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FROM FIELD AND STUDY

Another Invasion of Wood Ibises in Southern California.—It may be that, after its nesting season, the Wood Ibis (*Mycteria americana*) visits Imperial County, California, every summer. But its appearance in San Diego County or the western part of southern California seems to be at intervals—determined, doubtless, by water conditions elsewhere. In the Condor (33, 1931, p. 29) I have recorded visitations of Wood Ibises to coastal San Diego County in 1923, 1925 and 1930. The year 1934, marked by a particularly notable invasion of these conspicuous birds, may now be added.

Considerable correspondence on the subject of this past summer's visitation was received at the Natural History Museum, San Diego, as well as many verbal reports of observations. The earliest record was June 10, from the caretaker of Hodges Reservoir, the latest September 28 when the local game warden stated that the birds were still at both Sweetwater and Hodges reservoirs. Almost every body of water in San Diego County seems to have had its Wood Ibis visitors. In addition to the two reservoirs just named, occurrences were reported at Lindo Lake, Lower Otay Lake, Henshaw Lake, Cuyamaca Lake (elevation 4600 feet), Guajome Pond, Chollas Reservoir, and various coastal sloughs from Torrey Pines to Oceanside. Even the band leader of the U. S. Marines wanted to know the name of the large white birds, with black on their wings, which he had seen between the parade ground and San Diego Bay. On the other hand, the caretakers of Barrett, Morena and Wohlford lakes, which are rather deep, mountain reservoirs, wrote that they had failed to see any of the ibises there.

The largest count was that of L. M. Huey, of the Natural History Museum staff, who tallied 77 individuals at Lindo Lake, Lakeside, on August 12. This small, shallow lake was a favored resort of the ibises throughout their stay. The characteristic unconcern of the birds was remarked upon by many persons who watched them at close range there. During a rodeo which was held in Lakeside on September 2 and 3, a number of ibises perched in a tree which was in full view of the grandstand and attracted considerable attention.

Supplementing observations in San Diego County, Professor Raymond B. Cowles, of the University of California at Los Angeles, wrote me that on August 13 he had seen 5 Wood Ibises flying above the salt lagoon at Point Mugu. He stated that they later settled in the salicornia at the edge of the water about a mile northwest of Fish Camp. Both of these localities are in Ventura County, and they provide the northernmost record for this visitation that has come to my notice. Dr. Loye Miller, of the University of California at Los Angeles, wrote: "We saw wood ibises in early August

at Balboa [Orange County] on several occasions. We counted about thirty."—CLINTON G. ABBOTT, *San Diego Society of Natural History, Balboa Park, San Diego, California, November 19, 1934.*

Nesting Habits of Cormorants.—On the cliffs above the famous Caves of La Jolla, California, there is a long established cormorant nesting ground. These cliffs rise almost sheer from the sea and are battered by the breaking surf along the base. Along the rough face of this cliff for a distance of perhaps 200 yards are niches, ledges, and projections which offer perching and nesting sites for the cormorants. When we first visited this rookery at the end of October, 1933, several hundred birds were present and every available perching site was in demand. Of the estimated 600 cormorants on the cliff 500 were Brandt Cormorants (*Phalacrocorax penicillatus*) and 100 were Farallon Cormorants (*Phalacrocorax auritus albociliatus*).

While all the cormorants perched on the same cliff, the birds of the two species did not mingle indiscriminately: the Farallons occupied the uppermost tiers of perches exclusively while the Brandts kept to the ledges below the two uppermost tiers. Each species recognized the rights of the other and there was never any apparent dispute between species. However, birds of the same species often dislodged one of their own kind to gain a favored perching site. As a matter of fact there were not enough perching sites to accommodate all the Brandt Cormorants, and as a consequence many were forced to do their resting on the surface of the sea. But nesting birds had well established rights, for they were never molested by birds who sought a foothold on the cliff.

At the time of our first visit and all through the month of November the cormorants were merely using the ledges as perching sites, but on the afternoon of December 21, on our visit to the rookery we discovered Brandt Cormorants just beginning to build nests. These birds were in breeding plumage and from the sides of the neck and from between the shoulders there extended long narrow plume-like feathers. Excited birds puffed out blue throat pouches.

The nest building activities of these cormorants was an elaborate ceremonial, and in two cases at least it seemed to be a three bird affair. Two birds stayed at the nest site to arrange the material which a third bird, the carrier, brought in from the sea. When the carrier came in from the sea with a billful of seaweed he came flying low over the water; with fast beating wings as he approached the cliff he lifted upward and then with an awkward flop he alighted clumsily on the nest ledge. When settled, he bows with grave dignity and places his offering of material at the feet of his lady. Now there is much politeness. The birds raise high their heads in turn, and bow to one another. This gesture is repeated many times. The third bird occasionally gets in a bow from the sidelines. The lady bows low and lies flat on her belly, she tilts her tail straight upward, she crooks back her neck and tilts upward her bill, and she quivers rapidly her partly spread wings. The carrier solemnly looks on, but makes no active response to this wanton gesture. Now the lady stands up and lifts high her head, the carrier follows suit and the birds twist and twine and rub necks in a most affectionate manner. It is a real "necking party" and the bills touch bills and pinch bills and tease one another cheek to cheek. Occasionally the female reaches down and pokes about the seaweed as though she thought she should cease such frivolous behavior and attend to her housekeeping.

In the course of thirty minutes the carrier made three trips for material which he evidently pulled up from the sea bottom about 200 yards off-shore. At each visit to the nest site he went through the same ceremony. In spite of the love making at the nest site the birds made progress and the nest soon took shape.

On December 31 we again visited the cormorant colony. The nests that were started on December 21 were apparently complete. Settled in each nest was a bird closely attended by a mate who stood just outside of the nest rim; there was no third bird in evidence.

The birds in the upper nest were performing in a weird manner. They squatted low, facing one another; their tails were erected at right angles to their bodies, and their necks were crooked into the form of a letter S with heads held low. Glistening blue throat pouches were puffed out in front. As the birds faced one another in this attitude the tips of their slightly spread wings vibrated rapidly. Occasionally they touched throat patches and then their bodies took on an added shiver. After several