NOTES AND SUGGESTIONS
For the Pupil

THE SPRING OF THE YEAR

CHAPTER I

Page 1

Have you ever seen a "spring peeper" peeping? You will hear, these spring nights, many distinct notes in the marshes, and when you have seen all of the lowly musicians you will be a fairly accomplished naturalist. Let the discovery of "Who's Who among the Frogs" this spring be one of your first outdoor studies. The picture shows you Pickering's hyla, blowing his bagpipe.

Arbutus: trailing arbutus (*Epigæa repens*), sometimes called ground-laurel, and mayflower, fishflower (in New Jersey).

hepatica: liver-leaf (*Hepatica triloba*).

Spice-bush: wild allspice, fever-bush, Benjamin-bush (*Benzoin æstivale*).

Wood-pussy: the skunk, who comes out of his winter den very early in spring, and whose scent is one of the characteristic odors of a New England spring.

Page 2

All white and still: The whole poem will be found on the last page of "Winter," the second book in this series.

trillium: the wake-robin. Read Mr. Burroughs's book "Wake-Robin,"—the first of his outdoor books.

Page 4

phœbe: See the chapter called "The Palace in the Pig-Pen."

bloodroot: Sanguinaria canadensis. See the picture on this page. So named because of the red-orange juice in the root-stalks, used by the Indians as a stain.

marsh-marigolds: The more common but incorrect name is "cowslip." The marsh-marigold is *Caltha palustris* and belongs with the buttercup and wind-flower to the Crowfoot Family. The cowslip, a species of primrose, is a European plant and belongs to the Primrose Family.

Page 5

woolly-bear: caterpillar of the isabella tiger moth, the common caterpillar, brown in the middle with black ends, whose hairs look as if they had been clipped, so even are they.

mourning-cloak: See picture, page 77 of "Winter," the second book of this series. The antiopa butterfly.

juncos: the common slate-colored "snowbirds."

witch-hazel: See picture, page 28 of "The Fall of the Year"; read description of it on pages 31-33 of the same volume.

bluets: or "innocence" (*Houstonia cœrulea*).

Page 6

the Delaware: the Delaware River, up which they come in order to lay their eggs. As they come up they are caught in nets and their eggs or "roe" salted and made into caviar.

Cohansey Creek: a small river in New Jersey.

Lupton's Meadows: local name of meadows along Cohansey Creek.

CHAPTER II

Page 7

Mowgli: Do you know Mowgli of "The Jungle Book"?

Chaucer: the "Father of English Poetry." This is one of the opening lines of the Prologue to the Canterbury Tales.

Page 8

migrating birds: See "The Great Tidal Waves of Bird Life" by D. Lange, in the "Atlantic Monthly" for August, 1909.

Page 9

The cold-blooded: said of those animals lower than the mammals and birds, that have not four-chambered hearts and the complete double blood-circulation.

Weymouth Back River: of Weymouth, Massachusetts.

Page 10

catfish: or horn-pout or bull-pout, see picture, page 12.

Page 11

stickleback: The little male stickleback builds a nest, drives the female into it to lay her eggs, then takes charge of the eggs until the fry hatch out and go off for themselves.

CHAPTER III

Page 14

burlap petticoat: a strip of burlap about six inches wide tied with a string and folded over about the trunks of the trees under which the night-feeding gypsy moth caterpillars hide by day. The burlaps are lifted and the worms killed.

a peddler's stall: In the days of the author's boyhood peddlers sold almost everything that the country people could want.

Page 16

grim-beaked baron: the little owl of the tree.

keep: an older name for castle; sometimes for the dungeon.

Page 20

for him to call the summer rain: alluding to his evening and his cloudy-day call as a sign of coming rain.

Page 22

castings: the disgorged lumps of hair and bones of the small animals eaten by the owls.

Page 24

Altair and Arcturus: prominent stars in the northern hemisphere.

CHAPTER V

Page 34

primaries, secondaries, tertials: Turn to your dictionary under "Bird" (or at the front of some good bird book) and study out just which feathers of the wing these named here are.

Page 35

half-moulted hen: Pick her up and notice the regular and systematic arrangement of the young feathers. Or take a plucked hen and draw roughly the pin-feather scheme as you find it on her body.

Page 37

reed-birds: The bobolink is also called "rice-bird" from its habit of feeding in the rice-fields of the South on its fall migration.

CHAPTER VI

Do not stop doing or seeing or hearing when you have done, seen, and heard the few things suggested in this chapter and in chapters IV and X; for these are only suggestions, and merely intended to give you a start, as if your friend had said to you upon your visiting a new city, "Now, don't fail to see the Common and the old State House, etc.; and don't fail to go down to T Wharf, etc.,"—knowing that all the time you would be doing and seeing and hearing a thousand interesting things.

CHAPTER VII

Page 48

a hornet's nest: the white-faced hornet, that builds the great cone-shaped paper nests.

swifts thunder in the chimney: See chapter VII (and notes) in "Winter." For the "thunder" see section IX in chapter X of this book.

Page 49

cabbage butterfly: a pest; a small whitish butterfly with a few small black spots. Its grubs eat cabbage.

Page 54

the crested flycatcher: is the largest of the family; builds in holes; distinguished by its use of cast-off snake-skins in its nests.

kingbird: Everybody knows him, for it is usually he who chases the marauding crows; he builds, out in the apple tree if he can, a big, bulky nest with strings a-flying from it: also called "bee-martin," a most useful bird.

wood pewee: builds on the limbs of forest trees a most beautiful nest, much like a hummingbird's, only larger. Pewee's soft, pensive call of "pe-e-e-wee" in the deep, quiet, dark-shrouded summer woods is one of the sweetest of bird notes.

chebec: a little smaller than a sparrow; builds a beautiful nest in orchard trees and says "chebec, chebec, chebec."

Page 58

One had died: After phœbe brings off her first brood sprinkle a little, tobacco-dust or lice-powder, such as you use in the hen-yard, into the nest to kill the vermin. Otherwise the second and third broods may be eaten alive by lice or mites.

CHAPTER VIII

Page 60

gray harrier: so named because of his habit of flying low and "harrying," that is, hunting, catching small prey on or near the ground. "Harry" comes from the Anglo-Saxon word for army.

Page 61

"He looketh as it were a grym leoun": from Chaucer's description of the Cock in the story of the Cock and the Fox.

Page 62

terrible pike: closely related to the pickerel.

kingfisher: builds in holes in sand-banks near water. Its peculiar rattle sounds like the small boys' "clapper."

Page 63

"The present only toucheth thee!": Burns's poem "To a Mouse."

