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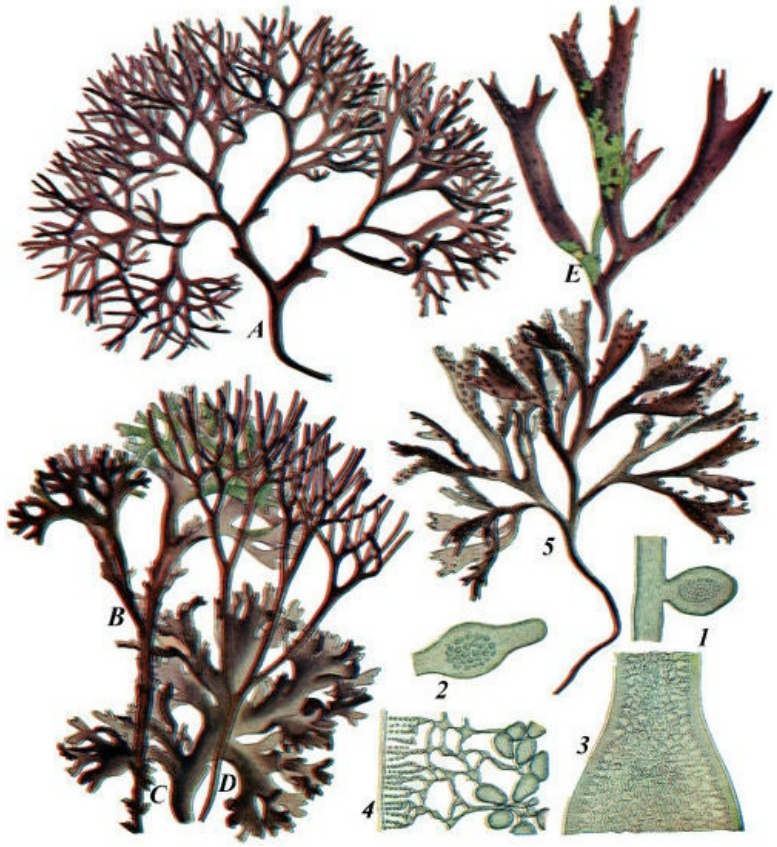
BIRDS AND NATURE.

ILLUSTRATED BY COLOR PHOTOGRAPHY.

VOL. XI. JANUARY, 1902. No. 1



BIRDS and NATURE

IN NATURAL COLORS

A MONTHLY SERIAL
FORTY ILLUSTRATIONS BY COLOR PHOTOGRAPHY
A GUIDE IN THE STUDY OF NATURE

TWO VOLUMES EACH YEAR
VOLUME XI
JANUARY, 1902, TO MAY, 1902

EDITED BY WILLIAM KERR HIGLEY

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BIRDS AND NATURE.

ILLUSTRATED BY COLOR PHOTOGRAPHY.

VOL. XI. JANUARY, 1902. NO. 1

CONTENTS.

A SONG FOR THE NEW YEAR'S EVE.

Stay yet, my friends, a moment stay—
Stay till the good old year,

So long companion of our way,
  Shakes hands and leaves us here.
    Oh stay, oh stay,
One little hour, and then away.

The year, whose hopes were high and strong,
  Has now no hopes to wake;
Yet one hour more of jest and song
  For his familiar sake.
    Oh stay, oh stay,
One mirthful hour, and then away.

The kindly year, his liberal hands
  Have lavished all his store.
And shall we turn from where he stands,
  Because he gives no more?
    Oh stay, oh stay,
One grateful hour, and then away.

Days brightly came and calmly went,
  While yet he was our guest;
How cheerfully the week was spent!
  How sweet the seventh day's rest!
    Oh stay, oh stay,
One golden hour, and then away.

Even while we sing he smiles his last,
  And leaves our sphere behind.
The good old year is with the past;
  Oh be the new as kind!
    Oh stay, oh stay,
One parting strain, and then away.

—William Cullen Bryant.

THE GOLDEN-CROWNED KINGLET.

(*Regulus satrapa.*)

The autumn wanes, and kinglets go,
  Sweet-voiced and knightly in their way,
And all the birds our summers know,
  They flock and leave us day by day.

—Frank H. Sweet, "Flocking of the Birds."

In these pleasing words the poet speaks of the kinglets. Yet his words may hardly apply to the Golden-crowned Kinglet, except in the northernmost part of its range, for it winters from the northern border of the United States southward to the Gulf of Mexico. "Muffled in its thick coat of feathers, the diminutive Goldcrest braves our severest winters, living evidence that, given an abundance of food, temperature is a secondary factor in a bird's existence."

But little larger than a hummingbird, though unlike that mite of bird life, it seeks in the cooler air of northern climes a place for its nest. It also breeds throughout the length of the Rocky Mountains and in the Alleghanies as far south as North Carolina.

This tiny and "charming sylvan ornament," both elegant in dress and graceful in movement, is one of the seven known species of kinglets, of which there are but three that frequent the New World. It is very active while searching for its food. Its colors are such that, as it moves from twig to twig hunting for insects among the leaves, it is frequently hard to locate though its voice may be heard among the tree tops.

Truly the name kinglet—little king—is not a misnomer, for the Golden-crown exhibits a decided character in every motion. It is fearless and though it will occasionally scold an intruder, wren-like, it does not visually resent the presence of man. Often in the forest or even in our city parks a Golden-crowned Kinglet will flash by one's face and, dropping to the ground, seize an insect or worm that its bright eyes have detected in the grass, even at one's feet.

Speaking of interesting phases of bird life, Mr. Keyser says, "On the same day my dancing dot in feathers, the Golden-crowned Kinglet, performed one of his favorite tricks, which is not often described in the books. You will remember that in the center of the yellow crown-patch of the males, there is a gleaming golden speck, visible only when you look at him closely. But when the little beau is in a particularly rollicksome mood, or wants to display his gem to his mate or kindred, he elevates and spreads out the feathers of his crest, and lo! a transformation. The whole crown becomes golden! That gleaming speck expands until it completely hides the yellow and black of the crown." May we not say with Mr. and Mrs. Grinnell that Mr. Golden-crown lifts his hat to Mrs. Golden-crown? We may learn patience and to be satisfied with nature as we find it, if we will study the life of the Golden-crown. It is

always happy, always cheerful. Seemingly it flies from bough to bough as contentedly in the rain as in the sunshine and in cold as well as in warm weather. In many respects this kinglet resembles the warblers, but it is much tamer. While seeking its food it exhibits some of the characteristics of the flycatchers.

Mr. Brewster describes its song as beginning “with a succession of five or six fine, shrill, high-pitched, somewhat faltering notes, and ending with a short, rapid, rather explosive warble. The opening notes are given in a rising key, but the song falls rapidly at the end. The whole may be expressed as follows: Tzee, tzee, tzee, tzee, ti, ti, ter, ti-ti-ti-ti.” Its call note is simply ti-ti uttered in a fine and well modulated voice that is scarcely audible.

GOLDEN-CROWNED KINGLET.
(Regulus satrapa.)
Life-size.
FROM COL. CHI. ACAD. SCIENCES.

The Golden-crown selects cone-bearing trees for its nest. This is usually a pensil structure and is hung from the branches at from four to fifty or more feet from the ground. It is globular in form with the entrance near the top. Mosses and dead leaves are used in its construction and it is lined with soft and fine fibers of bark and feathers.

Someone has said of a Golden-crowned Kinglet: “I often spoke to him as if he were a real person; and he appreciated my words of praise, too, without doubt, for he would come scurrying near, disporting his head so that I could catch the gleam of his amber coronal, with its golden patch for a center piece.”

THE TALKING PINE TREE.

It was a chilly winter Saturday. Though the winds were cold, the sunshine was bright and warm. After dinner Jacob put on his overcoat and new red mittens and went, as he often did, with his father, who was sexton of Evergreen cemetery. While his father was busy Jacob amused himself.

He had never before noticed how bare the great trees looked. Their limbs reached out like hundreds of crooked arms between him and the blue sky. As he looked around here and there he could see a tree wearing a dark green coat. Most of them were small, but some were tall and pointed. A pretty good sized, umbrella-shaped one grew

near where his father was digging a grave.

Full of boyish life and spirits he ran to it playfully shouting: “I am a squirrel hunting a nut and will climb up among your branches.” But he tried in vain. The lowest limbs were so high above his head that he could not reach them.

“Never mind,” said he, “I will hunt a nut on the ground.”

Dropping on all fours he began to crawl around. Soon his hand came down upon something hard under the dead leaves which covered the ground. Now he thought he had really found a nut. It was roundish, with blunt spines and woody, and like no nut which he knew. Hunting a loose brick he cracked it upon a stone. Two or three little round things with gauzy wings dropped out.

This roused his curiosity. He now searched round and round for others. He spied a small branch which had broken off and dropped to the ground. As he snatched it up an end whirled round, striking his face. “How you stick!” cried he. He pulled off a mitten to feel what was so sharp. He noticed that the branch was bare, black and full of scars except at the end of each branchlet, where bunches of green sharp needles about as large as his mother’s darning needles were growing.

“Why, old tree,” said he, “where are your leaves?”

Now the tree heard every word which Jacob said but it could not make Jacob hear its answers.

At the tip of each branchlet was a pink bud, and near some of these was a little, tender thing about the shape of, though smaller, than the English sparrow’s egg. These he could pinch into pieces. But lower down on the branchlets, among the queer needles, were others not so large nor so dry as the odd fruit which he had found on the ground. They were not so easily destroyed. He picked them off and put them in his pockets.

“You’re a funny tree! Why do you not have nuts which hungry boys can eat?”

Jumping to his feet he looked up into the branches. They were all bare except for the needles growing on the branchlets. The tree was dotted with the odd nuts.

“What kind of a tree are you? You are not at all like our pretty oak or maple trees. Your branches grow nearly straight out. I should not like to live in a graveyard and look at tombstones all the time.”

He hunted around for clods and dead branches which, in his efforts to throw over its crown, he threw into and through the tree.

“You’ll see, Mr. Tree, some day, I’ll be able to throw higher,” said our cheerful Jacob.

Just then Rover came running to him and they had one of their jolly romps on the dry grass and leaves. Presently, tired out with their sport, both boy and dog dropped to sleep. Now was the pine tree’s chance.

“Jacob, Jacob!” called the tree; “I am a pine tree.” One of the little, green fairy spirits who made her home among the branches had cast such a spell over Jacob that now he could hear every word the tree said as plainly as when his mamma spoke.

“When you come to know me and my friends better you will love us for our youth and worth as well as for our beauty,” said the pine. “See—the oaks and maples are mere dark skeletons. What you call needles are our leaves. They never all leave us at once. In our family our faithful leaves serve us for two years. When a new growth covered with fresh needles comes at the end of a branch the old needles drop, it is true, leaving our branches full of scars. Since others never grow in these same places our larger branches are left bare; but the bunches of needles on the new growth keep us always green.

“That hard thing which you found, and which you supposed to be a nut, was a mature dry cone. In our cones we hide our seeds, which have wings, so that they fly on the wind to a good resting and growing place. The little, tender balls which you found near the young bud at the end of the branchlet is a new cone just started this year. The harder, darker growth farther down among the needles is a last year’s cone.

“My home is not in this country. I was brought from a country of highlands and mountains where the Scottish people live. I am called a Scotch pine. I do not choose to live in a graveyard, but I am willing to serve man and God by doing my best wherever I chance to be. My comrades and I have been placed here by mourning friends for a token of the constant remembrances and love which are held for their friends who have passed away.

