and others, little 20 bands and squads of them heavily freighted with honey from the box. The tree was about twenty inches through and hollow at the butt, or from the axe mark down. This space the bees had completely filled with honey. With an axe we cut away the outer ring of live 25 wood and exposed the treasure. Despite the utmost care, we wounded the comb so that little rills of the golden liquid issued from the root of the tree and trickled down the hill.

The other bee-tree in the vicinity, to which I have 30 referred, we found one warm November day in less than half an hour after entering the woods. It also was a hemlock, that stood in a niche in a wall of hoary, moss-covered rocks thirty feet high. The tree hardly

reached to the top of the precipice. The bees entered a small hole at the root, which was seven or eight feet from the ground. The position was a striking one. Never did apiary have a finer outlook or more rugged surroundings. A black, wood-embraced lake lay at our feet; the long panorama of the Catskills filled the far distance, and the more broken outlines of the Shawangunk range filled the rear. On every hand were precipices and a wild confusion of rocks and trees.

10 The cavity occupied by the bees was about three feet and a half long and eight or ten inches in diameter. With an axe we cut away one side of the tree and laid bare its curiously wrought heart of honey. It was a most pleasing sight. What winding and de-

15 vious ways the bees had through their palace! What great masses and blocks of snow-white comb there were! Where it was sealed up, presenting that slightly dented, uneven surface, it looked like some precious ore. When we carried a large pail full of it out of the

20 woods, it seemed still more like ore.

Your native bee-hunter predicates the distance of the tree by the time the bee occupies in making its first trip. But this is no certain guide. You are always safe in calculating that the tree is inside of a

25 mile, and you need not as a rule look for your bee's return under ten minutes. One day I picked up a bee in an opening in the woods and gave it honey, and it made three trips to my box with an interval of about twelve minutes between them; it returned

30 alone each time; the tree, which I afterwards found, was about half a mile distant.

In lining bees through the woods, the tactics of the hunter are to pause every twenty or thirty rods, lop away the branches or cut down the trees, and set the

bees to work again. If they still go forwards, he goes forwards also and repeats his observations till the tree is found or till the bees turn and come back upon the trail. Then he knows he has passed the tree, and he retraces his steps to a convenient distance and tries again, and thus quickly reduces the space to be looked over till the swarm is traced home. On one occasion, in a wild rocky wood, where the surface alternated between deep gulfs and chasms filled with thick, heavy growths of timber and sharp, precipitous, rocky ridges like a tempest-tossed sea, I carried my bees directly under their tree, and set them to work from a high, exposed ledge of rocks not thirty feet distant. One would have expected them under such circumstances to have gone straight home, as there were but few branches intervening, but they did not; they labored up through the trees and attained an altitude above the woods as if they had miles to travel, and thus baffled me for hours. Bees will always do this. They are acquainted with the woods only from the top side, and from the air above; they recognize home only by land-marks here, and in every instance they rise aloft to take their bearings. Think how familiar to them the topography of the forest summits must be — an umbrageous sea or plain where every mark and point is known.

Another curious fact is that generally you will get track of a bee-tree sooner when you are half a mile from it than when you are only a few yards. Bees, like us human insects, have little faith in the near at hand; they expect to make their fortune in a distant field, they are lured by the remote and the difficult, and hence overlook the flower and the sweet at their very door. On several occasions I have unwittingly

set my box within a few paces of a bee-tree and waited long for bees without getting them, when, on removing to a distant field or opening in the woods I have got a clew at once.

5 I have a theory that when bees leave the hive, unless there is some special attraction in some other direction, they generally go against the wind. They would thus have the wind with them when they returned home heavily laden, and with these little navigators the difference is an important one. With a full
10 cargo, a stiff head-wind is a great hindrance, but fresh and empty-handed they can face it with more ease. Virgil says bees bear gravel stones as ballast, but their only ballast is their honey bag. Hence, when I go
15 bee-hunting, I prefer to get to windward of the woods in which the swarm is supposed to have taken refuge.

Bees, like the milkman, like to be near a spring. They do water their honey, especially in a dry time. The liquid is then of course thicker and sweeter, and
20 will bear diluting. Hence, old bee-hunters look for bee-trees along creeks and near spring runs in the woods. I once found a tree a long distance from any water, and the honey had a peculiar bitter flavor imparted to it, I was convinced, by rain water sucked
25 from the decayed and spongy hemlock-tree, in which the swarm was found. In cutting into the tree, the north side of it was found to be saturated with water like a spring, which ran out in big drops, and had a bitter flavor. The bees had thus found a spring or a
30 cistern in their own house.

Bees are exposed to many hardships and many dangers. Winds and storms prove as disastrous to them as to other navigators. Black spiders lie in wait for them as do brigands for travellers. One day

as I was looking for a bee amid some golden-rod, I spied one partly concealed under a leaf. Its baskets were full of pollen, and it did not move. On lifting up the leaf I discovered that a hairy spider was ambushed there and had the bee by the throat. The vampire was evidently afraid of the bee's sting, and was holding it by the throat till quite sure of its death. Virgil speaks of the painted lizard, perhaps a species of salamander, as an enemy of the honey-bee. We have no lizard that destroys the bee; but our tree-toad, 10 ambushed among the apple and cherry blossoms, snaps them up wholesale. Quick as lightning that subtle but clammy tongue darts forth, and the unsuspecting bee is gone. Virgil also accuses the titmouse and the woodpecker of preying upon the bees, and 15 our king-bird has been charged with the like crime, but the latter devours only the drones. The workers are either too small and quick for it, or else it dreads their sting.

