

SIGHT AND SCENT IN THE TURKEY VULTURE.

BY JOHN B. LEWIS.

THE article by Alexander H. Leighton in the July number of 'The Auk,' entitled 'The Turkey Vulture's Eyes' was of much interest to me, and called to mind some experiments I have made along similar lines, which may be of interest to others.

January 19, 1927, a large hen that had died the night before was placed in an open field ninety yards from our house, in a spot easily seen from the windows, covered with a burlap bag, and a weather-beaten box placed over all to keep dogs from carrying the carcass away. Either the burlap or the box would have prevented the carcass from being seen, but offered little resistance to the escape of odor. Either Mrs. Lewis or myself kept very close, though not quite continuous watch on the situation until February 21, without seeing a Vulture near the box.

At 10.30 A.M. February 21, the temperature was just above freezing, the sky was clear and a light wind blew from the west. I removed the box and burlap from over the hen, placing the box four feet from the carcass, so that if it had frightened the Vultures away while the hen was concealed, it would do the same when she was exposed to view. After arranging the hen and box I carefully scanned the sky and saw but one Vulture, which was flying low in the southern horizon. I walked to the house, washed my hands and went to the window just in time to see a Vulture alight on the ground fifteen feet from the hen. In less than as many minutes, three others had lit near the first. All four walked cautiously around the carcass and box for some time before venturing to begin the feast. The temperature all through this experiment was low enough that the carcass did not develop a very rank odor.

We might summarize the results of this experiment as follows. A dead hen lay in an open field concealed from sight for four weeks without attracting any apparent attention from the Vultures that sailed across the sky every day. The carcass was then exposed

to view without changing any other of the surroundings, and in less than ten minutes four Vultures lit within 25 feet of it.

July 20, 1927, I placed the carcass of a Barred Terrapin ten and a half inches long under a box in an open field for the double purpose of letting the carrion beetles clean the skeleton, and to learn whether the Vultures would find it when concealed from sight. The top of the box was tight, but there was a half inch crack 11 inches long, on one side, five inches from the ground, and a three-fourths inch knot hole on the other side four inches from the ground.

These should have been stopped, though it is hardly thinkable that a Vulture could have seen the carcass through them without being on the ground near the box. July 24 at 1 P.M. seven Vultures were on and near the box.

December 21, 1927, I shot two stray tom cats that came to our place. The carcass of one was placed in an open field without concealment. The other was placed under a thick, low branching holly tree in the same field, 240 yards from the first. The lower limbs of the holly were far enough from the ground that a Vulture could easily have got at the cat, but effectually concealed it from view, unless from very near the ground. The Vultures found the cat in the open the next day, and were at work at it, trying to get the flesh from under the tough skin, for several days.

The cat beneath the holly attracted no apparent attention from the Vultures for 11 days, when it was carried off during the night, probably by a dog or fox.

At 8:20 A.M. July 15, 1928, the carcass of a freshly killed Opossum (*Didelphys virginiana*), was placed in an open field in view from the windows of my home, and covered with a weather-beaten box that had had all cracks stopped. Twenty-six yards from the box was an old telephone pole, left from an abandoned line. This layout was watched carefully, though not quite continuously, for four days.

At 3:20 P.M. July 16, a Vulture lit near the box, walked up to it and remained eight minutes and then left.

At 9:10 A.M. July 17, two Vultures circled about over the box for four or five minutes and left without alighting.

At 10 A.M. the same day a single Vulture circled over the box

and then left. At 2:35 the same day a single Vulture circled over the box, then lit on the telephone pole where it remained twelve minutes.

At 6:10 A.M. July 18, I removed the box from over the Opossum and placed it four feet from it. Decomposition was now far advanced and many carrion beetles were at work.

Omitting details, between 10 A.M. and 5 P.M. eighteen Vultures came to the carcass, sailing low over it, many alighting on the telephone pole, but only one was seen to alight on it and eat. Two Black Vultures (*Coragyps urubu*) were among the Turkey Vultures on this day.

I failed to go to the carcass of the Opossum early the morning of July 19, to make sure that it had not been devoured by dogs or other mammals during the night, as should have been done, but between 9 and 9:45 A.M. sixteen Vultures, about half of which were Blacks, gathered about the carcass and completely cleaned up whatever may have remained of it.

These experiments seem to indicate that in cold weather when little odor is thrown off, sight is the Vultures' chief means of locating food, but that they have no difficulty in locating it by scent alone, in warm weather when odor is strong.

These observations and others of the author may throw light on a question raised by Dr. Russel M. Kempton, of Centerville, Indiana, in the 'Wilson Bulletin' for September, 1927, as to whether Vultures willingly feed on the carcasses of carnivorous animals. That they will eat such carcasses there can be no doubt, as I have frequently seen them eating the carcasses of dogs and cats. Dr. Frank N. Mallory of Lawrenceville, a careful and trustworthy observer, has also seen them devouring the carcasses of dogs that had been killed by automobiles on the highways. In my own experience most of these cases have occurred in winter when food may have been scarce, and may not prove that they eat the flesh of carnivores from choice.

The experiment described below, however, seems to give a definite answer to the question.

At noon, August 10, 1928, I shot a large, domestic tom cat, split the carcass ventrally so as to open both the thoracic and abdominal cavities, and placed it in an open field, near the place

that had been occupied by the Opossum in the preceding experiment. No attempt at concealment was made.

At 4:20 P.M. the same day a Vulture lit on the old telephone pole but did not go to the carcass.

August 11, at 12:40, a Vulture lit at the carcass and ate ten minutes, after which an examination showed the thoracic cavity cleaned out and the liver and part of the intestines gone.

At 3:25 P.M., the same day, two Vultures came and ate twelve minutes, when a third came and drove them away, after which he ate thirty-two minutes. I watched the last through a six power field glass at a distance of eighty yards. He stood on the carcass with both feet, tearing shreds of flesh from it with much apparent effort, and swallowing them. Several times he stepped off the carcass and seizing it with his bill, thrashed it about violently. During the afternoon two more Vultures came to the carcass and ate. Later an examination showed that the bones had been picked clean, the legs having been skinned back as far as there are any large muscles, and the head skinned past the eyes. All these birds were Turkey Vultures (*Cathartes aura septentrionalis*).

I believe that the fact that Vultures are not strong enough to get through the tough skin of carnivorous animals accounts for their sometimes leaving them after having picked out the eyes and tongue, rather than any dislike they have to the flesh.

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