

the slightest glimpse of the bird — never perceived the slightest quiver of the surrounding grass to mark her movements as she glided away, and yet I found the eggs warm every time, indicating that she had just left them.”

Plate I accompanying this article, from an excellent drawing by Mr. Fuertes, is a very life-like representation of this rarely seen species. The only previous figures of this species appear to be those published by Edwards in 1760, and by Audubon, in 1838.

THE RUFIOUS HUMMINGBIRDS OF CAPE DISAPPOINTMENT.

BY WILLIAM H. KOBBE'.

CAPE DISAPPOINTMENT, formerly called Cape Hancock, forms the extreme southwestern point of Washington State, and is therefore at the mouth of the Columbia River, which enters the Pacific Ocean near the 46th degree of north latitude. Roughly speaking, this cape is in the form of a crescent and extends about one mile into the ocean, thus enclosing a small bay on the side towards the river. The opposite side receives the full force of the Pacific and is cut by the action of the mighty waves into numerous beaches and rocky headlands. In fact, the entire aspect of the cape is very hilly. At one time, I imagine, these hills formed the backbone of the cape, but they are now washed into cliffs on the ocean side and into precipitous slopes on the other. In one place the ocean seems to have broken through and connected with the bay during former centuries, thus forming a low tract or valley in the center of which a small lake has formed.

The climate of this region is rather unique. The warm oceanic current from Japan, flowing south along the coast, causes a very mild climate, and heavy and incessant rains. These rains are caused by the moisture-bearing winds moving inland from the ocean and being chilled against the Cascade Mountains.

The average yearly rainfall is about 53 inches which is distributed abundantly in autumn, winter, and spring, in dews, fogs, rains, and occasional snows. This amount of rain is not remarkable, being about the same as at Philadelphia; but since it all falls in about six months or less, it appears to be much greater for the entire year than it really is.

The result of this wet climate is best seen in the vegetation, which is remarkably luxuriant and green the year round. The entire cape is thus overgrown and where space has not been cleared by the government for a military settlement we find giant spruces and firs standing. Mr. R. H. Lawrence has described this country with such vividness that I cannot resist using his own words. He says, this whole region "is densely covered with a heavy growth of large timber—fir, hemlock, spruce, and cedar. The firs and spruces grow to be giants: it is usual to see them from four to seven feet in diameter, and over two hundred feet high. Underneath these great trees is generally a thick growth of vine-maple, hemlock, large and small, alder, etc., the ground being a network of ferns, vines, bushes, and brush, with fallen giant trees here and there in all stages of decay. On all this much moss grows; and long festoons hang from the branches of the standing trees. Except in the few dry weeks of midsummer, the bushes and ferns are generally wet. With one's face spattered with raindrops and cobwebs, and with an unsure footing, it is no wonder progress is slow through such a tangle."¹ With the exception of the extreme end, the cape is thus an unbroken wilderness. The tip, or end, is occupied by a military post with accommodations for about one hundred men who constitute the entire population. The nearest town is Ilwaco, which lies on the bay about three miles distant, and which is simply a small fishing village consisting of but one main street. The military post is known as Fort Canby, being named after General Canby, the famous Indian fighter. At this place I lived for two years, where my father was commanding officer for that length of time, giving me ample opportunity to study the bird life of the cape.

¹ Auk, Vol. IX, 1892, pp. 39, 40.

Before I speak of any *particular* species, I think it advisable to note the effect of climate and vegetation upon the birds in general found inhabiting the cape. Upon this point Dr. Coues speaks as follows:—"The more varied the face of a country, the more varied its birds. A place all plain, all marsh, all woodland, yields its particular set of birds, perhaps in profusion; but the kinds will be limited in number. It is of first importance to remember this, when you are so fortunate as to have choice of collecting-ground; and it will guide your steps aright in a day's walk anywhere, for it will make you leave covert for open, wet for dry, high for low and back again. Well-watered country is more fruitful of bird-life than desert or even prairie; warm regions are more productive than cold ones. As a rule, variety and abundance of birds are in direct ratio to diversity and luxuriance of vegetation. Your most valuable as well as largest bags may be made in the region most favored botanically, up to the point where exuberance of plant-growth mechanically opposes your operations." This last sentence, I think, expresses the exact position in which an ornithologist is placed when he hunts upon this verdant cape.

The rainfall does not affect the number so much as it does the coloration of birds: it tends to produce darker coloration in all the species occurring in the region. This can be easily seen upon comparing certain species from this section with the same from the arid regions of the South. In the northern forms the colors and shades are not only darker, but also more distinctly and heavily marked. In some species occurring in different regions, these distinctions are so marked that they have led to the dividing of the species into subspecies. This fact is well illustrated by the two subspecies *Falco columbarius suckleyi* (Black Merlin) and *Colaptes cafer saturator* (Northwestern Flicker). Both of these birds are simply dark forms of *Falco columbarius* and *Colaptes cafer*, respectively.

