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## **BIRDS AND ALL NATURE.**

ILLUSTRATED BY COLOR PHOTOGRAPHY.

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VOL. VI.

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# THE TRAMPS OF BIRDLAND.

ELANORA KINSLEY MARBLE.

THE birds had met in council that morning, and from the great chattering and chirping I judged some very serious question was up before the board.

"Something must be done," Mr. Red-eyed Vireo was saying, as I sauntered down to the orchard and seated myself beneath an apple tree, "we have stood the imposition long enough. Every year we meet and draw up resolutions, with many 'whereases' and 'wherefores,' and 'aforesaid's'—resolutions with nothing resolute about them. To-day, I say, something must be done."

Mr. Wood-thrush, Mr. Towhee, Mr. Chipping Sparrow, Mr. Yellow-breasted Chat, Mr. Song Sparrow, and several Mr. Flycatchers, beside a number of other small birds, nodded their heads in unequivocal assent.

"We have enemies enough," continued Mr. Vireo, "how many only Mother Nature knows. Even in the darkness of night we are not safe from the owls, skunks, snakes, and other robbers, and in the day-time, besides our feathered foes, we have the ruthless 'collector,' and the ever-present bad boy. Enemies without are bad enough, but to have in our very midst a—a—" Mr. Vireo paused, presumably choking with indignation, but really because he had quite forgotten what he had prepared to say.

"Hear, hear!" cried the assembled birds, making a great clamor and clatter in order that the speaker might have a chance to slyly consult his notes.

"A tribe of social outcasts—tramps, in fact," continued Mr. Vireo, "whose females, disliking the cares of family life, build no homes of their own, but instead deposit their eggs in some other bird's nest that their young may be hatched and reared without any trouble to themselves. Our mates have enough to do to bring up their own families, so I say the tribe of cowbirds must be driven from this community, or else, like the rest of us, be forced to work."

"H'm! yes," sighed Mr. Towhee, "that's what we say every year, and every year the conditions remain just the same. The cowbirds are tramps by nature, and you can't change their natures, you know."

I judged, from the great chattering and chirping, that grave exceptions were taken to this remark, but quiet at length being restored, Mr. Towhee continued:

"My mate says it depends upon ourselves whether the whole tribe shall be exterminated. She, for one, does not intend to hatch out any more of Mrs. Cowbird's babies. This spring we found one of her speckled eggs in our nest, but it wasn't hatched out, I warrant you. We simply pierced the shell with our bills, picked it up by the opening, and carried it out of the nest."

A round of applause greeted these remarks, much to Mr. Towhee's gratification.

"It strikes me," said Mr. Indigo Bunting, "that the whole fault lies with our mates. From the size and different markings of Mrs. Cowbird's eggs they can always be distinguished from their own. No self-respecting bird should ever brood one; in that way we can exterminate the race."

"'Tis the mother-instinct, I presume," said Mr. Vireo, "or the kindly nature of some females, not to neglect a forlorn little egg abandoned by its parents at their very door. Ah," he broke off, pointing in a certain direction, "is not that a sad sight for an affectionate husband to see?"

On a fence near by stood two birds—a very small one, with a worried, harassed air, endeavoring upon tip-toe to drop into the mouth of the great fat baby towering above her a green caterpillar which she held in her bill.

"That is Mrs. Vireo, my mate, and her foster child," continued the speaker. "The egg of the cowbird being larger than her own, received all the warmth of her breast, so that her own little ones perished in the shell. It takes all her time and strength to feed that great hulking baby, who will accept her nursing long after he can take care of himself, then desert her to join his own tribe in the grain fields."

"Last year my mate had no better sense than to brood one of Mrs. Cowbird's eggs," said Mr. Chipping Sparrow. "It emerged from the shell first, of course, and in attending to its everlasting clamor for food she neglected her own birdlings so that all but one of them died. That one has always been a puny, weak little thing. We were greatly astonished, I assure you, at the size of our first offspring, neither of us being acquainted with the habits of Mrs. Cowbird, and disappointed that in neither feather nor feature it resembled her or me."

"I got the best of the lazy tribe, this year," chuckled Mr. Yellow Warbler. "Our nest was just completed, and my mate had deposited one egg, when in our absence one day Mrs. Cowbird sneaked in, laid one of her own beside it and then stealthily crept away. My mate said nothing, and might have brooded it with her own, but the next day the same thing, in our absence, occurred again; another female of the lazy tribe, I presume, finding our home quite to her liking."

"Two to one," said the Chat with a laugh, "that was not fair. Well, what did you do then?"

"Why we concluded to abandon the nest and build another, but on second thought gave up that

plan. We simply built a floor over the lower portion of the nest, and on the upper floor, or second story, so to speak, my mate deposited four eggs, those, with the one shut in with the Cowbird's, making her full complement, you see."

"It would have been far easier, it seems to me," said Mr. Towhee, "to have thrown Mrs. Cowbird's eggs out of the nest as we did. But then you and your mate must learn by experience and you will know better what to do the next time."

"Doubtless," said Mr. Yellow-throat, a trifle stiffly, "but my mate is a very dainty bird and wouldn't for a moment think of using a cradle for her little ones that had been occupied, even for a short time, by two female tramps."

"Hm!" replied Mr. Towhee, in his turn not altogether pleased, "that accounts probably for the number of abandoned nests one meets with every year, containing a speckled egg of Mrs. Cowbird's. Too dainty, indeed!"

"Did you ever happen to see one of the homeless creatures seeking somebody else's nest in which to lay her egg?" interrupted Mr. Chipping Sparrow, scenting a quarrel in the air. "I saw one in the woods once sneaking through the undergrowth, and when Mr. and Mrs. Red-eyed Vireo had flown away for a little time, out she crept, inspected their nest, and, finding it to her taste, entered and deposited her egg. She felt sure, you see, that Mrs. Vireo had a kind heart and would hatch out the foundling with her own."

"And she did," sadly said Mr. Vireo, "she did."

"The company the tribe keeps is no better than themselves," said Mr. Wood Thrush. "During the breeding-season you will see the grackles, and red-winged blackbirds, and the cowbirds chattering and gossiping together, as they roost for the night. They are a lawless crew. No self-respecting bird will be found in such company."

"I saw a number of the cowbird tribe perching on the backs of a bunch of cattle in the pasture-land to-day," said a very young Mr. Flycatcher. "What do you suppose they were doing?"

"Searching for parasites," gruffly said an old bird; "that's the reason they are called cowbirds. They were once called 'buffalo birds' for the same reason."

No one spoke for the space of several minutes.

"If there are no further remarks," said Mr. Red-eyed Vireo, "the question will be put. All in favor —"

"What is the question, Mr. Chairman?" meekly asked a very young Mr. Flycatcher.

"Is it or is it not our duty to destroy every egg of Mrs. Cowbird's we find in our nests, thus forcing the tribe to build homes of their own in which to bring up their families? All in favor—"

"Ay," chirruped every bird at once.

"Contrary minded?"

There was no response, so the meeting was declared adjourned.



FROM MAYFLOWER, BY  
PER.

NARCISSUS.

CHICAGO:  
A. W. MUMFORD  
PUBLISHER.

[Pg 199]

## THE NARCISSUS.

THE NARCISSUS.

WILLIAM KERR HIGLEY,

Secretary of The Chicago Academy of Sciences.

**T**HE genus of plants called Narcissus, many of the species of which are highly esteemed by the floriculturist and lover of cultivated plants, belongs to the Amaryllis family (*Amaryllidaceæ*.)

This family includes about seventy genera and over eight hundred species that are mostly native in tropical or semi-tropical countries, though a few are found in temperate climates.

Many of the species are sought for ornamental purposes and, on account of their beauty and remarkable odor, they are more prized by many than are the species of the Lily family.

In this group is classed the American Aloe (*Agave americana*) valued not only for cultivation, but also by the Mexicans on account of the sweet fluid which is yielded by its central bud. This liquid, after fermentation, forms an intoxicating liquor known as *pulque*. By distillation, this yields a liquid, very similar to rum, called by the Mexicans *mescal*. The leaves furnish a strong fiber, known as vegetable silk, from which, since remote times, paper has been manufactured.

The popular opinion is that this plant flowers but once in a century; hence the name "Century Plant" is often applied to it, though under proper culture it will blossom more frequently.

Other plants of equal economic and historic interest, but less known, belong to this family. It is said that one species furnished the fluid used by the Hottentots for poisoning their arrows.

The genus Narcissus derives its name from a Greek word meaning "stupor" because of the narcotic effect produced by the odor and by portions of the plants of some species.

There are about twenty-five species, chiefly natives of southern Europe, but some of them, either natural or modified by the gardener's art, are world-wide in cultivation.

Blossoming early in the season they are frequently referred to as "harbingers of spring." The flowers are handsome, large, varying in color from yellow to white and sometimes marked with crimson. They are usually borne on a nearly naked stem. Some of the species are very fragrant. The leaves are elongated, nearly sword-shaped and usually about a foot in length, rising from the bulbous underground stem.

Among the forms that are familiar are the daffodils, the jonquils, and the poet's narcissus.

An interesting feature in the structure of the flowers is the cup or crown which is found at the

base of the flower segments. The length and character of this is an important feature in the separation of the species.

In Grecian mythology Narcissus was the son of the river god, Cephissus. He failed to return the love of the mountain nymph, Echo, which so grieved her that she pined away till nothing remained but her voice, which gave back with absolute fidelity all sounds uttered in the hills and dales.

Narcissus was punished for this by Aphrodite, who caused him to love his own image as it was reflected in the water of a neighboring fountain. "Consumed with unrequited love, he too, wasted away and was changed into the flower which bears his name."



# FASHION'S CLAMOR.

E. K. M.

JUDGING from late millinery creations, and the appearance of windows and showcases, women, in spite of the efforts of the Audubon societies, still elect to adorn themselves with the stuffed remains of rare or common birds.

A live bird is a beautiful and graceful object, but a dead duck, pigeon, or gull peering with glassy eyes over the brim of a woman's hat is, to the thinking mind, both unbecoming and repulsive. In deference to "sentimental" bird lovers and at the same time the behest of Dame Fashion, wings and breasts are said to be manufactured out of bits of feathers and quills which have all the appearance of the original. Wings and breasts, yes, but never the entire creature, which the bird lover—in a millinery sense—chooses above all other adornments for her headgear. Apart from the humanitarian side of the subject, one cannot but marvel that such women cannot be brought to regard the matter from the esthetic point of view.

