

AN OBSERVATION ON THE DRUMMING OF A RUFFED GROUSE

Long years ago, when I was a child in Virginia and went out for chinkapins in the fall, I heard occasionally the drumming of a partridge. All recollection of the sound had faded, so that, when early last spring, as I snuggled down into my sleeping-bag for another nap before beginning my tent housekeeping, I heard it again, I wondered what farmer was starting his gas engine so early in the morning and why the engine ran for only a few seconds. Why it never occurred to me that it might be a Ruffed Grouse I know not, for grouse had nested at the Wilderness the year before and had been flushed often during various visits.

For shelter and comfort during both winter and summer, we have at the Wilderness a 12 x 16 wall tent. In warm weather both ends are open and curtained with bobbinet to keep out the flies. During the noon hour on September 19, 1923, the sound of the "gas engine" came from the woods, and looking through the open doorway a movement caught my eye, a Ruffed Grouse in the act of drumming. The log upon which he stood was about seventy feet from and in plain sight of the tent, offering an unusual opportunity for observation. Eight power binoculars were used for details and an ordinary watch for timing intervals between the drummings and the duration of the act.

After the first complete act which I saw, the Grouse was not quite satisfied with his footing and moved over a little, placing his feet very carefully on the front curve of the log, seeming particular as to the way they fitted on the bark. He stood up straight, head up, neck and legs straight, tail dropped at a slight angle over the crest of the log. Just before drumming, he crouched slightly and bent forward as if about to take flight. As the beat began he seemed to sit hard upon the log, tail horizontal and flattened over the log but not widely spread, body erect, neck ruff somewhat open, head drawn down between the shoulders with bill out, wings hanging easily from the shoulders, but bent practically at right angles at the elbow joint and the primaries spread. Feathers on the breast and belly were raised to a horizontal position. The movement began slowly, one beat of the forewings toward the breast without striking the feathers of the breast, then a long pause, followed by five deliberate beats, a short pause, a sixth beat, slight pause, then increase in speed of beats from the seventh to the nineteenth, when they became too rapid for counting. At the finish of the drumming the feathers of the breast flattened, the Grouse stretched himself to the usual standing position, elevated his tail and lowered it. The feathers of the breast were at no time ruffled except close by the elbow, showing that there was no actual contact with the beating wings. The drummings timed lasted from ten to twelve seconds each, and the intervals between the drummings from two to seven minutes when the bird was undisturbed. After watching the bird for about an hour and a half I walked out of the tent and around to the other side without disturbing him other than to delay the next drumming. He flushed, however, when I went out on his side of the tent some fifteen minutes later.

The entire observation lasted from ten minutes before one to thirty-

five minutes after two, with a total of twenty-seven drummings. "Michigan Bird Life" gives as possible causes for the sound the striking of the wings over the back, striking of wings against sides, and a hollow log. In this instance the wings did not touch above the back nor did they strike the sides of the breast. The log, which was twenty inches in diameter, had a hollow center possibly two to three inches in diameter.

My conclusion is that the opening of the feathers permitted the formation of an air cushion which acted as a sounding board for the vibrations caused by the heating of the wings.

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ACTIONS OF COOTS DURING FREEZE-UP

Squaw Lake, Minnesota, where these observations were made, is in the north-central part of Minnesota, 32 miles by road, north of Deer River, and 120 miles north-west of Duluth. The lake is about 8 miles long, a series of bays completely covered with wild rice. This offers food for thousands of ducks and coot.

On the morning of October 28, 1923, a very cold north-west wind began to freeze the lake. The ducks, mainly lesser scaup and canvass-backs left the country, but the coots remained. They stayed in the open patches of water, as long as there were any, and then flew to places on the ice where it was strong enough to hold them. By 10 A. M. there were at least 2,000 birds on the ice in one of the bays. They were scattered about over a half square mile area in little groups of anywhere from 3 to 10. They did not seem to want to fly. Individuals would run about for a few minutes and then join a group. It was noticeable that coots strayed from smaller to the larger gatherings. By 2 P. M. the general sprinkling of birds was no longer in evidence. Instead, there were three large compact masses of Coots containing approximately 600 individuals each. They had gathered, evidently, to keep warm, and to protect themselves from the wind. The groups were about 15 ft. wide and 40 to 50 ft. long, running in a north-west-south-west line. The wind was from the north-west, so that the formation of the birds offered them maximum wind protection.

Two rafts of the coots stayed all night, and were on the lake most of the next day. Some 300 birds stayed out the second night, and were still in a compact flock on the ice the following morning. They spread out over the ice during the warm part of the day, but returned to their mass formation toward dusk. At the end of five days there were still about a dozen flying birds, and as many cripples in the flock. The rest had left. While the coots remained on the lake, they could have had little or no food, for the rice had been eaten off very thoroughly by the Indians, and upon examination of the ricebeds, when the ice was thick enough to hold a man, we could find no kernels about anywhere.

Only one coot did I notice; that was frozen into the ice alive. For two days it tried to free itself by flapping its wings and struggling. It could not release its feet, nor break them off. The morning of the second day, two herring gulls that had been circling over Squaw Lake, settled on the ice near the imprisoned bird. I watched the gulls carefully.