

ADDITIONAL INFORMATION CONCERNING THE  
DOUBLE-CRESTED CORMORANT (*PHALACROCORAX*  
*AURITUS AURITUS* (LESSON))

BY HARRISON F. LEWIS.

SINCE the publication, on December 9, 1929, of my work on "The Natural History of the Double-crested Cormorant," a number of additional items of interesting information about this species have come to my attention, some in scattered published records and some through observation, correspondence, and bird-banding returns. For convenience of reference, such of these items as appear to be of any moment are brought together here.

There have been some changes in the recorded nesting colonies of Double-crested Cormorants and several additional colonies have been discovered. I am under great obligation to the various correspondents mentioned in the following paragraphs as having furnished me with information in regard to these matters.

On the north shore of the Gulf of St. Lawrence a small colony, observed for the first time in 1930 when it contained 30 or 40 breeding birds, was situated on a rock seaward of "Long Island," about six miles south-west of Pointe au Maurier, in latitude  $50^{\circ} 16'$  N., longitude  $59^{\circ} 52'$  W. This probably indicates a change of site on the part of the colony that I have recorded at Yankee Harbor, about three miles distant, where the rock on which the Cormorants once nested appeared in 1930 to be nearly or quite deserted, owing presumably to severe human persecution in the form of repeated removal of eggs and young. Some birds from the colony off the mouth of Etamamu River may also have joined the colony at the new site.

Owing to the recent construction of a lighthouse on Cormorant Rocks, the Double-crested Cormorant colony that once nested there has moved away and will probably never return. Apparently the birds from this colony have joined the mixed colony of Double-crested Cormorants and Common Cormorants (*Phalacrocorax carbo*) on the cliffs of Lake Island, about a mile and a half north of Cormorant Rocks. There were no Double-crested Cormorants

nesting on Egg Rock when I visited it on June 15, 1930, and it is quite likely that the colony that once nested here has also joined the Lake Island colony, which is certainly much larger than it was in 1928.

The colony at Wolf Bay has decreased from 440 breeding birds in 1928, as published, to 392 in 1930, a decrease of 11 per cent in two years, and the breeding population of the colony on a rock near Fog Island has decreased in the same period of time from 756 to 694, a diminution of 8 per cent. Both of these colonies are situated in government bird sanctuaries and are almost certainly free from disturbance during the nesting season. Their decrease is therefore very disquieting, and is probably due to heavy mortality, caused chiefly by wanton shooting and partly by other human activities, along the birds' migration route, which follows the eastern coast of North America, and in their winter quarters in southeastern North America.

As far as known, there are now, in consequence of the changes mentioned, only 17 nesting colonies of Double-crested Cormorants on the north shore of the Gulf of St. Lawrence, instead of 19, as previously published.

Several additional colonies have been reported from western Canada. A. G. Lawrence, of Winnipeg, published in the "Manitoba Free Press Bulletin" for November 21, 1929, an account of colonies of Double-crested Cormorants at Chitek (or Pelican) Lake, east of Lake Winnipegosis. He obtained his information, supported by photographs, from J. D. B. MacFarlane, of the Dominion Forest Service, who reported that, in July, 1929, several islands in Chitek Lake contained nesting colonies of Double-crested Cormorants and White Pelicans (*Pelecanus erythrorhynchos*), and that there were several hundred breeding birds of the two species on the island on which his photographs were taken. Mr. MacFarlane also reported seeing Double-crested Cormorants in the summer of 1929 at Cormorant Lake, Manitoba, in latitude 54° N. and at Cross Lake, Manitoba, north-east of Cormorant Lake, but he obtained no evidence of nesting at those lakes.

Mr. Lawrence has also informed me, in a letter dated April 15, 1930, that he has evidence of the existence of another Double-crested Cormorant colony, the evidence consisting of a photograph

that shows young Cormorants in part of what appears to be a large colony on an island, and that is inscribed on the reverse side, "Pelican River, Lat. 54°, Mr. Reid."

Dr. J. Frank Wright, of the Canadian Geological Survey, in a letter dated October 24, 1930, states that he visited colonies of Double-crested Cormorants on several rocky islets in Wekusko or Herb Lake (Lat. 54° 45' N., Long. 99° 48' W.) in northern Manitoba, in the summer of 1930. His report is supported by photographs of the nests. Even in that remote locality, he adds, these birds are much persecuted by the gathering of their eggs by prospectors, who use them for food.

