

Breeding of the Raven in Pennsylvania

BY RICHARD C. HARLOW

One of the attractive features of field ornithology is its uncertainty. One never knows when some rarity may cross his path. Our list of spring transients may seem unusually complete until a passing glimpse of some long-sought rarity dims the luster of all our other observations and stamps this day as the red-letter day of the year.

So in all my field experiences in Pennsylvania and New Jersey the early springs of 1909 and 1910 stand out in bold relief—the seasons when I discovered the nest of the Northern Raven.

Before considering my experiences in detail it may be well to review the status of this bird in the State of Pennsylvania. The consensus of opinion seems to be that it is a rare breeder at the present time anywhere in the United States south of Maine, though it still nests regularly on the rocky islets off the coast of that State and thence northward to Labrador and Greenland and northwestward to Alaska. Mr. A. R. Dugmore in 1900 goes so far as to say that he has been unable to find an authentic record of its breeding within the United States, but several records for Maine were published in the *Auk* prior to that date, as well as one for the pine barrens of New Jersey. Since that date Mr. Herman Behr and Mr. Witmer Stone obtained a deserted nest from the top of a spruce tree in Garrett County, Maryland, just below the Pennsylvania line, which was presented to the Delaware Valley Club collection, and Mr. Behr's observations on its construction were published in *CASSINIA*. In the *Auk*, for July, 1905, Mr. C. W. G. Eifrig also describes a nest near Cumberland, Maryland.

The only nest actually found in Pennsylvania of which I can secure any definite evidence is one discovered a number of years

ago by Mr. Pierce, of Renovo, who still has the eggs in his collection. For this information I am indebted to Mr. W. E. Clyde Todd, of the Carnegie Museum, Pittsburg.

Aside from actual records of nesting, the Northern Raven seems to have been observed with more or less regularity, even during the twenty years of the Delaware Valley Ornithological Club's existence, and evidence of its probable breeding in Fulton County was obtained by several members. Dr. Warren's "Birds of Pennsylvania" includes records of its occurrence in a number of counties, and although he gave no definite nesting records, it seems safe to say that up to 1890 at least it bred locally through the wilder mountainous regions of the State.

Mr. R. B. Simpson, of Warren, Pa., writes me that the Raven was formerly of regular occurrence there, as well as in Forest County, but that it had disappeared some years back, and he had not observed it until last year, when several were seen about Renovo. This is an especially valuable bit of information, as Mr. Simpson is one of the most careful ornithologists in the State, and he could hardly have failed to observe Ravens had they been constantly resident in his locality. Besides the above notes I have recent records of the occurrence of Ravens in Somerset, McKean, Clearfield and Huntingdon counties. Farther to the east I have reports of their occurrence at rare intervals in Wayne and Pike counties, and casting out my previous record as doubtful (CASSINIA, 1905), I have a positive record of their occurrence in southwestern Pike county, as I observed two specimens there at close range on August 12, 1909. Mr. Stone also saw one in Sullivan county in the same month.

My experience of the last two years would tend to show that though rare and extremely local, yet the Raven is still a regular resident among the mountains of Center County. Moreover, it is extremely tenacious of its nesting place, as will be shown by the evidence of my notes. The fact of its rarity is manifest when I say that I had been at State College for over eight months before I saw my first Raven, and this despite the fact that I was in the field twice a week and kept a sharp lookout for them.

My first acquaintance with the Raven began on April 13, 1909. We were walking through the Nittany Valley about a mile southeast of State College when suddenly a hoarse, rolling "crrruck" came to my ears. Even before I turned I realized that it was the bird I had been looking for, and I was not disappointed. About sixty yards off a Raven flew slowly by, frequently uttering its harsh note and closely pursued by an irate Crow. The difference in size between the birds was noticeable at once, the Raven being apparently twice as large as its tormentor. Again on the following day a bird was seen under nearly the same conditions, and each time it disappeared in the direction of the Nittany Mountains. The appearance of these birds interested me greatly, as I had heard previous reports of their occurrence back in the Tussey Mountain range. The result was that April 17, 1909, found me, in company with a friend, working my way along the ridge of the first range of mountains. The mountains at this point are some three or four miles distant from the town of State College, and are in the form of rather regular ridges, rising to a height of 1600 to 1900 feet above sea level. Several of the ridges have abrupt gaps, the sides of which are very rough, and in some places fairly large crags jut out from their sides. The country is for the most part denuded of timber, though the lower slopes and the gaps still support a few small stands of Pitch, White and Table Mountain Pines, while Hemlock, Black and Chestnut Oaks are rather common. We worked our way slowly along the crest of the ridge, and inspected several rocky shelves in vain. Finally we arrived at one of the gaps, and looking across to the opposite side I beheld a fairly large cliff ornamented with suspicious white splashes. Closer inspection showed a large nest in among the shelving rocks, and we hurriedly climbed across to the spot. At the point where the nest was placed, the crag was perhaps 35 feet in height, and the nest was built on a small projecting ledge completely sheltered from above. Though not inaccessible, it was up about 12 feet, and was extremely hard to reach. The nest was a large affair, fully a yard across on the outside, and was firmly built into the crevices of the rocks. Externally it was composed of dead sticks, some of them three-