“In our native land my brothers grow to be very large, sometimes living for three or four hundred years. As we grow at the top, keeping our rounded shape, our lower branches drop off.”

“Are you only useful for planting in graveyards?” asked Jacob.

“Oh, no, indeed! We furnish excellent timber, called red pine, which is of great use for fuel and in ship and house building. When our trees are cut through the bark, sap runs out. When this is strained it is called turpentine, which is used so much in medicine, by painters and by other workmen. Oil of turpentine is also made from our leaves and cones. When you have a very bad cold your mamma sometimes rubs turpentine on your chest.”

“Oh, yes, I remember,” said Jacob; “it has a strong smell.”

“The dregs harden,” continued the pine, “and are called resin. This is used in making yellow soap, ointments and

plasters. Our wood is burned to make charcoal, tar and pitch. Even the soot is saved, and called lampblack.

“Charcoal is good for many things. Doctors use it. Placed in a cistern filter it purifies the water. It is burned for fuel, especially when a fire with no smoke is wanted.

“As water cannot get through tar and pitch, these are used in protecting wood from water. Hence they are put on the outside of ships, on the inside of water casks, and on roofs. They are used in making a black varnish with which people coat iron pumps and fences to keep them from rusting. Did you see the men making the hard asphalt pavement which leads to the vault?”

“Oh, yes. They had a big kettle of tar, didn’t they?”

“Yes. Stick out your foot.”

Jacob did as told.

“You have shining patent leather tips on your shoe toes. Ask papa to tell you how patent leather is prepared.

“Lampblack is mixed with white lead to make paint. If a little lampblack is used a gray is made. Enough can be used to make the paint black. Less makes a slate color.”

“How much you can do! How useful you are!” said Jacob.

“That is not all,” said the Scotch pine. “In some places my needles are made into shreds which are used in stuffing cushions. Our roots, which contain so much resin that they burn with a bright blaze, are burned for lights in cottages of the poor. Fishermen make ropes of our inner bark. Laplanders and some other peoples dry and grind our inner bark. After steeping this in water to remove the strong taste it is made into a coarse bread.

“Now,” said the tree, who could see some distance, “your father has finished his digging. If you will come again my little fairies can again cast a spell so that we can talk together, and I will tell you something about my cousins. I have a large number of first cousins, second cousins, and more distant ones. Ours is one of the largest tree families.”

“Indeed, I will come again.”

Just then his father’s footsteps among the dry leaves roused Rover, and both jumped to their feet.

“Why!” exclaimed papa; “I supposed that you two rogues had gone home.”

When they reached home papa, who knew nothing of pine tree fairies, told mamma that Rover and Jacob had been playing “babes in the wood.”

The next week was a stormy one and the days were growing shorter. But on Friday the clouds cleared and Jacob begged to go into the cemetery to play after school. But his mamma said it was too damp. However, on Saturday afternoon she said that he might, and he eagerly donned his overcoat and mittens.

“Good afternoon, pretty tree,” he said as he and Rover came near.

As the tree said “How do you do?” it tried its best to nod its head and reach out a limb to shake hands.

The fairy had done as the tree promised, and Jacob heard. He clapped his hands in glee. Thinking that Jacob meant to play with him, Rover showed that he was ready for a frolic. But Jacob curtly said, “Get down, Rover! Listen—the pine tree is talking again.”

Rover could not hear the tree, but he sat still and looked at his master in surprise.

“Good old tree,” said Jacob in a gentle voice. “I could scarcely wait until today. You promised to tell me of your relations.”

“Certainly, I shall be pleased to do so,” said the pine, who never tired of talking of the good traits of its family and friends. “Where is the little limb you had the other day?”

“Here it is,” picking it up.

“Look closely at my leaves. Did you ever notice anything peculiar about the way they grow?”

“No. Oh, I see. The needles grow in pairs. Two seem to be wrapped together at the stem end.”

“That is it. I have a cousin who stands just on the other side of that great elm tree. Under it is a rustic bench. See if by standing on it you cannot reach a twig. If you can, bring it here.”

Jacob did as directed.

“Now look at those needles. Are ours alike?”

“No; these are coarser, longer and darker than yours; though they grow in twos.”

“Right. Run back and look at the cones.”

When he returned he said: “I could not get a cone, but I can see that those are coarser and larger, too.”

“How about the shape of the tree?”

“You two grow very much alike.”

“That is a first cousin. Its family lives on the mountains of Austria. It is known as black pine or Austrian pine.

“Do you see that tall pine near that massive monument?”

“Where?” he asked, looking around.

“Just behind you,” said Scotch pine, nodding its head in that direction.

“Oh, yes, I see now. Such a tall, straight trunk! Its crown grows in a point, making one think of a high church steeple piercing the sky.”

“As its limbs are above your reach it is useless for you to try to get a branch. If you will get papa to break you a twig some day, and you examine it, you will find that its needles, which are finer than mine, are in bunches of five. See when the wind blows how gracefully her boughs bend and sway. Go there and look at the cones.”

Off he went. Returning soon, he said: “The cones are not at all like yours; they are long and different in shape. The silky needles look something like a paint brush at the end of each twig.” 8

“It is a far more beautiful tree than I, so straight and lofty. Its pointed top looks down upon all the other great trees in this cemetery. If you could go through Canada and northern United States, especially around the Great Lakes, you would see great forests of this—the white pine. As its wood contains little resin it looks white, and is not so valuable for fuel. As it is easily nailed and worked, it is said to be a soft wood. You can whittle it with your knife which Santa brought you. Furniture, shingles, laths, boards and many other things are made of it.

“If you could tramp around the Rocky Mountains you would find another soft pine tree, popularly called the sugar pine because the burnt resin has at times been used by the Indians for sugar. Coarse cakes are made from its nut-like seeds. Its cones grow to be more than a foot long. Its leaves, too, grow in fives.

“The pine growing in the South, known as the Southern or Georgia pine, has yellow, hard wood. It is heavy and very strong. It makes fine lumber, ties, fuel, fencing and furniture. It is used in shipbuilding and for other things when a durable wood is needed. It is rich in turpentine, resin and tar. Indeed, the markets of Europe are supplied with those articles largely by the Scotch pine and those of the United States, chiefly by the Georgia pine. Because of the length of the southern pine’s needles, which sometimes measure more than a foot, it is sometimes called the long-leaved pine. The leaves grow in threes. Its large cone also contains seeds, which are eaten.”

One day when visiting the pine, Jacob said: “When I get big I mean to visit some of the pine forests.”

“Go as soon as you can, then, my boy. In cutting pine timber men are so thoughtless and lacking in foresight and management that they are being cleared away very fast.”

“Then I must try to teach them to know the pines better and to love them more for their beauty and their great usefulness. Then I am sure they will use better judgment.”

“Thank you, Jacob.”

Another day Jacob asked: “Have you told me of all your cousins?”

“Oh, no, indeed. I have told you of only a few of my nearest ones. There are seventy first cousins, of which thirty-five different ones are American trees. Then there is a host of more distant relatives. There are the twelve spruces, with short, sharp-pointed, four-cornered needles which grow singly all around the branches. They like cool places, and make their homes in great forests at the north or on mountains. The fir sisters and brothers have flat, blunt leaves growing on opposite sides of the branches, making them look like combs. The larches, who lose their needles in the fall; the cedars, the junipers, the arbor vitæ, the great California redwood—there are so many I can not name them all! They all belong to the cone bearing families.”

Jacob, who loved the talking pine tree, spent many happy hours in its shade and learning lessons taught by it. Through it he came to know of the wonderful great trees of California; of what the straight, tall masts of ships see; of secrets known only by telegraph and telephone poles; of the sweet sounds of musical instruments; of things which props can tell of mining affairs; of the travels of railroad ties and the tragedies which occur within their sight; of the water folk with whom bridge piles neighbor; of the animals whose hides the evergreen barks help to tan; of the birds and animals who seek the shelter of these trees and feed upon their seeds and young buds; and of beautiful things with which loving hands deck the gay Christmas tree and the hosts of happy children who love it most of all trees.

Every child who will select a favorite tree and watch it with patient, loving care will also find himself helped. Although it may not be able to talk as Jacob’s talking pine tree did, if he will but be faithful to its lessons it will teach him many useful facts; will prompt him to reach, like a tree, upward and outward, and to throw out from his life an influence as healthful and pure as the fragrance of the pine.

Loveday Almira Nelson.

KING RAIL.
(Rallus elegans.)
½ Life-size.
FROM COL. CHI. ACAD. SCIENCES.

THE KING RAIL.
(*Rallus elegans.*)

The King Rail is the largest of the American true rails and is favored with a number of popular names. It is known as the Red-breasted Rail, the Marsh Hen, the Sedge Hen and the Mudhen. It frequents the fresh-water marshes of the eastern United States and is found as far north as Maine and Wisconsin and as far west as Kansas.

This fine bird very closely resembles the clapper rail which inhabits the saltwater marshes of eastern North America. The two species, however, may be easily distinguished by the difference in size and color. The clapper rail is much smaller and the upper parts are more ashy or grayish in color and the lower parts are duller and more yellowish.

Fifteen of the one hundred and eighty known species of the family Rallidæ, which includes the rails, gallinules and coots, inhabit North America.

The rails are not fitted for easy flight and find safety from an enemy by running and hiding, only taking to flight when all other means of escape have been exhausted. They not only have “a body proportioned and balanced for running, but also capable of compression to the narrowness of a wedge, in order to pass readily through the thick growths of the marshes, and also to aid them, perhaps, in their peculiar habit of walking on the bottom under the water in search of food.” Their feet, because of their large size and the length of the toes, are well adapted to the soft mire and floating vegetation in which they live. With long legs and well developed muscles the rails are able to “run like very witches in their reedy mazes, and were it not for their sharp, cackling voices, their presence would scarcely be detected.”

Unless approached too rudely, the female when setting on her nest will allow a very close inspection. She will seem to be as interested in the observer as he is in her. There will seem to be an expression of wonder in her face. If she is approached more closely than she likes she slips from her nest and gracefully runs through the reeds and grass and soon disappears.

The nest is usually constructed with flag stems and grasses. When the nests are built on dry ground they are usually placed in a depression in a tuft of grass and somewhat resemble the nest of the meadow lark. The nests are usually placed over water in tufts of marsh-grass or flags. Frequently the bottom of the nest is in the water and the top a few inches above it.

Mr. Silloway says: “The King Rail is said to be irritable and quarrelsome in its disposition, and it is especially overbearing toward its neighbors. The species should be named the ‘queen rail,’ for the female is without doubt the head of the family. Is it not she who sometimes takes possession of the homes of her meek neighbors, the gallinules? Is it not she who defends her home so spiritedly when it is threatened? Hence it seems to me that the King Rail is more king by marriage than in his own right. She lords it over the gentle-spirited mudhens with whom she dwells, and frequently saves herself the labor of making a nest and the time to lay so many eggs, by

appropriating both nest and eggs of a comfortably settled gallinule. I have frequently found nests containing incubated eggs of the Florida gallinule and fresh eggs of the rail—indubitable evidence to me that the rail was the usurper of the home."

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BETWEEN THE DAYLIGHT AND THE DARK.

She sat in the deepening twilight awaiting the coming of her lover. The wind whispered in the rustling tree tops, but she heeded it not, though she turned her handsome head sharply when a thoughtless katydid near her sent forth one shrill note.