Virgil, by the way, had little more than a child's 20 knowledge of the honey-bee. There is little fact and much fable in his fourth Georgic. If he had ever kept bees himself, or even visited an apiary, it is hard to see how he could have believed that the bee in its flight abroad carried a gravel stone for ballast:— 25

“And as when empty barks on billows float,
With sandy ballast sailors trim the boat;
So bees bear gravel stones, whose poisoning weight
Steers through the whistling winds their steady flight”;

or that when two colonies made war upon each other 30 they issued forth from their hives led by their kings and fought in the air, strewing the ground with the dead and dying:—

"Hard hailstones lie not thicker on the plain,
Nor shaken oaks such show'rs of acorns rain."

It is quite certain he had never been bee-hunting. If he had, we should have had a fifth Georgic. Yet he seems to have known that bees sometimes escaped to the woods:—

"Nor bees are lodged in hives alone, but found
In chambers of their own beneath the ground:
Their vaulted roofs are hung in pumices,
10 And in the rotten trunks of hollow trees."

Wild honey is as near like tame as wild bees are like their brothers in the hive. The only difference is that wild honey is flavored with your adventure, which makes it a little more delectable than the domestic
15 article.

THE PASTORAL BEES

THE honey-bee goes forth from the hive in spring like the dove from Noah's ark; and it is not till after many days that she brings back the olive leaf, which in this case is a pellet of golden pollen upon each hip, usually obtained from the alder or the swamp willow. In a country where maple sugar is made, the bees get their first taste of sweet from the sap as it flows from the spiles, or as it dries and is condensed upon the sides of the buckets. They will sometimes, in their eagerness, come about the boiling place and be overwhelmed by the steam and the smoke. But bees appear to be more eager for bread in the spring than for honey; their supply of this article, perhaps, does not keep as well as their stores of the latter; hence fresh bread, in the shape of new pollen, is diligently sought for. My bees get their first supplies from the catkins of the willows. How quickly they find them out! If but one catkin opens anywhere within range, a bee is on hand that very hour to rifle it, and it is a most pleasing experience to stand near the hive some mild April day and see them come pouring in with their little baskets packed with this first fruitage of the spring. They will have new bread now; they have been to mill in good earnest; see their dusty coats, and the golden grist they bring home with them!

When a bee brings pollen into the hive, he advances to the cell in which it is to be deposited and kicks it off as one might his overalls or rubber boots, making one foot help the other; then he walks off without ever

looking behind him; another bee, one of the indoor hands, comes along and rams it down with his head and packs it into the cell as the dairy-maid packs butter into a firkin.

5 The first spring wild-flowers, whose shy faces among the dry leaves and rocks are so welcome, yield no honey. The anemone, the hepatica, the bloodroot, the arbutus, the numerous violets, the spring beauty, the corydalis, etc., woo all lovers of nature, but do
10 not woo the honey-loving bee. It requires more sun and warmth to develop the saccharine element, and the beauty of these pale striplings of the woods and groves is their sole and sufficient excuse for being. The arbutus, lying low and keeping green all winter,
15 attains to perfume, but not to honey.

The first honey is perhaps obtained from the flowers of the red maple and the golden willow. The latter sends forth a wild, delicious perfume. The sugar maple blooms a little later, and from its silken tassels
20 a rich nectar is gathered. My bees will not label these different varieties for me as I really wish they would. Honey from the maple, a tree so clean and wholesome, and full of such virtues every way, would be something to put one's tongue to. Or that from
25 the blossoms of the apple, the peach, the cherry, the quince, the currant, — one would like a card of each of these varieties to note their peculiar qualities. The apple-blossom is very important to the bees. A single swarm has been known to gain twenty pounds in
30 weight during its continuance. Bees love the ripened fruit, too, and in August and September will suck themselves tipsy upon varieties such as the sops-of-wine.

The interval between the blooming of the fruit-trees

and that of the clover and the raspberry is bridged over in many localities by the honey locust. What a delightful summer murmur these trees send forth at this season! I know nothing about the quality of the honey, but it ought to keep well. But when the red raspberry blooms, the fountains of plenty are unsealed indeed; what a commotion about the hives then, especially in localities where it is extensively cultivated, as in places along the Hudson. The delicate white clover, which begins to bloom about the same time, is neglected; even honey itself is passed by for this modest, colorless, all but odorless flower. A field of these berries in June sends forth a continuous murmur like that of an enormous hive. The honey is not so white as that obtained from clover, but it is easier gathered; it is in shallow cups, while that of the clover is in deep tubes. The bees are up and at it before sunrise, and it takes a brisk shower to drive them in. But the clover blooms later and blooms everywhere, and is the staple source of supply of the finest quality of honey. The red clover yields up its stores only to the longer proboscis of the bumble-bee, else the bee pasturage of our agricultural districts would be unequalled. I do not know from what the famous honey of Chamouni¹ in the Alps is made, but it can hardly surpass our best products. The snow-white honey of Anatolia in Asiatic Turkey, which is regularly sent to Constantinople for the use of the grand seignior and the ladies of his seraglio, is obtained from the cotton plant, which makes me think that the

¹ *Chamouni*. The valley of Chamouni, about twelve miles long with an average breadth of two miles, is also famous for its magnificent scenery.

white clover does not flourish there. The white clover is indigenous with us; its seeds seem latent in the ground, and the application of certain stimulants to the soil, such as wood ashes, causes them to germinate and spring up.

The rose, with all its beauty and perfume, yields no honey to the bee, unless the wild species be sought by the bumble-bee.

Among the humbler plants, let me not forget the dandelion that so early dots the sunny slopes, and upon which the bee languidly grazes, wallowing to his knees in the golden but not oversucculent pasturage. From the blooming rye and wheat the bee gathers pollen, also from the obscure blossoms of Indian corn. Among weeds, catnip is the great favorite. It lasts nearly the whole season and yields richly. It could no doubt be profitably cultivated in some localities, and catnip honey would be a novelty in the market. It would probably partake of the aromatic properties of the plant from which it was derived.