Page 64

"The fair music that all creatures made": from Milton's poem "To a Solemn Music," "solemn" meaning "orchestral" music.

Page 65

then doubling once more: This is all figurative language. I am thinking of myself as the fox. The dogs have run themselves to death on my trail, and I am turning back, "doubling," to have a look at them and to rejoice over their defeat.

Page 71

pine marten: The marten is so rare in this neighborhood that I am inclined to think the creature was the large weasel.

Page 73

the heavy bar across their foreheads: a very unusual way of yoking oxen in the United States. The only team I ever saw here so yoked.

Page 74

San Francisco: alluding to the earthquake and fire which nearly wiped out the city in 1906.

CHAPTER IX

The picture of the young buzzard is as true as a photograph; the bumped-up drawing of the old bird looks precisely as she did atop her dead tree, watching my approach. This vulture rarely soars into New England skies; down South, especially along the coast, the smaller black vulture (*Catharista urubu*) is found very tame and in great abundance; while in the far Southwest lives the great condor.

Page 80

tulip poplar: tulip-tree (*Liriodendron tulipifera*).

"For it had bene an auncient tree": from Edmund Spenser's "Shepherd's Calendar."

Page 85

a dozen kinds of cramps: Perhaps you will say I didn't find much in finding the buzzard's nest, and got mostly cramps! Yes, but I also got the buzzard's nest—a thing that I had wanted to see for many years. It was worth seeing, however, for its own sake. Even a buzzard is interesting. See the account of him in "Wild Life Near Home," the chapter called "A Buzzard's Banquet."

CHAPTER XI

Page 94

Burlington: in Vermont.

Concord and Middleboro: in Massachusetts.

Zadoc Thompson: a Vermont naturalist.

D. Henry Thoreau: better known as Henry D. Thoreau; author of "Walden," etc.

J. W. P. Jenks: for many years head of Pierce Academy, Middleboro, and later Professor of Agricultural Zoölogy in Brown University.

Page 96

Contributions: used in place of the whole name: Go yourself into the public library and read this and look at the four large volumes.

Page 101

spatter-docks: yellow pond-lily (Nuphar advena).

Page 102

dinosaurian: one of the fossil reptile monsters of the Mesozoic, or "middle," period of the earth's history, before the age of man.

CHAPTER XII

Page 115

June-bug: the very common brown beetle whose big white grubs you dig up under the sod and in composts.

Page 118

rose-breasted grosbeak: one of the most beautiful of our birds, and a lovely singer.

Page 120

Chickaree: the common name of the red squirrel. The red squirrel does not need to be destroyed.

tree swallows: They build in holes in orchard trees, etc.; to be distinguished on the wing from the barn swallows by their white bellies and plain, only slightly forked tails.

chippies: the little chipping sparrow, or hair-bird.

red-eyed vireos: the most common of the vireos; see picture of its nest on page 40 of "Winter."

Page 121

cowbird: the miserable brown-headed blackbird that lays its egg or eggs in smaller birds' nests and leaves its young to be fed by the unsuspecting foster-mother. As the young cowbird is larger than the rightful young, it gets all the food and causes them to starve.

Page 122

Thorn Mountain: one of the smaller of the White Mountains; it overlooks the village of Jackson, N. H.

CHAPTER XIII

Page 128

Here is the prescription: Think you can swallow it? Go out and try.

Page 129

Golden Chariot: In what Bible story does the Golden Chariot descend? and whom does it carry away?

pale-face: an Indian name for the white man.

Page 130

box turtles: They are sometimes found as far north as the woods of Cape Cod, Massachusetts; but are very abundant farther south.

Page 133

Chewink: towhee, or ground-robin; to be distinguished by his loud call of "chewink" and his vigorous scratching among the leaves.

SUMMER

CHAPTER I

Page 1

Learn first of all the joy of walking. It is enough at first to say "I am going to take a woods walk," with nothing smaller in mind to do or hear or see. Such tramping itself is one of the very best ways of meeting the wild folk, and getting acquainted with nature. Go to a variety of places—the seashore, the water-front, the upland pasture, the deep swamps, even if you take a car-ride to reach them. Then select the place nearest at hand to frequent and watch closely.

Page 3

There are many good books on the use of the camera for nature-study. Among them read: "Nature and the Camera" by Dugmore; "Home Life of Wild Birds," by Herrick.

Page 4

The clover blossom and the bumblebee: Read the intensely interesting book of Darwin's on the cross-fertilization of flowers. You will also find readable accounts in "Nature's Garden," by Mrs. Blanchan.

Page 5

In what nursery book do you find the original account of the House that Jack Built?

Page 6

Coccinella septempunctata: The ladybirds, or ladybugs, are named according to the number of their spots: *septempunctata* means seven-spotted. Another is called *novemnotata,* nine-spotted.

Sixty species of birds: Make your own list. Study your woods, your neighborhood, minutely day and night in order to find them all.

CHAPTER II

Page 10

"line": the end of the race; the "tape" or mark set for runners in a contest.

"set-to": a combat or fight.

mix-up: is the same half-slangy word or newspaper expression for a general fight.

Page 11

Paramœcium: this is one of the best known of the single-celled animals. You can get them by making an "infusion" of raw potato, a little hay, and stagnant water.

Page 12

A writer in one of our magazines: The account is found in "St. Nicholas" for May, 1913.

two big slanting cellar-doors: These were in the shed of my grandfather's farmhouse, "Underwood," and covered the "bulkhead" of the cellar.

Page 13

The [Massachusetts] Society for the Prevention of Cruelty to Animals: has its headquarters in Boston. It does a great work for "dumb" animals, and publishes a paper called "Our Dumb Animals" that every home and school should have.

Page 14

follow my leader: a game that all boys know and love, especially when a strong, daring leader takes the game in hand.

Page 15

Mount Hood: is the highest peak of the Cascade Range in Oregon. The rope hanging down from the summit was brought up on a pack-horse or mule (I forget which) as far as Tie-up Rock, then carried to the summit by the professional guides and there fastened for the safety of those whom they take to the top during the summer.

Page 17

a wild snowstorm: for a fuller description of this storm and the whole climb see the chapter in "Where Rolls the Oregon" entitled "The Butterflies of Mount Hood."

CHAPTER III

Page 19

"All heaven and earth are still," etc.: this is from Byron's "Childe Harold's Pilgrimage," a poem you ought to read.

Page 21

Mr. William L. Finley's story of the condor appeared in the "Century Magazine." It is one of the most interesting bird stories ever written.

This is the season of flowers: among the helpful and interesting flower books for field use are "Gray's Manual," Mrs. Dana's "How to Know the Wild Flowers," and Chester A. Reed's little vest-pocket Guide with colored plates of the common flowers.

