NOTES ON THE COURTSHIP OF THE LESSER SCAUP, EVERGLADE KITE, CROW, AND BOAT-TAILED AND GREAT-TAILED GRACKLES.

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Marila affinis, LESSER SCAUP.

In his 'Life Histories of American Wild Fowl,' Mr. A. C. Bent states that "very little has been published about the courtship of this species." He quotes Audubon, who says that the males bow their heads and utter a kind of quack, and Wetmore,[1] who observed the conduct of a pair during courtship in New Mexico and carefully recorded it. He concluded that mating took place with both birds under water.

My observations agree with those of Wetmore, and as I saw the spectacular performance of over a hundred of these birds, it seems worthwhile to record it. At Sanibel Island on the west coast of Florida, the Lesser Scaup is abundant during the winter, feeding in large and small flocks in the Gulf of Mexico near the sand beaches, often among the breakers. They frequently come ashore with the wave and continue to feed eagerly until the wave receding leaves them lying flat on the sand. They then get up and walk towards the water until the next wave washes them in and provides them food as before. I saw no signs of courting among the flocks in the Gulf. On February 22, 1926, however, in a small shallow fresh water pond about a mile back from the shore, I came upon some of these Ducks evidently courting, and, from a concealed position, watched them for over half an hour. At first there were five groups of from ten to forty each, made up of both males and females, although the former were perhaps slightly in the majority. In each group the birds were crowded together, and were rapidly and nervously milling about in the way that shows at a glance that courting is in progress. At one time several groups joined together, forming a compact mass of fully seventy-five birds. The commotion was exceedingly great.

The males were continually diving and the females were diving

[1] Alexander Wetmore, 'The Auk,' 1920, vol. 37, pp. 244, 245.

nearly as frequently. The males often jumped clear of the water, made graceful curves and entered it with wings close to the sides, but the astonishing part was that, as they disappeared, spurts and sometimes sheets of water were sent up by their feet. I often saw several males dive almost immediately after a female disappeared. The consequence was that the entire group was partly obscured by the continuous splashing. It was a veritable orgie. The water about the group was muddy, contrasting with the clear but brown water of the rest of the pond. Both sexes frequently stood up and flapped their wings, and they often held their heads up and shook them. In the confusion of the excited mob, such details as the lowering of the crest and the drawing of the head downwards to the breast, described by Wetmore, could not be seen. The only notes I heard were low croakings, but the loud splashings may have obscured finer notes. On my return half an hour later, the birds were quietly preening.

Rostrhamus sociabilis, EVERGLADE KITE.

In the marshes of the upper waters of the St. John River, Florida, on March 4, 1926, I watched three of these birds flying together. Presently one departed and the other two circled about, darting at each other from time to time. Occasionally one would turn on its side and stretch out its legs as if to grapple. After playing in this way for a short time, one of the Kites circled upwards and, reaching a considerable elevation, dove swiftly downwards with wings curved back, and then turned completely over, end to end. This maneuver was repeated several times, the bird crying out at the same moment in a bleating fashion very much like a sheep. Howell[1] describes similar maneuvers on the part of the Mississippi Kite.

Corvus brachyrhynchos brachyrhynchos, CROW. The bowing, spreading slightly of the wings and tail, puffing out of body-feathers and the rattling song with head at first up and gradually lowered, I have already described and recorded[2], but a recent unusual opportunity for observation has added to my knowledge. Spending the nights in an open lean-to in my "forest," at Ipswich,

[1] Arthur H. Howell, "Birds of Alabama," 1924, p. 130.

[2] "The Voice and Courtship of the Crow," Bull. Essex County Ornith. Club, 1923, pp., 4–8.

I found myself listening every morning to the courtship song of the Crow close at hand, and, on May 3, 1926, I discovered from my bed that a pair had their nest in a white spruce twenty-five yards from me, so that I was able to watch them closely. At about four-thirty every morning I awoke to the rattling song of the Crow, and I often saw one flying about in irregular circles, singing and chasing another. Both alighted on trees, especially on the spruce, from time to time. The song was given in the air and from a perch, and once I heard it given as a whisper song. I also heard for the first time at the end of the rattle a pleasing sound which suggested the cooing of a Pigeon or the note of a cuckoo clock, but softer and more liquid. It was usually double—I wrote it down *coi-ou* or a single *cou*—and generally repeated several times, although sometimes given only once. These soft sounds, which I heard many times when the bird was near, generally followed the rattle, but were often given independently. When the bird was perched, he bowed and puffed out his feathers at the time of their delivery as during the rattling song. The cooing was also given in the air and on one occasion, I saw a bird drop slowly down with wings tilted up at an angle of forty-five degrees, singing as he fell. The rattle song was once given fifty-four times in succession, followed by a series of *cous*.

The female was at times very importunate, calling slowly *car car* like a young bird begging for food. If the male approached, the calling would become more and more rapid and end exactly as in the case of a young bird in a gurgle or gargle—*car, car, car, cowkle, cowkle, cowkle.* After mating the male would fly to the next tree and call loudly *caw-caw* several times. Occasionally the loud *wa-ha-ha-ha* was given. An examination of the nest made at this time showed three heavily incubated eggs.