While the list of breeding colonies that I published included a colony of about 400 nesting birds on an island in Big Quill Lake, Saskatchewan, I have since learned from reports from J. A. M. Patrick, of Yorkton, Saskatchewan, and from correspondence with F. Bradshaw, of Regina, Saskatchewan, that a much greater total number of Double-crested Cormorants nests on islands in this lake. The colony already reported, which is on an island north of the village of Dafoe, had dwindled to about 80 nesting Cormorants when visited by Mr. Bradshaw in the summer of 1929, but another colony in the same lake, but about ten miles farther east, north of the village of Kandahar, contained about 1600 nesting Cormorants when visited by Mr. Patrick in the same summer, and it is thought that some birds may have shifted from the more western colony to the more eastern one. Mr. Bradshaw is of the opinion that still other colonies of Double-crested Cormorants, so far unreported, exist on other islands in the Quill Lakes.

On page 6 of "The Natural History of the Double-crested Cormorant" I recorded, on Mr. Bradshaw's authority, a colony of 120 Double-crested Cormorants at Johnson Lake, Saskatchewan, and on page 12 of the same publication I rejected, as lacking recent substantiation, an old published report<sup>1</sup> of the breeding of this species at Old Wives Lake, Saskatchewan. Mr. Bradshaw has pointed out to me by letter that Old Wives Lake and Johnson Lake are one and the same body of water, Johnson Lake being the more recent name for it.

In the mid-western United States several additional nesting

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<sup>1</sup> Cat. of Can. Birds, Macoun and Macoun, Ottawa, 1909, p. 68.

colonies have also become known and changes in the size of some already recorded have been observed. F. M. Uhler, of the Biological Survey, has kindly informed me in correspondence that he learned in 1929 of a well-established colony of Double-crested Cormorants, containing 29 nests, at Lake Harriet, near Arena, in north-eastern Burleigh County, North Dakota, and that on July 30, 1930, he visited, at Thorp Lake, several miles north-east of Hyannis, Grant County, Nebraska, a mixed colony of Black-crowned Night Herons, Great Blue Herons, and Double-crested Cormorants, which included at least 20 to 30 nests of the Cormorants, situated in low willows, within 20 feet of the ground. The latter colony is apparently the first nesting colony of this species to be reported in Nebraska.

M. P. Skinner has published<sup>1</sup> a notable record of the finding of a single nest of the Double-crested Cormorant, with two eggs, on Molly Island, Yellowstone Lake, Yellowstone National Park, Wyoming, by C. Brooke Worth, of St. Davids, Pennsylvania. One of the birds was seen at a little distance. This is the first certain record of the nesting of this species in Wyoming. These records from Nebraska and Wyoming are filling in the gap that formerly appeared between the colonies in Utah and those in the Dakotas.

In arriving at a usable approximation to the total number of nesting colonies and total existing population of the Double-crested Cormorant, as published in detail in my work previously referred to, I estimated as still unknown 25 colonies, containing 5600 breeding birds. The newly discovered colonies mentioned above form a part of this number and cause no change in the estimated total population of this form at the present time.

William Youngworth, of Sioux City, Iowa, visited in 1930 the colonies of Double-crested Cormorants at Fort Sisseton, South Waubay Lake, and Lake Albert, in South Dakota, and has informed me by letter that, as compared with the size of these colonies as published in my book, the colony at Fort Sisseton remains about the same (with 50 breeding birds), that at South Waubay Lake has become two groups on separate islands and has doubled in size (from 840 breeding birds to 1680), and that at

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<sup>1</sup> Condor, Vol. XXXI, No. 1, p. 128, May, 1929.

Lake Albert has increased in numbers (beyond the 200 breeding birds previously reported).

A number of interesting records relating to the migration of the Double-crested Cormorant have been published recently, and others have been obtained from bird-banding returns and from conversation. The most important of such records are listed here.

Dr. H. C. Oberholster has recorded two Double-crested Cormorants<sup>1</sup> seen by him on the Potomac River near Fort Washington on April 13, 1929, and one<sup>2</sup> seen in the same locality on June 7, 1930.