"Esthetic," repeats my lady, glancing admiringly in the mirror at the death's head above her brow, "esthetic point of view, indeed! Why, the point of view with most women is to wear whatever they consider becoming, striking, or *outré*. Now I flatter myself in selecting this large gull with spreading wings for my hat, that I attained all three of these effects, don't you?"

"Especially the *outré*," muttered one of her listeners, at which my lady laughed, evidently well pleased.

Five women out of every ten who walk the streets of Chicago and other Illinois cities, says a prominent journal, by wearing dead birds upon their hats proclaim themselves as lawbreakers. For the first time in the history of Illinois laws it has been made an offense punishable by fine and imprisonment, or both, to have in possession any dead, harmless bird except game birds, which may be "possessed in their proper season." The wearing of a tern, or a gull, a woodpecker, or a jay is an offense against the law's majesty, and any policeman with a mind rigidly bent upon enforcing the law could round up, without a written warrant, a wagon load of the offenders any hour in the day, and carry them off to the lockup. What moral suasion cannot do, a crusade of this sort undoubtedly would.

Thanks to the personal influence of the Princess of Wales, the osprey plume, so long a feature of the uniforms of a number of the cavalry regiments of the British army, has been abolished. After Dec. 31, 1899, the osprey plume, by order of Field Marshal Lord Wolseley, is to be replaced by one of ostrich feathers. It was the wearing of these plumes by the officers of all the hussar and rifle regiments, as well as of the Royal Horse Artillery, which so sadly interfered with the crusade inaugurated by the Princess against the use of osprey plumes. The fact that these plumes, to be of any marketable value, have to be torn from the living bird during the nesting season induced the Queen, the Princess of Wales, and other ladies of the royal family to set their faces against the use of both the osprey plume and the aigrette as articles of fashionable wear.

If this can be done in the interest of the white heron and osprey, on the other side of the water, why cannot the autocrats of style in this country pronounce against the barbarous practice of bird adornment entirely, by steadfastly refusing to wear them themselves? The tireless energy of all societies for the protection of birds will not begin to do the cause among the masses so much good as would the total abandonment of them for millinery purposes by what is termed society's 400.



FROM KÄHLER'S  
MEDICINAL-  
PFLANZEN.

COCA.

CHICAGO:  
A. W. MUMFORD,  
PUBLISHER.

Description of Plate.—A, flowering branch; 1, bracts, enlarged; 2, flowering bud; 3, flower; 4 and 5, petal with ligula; 6, pistil with stamens; 7, stamen; 8, pistil; 9, ovary, transverse section; 10 and 11, corolla; 12 and 13, fruit.



# COCA. [1]

(*Erythroxylon Coca Lam.*)

DR. ALBERT SCHNEIDER,  
Northwestern University School of Pharmacy.

It is an aromatic tonic and cerebral stimulant, developing a remarkable power of enduring hunger and fatigue.—*Gould: Dictionary of Medicine.*

**A**T THE very outset I wish to state that coca is in no wise related to cocoa, a mistake which is very often made. The term coca, or cuca, as it is sometimes spelled, applies usually to the leaves of *Erythroxylon coca*, which are used as a stimulant by the natives of South America and which yield cocaine, a very important local anæsthetic. Cocoa or cacao refers to the seeds of *Theobroma cacao*, from which cocoa and chocolate are prepared, so highly prized in all civilized countries. With these preliminary statements I shall begin the description of coca, hoping at some future time to describe the even more interesting and important cocoa-yielding plant.

Coca and cuca are South American words of Spanish origin and apply to the plant itself as well as to the leaves. The plant is a native of Brazil, Peru, and Bolivia. It is a shrub varying in height from three to ten feet. The leaves resemble the leaves of tea in general outline. The margin, however, is smooth and entire, the leaf-stock (*petiole*) short; upper and lower surfaces smooth; they are rather thin, leathery, and somewhat bluish-green in color. The characteristic feature of the leaf is two lines or ridges which extend from the base of the blade, curving out on either side of the mid-rib and again uniting at the apex of the leaf. The flowers are short pedicled, small, perfect, white or greenish-yellow, and occur singly or in clusters in the axil of the leaves or bracts. The shrub is rather straggling and not at all showy.

Coca has been under cultivation in South America for many centuries. According to A. de Caudolle the plant was very extensively cultivated under the rule of the Incas. In fact it is generally believed that the original wild stock no longer exists; such eminent authorities as D'Orbigny and Poeppig maintaining that the wild growing specimens now found in South America are plants which have escaped from cultivation. Coca is now extensively cultivated in Peru, Bolivia, Brazil, and other South American countries, particularly in the Andes region. It is also extensively cultivated in British India and in Java. Attempts have been made to introduce it into Southern Europe but without success.

The plants are grown from seeds sown in pots or boxes in which they are kept until they are from eight to ten inches high, after which they are transplanted during the rainy season. Coca thrives best in a warm, well-drained soil, with considerable atmospheric moisture. In the Andes region an elevation of 2,000 feet to 5,000 feet is most suitable. The young growing plants must be protected against the heat of the sun. The maximum growth is attained in about five years.

The leaves are the only parts used although the active principle, cocaine, is present in small quantities in all parts of the plant. As soon as the shrubs are several years old the leaves are picked, usually several times each year. This work is done principally by women and children who pick the leaves by hand and place them in aprons. They are then spread upon large mats, awnings, or cemented floors, and exposed to the sun for from five or six hours to two or three days. During very warm, bright weather drying may be completed in one day. If the process of drying is slow or if it rains upon the leaves they assume a dark color and are of less value. On the first indications of rain the leaves are placed in sheds specially made for that purpose.

Coca leaves have been used for many centuries by the natives of South America who employed them principally as a stimulant, rarely medicinally. The leaves were at one time highly prized. Acosta states that during the reign of the Incas the common people were not permitted to use the leaves without permission from the governor. After the passing of the Incas and after coca was more extensively cultivated all classes chewed the leaves. Children were, however, not allowed to use them. According to Mariani, the young Indian on arriving at the proper age was sent to an old woman whose duty it was to instruct him and to invest him with authority to chew coca leaves. The native carries the leaves in a little pouch (*huallqui* or *chuspa*) suspended from the belt. This pouch also contains a small bottle-gourd or calabash (*ishcupura*) in which is carried the ash of some plant (species of *Chenopodium*), known as *Llipta*. A few leaves are placed in the mouth and rolled into a ball; a stick moistened with saliva is now dipped into the ash and wiped upon the leaves. The ash is supposed to develop the flavor and to cause a flow of saliva which is either entirely swallowed or partially expectorated. It is said that the use of the leaves enabled the Indians to undergo extreme hardships. A French missionary states that the leaves were absolutely necessary to the slaves employed in the quicksilver mines of Peru. They were also used in dressing wounds, ulcers, and taken internally for the cure of intestinal troubles, jaundice, and various spasmodic troubles. Historians seem to agree that the constant chewing of the leaves by the Indians did not produce any very marked deleterious effects. Mariani, upon the authority of several authors, states that it even seems to be conducive to longevity. The dead of the South American Indians were always supplied with a liberal quantity of coca to enable them to make the long and fatiguing journey to the promised land.

Chewing coca leaves is a habit which may be compared to the habit of chewing tobacco with the

difference that the former is by far less injurious though there are good reasons to believe that it is far from harmless. Dr. Wedell says an habitual coca chewer is known as coquero and is recognized by his haggard look, gloomy and solitary habit, listless inability, and disinclination for any active employment. The same authority states further that the habitual use of coca acts more prejudicially upon Europeans than upon the Indians accustomed to it from their early years. Occasionally it causes a peculiar aberration of intellect, characterized by hallucinations.

Chewing coca leaves has never become common among civilized nations. Large quantities of leaves are, however, imported for the purposes of extracting the active principle cocaine, whose effects are very marked. Cocaine causes a feeling of depression, and a marked reduction in the activity of the senses preceded by stimulation. Cocaine solutions are very extensively employed to produce local anæsthesia in minor surgical operations. Dentists employ it very extensively. Its use has several serious drawbacks. Occasionally it produces no effects whatever and again an ordinary medicinal dose has caused fatal poisoning. For these reasons dentists, physicians, and surgeons often hesitate in using it. According to some authorities the poisonous effects are due to a second alkaloid which occurs in the leaves of some varieties of coca. If that is the case, then poisoning may be prevented by excluding these varieties from the market, which is not an easy matter considering that the leaves are collected, dried, and shipped by ignorant natives. It is also known that the active principle is rapidly destroyed, hence the necessity of using fresh leaves. In the course of one year most of the cocaine has undergone a chemical change and the leaves are absolutely worthless. Careless drying also destroys much or all of the cocaine.

#### **FOOTNOTE:**

[1] Cvea on plate, typographical error; Coca correct.— ED.

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# OUR NATIVE WOODS.

REST H. METCALF.

**H**OW many different varieties of wood are there in your own town? If you never have considered this question you will be surprised at the variety, and, I am sure, will enjoy making a collection for yourself. A pretty cabinet size is two inches in length and the same in diameter. This size is very convenient, unless you have an abundance of room, and will show fibre, grain, and color quite distinctly. If you will plane off two sides of the block you will see the grain plainly, and, if possible to polish one side, you will see what a beautiful finish some of our own woods will take.

All that is necessary in obtaining your collection is a small saw, but a congenial companion will greatly add to your pleasure. Saw your specimen considerably longer than you call for after it is prepared, for most of the varieties will check in drying; then let it thoroughly dry before preparing for your collection. The fruit trees around your home may first take your attention. You will be interested in noting the differences in the grain of the apple, apricot, barberry, cherry, pear, peach, plum, and quince; and while you are becoming interested in the fruit trees, notice the variety of birds that visit the different trees, for you will find each bird has its favorite fruit and favorite nesting-place. The mountain ash will perhaps feed as many birds in the fall and winter as any tree, and is a pretty tree for the lawn, holding its place with the maples, the ever graceful elm, admired by all, except the man who is trying to split it into fire-wood, and a favorite with the Baltimore oriole. If you wonder why the horse chestnut was so named, just examine the scars after the leaves fall and you will think it rightly named. Who has not tried carrying a horse chestnut in his pocket to prevent rheumatism? The weeping birch, as well as the weeping maple, are much admired for shade and ornamentation, but are not very common. We were told recently that the Lombardy poplar was coming back as a tree for our lawns, but many prefer the balm-of-gilead, so popular for its medicinal qualities. In the United States there are thirty-six varieties of the oak; you will find several in your own town and I trust will add a collection of acorns to your cabinet, and friends from the South and West will help make your collection a complete one. Then you will become interested in the cone-bearing trees and a variety of cones will also be added to your evergrowing collection, you will enjoy gathering some green cones and listening to the report as the seed chambers open, and if you gather a small vial of the common pine and hemlock seeds you will puzzle many a friend. One person remarked, when shown a vial of hemlock seed, "O yes, I have seen something like that, that came from Palestine, but I have forgotten the name." Some of the fir trees are pitted with holes where the woodpeckers insert grub-bearing acorns, leaving the grub to fatten, and in the fullness of time devouring it. Then the trees bearing edible nuts will call for their share of attention. The chestnut is familiar to all, as well as the butternut and hazelnut, but I knew one collector who called an ash tree butternut. There are twelve varieties of ash in our country, a wood that is coming more and more into prominence, and deservedly so; its toughness is proverbial, and it has long been utilized by carriage-makers for certain parts of wheels. A fine, handsome wood, combining in itself the qualities of oak and pine.