"He is late tonight," she murmured softly, as she gave a graceful little shake to her fluffy brown suit and settled herself anew. Then she bent her beautiful head and gently scratched her ear with her right reversible toe.

There came no sound of wings, but the branch on which she sat quivered beneath an added weight, and she rolled her round eyes affectionately toward the new comer, a great horned owl, with a welcoming gurgle, in which was a note of expectation. Her lover was a handsome fellow, with great tufts over his ears, and he had brought a "gift for his fair," though it was not a dainty box of bonbons produced from his overcoat pocket. He lifts his broad wings, bends his head, and produces from his crop a newly caught frog. His mistress nestles close, with fluttering wings and upturned beak, and receives the great dainty with an evident pleasure which delights him. He tries again. This time the convulsive effort brings forth to light a field mouse, garnished with two grasshoppers and a black cricket, which his lady receives with the pretty infantile attitudes and flutterings which all ladies think so becoming and attractive. Then they snuggle up close together, as is the way of lovers, and sit so still they might have been mistaken for a pair of stuffed owls—indeed one of them was—save for the occasional turning round of the head in that mechanical way affected by owls, for they are watchful, as all wood creatures have need to be.

"Why didst thou tarry so long, my brave?" she finally murmured, as she fondly toyed with the soft mottled feathers on his broad breast.

He lifted his feathery horns angrily at the remembrance. "The blue terror caught sight of me as I looked forth from the beautiful dark home in the dead oak tree which I have selected for thee, my beloved. It was just as the gaudy daylight was giving way to the pleasing blackness of night that I came forth, thinking all the little day flyers would have been asleep, but a belated bluejay saw me and, with lifted crest and shrill voice, raised the hue and cry. The robin left his mud daubed nest in the orchard across the road, the titmouse from his home in the knot hole of the rail fence, the nuthatch, the butcher bird and hosts of others all came, with piercing scoldings, sharp pecks and fluttering wings. I might have gone back into the darkness of our new home and so saved myself further annoyance, but, light of the world," as he rolled his eyes fondly toward her, "I wanted not the blue terror to know where thou wouldst lay thine eggs—he is an egg thief, himself, thou knowest—so I sailed away into the open, and, O, the clamor they raised. And see," showing two or three broken feathers, "what the bold blue terror has done, the strong voiced and strong winged bluejay."

"How I wish I had been there," muttered the lady owl vengefully through her clenched beak. "I would have torn his blue crest from his wicked little head."

"And I would have taken his head along with it, at least as far as that black necklace of which he is so proud, if he had but given me the chance," laughed the owl grimly. "It's my usual way, only there were so many of the light, active little things that when I turned toward one another would come at me from the other side, so that my only safety from annoyance—for that was all they could do—was in my swift and silent wings.

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"It seemed," he went on, his great eyes blazing at the recollection, "as if all the birds in the woods joined the mob, friend and foe flying wing to wing, the most innocent seed bird and the bloodiest thief fighting side by side, and I had to buffet them with wing and claw, though they kept beyond reach of my beak," he added proudly, and he passed his great feather-clad claw caressingly down his polished black beak, curved like a scimitar, and as strong and sharp.

"Thou knowest, my beautiful one," he continued, "how the bluejay and the woodpecker fight one another, but tonight they joined forces as if they had been friends from the dawning of creation; and when the butcher bird cried out, 'He ate three of my children yesterday,' the titmouse—forgetting the thorn on which that same butcher bird impaled her first husband in the early summer—replied in fullest sympathy, 'And he stole one of my lovely eggs only a week ago,' and then she screamed with all her tiny might and flew at my head as boldly as if she had been an eagle. The little pests!"

"Never mind, my hero," murmured the lady owl as fondly as a coo dove, "a man has his mosquitoes, a dog has his fleas, there is a horsefly for the horse, and these little birds are our mosquitoes, our fleas and our flies. Who-who-who," she stammered in her rhetorical flight; "who has not his troubles in this world?"

"Who-who-who," echoed the owl.

S. E. McKee.

TO A NUTHATCH.

Shrewd little hunter of woods all gray,
Whom I meet on my walk of a winter day,
You're busy inspecting each cranny and hole
In the ragged bark of yon hickory hole;
You intent on your task, and I on the law
Of your wonderful head and gymnastic claw!

The woodpecker well may despair of this feat—
Only the fly with you can compete!
So much is clear; but I fain would know
How you can so reckless and fearless go,
Head upward, head downward, all one to you,
Zenith and nadir the same to your view?

—Edith Thomas.

THE BROWN-HEADED NUTHATCH.

(*Sitta pusilla.*)

Come, busy nuthatch, with your awl,
But never mind your notes,
Unless you've dropped your nasal chords
And tuned your husky throats.

—Ella Gilbert Ives, "Robin's Thanksgiving Proclamation."

Of the twenty species of nuthatches known to inhabit the temperate regions of the Northern hemisphere, but four are distinctively American. They are classed by ornithologists with the tits and chickadees in the family Paridæ, a word derived from the Latin parus, meaning a titmouse. The nuthatches, like the woodpeckers, are climbers, but unlike the latter they climb downward as well as upward and with equal facility. Their tails are very short and are not used for support. Their bodies also do not touch the tree "unless they are suddenly affrighted, when they crouch and look, with their beaks extended, much like a knot with a broken twig to it." A sudden clapping of the hands or a sharply spoken word will often cause a nuthatch to assume this attitude. They are busy birds, yet they are seldom too absorbed in their work of gathering food to stop and closely scrutinize an intruder. "Few birds are easier to identify: the woodpecker pecks, the chickadee calls 'chickadee,' while the nuthatch, running up and down the tree trunks, assumes attitudes no bird outside of his family would think of attempting."

They do not always seek their food in the crevices of the bark of trees but, flycatcher-like, will fly outward from their perch and catch insects on the wing. Mr. James Newton Baskett relates the following interesting observation: "One spring day some little gnats were engaged in their little crazy love waltzes in the air, forming little whirling clouds, and the birds left off bark-probing and began capturing insects on the wing. They were awkward about it with their short wings and had to alight frequently to rest. I went out to them and so absorbed were they that they allowed me to approach within a yard of a limb that they came to rest upon, where they would sit and pant till they caught their breath, when they went at it again. They seemed to revel in a new diet and a new exercise."

The Brown-headed Nuthatch is abundant from Louisiana and Florida to the southern part of Maryland. It also strays, at times, farther north, for it has been taken in Illinois, Michigan and Ohio. In the pine woods of the Southern States it passes a happy existence, always chattering in bird language even when its head is downward. "Each one chatters away without paying the slightest attention to what his companions are saying." Mr. Chapman says: "There is such a lack of sentiment in the nuthatch's character, he seems so matter-of-fact in all his ways, that it is difficult to imagine him indulging in anything like a song." Though these words have reference to another species, they apply equally well to the Brown-headed form, whose only note seems to be a monotonous and oft-repeated utterance of a single syllable.

For its nest it selects a suitable hole in the trunk of a tree, or in a stump, that is usually not far from the ground. This it lines with grasses, fine, soft fibers and feathers. Here are laid about six creamy white eggs that are spotted with a brownish color. The parents are attentive to their young and seldom associate with others of their kind till these family cares are finished. Then they become more sociable and are found in companionship not only with other Brown-heads but also with woodpeckers, warblers and chickadees.

BROWN-HEADED NUTHATCH.
(Sitta pusilla.)
Life-size.
FROM COL. CHI. ACAD. SCIENCES.

MY RED-HEADED NEIGHBORS.

I.

For five years, with each returning spring, a pair of red-headed woodpeckers has come, to make their nest and rear their brood of young near my cabin door. It was on a cold drizzly day the last of April, when I first observed my new neighbor. He was closely watching me as he dodged about the trunk of a dead tree standing in the yard.

Unmindful of the falling rain, he put in the day pecking and pounding away, seemingly in search of food, occasionally flying away or hitching around the tree as some one passed, returning to his quest as soon as the coast was clear.

Not until the next morning on awaking and hearing my neighbor industriously hammering away, did I suspect he was making a nest, having selected a place on the trunk of the tree about ten feet from the ground, and facing the noon-day sun. He proved to be no stickler for time, working early and late with short intermissions, when he would dart out into the air and stop some passing insect that was quickly disposed of. At the end of two weeks the nest had been completed and on the same day the female arrived. Was it a coincidence? It would seem so, for each succeeding year the male preceded his mate by a fortnight, in which time the place was selected and the new home made ready in which there was no straw, no feathers, nothing but the deep cavernous pocket, clean and fresh, perfumed with the pungent odor of decaying wood.

As the days went by they came to be less afraid of and more neighborly with me, paying little or no attention to my passing or repassing.

After repeatedly testing every available object in the vicinity of the nest, the male finally selected as his drumming place the roof-board of the cabin, where in lieu of song, he beat off many a short strain, like the roll of a snare drum, that was intended for and easily heard by his mate as she kept warm the eggs in the nest near by.

In the matter of incubating each took part, though the female devotes by far the more time, usually remaining on the nest from one to two hours, when the old man would spell her for about twenty minutes, in which time she makes her toilet and indulges her insectivorous appetite. At the end of two weeks they carried out of the nest and dropped, as they flew across the yard, the broken fragments of shell. Now the greatest of all mysteries has taken

place. Like some beautiful creation of art that is to be, but as yet is an unexpressed thought in some human brain, so the bird within the egg is but a thought till, warmed by the parent's soft downy breast, the life lines throb and pulsate till the swelling life within bursts the shell. Now instead of eggs requiring warmth the old birds have two hungry mouths demanding food, that keeps them busy. Yet they knew it, knew it all from the very first; every act was intelligent, not instinctive. During the first days of the baby birds, much care was given to the preparation of their food; the legs, wings and antennae were removed from each bug or beetle. On some dead limb convenient to the nest, a small hole the size of a lady's thimble had been prepared, and into this improvised mortar the body of the insect was placed and pounded to a pulp before feeding. This care was not long continued, as the young birds were soon capable of eating whatever is given them.

The next ten days were full of business for my neighbors. Throughout the days they were constantly in pursuit of the passing life that filled the air. Each catch was quickly delivered to the baby birds, whose appetite seemed never to be satisfied.

The young birds quickly grew to be squabs, and their bodies were covered with a downy coat resembling fur more than feathers. Soon came the last week in the home before their formal "coming out." Feathers quickly took the place of down; the rapid feeding was greatly lessened, to which the baby birds made constant complaint in a whimpering cry as they peeked out of the nest into the big world where so soon they were to be launched on their first flight, never to return to the nest.

II.

It was about the tenth of May of the following spring when my red-headed neighbor returned from his southern trip, where he had spent the winter. He was soon hard at work and had the lawn sprinkled with his white chips about the root of a pine stub, as he burrowed into the wood a few feet above, where he was making a new nest, the spot having been selected during the past summer. Here, at that time, he had done some preliminary work in the way of a prospect hole, evidently with the view of returning.

With a quick hammer-like stroke of the head, he drove his sharp polished beak into the decaying wood, rapidly repeating the strokes till the pulpy fiber was broken down and then with a mouthful of the loosened fragments, he hitched back out of the entrance, flinging the chips to the wind.

After a quick survey of the surrounding and a peek around the tree to see if there was any approaching danger, he dove into the hole again to make further excavations, soon returning, tail first, with another mouthful of refuse. After several days' work on the new nest, he came in contact with the hard resinous heart of a knot that he was unable to remove. To get by this obstruction and still be able to utilize the work done, he changed the entrance from a circle to an ellipse by extending it downward. This bit of strategy worked well in getting by the difficulty, but it proved to be only temporary.