Among your stores of honey gathered before midsummer, you may chance upon a card, or mayhap only a square inch or two of comb, in which the liquid is as transparent as water, of a delicious quality, with a slight flavor of mint. This is the product of the linden or basswood, of all the trees in our forest the one most beloved by the bees. Melissa,¹ the goddess of honey, has placed her seal upon this tree. The wild swarms in the woods frequently reap a choice

¹ *Melissa*. The Greek word for bee is *melissa*. *Melissa* was a daughter of *Melissus*, king of Crete, and was one of the nurses of *Jupiter*, the king of the gods. It was she who first found the method of collecting honey. It is fabled that after death she was changed into a bee.

harvest from it. I have seen a mountain side thickly studded with it, its straight, tall, smooth, light gray shaft carrying its deep green crown far aloft, like the tulip-tree or the maple.

In some of the North-Western States there are large forests of it, and the amount of honey reported stored by strong swarms in this section during the time the tree is in bloom is quite incredible. As a shade and ornamental tree the linden is fully equal to the maple, and if it were as extensively planted and cared for, our supplies of virgin honey would be greatly increased. The famous honey of Lithuania in Russia is the product of the linden.

It is a homely old stanza current among bee folk that: —

“A swarm of bees in May
Is worth a load of hay;
A swarm of bees in June
Is worth a silver spoon;
But a swarm in July
Is not worth a fly.”

15

20

A swarm in May is indeed a treasure; it is, like an April baby, sure to thrive, and will very likely itself send out a swarm a month or two later; but a swarm in July is not to be despised; it will store no clover or linden honey for the “grand seignior and the ladies of his seraglio,” but plenty of the rank and wholesome poor man’s nectar, the sun-tanned product of the plebeian buckwheat. Buckwheat honey is the black sheep in this white flock, but there is spirit and character in it. It lays hold of the taste in no equivocal manner, especially when at a winter breakfast it meets its fellow, the russet buckwheat cake. Bread with honey to cover it from the same stalk is double good

fortune. It is not black, either, but nut-brown, and belongs to the same class of goods as Herrick's¹

"Nut-brown mirth and russet wit."

How the bees love it, and they bring the delicious odor of the blooming plant to the hive with them, so that in the moist warm twilight the apiary is redolent with the perfume of buckwheat.

Yet evidently it is not the perfume of any flower that attracts the bees; they pay no attention to the sweet-scented lilac, or to heliotrope, but work upon sumach, silkweed, and the hateful snapdragon. In September they are hard pressed, and do well if they pick up enough sweet to pay the running expenses of their establishment. The purple asters and the golden-rod are about all that remain to them.

Bees will go three or four miles in quest of honey, but it is a great advantage to move the hive near the good pasturage, as has been the custom from the earliest times in the Old World. Some enterprising person, taking a hint perhaps from the ancient Egyptians, who had floating apiaries on the Nile, has tried the experiment of floating several hundred colonies north on the Mississippi, starting from New Orleans and following the opening season up, thus realizing a sort of perpetual May or June, the chief attraction being the blossoms of the river willow, which yield honey of rare excellence. Some of the bees were no doubt left behind, but the amount of virgin honey secured must have been very great. In September

¹ *Herrick*. The English poet, Robert Herrick (1591-1674), was a writer of light lyrics. His principal work is *Hesperides; or Poems Human and Divine*.

they should have begun the return trip, following the retreating summer South.

It is the making of the wax that costs with the bee. As with the poet, the form, the receptacle, gives him more trouble than the sweet that fills it, though, to be sure, there is always more or less empty comb in both cases. The honey he can have for the gathering, but the wax he must make himself — must evolve from his own inner consciousness. When wax is to be made, the wax-makers fill themselves with 10 honey and retire into their chamber for private meditation; it is like some solemn religious rite; they take hold of hands, or hook themselves together in long lines that hang in festoons from the top of the hive, and wait for the miracle to transpire. After about 15 twenty-four hours their patience is rewarded, the honey is turned into wax, minute scales of which are secreted from between the rings of the abdomen of each bee; this is taken off and from it the comb is built up. It is calculated that about twenty-five pounds of honey 20 are used in elaborating one pound of comb, to say nothing of the time that is lost. Hence the importance, in an economical point of view, of a recent device by which the honey is extracted and the comb returned intact to the bees. But honey without the 25 comb is the perfume without the rose, — it is sweet merely, and soon degenerates into candy. Half the delectableness is in breaking down these frail and exquisite walls yourself, and tasting the nectar before it has lost its freshness by the contact with the air. 30 Then the comb is a sort of shield or foil that prevents the tongue from being overwhelmed by the shock of the sweet.

The drones have the least enviable time of it. Their

foothold in the hive is very precarious. They look like the giants, the lords of the swarm, but they are really the tools. Their loud, threatening hum has no sting to back it up, and their size and noise make them only the more conspicuous marks for the birds.

Towards the close of the season, say in July or August, the fiat goes forth that the drones must die; there is no further use for them. Then the poor creatures, how they are huddled and hustled about, trying to hide in corners and by-ways. There is no loud, defiant humming now, but abject fear seizes them. They cower like hunted criminals. I have seen a dozen or more of them wedge themselves into a small space between the glass and the comb, where the bees could not get hold of them, or where they seemed to be overlooked in the general slaughter. They will also crawl outside and hide under the edges of the hive. But sooner or later they are all killed or kicked out. The drone makes no resistance, except to pull back and try to get away; but (putting yourself in his place) with one bee a-hold of your collar or the hair of your head, and another a-hold of each arm or leg, and still another feeling for your waistbands with his sting, the odds are greatly against you.