Page 25

rain down little toads: I saw it again in the deserts of Oregon, the quick shower making millions of western spadefoot toads hop up out of the sand. As the sun came out again, presto! all were gone—into the sand out of sight.

CHAPTER IV

Page 27

plumers: those who used to kill birds for their beautiful plumage.

Klamath Lake Reservation: is partly in California. It was set aside by President Roosevelt.

the coyote: is the prairie or desert wolf. He is larger than the red fox, but smaller than the gray, or timber, wolf.

Page 29

homesteader: one who settles upon land under the Federal home-steading laws.

CHAPTER V

T wharf, long one of the busiest fish wharves in the world, perhaps the busiest, is, as I write, on the point of being abandoned by the fish-dealers of Boston, who are to occupy a huge new pier at South Boston, built by the State at a cost of about a million dollars. Franklin Field is a great athletic field adjoining Franklin Park in the southern part of Boston.

Page 39

list of saints: these immortal names are carved in various places on the outer walls of the Public Library.

cranium: the head, or rather the skull.

herring gull: Larus argentatus, one of the largest and commonest of the harbor birds, and very much like the Western gull of Three-Arch Rocks. It is a pearl-gray and pure white creature with black on the wings. The immature birds are a brownish gray and look like an entirely different species for the first year.

Page 40

Boston, Baltimore, etc.: Make a study of your city parks and the spots of green and the open spaces where the wild things may be found. Go to the Public Library and ask for the books that treat of the wild life of your city: "Wild Birds in City Parks," by Walter, will be such a book for Chicago; "Birds in the Bush," by Torrey, and "Birds of the Boston Public Garden," by Wright, for Boston.

Charles River Basin: the wide fresh-water part of Charles River just above the dam and near Beacon and Charles Streets.

Scup: another name is porgie, porgy, scuppaug.

Squid: (*Ommastrephes illecebrosus*), a cephalopod, or cuttlefish, used for bait along the Atlantic coast. The "cuttle-bone" in canaries' cages is taken from the genus Sepia.

Squeteague: pronounced skwe-tēg´; also called weakfish and sea-trout.

Scallops: are shellfish the large muscle of which is much prized for food.

These are only a few of the fish kinds brought in at T Wharf.

Page 41

Grand Banks: a submarine plateau in the Atlantic, eastward from Newfoundland; noted as a fishing-ground. Its depth is thirty to sixty fathoms.

the Georges: a smaller bank lying off Cape Cod.

"We're Here": the name of the schooner in Kipling's "Captains Courageous."

Quincy Market: an old well-known market in Boston.

King's Chapel: on Tremont Street. It was begun in 1749 and is still used for worship. See "Roof and Meadow" for a fuller account of the sparrows.

Page 42

rim rock: the edging of rock around the flats and plains of the sage deserts of Oregon.

Boston Common: known to every child who has read the history of our country. The "Garden" is across Charles Street from the Common.

Page 43

Agassiz Museum: the Museum of Comparative Zoölogy at Harvard University. It is popularly called the Agassiz Museum in honor of the great naturalist Louis Agassiz, who founded it.

See Sarah K. Bolton's "Famous Men of Science."

Arnold Arboretum: is near the western edge of Boston; one of the most celebrated gardens of trees in the world.

Through the heaven's wide pathless way: from "Il Penseroso," by Milton.

Page 44

Swales: wet, grassy, or even bushy, meadows.

CHAPTER VI

Page 46

The tree-toad: (Hyla versicolor); he is said by country people to prophesy rain.

pennyroyal: is one of the small aromatic mints.

Wilson Flagg: one of our earliest outdoor writers. Look up his life in any American biographical dictionary.

CHAPTER VII

Page 57

Tillamook: the name of a town near the coast of Oregon.

at the mouth of the bay: Tillamook Bay, where the bar is only about thirty feet wide, making the passage extremely difficult and dangerous.

Three-Arch Rocks Reservation: was set aside by President Roosevelt. Credit for this and the other Oregon Reservations is largely due to Mr. William L. Finley and the Audubon Societies.

Page 59

Shag Rock: so named for the black cormorants that nest upon it, for these birds are commonly known as "shags."

Page 60

the sea-lions: were of the species known as Steller's sea-lions.

reversed in shape: I mean the close hind flippers, the tapering hind end of the body, gave them an unnatural shape—reversed.

Æolus: the god of the winds.

CHAPTER VIII

Page 65

Cud: the ball of grass or hay that the cow keeps bringing up from her first stomach to be chewed and swallowed, going then into the second stomach, where it is digested.

stanchions: the iron or wooden fastening about the cow's neck in the stall.

mother-principle: the instinct or unconscious impulse of all living things to reproduce their kind.

Page 66

spores: the name of the seed dust of the ferns.

the hunter family: these are the spiders that build no nets or webs for snaring their prey, but hunt their prey over the ground.

Page 69

Toadfish: See the chapter in the "Fall of the Year" called "In the Toadfish's Shoe."

Page 70

Surinam toads: pronounced sōō-rī-näm´.

Mother-passion ... in the life of reptiles: many readers, seeing this statement in the "Atlantic Monthly," where the essay first appeared, have written me of how when they were boys they saw snakes swallow their young—or at least killed the old snakes with young in them! Isn't that mother-love among the reptiles? But every time the story has been about garter snakes or moccasins or some other ovoviviparous snake; that is, a snake that does not lay eggs, but keeps them within her body till they hatch, then gives birth to the young. I have never seen a snake swallow its young; though big snakes do eat little ones whenever they can get them.

CHAPTER IX

Mother Carey's chickens are any of the small petrels. The little stormy petrels of poetry and story belong to the Old World and only wander occasionally over to our side of the Atlantic.

Page 79

petrel: pronounced pĕt´rel, so called in allusion, perhaps, to Saint Peter's walking on the sea.

CHAPTER X

Page 88

P Ranch: is one of the Hanley system of cattle ranches, which cover a wide area almost seventy-five miles long. The buildings and tree-fences, the stockades and sheds make it one of the most picturesque I have ever seen. This story was told to me by Jack Wade, the "boss of the buckaroos." "Buckaroo" is a corruption of the Spanish vaquero, cowherd.

Winnemucca: find the place on the map.

Page 91

buckskin: a horse of a soft yellowish color. He got his name Peroxide Jim from the resemblance of the color of his coat to that of human hair bleached by peroxide of hydrogen.

CHAPTER XI

Page 100

paper nests in trees: The common yellow-jacket hornet builds similar large round nests in bushes, and other wasps build paper nests behind walls, under the ground, in holes, etc.