C. Brooke Worth has reported<sup>3</sup> seeing 50 Double-crested Cormorants, mostly migrating north, at Cobb's Island, Virginia, June 7-11, 1929.

Francis M. Weston has recorded<sup>4</sup> that this species was still present at Pensacola, Florida, on May 18, 1930, which he considered very late for such an occurrence.

Dr. H. C. Oberholser has published<sup>5</sup> a record of a Double-crested Cormorant observed at Washington, D. C., on August 13, 1929, by Dr. H. H. T. Jackson.

J. T. Nichols has recorded<sup>6</sup> 41 Double-crested Cormorants observed on July 31, 1929, between Mecox Bay and Montauk Point, on Long Island, New York, by Dr. W. T. Helmuth, Jr., and stated that Dr. Helmuth had seen the species daily in that area since July 4, while Dr. Helmuth himself has published<sup>7</sup> somewhat later the statement that this species "has become a fairly common, non-breeding, summer resident on Gardiner's Bay," at the east end of Long Island, where "It was noted throughout the summer, usually in numbers of from 10 to 50 or 60 per day."

Francis M. Weston has reported<sup>8</sup> the presence of Double-crested Cormorants at Pensacola, Florida, on September 29, 1930, earlier than they had ever before been noted there in the fall.

E. F. G. White, of Ottawa, Ontario, told me on November 11, 1930, that a flock of 30 Double-crested Cormorants was seen shortly before that date on the Ottawa River, about 25 miles east of Ottawa, although he did not see it himself. Several birds were said to have been taken from the flock. This is not an unusual occurrence, except that this is the largest flock of these birds known to have appeared in this vicinity. At about the same time a flock of 12 to 15 Double-crested Cormorants was reported to Mr. White from the vicinity of Pembroke, Ontario, about 100 miles west of Ottawa.

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<sup>1</sup> Bird-Lore, Vol. XXXI, No. 4, p. 271, July-August, 1929.

<sup>2</sup> Bird-Lore, Vol. XXXII, No. 5, p. 358, September-October, 1930.

<sup>3</sup> Auk, Vol. XLVI, No. 4, p. 558, October, 1929.

<sup>4</sup> Bird-Lore, Vol. XXXII, No. 4, p. 283, July-August, 1930.

<sup>5</sup> Bird-Lore, Vol. XXXI, No. 6, p. 410, November-December, 1929.

<sup>6</sup> Bird-Lore, Vol. XXXI, No. 5, p. 340, September-October, 1929.

<sup>7</sup> Auk, Vol. XLVII, No. 4, p. 529, October, 1930.

<sup>8</sup> Bird-Lore, Vol. XXXII, No. 6, p. 433, November-December, 1930.

Interesting winter records that may perhaps represent the extreme rear-guard of a late autumn migration are:

One immature Double-crested Cormorant identified on the coast of Essex County, Massachusetts, on December 22, 1929, by Ludlow Griscom, and recorded by Griscom<sup>1</sup> and by John B. May.<sup>2</sup>

Two individuals of this species reported<sup>3</sup> as present between Watermill and Amagansett, Long Island, New York, on December 21, 1929, by William T. Helmuth, 3rd.

One individual observed at Long Beach, Long Island, New York, on January 4, 1930, by R. T. Clausen and F. G. Garrett, and recorded by John T. Nichols.<sup>4</sup>

The banded birds listed below were all banded as juveniles at the nesting colonies where they were hatched.

No. 334026, banded by Harrison F. Lewis at Wolf Bay, Saguenay County, Quebec, on July 26, 1925, was shot at Vero Beach, Florida, on January 15, 1930.

No. 302355, banded by Harrison F. Lewis in Fog Island Bird Sanctuary, Saguenay County, Quebec, on August 2, 1927, was found at Lake Apopka, Orange County, Florida, on January 1, 1930.

No. A701957, banded by Harrison F. Lewis, at Wolf Bay, Saguenay County, Quebec, on August 9, 1929, was reported, probably killed, in Miller County, in southwestern Georgia, on October 30, 1929. It is unusual for a bird of this species banded on the coast to be found so far inland in the south.