It is a singular fact, also, that the queen is made, not born. If the entire population of Spain or Great Britain were the offspring of one mother, it might be found necessary to hit upon some device by which a royal baby could be manufactured out of an ordinary one, or else give up the fashion of royalty. All the bees in the hive have a common parentage, and the queen and the worker are the same in the egg and in the chick; the patent of royalty is in the cell and in the food; the cell being much larger, and the food a

peculiar stimulating kind of jelly. In certain contingencies, such as the loss of the queen with no eggs in the royal cells, the workers take the larva of an ordinary bee, enlarge the cell by taking in the two adjoining ones, and nurse it and stuff it and coddle it, till at the end of sixteen days it comes out a queen. But ordinarily, in the natural course of events, the young queen is kept a prisoner in her cell till the old queen has left with the swarm. Later on, the unhatched queen is guarded against the reigning queen, who only wants an opportunity to murder every royal scion in the hive. At this time both the queens, the one a prisoner and the other at large, pipe defiance at each other, a shrill, fine, trumpet-like note that any ear will at once recognize. This challenge, not being allowed to be accepted by either party, is followed, in a day or two, by the abdication of the reigning queen; she leads out the swarm, and her successor is liberated by her keepers, who, in her time, abdicates in favor of the next younger. When the bees have decided that no more swarms can issue, the reigning queen is allowed to use her stiletto upon her unhatched sisters. Cases have been known where two queens issued at the same time, when a mortal combat ensued, encouraged by the workers, who formed a ring about them, but showed no preference, and recognized the victor as the lawful sovereign. For these and many other curious facts we are indebted to the blind Huber.¹

¹ Huber. Francis Huber (1750-1830) was a Swiss naturalist, who at an early age became totally blind. He devoted his life to the study of bees, and, with the aid of his servant, made many important discoveries. In 1792 he published his famous work, *New Observations on Bees*. This was followed by a *Memoir on the Origin of Wax*.

It is worthy of note that the position of the queen cells is always vertical, while that of the drones and workers is horizontal; majesty stands on its head, which fact may be a part of the secret.

5 The notion has always very generally prevailed that the queen of the bees is an absolute ruler, and issues her royal orders to willing subjects. Hence Napoleon the First sprinkled the symbolic bees over the imperial mantle that bore the arms of his dynasty; 10 and in the country of the Pharaohs¹ the bee was used as the emblem of a people sweetly submissive to the orders of its king. But the fact is, a swarm of bees is an absolute democracy, and kings and despots can find no warrant in their example. The power and 15 authority are entirely vested in the great mass, the workers. They furnish all the brains and foresight of the colony, and administer its affairs. Their word is law, and both king and queen must obey. They regulate the swarming, and give the signal for the 20 swarm to issue from the hive; they select and make ready the tree in the woods and conduct the queen to it.

The peculiar office and sacredness of the queen consists in the fact that she is the mother of the swarm, 25 and the bees love and cherish her as a mother and not as a sovereign. She is the sole female bee in the hive, and the swarm clings to her because she is their life. Deprived of their queen, and of all brood from which to rear one, the swarm loses all heart and soon dies, 30 though there be an abundance of honey in the hives.

The common bees will never use their sting upon the queen; if she is to be disposed of, they starve her

¹ *The Pharaohs.* The rulers of Egypt.

to death; and the queen herself will sting nothing but royalty — nothing but a rival queen.

The queen, I say, is the mother bee; it is undoubtedly complimenting her to call her a queen and invest her with regal authority, yet she is a superb creature, and looks every inch a queen. It is an event to distinguish her amid the mass of bees when the swarm alights; it awakens a thrill. Before you have seen a queen you wonder if this or that bee, which seems a little larger than its fellows, is not she, but when you once really set eyes upon her, you do not doubt for a moment. You know *that* is the queen. That long, elegant, shining, feminine-looking creature can be none less than royalty. How beautifully her body tapers, how distinguished she looks, how deliberate her movements! The bees do not fall down before her, but caress her and touch her person. The drones, or males, are large bees too, but coarse, blunt, broad-shouldered, masculine-looking. There is but one fact or incident in the life of the queen that looks imperial and authoritative: Huber relates that when the old queen is restrained in her movements by the workers, and prevented from destroying the young queens in their cells, she assumes a peculiar attitude and utters a note that strikes every bee motionless, and makes every head bow; while this sound lasts not a bee stirs, but all look abashed and humbled, yet whether the emotion is one of fear, or reverence, or of sympathy with the distress of the queen mother, is hard to determine. The moment it ceases and she advances again towards the royal cells, the bees bite and pull and insult her as before.

I always feel that I have missed some good fortune if I am away from home when my bees swarm. What

a delightful summer sound it is; how they come pouring out of the hive, twenty or thirty thousand bees each striving to get out first; it is as when the dam gives way and lets the waters loose; it is a flood of bees which breaks upwards into the air, and becomes a maze of whirling black lines to the eye and a soft chorus of myriad musical sounds to the ear. This way and that way they drift, now contracting, now expanding, rising, sinking, growing thick about some 10 branch or bush, then dispersing and massing at some other point, till finally they begin to alight in earnest, when in a few moments the whole swarm is collected upon the branch, forming a bunch perhaps as large as a two-gallon measure. Here they will hang from 15 one to three or four hours, or until a suitable tree in the woods is looked up, when, if they have not been offered a hive in the meantime, they are up and off. In hiving them, if any accident happens to the queen, the enterprise miscarries at once. One 20 day I shook a swarm from a small pear-tree into a tin pan, set the pan down on a shawl spread beneath the tree, and put the hive over it. The bees presently all crawled up into it, and all seemed to go well for ten or fifteen minutes, when I observed that something 25 was wrong; the bees began to buzz excitedly and to rush about in a bewildered manner, then they took to the wing and all returned to the parent stock. On lifting up the pan, I found beneath it the queen with three or four other bees. She had been one of 30 the first to fall, had missed the pan in her descent, and I had set it upon her. I conveyed her tenderly back to the hive, but either the accident terminated fatally with her or else the young queen had been liberated in the interim, and one of them had fallen in combat,

for it was ten days before the swarm issued a second time.