quarters of an inch in diameter, and lined with thin strips of bark and a large amount of sheeps' wool. The sticks were freshly broken off, as was shown by their rough edges, while the nest was easily discernible from a considerable distance. The surrounding cliff was splattered with excrement, and a large number of insects were crawling about, attracted by the odor. A jagged pine stub in front of the cliff was evidently used as a perch by the birds, as the rocks beneath were a mass of chalky excrement. The nest held three young, nearly full fledged. On near approach they struck out with their beaks and uttered a harsh "cawr," more like a mixture of the notes of the Fish Crow and Common Crow than the croak of the adult Raven. During an hour's stay at the nest the old birds did not put in an appearance.

Having no knowledge of the nesting habits of the Raven we did not venture near the place again till May 1, as we were fearful lest the birds should desert the locality. As we approached the nest, one bird, presumably the female, flew continually about overhead, all the while croaking dismally. As we reached the cliff, much to our surprise, we saw that some one had destroyed the nest, which lay at the base of the cliff ruined. However, two of the young still crouched on the rock shelf which had held the nest. They seemed fully grown, though their feathers were still rather fuzzy. One of the young was secured, the solitary parent meanwhile flying in circles overhead and croaking frequently. Though we were in the neighborhood several times afterward, no trace of the birds was seen until May 30, when I observed one at a distance of a mile from the nest.

Summing up the evidence at hand, we came to the conclusion that the nesting season must be much earlier than we had supposed, for the eggs must have been deposited not later than March 10, when the surrounding mountains were still snow-clad. With this in view the locality was visited much earlier in 1910, and the results are appended below just as they were written in my note-book.

February 19, 1910. About twelve o'clock I set out for the gap to look for the Ravens. Several times small flocks of

Horned Larks (probably *Otocoris a. praticola*) were heard and seen, and along the base of the mountains Blue Jays and Juncos were quite common. Here I noticed a Raven chasing a Crow, and shortly afterward another one joined it and both soared about uttering their hoarse "crruck." They seemed far larger than the Crow, flew more easily and sailed much more frequently, while their wings and tail seemed much more conspicuous than those of the Crow. Owing to the deep snow it was very hard to get to the cliff, but on reaching it we saw a new nest in the most inaccessible portion of the rock. After some hard work the nest was reached, and I found it nearly completed, as the wool lining was just being inserted. The nest was on a ledge about 10 feet above the shelf which supported last year's nest. The sticks on the exterior were freshly broken, and a large number of sticks lay under the cliff, where they had fallen from the nest above. While we were at the nest the Ravens were flying about on the other side of the gap and constantly uttering their hoarse cries.

February 25, 1910. With Foster White I drove over in a sleigh to look at the Ravens' nest. As we neared the cliff I saw one of the birds perched on a dead stub near by, but soon perceiving us it took wing. Shortly afterward its mate flew directly from the nest and the two soared over us for a while, their cries varying from a hoarse "craw" to the usual "crruck." The birds soon soared over to the far side of the gap, where they perched close together on an old stub, and remained silently there during the half hour we remained at the nest, vainly trying to secure some photographs. As the birds soared over us I noticed that the feet are drawn up against the abdomen and not stretched out behind. On inspection the nest was found to contain two eggs.

February 26, 1910. When we reached the cliff no Ravens were to be seen. We examined the nest and found that another egg had been deposited. As we stood hidden near the nest we heard a coarse "craw" and the Ravens appeared, one flying low and the other high up, the upper one giving a beautiful exhibition of aerial gyrations. The lower bird, probably the female, soon went to the nest, but the other soared about for a

few minutes and then alighted on the dead stub near the cliff. We could hear them calling in almost caressing tones to each other, and their notes were almost soft, sounding something like a bell-like "coo-coo." Temperature 12°.

March 1, 1910. Foster White and I started out early this morning for the Ravens' nest. The day was springlike and the snow was melting. When we were about a hundred yards from the cliff the Raven darted off the nest and disappeared. The nest held a set of five eggs, which we collected and found to be perfectly fresh. Both Ravens soared over us high up in the air, calling several times, and then flew off and perched side by side on the dead stub on the far side of the gap.