The nest was completed in the allotted two weeks and the female came on time. After a very warm greeting she was shown the nest for her approval; but on sight of the new-fangled entrance, she halted, showing her disapproval in many ways. To overcome her objections, the old man went in and out as a demonstration; then hopping close up to her side, he talked in a low voice, making many gestures with his head, sometimes picking at the tree in an absent-minded way, as a man thoughtlessly whittles while pleading his cause. Seeing that she did not readily assent, he went in and out three or four times in rapid succession; then sidling up to her again began his persuasive chatter, but all to no purpose; she gave a decided answer and flew away.

After a little hesitation he followed her. In about an hour they came back. After some maneuvering about the yard he got her back to the nest, but not in it. He tried in every way, but no amount of coaxing could induce her to go in, and refusing to listen longer to his argument, she again flew away. Now he was disconsolate, flying away, then returning to go in and take another look at the nest, then flying to the housetop to pout. Yes, pout, for at all other times he would drum and make a great deal of noise; now, he was sulky and silent.

Next morning they came back, when, if possible, he tried harder than ever to get her to inspect the nest, but without success. She was obdurate, and, after sitting quiet until he was through his demonstrations and chatter, she flew away over the fields, uttering a loud cry as she left him sticking to the side of the tree. He sat still a few moments, seemingly in a brown study, then he began hopping about the trunk of the tree, where in a short time he had selected a place and gone to work with a will in making a new nest, that was completed in a little more than eight days. Very little was seen of the female during the completion of the new home. She was in the yard a few times, but never near the tree where the male was at work.

He had made no mistake this time, the entrance was round and clean cut as an augur hole. When the madam was escorted to the new nest there was no hesitation about inspecting it; she entered at once. Coming out a moment later, she made it known that the nest was satisfactory. Then the old man was jubilant, expressing it by voice and action. From this moment domestic affairs went on as usual and the family jar was forgotten, so far as an outsider could observe.

Eggs, baby birds, busy days, fall and southern journey, ended this year with my pleasant summer neighbor.

III.

Many times during the following winter they were the subject of my thoughts. I wondered where they were and whether they would return. Yes, early one morning of the next spring I was awakened by his beating a reveille in

the same old place on the roof-board of the cabin. With little delay he selected a place for the new home. Then followed a fortnight of hard work and vigilance when the excavation was completed and only awaited the coming of his better half, who was as prompt in her arrival.

There are families to raise; there are thousands of flies, bugs and beetles to catch, for which they are never given credit, but let them take a berry and it is “Johnnie, get your gun.” Early one bright morning in July there was noise and bustle about the woodpecker home. It was not difficult to guess what was going to take place. The parents were close by the nest on the side of the tree. The little birds had crowded out of the entrance, eager for their first flight, which, like the first tottering steps of a baby, is attended with much chatter and nonsense that is not understood.

The mother set an example by flying to a tree some fifty feet distant. The little birds followed with a labored effort and, striking the tree with a thud near the ground, managed to stick fast. Now began their arboreal life of tree climbing at which they were awkward at first and had many falls. The young birds were a soft smoky gray. There was no sign as yet of the cardinal cap and white bodice with black chevrons, which would make them so conspicuous during the next year.

In their daily visits to the yard each parent chaperoned one of the baby birds, teaching it all the tricks in the woodpecker trade, as they conducted it from tree to tree where they searched amid the bark and worm holes for morsels of food that had been secreted there.

One day late in October they failed to return; this ended another year and brought another separation.

IV.

As promptly as ever the following spring found my summer tourists in their old haunts, each year getting a little closer if possible to the cabin with their nest.

Household affairs went along smoothly till one day the old man was keeping house while the madam had gone out for lunch. At the expiration of about twenty minutes he came out of the nest. As he flew away he gave a loud call that on former occasions had invariably brought his mate to take charge of the nest, but to this call she did not answer. She never returned. He waited a few moments, calling for her, then returned to the nest. Ten minutes later he came out again, repeating the call several times as he flew from tree to house and back again to the nest, about which he showed much concern. Five minutes more and for the third time he left the nest, flying down in the orchard where the female often went for food. Soon returning he went direct to the nest, seeming to understand that some misfortune had overtaken his mate.

Like Mark Tapley, when the occasion demanded he came out strong, for with scarcely an intermission he stuck to the nest for the next three days. Then he carried out the broken shells and began bringing food for two mouths that were always agape. With a desire to assist him I daily placed bits of food on a certain stump in the yard. He soon came to understand the meaning of my visits and to regard these tit-bits as belonging to himself. He would fly to the house top and watch me put out the food. As soon as I turned away he would drop off the roof, spread his wings, slide down on the air with a long graceful sweep, bringing up on the edge of the stump.

Nodding and chattering, he hitched around the stump, tasting each bit of food, eating what he liked, but rarely giving any of this food to the babies. No matter whether he ate it or not, no other bird was permitted to trespass.

The undivided care of the family left little time for personal attention. He looked shabby and forlorn by the time the young birds were old enough to quit the nest and seek their own food. Then he spent much time in mending his appearance.

Each passing year my attachment had grown for my summer visitors. The thought that he might never return, owing to the loss of his mate, worried me.

The summer passed; the days grew short and the night grew frosty. The blackbird family would soon be on their way to the sunny south, and I should miss their familiar voices and many cunning pranks about the yard.

V.

Early one May morning the next spring I was greatly pleased to hear the well remembered call. I knew my old-time friend had come to spend his summer sojourn in the yard amid the scenes of former years.

He flitted about the yard in his old familiar way, tapping off his short quick rattle on the roof-board which reverberated through the cabin.

He was happy again. Why not? He had brought with him a new bride. She was afraid of me. He showed her by example that I would not hurt them, but on sight of me she slipped around the stumps and trees, and at the least approach flew away.

William Harrison Lewis.

BEAUTIFUL SNOW.

Beautiful snowflakes are softly falling
  Like down from an angel’s wings,
Beautiful snowflakes are softly falling
  While the snow bird merrily sings.

Beautiful snowflakes are softly falling,
  From the clouds they come whirling down,
Like the dust from the floor of a crystal palace,
  And cover the frozen ground.

Beautiful snowflakes are softly falling,
  Covering the ground with white;
The flowers of summer have withered and faded,
  The robin has taken his flight.

Beautiful snowflakes are softly falling,
  They bring joy to young and old;
Beautiful-snowflakes are watching and waiting
  For the Christmas chimes to toll.

Beautiful snowflakes are softly falling
  Like down from an angel’s wings,
Beautiful snowflakes are softly falling
  While the snow bird merrily sings.

—J. Frank Richman.

SHARP-SHINNED HAWK.
(Accipiter velox).

THE SHARP-SHINNED HAWK.

(*Accipiter velox.*)

The Sharp-shinned Hawk is a hardy and courageous bird with an extended range, covering North America as far south as Panama. Unlike the larger number of birds, it breeds throughout its range, even as far north as the Arctic circle. In the fall months it passes over the middle states in large numbers. One writer says that he observed several hundred during a single day's tramp, the majority flying very high in the air. In the spring, usually in March and April, the same scene is repeated during their northward flight.

Much of the bad repute in which the hawks are held is due to the depredations of the Sharp-shinned and its sister species the Cooper's and goshawks. All these feed, to a great extent, upon the smaller birds, grouse and poultry. The smaller mammals, such as the troublesome field rodents, form a much smaller proportion of their food than is the case with the other hawks.

Dr. A. K. Fisher, speaking of the Sharp-shin, says: "Little can be said in favor of this hawk, although its daring, courage and impudence are to be admired. A score of valuable species suffer because they belong to a class which includes two or three noxious kinds. However, like most villains, it has at least one redeeming quality, and that is its fondness for the English sparrow, our imported bird nuisance. This Hawk is gradually learning that there is a never-failing supply of food for it in the larger towns and cities, and it is not uncommon in Central Park, New York, all through the winter, where the writer has witnessed it chasing sparrows."

The Sharp-shinned Hawk is brave and full of dash and spirit. It does not hesitate to attack birds fully as large as itself and in one instance it was known to strike down a night heron, which obtained its liberty only because its discordant squawks so disconcerted its ordinarily cool and collected enemy that it was frightened away. Even though its wings are short and seemingly not fitted for rapid progress, its flight, when in the pursuit of prey, is very swift and direct. "No matter which way the selected victim may turn and double, his untiring pursuer is equally prompt, and only rarely will it miss capturing its quarry. Once struck, death fortunately follows quickly, as it fairly transfixes its victim's vitals with its long and sharp talons."

Audubon well describes the habits of this bird. He says: "While in search of prey, the Sharp-shinned Hawk passes over the country, now at a moderate height, now so close over the land, in so swift a manner that, although your eye has marked it, you feel surprised that the very next moment it has dashed off and is far away. In fact, it is usually seen when least expected and almost always but for a few moments, unless when it has procured some prey and is engaged in feeding upon it. The kind of vacillation or wavering with which it moves through the air appears perfectly adapted to its wants; for it undoubtedly enables this little warrior to watch and to see at a single quick glance of its keen eyes every object, whether to the right or to the left, as it pursues its course. It advances by sudden dashes, as if impetuosity of movement were essential to its nature, and pounces upon and strikes such objects as best suit its appetite, but so very suddenly that it appears quite hopeless for any of them to try to escape."

The nest of this species is usually built in dense hemlock or other cone-bearing trees, though a deciduous tree is sometimes selected. It prefers also a site not more than twenty to forty feet from the ground. It is said that the nest is sometimes built in the crevices of cliffs or in hollow trees. This may be the case in Arctic regions, but it is not the usual habit of the bird within the borders of the United States. The nests are very large, as compared with the size of the bird, varying in diameter from twenty to thirty inches, outside measurement. The walls are usually constructed with twigs and lined with smaller ones and strips of the fibrous inner bark of coniferous trees. Instances have been reported in which the walls were nearly eight inches in thickness.

As a rule the Sharp-shinned Hawk does not defend its nest from the attack of intruders. There are, however, a few instances recorded in which both the male and female birds fought a person who was climbing to their nest, by repeatedly striking at the intruder.

As befits a bird that possesses such a character as that of the Sharp-shinned Hawk, it is practically a voiceless bird and seldom utters a sound except when its nest is approached. At such times its cries have been described as like those of a flicker.

BIRDS ON THE WING.

In a picturesque little hill-town in eastern Massachusetts, where I was spending the summer, I had opportunities for studying birds, their language, and their customs. I shall not soon forget a remarkable sight in the heavens on the evening of August 26. I was suddenly attracted by an unusual twittering and calling of the birds, and, on looking out of a window, I saw a multitude of birds of various sizes, from the tiniest of hare-birds, or sparrows, to birds as large as robins, flying in all directions and filling the air, it seemed, with their songs and their soft little notes. Ah, I thought, the birds are having a gala day, a picnic, or a ball, or perhaps a regatta. They were sailing, soaring, whirling, diving, dipping, in intricate mazes, yet with a certain method that was both bewildering and charming. Perhaps they were trying their wings for their southern journey; perhaps they were merely taking a twilight constitutional en masse. The hour was a little past six o'clock. The southern sky was pale blue, overspread with soft, translucent clouds of opaline hues, paling and flushing—a most fascinating picture of itself, and a fine background for the bird parade. All around great trees rose in billowy masses of emerald green, maples and elms predominating; while, standing like tall sentinels, two giant Lombardy poplars rose above them all, looking straight up to the heavens. In pauses of the dance the birds seemed to sink into these bowers of green, and for a few moments no bird was seen. Then, from somewhere, one came sailing through the air, then two, then three, with little notes of command, as when the leader of an orchestra with his baton begins the overture, and then a general rush of wings and the whirling and wheeling and dipping and darting was again in full play.