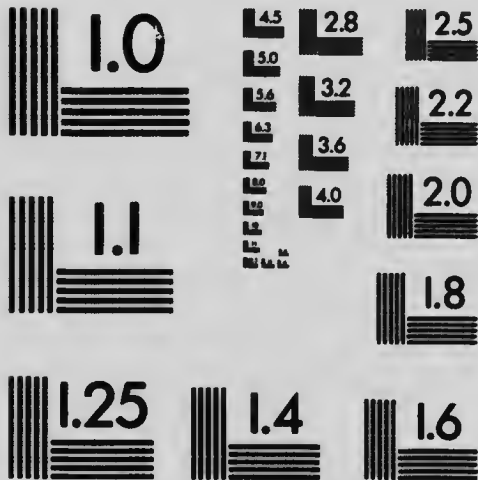
No one, to my knowledge, has ever seen the bees house-hunting in the woods. Yet there can be no doubt that they look up new quarters either before or on the day the swarm issues. For all bees are wild bees and incapable of domestication; that is, the instinct to go back to nature and take up again their wild abodes in the trees is never eradicated. Years upon years of life in the apiary seems to have no appreciable effect towards their final, permanent domestication. That every new swarm contemplates migrating to the woods, seems confirmed by the fact that they will come out only when the weather is favorable to such an enterprise, and that a passing cloud, or a sudden wind, after the bees are in the air, will usually drive them back into the parent hive. Or an attack upon them with sand or gravel, or loose earth or water, will quickly cause them to change their plans. I would not even say but that, when the bees are going off, the apparently absurd practice, now entirely discredited by regular bee-keepers but still resorted to by unscientific folk, of beating upon tin pans, blowing horns, and creating an uproar generally, might not be without good results. Certainly not by drowning the "orders" of the queen, but by impressing the bees as with some unusual commotion in nature. Bees are easily alarmed and disconcerted, and I have known runaway swarms to be brought down by a farmer ploughing in the field who showered them with handfuls of loose soil.

I love to see a swarm go off — if it is not mine, and if mine must go, I want to be on hand to see the fun. It is a return to first principles again by a very



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direct route. The past season I witnessed two such escapes. One swarm had come out the day before, and, without alighting, had returned to the parent hive — some hitch in the plan, perhaps, or may be the queen had found her wings too weak. The next day they came out again, and were hived. But something offended them, or else the tree in the woods — perhaps some royal old maple or birch, holding its head high above all others, with snug, spacious, irregular chambers and galleries — had too many attractions; for they were presently discovered filling the air over the garden, and whirling excitedly around. Gradually they began to drift over the street; a moment more, and they had become separated from the other bees, and, drawing together in a more compact mass or cloud, away they went, a humming, flying vortex of bees, the queen in the centre, and the swarm revolving around her as a pivot, — over meadows, across creeks and swamps, straight for the heart of the mountain, about a mile distant, — slow at first, so that the youth who gave chase kept up with them, but increasing their speed till only a foxhound could have kept them in sight. I saw their pursuer laboring up the side of the mountain; saw his white shirt-sleeves gleam as he entered the woods; but he returned a few hours afterwards without any clew as to the particular tree in which they had taken refuge out of the ten thousand that covered the side of the mountain.

The other swarm came out about one o'clock of a hot July day, and at once showed symptoms that alarmed the keeper, who, however, threw neither dirt nor water. The house was situated on a steep side-hill. Behind it the ground rose, for a hundred rods or so, at an angle of nearly forty-five degrees, and the pros-

pect of having to chase them up this hill, if chase them we should, promised a good trial of wind at least; for it soon became evident that their course lay in this direction. Determined to have a hand, or rather a foot, in the chase, I threw off my coat and hurried on, 5 before the swarm was yet fairly organized and under way. The route soon led me into a field of standing rye, every spear of which held its head above my own. Plunging recklessly forwards, my course marked to those watching from below by the agitated and wrig-10 gling grain, I emerged from the miniature forest just in time to see the runaways disappearing over the top of the hill, some fifty rods in advance of me. Lining them as well as I could, I soon reached the hill-top, my breath utterly gone and the perspiration streaming 15 from every pore of my skin. On the other side the country opened deep and wide. A large valley swept around to the north, heavily wooded at its head and on its sides. It became evident at once that the bees had made good their escape, and that whether they had 20 stopped on one side of the valley or the other, or had indeed cleared the opposite mountain and gone into some unknown forest beyond, was entirely problematical. I turned back, therefore, thinking of the honey-laden tree that some of these forests would 25 hold before the falling of the leaf.

I heard of a youth in the neighborhood, more lucky than myself on a like occasion. It seems that he had got well in advance of the swarm, whose route lay over a hill, as in my case, and as he neared the summit, hat 30 in hand, the bees had just come up and were all about him. Presently he noticed them hovering about his straw hat, and alighting on his arm; and in almost as brief a time as it takes to relate it, the whole swarm

had followed the queen into his hat. Being near a stone wall, he coolly deposited his prize upon it, quickly disengaged himself from the accommodating bees, and returned for a hive. The explanation of this singular circumstance no doubt is, that the queen, unused to such long and heavy flights, was obliged to alight from very exhaustion. It is not very unusual for swarms to be thus found in remote fields, collected upon a bush or branch of a tree.