March 12, 1910. Visited the cliff again. The birds were flying about the locality, but when I climbed to the nest I found it empty and the lining partly torn out. The birds seem very solicitous, however, and I almost believe they are building again in the vicinity.

March 13, 1910. This afternoon I started out for the gap to look for the second Ravens' nest, which was evidently somewhere among the rocks. When I came up the gap the male was perched on the stub just in front of the old nest, and soon seeing me he uttered a rolling "crrruck," evidently of warning, and flew off, followed by the female, which came from the vicinity of the former nest. On reaching the old nest I noticed that a new one had been built farther back on the same jutting rock. The nests were not more than two feet apart. The new one was built very firmly in among the shelving rocks, and was lined with sheeps' wool, which had evidently been torn from the former nest. It presented a striking appearance, as icicles had formed on the rocks, and some over a foot long hung down all about the nest. It contained two eggs.

March 14, 1910. At 10 a. m. the nest held three eggs, and the male was perched on his usual stub, while the female was on the nest. Both soared off to their usual perch on the dead stub across the gap.

March 16, 1910. In company with Foster White I set out for the Ravens' nest. As we neared the cliff we saw both birds circling about over the ridge on the opposite side of the gap.

On reaching the nest it was found to contain a set of five eggs, in every way counterparts of a typical set of Crows' eggs, though of course much larger. About an hour was spent in trying to secure some photographs, but the situation and the darkness of the day caused them to fail. Meanwhile the Ravens circled far overhead, constantly calling their discordant notes. The nest was fully three feet across, and inside the exterior of sticks was a warm lining of sheeps' wool, with some horsehair, a few small pieces of cow's hide and strips of thin bark. The cavity was deeply cupped, the eggs resting fully seven inches below the rim.

After securing two sets of eggs I naturally suspected that the birds would leave the locality; nevertheless they made a third attempt, and on April 10 David Harrower collected a set of four half-incubated eggs from the first nest. Since that date they have not been seen about the cliff, though on April 24 I saw and heard a solitary bird flying slowly up the Nittany Valley, about one mile from the nest. November 10, 1910, while out towards Scotia, in a section known as the barrens, I observed two Ravens flying over. This locality is ten miles distant from the nesting cliff, and there is no way of telling whether they were the same pair. While on a trip back in the mountains in Huntingdon County on May 7, 1910, another breeding record of the Raven was established, though the nest was not found. I saw at close range a pair of Ravens, and with them a single young bird, easily identified by his weak Crow-like "cawr," as compared with the hoarse "crrruck" which his parents uttered. Though I failed to find the nesting place, the locality is very wild, and there are several rocky crags as well as some tall, virgin conifers, affording good nesting places. Again on May 8 I saw this trio near the same spot.

From the data presented it will be seen that this pair of Ravens at least were very tenacious of their nesting place. Of course the evidence is far too meagre to draw general conclusions, yet the nesting season seems to be much earlier than generally supposed. The 1909 nest must have held eggs by March 10 at least, and the Huntingdon County pair could hardly have nested later than this date, while the 1910 pair had completed their set by March 1. The distance of the nest from

State College, and its general inaccessibility, made continued observation difficult, yet it would seem that one egg is deposited each day, and that the female remains on the nest during cold weather from the time the first egg is deposited. As is usually the case, the eggs seem to be deposited in the morning.

The Raven seems to disgorge indigestible food materials, much after the manner of our Raptores, as numbers of pellets lay under the nest. The pellets contained remains of crayfish, mice, several berries of Juniper, as well as the bones and hair of the Alleghany Wood Rat, of which there was a den in the cliff. About the nest at least the Raven is not as silent as the books would have him, for I have heard the male and female calling back and forth for fully half an hour at a time, and under such circumstances the notes were soft and actually pleasing. However, as soon as they discerned a person, the tones changed to the hoarse, rolling, guttural "crrruck" which is so characteristic of the bird. They seem closely attached to each other during the nesting season, and exhibit much solicitude over the welfare of the nest and its contents. At such times the proverbial wariness was not much in evidence, as they frequently soared within thirty feet of our heads, calling violently. However, at other times they would stay high up in the air, and nearly always would soon fly off and perch side by side on a big dead stub where they had a clear view of the cliff. The flying powers of this bird are marvelous. Time and again I have seen the male circle high up, never moving a wing, and then come twisting and gyrating almost straight down until it seemed he must strike the earth, when he would suddenly veer up and sail off. At times their flight resembles that of a Crow, but when soaring they could not possibly be mistaken, and they almost resembled the Duck Hawk in their mad dashes when the nest was threatened. Taken all in all, the Raven possesses far more versatility than he is given credit for having, and my meagre acquaintance with him is treasured, not only for its ornithological value, but the pleasure of gaining an insight into the home life of one of our least understood birds.