There are eighteen varieties of willow, several of the alder, but throughout the United States there is only one kind of beech. The ironwood is often wrongly called the beech. The hard and soft pine are interesting trees. The soft especially is a favorite for the sawyer, a beetle with long horns, who cuts large holes through the wood. When obtaining your specimen from the thorn tree you may be fortunate enough to see the shrike getting his breakfast from the thorns where he had placed it some time before. The locust with its fragrant racemes of white blossoms in the spring and long seed pods in the fall will call for attention, and you may perhaps receive, as I did, a locust seed from the tree planted by George Washington at his Mount Vernon home many years ago. The shumachs and white birches are very artistic and sought out by all artists, for who does not want to put a white birch into a landscape! Every one knows the black birch by its taste. The laurel has a pretty, fine grain. The witch hazel is another favorite for its medicinal qualities as well as its popularity for being the last blossom of the autumn. And many others will be added from the shrubs and vines until your collection, just from your own town, will number nearly, if not quite, one hundred. You will thus, too, have become interested in all nature and will be able more fully to appreciate all the beautiful things God has given us to use and enjoy.

## BIRD WORTH ITS WEIGHT IN GOLD.

POSSIBLY the rarest of all feathered creatures is the "takahe" bird of New Zealand. Science names it *Notornis Mantelli*. The first one ever seen by white men was caught in 1849. A second came to white hands in 1851. Like the first it was tracked over snow, and caught with dogs, fighting stoutly, and uttering piercing screams of rage until over-mastered. Both became the property of the British museum. After that it was not seen again until 1879. That year's specimen went to the Dresden museum at the cost of \$500. The fourth, which was captured last fall in the fiords of Lake Te Anau, in New Zealand, has been offered to the government there for the tidy sum of \$1,250.

Thus it appears that the bird is precious; worth very much more than its weight in gold. The value, of course, comes of rarity. The wise men were beginning to set it down as extinct. Scarcity aside, it must be worth looking at—a gorgeous creature about the size of a big goose, with breast, head, and neck of the richest dark-blue, growing dullish as it reaches the under parts. Back, wings, and tail-feathers are olive-green, and the plumage throughout has a metallic lustre. The tail is very short, and has underneath it a thick patch of soft, pure white feathers.

Having wings, the takahe flies not. The wings are not rudimentary, but the bird makes no attempt to use them. The legs are longish and very stout, the feet not webbed, and furnished with sharp, powerful claws. The oddest feature of all is the bill, an equilateral triangle of hard pink horn. Along the edge, where it joins the head, there is a strip of soft tissue much like the rudimentary comb of a barn-yard fowl.

"Around the glistening wonder bent  
The blue wall of the firmament;  
No clouds above, no earth below,  
A universe of sky and snow."  
—Whittier.



FROM COL. F.  
NUSSBAUMER & SON.  
A. W. MUMFORD,  
PUBLISHER, CHICAGO.

RED-TAILED HAWK.  
 $\frac{1}{2}$  Life-size.

COPYRIGHT 1899, BY  
NATURE STUDY PUB.  
CO., CHICAGO.

# THE RED-TAILED HAWK.

(*Buteo borealis.*)

C. C. M.

UNTIL recently the red-tailed hawk was classified with the obnoxious hawks which prey upon birds and poultry, but the Department of Agriculture instituted an investigation of this species and concluded that it has a far worse reputation with the average farmer than it deserves. The late Major Bendire asserts that, while it does capture a chicken or one of the smaller game birds now and then, it can readily be proved that it is far more beneficial than otherwise and really deserves protection instead of having a bounty placed on its head, as has been the case in several states. The red-tailed buzzard, as it is sometimes called, in its light and dark geographical races, is distributed throughout the whole of North America. Its food is chiefly small quadrupeds, red squirrels, gophers, and moles, and the remains of these rodents may be found in this bird's nest containing young. Where this hawk is found these small animals are most abundant. Longfellow in the "Birds of Killingworth," among the "Tales of a Wayside Inn," has written a defense of the hawks that the Audubon societies might well use as a tract.

The nest of the red-tail is placed in high trees in deep woods; it is large and bulky, though comparatively shallow, and is made of sticks and twigs mixed together with corn husks, grass, moss, and on the inside may be found a few feathers. It is said that sometimes the deserted nest of a crow or that of another hawk is fitted up and used. Mr. J. Parker Morris records a nest occupied first by the great horned owl and afterwards by the red-tailed hawk each year. The young owls leave the nest before the hawk is ready to occupy it. Two or three, rarely four, eggs are laid. Eggs are found as late as the middle or latter part of May. They present many differences in size and markings; their ground color is white or bluish white, some are entirely unmarked, while others are very heavily blotched and splashed with many shades of red and brown; and Davie says some are faintly marked here and there with a light purplish tint, and again the colorings may form an almost confluent wreath at either end. The average size is 2.36 by 1.80.

In old paintings the hawk is represented as the criterion of nobility; no person of rank stirred without his hawk in his hand. Harold, afterwards king of England, going on an important embassy into Normandy, is drawn in an old bas-relief, embarking with a hawk on his fist. In those days it was sufficient for noblemen's sons to wind the horn and carry the hawk.

According to Mr. Horace A. King this is one of the commonest birds of prey to be found in northern Illinois. They may be met with in all sorts of places, but are most common in the vicinity of heavy timber. In driving through the country one will see them perched upon rail fences, trees by the wayside, sitting on the ground in stubble or pasture fields, or soaring, over fields in search of their prey. When on one of his foraging expeditions, the red tail, on sighting his quarry, will remain at the same place in the air by a continual flapping of the wings, when at the proper time he will dart swiftly and silently upon it.

Mr. Claude Barton, while rowing up Flat river recently, came upon six mallards. At sight of him the birds took flight, following the river. About two miles further up the stream he again came upon the same flock. There were four ducks and two fine drakes. He hid his boat in the rice and watched them. All at once a large red-tailed hawk dashed into the flock. The ducks, with the exception of one, dove, and this one took wing, a swift pursuer following. The hawk did not seem to gain on his prize, and the poor duck was screaming with terror. Had the duck sought safety in the water it would probably have escaped, but it was too frightened apparently to think of it.

# A TRANSPLANTING.

ALICE WINSTON.

IT WAS the kitten who did it, though no one knew but Martha. Aunt Jenny thought it was the work of Providence and Aunt Amy thought it was the result of her own smiles and caresses. Aunt Mary never thought about it at all, of course. But really it was the kitten. And what was this thing that the kitten accomplished? The taming of Martha. And why did Martha need taming? Because she came at twelve, a very barbarian, with freckles and unmanageable hair, under the dominion of three smooth-locked ladies, who never had a freckle and whose hair had always been smooth.

Perhaps it would be better to begin at the beginning which was twenty years before there was any kitten. Most serene and happy would have been the lives of the three Miss Clarkes, if it had not been for Arthur. Arthur was their brother, and the combination of prim, blonde girls and harum-scarum black-eyed boy, made a most surprising family. The son and heir was not looked on as a success by his sisters and the other staid and respectable citizens of Summerfield. He did not join the church and he did not go to college, he wedded no one of the many eligible town's daughters, and, lastly, on his father's death he did not settle down at home, to take care of his property and his sisters.

This last of his misdeeds had made a breach between himself and his sisters. The more serious, because of the very deep affection which lay at the bottom of their half apologetic demeanor toward their brother. The difference between them was augmented by his removal to a far western town and his marriage with one of the natives. For the next twelve or thirteen years they never saw him and heard of him but seldom. Then he died suddenly, after accomplishing his task of wasting all his money.

So it happened that Martha saw her aunts for the first time on the day of her father's funeral, and her dim recollection was of cold faces and mannerisms which worried her mother. Martha was the eldest of four and her mother was one of the ornamental of earth, and her father one of the restless. So the first eleven years of her existence was wandering up and down through many cities, attended with much care for her slender shoulders, and an amount of worldly experience such as forty years of life had not given to the elder generation. Then her father died and they all went to share the spendthrift poverty of the home, whence her mother drew her ideas of domestic economy.

Through wifehood and widowhood, to her deathbed, Mrs. Clarke clung to an unreasoning hate of her sisters-in-law, and a dread of the time when her children must come into their hands kept her struggling against death for months.

But just one month after her pitiful fight was over, Martha started for Summerfield.

Poor Martha! Never captive carried to slavery felt such dread as did she on her eastward journey. When the friend who had borne her company left her at a station near Summerfield, even the stoicism of Martha gave way before the horror of the unknown and she clung to the last landmark of her old life, with a sobbing eagerness, which even a carefully nurtured child might know.

But there was no trace of frail, human grief in the little maiden who lifted the sullen blackness of her big eyes to Aunt Jenny's face that evening, who received Aunt Mary's greeting with a self-possessed composure alarming to that shy and gentle lady, and who gave the same degree of cold attention to Aunt Amy's sweet speeches.

They had looked forward to the coming of Arthur's daughter with a strange mixture of excitement, pleasure, and dread. The dread was predominant now. For this stern little woman was not their flesh and blood, not the child of their brother, but of the woman who had kept them apart from their brother in his trouble and sickness and death.

Martha was quiet and docile enough. In fact she did what she was told with a resignation most depressing. Aunt Jenny took her to church and the sight of her critical dark eyes roving over minister and congregation spoiled the sermon for Aunt Jenny. Aunt Mary told her stories of her father intended to be gently humorous. In the midst of them Martha jumped up and ran off into the garden. She cried there for half an hour, but nobody ever knew, and this business lost her the little hold she had had on Aunt Mary's heart. Aunt Amy tried to amuse her and took her to Sunday-school, and to the Band of Hope. She gave her a doll and invited the neighbor's children to come and take tea. The doll was a source of secret amusement to Martha, but the visits of these pretty and proper children were trials which she could scarcely bear with patience.

