

Commencement Thesis.

Ornithology;

The Haunts and Habits
of Birds.

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Outline.

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Ornithology. The Haunts and Habits of Birds.

It is easy to understand the enthusiasm of ornithologists. The subjects of their study are found among the grandest and most beautiful scenes of nature. They pursue their investigations, not bending over the desk or stifled by the fumes of a laboratory, but beneath the open heavens, along the sea, by the side of water-courses, through valleys, over hills, wherever the bird makes his home.

Man's thoughtlessness and greed have gone so far as to render extinct some of our North American birds during the present century, and others are threatened. This is often commented upon, and suggestions made to stop the work of destruction before it is too late; but nothing comes of it. The phrase "there are more gunners than birds" is often literally true and laws against their use have been passed, protecting especially certain species of birds. The ornithologist cannot wholly escape the just criticism in this matter of bird slaughter. It is not justifiable to kill a hundred birds in a day just to see if a

particular one is among them; but if some scientific use is made of the dead birds, as in the practice of taxidermy work it would be better. A great many facts on the subject of birds and their place in nature have been collected and thus the great science of Ornithology has been formed.

The study of ornithology may be defined as the science of birds. It consists in the arrangement and exposition of all that is known of birds. It treats of the physical structure, physiological processes, and mental attributes of birds; of their habits and manners; of their geological and geographical distribution; of their relations to each other and to other animals.

What is a bird? Elliot Coues defines a bird as "an air-breathing, egg-laying, warm-blooded vertebrate, with two limbs (legs) for walking or swimming, two limbs (wings) for flying or swimming, fixed lungs in a cavity communicating with other cavities, and one outlet of genito-urinary and digestive organs."

Like every other branch of natural

science, ornithology furnishes numberless illustrations, in the adaptation of means to ends which it discloses in the formation of birds. How wonderfully is the frame of the bird, fashioned, that it may be prepared for its peculiar destiny. Its hollow bones, the strength of muscle, the bone and muscle so combined as to give such vigor to the wing, the air-cells, in some cases extending over a large portion of the bird, especially under the wings and not only making it lighter, but aiding its flight by preventing suffocation from its rapid motion through the air as well as aiding in its flight in the higher regions.

Even as regards that which first strikes the attention, the singing of birds, few persons are aware of the surprising variety and harmony of their notes. Listen where you will in the country, and you immediately perceive that the air is full of voices, and are all those of enjoyment! A robin has paused for a moment on a dead branch to sing a snatch of music,

and is now gone. From the neighboring wood comes the pewee's note and the brown thrasher's song. On the fence some twenty rods distant in front a quail serenades its partner who is doubtless seated on its nest just beyond. Sparrows, twittering as they fly, are flitting back and forth. A crow may be heard in the distant, warning its comrades against some intruding foot. As the sun sinks nearer to the horizon, the festive merriment of the woods begins to cease. Stopping suddenly sometimes in the midst of their song, like children tired of play, and bird after bird drops down through the shadows, each upon its branch or into its nest, and while its song still lingers among the leaves, is asleep.

The bird's work has two objects; to provide a home and food for his offspring, and to support himself. The purpose of the nest is ~~merely~~ to secure the safety of the eggs and young, and it is not quite clear why such very different methods should be pursued to accomplish this rather simple matter. A strong cup-shaped nest, inconspicuous

ly placed would seem to be all that is necessary; but instead of this we have long pendant nests on the terminal twigs of elm trees and showy nests on slight shrubs, even sometimes decked out with bits of paper.

The oriole hangs a long basket, neatly woven of silkworm, upon some pendant bough, and its nest becomes the cradle of future singers.

Fig I. The hermit thrush sets her nest of pine leaves and sticks upon the shelving rocks. The wood Pewee builds her nest so cunningly, of bits of lichens and similar materials held together by filaments of cobwebs and woven silk and strong twine that it looks like a moss-covered knot upon the tree-branch. The woodpecker cuts with his chisel like bill a clean room in the heart of a tree. The chimney swallow or swift gums his open shallow nest to the inside of a chimney or the inner wall of a building. The cliff swallow puts his packets under the eaves of buildings and probably he plastered them under cliffs before he found houses as convenient. The nest of the humming-bird is a miracle of perfection in domestic economy. For beauty, fitness,

and safety, the wisdom and taste displayed in its arrangement are irreproachable. The parents unite their labors in house-building and share the cares of incubation, the male watching constantly in the vicinity and cheering the female in her combined duties, and afterwards the happy pair are diligent in their efforts properly to feed and rear their young and defend them during their period of helplessness. The most timid will often brave the most dangerous approach of man, leaving the nest only upon the closest proximity of intruders and returning even at the risk of capture or death.

Birds of different species do not associate together only to a certain degree. Though several kinds of birds are found together in the same thicket, still they may be the worst of enemies. As in the case of the blue jay which is one of the worst enemies of the oriole, grosbeak, thrush, etc. and often eats a nestful of eggs or young birds. But the truth of the case is that what the blue-jay does openly many "dear innocent" does behind your back. It is only to a limited

degree that "birds of a feather always flock together." A few species as seen in the case of the blackbird, crow, duck, geese, etc. flock together and do not separate even during their mating time. Early in the spring the birds begin to mate and this is one of the most interesting and exciting times of the birds life. The male bird especially singing his best so as to attract his lady. As soon as they have mated they hunt a place for their nest and begin building it for their future use.