The following is a short list of some other birds in which the coloration is affected by the rainfall:—Sooty Grouse, Sharpshinned Hawk, Sparrow Hawk, Gairdner's Woodpecker, Rusty Song Sparrow, and Townsend's Sparrow. Of course all birds are affected in some degree, but I think these are more than the others.

The Rufous Hummingbird (*Selasphorus rufus*) does not occur within the rainy region during the wet winters, and is therefore little affected by the moist climate. Mr. R. H. Lawrence states that this Hummingbird arrives at Ilwaco, Wash., on March 9, but I have seen them during the latter part of February or the first of March. The males arrive several weeks before the females, but by the end of April the cape is overrun by these flashing little beings. They are by far the most prominent bird found upon the cape and are probably the most common, although such birds as are retiring in their habits, as the Russet-backed Thrush (*Hylocichla ustulata*), may exceed them in numbers. They are particularly abundant about the flowering salmon-berry bushes and also the thimble-berry, but they seemed to be fonder of the honeysuckle blossoms than of either of the others. These Hummingbirds, although arriving early, do not depart until the rainy season begins, late in the fall. I neglected to put the exact date in my notes, but it is somewhere near the latter part of September, though of course it differs with the season.

The pugnacity of these birds is the most prominent characteristic of the species and when they are not fighting among themselves they make war upon other birds. The males are nearly always the participants and seem to take great delight in fighting each other with their utmost strength. It is a very common sight to see a male Hummer perched upon a telegraph wire or exposed twig watching for others of his own sex with which to do battle. Although they sometimes fall over and over toward the ground like two huge bees, they seldom disable one another, since their bills are very weak. The greatest efforts on the part of one of the Hummers only succeed in pulling out a few feathers of his adversary, who is finally driven away in a rather bedraggled condition. During these aerial battles the males expand their metallic feathers upon the throat and chin, which reflect the sunshine in brilliant colors, thus causing their affrays to appear particularly fierce, besides making them very beautiful on a bright day. I do not remember ever seeing the females fight; they being more retiring and timid than the males. On several occasions I have seen male Hummers fight and drive off Swallows from the vicinity of their nest, particularly when it con-

tained eggs. During the nesting season the males frequently, but not always, sit near the tree in which their home is placed and attempt to drive all birds from the vicinity of the nest. They pay great attention to their duty and seldom fail to dart after other Hummers, even if they are simply passing the tree in which the nest is placed. I have good reasons to believe that they do this more from a love of fighting than from parental instinct or devotion, since the male birds rarely appear upon the scene when their nest is being taken. Their nests may often be located by the actions of the male towards other birds in the vicinity of the nest; and I have found several nests in this way.

On March 19, 1898, while out after birds in a small grove of trees I heard a rather queer rasping note which was new to me. Upon looking around I finally saw a male Hummingbird which would fly upward for about fifty or sixty feet and then suddenly dart towards the ground until it almost touched the earth, where it made the note, which had a very rasping sound and which was quite loud. I have seen them make this note on cloudy as well as on bright days but the latter seem to be the favorite times for going through this queer performance. I have never been able to discover why they do it, but I have come to the conclusion that it has no connection with either the nesting site or with other Hummers of either sex. It seems to be an individual matter of pleasure or possibly alarm.

The nests of this bird may be looked for very early in the spring. The earliest record which I have is a nest found on April 25 of last year which contained young birds about a week old. Of course this is unusual, but nests containing eggs are quite abundant by the latter part of April if the spring is at all early. The nest just spoken of was built upon the bough of a young spruce and it was not over six feet from the ground. I find the following statement in my notes concerning a nest found on May 2. The nest was situated upon the side of a small branch which grew downward from the horizontal limb of a medium sized spruce. In a horizontal line the nest was about twenty feet from the tree trunk and half this distance from the ground. It was very well hidden by the branch upon which it rested, and difficult to find. It was composed of soft green moss.