All the while, as the aunts half suspected, she was criticising everything that came within the ken of her hungry eyes. She found Aunt Jenny imperious, Aunt Mary dull, and knew that Aunt Amy was thinking of her sweet smile as she smiled. For Martha was outside of it all, a mere spectator of this life of peace and quiet and plenty, and she secretly hungered after something to care for—something to take the place of the little brothers and sisters who had always run to her to have their faces washed and their aprons buttoned. They expected her to play with dolls, she, Martha Clarke, who had had real work to do and had learned to push and crowd her own way.

Months went by and the barrier was unbroken. One evening the tea bell rang again and again without bringing any Martha. The aunts were in consternation. Had she run away or was it a case

of kidnapping? After nearly an hour the suspense was ended by the arrival of Martha. But such a Martha! Her neat raiment was muddy and torn. Her hair was in shocking disorder. Her right hand, tied up in a handkerchief, was emphatically bloody, but in spite of this, it was used to steady her bonnet, which she carried by the string, basket-wise, in her left hand.

Exclamations of horror and surprise burst from the astonished women. "Martha, where have you been? What have you been doing? What is the matter with your dress? Have you hurt your hand? Why, it's bloody! Has the child been fighting? Martha, are you going to answer?"

Martha was actually embarrassed. As she advanced into the lamplight they saw that her cheeks were crimson and her eyes sparkling, also that the contents of her bonnet was a dilapidated kitten. When she did speak, her voice was shriller than usual.

"I fell down in the mud and my hand is hurt," was her meager and hesitating answer.

"Where did the cat come from?"

"It isn't a cat, it's a kitten, and it was out in the yard, and I tried to catch it and it ran away and a dog chased it. When I came up, the dog was eating the kitten, and I hit him and then he bit me and pushed me down in the mud. But I'm going to keep the kitten." The last defiantly, then on second thought, she added:

"If you please. It's awfully hurt, that kitten."

In the silence that followed the shrill child-voice the aunts looked at each other and one thought was in the mind of each. "She looks like Arthur."

When Martha went to bed that night the kitten, with its wounds all dressed, was slumbering peacefully before the kitchen fire.

Time passed on happily for the kitten, which was not very much injured after all, and full of new interest for Martha, who plunged head and soul into the education of the kitten. Toward her aunts her feeling was unchanged. She drew a line between them and the kitten.

One evening Aunt Jenny and Aunt Amy had gone to prayer-meeting. Aunt Mary was not well and she sat bolstered up in a rocking-chair, knitting, before the bright fire in the sitting-room grate. Martha sat beside her, also knitting, in theory, but in practice carrying on a flirtation with the kitten, which was now a very gay kitten, indeed. An empty rocking-chair stood very near the fire and the kitten was leaping back and forth between its chair and Martha's, making its attacks with much caution and its retreats with much speed. Aunt Mary was sleepily watching the fun.

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Suddenly there was a loud crash. The kitten had fallen into the fire in such a fashion as to knock over the rocking chair in front of the grate. It was a prisoner in the fiery furnace.

Many years had passed since Aunt Mary had moved so quickly. She threw herself at the rocking-chair and flung it to one side. She snatched up the unfortunate kitten and made one rush to the kitchen and the kerosene can, and by the time Martha overtook her, was soaking the poor little burned paws.

Half an hour later when Aunts Jenny and Amy opened the sitting-room door, an astonishing sight met their eyes. The firelight redness flickered over the excited faces of Martha and Aunt Mary laughing and talking eagerly together, Martha no longer dignified and Aunt Mary no longer shy. That was the beginning of the end, but Aunt Mary was always Martha's favorite.

And it was the little kitten who did it.

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## TWO BIRD LOVERS.

SUNDAY afternoon the birds were sweetly mad, and the lovely rage of song drove them hither and thither, and swelled their breasts a main. It was nothing less than a tornado of fine music. I kept saying, "Yes, yes, yes, I know, dear little maniacs! I know there never was such an air, such a day, such a sky, such a God! I know it! I know it!" But they would not be pacified. Their throats must have been made of fine gold, or they would have been rent by such rapture-quakes.—*Mrs. Nathaniel Hawthorne, in a letter to her mother.*

Lovely flocks of rose-breasted grosbeaks were here yesterday in the high elms above the springhouse. How very elegant they are! I heard a lark, too, in the meadows near the lake, the note more minor than ever in October air. And oh, such white crowns and white throats! A jeweled crown is not to be mentioned beside theirs—such marvelous contrasts of velvets, black, and white! Swamp sparrows, too, and fox sparrows—I saw both during my last drive.—*From letter to Ed., from Nelly Hart Woodworth, Vermont, Oct. 20, 1899.*

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# WINTER TIME.

ROBERT LOUIS STEVENSON.

Late lies the wintry sun a-bed,  
A frosty, fiery, sleepy-head;  
Blinks but an hour or two; and then,  
A blood-red orange sets again.

Before the stars have left the skies,  
At morning in the dark I rise;  
And shivering in my nakedness,  
By the cold candle, bathe and dress.

Close by the jolly fire I sit  
To warm my frozen bones a bit;  
Or, with a reindeer-sled, explore  
The colder countries round the door.

When to go out, my nurse doth wrap  
Me in my comforter and cap,  
The cold wind burns my face, and blows  
Its frosty pepper up my nose.

Black are my steps on silver sod;  
Thick blows my frosty breath abroad;  
And tree and house, and hill and lake,  
Are frosted like a wedding-cake.



FROM COL. F.  
NUSSBAUMER & SON.  
A. W. MUMFORD,  
PUBLISHER, CHICAGO.

MARYLAND YELLOW-  
THROAT.  
 $\frac{3}{4}$  Life-size.

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## THE MARYLAND YELLOW-THROAT.

(*Geothlypis trichas.*)

C. C. M.

ONE of the first birds with which we became acquainted was the Maryland Yellow-throat, not especially because of its beauty but on account of its song, which at once arrests attention. *Wichity, wichity, wichity, wichity*, it announces from some thicket or bush where it makes its home. It is one of the most active of the warblers and is found throughout the United States, Canada, and Nova Scotia; in winter it migrates to the South Atlantic and Gulf States and the West Indies.

The nest is not an easy one to find, being built on the ground, under the foot of a bush or tussock of rank grass, sometimes partly roofed over like the oven bird's. The eggs are four or five, rarely six in number, creamy-white, speckled, chiefly at the larger end, with reddish-brown, dark umber, and black; in some, occasional lines or scrawls appear. The average size is .69 × .52

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inches. Oliver Davie says that the best description of this bird's song was given by Mr. Thomas M. Earl. One evening in May, 1884, he was returning from a day's hunt, and, after a rest on an old log, he was about to start on his journey homeward. At this instant a little yellow-throat mounted a small bush and, in quick succession, said: *Tackle me! tackle me! tackle me!* The fact is, the yellow-throat has several notes and is rather noisy for so small a bird. It is known by other names, as black-masked ground warbler, black-spectacled warbler, brier wren, and yellow brier wren.

The female is much duller in color than the male, without black, gray, or white on head. The young are somewhat like the adult female.

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# BOB-O-LINK.

GRANVILLE OSBORNE.

Soaring high up in the bright blue sky,  
Can't keep track of him if you try;  
Flitting around in the pasture lot,  
Likes to be friendly, rather than not;  
Dancing along on the old rail fence,  
Sunshine and flowers where the woods commence;  
Got so he almost talks to me;  
Head a-nodding, he says, says he—  
"Bob-o-link, o-link, o-link."

Clover and buttercups just seem to try  
Coaxing him up in the meadow to fly;  
Bees hunting honey keep buzzing around,  
Seem to know best where the sweetest is found,  
Almost forget when a-hearing him sing  
What kind of honey they all came to bring;  
Pert and saucy as he can be,  
Tail a-flitting, he says, says he—  
"Bob-o-link, o-link, o-link."

Wings jet black and glossy as silk,  
Waistcoat a-gleaming as white as milk;  
Dainty and slender, quicker than light,  
First in the morning, last one at night,  
Perched on the post of the barn-yard gate,  
Singing his sweetest to waken his mate;  
Dressing his feathers and winking at me,  
Mincing around, he says, says he—  
"Bob-o-link, o-link, o-link."

# A STUDY OF THE COLOR PHOTOGRAPH.

**T**HE color photograph is found to be most useful in developing the color sense in children. The act of recognizing various colors and shades is educative. When we consider that all the effects of the color photograph are produced by combinations of the three primary colors we at once step into a realm of thought and observation that is boundless. The danger is that we may attempt too much with the abundance of material at hand and, by forgetting the limitations of the unformed mind, confuse instead of enlighten.

It is well for the teacher to know the process by which the color photograph is produced, but young children who know little of the laws of light are not expected to understand it fully. In advanced classes the following will be found beneficial:

A natural object is placed before a camera and a water screen is adjusted so no rays but the yellow may reach the photographic plate. A negative is thus obtained recording all the yellow that appears upon the surface of the object, whether it shows as pure yellow or in combination with other colors. With the camera and object in exactly the same position and another screen which absorbs all the rays but the red ones coming from the object, a negative of the red is obtained. A third negative of the blue in the object is similarly got, and we have an accurate representation of the form and all the colors of the object separated into red, yellow, and blue.

From these negatives three half-tone plates are made upon copper. A half-tone plate is an acid etching produced by photographic process with fine lines crossing each at right angles so that the picture appears as a series of microscopic square points which decrease in size in the lighter portions of the plate.

Red, yellow, and blue inks of the rarest quality are used in printing from these plates, with great care exercised as to getting the exact depth of color required for each. By placing a sheet of fine tissue paper beneath a plate printing red, the red is deepened, another sheet makes it more intense, and others are placed under the plate, if necessary, to get the rich red required to blend with the yellow and blue to make the exact reproductions of nature's colors which appear in the color photograph.

The order of the printing is yellow first, and when this is thoroughly dry the red is laid on, and the blue a day later. As the color is nowhere a solid mass, but a series of points, one color does not hide another, but the three colors shine through and make the blendings which appear in the beautiful and delicate shades and tints of the color photographs.

Do not manifest surprise when you find pupils wholly or partly color blind. The boy who cannot find a red marble in the grass will show by his conversation that red and green are the same to him. His is an extreme case, but there are many who are slow to name the primary colors and totally fail to recognize differences in tints.