The labors of the bird in his own behalf are continued all the year round somewhere. It may be considered all the faults of a bird that a few species are made with taste refined enough, like ours, to know that some tame-fruits are good in the thirsty mid-summer days; but how does this account between nature and the smaller birds and younger birds stand? All of them are eminently insectivorous during the period of reproduction and many live exclusively upon insects, while the remainder feed very largely upon them, whenever they can be readily

obtained. The birds preserve the trees by eating or destroying moths and borers; they preserve the flowers and fruit; they preserve the grain. Those which love a little of our fruit occasionally are usually among our best helpers against insects.

When the dark days are over and the falling snows are here and nearly all our summer friends are gone, the finches and sparrows come to claim our winter, and offer us their assistance in keeping down the ever present weeds, by eating up the seeds. Often the snow buntings and the sparrows may be seen dexteriously picking out the seeds of the wild sunflower in the early winter months, November and December.

Swallows live principally by feeding on flies, grasshoppers, butterflies, and beetles. Belou says that the swallow can see a fly at a distance of about 200 yards. While noticing the nest of a thrush, I counted twenty two visits of both parents during one hour to feed their young. Woodpeckers are constantly and laboriously seeking

insects in the bark of trees, one variety especially, only the sap-suckers have been accused of piercing the green bark to feed upon the juices, yet the sap-suckers are very useful in other respects. Owls and hawks are equal to terriers as mousers speedily clearing the fields, sheds, and barns of mice, moles, and rats.

S. A. Forbes, Director of Ill. State Laboratory of Natural History, says that, "no agriculturist can take the life of any bird without doing that which can result only in a loss to himself." I believe that in this he is entirely right, though some birds do destroy a little fruit, grain, etc. still the amount of good they do as insect destroyers will overbalance their evil. Every bird has his mission of good though we may not now see it. The sparrows, starlings, crows, blackbirds, and many others are great destroyers of the may-beetle, locust, and larvae of other insect pests. Nearly all birds during the period of reproduction whatever may their natural food at other times be, are always entirely insect eaters, and they feed their young almost wholly with

insect food, which will count up to an enormous amount during the given time of growth. It is shown by Prof. Treadwell that a young robin will eat, and require too, for his well being at least his own weight in insect food.

In order to secure food and to avoid the dangers incident to rapid motion, it is necessary that the sight of birds should possess peculiar keenness. While their sense of smell is inferior to that of the quadruped, they can see distinctly to almost incredible distances. The kite or the hawk hanging in the air at a height which renders it nearly invisible, can see a mouse or a fish so clearly that it is able to descend upon its victim with infallible aim. To protect an organ so sensitive and so exposed, it has a third eyelid, a thin membrane, which it can at will draw like a shade over these eyes.

It might seem at first as if the tribes whose home is the air might encroach on each other, that their supplies of food must be uncertain, and that while the strong feasted, the weak would starve. But nature

is both a wise and a generous mother. For each kind of bird she provides a different kind of food. The food of birds is of the most various description, requiring in each case a different kind of organization in order to secure it. Leave its instincts to the eagle and give it the feet and beak of the pheasant and it must perish.

If the consequences of the destruction of birds are so disastrous, the sportsman should be restrained and the cruel, nest-hunting boys held in check; and beyond this, actual places for shelter and nesting should be afforded, and practical invitations extended, prompted by more careful study and better knowledge of their habits, to settle upon a homestead near man's habitation. First in the lists of protections, laws should be enacted with stringent provisions prohibiting the killing of song birds at any time, except by naturalists for scientific purposes; and wisely restricting the slaughter of game birds at such seasons as will not interfere with their propagation. Laws looking to these objects already exist but are

defective in provisions affecting the certainty of their execution, in the incompleteness of their penalties, and in many other respects. While we strive to prevent destruction of birds the conditions favorable to their increase should be promoted and enlarged. Gardens have often been preserved from insect destruction by placing bird houses and other nesting places within their limits, when neighboring gardens have been destroyed. In cherry time or gooseberry or pea season, some little devices may be tolerated for frightening birds away when they incline to become too familiar or take too large a toll for their valuable service. Yet of them all I can say as Cowper did of England, "With all your faults I love you still."

In this state there are various restrictions and penalties ranging from one dollar up to twenty five for the killing of the song birds. It shall be unlawful for any person or persons, at any time to catch, shoot, kill, or trap any pheasant, oriole, meadow-lark, red-bird, mocking-bird, and blue-bird, except when used for scientific

purposes.

The Robin and the blue bird, piping loud,
Filled all the blossoming orchards with their glee;
The sparrows chirping as if they still were proud
Their race in Holy Writ should mentioned be;
And hungry crows, assembled in a crowd,
Clamored their piteous prayer incessantly,
Knowing who hears the raven's cry, and said,
'Give us, O Lord, this day our daily bread!'

The thrifty farmers heard with alarm
the carving of the crow, and shook their
heads and doomed "to swift destruction the
whole race of birds", notwithstanding the
protests of the preceptor against a decree
of banishment to those

"whose household words are songs in many keys,
Sweeter than instrument of man e'er caught,
Whose habitations in the tree tops, even,
Are half way houses on the way to heaven,"

"You slay them all! and wherefore? For the gain
Of a scant handful, more or less, of wheat,
Or rye, or barley, or some other grain,
Scratched up at random by industrious feet,
Searching for worm, or weevil, after rain!

Or the cherries, that are not so sweet
As are the songs these invited guests
Sing at their feasts with comfortable breasts".

Longfellow.

He who sings and flies away
Lives to sing another day.