firmly held together by a network of spider webs, and was plentifully lined with plant down obtained from the siskins of the pussy willow. It showed the following measurements: Diameter outside, 1.65 inches; diameter inside, .90 of an inch; depth outside, 1 inch; depth inside, .64 inches. These birds seem to make the outside of their nests correspond as nearly as possible with the color of the surroundings. The foregoing nest was the exact color of the green bough upon which it was built. I also found a nest which was covered on the outside with fine rootlets and weed stems, the color of which corresponded exactly with the color of the dead vine in which it was placed. This nest illustrates very well the fearlessness of this Hummer, since it was placed directly over our front porch in the branches of a dead honeysuckle vine. The following note was probably written by me sometime in April and it speaks as follows concerning the nesting site:— All of the Rufous Hummingbirds' nests which I have thus far found (about twenty in number) were situated upon the boughs of spruce trees, with the exception of two. I have already spoken of one of these as being built in a dead vine. The other was situated in a thimbleberry bush and was only thirty inches, by actual measurement, from the ground. Nearly all of them are composed of lichens and spider webs lined with the down of pussy willow siskins. I think they use the spider webs mainly to make the nest stable, since they are only found on the outside as a sort of network. All the nests found were less than thirty feet from the ground and generally over six. The majority, however, fall between these figures, being over six and less than fifteen. They were always well hidden by the foliage of the thick evergreens in which they are placed, and if it were not for the female darting off her nest, very few would be found. In fact I know of only two or three nests located in other ways. These were found either by accident or by seeing the male Hummer drive off other birds.

Like all Hummingbirds this species lays but two pure white eggs, the average measurements of which are .50 of an inch long and .32 of an inch wide.

The following paragraphs are taken from the descriptions of two sets of eggs of this species taken at this place. The first

set is described as follows: I identified this set by a minute examination of the female as she sat on the nest. I used a powerful telescope and also examined her while she perched upon a telegraph wire. The only other species it could have been was Anna's Hummingbird, but this specimen had the rufous tinge on tail and under parts, so the identification is probably correct. The two eggs, one of which I broke before blowing, were rather thick and I should say the parent had been incubating for about four days. The eggs measure as follows: $.49 \times .32$ and $.48 \times .33$. The nest is composed externally of a large number of different substances and internally of the softest vegetable down. It was situated on the drooping branch of an araucaria tree eight feet from the ground and ten inches from the tip of the branch which extended directly over the middle of the walk. It measures as follows:—Diameter outside, 1.75 inches; diameter inside, .75 of an inch.

The second nest, taken upon the same day—April 10—is described as follows: I identified this set in the same manner as I did the foregoing, but the parent of this one was so tame that she allowed me to approach within a few feet of her as she sat upon her nest, making the identification comparatively easy. On April 7 the nest contained a single egg and the second was not laid until three days after. These two eggs measure respectively $.47 \times .32$ and $.48 \times .31$.

The composition of the nest is about the same as the one just described, excepting that this one has fewer spider webs on it, and it also has one or two small feathers in the lining. The nest was situated upon the drooping branch of a shrub (*Virburnum tinus*) four and one half feet from the ground and eleven inches from the tip of the branch. This nest, like the preceding one, was built near the sidewalk, but was very difficult to find. It measures as follows: Diameter outside, 1.50 inches; diameter inside, .87 of an inch; depth outside, 1.12 inches; depth inside, .75 of an inch.

After taking the nest, I waited for the return of the parent, and when she came and found her home gone she flew about in small circles, scarcely moving an inch from the spot where the nest had been. She continued to do this for about five minutes,

and then, being certain that her nest was gone, she suddenly darted away, not to return as long as I remained there. During all this time the male bird did not appear on the scene and I only recall one instance in my experience with this species when the male has taken any interest in the taking of its nest. They seem to disappear after the nest is completed and not to return until the eggs are hatched. Nor have I ever seen the male feed the female as she sat upon her eggs, which is a common habit with other birds. The females, however, take the utmost interest in their little homes and very soon return after being flushed from their nests, alighting on them with the greatest beauty even when flying swiftly.

After a nest has been taken, a second one is speedily built if it be early in the season; this second nest, however, is generally less exposed than the first one, and is sometimes placed at a greater height. It is a peculiar fact that nine nests out of ten, almost, are placed over paths or gullies, and Mr. A. W. Anthony states that he found six nests in Washington County, Oregon, all of which were found in an old railroad cut.

Soon after the eggs are both laid, the female begins to sit and after a few weeks the young are hatched, naked and helpless little creatures, about the size of a large pea. The parents are now kept busy bringing food, which consists of minute insects contained in the honey and sweets of flowers, to their young. To accomplish this, the parent bird alights upon the rim of the nest and places its bill some distance into the mouths of the young and in this way feeds them. As the young birds develop under the assiduous care of the parents, the tiny nest becomes almost too small for them and they are finally forced to face in opposite directions just as two shoes are put in a box. The nest also becomes somewhat flattened, and by the time the young leave, it is a sorry looking object, unfit to keep.

By the latter part of August all the young had left their nests and the parents were beginning to prepare for their southward migration. A month later all the Hummers have left and the cape is given over to the incessant rains of a long winter.