A recrudescence of the song in the fall is common among all birds, and on and after August 21 I occasionally heard the rattling song, followed by the *cou* if the bird was near enough for me to hear the softer sound.

Megaquiscalus major major, BOAT-TAILED GRACKLE. When I was studying the song of the Boat-tailed Grackle in the South, I did not know that the mechanism of part of it had been discussed by Torrey, Wayne, Harper and Wetmore, so that my notes

made at the time were entirely unbiased. Although I find that my conclusions differ from those of all these authorities, I have ventured, nevertheless, to set them down here, but shall be glad to be corrected if I am wrong.

The part of the song to which I refer, appears to be made by the rattling or vibration of the primaries against themselves or the body of the bird. In other words, this part of the song appears to be instrumental, not vocal—to be wing-made. That was my first impression, and that seems to have been the first impression of all the observers mentioned. Mr. Wayne,[1] a most careful observer, had studied the bird for many years, and states definitely that the "birds with their wings make a loud rolling sound." Mr. Torrey,[2] however, began to have his doubts for he heard the sounds when the wings were motionless, and, moreover, he noticed a movement of the mandibles. "If the sounds are not produced by the wings," he says, "the question returns, of course, why the wings are shaken just at the right instant. . . . The reader may believe, if he will, that the bird is aware of the imitative quality of the notes, and amuses itself by heightening the delusion of the looker-on. My own more commonplace conjecture is that the sounds are produced by snappings and gratings of the big mandibles . . . and that the wing movements may be nothing but involuntary accompaniments of this almost convulsive action of the beak. But perhaps the sounds *are* wing-made, after all." Mr. Harper,[3] who quotes Mr. Torrey as above, came independently to the same conclusion that the sound is not made by the wings, for he saw a bird produce the sound when the wings were motionless, but by the rattling of the mandibles, as he "could plainly see the bill in a sort of rattling motion." He quotes Dr. Alexander Wetmore as verbally confirming this theory from his own observation.

My first notes were made at Punta Gorda, Florida, on February 11, 1926, and I copy them verbatim: "The males are singing a fine high-pitched trill with great energy, moving their heads about

[1] Arthur T. Wayne, "Birds of South Carolina," 1910, p. 113.
[2] Bradford Torrey, "A Florida Sketch-book," 1894, p. 110.
[3] Francis Harper, "The song of the Boat-tailed Grackle," 'The Auk,' 1920, Vol. 37, pp. 295-297.

with wide-open mouth and frequent winkings, apparently of the nictitating membrane. After two or three trills, they flutter their wings slightly, making instrumental music in the form of a rattle. Occasionally they emit a succession of clear notes something like that of a Robin calling." Later the same day and on several other occasions, I noticed that during the rattle the wings were sometimes moved but little or were motionless. Once or twice I saw one wing slightly elevated but not vibrated. I also heard the rattle many times given in flight, and there was no perceptible modification of the action of the wings at the time. I think it can be definitely stated, therefore, that the evidence eliminates the wings from any causative action of the rattle, although the vibratory movement is generally present and exactly synchronous with it.

So far Torrey, Harper, Wetmore and I are in agreement, but my observations lead me to think that the rattle is vocal, modified by throat vibrations and not made by the bill. My notes of March 24, 1926, made at Charleston, S. C., explain this. The bird was seen on a tree in a favorable light within twenty yards and studied with eight power prismatic glasses. "After three or four wheezy trills with bill wide open, he would partly close it and appear to gulp and the feathers of the throat vibrated as the guttural rattle was produced." I could see the bill vibrating also, but it did not occur to me then, nor does it seem probable to me now, that the bill made the sounds. The vibration of the throat would seem to point to its vocal origin. Certain parts of the song of the Purple Martin are very similar to this "guttural rattle," and the throat of the bird may in the same way be seen to vibrate. I observed this at Mr. Wayne's home.

Megaquiscalus major macrourus, GREAT-TAILED GRACKLE. At Brownsville, Texas, in December, 1925, I had excellent opportunities to watch this bird and was struck with the great variety of its clear and at times musical notes and songs mixed with others that were not so pleasing, all so different from the songs of the Boat-tailed Grackle. I have recorded them as a clear almost Flicker-like *week-it, week-it* and *see, see, see;* also a clear and pleasing *wheet, whit-a, whit-a, whit,* followed by *whee-ee-ee,* the last vibratory and pleasing.

The males also fought or, rather, pretended to fight with tails cocked up and wings partly spread, facing each other and sometimes flying up at each other like fighting cocks. But another very striking difference in the courtship of these two birds is the manner in which the male Long-tails pose, thus executing a form of dance. The head and neck are stretched up nearly vertically which gives them an absurdly attenuated look, and, when several males pose motionless facing each other in this position, the effect is very extraordinary. There is no hint of such actions in the courtship of the Boat-tailed Grackle.

The various subspecies of Song Sparrows differ no more in song than individuals of the same race do, and the same may be said of other subspecific races. On the other hand, birds that look so much alike as do the Gray-cheeked and Olive-backed Thrushes, but are in reality not closely related, have very different songs. I am led to ask, therefore, whether the assumed sub-specific relationship between the Boat-tailed and the Long-tailed Grackles may be an error and that the birds are really of more widely separate stock and have approached each other by parallel evolution.

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