This display of bird maneuvring continued for about half an hour. I viewed it from a doorway where I could

command the whole scene, which was enchanting and something which I had never before seen.

I have not the presumption to suppose that it was a field-day review gotten up for my especial benefit; yet I enjoyed it quite as much as if it were.

It is possible that they were swallows out on a foraging expedition, for the day before a shower of small, green flies swept through the air, lighting here and there and everywhere within its radius. Perhaps the birds had discovered a school of these flies in the air and took sudden advantage of the aerial sporting grounds. Whatever may have been the occasion, I wonder if such bird parades are often seen.

M. D. Tolman.

25

A SUNSET CLUB.

The mere idea of another club may be unwelcome in these days of many clubs, yet I am so bold as to desire the existence of a new one; and I would urge all who can, to become members of it as soon as possible.

Unlike most clubs, it will have no officers, nor any rules and regulations; neither will there be initiation fees nor dues to pay.

The object of the club will be the study of art, as it is displayed in Nature's studio; and the only requisites for membership are a love of beauty and a few minutes' time each day. The club will be in session every day at sunset, and all members are urged to be present at any place where they can command a view of the western sky. They will thus be enabled to study the latest picture from the brush of that master artist, Nature.

No art gallery on earth can afford its visitors such a succession of masterpieces as will be open to the view of all members of this club. There is no artist so resourceful, none capable of giving such an endless variety of colors and effects as Nature.

To attempt to describe the beauties that are daily set before us would be vain; for who can adequately express in words the marvels of a sunset sky? No mere words, however carefully chosen and accurately used, can convey to the mind its unspeakable glories. These must reach us through our eyes, those "windows of the soul." Shall it be said of us that we "have eyes and see not"?

This evening the sun went down in a blaze of orange fire, deep and transparent, and a few minutes after the great ball had dropped below the horizon, the orange glow at the base melted into pale green above, then clear yellow and delicate pink, with infinite graduations of exquisite shading. Words fail, and leave me helpless before such a masterpiece I can only hope that many other people were enjoying it with me, as its beauties stirred my inmost soul.

Some days ago the sun's setting was followed by one great expanse of deep orange red from the horizon up to a bank of cloud which hung like a gray curtain, slightly raised, across the western sky. Another day the afterglow was an inimitable, transparent lemon-yellow, across which were stretched two horizontal bars of rose-colored cloud. In the foreground of these pictures are the beautiful trees, which, having now laid aside their leafy robes, appear in their loveliness and diversity of outline. A good opera glass is a great aid to the fuller enjoyment of the pictures, as it brings out the perspective more clearly, and deepens and intensifies the colors.

When a day has been clouded and dull, some may think it not worth while to attend the meeting of the Sunset Club. But they are mistaken. Who that admires a beautiful picture in black and white—a fine engraving—can fail to see the beauty of this sunset picture; this living picture in half tones, which is so superior, so much more perfect in every detail than the work of man? Nay, never miss a meeting if you can possibly be present: never fear that you will fail to find beauty there if you look for it.

Let us not complain if we cannot possess works of art wrought by human brains and hands, when we often fail even to look at, much less appreciate, the daily art of Nature which is our birthright, and which perhaps we regard but lightly, because it is free to everyone with seeing eyes and beauty-loving soul. Let us rather cast off the scales that blind our eyes and hide from us the visible expression of a Creator's love, the beauty of Nature.

And our lives shall be enriched an hundred fold.

Anne Wakely Jackson.

26

QUARTZ.

This is the most abundant, most durable and most indestructible of common minerals. There is scarcely a sand beach, field or mountain side upon which this mineral cannot be found in some form or other. Its abundance is due not so much to its excess in quantity in the underlying rocks as to the fact that, being harder and less easily decomposed than other minerals, it remains after they are worn away.

Though so common, it appears in so great a variety of colors and different kinds of structure that a large

collection of minerals *looking* very much unlike might all be made up of Quartz. If they were all of Quartz they would have the following characteristics: Hardness, 7 (cannot be scratched with a knife blade); specific gravity, two and a half times as heavy as water; no cleavage; fracture conchoidal (shell-like); infusible before the blowpipe; insoluble in common acids. The numerous varieties of Quartz can be grouped into two classes, the pheno-crystalline (plainly crystalline) and the crypto-crystalline (obscurely crystalline). This article deals with the plainly crystalline varieties. These include, among other varieties, rock crystal, amethyst, rose quartz, smoky quartz, and sagenitic quartz. These varieties all occur in well formed crystals, and all have a vitreous luster, i. e., luster like that of glass. The differences between them are almost exclusively differences of color.

Rock Crystal—This is quartz in its purest form. Typical rock crystal is perfectly transparent and colorless, but the mineral is often more or less clouded and opaque. By the ancients it was supposed to be petrified ice, and hence the Greeks applied to it their word for ice, from which we get our word crystal. The belief in its ice origin survived to a comparatively late period, for in 1676 Robert Boyle opposed the idea, stating that the quartz could not be ice, first because it was two and a half times as heavy as water, and second because it was found in tropical countries. The belief of the ancients probably came largely from the fact that the quartz they knew was obtained from the peaks of the Alps. They reasoned that it was ice that was frozen so hard that it would never melt. Fortunately our present knowledge of chemistry prevents us from any longer confounding the two substances, for we know Quartz is oxide of silicon while water is oxide of hydrogen.

Quartz in the form of rock crystal occurs in all parts of the globe, and for the most part in well-formed crystals. These crystals are usually six-sided, and usually have the form of a prism capped by a pyramid. Hot Springs, Arkansas, and Little Falls, New York, are the best known localities in our own country for this form of crystallized quartz. The Little Falls crystals are exceptionally brilliant and well formed. From this locality and others the material, cut or uncut, is often known as diamonds, and sold as such. Such stones can, of course, be easily distinguished from true diamond, for while they will scratch glass, their hardness is much below that of the king of gems and they utterly lack the internal fire of the latter.

Rock crystal occurring in large, clear masses is often cut into ornamental and useful objects such as seals and paperweights, and especially into balls. The latter industry flourishes especially in Japan, and perfectly clear quartz balls six inches in diameter are made there.

Rock crystal is also used extensively to cut into eyeglasses and spectacles in place of glass, some considering it less detrimental to the eyes than glass. It is also occasionally used for mirrors, it being superior to glass for this purpose, in that it does not detract from the rosiness of the complexion.

Among the ancients rock crystal was much more highly prized than among us, as it answered them many of the purposes for which we now find glass more suitable and cheaper. Wine glasses were made from it, though of course at great cost, a thousand dollars being considered a small price for one. Lenses of rock crystal were used to concentrate the rays of the sun for cauterizing wounds and also to light fires, especially sacrificial ones. Roman ladies were also accustomed to carry balls of rock crystal in their hands in summer for the sake of the coolness they afforded. The ladies of Japan are said to do the same at the present day.

QUARTZ (crystalline.)
LOANED BY FOOTE MINERAL CO.]

Top row:
Rutilated Quartz, polished (Brazil.)
Amethyst (Virginia.)
Center:
Smoky Quartz (Switzerland.)
Bottom row:
Rose Quartz (Black Hills.)
Amethyst (Montana.)

The stone was in former times often stained different colors, and thus all sorts of imitation gems were produced. The modern method of making doublets has now superseded this art.

Amethyst.—This is the name given to the violet or purple varieties of crystallized quartz. The color has often been supposed to be due to small quantities of oxide of manganese, but is more probably the result of a content of organic matter, as the color can usually be mostly burned out by heating the stone. By partial heating the color is changed to yellow, and much so-called citrine is simply burned amethyst.

Quartz having in a general way the amethystine color is comparatively common, but for gem purposes only that transparent and of good color is available.

Important localities for gem amethysts are Southern Brazil, the Ural Mountains, Ceylon, and occasional finds in the States of Maine, North Carolina, Pennsylvania and Montana in our own country.

Very commonly where crystallized quartz occurs, crystals of an amethystine hue are to be found, so that to enumerate localities of the mineral would be a considerable task. Good cut amethysts command a fair price, though they are much less valuable than formerly. Three or four dollars a carat is a fair price at the present time. At the beginning of this century Queen Charlotte of England is known to have paid $10,000 for an amethyst for which $500 could now hardly be realized. One reason for the greater esteem in which amethyst was formerly held is probably the virtue ascribed to it of shielding its wearer from the effects of drinking too much wine. Its name is derived from two Greek words, meaning “not to inebriate.” The drinking cups of the Romans were often made of it, partly for the above reason and partly on account of their belief that any poison placed in such a cup would be rendered harmless. Amethyst is the “birth stone” of the month of February, and St. Valentine is said always to have worn an amethyst.

“The February born shall find

Sincerity and peace of mind,
Freedom from passion and from care
If they an amethyst will wear."

Rose Quartz.—This form of quartz, the color of which is indicated by its name, is rarely of sufficient transparency to be prized as a gem. Cut, however, into various ornaments, it makes objects of considerable beauty. Its luster, instead of being glassy like that of other forms of quartz, is nearly always more or less greasy. The ingredient which gives its color is not known. It is probably some organic matter, since the color disappears on heating and, unfortunately for the extended use of the stone, fades considerably on exposure to light. There are numerous localities whence rose quartz of good color may be obtained, although it is not of so common occurrence as most other varieties of quartz. The best rose quartz in this country comes from Oxford County, Maine, and the Black Hills. Foreign localities are the Urals, Brazil and Ceylon.

Smoky Quartz.—This variety of quartz is often known as "smoky topaz," a misleading term, since the mineral is not topaz at all. As its name implies, its color is like that of smoked glass, all gradations occurring between a mere tinge to color so dark as to render the mineral practically opaque. The color often varies considerably in the same crystal, being darker and lighter in spots. The coloring matter is undoubtedly carbonaceous and organic in nature, for when a crystal is heated it gives off a smell of burning organic matter, and by heating for some length of time the coloring may be entirely burned out. At an intermediate stage in such heating the color becomes brown or yellow, and stones of this color are often cut as gems and known by the name of "Spanish topaz" or "citrine." True citrine is, however, transparent quartz with a natural yellow color. The most remarkable crystals of smoky quartz known are some that were found in 1868 in a hollow in granite in a locality in the Canton Uri, Switzerland. About 3,000 pounds of well formed crystals were there found, the largest and best of which are preserved in the Berne Museum. They are so unique that special names have been given them. One about two and one-half feet long, and weighing nearly four hundred pounds, is known as the "Grandfather"; another, somewhat smaller, but more perfect in form, as the "King," and two of nearly equal size, weighing about one hundred and forty pounds each, are called "Castor and Pollux." The smaller crystals obtained from this and neighboring regions in the Alps are for the most part of great perfection of form and color. Aside from these localities in the Alps, the most remarkable crystals of smoky quartz come from the region of Pike's Peak, in our own country. While not reaching the size of the Alpine crystals, they are often perfect in form and color, and gems to the value of thousands of dollars are annually cut from the supply there obtained. Alexander County, North Carolina, also furnishes many crystals. Smoky quartz may be called the national stone of Scotland, the name by which it is known being "Cairngorm stone," from the locality where the best crystals are obtained.

