

Corvus ossifragus. FISH CROW.—Though not as numerous as *Corvus americanus*, this Crow is not to be classed as rare. It breeds abundantly in May in the clumps of cedar trees near the beach. On May 16 Mr. Harry G. Parker found a number of sets of eggs in a grove of cedars near the Seven Mile Beach Life-saving Station. Incubation was but slightly advanced. My notes on the Fish Crow in the 'Bay State Oölogist' for March, 1889, were wrong, as the Crow I found breeding on Peck's Beach in April was not the Fish Crow, but *Corvus americanus*. The breeding time of the Fish Crow is from the 5th to the 25th of May. Fresh eggs can be found early in May.

Molothrus ater. COWBIRD.—I have taken a number of sets of Chipping Sparrow's nests containing single eggs of this bird, and I have also found their eggs in the nests of Song Sparrows.

(To be continued.)

NOTES ON HABITS AND NESTING OF *VIREO FLAVOVIRIDIS* (CASS.).

BY GEORGE K. CHERRIE.

AT SAN JOSE, Costa Rica, the Yellow-green Vireo (*Vireo flavoviridis*) is not a permanent resident, disappearing at the beginning of the dry season together with the Red-eyed Vireo (*Vireo olivaceus*), which latter bird is seen only for a very short time and is very rare as it passes on its journey south. The last record I have of *V. flavoviridis* for 1889 is that of the night of September 28, when, in company with seven other species of North American birds—none of which are found within the limits of Costa Rica during the breeding season,—they rushed, in terrified groups, to death, bewildered by the electric lights. The bodies of those picked up the following morning, and for some three weeks previous, were noted as being extremely fat, a thing that had not in any way attracted my attention previous to the migration.

By April 10 they are quite common, and on April 24, 1889, I saw one carrying nesting material. At this season they are almost always seen in pairs, and apparently have a pent up supply of song that is liable to burst forth at almost any moment, wherein they differ from their near relatives, *V. olivaceus*, which at this

time are only seen as single individuals and apparently are not in a singing mood.

Although I first saw the birds carrying nesting material on April 24, and frequently thereafter, — for they breed abundantly here, — I did not succeed in finding a nest until May 12, when I collected one containing two fresh eggs. The nest in all essential features is like those of *V. olivaceus*. It was situated about four feet from the ground in a shrub (*Dracco volanais*), suspended between small forks, and overhung by a bunch of leaves which completely concealed it. Outside the diameter is 2.50 inches; inside, at top, 1.75; lower down it is somewhat greater, for the rim is a trifle contracted. Depth outside, 2.25; inside, 1.75. The lining of the nest is very fine dry grass. The outside is covered with soft dry leaves and a kind of papery bark such as peels from a birch tree, all bound and held in place by spider webs. The eggs, measuring $.81 \times .57$ and $.81 \times .58$ inch, are white, speckled, chiefly at the larger end, with spots varying in color from a dark chestnut to an orange rufous, the chestnut predominating.

A second nest containing three fresh eggs was taken May 21. In this instance the nest was at the extreme end of a large limb of a tree on the river bank, about ten feet above the water. In form and materials it was similar to the last. The eggs measure $.76 \times .58$, $.75 \times .57$ and $.79 \times .60$ inch. In color and markings they are exactly like the last. When discovered, the female was on the nest and refused to move until the limb was shaken.

A third nest and three much incubated eggs were secured May 26. The eggs measure $.83 \times .56$, $.84 \times .55$, and $.84 \times .56$ inch. In color and markings they are like those described above. The nest was about seven feet from the ground, hanging between the twigs of a small tree on the river bank. It was admirably concealed by leaves from above and the sides. It is typical in construction and location. Depth outside from the supporting twigs 2.75, inside 2.00 inches. The rim, bounded on two sides by the supporting twigs and on the other by the free edge of the nest, forms an equilateral triangle having sides two inches long. Outside diameter 2.50 inches. The female was shot as she left the nest.

Both male and female are always to be found very near the nest, the male warbling joyously, but stopping to take an insect

between whiles. When disturbed the birds remain quite near, but are not demonstrative in their uneasiness, usually keeping well concealed from view and uttering very few notes, few, if any, indicative of alarm.

From the latter part of May until the middle of July the birds I observed were exceedingly shy and very quiet. June 30 I secured the first young bird from the nest. By July 20 family parties were very common and made noisy crowds. To approach one of these parties, was to be at once taken for an evil character. The parent birds would immediately grow excited trying to hurry their charges along. The family parties were common until about August 20, when they were more frequently seen in pairs or singly until all had departed.

The present year I have seen, compared with last year, very few birds. Also the breeding commenced very much later and I did not take a specimen showing signs of breeding by the swollen condition of the ovaries until May 8. Not only with *V. flavo-viridis* have I noticed the late date of breeding, but with all the birds breeding in the vicinity of San José. This is probably owing to the commencement of the rainy season being a month later than last year, that is the middle of May this year, whereas last year it had begun by the middle of April. Before the beginning of the wet season vegetation is parched and dry, and insects of all kinds are much less abundant.

NORTH AMERICAN BIRDS FOUND AT SAN JOSÉ, COSTA RICA, WITH NOTES ON THEIR MIGRATION.

BY GEORGE K. CHERRIE.

According to Zeledon's list of the birds of Costa Rica, published in Vol. I, *Annales del Museo Nacional de Costa Rica*, there are found here 190 of the birds recognized by the A. O. U. as North American. Of this number 81 are found at San José, as represented in my own collection or that of the Museo Nacional. While the time I have been in Costa Rica is short, I yet feel that



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