10 When a swarm migrates to the woods in this manner, the individual bees, as I have intimated, do not move in right lines or straight forwards, like a flock of birds, but round and round, like chaff in a whirlwind. Unitedly they form a humming, revolving, nebulous
15 mass, ten or fifteen feet across, which keeps just high enough to clear all obstacles, except in crossing deep valleys, when, of course, it may be very high. The swarm seems to be guided by a line of couriers, which may be seen (at least at the outset) constantly going
20 and coming. As they take a direct course, there is always some chance of following them to the tree, unless they go a long distance, and some obstruction, like a wood, or a swamp, or a high hill, intervenes — enough chance, at any rate, to stimulate the lookers-on
25 to give vigorous chase as long as their wind holds out. If the bees are successfully followed to their retreat, two plans are feasible: either to fell the tree at once, and seek to hive them, perhaps bring them home in the section of the tree that contains the cavity; or to leave
30 the tree till fall, then invite your neighbors, and go and cut it, and see the ground flow with honey. The former course is more businesslike; but the latter is the one usually recommended by one's friends and neighbors.

Perhaps nearly one-third of all runaway swarms

leave when no one is about, and hence are unseen and unheard, save, perchance, by some distant laborers in the field, or by some youth ploughing on the side of the mountain, who hears an unusual humming noise, and sees the swarm dimly whirling by overhead, and, ⁵ may be, gives chase; or he may simply catch the sound, when he pauses, looks quickly around, but sees nothing. When he comes in at night he tells how he heard or saw a swarm of bees go over; and, perhaps from beneath one of the hives in the garden, a ¹⁰ black mass of bees has disappeared during the day.

They are not partial as to the kind of tree, — pine, hemlock, elm, birch, maple, hickory, — any tree with a good cavity high up or low down. A swarm of mine ran away from the new patent hive I gave them, ¹⁵ and took up their quarters in the hollow trunk of an old apple-tree across an adjoining field. The entrance was a mouse-hole near the ground.

Another swarm in the neighborhood deserted their keeper and went into the cornice of an out-house that ²⁰ stood amid evergreens in the rear of a large mansion. But there is no accounting for the taste of bees, as Samson ¹ found when he discovered the swarm in the carcass, or more probably the skeleton, of the lion he had slain.

In any given locality, especially in the more wooded and mountainous districts, the number of swarms that thus assert their independence forms quite a large per cent. In the Northern States these swarms very often perish before spring; but in such a country as Florida ³⁰ they seem to multiply, till bee-trees are very common. In the West, also, wild honey is often gathered in large

¹ Samson. See Judges xiv. 5-8.

quantities. I noticed not long since, that some wood-choppers on the west slope of the Coast Range felled a tree that had several pailfuls in it.

One night on the Potomac a party of us unwittingly made our camp near the foot of a bee-tree, which next day the winds of heaven blew down, for our special delectation, at least so we read the sign. Another time while sitting by a waterfall in the leafless April woods I discovered a swarm in the top of a large hickory. I had the season before remarked the tree as a likely place for bees, but the screen of leaves concealed them from me. This time my former presentiment occurred to me, and, looking sharply, sure enough there were the bees, going out and in a large, irregular opening. In June a violent tempest of wind and rain demolished the tree, and the honey was all lost in the creek into which it fell. I happened along that way two or three days after the tornado, when I saw a remnant of the swarm, those, doubtless, that escaped the flood and those that were away when the disaster came, hanging in a small black mass to a branch high up near where their home used to be. They looked forlorn enough. If the queen was saved, the remnant probably sought another tree; otherwise the bees soon died.

I have seen bees desert their hive in the spring when it was infested with worms, or when the honey was exhausted; at such times the swarm seems to wander aimlessly, alighting here and there, and perhaps in the end uniting with some other colony. In case of such union, it would be curious to know if negotiations were first opened between the parties, and if the houseless bees are admitted at once to all the rights and franchises of their benefactors. It would be very like the

bees to have some preliminary plan and understanding about the matter on both sides.

Bees will accommodate themselves to almost any quarters, yet no hive seems to please them so well as a section of a hollow tree — "gums" as they are called in the South-West where the sweet gum grows. In some European countries the hive is always made from the trunk of a tree, a suitable cavity being formed by boring. The old-fashioned straw hive is picturesque, and a great favorite with the bees also. 10

The life of a swarm of bees is like an active and hazardous campaign of an army; the ranks are being continually depleted, and continually recruited. What adventures they have by flood and field, and what hair-breadth escapes! A strong swarm during the 15 honey season loses, on an average, about four or five thousand per month, or one hundred and fifty per day. They are overwhelmed by wind and rain, caught by spiders, benumbed by cold, crushed by cattle, drowned in rivers and ponds, and in many nameless ways cut 20 off or disabled. In the spring the principal mortality is from the cold. As the sun declines they get chilled before they can reach home. Many fall down outside the hive, unable to get in with their burden. One may see them come utterly spent and drop hopelessly into 25 the grass in front of their very doors. Before they can rest the cold has stiffened them. I go out in April and May and pick them up by the handfuls, their baskets loaded with pollen, and warm them in the sun or in the house, or by the simple warmth 30 of my hand, until they can crawl into the hive. Heat is their life, and an apparently lifeless bee may be revived by warming him. I have also picked them up while rowing on the river and seen them safely to shore.

It is amusing to see them come hurrying home when there is a thunderstorm approaching. They come piling in till the rain is upon them. Those that are overtaken by the storm doubtless weather it as best they can in the sheltering trees or grass. It is not probable that a bee ever gets lost by wandering into strange and unknown parts. With their myriad eyes they see everything; and then, their sense of locality is very acute, is, indeed, one of their ruling traits. When a bee marks the place of his hive, or of a bit of good pasturage in the fields or swamps, or of the bee-hunter's box of honey on the hills or in the woods, he returns to it as unerringly as fate.