Sagenitic Quartz.—This form of quartz, also known as "sagenite," "fleche d'amour" (love's arrow), "Venus' hair stone," and, if the included mineral be rutile, "rutilated quartz," is rock crystal containing inclusions of other minerals in hair-like or thread-like forms. Of the minerals so included, rutile is the most common, but tourmaline, hornblende, epidote and others occur. These minerals are formed in the quartz doubtless by crystallizing simultaneously with that mineral, or "host," as it is called. The arrangement often gives a stone of great beauty, especially when the rutile is more or less transparent and has a blood red color. The Japanese frequently polish the surfaces of such crystals of quartz to make the interior structure better visible. Specimens are also obtained from Madagascar, Brazil, and North Carolina in our own country. When the fibers of the included mineral are smaller and more abundant, the forms of quartz known as "cat's eye" and "tiger eye" are produced. The reflection of light from the surfaces of the fibers gives the glittering effect known as chatoyancy. Nearly all the "tiger eye" in use at the present time comes from South Africa; the cat's eye from Bohemia and Ceylon.

Oliver Cummings Farrington.

EVENING IN THE CANYON.

The sun's last beams kiss the mountain side,
At which it blushes like a bride;
A soft wave, from the earth's warm breast,
Stirs in the pines and sinks to rest.
Far off a straying lambkin bleats,
Which pitying Echo soft repeats;
Anear the querulous, strident cries
That tell of insect lullabies.
Then long, grey shadows take command
And beckon with mysterious hand
Till falls a deep, expectant hush,
And then—the song of a single thrush.
The flowers and grasses bow the head,
Like children when their prayer is said,
While I with heart and soul rejoice
That a perfect day hath found its voice.

—M. E. Dissette.

BERRIES OF THE WOODS.

There are no flowers to make the earth gay in winter, but the berries, vivid, scarlet, like a note of exclamation or emphasis, light up the somber browns and grays of the woods and marshes. Jack-in-the-pulpit now shows a brilliant cluster, the Uncle Spadix completely hidden by the flaming berries. It is as if Jack had forsaken his pulpit altogether and turned to a rollicking life in the world. We know quite well without seeing the birds feed on any special variety of berry that they like them, for in the economy of thrifty Dame Nature these vivid colors of the outer cases are signals—calls to a feast, with the prudent condition that thus the seeds shall be carried abroad.

Holly stands at the head of all the berry tribe, royal by virtue not only of its shining clusters of fruit, but its glossy leaves, deep cut on the edges, that keep their beauty so long. It is usually a shrub, but in the mountains where the conditions are favorable it towers aloft as a tree. Another less famous, yet admirable member of the Ilex family with red berries whirled most gracefully around its stem, is the winterberry or black alder. Its foliage is less beautiful than that of the holly, but its berries are as brilliant. There are different splendors for North and South. In the North, when the white frosts fall the prickly barberry bushes are already loaded with their tart scarlet berries, and the old fences are rich with the fruit of the choke cherry. In the damp places of Southern woods the spice berries of the Laurel family are shining in small clusters. You are drawn by another sense in this case, for the berries are not only pleasing to the eye; they have also a delightfully pungent fragrance, especially when the scarlet skin is broken, and shows the yellow pulp inside.

The staff-tree, shrubby bitter-sweet or strawberry tree—for it has many names—glows with its odd-looking fruit, consisting of a scarlet aril and orange-tinted, or crimson pods or seeds. The aril plays a different part in various plants, though it is always a seed-covering; in the water-lily it is the transparent seed-bag, in the nutmeg it is the mace, in the twining strawberry bush it is a pulpy scarlet case; in the shrub it looks rather like a red chestnut burr, split wide open to show its gay seeds. There is a low shrub whose dark purplish red berries are arranged gracefully along its slender stems, called the snow or coral berry. The latter name suggests a far brighter color than the berries possess, for they are rarely noticeable until the winter snows have turned the earth white and by contrast made them attractive. This belongs to the Honeysuckle family and grows abundantly beside roads and in fence corners. Most of the honeysuckles bear berries; the local honeysuckle is almost as brilliant in the season of fruit as when it blooms, but the Chinese and Japanese honeysuckles have berries of glossy black, easily seen by the birds. The haw and the tupelo also bear black berries, and it is a pretty sight to see the flowers of gay yellow and the black sapsuckers just arrived from the North, rejoicing over the feast of the purple-black clusters of the tupelo. Other birds also love them and the trees are crowded till the migration is over.

The pale blue adar berries are as fragrant as they are pretty, thickly clustered in the prickly boughs. The mistletoe (Trees-thief as its Greek name means) grows upon our great oaks, hanging sprays of pearly or clouded opaline berries among its strange, thick, yellowish leaves. It is not the English mistletoe of Christmas stories which grows upon fir-trees in preference to all others, but is of similar habit.

Ella F. Mosby.

EARLY RECOLLECTIONS OF NATURAL OBJECTS.

In the inanimate world the things which most strongly impressed me were the many beautiful scenes of the winter season, such as the graceful drooping of the evergreens after a heavy snow fall; the thousands of domed, draped and capped objects at this time; the many beautiful designs of ferns, grasses, wheat sheaves, coral branches, etc., formed by the frost upon our windows, and the unmatchable splendor of the trees and other objects after receiving a coating of ice during a sleet storm. The lovely display of blossoms in the spring time, and the crimson leaves of autumn, also called forth expressions of joy and pleasure.

Among flowers, the wild blue violet is the first blossom that I remember having found and gathered. They were plentiful in the woods, meadows and roadsides, and we always kept one or more bunches of these and other wild flowers in the house during the spring season. Next to the blue violet, the dog-tooth violet, buttercups, spring beauties, dandelions and daisies follow in memory’s train.

My mother always accompanied me on my first little rambles, and many are the pleasant strolls we took, hand in hand, gathering flowers, listening to the songs of birds and enjoying the beautiful surroundings; her training and instruction in Nature’s book doubtless laid the foundation of my devotion to and study of these things in later years. Did she not call my attention to the gorgeous sunsets, to the bow of promise spanning the sky, to the squirrels and other little animals of the woods, to the rippling brook splashing over its pebbles and golden sands; did she not teach me to love God’s creatures and not kill or destroy them? Happy days never to be forgotten; little friendships never broken.

Berton Mercer.

TWO STRANGE HOMES.

The little brown wren is a bird with which most of us are familiar, as it is one of our most common birds. It builds its nest in all sorts of odd places, venturing about barns, outhouses, or even the homes of men.

One summer a ball of twine left over from the harvesting was placed upon a shelf in our tool-house. The next

spring a pair of tiny wrens discovered it and selected it as a suitable nesting place. They built the coziest and softest of homes in the hole in the center of the big ball and several eggs were laid before we discovered it. It was then left to the birds who had taken possession of it and they were allowed to raise their family there in peace.

At another time a pair of wrens built their nest in the sleeve of an old coat which had been left hanging in a shed and they made what, at least to them, was quite a palatial abode in that which superior man had deemed unfit for use.

MARY MCCRAE CULTER.

GREENLAND WHALE.
(Balaena mysticetus).

THE GREENLAND WHALE.

(*Balaena mysticetus.*)

The whale is by far the largest animal on earth, some species being many times the size of an elephant, and is it not a curious fact that in appearance it so resembles a fish that many suppose it to belong to that class, while truly it is not a fish at all? It is in reality much more like a cow or a horse, although externally it seems very unlike these animals; but appearances are not always to be relied upon.

When we examine the construction of the whale we find that it is warm-blooded, as we are. We find that it has immense lungs which hold a great quantity of air and that it must fill them or die. We find that it has bones similar to those of land animals. It has the seven neck bones found in all mammals, but it is the opposite extreme from the giraffe, as in proportion to its size it has the shortest neck of any mammal, while the giraffe has the longest. It has ribs, also bones for the forearm, and, nearly obliterated, there are found bones representing the hind legs. Instead of being hatched from an egg, as most fishes are, a baby whale comes into the world alive and complete, and for many months it takes its mother’s milk as a calf might do or a young colt. A baby whale is indeed a monstrous infant, being sometimes ten or twelve or even fifteen feet long; but by its mother’s side it does not seem such a monstrosity, for the whale mother may be forty-five or fifty feet in length herself.

These great animals are a most interesting study, for their ancestors undoubtedly once lived on land. We can imagine the land animal, many centuries ago, dwelling on the banks of some large stream, fond of spending much time in the water, until with successive generations the shape of the animal gradually changed and adapted itself to its fluid surroundings. The forearms and hands gradually became covered with continuous skin until the arm

and hand became a flipper; the rear limbs grew shorter and snorter as they were used less and less, until finally there was nothing left to indicate their presence except a few small bones. The tail, used as a propeller, grew strong, large and flat, and we can imagine that the animals themselves, as they put out to sea and in time avoided even the rivers, became larger as the centuries passed by.

However this may be, the Greenland Whale has been found sixty feet in length, although some other species are smaller.

I think we can consider the whale an animal of a roving disposition. In early times it roved away from land, and now it belongs to the migratory animals, changing its locality with the seasons. The Greenland Whale is happiest with cold and ice, so when summer comes it travels north in great numbers. These great groups are called schools, and being of a social disposition, it is seldom found alone when traveling. At first thought it would seem strange that a warm-blooded animal with no fur to protect it could so enjoy the cold, but should we examine beneath the soft, velvety skin we would find a great layer of fat, from ten to eighteen inches thick. This protects the animal from cold like a great soft overcoat, and the polar sea has for it no terrors.

Of the peculiar make-up of the Greenland Whale the head is certainly the most peculiar of all the parts.

It is a great, shapeless mass about a third of the length of the entire animal. It seems to be out of all proportion until one realizes that it must provide food for this great creature, which is no small task. Like all of the whalebone whales, the Greenland Whale has no teeth, but in the mouth is found a great number of flexible, bone-like appendages attached to the roof of the mouth and palate at one end and hanging loose at the opposite end. These are known as the baleen plates and form the whalebone of commerce. In the Greenland Whale this whalebone hanging from the center of the jaw is sometimes twelve feet in length, and as there are from two hundred and fifty to four hundred in number, the great value of the baleen is readily seen. When the great animal opens its mouth, a row boat with its oarsmen could easily be taken in, yet the animal eats only small crustaceans, mollusks, worms and minute forms of life.

When the immense mouth opens, it takes in a large amount of water containing its food. The mouth then closes, but the water is permitted to flow out, the baleen acting like a sieve, retaining the food supply within and allowing the water to ooze away. The food is retained on the great tongue and swallowed at leisure.

The eye of the whale is very small; the ear is barely perceptible, yet when submerged, the sight is keen and the hearing well developed. The nostrils are placed on the top of the head, so that the whale when rising can readily begin the operation of breathing. With a snorting noise the animal first blows up the water which has entered the imperfectly closed nostrils when submerged. This is done with such force that the water is separated into fine drops and thrown fifteen or eighteen feet into the air. The whale then breathes with a rapid inspiration, making a sort of moaning sound. When the lungs are filled with air, it will plunge beneath the surface of the water and remain for perhaps twenty minutes before appearing again, although when wounded it remains under water a much longer time.

In spite of its great size the whale is so perfectly adapted to its surroundings that it is a highly active animal. It swims without apparent effort and on account of the great strength of the enormous horizontal tail fin, it can jerk itself above the water and take long leaps. The smoothness of the skin facilitates the passage of the immense bulk through the water and the thick layer of fat diminishes the weight so that a whale can move with the rapidity of a steamship.