Page 107

bite into something poisonous: Send to the Department of Agriculture at Washington for the little booklet on our poisonous plants. It is free.

CHAPTER XII

Page 121

"And God who clears": these lines of Kipling I am quoting as I first found them printed. I see in his collected verse that they are somewhat changed.

THE FALL OF THE YEAR

CHAPTER I

Page 1

The clock of the year strikes one: When, in the daytime, the clock strikes one, the hour of noon is past; the afternoon begins. On the 21st of June the clock of the year strikes twelve—noon! By late July the clock strikes one—the noon hour is past! Summer is gone; autumn—the afternoon of the year—begins.

going "creepy-creep": In the quiet of some July day in fields or woods, listen to the stirring of the insects and other small wood creatures. All summer long they are going about their business, but in the midst of stronger noises we are almost deaf to their world of little sounds.

Page 3

begins to shift: Why is the oak's shadow likely to be "round" at noon? What causes the shadow to "shift"; or move? In which direction would it move?

falls a yellow leaf from a slender birch near by ... small flock of robins from a pine ... swallows were gathering upon the telegraph wires: Next summer, note the exact date on which you first see signs of autumn—the first falling of the leaves, the first gathering of birds for their southern trip. Most of the migrating birds go in flocks for the sake of companionship and protection.

chewink (named from his call, chē-wink´; accent on second, not on first, syllable, as in some dictionaries) or ground robin, or towhee or joree; one of the finch family. You will know him by his saying "chewink" and by his vigorous scratching among the dead leaves, and by his red-brown body and black head and neck.

vireo (vīr´-ē-ō): the red-eyed vireo, the commonest of the vireo family; often called "Preacher"; builds the little hanging nest from a small fork on a bush or tree so low often that you can look into it.

fiery notes of the scarlet tanager (tăn´-a-jĕr): His notes are loud and strong, and he is dressed in fiery red clothes and sings on the fieriest of July days.

Page 4

resonant song of the indigo bunting: or indigo-bird, one of the finch family. He sings from the very tip of a tree as if to get up close under the dome of the sky. Indeed, his notes seem to strike against it and ring down to us; for there is a peculiar ringing quality to them, as if he were singing to you from inside a great copper kettle.

scarlet tanager by some accident: The tanager arrives among the last of the birds in the spring, and builds late; but, if you find a nest in July or August, it is pretty certain to be a second nest, the first having been destroyed somehow—a too frequent occurrence with all birds.

half-fledged cuckoos: The cuckoo also is a very late builder. I have more than once found its eggs in July.

red wood-lily: Do you know the wood-lily, or the "wild orange-red lily" as some call it (*Lilium philadelphicum*)? It is found from New England to North Carolina and west to Missouri, but only on hot, dry, sandy ground, whereas the turk's-cap and the wild yellow lily are found only where the ground is rich and moist.

low mouldy moss: Bring to school a flake, as large as your hand, of the kind of lichen you think this may be. Some call it "reindeer moss."

sweet-fern: Put a handful of sweet-fern (Myrica asplenifolia) in your pocket, a leaf or two in your book; and whenever you pass it in the fields, pull it through your fingers for the odor. Sweet gale and bayberry are its two sweet relatives.

Page 5

milkweed, boneset, peppermint, turtle-head, joe-pye-weed, jewel-weed, smartweed, and budding goldenrod: Go down to the nearest meadow stream and gather for school as many of these flowers as you can find. Examine their seeds.

wind is a sower going forth to sow: Besides the winds what other seed-scatterers do you know? They are many and very interesting.

Page 6

"Over the fields where the daisies grow...." From "Thistledown" in a volume of poems called "Summer-Fallow," by Charles Buxton Going.

seed-souls of thistles and daisies and fall dandelions seeking new bodies for themselves in the warm soil of Mother Earth: On your country walks, watch to see where such seeds have been caught, or have fallen. They will be washed down into the earth by rain and snow. If you can mark the place, go again next spring to see for yourself if they have risen in "new bodies" from the earth.

sweet pepper-bush: The sweet pepper-bush is also called white alder and clethra.

chickadees: Stand stock-still upon meeting a flock of chickadees and see how curious they become to know you. You may know the chickadee by its tiny size, its gray coat, black cap and throat, its saying "chick-a-dee," and its plaintive call of "phœbe" in three distinct syllables.

Page 7

clock strikes twelve: As we have thought of midsummer as the hour from twelve to one in the day, so the dead of winter seems by comparison the twelve o'clock of midnight.

shimmering of the spiders' silky balloons: It is the curious habit of many of the spiders to travel, especially in the fall, by throwing skeins of silky web into the air, which the breezes catch and carry up, while the spiders, like balloonists, hang in their web ropes below and sail away.

CHAPTER II

There are two species of foxes in the eastern states—the gray fox, common from New Jersey southward, and the larger red fox, so frequent here in New England and northward, popularly known at Reynard. Far up under the Arctic circle lives the little white or Arctic fox, so valuable for its fur; and in California still another species known as the coast fox. The so-called silver or blue, or black, or cross fox, is only the red fox with a blackish or bluish coat.

Page 9

Mullein Hill: the name of the author's country home in Hingham, Massachusetts. The house is built on the top of a wooded ridge looking down upon the tops of the orchard trees and away over miles of meadow and woodland to the Blue Hills, and at night to the lights that flash in Boston Harbor. Years before the house was built the ridge was known as Mullein Hill because of the number and size of the mulleins (*Verbascum Thapsus*) that grew upon its sides and top.

Page 10

mowing-field: a New England term for a field kept permanently in grass for hay.

Page 11

grubby acres: referring to the grubs of various beetles found in the soil and under the leaves of its woodland.

BB: the name of shot about the size of sweet pea seed.

Page 12

Pigeon Henny's coop: a pet name for one of the hens that looked very much like a pigeon.

shells: loaded cartridges used in a breech-loading gun.

bead drew dead: when the little metal ball on the end of the gun-barrel, used to aim by, showed that the gun was pointing directly at the fox.

Page 16

the mind in the wild animal world: how the animals may really feel when being chased, namely, not frightened to death, as we commonly think, but perhaps cool and collected, taking the chase as a matter of course, even enjoying it.

Page 17

The Chase: The sound of the hunting is likened to a chorus of singing voices; the changing sounds, as when the pack emerges from thick woods into open meadow, being likened to the various measures of the musical score; the whole musical composition or chorus being called The Chase.

Page 18

dead heat: a race between two or more horses or boats where two of the racers come out even, neither winning.

Page 19

Flood: Why spelled with a capital? What flood is meant?

