

diving through the green rollers near shore the black bodies of the Scoters, paddling feet and all, showed as plainly as beetles in yellow amber.

What with the flocks of Scoters and the innumerable, ever-shifting throng of waders, interesting moving pictures were almost always to be seen on the beach. One afternoon when there were a large number of waders, perhaps a hundred and fifty Sanderlings together with Willets, Surf-birds and Gulls on the shore, in the sun path a flock of Surf Scoters were rocking over the quiet green rollers, while in the lower white surf lines, men with long rakes were clamming. A steam launch with tightly rolled sails went hurrying by, and down the sunlit cliffs at the foot of the bay two schooners with square-topped sails lay at anchor.

At sunset another time, as I walked home up the beach breathing in the strong ocean air, the only birds in sight were swirling flocks of belated Sandpipers ever resolving ahead of me. Long straight lines of deep voiced surf were breaking well outside at the low ebb of a full moon tide, the great rollers ridging up behind. And over the gray sea a deep glittering sun path led to a sunset sky that grew and ripened to rich purples—one of the sunsets when a red ball goes down into the Pacific. Long straight lines of deep voiced surf breaking far out at the beck of the moon, following obediently the rhythm of the heavenly bodies—long straight lines of white surf with great gray rollers coming in behind! How big and simple Nature is in all her processes! How microscopic man becomes viewed in the perspective of the orderly march of the universe! And yet while bird and beast blindly follow the laws Nature has laid down for them and live and die as they must, man alone, mercifully or unmercifully controls their environment, man alone can trace their course from pole to pole and try to read the reasons why. And although he in turn fail to solve the riddles of the Sphinx, he alone, humble student of Nature's laws, waiting in the stillness of the forest or listening in silence to the deep voice of the ocean, moved by the bigness and truth of Nature, can choose to try to keep step in the orderly march of the universe.

*Washington, D. C., December 4, 1915.*

## NESTING OF THE BAND-TAILED PIGEON IN SOUTHERN ARIZONA

By F. C. WILLARD

WITH ONE PHOTO BY THE AUTHOR

THE PAST season (1915) has been one in which I was fortunate enough to make a number of detailed observations on several of our local birds, interesting despite the fact that they pertain to common species. Among them was the Band-tailed Pigeon (*Columba fasciata*). During the late summer and early autumn, I was located in the Huachuca Mountains, in Huachuca Canyon, a short distance above the army post of that name. There were a few pigeons nesting in the vicinity, and one pair near camp was watched quite closely from the time the nest was begun until the egg was laid. Nest building was carried on only in the early morning hours, from sunrise till about 8 o'clock. Both birds were present, but the female alone seemed to be engaged in the actual construction of the nest, which she went

about in a very lackadaisical manner. The pair would sit together on the few sticks already in place for many minutes; at last the female seemed to remember that she was nest building, and flew up the mountain side followed by the male. Considerable time was spent on every trip after material, so very few sticks were added each day, and it was not until six days had elapsed that the flimsy platform was completed and the egg laid. This last event occurred on July 14. On September 18 I frightened another pigeon from an apparently completed nest. I think it was a female but could not tell with certainty. The other one of the pair was close by, and the two flew away together.

A few days later a flock was observed feeding on acorns in a group of large oak trees (*Quercus emoryi*). The antics of these birds were more like the



Fig. 34. A TYPICAL NEST OF THE BAND-TAILED PIGEON; FROM THE HUACHUCA MOUNTAINS, ARIZONA.

acrobatic stunts of parrots than of pigeons. They would walk out on the slender branches till they tipped down, then, hanging by their feet, would secure an acorn, and drop off to alight on a branch lower down. In spite of their large size, pigeons are surprisingly inconspicuous when thus engaged in feeding among the leaves. The Prairie Falcon and Cooper Hawk take considerable toll from the flocks. These two terrors of the air will dash into a tree and grab a pigeon off a branch, rarely making an unsuccessful raid. The Prairie Falcon is the chief offender.

This is an appropriate place in which to state that I have never found a nest of the Band-tailed Pigeon with more than one egg or one young bird in it. Also that I have never seen a pigeon carry an egg from the nest, a feat that one writer has claimed to have observed in this region. I have, however,

missed taking several eggs by their being knocked from the nest by the startled bird as she flew off.

This fine pigeon is not uncommon in the various mountain ranges of Cochise County, Arizona, and there seems to be a general willingness on the part of hunters to observe the closed season. This is not so true among the farmers, but comparatively little damage is done thereby, as the class of farmers is not a very numerous one with us. I hope the observance of the closed season will lead to an increase in the number of pigeons, but I think two years more at least should be added to it. An effort will be made next year to secure such legislation in this state.

*Tombstone, Arizona, February 25, 1916.*

## THE SPEED OF FLIGHT IN CERTAIN BIRDS

By ALEXANDER WETMORE

**D**URING early November, 1914, while carrying on field work around Tulare and Buena Vista lakes, California, in company with Mr. Tipton Matthews, Deputy Game Warden of Kern County, I had excellent opportunity for observing the speed of flight of certain birds. We had our headquarters at Lemoore while in the northern part of the area, and daily made trips back and forth to the shore line of Tulare Lake in Mr. Matthews' auto. Work around Buena Vista Lake was carried on with Bakersfield as a base. In the open valley birds of various species were abundant, and in traveling about I had leisure to watch them. Often Horned Larks or other birds flew up close at hand and maintained a course parallel to that of the car. On such occasions Mr. Matthews increased our speed gradually until we were travelling at a rate equal to that of the bird. At the same time I kept close watch of the bird and the speedometer. In this way we were able to gauge the speed of flight of these individuals with a fair amount of accuracy. Following is a summary of the observations made. Unless otherwise stated the notes refer to a single individual.

Species	Locality	Date	Rate of flight in miles per hour
<i>Ardea herodias</i>	Tulare Lake,	Calif. November 7, 1914	28
" "	" "	" "	28
<i>Buteo b. calurus</i>	Bakersfield,	" "	10, "
<i>Cerchneis s. phalaena</i>	" "	" "	" "
" " "	" "	" "	" "
<i>Colaptes c. collaris</i>	Tulare Lake,	" "	8, "
<i>Otocoris a. actia</i>	" "	" "	6, "
" " "	" "	" "	7, "
" " " (several)	" "	" "	" "
" " " (2)	" "	" "	8, "
" " " (3)	" "	" "	" "
" " " (several)	Bakersfield	" "	10, "
<i>Corvus c. sinuatus</i>	Foot of Tejon Pass,	" "	" "
<i>Lanius l. gambeli</i>	Tulare Lake,	" "	6, "