For ordinary purposes there should be little effort given to the naming of the shades. If the colors are talked about by name, enough is done in the line of language. But classes become readily interested in comparing reds, and blues, or greens to say which is the deeper or the purer. The location of a patch of color often changes its apparent intensity. Contrast with surroundings may deceive the eye. Whistler has used Naples yellow so the observer declares it pure white.

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A good exercise in color recognition is given in choosing masses of color on the picture and telling what primary colors are in them; also in comparing two masses and saying which appears to have the more red or yellow in it.

Where the class have water colors excellent practice may be had in selecting and mixing colors to correspond with a given one. The mixing should be first tried without placing the mixed mass beside the copy. Very young children often make surprisingly accurate judgments of color, and no game pleases them more than a mixing contest, having the game decided in each instance by placing the best work beside the original.

No pictures have inspired so many young people with a desire to copy as have the color photographs. Their perfection of detail has not discouraged such attempts. The more easily copied lithograph has no such fascination. This shows that the nearer we approach nature in any presentation the more strongly we appeal to human nature and draw out its latent powers.

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# THE PILEATED WOODPECKER.

BELLE P. DRURY.

**T**HIS noble bird may be found in wooded districts of Illinois, but I made its acquaintance in the Indian Territory, where it is quite common.

In size and beauty of color it is second only to the ivory-billed.

The Choctaw Indians told me it was the "Good God" bird. I asked what they meant by that designation. The reply was "Only listen and you will know."

For days I spent much time watching several pairs as they flew about among the trees on the Shawnee Hills, but the only sound I heard was the hammering of their strong stone-colored bills on the sides of the trees, a noise that might easily be heard a quarter of a mile away. They did not descend to fallen logs for their prey but made the chips and bark fly from the upright trees.

Naturalists say the pileated will occasionally leave the insect-laden trees in search of fruit and grain, a thing the ivory-billed never does.

My beautiful, noisy companions eyed me and my opera glass suspiciously, trying always to keep on the other side of the tree from me, and, for a time, gave me no hint of the reason for their Indian name.

But at last a hunter appeared upon the scene when the frightened birds bounded away through the air uttering a cry which did indeed resemble the words "Good God," spoken in guttural tones. The marksman brought down a fine specimen, which he gave to me. With magnificent red top-knot and wide-spread wings it looks as if it might be longing to fly back to its home among the Shawnee Hills.

# THE LYRE-BIRD.

(*Menura superba*.)

LYNDS JONES.

IF AUSTRALIA were noted for no other thing than the ancient and strange animal forms which are to be found nowhere else on the earth, it would still be a wonderful continent. Not the least remarkable of these forms is the lyre-bird, the subject of the present sketch. Since its discovery on January 24, 1798, by one Wilson, it has been handed about among the different orders of birds by different systematists until its anatomy seemed to give it a more or less permanent place among the birds of passerine form, in spite of its fowl-like build and strong legs and large feet.

The appearance of the bird, except the superb tail, is not remarkable; but paradoxical as it may be, the tail is the bird's crowning glory, at once giving it a name and fame. Like many other cumbersome things, the lyre-bird's tail is used for ornament during a part of the year only, being donned at the mating season and doffed at the close of the nesting period. It assumes the lyre-shape only when voluntarily spread, appearing simply as a long, greatly developed tail at other times. The bird throws up a mound of earth, dome-shaped, which serves as a raised platform or stage well suited to tail spreading and other courting antics. Strutting and wing-dragging are accompaniments of the tail-spreading, and strongly suggest gallinaceous affinities, especially since the bird is the size of the ordinary barn-yard fowl.

In habits the lyre-bird is lowly, preferring the ground to bushes or trees, and running from danger rather than flying, the strong legs and feet permitting a swift retreat. Rarely the bird may mount a tree, ascending branch by branch instead of flying up at once. They are said to use the wings to aid them in running, and in hopping upward in the trees. They are so wary and timid that it is difficult to secure specimens except by resorting to deception or the use of dogs. The barking of the dogs drives them into the trees, allowing the hunter a fair mark. They are inhabitants of the dense brush from which it is next to impossible to dislodge them.

Authorities agree that the lyre-bird's powers of song are remarkable. It seems to have the power of mocking almost every other bird, as well as the barking of the dingo, besides possessing a sweet song of its own. One author states that for the first two hours of the morning it repeats over again its own song, then gradually changes it to imitate other birds, ending its four-hour song period with imitations of all the other birds within hearing, then remaining silent for the rest of the day.

The nest is a dome-shaped affair with the opening in one side, made of "small sticks, interwoven with moss and fibers of roots." "The single egg laid is of a very dark color, appearing as if it had been blotched over with ink." The young emerges from the egg a downy white ball, perfectly helpless, and remains in the nest for several weeks. The food seems to consist of insects, myriapods, and snails, of which large quantities must be destroyed to satisfy a bird of this size.

This is another of the world forms which are doomed to complete extinction. It is to be earnestly hoped that the time of its disappearance will await a more careful study of its habits than has been accomplished thus far. A study of these curious forms can hardly fail to throw much light upon the development of the bird fauna of the world.



FROM COL. F.  
KAEMPFER.  
A. W. MUMFORD,  
PUBLISHER, CHICAGO.

LYRE BIRD.  
 $\frac{1}{5}$  Life-size.

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# ROBERT AND PEEPSY—THE TWINS.

NELLY HART WOODWORTH.

**I**N THE latter part of May a pair of Baltimore orioles built a nest in my maples, from which, eventually, a brood of noisy fledglings were launched upon the world. A quantity of Hamburg embroidery was woven into the nest and festooned gracefully from the outside.

This was obtained from my neighbor's washing as it lay bleaching upon the grass, a task demanding more time and strength than seemed necessary for useless ornamentation.

To all appearance the esthetic taste of the builders was more pronounced than was their family discipline.

The children were a clamoring, rollicking group, pushing each other about and insisting, forcibly, upon a high point of view that constantly threatened their frail lives. I was in constant fear lest they come tumbling down and it was not long before my worst fears were realized.

They fell, with a shower, upon the morning of the 23rd of June, tumbling pell-mell into the strawberry bed, the biggest baby picking himself up in a hurry, and climbing upon one of the fence wires.

The other nestlings were marched off by the head of the family to other fields of observation, the first little bird hopping from the fence to a wild rosebush that grew beside the kitchen door.

There he was fed by his father during the day; as his mother did not appear I inferred that she had her hands full with the other children.

Neither parent appearing the next morning, the first baby was put into a grape basket upon the window-sill.

Before noon the old birds came; the wire netting was removed from the window, both parents coming at short intervals into the kitchen with food.

To my surprise they did not return the following morning, when I fully intended to speed the parting guest, though the little one was placed in a cage outside the door. The helpless infant was left in an orphaned condition to my care; he could not feed himself, nor did he understand, under my tutelage, how to open his beak when food was brought. It was necessary to pry it open, the lunches coming so often that nearly all my time was spent in attending to his meals. That very evening the chore-boy brought a lank, long-legged bobolink which was given into my keeping only because it was threatened with starvation.

Like the oriole he was too young to feed himself and had been for twelve hours without food.

A more uninviting specimen of babyhood could not be imagined, forlorn, ragged, with unfeathered spaces upon his homely little body; but, though he had none of the oriole's commanding beauty, he was sure to perish unless regularly adopted and his infant wants supplied.

He was placed in the cage while the oriole was taking a nap, the introduction prefaced by being stuffed till his bare little crop was as round and full as an egg. Mrs. Olive Thorne Miller, who was with me at the time, assisted at the christening of the pair.

As the oriole was always peeping we called him "Peepsy;" the bobolink was named "Robert" with due respect to the Robert-o-Lincoln family.

They were oftenest called "the twins," and troublesome twins they were, waking me at three o'clock each morning and crying loudly for their breakfast, which was prepared the previous evening.

Peepsy was first taken in my hand and given a few mouthfuls, then Robert's turn came, after which Peepsy was thoroughly fed and when Robert's demands were appeased, both birds were returned to the cage for another nap.

After sleeping innocently for another hour they awoke, insisting with emphatic protest upon an immediate supply of rations.

There were times when they jerked their heads from side to side and not a morsel was safely lodged or appropriated, persisting in the clamor until, after patient effort, both little creatures were satisfied at last.

As may be surmised this was no enviable task, though the twins went promptly to bed at dusk leaving me free for the evening.

Peepsy was far the brighter bird. He took the lead at first, helping himself to his meals at times, twinkling the soft brown wings at my approach with most flattering evidences of favor.

Robert was a different bird; he scratched and bit, flopped about and hissed out his disapprobation.

The last was not without compensations. Whenever his beak was opened wide in disapproving hisses the opportunity was seized to fill it with food.



Sometimes his tactics changed; he would throw back his head and refuse to swallow. In a short time he took on prettier ways, now and then coaxing a little while receiving his meals with dainty baby eagerness.

From first to last their tastes diverged; Peepsy was high-born, Robert was of low degree. These low-born instincts preferring the cage floor he was given a sod to stand upon, the oriole's decided preference for higher stations culminating in the swing, his both by right of preference and forcible possession. In ten days Peepsy began to believe himself a full-grown bird. Then began an investigation of the cage and its appointments, diving into every corner, thrusting himself into the drinking cup as far as its size would allow, playing with the food, and throwing the earthworms given him to the top of the cage before attempting to swallow them. He would thrust his beak into Robert's feathers or catch hold of his legs, while the bobolink with ruffled plumage drew back with becoming indignation. He certainly *was* a homely baby which did not excuse the other twin for putting on airs, regarding him with lofty condescension, or stepping on his big, sprawling feet when they came too near. This unseemly behavior may have accounted for Robert's despondent hours from which he emerged to sing low and tentatively with the tinkling music of falling raindrops. Then they tried to stand upon one foot, balancing with great difficulty meanwhile, crowding into the swing and tumbling out upon the floor together.

In utter indifference to his own toilet Peepsy insisted upon preening Robert's plumage, calling his attention to the matter by vigorous pulls at his tail, or jerking some truant feather that beauty or tidiness required to be smoothed into place.

This unappreciated service was resented with many hisses, darting at the persecutor with wide-open beak and dire threatenings of vengeance, after which they cuddled up lovingly together for a nap.

For several days this self imposed helpfulness was so officious that the twins were separated lest Robert's temper, not over-good at the best, be permanently spoiled.

On this account Peepsy had the liberty of the house and went oftenest abroad. What with a better disposition and more enticing manners there was no resisting, whether it was coaxing to sit upon my finger or happy as bird could be when admired and caressed.