Page 20

hard-pressed fox had narrowly won his way: In spite of the author's attempt to shoot the fox that was stealing his chickens do you think the author would be glad if there were no foxes in his woods? How do they add interest to his out of doors? What other things besides chickens do they eat? Might it not be that their destruction of woodchucks (for they eat woodchucks) and mice and muskrats quite balances their killing of poultry? (The author thinks so.)

CHAPTER III

The toadfish of this story is *Batrachus tau*, sometimes called oyster-fish or *sapo*. The fishing-frog or angler is by some called toadfish, as is also the swell-fish or common puffer of the Atlantic Coast.

Page 21

Buzzards Bay: Where is Buzzards Bay? Do you know Whittier's beautiful poem, The Prayer of Agassiz, which begins:—

"On the isle of Penikese
Ringed about by sapphire seas."

Where is Penikese? What waters are those "sapphire seas," and what was Agassiz doing there?

Page 23

Davy Jones: Who is Davy Jones? Look him up under Jones, Davy, in your dictionary of Proper Names. Get into the "looking up" habit. Never let anything in your reading, that you do not understand, go unlooked up.

Old Man of the Sea: Look him up too. Are he and Davy Jones any relation?

It was really a fish: What names do you think of that might fit this fish?

Page 24

coarsely marbled with a darker hue: What is the meaning of marbled?

Page 25

covered with water: The author means that the rock is not always covered with water, not the hole under the rock. Of course the hole is always built so that it is full of water, else the fish would perish at low tide.

Page 27

love the out of doors with all your mind: Do you know what is meant by loving the out of doors with your mind? Just this: that while you feel (with your heart) the beauty of a star, at the same time you know (with your mind) that that particular star, let us say, is the Pole Star, the guide to the sailors on the seas; that it is also only one of a vast multitude of stars each one of which has its place in the heavens, its circuit or path through the skies, its part in the whole orderly universe—a thought so vast and wonderful that we cannot comprehend it. All this it means to love with our minds. Without minds a star to us is only a point of light, as to Peter Bell

"A primrose by the river's brim
A yellow primrose was to him
And it was nothing more."

Does the toadfish become anything more than a mere toadfish in a shoe before the end of the chapter?

Page 28

in the toadfish's shoe: What does the author mean by asking you to put yourself in the toadfish's shoe? Only this: to try, even with the humblest of creatures, to share sympathetically their lives with them. The best way to do this with man as well as with toadfish is to learn about their lives.

CHAPTER V

Page 36

Maurice River Cove: Where is Maurice River Cove? What is the Cove famous for?

great eagle's nest: Look up the habits of the bald eagle in some natural history. Is he a very great enemy to man? If a pair of the noble birds lived in your neighborhood would you want their nest destroyed and the birds shot? Do you know the story of "Old Abe"? Look that up also.

Page 37

scream of a wild cat: The wild cat is still to be found throughout the United States wherever the country is very wild and wooded. Its cry or scream is an indescribable thrill that shoots cold all over you, freezing fast in the roots of your hair.

mud-hens: The mud-hen or American coot, a dark bluish slate-colored bird of the marshes about the size of a large bantam, with an ivory-white bill and peculiar lobed toes, instead of webbed like a duck's.

eyrie: What does the word mean? Are there any other ways of spelling it?

Page 38

size of a small haystack: This is no exaggeration. From one nest of a fish hawk (and this nest was probably built first by a fish hawk) that blew down from the top of an old house chimney in the Maurice River Marshes, the author knew six one-horse cartloads of loose sticks to be taken.

Page 40

such a sight as this: Have you ever seen a sunset more gorgeous than any artist could paint and any rich man could buy? Ever had a smell of trailing arbutus that no perfumer could equal, that all the money in the world could not create? Old Midas had a golden touch and turned his daughter into gold. Was he not more than willing to be the poorest man in his kingdom if only he might be rid of the fatal touch, be a natural man again and have his loving little daughter a natural child again? To be your natural selves, and to enjoy your beautiful natural world is better than to be anything else, or to have anything else, in the world.

CHAPTER VI

Page 46

end of the outdoors: The fall plowing, even the digging of the ditches—all the work in the soil is about over by Thanksgiving when the ground begins to freeze.

Page 47

crib-house: Where the writer lived as a boy the corn was husked and left in the ear and stored in long, narrow houses built of beveled slats spaced about half an inch apart to allow the wind free play, but like the thin slats of a shutter so arranged that the rain ran down and, except in a driving wind, did not wet the grain.

"spring-house": Spring-houses took the place of modern ice-chests, being little cupboard-like houses well ventilated and screened, built near the farmhouse and usually over a spring of water that kept the milk and other contents cool.

battened: Is this a "land" term or a "sea" term? What does it mean? Look it up and report.

the swallows: These were the barn swallows—the beautiful swallows with the long, finely-forked tail. You will always know them on the wing by the brown breast and fine forked tail.

worm-fence: A worm-fence is built of rails laid one on top of the other, running zigzag, each corner held together by two upright stakes, set in the ground and crossed just above the next-to-the-top rail. The top rail is laid in the crotch of the two stakes.

turn-o'-lane: name of a very excellent old-fashioned apple that got its name from the fact that the original tree of the kind grew at a turn of the lane—the writer does not know whose lane.

Page 48

double-hived: It is customary to cover beehives with newspapers, then slip an outside box down over papers and all to keep the swarm from the cutting cold winds of winter. Bees are frequently brought into the cellar for the winter in northern latitudes.

put on an extra coat, and turned their collars up about their ears: What does the writer mean?

changed their roost from the ridge-pole: Turkeys roost high; but the ridge-pole of the crib-house used to be too cold in the dead of winter, so they would change to the more protected apple-tree, still roosting high, however.

pearmain: name of a "summer" apple in New Jersey; of a winter apple in this section of Massachusetts.

garden of box: the box bush.

bleeding-hearts: an old-fashioned flower; a low shrub with pendent blossoms shaped like a heart.

creeper: the Virginia creeper, or woodbine.

Page 49

"template" stove: from template or templet, a strip of sheet iron used in boiler-making. A simple long stove made of a single piece of sheet iron, bent like an inverted U, and riveted to a cast iron bottom. It had a single door in the front; and burnt pieces of wood about two feet long. Often called "tenplate" stove.

Page 50

seven of us alone: seven brothers and sisters in the writer's family.

flats: Describe the outside appearance of a city "flat," and also the inside if you have ever been in a flat. Is it like a farmhouse?

kitchenette: What kind of a kitchen is a kitchenette?

neither a farm nor a city home: By which the writer means a farm in the ordinary sense of land cultivated for a living. His is a home only, with several acres around it, largely in woods and grass.

Page 51

"Bucksy": the invented name of a little Indian hero about whom the writer tells stories to his little boys.