Honey was a much more important article of food with the ancients than it is with us. As they appear to have been unacquainted with sugar, honey, no doubt, stood them instead. It is too rank and pungent for the modern taste; it soon cloys upon the palate. It demands the appetite of youth, and the strong, robust digestion of people who live much in the open air. It is a more wholesome food than sugar, and modern confectionery is poison beside it. Besides grape sugar, honey contains manna, mucilage, pollen, acid, and other vegetable odoriferous substances and juices. It is a sugar with a kind of wild natural bread added. The manna of itself is both food and medicine, and the pungent vegetable extracts have rare virtues. Honey promotes the excretions and dissolves the glutinous and starchy impedimenta of the system.

Hence it is not without reason that with the ancients a land flowing with milk and honey should mean a land abounding in all good things; and the queen in the nursery rhyme, who lingered in the kitchen to eat "bread and honey" while the "king was in the parlor

counting out his money," was doing a very sensible thing. Epaminondas¹ is said to have rarely eaten anything but bread and honey. The Emperor Augustus² one day inquired of a centenarian how he had kept his vigor of mind and body so long; to which the veteran replied that it was by "oil without and honey within." Cicero,³ in his "Old Age," classes honey with meat and milk and cheese as among the staple articles with which a well-kept farm-house will be supplied.

Italy and Greece, in fact all the Mediterranean¹⁰ countries, appear to have been famous lands for honey. Mount Hymettus, Mount Hybla,⁴ and Mount Ida⁵ produced what may be called the classic honey of antiquity, an article doubtless in no wise superior to our best products. Leigh Hunt's⁶ "Jar of Honey" is¹⁵ mainly distilled from Sicilian history and literature, Theocritus furnishing the best yield. Sicily has always been rich in bees. Swinburne⁷ (the traveller

¹ *Epaminondas*. The famous Theban general, who delivered his country from the power of Sparta. He was killed at the battle of Mantinea, 363 B.C.

² *Augustus*. The nephew of Julius Cæsar, and the first emperor of Rome.

³ *Cicero*. The Roman orator, writer, and statesman (106 B.C.—43 B.C.). One of his most celebrated works is the *De Senectute* (Essay on Old Age).

⁴ *Mount Hybla*. A mountain in Sicily, celebrated in ancient times for its honey.

⁵ *Mount Ida*. A mountain in Crete. It was on this mountain that Melissa assisted in the nursing of Jupiter.

⁶ *Leigh Hunt*. An English poet and writer (1784—1859). The full title of the work here referred to is *A Jar of Honey from Mount Hybla*.

⁷ *Swinburne*. Henry Swinburne (1752—1803) travelled extensively throughout Europe and published many volumes dealing with his journeys. *Travels in the Two Sicilies* is one of his best-known works.

of a hundred years ago) says the woods on this island abounded in wild honey, and that the people also had many hives near their houses. The idyls of Theocritus are native to the island in this respect, and abound in 5 bees — “flat-nosed bees,” as he calls them in the Seventh Idyl — and comparisons in which comb-honey is the standard of the most delectable of this world’s goods. His goatherds can think of no greater bliss¹ than that the mouth be filled with honey-combs, or 10 to be enclosed in a chest like Daphnis² and fed on the combs of bees; and among the delectables with which Arsinoë³ cherishes Adonis⁴ are “honey-cakes,” and other tid-bits made of “sweet honey.” In the country of Theocritus this custom is said still to prevail: when 15 a couple are married, the attendants place honey in their mouths, by which they would symbolize the hope that their love may be as sweet to their souls as honey to the palate.

It was fabled that Homer⁵ was suckled by a priestess

¹ *No greater bliss* —

Goatherd. “Thyrsis, let honey and the honeycomb
Fill thy sweet mouth, and figs of Ægilus”:

— THEOCRITUS: *The Death of Daphnis.*

² *Daphnis.* One of the most celebrated *Idyls* of Theocritus deals with the death of Daphnis, a shepherd of Sicily and the reputed son of the god Mercury.

³ *Arsinoë.* The wife of Ptolemy Philadelphus, king of Egypt. One of the *Idyls* of Theocritus is devoted to an account of a festival of Adonis, celebrated at Alexandria, during which the statue of the unfortunate youth was decorated with great magnificence by Arsinoë.

⁴ *Adonis.* A youth beloved by Venus, who was killed by a wild boar while hunting. He was raised to the rank of a god, and extensively worshipped throughout the East.

⁵ *Homer.* The great epic poet of Greece, the author of the *Iliad* and the *Odyssey.*

whose breast distilled honey; and that once when Pindar¹ lay asleep the bees dropped honey upon his lips. In the Old Testament the food of the promised Immanuel² was to be butter and honey (there is much doubt about the butter in the original), that he might know good from evil; and Jonathan's³ eyes were enlightened by partaking of some wood or wild honey: "See, I pray you, how mine eyes have been enlightened, because I tasted a little of this honey." So far as this part of his diet was concerned, therefore, John⁴ the Baptist during his sojourn in the wilderness, his divinity school days in the mountains and plains of Judea, fared extremely well. About the other part, the locusts, or, not to put too fine a point on it, the grasshoppers, as much cannot be said, though they⁵ were among the creeping and leaping things the children of Israel were permitted to eat.⁶ They were probably not eaten raw, but roasted in that most primitive of ovens, a hole in the ground made hot by building a fire in it. The locusts and honey may have been served together, as the Bedas⁶ of Ceylon are said to season their meat with honey. At any rate, as the locust is often a great plague in Palestine, the prophet in

¹ *Pindar*. The Greek lyric poet who died 435 B.C. The prodigy of the bees dropping honey on his lips as he slept was taken as an indication of his future greatness as a poet. Almost all his works have been lost.