He would fly to my shoulder, pull a stray lock of hair lying against my throat, dodge skillfully when the hand was raised in protest, only to reappear and bite my lips as they moved in cautioning words.

He followed me to my chamber morning by morning, hopping up the stairs one at a time till we reached the top, when he flew to my shoulder and entered the room master of ceremonies.

As the clothes were replaced upon the bed he darted down upon sheets and blankets on purpose, seemingly, to be "shooed" away. Too much notice was spoiling the child, though his reign, poor baby, was short!

He was quite independent as to feeding himself when Robert first began to pick up cracker crumbs. What was stranger still, when the bobolink was well-versed in such matters, his memory was so unreliable that he forgot how to eat over night and had to be taught all over again for several mornings, nor would he swallow till the egg or cracker was thrust clear down his throat.

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After the first month, in which the oriole took the lead, the order was reversed. Robert was first thereafter, coming to the front and taking entire charge of the establishment, chaperon, servant, adviser, nor was he above making sarcastic remarks at the expense of the faithful companion who followed closely at his heels.

He pecked at the little blue kid shoes on the perch above, pulled the tiny toes, tweaked the feathers and tried to pull them out, and behaved generally, I regret to say, most impolitely. With this increased assurance there was a marked gain in song.

He sang while we breakfasted or dined, the same ideally happy bobolink medley, a new discovery of the joy of living, lifting his voice in rainy days in rhythm with the shower, Peepsy joining with sundry encouraging notes but no real song.

After the first month both birds were fond of the bath; water in bowl, pitcher, or tumbler, was a challenge seldom ignored.

Robert's short memory and inexperience were liable to mistake the dish of cracker and milk for a bath tub, crowding into and flirting the contents over chairs and floor. He was specially fond of my mother, planting his feet in her soft, wavy hair and jerking her locks in utter disregard of all threatening.

The door to the next room, left ajar, was a ceaseless fascination. When the cage door was opened they started promptly, Robert leading, Peepsy following meekly, till they reached the crack in the door, stretching out their necks and peering with curious eyes into the room beyond; then, as if confronted with some terrible ogre they turned quickly about and hopped back to the cage.

The hidden possibilities were too great. In a moment back they came, repeating the search over and over, till the door was thrown open and they were at liberty to explore the terrors and resources of the room beyond. After one of these excursions Peepsy was found fast asleep in the narrow space between the door and the wall!

Both birds were very curious over the sweeping, Robert superintending, keeping just in front of the broom, hopping straight into the dust-pan, bristling his feathers when reprov'd, or flying, in frigid terror, if pursued. They helped also in preparing the meals, following from kitchen to pantry, from pantry to kitchen, till a too generous attendance was checked for the time by compulsory return to the cage.

Ignorant of all fear they became my constant companions from room to room, from house to garden and orchard, when wild birds looked down in wonder, coming from the higher branches to peer and question, Peepsy answering politely, fluttering the brown velvet wings in unavailing winningness, while Robert silently ignored their inquisitive ways. During the intense heat of midsummer I saw less of the twins than usual, the house being darkened as much as possible to exclude the heat. Opening my door I heard the patter of little feet as they crossed the hall; Peepsy stood upon the threshold and, with a welcoming chirp, flew towards me, coaxing and nestling against my cheek with many evidences of gladness.

The heat of the day was waning; the sun had withdrawn from the valley; the heights were radiant still, the peaks of the mountain range dazingly lit with golden light. I carried the bird out-of-doors and across the way where children were playing, the tiny guest enjoying the call thoroughly, lurching upon raspberries, exploring the rooms, "trying on" each nook and corner, and regarding with astonished interest a huge feather duster that lay upon the carpet.

Advancing and retreating before the huge monster, ruffling his feathers in rage, he hopped around it several times before his courage was equal to an attack. Then, with wide-spread wings he charged upon the savage enemy, striking it with his beak, trampling upon and biting the feathers.

When we returned Robert's indignation knew no bounds; he was furious.

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He might have been jealous that Peepsy went abroad while he stayed at home; anyway, he pounced upon his brother in angry passion, caught his foot and jerked him off the perch, pulled out his feathers and tumbled him over upon the floor, when I interfered promptly.

As it was past their bedtime I saw them safely asleep, both little heads laid snugly against their wings, and thought by morning the quarrel would be forgotten. When I saw them next poor little Peepsy lay dead upon the cage floor. I strongly suspect that Robert rose early to help him out of the world; at least there was no appearance of suicide!

The remaining twin sang freely for a few hours; he had vanquished an imaginary foe and was singing the song of him who overcometh.

After that he seemed preyed upon by remorse, nor was he ever himself again, refusing food and pining away gradually through the few remaining weeks of his short life, when, in spite of all his faults, he died, as the storybooks say, much loved and lamented.

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FROM COL. F.  
NUSSBAUMER & SON.  
A. W. MUMFORD,  
PUBLISHER, CHICAGO.

COW BIRD.  
½ Life-size.

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# THE COWBIRD.

(*Molothrus ater.*)

C. C. M.

"**B**UFFALO-BIRD" was formerly one of the names applied to this bird of strange habits, and Major Bendire, who was long an observer of all that took place on the plains, states that one will rarely see a bunch of cattle without an attending flock of cowbirds, who perch on their backs searching for parasites, or sit with "lazy ease," their familiarity with the cattle suggesting their name of cowbird. They also follow the freshly plowed furrows and pick up worms and larvæ. Mr. P. M. Silloway, who has made a very extended and careful study of the cowbird, says that its strange behavior and stealthy movements at certain seasons have prevented the acquisition of full data concerning many features of its life, and a few unfounded speculations about its habits have become current. It occupies a parallel place with the European cuckoo. It never builds a nest, but deposits its eggs in the homes of other birds, usually those of the smaller species. It is, therefore, a homeless creature, and its young are all orphans or adopted children. "It is, indeed, a peculiar bird, having no attractiveness of color, no beauty of voice, and no home. No wonder that, when in the haunts of other species, it hides and skulks as it seeks a suitable and convenient habitation to house its unborn orphan." Major Bendire gives a list of ninety-one birds in whose nests she has been known to leave her eggs. This includes woodpeckers, flycatchers, orioles, thrushes, sparrows, vireos, wrens, and warblers, but the most frequently imposed upon are so small that the cowbird's big nestling is almost certain to be the one to survive, the smaller birds being crowded out, and left to perish. It is said that as many as seven cowbird eggs have been found in a single nest, but there is generally only one. It is believed that a brood of insectivorous and useful birds is almost invariably sacrificed for every cowbird raised. Mr. Ridgway, in his fascinating book on the birds of Illinois, gives the following vivid picture of the female searching for a nest in which to deposit her egg: "She hunts stealthily through the woods, usually among the undergrowth, and when a nest is discovered, patiently awaits from a convenient hiding-place the temporary absence of the parent, when the nest is stealthily and hastily inspected, and if found suitable, she takes possession and deposits her egg, when she departs as quietly as she came." "In the village of Farmington, Conn.," says Florence A. Merriam, "we once saw a song sparrow on a lawn feeding a cowbird bigger than she. When she handed it a worm, one of my field class exclaimed in astonishment, 'I thought the big bird was the mother!'"

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Some of the foster parents abandon their nests, or build a second nest over the eggs, but usually the little bird works faithfully to bring up the foundling. Sometimes the egg is recognized by the mother and quickly thrown out. Frequently, also, the cowbird will eject one or more eggs of the owner to make room for her egg, or to deceive the owner and leave the same number of eggs as were in the nest before her visit. Sometimes an egg of the owner is found on the ground near a nest containing an egg of the cowbird, and it is no unusual occurrence to find an egg of the cowbird lying near a nest of a species regularly imposed upon by the parasite. Silloway says that the wood thrush, towhee, field and chipping sparrows, yellow-breasted chat, and the Maryland yellow-throat are oftenest selected to bear the burden of rearing the young of the cowbird.

In their courtship the males are very gallant. They arrive from the south several days in advance of the females. At this season—about the middle of March—they generally associate in groups of six or eight, and the males are easily distinguished by the gloss of their black plumage in contrast to the dull brown of the female. They do not pair, the females meeting the advances of the males indiscriminately. Dr. Gibbs, however, thinks that the birds may pair frequently for the summer, and suggests this as reasonable, referring to an incident coming under his notice when he saw a blue jay, on the point of despoiling the nest of a vireo, driven away by a pair of cowbirds in a most valiant manner. In going to the nest he found a large over-grown cowbird occupying the largest share of the structure, "while a poor little red-eyed vireo occupied a small space at the bottom, and beneath his big foster brother."

The eggs of the cowbird hatch in eleven or twelve days. They average .88 by .65 of an inch, the length varying from .95 to .67 of an inch, and the width varying from .72 to .58 of an inch. The ground is a dingy white or gray, and the markings vary through all the shades of brown, sometimes evenly distributed over the surface, and at other times predominating around the larger end. There is so much diversity in the appearance of different specimens, that frequently the investigator is puzzled in distinguishing the true eggs of the towhee, cardinal, and other species from those of the cowbird.

In the breeding season the male grackles, red-winged blackbirds, and the cowbirds of both sexes, nightly congregate to roost together. Early after the breeding season they form into flocks of from fifty to sixty. The birds have then finished moulting, and the glossy black of the males has been changed into the duller colors of the females and the young. They assemble with the blackbirds of various species where food is most abundant and easy to be procured.

Late investigations of the food habits of the cowbird indicate that the species is largely beneficial. Prof. Beal showed the food of the cowbird to consist of animal and vegetable matter in the proportion of about twenty-eight per cent. of the latter. Spiders and harmful insects compose almost exclusively the animal food, while weed seeds, waste grain, and a few miscellaneous articles make up the vegetable food. Mr. Silloway thinks "it is not improbable that the so-called insectivorous birds displaced by the cowbird are thus kept in check by this natural agent, and

their mission performed by the usurper in directions as helpful as the special functions of the sufferers. We may later come to understand that one cowbird is worth two bobolinks after all."

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# THE LEGEND OF SAINT SILVERUS.

There runs an old, old legend,  
A tale of Christmas time,  
Low breathed round the fireside  
In distant Northern clime;  
It tells how once an angel  
Looked down in mercy sweet,  
And bade the people listen  
To hear the Master's feet:  
"Behold the Christ-child cometh!  
The King of love is near!  
Oh! bring your gifts of Noel  
Unto the Lord most dear."

With golden grain of plenty  
Fair shone each raptured home;  
The corn crown'd every dwelling  
Whereto the Christ should come.  
And one, a blue-eyed stripling,  
In longing all unknown,  
With heart aflame had labored  
For gift that God might own:  
"Behold the Christ-child cometh!"  
Up rose the music blest,  
And Silverus stood waiting  
With sheaf the richest, blest.