CHAPTER VIII

If there is a muskrat house or village of houses in your neighborhood, report to the class, or better, take teacher and class, as soon as freezing weather comes, to see it. Go out yourselves and try to see the muskrats plastering their walls on one of the bright October nights.

Page 63

muskrats combine: The author has frequently found as many as six rats in a single house; but whether all of these helped in the building or not, he is unable to say.

winter house: If the house is undisturbed (as when situated out in a stumpy pond) it will stand for years, the rats dwelling in it the year around.

Page 64

pick and shovel: What is meant by a fox's "pick and shovel"?

Lupton's Pond: the name of a little wood-walled pond that the author haunted as a boy.

"The best-laid schemes o' mice and men
Gang aft agley."

Learn this poem ("To A Mouse") by heart. Burns is the author.

Page 65

very much alike: Name some other respects in which animals and men are alike in their lives. What famous line in the poem just quoted is it that makes men and mice very closely related?

bottom of the house: Down in the very foundation walls of the muskrat's house are two runways or "doors" that open under water and so far under that they rarely if ever freeze. See picture of such a house with its door in the author's "Wild Life Near Home," page 174.

Page 66

tepee: What is a tepee?

juicy and pink and tender: The muskrats eat grass stems and roots, so that under the water near the lodge you will often find in winter little stacks of these tender pink stems and roots ready for eating—much as the beaver stores up sticks of tender bark under the water near his lodge for food when the ice forms overhead.

Winter is coming: Are you glad or sorry? Are you ready?

CHAPTER IX

Page 67

"The north wind doth blow,
And we shall have snow,
And what will the Robin do then,
Poor thing?"

Where does the verse come from? Mother Goose? Yes, but who was she?

Chipmunk: Our little striped ground squirrel, interesting because he has cheek-pouches and thus forms a link between the arboreal squirrels (gray squirrels, etc.) and the ground squirrels or spermophiles, of which the beautiful little thirteen-lined squirrel of the prairies is an example.

Whitefoot, the wood mouse: The white-footed or wood mouse or deer mouse.

Page 68

Not so much as a bug or a single beetle's egg has he stored: Why not, seeing that these are his food?

a piece of suet for him on a certain lilac bush: Whose bush might it be? Is there a piece on yours?

upon the telegraph-wires were the swallows—the first sign that the getting ready for winter has begun: What kind or kinds of swallows? Have you any earlier sign?

Page 69

the few creatures that find food and shelter in the snow: Name four of the animals that so find their food and shelter. Are there any others? Look them up.

Page 70

there will be suffering and death: In your tramps afield this winter look out for signs of suffering. There are many little things that you can do to lessen it—a little seed scattered, a piece of suet nailed up on a tree, a place cleared in the snow where gravel stones can be picked up.

or even three hundred pounds of honey: By not allowing the bees to swarm, and thus divide their strength, bee-keepers often get more than three hundred pounds of comb-honey (in the little pound boxes or sections) from a single hive. The bees themselves require only about twenty to twenty-five pounds to carry them through the winter.

Page 71

the witch-hazels: The witch-hazels do not yield honey so far as the author has observed. Suppose you watch this autumn to see if the honey-bees (do you know a honey-bee when you see her?) visit it. Whence comes this quotation? From which poem of Bryant's:—

"*when come the calm, mild days.*"

put on their storm-doors: In modern bee-hives there is a movable board in front upon which the bees alight when entering the hive; this can be so turned as to make a large doorway for the summer, and a small entrance for the cold winter.

whole drove of forty-six woodchucks: The author at one time had forty-six inhabited woodchuck holes on his farm.

Page 72

as Bobolink among the reeds of the distant Orinoco: The bobolink winters even farther south—beyond the banks of the Amazon.

to sleep until dawn of spring: What is the name for this strange sleeping? What other American animals do it? Name three.

Page 73

frogs frozen into the middle of solid lumps of ice: Of course, this was never done intentionally: each time the frogs were forgotten and left in the laboratory, where they froze.

Page 74

they seem to have given up the struggle at once ...: This may not be the explanation. One of the author's friends suggests that it may have been caused by exposure, due to their having been frightened in the night from their usual bed and thus forced to roost where they could until morning.

Page 75

timothy: "Herd's-grass" or "English hay"—as it is sometimes called in New England.

plenty for the birds: What are the "weeds" made for? You growl when you are set to pulling them in the garden. What are they made for? Can you answer?

CHAPTER X

Page 76

An English sparrow: Make a long and careful study of the sparrows that nest about you. If you live in the country try to drive them away from the bluebird house and the martin-boxes. The author does not advise boys and girls to do any killing, but carefully pulling down a sparrow's nest with eggs in it—if you are sure it is a sparrow's nest—is kindness, he believes, to the other, more useful birds. Yet only yesterday, August 17th, he saw a male sparrow bring moth after moth to its young in a hole in one of the timbers of a bridge from which the author was fishing. It is not easy to say just what our duty is in this matter.

Page 77

clack of a guinea going to roost: The guinea-fowl as it goes to roost frequently sets up a clacking that can be heard half a mile away.

an ancient cemetery in the very heart of Boston: The cemetery was the historic King's Chapel on Tremont Street, Boston. Some of the elm trees have since been cut down.

Page 78

Cubby Hollow: a small pond near the author's boyhood home, running, after a half-mile course through the woods, into Lupton's Pond, which falls over a dam into the meadows of Cohansey Creek.

on the water: What water is it that surrounds so large a part of the City of Boston?

Page 79

the shuttered buildings: Along some of the streets, especially in the wholesale district, the heavy iron shutters, closed against the high walls of the buildings, give the deserted streets a solemn, almost a forbidding aspect.

facing the wind: like an anchored boat, offering the least possible resistance to the storm.

out of doors lies very close about you, as you hurry down a crowded city street: Opportunities for watching the wild things, for seeing and hearing the things of nature, cannot be denied you even in the heart of the city, if you have an eye for such things. Read Bradford Torrey's "Birds on Boston Common," or the author's "Birds from a City Roof" in the volume called "Roof and Meadow."

CHAPTER XI

Page 80

the unabridged dictionary: What does "unabridged" mean?

hay-rig: a simple farm wagon with a "rigging" put on for carting hay.

Page 81

cord wood: wood cut into four-foot lengths to be cut up smaller for burning in the stove. What are the dimensions of a cord of wood?