The Greenland Whale is, on the whole, an amiable animal. It seems to prefer to live at peace with its kind, and although it can make great havoc with its immense tail fin, it seemingly does so by accident rather than from viciousness.

Like all other animals the whale has its enemies, especially when young. The killer-whale and some sharks hunt and attack the young whales, as indeed they do the older ones; but the greatest enemy of all is man. For a thousand years he has systematically pursued and captured many species, until some are nearly exterminated. The Americans became great whale hunters in the nineteenth century, and in the thirty-eight years from 1835 to 1872 nearly 20,000 ships engaged in this industry. These whaling ships were fitted especially for this work. They were built to withstand the perils of the ice-bound northern seas and were arranged for long voyages. It was a sad day in the coast villages when the whalers sailed on these long, perilous and uncertain cruises, for the ships frequently were gone three years and some never came back, though as a whole the actual loss of human life was comparatively small. A number of ships would if possible keep sufficiently near together to render assistance in case of accident.

After reaching the whaling grounds usually two men were kept on the mast as a lookout. When the cry came, “There they spout!” all became excitement. As soon as it was determined that the whales were the species which they were seeking, the boats were lowered, the harpoons, the lances, the gun, the hatchet, the knife, the blubber-spade, and, most important of all, the line, were all placed in the boat together with a keg of fresh water, some ship’s biscuit, the lantern, candles and matches; and in a very short time the men were lustily pulling toward the monster they hoped to capture. They endeavored to approach the whale from the rear and often were not discovered by the animal until the harpoons were buried in its body. The boat was then rowed backward with great speed, as the whale could easily annihilate it with one blow of its great tail. Frequently the whale would dive down perpendicularly to a great depth and if the line was not sufficiently long it would of course pull the boat after it. In time the whale was obliged to rise for air and the struggle was renewed. Other boats approached and threw their harpoons, and the whale either turned upon its tormentors or ran, dragging the boats after it. In time it became exhausted and then it was killed either with the gun, harpoon or a hand lance. It was then towed to the ship’s side, made fast with chains and placed to float head backwards. The blubber was then torn off by means of pulleys and tackle. This process lasted from four to eight hours. The upper jaw of the

whalebone whale or the lower jaw of the sperm whale was then cut off and taken on deck. After all the valuable parts were taken the carcass was cast adrift. The blubber was then cut into pieces and tried out, the oil being stowed away in barrels. The value of the whale may be as high as $10,000.

The trying out of the oil is indeed a weird sight. At first, wood is used as a fuel, but afterward the residue of the blubber, called cracklings, is used, as it possesses sufficient heating power to finish the work. “Attired in their worst clothes,” writes Pechuel-Loeschke, “half-naked, dancing and singing, running after one another and brandishing their tools, dripping with oil and sooty like devils, the crew disport themselves about the hearth. An intensely active life prevails on board. The sight of this activity is doubly striking by night when a mass of the cracklings is hoisted up in an iron basket. This strange torch burns merrily, casting a weird light on the scene as the blazing flames throw glaring, fitful rays on the deck and bring out in bold relief the black clouds of smoke and the masts with their sails, the reflection extending far out over the sea. By day huge masses of smoke on the horizon betray the presence of a whaler which ‘tries out’ the blubber, long before one catches sight of the ship itself.”

JOHN AINSLIE.

Through the silent watches of the night
The snowflakes fast and faster fall;
And with swift and magic deftness,
Spread a spotless mantle over all.

Behold the landscape clothed in white,
Decked with crystals’ shining light;
See the towering fir trees bending low,
With their load of sparkling snow.

—Berton Mercer, “Winter.”

THE THISTLE.

As plants were among the objects most familiar to primitive man, they naturally came to be considered good or evil, according as their properties were found to be beneficial or injurious. The imaginative and pure reverence, however, which originally linked plant life with the personifications of natural phenomena, soon degenerated into a superstitious worship and became associated with the mummery of various kinds of impostors. The plants, through the manipulations of the quacks and witches, who largely composed the fraternity of the early herbalists, became endowed with powers to kill or heal, to control the weather, to gain or hold friends, and many other associations that have clung to them ever since. The Thistle appears to have been especially favored in this regard. It appears that an eagle had stolen the sacred Soma from the Hindu tree of life. Barely had he departed with the immortalizing draught before he was overtaken by a lightning bolt and stretched lifeless upon the earth. From the eagle’s feathers sprang up the bramble, while the Thistle grew from his claws. About this time Loki, the evil spirit of the Norse Asgard, passed that way, bent upon mischief. The unpleasant qualities of the two plants at once appealed to him. Loki immediately gathered the seed and proceeded to sow them in the fields of his enemies, the result being that all the good seed was killed. This Aryan myth has given rise to the expression, “Sowing wild oats,” and is believed to be the origin of the biblical story of the tares and the wheat, coming into Hebrew literature by means of the Indo-Iranians at the time of the Israelitish exile.

Now, Thor observed what Loki had done; so he hurled his hammer at the brambles and a bolt of lightning at the Thistles. For this reason the thistle blossoms are colored red and the plants became lightning plants. But the end was not yet. The beautiful goddess Freya, seeing the Thistles drooping under the chastisement of the god, took compassion and gave them to drink of the mead from the sacred goat of Valhalla, by virtue of which the plants became invested with immortality. Thus it came to pass that the Thistle has a dual life. It is a lightning plant, in which, in common with similar forms, like the vervain, the hazel, and the ash is never injured by lightning or approached by serpents. On the other hand, it being a protege of Freya, the goddess of Love, it straightway became a powerful love charm, and doubtless has done much execution in Cupid’s lists.

The Thistle group is the most primitive of the Composite family, and it bears evidence of a vast evolutionary history. There are one hundred and seventy-five living species which are distributed over Europe, Asia, Africa, North and South America. The plants seem able to adapt themselves to almost any conditions, and their unpleasant spines are found bidding defiance to the reindeer near the Arctic circle, as well as successfully measuring strength with the prickly cactus and acacias of the tropics. On our own prairies only plants thus armed stand much show to survive the herds of cattle that wander over them, and this protection, together with their great productiveness, have rendered Thistles such a nuisance and menace to agricultural interests as to necessitate legislative action looking to their extermination. The Russian and Canada thistles are the worst offenders, and where they once obtain a foothold they, as a rule, remain. The unpleasant qualities of the Thistle, however, served to bring about its adoption as the national emblem of Scotland. The story relates that during the eighth century the invading Danes, while stealing up to the Scotch camp under cover of darkness, passed over a patch of cotton thistle, and the sudden cries of the injured men warned the guards, and thus the army was saved. Achaius, King of Scotland, adopted the plant as his emblem in recognition of this service, but it was not made a part of the national arms until the middle of the fifteenth century.

BUR OR SPEAR THISTLE.
(Carduus lanceolatus.)
PASTURE OR FRAGRANT THISTLE.
(Carduus odoratus.)
FROM "NATURE'S GARDEN"

The origin of the Scottish order of the Thistle, or St. Andrew, is somewhat uncertain. In 1687 it was restored to favor by James II of England and was given much prominence during the reign of Queen Anne. The membership was limited to from twelve to sixteen peers of the realm, the insignia being a golden collar composed of sixteen thistles, from which hung a St. Andrew's cross. 41

What is known as the purple star thistle was named for Chiron the Centaur. The great spines on the calyx suggested the military caltrop, an iron star of four points, which was used in battle to annoy horses.

Among other incidents in which Thistles have been in evidence may be mentioned the confusion into which the army of Charles the Bold was thrown, in 1465, because of the deceptive appearance of the plants. The Burgundians were beseiging Paris, and while the army slept scouts brought word that great numbers of spears were assembled outside the city walls. A panic was narrowly averted, and later it was discovered that the stems and spines of some very tall Thistles had produced the deception. The leaves of the Thistles were commonly employed by the Roman soldiers to shade their helmets, and it is stated that when Hugh Spencer, favorite of Edward II, was hanged, the mob, in derision, placed a crown of thistle spines upon his head.

Thistles seem to have figured in peace as well as war. In England the teasel is indispensable in the cloth mills, in which it is employed to dress the nap of the fabrics, and Virgil tells of the vest of Helen, which was embroidered to represent the plants, while the handles of the Cup of Eurymedon were entwined with them. Probably the crowning glory of the Thistle, if the story be true, lies in its contribution to architecture, in which capacity it deserves no less consideration than the Egyptian lotus. It appears from the narrative that a young girl of Corinth dying, her nurse placed on her grave a basket containing her toys, covering them with a large tile in order to shield the childish treasures from the weather. The basket was set by chance on the root of a Thistle. When the springtime came the plant grew until, meeting the tile, it was forced to turn downwards in graceful folds, which, catching the eye of Callimachus, he conceived the capital of the Corinthian columns.

CHARLES S. RADDIN.

The smallest effort is not lost;
Each wavelet on the ocean toss'd
Aids in the ebb-tide of the flow;
Each rain drop makes some flow'ret blow
Each struggle lessens human woe.

—Charles MacKay in the Chicago Record-Herald.

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WITH SILVER CHAINS AND GAY ATTIRE.

After the cold, repeated rains,
The crusted branches rub the panes,
And ere the dawn the pelting hail
Adds fury to the roaring gale.
So wears the night—the morrow's sun
Proclaims the winter tempest done.
And what a morn! A crystal dome
Each rounded hill about our home!
More radiant is the sight, I ween,
Than e'er before has mortal seen.

Betwixt their glassy walls on high
The mountain corridors we spy,
And lo! all chandeliered are they,
Like costly palace of a day!
From limb to limb with whitest wreaths
The trees are festooned. All the heaths
With sun-tipped, icy spikes are bright;
And frost-stars glitter in the light.
With untold wealth the earth is strewn,
Each bush bears jewels, dimmed too soon.

Each stalk is cased in crystal mail,
Gem rivals gem in every vale;
No gaudier crown has sunflower's head,
With dew and fragrance round it shed.
Rich vitreous tubes each breeze shakes down,
What shafts and columns gird our town!
Fretwork and tinsel fairy fair,
Wondrous stalactites everywhere.
And so the emulation grows
Till Sol dissolves the wafted snows.

—George Bancroft Griffith.

THE BIRDS IN THEIR WINTER HOME.

(In the Woods.)

From the region of the Great Lakes to the Gulf there is no section that contains more to interest the naturalist than the hills and forests of central Mississippi. Here no winter's rigors chill the blood and drive the forest folk to remote or inaccessible retreats. Into this land of warmth and sunshine, this land of the 'possum, persimmon and the pickaninny, Jack Frost does not come till November is well advanced. Even then he comes only to clear the air, bring down the leaves, and announce the coming of the short, make-believe winter.

Go out doors in December after the leaves have fallen and take note of the varied life in wood, field and brake; think that now in the far away North the wind howls through the leafless trees, finding few creatures hardy enough to resist his blasts save the snowbird and the hare. The blasts of chill November and chillier December have sent myriads of birds down here where food is plenty in savannah, forest and thicket. On the wooded knolls under the beeches and hollies congregate the hungry hordes, feasting on seeds and berries of the rattan, holly and smilax. Flying in and out of the briar-thickets are innumerable white-throated sparrows fleeing from frozen Canada and the lake country. A clear long-drawn whistle strikes the ear. We seek the source. A little brown bird much the size and shape of an English sparrow seated on a shrub projecting from the briars raises his head and whistles a sound as pure and free from flaw as the little spot of white upon his throat. Cheewinks as fussy as old hens toss the dead leaves about; grackles in shining black stalk dignifiedly about; while cardinals in low boughs and underbrush give a touch of vivid color to the scene just as the pink and white dresses of the girls form a pleasing contrast to the somber blacks and grays of the gentlemen's attire at a Fourth of July celebration.