A tiny bird, nigh fainting,  
A little trembling thing,  
Through chilling airs of Christmas  
Drew near on drooping wing;  
The people raised a clamor,  
They chased it from the corn,  
They drove it from the garlands  
That gleamed for Christmas morn:  
"Behold the Christ-child cometh!"  
His praise they fain would win;  
How could they bring to Jesus  
An offering marred and thin?

On drooping, dying pinion  
That vainly sought relief,  
The shivering bird down lighted  
Where shone the proudest sheaf;  
And Silverus moved softly,  
Though dews all wistful stirred,  
Close, close within his bosom  
He fed the fainting bird:  
"Behold the Christ-child neareth!"  
He spake in faltering tone,  
"The golden ears are broken,  
Yet broken for His own."

And while the sheaf of beauty  
Grew marred and spent and bare,  
The sweet bird flew to heaven;  
The King of love stood there:  
"Oh! tender heart and Christlike,  
Whose yearnings soared on high,  
Yet could not see, uncaring,  
My weakest creature die!  
Lo, I am with thee always,  
My Christmas light is thine;  
The dearest gift of Noel  
Is pity poured for mine!"

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## BIRDS GATHERED HIS ALMOND CROP.

**A**N ALMOND-ROWER of this locality hit upon a neat device for gathering his crop last fall. His trees bore largely, and this early became known to the yellowhammers, a species of the woodpecker tribe of birds, and they had regularly stored away large quantities of ripe nuts taken from the orchard in the limb of an oak tree near by. The astute orchardist watched operations, and at last hit upon a novel nut and labor-saving plan, and he lost no time in putting it into execution.

The limb was sawed from the tree and replaced by a square-shaped funnel, long enough nearly to reach the ground; a bucket was then set underneath. A genuine robbing game then went merrily on. The birds gathered the nuts, which they dropped into the funnel and down into the bucket below, and as regularly as night came the almond-grower would in his turn empty it of its contents and set it back for a new supply. This was kept up until the entire crop had been gathered and the yellowhammers had departed broken-hearted at the heartless deception practiced upon them.—*Sutler (Cal.) Enterprise.*

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## STORIES FROM BIRDLAND.

**A** SPECIMEN of the egg of that rara avis, the great auk, which was discovered after twenty-seven years in a disused attic in the house of Lord Garvagh in England, recalls to mind the fact that only about seventy of these zoölogical treasures are now known to exist. Of these G. F. Rowley of Brighton possesses half a dozen, while Prof. Alfred Newton of Cambridge, the well-known zoölogical expert, has half that number. The same gentleman discovered a splendid set of ten, labeled "penguin eggs," in the Royal College of Surgeons upward of thirty years ago, while the university museum at Cambridge possesses four, which were the gift of the late Lord Lilford, whose beautiful grounds at Oundle were a veritable paradise of bird life. One of these was brought to light in a farm-house in Dorsetshire, and another changed hands in Edinburgh for a mere trifle. It is a remarkable fact that, whereas in 1830 the market price of a great auk's eggs was no more than \$1.25, Lord Garvagh's specimen was bought from Dr. Troughton in 1869 for \$320; Sir Vauncey Crewe, in 1894, paid \$1,575 for one; in 1897, another was knocked down in London for \$1,470, and a slightly cracked specimen went about the same time for \$840; not so long ago a couple of these eggs was purchased at a country sale for \$19 and resold for \$2,284.

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Some few years ago a robin took up his abode near the communion table in the old abbey at Bath, England, and remained there for some considerable time; his victualing department being presided over by a friendly verger, he naturally had every inducement to remain, and remain he did. During sermon time, with the exception of an occasional chirp of approval, he preserved an exemplary silence, neither coughing nor yawning, but when the hymns were sung, and he perched himself on the communion rail, his voice could be heard high above those of the human singers. All redbreasts, however, do not behave so well, and one at Ely cathedral some time ago carried on in such a manner that he brought disgrace on his tiny head. During the service he behaved fairly well, but when the clergyman ascended the pulpit and began to speak, the robin deliberately perched himself on an adjacent pinnacle of the chancel screen and began to sing, and the louder the preacher spoke the greater volume of sound proceeded from the irreverent bird, till he had to be removed.

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The first place in the ranks of birds was until lately given by naturalists to eagles and hawks. The low-foreheaded tyrants are now dethroned, and the highest development of the race is reached in the family of the sparrows, if the following story be true. A man was feeding with breadcrumbs a wood pigeon at his feet. One of the bird's feathers, which was ruffled and out of place, caught the eye of a sparrow; the little bird flew down, seized the feather in its beak and pulled its best. The feather did not yield at once, and the pigeon walked off with offended dignity. The sparrow followed, still holding on; and, in the end, flew off triumphant with the trophy to its nest.

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# DECEMBER.

Down swept the chill wind from the mountain peak,  
From the snow five thousand summers old;  
On open wold and hill-top bleak  
It had gathered all the cold,  
And whirled it like sleet on the wanderer's cheek;  
It carried a shiver everywhere  
From the unleafed boughs and pastures bare;  
The little brook heard it and built a roof  
'Neath which he could house him, winter-proof;  
All night by the white stars' frosty gleams  
He groined his arches and matched his beams;  
Slender and clear were his crystal spars  
As the lashes of light that trim the stars;  
He sculptured every summer delight  
In his halls and chambers out of sight.

\* \* \* \* \*

'Twas as if every image that mirrored lay  
In his depths serene through the summer day,  
Each fleeting shadow of earth and sky,  
Lest the happy model should be lost,  
Had been mimicked in fairy masonry  
By the elfin builders of the frost.

—*Lowell.*



FROM COL. F.  
NUSSBAUMER & SON.  
A. W. MUMFORD,  
PUBLISHER, CHICAGO.

WILD CAT.  
½ Life-size.

CHICAGO COLORTYPE  
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# THE WILD CAT.

(*Lynx rufus*.)

C. C. M.

THE species of lynx found in forests in the United States is the red or bay lynx. Its popular name is wild cat, but it is a true lynx, with the ear tufts characteristic of that group, and differs from the other members of it principally in the color of its fur. It is a resident of every part of the United States from ocean to ocean. The general color is usually red, but darker, and sometimes nearly black along the backbone, while under the body it is whitish and on the breast pure white. The entire fur, except the breast, is covered with spots and streaks of darker fur. The length of the body and head is about fifty-three inches and the tail is six inches long. The color of the fur is of a brighter red in summer and a darker brownish-red in winter. Different writers have classified several species of the American lynx, including the Texas lynx, which is found in Texas, and southern California; the Oregon lynx, which inhabits northern Oregon and Washington. There is also a Florida lynx. It is believed there is not much justification for these divisions, which Brehm says are based principally upon the different markings of the fur, and that in a general way it may be said that the specimens obtained from southern climates have shorter fur, which is more brightly colored and more distinctly spotted than those from the northern regions; but otherwise these animals do not differ in their habits and characteristics, which are those of the lynx group in general.

The natural home of the wild cat is a dense forest abounding in deep thickets and game. It rarely seeks sparsely-wooded sections. Sometimes it will hunt the hare even on the plain, and a prairie fire will drive it to the neighborhood of settlements. It is capable of great endurance in walking, can leap an astonishing distance, climbs well, and is said to be a good swimmer. Its sense of hearing is very acute, and its sight keen. It is a night-prowler, hiding at the dawn of day, and remaining still until evening. The wild cat selects for its lair a deep thicket, a cavern, or hole in a tree trunk.

As the shades of evening fall, says Brehm, it becomes active. During the day it seems as rigid as a statue, but at night it sets out, and on the first part of its journey makes frequent pauses, like those made by the domestic cat previous to entering an enclosure that appears to threaten danger. Only a very inexperienced person could mistake the spoor of the lynx for that of any other animal. The imprint is very deep owing to the strength of the paw, which exceeds that of a large wolf. It is very round and, as the claws are hidden, it is blunt in front. The pace is short compared with the size of the imprints made. The spoor takes a form something like that of a row of pearls; any one who has once seen it is sure to recognize it again.

The wild cat seems clumsy; its body is heavy, but it possesses the agility of its kind and surpasses them in rapidity of movement and endurance. Almost all animals and birds are its prey, although only the strongest lynx will attack deer. In temperate climates it is detested by the farmer and sportsman as it kills more than it needs, for its sustenance, often merely lapping the blood of its victim, and eating only the choicest portions. In the south it will not return a second time to this food, but in the north, where game is scarce, it always returns, remaining near the carcass until it is all eaten.

The wild cat has been tamed but it has not been found to be a very attractive animal to handle when angry. Loewis gives the following report of a female that he kept. He says: "A few months sufficed to teach my young lynx her name, 'Lucy.' When, during a hunting expedition, I would call out this name, together with those of numerous dogs, she would always respond to her own name, but to no other. Her training had been very easy and had reached such a point that when she was engaged in a passionate, but forbidden chase of hares, sheep, or poultry, and I called her, she would stop instantly and return, like a guilty dog, crouching low on the ground and pleading for mercy. When she was too far away to hear our voices, the report of a gun was sufficient to call her back in breathless haste. Lucy took part in all my autumnal hunting-trips. When she got sight of a poor hare she at once engaged in hot pursuit, and, in spite of her great excitement, she always had enough reasoning power to gauge the distance and to approximate the difference between the hare's speed and her own. She would obey only my brother's and my own summons, and showed no respect to any other persons. When we were both absent for a whole day, nobody could control her, and then, woe be unto the careless chicken or the thoughtless goose! During our absence she would, as soon as it became dusk, climb on the roof, lean against the chimney, and go to sleep. As soon as our carriage came into the yard, late at night, she sprang to the stairs in a few bounds. If I then called her name she would come to me quickly, put her strong fore-paws on my shoulders and, purring and rubbing herself against me, she would follow me into the room and prepare to pass the night on the bed or the lounge."

The fur of the lynx is very valuable. The Scandinavian specimens are counted among the largest and finest. Siberia and Russia furnish many thousands of skins. The flesh is said to be very palatable. It is light colored and tender, like the best veal, and is free from the disagreeable taste so common in game. The lynx was known to the ancients but was exhibited much more rarely in Rome than the lion and leopard, because even then it was so much more difficult to take alive. The one that Pompey exhibited had been captured in Gaul. The life of the wildcat in the natural state was shrouded in mystery which left room for many fables.