Page 82

through the cold gray of the maple swamp below you, peers the face of Winter: What does one see in a maple swamp at this time of year that looks like the "face of winter." Think.

he that gathers leaves for his pig spreads a blanket of down over his own winter bed: How is this meant to be taken?

round at the barn: It is a common custom with farmers to make this nightly round in order to see that the stock is safe for the night. Were you ever in a barn at night where the horses were still munching hay, and the cattle rattling their stanchions and horns? Recall the picture in Whittier's "Snow-Bound."

Page 83

diameters: the unit of measure in the "field" or the lens of the microscope, equivalent to "times."

white-footed wood mouse: Text should read or wood mouse. There are other wood mice, but Whitefoot is known as the wood mouse.

gives at the touch: an idiom, meaning moves back, gives way.

red-backed salamander: very common under stones; his scientific name is Plethodon erythronolus.

His "red" salamander: Read chapter V in "Pepacton," by Burroughs. His salamander is the red triton, *Spelerpes ruber.*

Page 84

dull ears: Our ears are dulled by the loud and ceaseless noises of our city life, so that we cannot hear the small voices of nature that doubtless many of the wild creatures are capable of hearing.

tiny tree-frog, Pickering's hyla: the one who peeps so shrill from the meadows in spring.

"skirl": a Scotch term; see "Tam O'Shanter," by Burns: "He screwed the pipes and gart them skirl."

bunches of Christmas fern: Gathered all through the winter here in the ledges about Mullein Hill by the florists for floral pieces.

Page 85

yellow-jacket's nest: one of the Vespa Wasps, Vespa Germanica. Read the first chapter of "Wasps Social and Solitary," by G. W. and E. G. Peckham.

Page 86

long-tusked boar of the forest: The wild boar, the ancestor of our domestic pigs is still to be found in the great game preserves in European forests; in this country only in zoölogical gardens.

live in a pen: How might one, though living in a big modern house, well furnished and ordered, still make a "pen" of it only.

CHAPTER XII

Now do not stuff cotton in your ears as soon as you have heard these ten sounds; or, what amounts to the same thing, do not stop listening. If you do only what the book says and nothing else, learn just the day's lesson and nothing more, your teacher may think you a very "good scholar," but I will tell you that you are a poor student of nature. The woods are full of sounds—voices, songs, whisperings—that are to be heard when none of these ten are speaking.

Pages 88 and 90

hear their piercing whistle: the husky yap, yap, yap of the fox: It is usually the young hawks in the fall that whistle, as it is usually the young foxes in the summer and fall that bark.

Page 91

"Heaped in the hollows of the grove, the autumn leaves lie dead;
They rustle to the eddying gust, and to the rabbit's tread."
"The robin and the wren are flown, but from the shrub the jay,
And from the wood-top calls the crow through all the gloomy day."

Study this whole poem ("The Death of the Flowers," by Bryant) for its excellent natural history. Could the poet have written it had he been ignorant of nature? Can you appreciate it all unless you, too, have heard these sounds, so that the poem can sound them again to you as you read? Nature is not only interesting for herself; but also absolutely necessary for you to know if you would know and love poetry.

the one with a kind of warning in its shrill, half-plaintive cry; the other with a message slow and solemn: What is the warning, would you say, in the scream of the jay? the solemn message in the caw of the crow?

Page 94

cave days: Cave days mean those prehistoric times in the history of man, when he lived in caves and subsisted almost wholly upon the flesh of wild animals killed with his rude stone weapons.

Page 95

to the deep tangled jungles of the Amazon: Some of the birds go even farther south—away into Patagonia at the end of the southern hemisphere. There is no more interesting problem, no more thrilling sight in all nature, than this of the migrating birds—the little warblers flying from Brazil to Labrador for the few weeks of summer, there to rear their young and start back again on the long, perilous journey!

CHAPTER XIII

Page 97

followed through our open windows: "followed" how? Must one have wings or a flying-machine in order to "follow" the wild geese?

Round and dim swung the earth below us....: What is the picture? It is seen from what point of view?

the call to fly, fly, fly: Did you ever feel the call to fly? Ever wish you had wings? Ever start and run as Mowgli did, or long to get up and go somewhere as the pilgrims did in the Canterbury Tales?

Page 99

in our hands to preserve: Do you belong to the Audubon Society, to the "Grange," or to any of the organizations that are trying to protect and preserve the birds? And are you doing all you can in your neighborhood to protect them?

Page 100

not in a heap of carcasses, the dead and bloody weight of mere meat: We may be hunters by instinct; we may love the chase, and we may like to kill things. But do you think that means we ought to, or that we any longer may, kill things? No; bird life has become so scarce that even if we do want to, it is now our duty to give over such sport in the larger interests of the whole country, and try to find a higher, finer kind of pleasure,—as we can in trying to photograph, or "shoot" with the camera, a bird, getting an interesting picture in place of a dead body.

Page 101

the mated pairs of the birds have flocked together: In domestic geese the mated pairs often live together for life; and among the wild geese this, doubtless, is often true.

Page 102

may I be awake to hear you: In what sense "awake"?

The wild geese are passing—southward: the end of the autumn, the sign that winter is here.

WINTER

CHAPTER I

Study the drawings of the tracks in this chapter, then go into the woods and try to identify the tracks you find in the snow. Every track you discover and identify will be quarry in your bag—just as truly as though you had killed a deer or a moose or a bear. You can all turn snow-hunters without leaving blood and pain and death and emptiness and silence behind you. And it is just as good and exciting sport.

Page 4

cushion-marked holes: Examine a cat's feet. Make a study of cat tracks: how they are placed; how wide apart; how they look when she walks, when she runs, when she jumps, when she gathers herself together for a spring. You can learn the art of snow-hunting by studying the tracks of the cat in your own dooryards.

wood pussy: a polite name in New England for the skunk.

Page 5

the great northern hare: The northern hare is not often seen here, and I am not sure but that this may be the common brown rabbit.

Page 8

slashings: The name for the waste limbs and tops left after cutting forest trees. Tree wardens should compel the woodchoppers to pile this brush up as they cut and burn it while the snow is on the ground to prevent forest fires in summer.

hazelnuts: small brown nuts like the filberts of the stores. They grow on a bush two to six feet high. There are two kinds,—common hazelnut and beaked hazelnut. The green husk looks like a cap, hence its Saxon name *haesle*, a cap, and the scientific name *Corylus* from the Greek *corys*, a helmet.

Page 9

Burns: Robert Burns, the Scotch poet.

Page 10

root and all, and all in all: from a poem by Lord Tennyson called "Flower in the Crannied Wall."

Page 11

Atalanta's race: Look up the story of the beautiful girl runner who lost her race with her lover because of her desire to pick up a golden apple.

Page 14

Two mighty wings: an owl's wing marks, perhaps the barred owl or the great horned owl, or the snowy owl, which sometimes comes down from the north in the winter.