Second to none in delicate beauty of coloring, king of his tribe, is the fox-sparrow. Russet and rufous on the back, beneath the white marked with brilliant stripings of the same color as the back, on the feathers of his head and upper neck a clear pearly luster which is iridescent in the sunshine but invisible in the shadow, he is a marked bird, the peer of any in the woods. Happy the bird-lover who has the opportunity to study this magnificent bird in his winter home; one so favored can well afford a feeling of pity for the less fortunate dwellers in the central states who seldom make his acquaintance except through the medium of the museum or the manual.

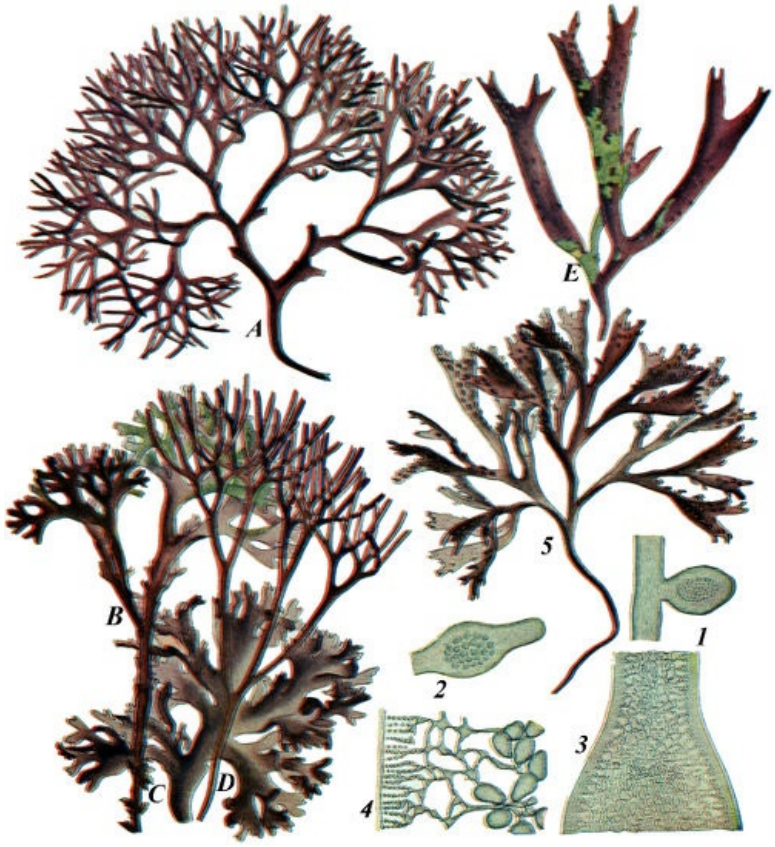
Florida blue jays in black, white and blue hop about among the rustling leaves or seated on a limb, hammer away at an acorn. Possessing a more extensive vocabulary than our familiar Northern jays, more loquacious, more sociable, they are certainly the artists of the tribe. No one who has ever heard their clear musical notes as they play in the tree-tops or hop about on the lawns as friendly and cheerful as robins, can ever entertain quite such a low opinion of their musical ability as he did before. Resonant, ringing tinkling, this call is the forest chime that summons the little children of the wood to vespers, heard at evening with white throats calling to one another from brush-heaps and briar thicket, it is the expression of this strong pure life away from the haunts of men. Under such surroundings it is easy to forget the cruelty practiced by our gifted blue-coat when spring has filled these woods and fields with nests and nestlings.

But here comes one for whom no cloak of charity is needed, the musician pre-eminent among all this gifted throng, the Carolina wren. A slender curved beak, a trim bunch of cinnamon-brown feathers barred with darker brown on wings and tail, a buff breast, a little throat pulsating with vigorous buoyant life are the most conspicuous characteristics of this chorister of winter woods. He has been called the mocking wren. Let no one be deluded by such a term into the belief that he has no individuality, for, although his song has in it the whistle of the cardinal, the dignified song of the brown thrasher and the effervescence of the mockingbird, through it all there runs a peculiar quality all his own. Swinging on a rattan vine, singing with all the abandon of a bright May morning he seems the most vigorous exponent of “the strenuous life” in this land where languorous breezes blow soft and warm, bringing with them a suggestion of the sun-kissed waters of the Gulf and odors of resin and turpentine from the interminable forests that intervene between us and the coast.

Down by the branches on cold frosty mornings you will find a little brown ball of a bird, that with tail tilted up over his back dives under every bridge, slides into every brush-heap, or hides tantalizingly behind every log that comes in his path. Not shy, yet not bold, he disappears from view at the most exasperating moments. Coming with the frosts, going away when they cease, he certainly deserves the name of winter wren. Shorter than the Carolina, darker on the back and tail, his nervous, fidgety manner makes it an easy matter to distinguish him from his more talented cousin. In these winter woods he never sings. Beyond an occasional metallic “chip” now and then I have never heard him give utterance to the emotions that fill his plump little breast. He is the silent observer of the busy life about him, a sitter in his own chimney corner, where he smokes his pipe and studies life subjectively, a modest little philosopher in cinnamon brown and black.

Darting in and out among the lower branches of a giant beech, now flitting to a new position with movements as sudden and unexpected as those of a hummingbird, now running along a limb like the brown creeper, comes another tiny friend the ruby crowned kinglet. A plain little Quaker he seems in his suit of olive green without a patch of yellow or black to relieve the severe simplicity of his garb. Even the tufts of brilliant red feathers on his head is concealed from vulgar gaze. If you have sharp eyes and a moderate degree of patience your efforts to get a glimpse of the red tuft will by and by be crowned with success, but don’t be disappointed if you don’t see the ruby the first time you see the bird. I had observed the cheerful little chap time after time in my morning rambles in the woods, and had come to know every twist and motion of the tiny body before I caught a glimpse of the longed-for tuft. Finally one morning as he bent his head to pick up some sweet tid-bit the olive-green feathers parted and I saw his tiny crown. A modest genial little anarchist he is, never parading his opinions before an admiring public, but suddenly springing down in front of us on some low bush he flaunts his red flag and is gone before we realize it. Having once learned how and when to look for his crown it is an easy matter to find it again whenever his little majesty feels inclined to give you the opportunity.

James Stephen Compton.



IRISH MOSS.
Chondrus crispus.
Gigartina mamillosa.
FROM KŒHLER’S MEDICINAL-PFLANZEN.

Description of Plate.—A, B, C, D, different forms of Irish moss; E. F., forms of Gigartina mamillosa; 1, section of thallus of G. mamillosa; 2, 3, 4, sections of Chondrus crispus.

IRISH MOSS.

(*Chondrus crispus* lyngb.)

A weary weed toss'd to and fro,
Drearily drench't in the ocean brine.

—Cornelius G. Fenner, "Gulf-Weed."

Those who have spent any time along the sea shore will recall the familiar seaweeds washed upon the bank by the tide and have watched them idly waving to and fro in the water near the shore where the depth does not exceed several meters. There are perhaps no plants more beautiful from the purely artistic point of view. Many a visitor to a distant sea coast has collected and mounted the more beautiful and delicate ones as souvenirs to delight the eye of friends. The delicate coloring and manifold branchings are the characteristic of the more attractive species. Some are quite small, while others grow to enormous size. The so-called "sea lettuce" is of a bright grass green color, forming a large leaf like expansion. The Gulf weed, a species of Sargassum, is very plentiful in the gulf regions of the southern United States, Mexico and Central America. During heavy storms great quantities of this are torn loose from their fastenings and carried far out into the Atlantic where they form the Sargassa sea and impede ocean traffic. The sailors on the ships of Columbus encountered such a sea and revived their hopes of soon seeing land, as they rightfully conjectured that the sea weeds were washed from the shore.

Sea weeds in general are variously employed. They are the sources of iodine and bromine. They are collected in large quantities and used as fertilizers. The Chinese and Japanese use some species very extensively as food. The stipes or stalks of Laminaria cloustoni are used in surgery.

Sea weeds and other aquatic plants serve as a protection and food for a host of animals of the seas; especially fish, cray-fish, lobsters, etc. The smaller fish in trying to escape from his larger, ravenous enemy hides among these plants. Bryant, in Sella says:

"Here were mighty groves
Far down the ocean-valleys, and between
Lay what might seem fair meadows, softly tinged
With orange and with crimson. Here arose
Tall stems, that, rooted in the depths below,
Swing idly with the motion of the sea;
And here were shrubberies in whose mazy screen,
The creatures of the deep made haunt."

Chondrus crispus, the plant of our sketch, is a sea weed of the Atlantic. It is quite plentiful along the shore lines of the Atlantic states, Ireland and England. It is commonly known as Irish moss, though it is not a moss at all. It is also known as Carrageen moss or Carrageen. It is a perennial plant, 3 to 10 inches high, consisting of a flat, much branched thallus, as shown in the illustration. It is variable in its coloring, greenish purple, purplish brown, grayish purplish brown, etc., somewhat waxy or translucent in appearance. It is also very variable in form; no two specimens being exactly alike. It attaches itself to rocks, pebbles and boulders by means of a basal disk which serves merely as a mechanical support, the frond or thallus absorbing its nourishment from the sea water. In consistency the plant is cartilaginous, mucilaginous, and is entirely dissolved on boiling. When dry it becomes very hard, brittle and elastic and assumes a light-yellowish, translucent appearance. Chondrus crispus is closely similar to Gigartina mamillosa, another sea weed, with which it is usually associated.

Irish moss is extensively collected along the coast of Massachusetts. The plants being spread high up on the beach to dry and bleach in the sun. Its principal use is in medicine, although it has perhaps no curative properties in itself. It is a demulcent and emollient, that is the mucilage present tends to allay irritation of inflamed mucous membranes as in sore throat, pulmonary complaints, etc. It has been extensively employed as a popular remedy in dysentery, kidney troubles and pneumonia. Its principal use at the present time is as an article of diet, in the preparation of soup, blanc mange and jellies. Sometimes it is combined with chocolate or cocoa, sugar, lemon juice, etc., to improve the flavor.

Bandoline, a fixative for keeping hair in curl is commonly prepared from carrageen. It is also used as sizing for paper, straw hats, felt hats, cotton goods and for thickening the colors used in calico printing. It is also used for clarifying coffee, beer and other drinks.

Carrageen is a word of Irish origin and was apparently originally applied to sea weeds in general. The Irish were the first to use this plant medicinally and as a food.

Albert Schneider.

THE CARDINAL FLOWER.

I love each flower beneath the sun,
Wherever it buds and blows;
From the pale arbutus that hides like a nun,
To the flushed and queenly rose.

But the cardinal flower to me is best
As close by the rivulet's brim
It regally wears its flaming crest,
In the woodlands cool and dim.

I long to lie in the pine tree's shade,
Or tread on the tufted moss;
If once away from the ways of trade,
I'd care not for gain or loss.

I would peacefully fall asleep at night
To the sound of singing streams,
With the glowing cardinal's flower of light
To illumine the realm of dreams.

—Belle A. Hitchcock.

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