# CHRISTMAS ONCE IS CHRISTMAS STILL.

PHILLIPS BROOKS.

The silent skies are full of speech,  
For who hath ears to hear;  
The winds are whispering each to each;  
The moon is calling to the beach;  
And stars their sacred wisdom teach  
Of Faith and Love and Fear.

But once the sky its silence broke,  
And song o'erflowed the earth;  
The midnight air with glory shook,  
And angels mortal language spoke,  
When God our human nature took  
In Christ the Savior's birth.

And Christmas once is Christmas still;  
The gates through which He came,  
And forests wild, and murmuring rill,  
And fruitful field, and breezy hill,  
And all that else the wide world fill,  
Are vocal with His name.

Shall we not listen while they sing  
This latest Christmas morn,  
And music hear in everything,  
And faithful lives in tribute bring,  
To the great song which greets the King  
Who comes when Christ is born?



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FROM COL. F.  
KAEMPFER.  
A. W. MUMFORD,  
PUBLISHER, CHICAGO.

EUROPEAN SQUIRREL.  
 $\frac{2}{3}$  Life-size.

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## THE EUROPEAN SQUIRREL.

(*Sciurus vulgaris*.)

**T**HIS is regarded as the typical species among the tree squirrels, and its character and that of the common species of American squirrels are very similar. The attitudes of the animals are familiar to all who have watched the antics of squirrels in their arboreal homes. It is widely distributed throughout all of Europe and across the Caucasus and Ural through southern Siberia to the Altai and eastern Asia. Brehm says it is not equally common everywhere or every year. Its favorite haunts are dry, shady forests with high trees and it is as much averse to dampness as to sunshine. When fruit and nuts are ripe it visits the gardens of villages, but only when they are connected with the forest by small tracts of trees or bushes. It will not attempt to forage far from the protection of the trees. Where there are many pine cones the squirrel makes its permanent home, and builds one or several habitations, usually in old crows' nests, which it improves very ingeniously. If it intends to make only a short stay, it uses the forsaken nests of magpies, crows, or birds of prey, just as it finds them, but the nests which it intends to serve as a permanent sleeping-place, a shelter against bad weather or a nursery, are built new, though the materials collected by birds are often utilized. It is said that every squirrel has at least four nests, though nothing has been definitely proven as to this. Hollows in trees, especially hollow trunks, are also frequented by them and occasionally built in. The open-air nests usually lie in a fork, close to the main trunk of the tree; the bottom is built like one of the larger bird's nests, while above there is a flat conical roof, after the manner of magpies' nests, close enough to constitute a perfect protection from the rain. The main entrance is placed sideways, usually facing east; a slightly smaller loop-hole for escape is found close to the trunk. Moss forms a soft lining inside. The outer part consists of twigs of various thicknesses, intertwined. Brehm says this squirrel especially likes to use the firm bottom of a forsaken crow's nest, filled with earth and clay, as a base upon which to construct a nest of its own.

A famous naturalist, describing this little creature, says that it is one of the principal ornaments of a forest. In quiet, fine weather it is incessantly active, keeping as much as possible to the trees, which at all times afford it food and cover. Occasionally it will deliberately descend a tree, run to another tree and climb that; doing this often in pure playfulness; for it need not touch the ground at all, unless it wishes to do so. He calls it the monkey of the woods of temperate climes, and it is possessed of many attributes which remind one of that capricious inhabitant of the warmer zone. There are probably few mammals which are possessed of such constant briskness and remain for so short a time in the same place as the squirrel does in tolerably fair weather. It is ever going from tree to tree, from top to top, from branch to branch; and even on the ground it is anything but clumsy or out of place. It never walks or trots, but always proceeds in longer or shorter bounds, and so quickly that a dog can hardly overtake it, and a human being has to give up the pursuit after a short time. "It glides up even the smoothest trees with wonderful ease and speed. The long, sharp claws on the toes stand it in good stead, for it hooks them into the bark, all four feet at once. Then it takes a running start for another leap and darts further upward; but one bound succeeds another with such rapidity that the ascent proceeds uninterrupted, and looks as if the creature glided up the tree. Usually it ascends to the top of the tree without pausing, not infrequently reaching the highest point; then it goes out on one of the horizontal branches and generally jumps to the tip of a branch of another tree, covering in these jumps distances of four or five yards, always in a downward direction. How necessary the bushy tail is for leaping has been demonstrated by cruel experiments, which consisted in cutting off the tail of some captive squirrel. It was then seen that the mutilated creature could not leap half so far as one having a tail. The squirrel is an excellent swimmer, though it does not go into the water willingly."

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The squirrel eats fruit or seeds, buds, twigs, shells, berries, grain, and mushrooms. The seeds, buds, and young shoots of fir and pine trees form its principal food. It bites pine cones off at the stem, comfortably sits down on its haunches, lifts the cone to its mouth with its fore-paws, and turning it constantly around, it bites off one little scale after another with its sharp teeth, until the kernel is reached, which it takes out with its tongue. Hazel nuts are a favorite dainty with it. Bitter kernels, like almonds, for instance, are poison to it; two bitter almonds are sufficient to kill it.

When food is abundant the squirrel lays by stores for less plentiful times. In the forests of southeastern Siberia it stores away mushrooms. "They are so unselfish," says Radde, "that they do not think of hiding their supply of mushrooms, but pin them on the pine needles or in larch woods on the small twigs. There they leave the mushrooms to dry, and in times of scarcity of food these stores are of good service to some roaming individual of their kind."

Four weeks after the breeding-season the female gives birth to from three to seven young, in the softest, best located nest; the little ones remain blind for nine days and are tenderly nurtured by the mother. After they have been weaned the parents leave the young to their fate. They remain together for a while, play with each other and soon acquire the habits of their parents. By June it is said the female has another family, and when they also are so far grown up that they can roam around with her, she frequently joins her first litter, and one may see the entire band, sometimes consisting of from twelve to sixteen members, gamboling about in the same part of a wood.

The squirrel is a very cleanly animal, licking and dressing its fur unceasingly.

The finest squirrel skins come from Siberia, and the farther east they are procured the darker and more valuable they are. The back and under part of the furs are used separately. Russia and Siberia annually furnish from six to seven million skins, valued at about one million dollars. Most

of these skins are manufactured in Russia and exported to China. Besides the skins, the tails are employed as boas, and the hair of the tail makes good painters' brushes. The flesh is white, tender, and savory, and is much esteemed by epicures.

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## "IN ORDERS GRAY."

E. F. MOSBY.

VERY demure is the soft gray of the catbird's garb, but under it is hidden a spirit ever ready for frolic and fun. His liquid, shining eyes are very innocent, yet they are full of mischief. He always looks to me as if he had a secret—one, however, that he is willing to share with any friendly looker-on. Not even the chat takes a more genuine delight in sport. Hide-and-seek is a favorite game with the whole tribe, and in their shadowy gray, how they glide through the branches and lurk in the thick leaves! What mischievous peering out, sometimes clinging to a tree-trunk like a nuthatch, sometimes sitting absolutely still and almost invisible on a bend of a crooked bough! When discovered, a wild and reckless chase ensues; they skim in rapid flight over the level fields, or dash through the shrubbery in excited pursuit.

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The catbird dearly loves to tease. I often saw one hide near the approach to an orchard oriole's nest, watching him with shining eyes of mischief. He never actually molested the oriole, and would fly away to some slender, swinging twig, after he had succeeded in startling the nest owner into a state of nervous alarm, so that he would complain to his mate for a half hour. The little scamp seemed thoroughly to enjoy his fright. He has keen vision, and darts down with wonderful swiftness on a worm far below his perch, while he can wheel and turn with surprising ease in pursuit of any victim. One of his most amusing performances is the way in which he nips off a shining, juicy blackberry with his sharp beak, glancing at you as if to ask, "Did you want that? You can't have it," and presto! the prize vanishes down his throat, and he hops to another cluster with an air of triumph. I love the little fellow in spite of his squawks and whims and naughty tricks. He looks so neat and trim with his soft gray and velvety black, and has such a pretty way of running along a bough with quick, short, pattering steps like a little child's, and such lovely, clear, musical tones when he chooses to be good, that it is hard to resist him. He has also a very warm heart for his mate and nestlings, and for his comrades as well. A gentleman relates that on one occasion, going too near a catbird's nest, the little owner aroused the others by his sharp cries, and they made such an attack upon him that he had to defend his face with his hat. They fear nothing when the nest is in danger.

The first alarm-note is usually a sort of *cluck! cluck!*—rather low and anxious. I saw my nephew one day take a young bird just out of the nest in his hand. Instantly the parents flew to him with their disturbed note. He put it down and went away, and a gray cat appeared. The place rang with the anguished cries of *snake! snake!* and the "taunt song," for so it seemed, was taken up by others in the depths of the woods. We did not succeed in saving all the brood from the stealthy cat, and it was pitiful to hear the birds lamenting. In a frenzy the mother-bird drove off furiously a Carolina wren that came to see what the trouble was, and even a female cardinal, that added *her* cries of resentment at her rough handling, until the whole bird world seemed in turmoil. The male cardinal appeared to answer his mate in soothing tones, but neither approached again the mourning catbirds.

Last summer there was a most beautiful singer in my neighborhood that added to his own melodies a marvelous mimicry of other birds. In one morning I have heard him repeat over and over the *ahli* of the wood thrush, the cardinal's notes, the songs of the indigo bird, the Maryland yellow-throat, the yellow-throated vireo, and the orchard oriole. Sometimes there would be a contest in song between the oriole and the catbird. The first was always the one to cease first, but each usually looked very dissatisfied—a ruffled ball of feathers at the end.

The loveliest experience was hearing on a spring morning a song so liquid, so sweet, so varied, and yet so low, scarce above a whisper, that it seemed a dream. I stole to the window—and there sat my little bright-eyed singer in shadowy gray, singing, as if all to himself, a *shadow-song*.

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## Transcriber's Note:

- Minor typographical errors have been corrected without note.
- Correction noted: "chocolade" changed to "chocolate" (p. 203).
- Punctuation and spelling were made consistent when a predominant form was found in this book; otherwise they were not changed.
- Ambiguous hyphens at the ends of lines were retained.
- Mid-paragraph illustrations have been moved between paragraphs and some illustrations have been moved closer to the text that references them.
- The title page information and Contents table were added by the transcriber.
- The index contains links to articles in other issues of *Birds and Nature* magazine:
  - [Gutenberg #48030: Volume VI Number 1, June, 1899.](#)
  - [Gutenberg #48085: Volume VI Number 2, September, 1899.](#)
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