CHAPTER II

Page 15

Shepherd-dog: Only a well-trained dog would do, for turkeys are very timid and greatly afraid of a strange dog.

Page 18

Black Creek: a local name; not in the Geography.

Page 26

a chorus of answering gobbles: Turkeys will follow their leader. It was this habit or trait that the boys now made use of.

CHAPTER III

Page 30

white-foot: the deer, or wood mouse (*Peromyscus leucopus*).

Page 32

"There are no birds in last year's nest": a line from a poem by Longfellow called "It is not always May."

Page 33

Darwin's book on earthworms: Read in this book how the worms make garden soil.

CHAPTER IV

Here are ten different things for you to see this winter, and most of them, whether you live in the city or country, you can see, provided you live where the snow falls. But you will have some kind of a winter no matter where you live. Don't miss it—its storms, its birds, its animals, its coasting, skating, snowshoeing, its invitations to tramp the frozen marshes and deep swamps where you cannot go in the summer, and where, on the snow you will catch many a glimpse of wild life that the rank summer sedges will never reveal. Don't stop with these ten suggestions; there are a hundred other interesting things to see. And as you see them, write about them.

CHAPTER V

Page 46

These lines of poetry you all know. But who can tell who wrote them? Where did he live and when?

gum swamp: See description of such a swamp on pages 262-263 of the author's "Wild Life Near Home." This is the tree known as sour gum, more properly tupelo (*Nyssa sylvatica* or *uniflora*).

cardinal grosbeak: Commonly called "cardinal," or "redbird."

Page 47

Holy Day: What was the oldest form of our word "holiday"?

ilex: Ilex verticillata, the black alder, or winterberry, one of the holly family. A low swamp bush covered with red berries all winter.

Page 48

Lupton's Pond: A little pond along Cohansey Creek near Bridgeton, N. J.

Persimmon trees: found from New Haven, Conn., to Florida.

Page 50

Bob Cratchit's goose: There never was such a goose, as you all know who have read Dickens's "Christmas Carol."

Page 52

liquid amber: The balsamic juice of the sweet gum tree, sometimes called "bilsted" (*Liquidambar styraciflua*), a large, beautiful swamp tree found from Connecticut to Florida and west to Texas.

Page 53

half-human tracks: Because the coon is a relative of the bears and has a long hind foot that leaves a track much like that of a small baby.

Page 54

tupelo: See note on gum swamp, page 141.

sour gums: same as tupelo.

Page 55

chicken or frost grapes: Vitis cordifolia: the smallest, sourest, best (boy standards) of all our wild grapes. They ripen after the frost and feed the boys and birds when all other such fruits have gone from the woods.

Smooth winterberry: is really another ilex, Ilex lævigata, a larger bush than Ilex verticillata, the black alder or winterberry.

Page 56

Fox sparrows: See the frontispiece. The largest, most beautiful of our sparrows. Nests in the Far North. A migrant to New England and the Southern States.

Page 59

The crows were winging over toward their great roost: Don't fail this winter to spend, if not Christmas Day, then one of your Christmas vacation days, in the woods, from morning until the crows go over to their roost. You will never forget that day.

CHAPTER VI

Page 64

"The Lilac": My lilac bush with its suet has become a kind of hotel, or inn, or boarding-house, for the chickadees.

Page 66

Phœ-ee-bee!: more often the spring call than the winter call of Chickadee. It is to be distinguished from the "phœ'be" call of the phœbe, the flycatcher, by its greater softness and purity, and by its very distinct middle syllable, as if Chickadee said "Phœ'—ee—bee." Phœbe's note is two-syllabled.

Page 67

protective coloration: a favorite term with Darwin and many later naturalists to describe the wonderful harmony in the colors of animals, insects, etc., and their natural surroundings, the animal's color blending so perfectly into the color of its surroundings as to be a protection to the creature.

Page 69

card house: as if made of cards, easily pushed, even blown down.

Page 70

the workman's chips: Look on the ground under a newly excavated woodpecker's hole, and you will find his "chips."

Page 73

a tiny window: The tough birch-bark would bend readily. I would shut the window in leaving by means of a long, sharp thorn.

CHAPTER VII

Page 79

the good things to read: To name only a few of them, we might mention John Burroughs's "Winter Sunshine" and "Squirrels and Other Fur-Bearers," Bradford Torrey's "Footing it in Franconia," Frank Bolles's "At the North of Bearcamp Water," William Hamilton Gibson's "Eye Spy," William L. Finley's "American Birds," and Edward Breck's "Wilderness Pets."

CHAPTER VIII

Page 83

incisor teeth: the four long front teeth of the rodents,—rats, mice, beavers, etc. These incisor teeth, are heavily enameled with a sharp cutting edge and keep growing continuously.

Page 85

voles: meadow mice.

Page 86

chimney swallows: more properly swifts; as these birds do not belong to the swallow family at all.

vermin: The swifts are generally infested with vermin.

Page 91

clapper rails: or marsh-hens (Rallus crepitans).

Page 92

"List'ning the doors an' winnocks rattle": lines from Burns's "A Winter Night."

CHAPTER IX

Page 94

Charles Lamb: Look up his life in the Encyclopedia. Read for yourselves his essay on Roast Pig.

modus edibilis: the Latin for "manner of eating."

Page 95

the 'possum's relations: They are the marsupials, the pouched animals, like the kangaroo.

Page 98

reptilian age: one of the great geological ages or eras, known to the geologists as the great mesozoic or "middle" epoch, when reptiles ruled the land and sea.

Page 103

smiles at you—grins: Read the account of this habit in the opening chapter of the author's "Wild Life Near Home."

CHAPTER XII

I

It is the stilling of the insects that makes for the first of these silences; the hushing of the winds the second; the magic touch of the cold the third.

II

The voice of the great spring storm should be added to these, and the shriek of the wind about the house.

III

You should not only hear, but you should also feel this split—passing with a thrilling shock beneath your feet.

V

How many other of the small voices do you know? The chirp of the kinglets; the scratching of mice in a shock of corn; the—— but you write a story about them. So listen for yourself.

VI

Do all you can to preserve the quail. Don't shoot.

VIII

Along toward spring you should hear him "drumming" for a mate—a rapid motion of his wings much like the hollow sound of a distant drum.

CHAPTER XIII

Get an almanac and study the old weather signs.

Page 130

"*When descends on the Atlantic*": from Longfellow's "Seaweed."

Page 133

frog or hyla: The hylas belong to the family Hylidæ and include our tree-toad, and our little tree-frog.

"For, lo, the winter is past,": from The Song of Songs, or The Song of Solomon, in the Bible.