² *Immanuel*. See *Isaiah* vii. 15.

³ *Jonathan*. See *1 Samuel* xiv. 24-30.

⁴ *John the Baptist*. See *Matthew* iii. 4.

⁵ *Permitted to eat*. See *Leviticus* xi. 22.

⁶ *Bedas*. The aboriginal inhabitants of Ceylon. The word is usually written *Veddas*. They are a very low type of humanity, and have remained almost unaltered as regards their customs for the last two thousand years.

eating them found his account in the general weal, and in the profit of the pastoral bees; the fewer locusts the more flowers. Owing to its numerous wild-flowers and flowering shrubs, Palestine has always been a famous country for bees. They deposit their honey in hollow trees as our bees do when they escape from the hive, and in holes in the rocks, as ours do not. In a tropical or semi-tropical climate bees are quite apt to take refuge in the rocks, but where ice and snow prevail, as with us, they are much safer high up in the trunk of a forest tree.

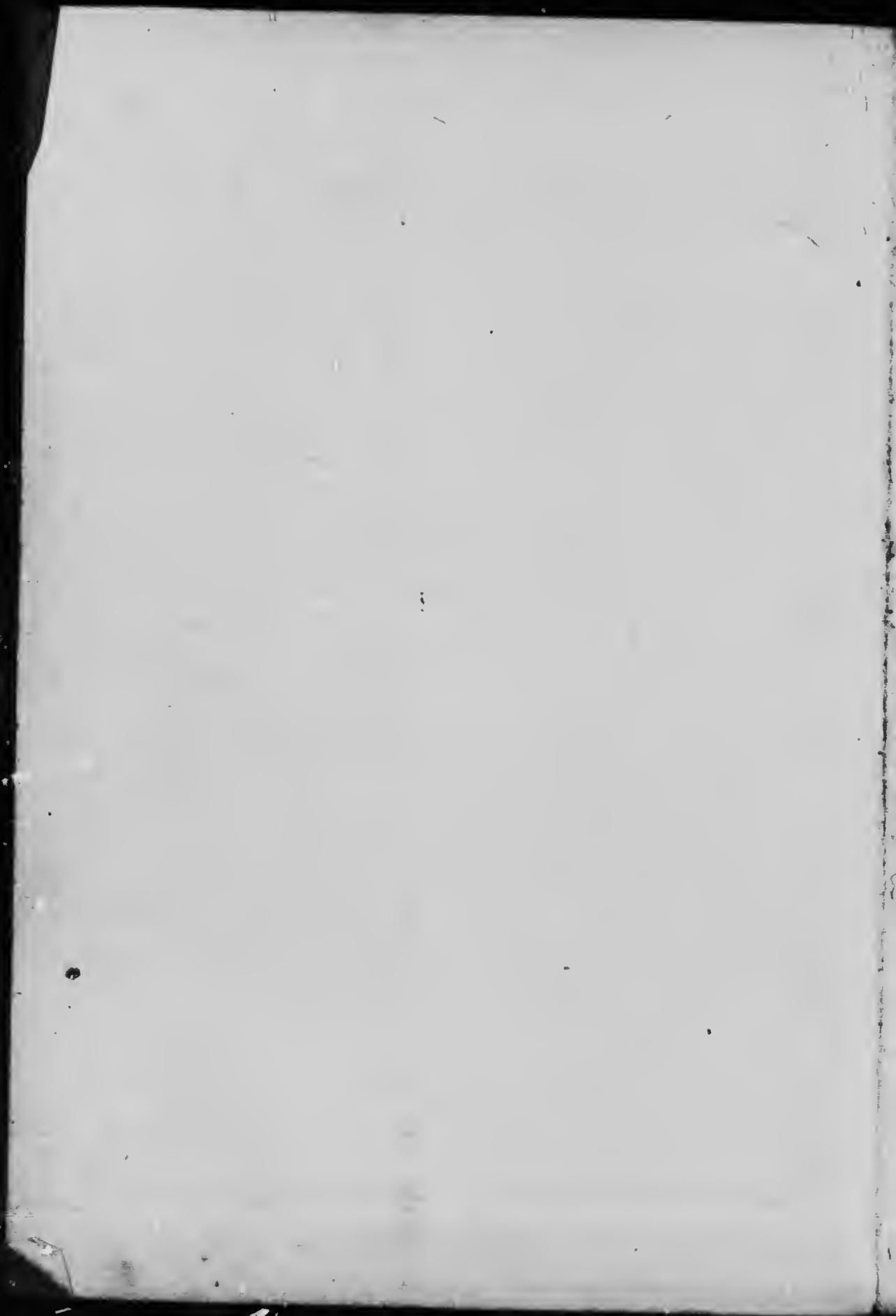
The best honey is the product of the milder parts of the temperate zone. There are too many rank and poisonous plants in the tropics. Honey from certain districts of Turkey produces headache and vomiting, and that from Brazil is used chiefly as medicine. The honey of Mount Hymettus owes its fine quality to wild thyme. The best honey in Persia and in Florida is collected from the orange blossom. The celebrated honey of Narbonne in the south of France is obtained from a species of rosemary. In Scotland good honey is made from the blossoming heather.

California honey is white and delicate and highly perfumed, and now takes the lead in the market. But honey is honey the world over; and the bee is the bee still. "Men may degenerate," says an old traveller, "may forget the arts by which they acquired renown; manufactories may fail, and commodities be debased, but the sweets of the wild-flowers of the wilderness, the industry and natural mechanics of the bee, will continue without change or derogation."

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