No. A701962, banded like the preceding, was shot at Clewiston, on Lake Okeechobee, Florida, on February 19, 1930.

No. A701973, banded like the preceding, was captured at Lavaltrie, Berthier County, Quebec, on October 12, 1929. As Lavaltrie is about 25 miles east of Montreal, it would appear that this bird had missed the migration route southward by way of the Atlantic coast, and had strayed up the St. Lawrence River.

No. A701998, banded like the preceding, was caught at Neuse River, Carteret County, North Carolina, on January 31, 1930.

No. A703124, banded by J. A. M. Patrick on an island in Big Quill Lake, Saskatchewan, on July 7, 1930, was caught in a fish net at Spruce Island, Lake Winnipegosis, Manitoba, 175 miles from its place of banding in a direction nearly north-east, on September 17, 1930.

No. A703,139, banded like the preceding, was shot on the Ontario part of Lake of the Woods, on October 17, 1930. The course taken by this bird was much more easterly and less southerly than the courses of most of its fellows from Saskatchewan colonies.

<sup>1</sup> Bird-Lore, Vol. XXXII, No. 1, p. 23, January-February, 1930.

<sup>2</sup> Bird-Lore, Vol. XXXII, No. 2, p. 136, March-April, 1930.

<sup>3</sup> Bird-Lore, Vol. XXXII, No. 1, p. 27, January-February, 1930.

<sup>4</sup> Bird-Lore, Vol. XXXII, No. 2, p. 137, March-April, 1930.

No. A703,184, banded like the preceding, was found crippled at Randle Lake, Denison, Texas, October 17, 1930.

Numerous other records of banded Double-crested Cormorants, from both Quebec and Saskatchewan, have been obtained since 1929, but they are not included here because they parallel to a large extent records already published. No record showing complete crossing of the Florida peninsula by a bird from either east or west has yet come to my attention.

In J. D. B. MacFarlane's account of the colonies of Double-crested Cormorants at Chitek Lake, Manitoba, as published by A. G. Lawrence in the 'Manitoba Free Press Bulletin,' it is stated that one set of 7 eggs and another set of 9 eggs were seen in one of the groups of nests in the summer of 1930. It is suggested that the set of 9 eggs contained possibly the eggs of two birds.

Mr. Lawrence, in correspondence, has kindly drawn my attention to a published reference<sup>1</sup> to Double-crested Cormorants which I had overlooked and in which the late Eric B. Dunlop, referring to colonies of these birds in northern Manitoba, states that, according to his experience, incubation begins from the laying of the first egg of a set, and that the birds regularly void the faeces from the nest.

Dr. Charles W. Townsend has kindly drawn my attention to his published<sup>2</sup> description of an activity of the young Double-crested Cormorants on Percé Rock, Gaspé County, Quebec. He there stated, "The young when fully grown may often be seen practicing flight by ascending a few feet into the air and coming back to the rock." This may be to some extent a habit peculiar to the Percé Rock Colony, which is situated on a broad-topped rock with high precipitous sides, which the young must eventually leave by flight. Young birds on low rocks with shelving shores probably swim away before flight is well mastered, and young birds in nests in trees or on narrow ledges on cliff faces have usually scant room for flight practice.

The Double-crested Cormorant recorded by Francis M. Weston<sup>3</sup> as containing a 9-inch catfish when taken near Pensacola, Florida, on March 24, 1929, is the same individual whose stomach contents

<sup>1</sup> *British Birds*, Vol. IX, No. 5, p. 114, Oct. 1, 1915.

<sup>2</sup> *The Canadian Field-Naturalist*, Vol. XXXIV, No. 5, p. 89, May, 1920.

<sup>3</sup> *Bird-Lore*, Vol. XXXI, No. 3, p. 201, May-June, 1929.

are reported on in connection with the same place, collector, and date on page 68 of "The Natural History of the Double-crested Cormorant."

This year (1931) is the centenary of the Double-crested Cormorant's introduction to science, as a duly described species, by Swainson,<sup>1</sup> in 1831. The first century of its formal history has witnessed a great diminution in its numbers. What shall be the record of the next century?

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<sup>1</sup> Swainson and Richardson, *Fauna Boreali-Americana*. London, 1831, p. 473.