

## THE FOOD AND NESTING HABITS OF THE BALD EAGLE

BY FRANK R. SMITH

WHEN in June, 1782, the Bald Eagle (*Haliaeetus leucocephalus*) was chosen for our national emblem, the bird was fairly common throughout most of the United States where conditions were suitable. Since then it has been exterminated over most of its original range and is found today only where law or seclusion give it protection.

It has been my fortune to observe the Eagle in one of these remaining strongholds and to study its food habits at two nests. One of these nests which it was possible to examine carefully yielded much interesting information about the food and habits of the Eagle in this type of environment.

The location of the nests was the Eastern Shore of Maryland, which with two counties of Virginia and the state of Delaware, constitutes the peninsula of land which cuts Chesapeake Bay off from the Atlantic Ocean.

The land in the area where the nests were located is very low and much of it consists of marsh and swamp land. It is drained by Blackwater River, a sluggish stream, fresh at its head but brackish and nearly salt at its mouth. The river flows through the great Blackwater Marshes which are dotted with ponds and small pine-clad elevations known as islands. Along the borders of the marsh are growths of trees which in some places extend back for several miles. These areas are flooded at every heavy rain and during the winter months, and are known as swamps. The chief trees in these swamps are loblolly pine, sweet gum, holly, and white and willow oaks. The one in which the first Eagles' nest was located is known as Gum Swamp.

The Blackwater marshes are famous for their muskrat population and for the great number of water-fowl that winter in the ponds and on the river. The river also has an abundance of fish. The old Eagles evidently had an eye on these bounties of nature when they established their lofty eyrie at the edge of the marsh so long ago.

The nest was located some two hundred yards from the open marsh and less than a mile from Blackwater River. It was about seven miles to the waters of Chesapeake Bay and less than three quarters of a mile to the nearest house. The original nest had been located for no one knows how long in a big pine far back in the swamp. Some thirty years ago the tree was cut and the Eagles then moved to the giant pine near the edge of the marsh. Here for over thirty years their nest was located until the hurricane of August 22, 1933, came sweeping across the marsh and tore the great nest from its place. The nest was not in use when destroyed, in fact no attempt had been made to rear a brood there for three years. A local egg collector had paid it yearly visits until the Eagles ceased to breed there. They still

guarded the tree, however, for in 1933 they routed a pair of Ospreys that attempted to nest on top of the old nest.

The remains of the nest were carefully sifted by hand and placed in baskets for weighing. All food remains were carefully saved. For this work Mr. Peter J. Van Huizen, acting supervisor of Blackwater Migratory Bird Refuge, gave able assistance. The forty-three bushels of material in the nest weighed 1274 pounds. A considerable number of the large foundation sticks remained in the tree and the food remains were not weighed. If these items had been added the weight of the nest would have been well over thirteen hundred pounds. The material was wet when weighed and this of course increased its weight. It was no wetter, however, than it must necessarily have been during every storm. Due to the bulk of the nest and the great water-holding capacity of its material, it is doubtful if it was ever completely dry even during the heat of summer. It must be recalled that the nest had not been occupied by the Eagles for three years and that the small amount of material added by the Ospreys would be practically negligible. Anyone familiar with the subject will recall the rapid disintegration of large nests. Decay must have removed several hundred pounds of the nest during the three years of abandonment preceding its fall. When the nest was in use and in good repair it must have weighed nearly a ton. From observations made from the ground it appeared that the nest was over ten feet thick and from four to five feet across.

The material of the nest consisted largely of dark brown mold held together and reinforced with sticks of pine and oak. Scattered through the mold were stalks and roots of cat-tails, grass and sedges as well as numerous pine cones and acorns.

As has been said, the food remains found were all carefully saved for identification. Due to lack of experience the remains of water-fowl could not be classified to species, several of which were probably represented. Some of the bones were so fresh that they were still held together by the ligaments while others were so badly decayed that they must have dated from almost the beginning of the great nest. Examination revealed the remains of the following animals in the nest. Muskrat 35; Water-fowl 8, of assorted kinds; Fish several; Periwinkle 1; Spotted Turtle 1; Blue Crab 1; and part of what appeared to be the skull of a Red-tailed Hawk.

From this list it will be seen that the Eagle depended for food almost entirely on the marsh. The Hawk was the only victim not directly connected with the water.

The capture of muskrats constitutes the greatest cause of complaint against the Eagle in the Blackwater district. A great many of the people make a living by the trapping of this fur bearer and the depredations of the Eagle are regarded as a serious offense. This is augmented by the

Eagles occasionally devouring the muskrats caught in the traps or by carrying off both these animals and the traps. The discovery of three traps in the nest, each holding between rusty jaws the leg bones of a muskrat, offered ample proof of this last habit. Although thirty-five skulls were found in the nest, it must be remembered that this amounts to only about one muskrat a year. These food remains, however, would at best represent only a very small part of the total food brought to the nest.

Eagles, like Vultures and most other birds of prey, often eat dead muskrats found on the marsh. I have seen an immature Eagle drive a Vulture from a dead muskrat and eat the animal himself. It is probable that half of the muskrats eaten by Eagles are picked up dead on the marsh. This is a commendable habit for it removes the bodies of animals dead of disease and thus tends to lessen danger of an epizootic among the animals. Of course it could not be determined how many of the skulls found in the nest represented animals picked up dead on the marsh. Hunters denounce the Eagle as a killer of Ducks and Geese and the remains of eight water-fowl in the nest sustained this accusation. It has been claimed by friends of the Eagle that they seldom attack Ducks unless they are sick or otherwise partly disabled. It is almost certain that the Eagle will attack these birds if they are available in preference to an able bodied Duck. Failing to find this disabled prey they probably attack any other fowl at hand. The destruction of crippled Ducks could hardly be held against the Eagle. Hunters wound a great many Ducks which they never recover. These maimed birds are left to wander about over the marsh as best they can until death from their wounds, starvation, or predators ends their pain. Sportsmen often kill more Ducks than they can use and these together with any that may be too badly shot up are left on the marsh. One of the sterna from the nest showed two shot holes, either of which would have been fatal. This bird had doubtless been picked up dead on the marsh where it had been left by hunters. It is hard to tell how many of the others had been similarly salvaged.

Eagles are fond of fish and the bones in the nest indicated that these vertebrates had frequently been served. It has been said that the Eagle secures most of its fish from the Osprey. Although both Ospreys and Eagles were often seen, the former frequently with fish, I never saw either species pay any attention to the other. Apparently the Eagles on the Blackwater marshes have not learned the trick or have found it easier to secure food otherwise. I have seen two adult Eagles together with a flock of Gulls feasting on the refuse from a fish cannery at Taylor's Island.

The periwinkle shell was probably carried to the nest in building material. They are fairly common on the saltier portions of the marsh. The shell was not broken and it would have been impossible for the Eagle to extract

the snail without breaking the shell. The blue crab shell may have also come to the nest with building material but I am inclined to believe that it was brought for food. These crustacians are favorite food for almost all the flesh-eaters on the marsh and there is no reason to believe that the Eagle would not eat them also.

The fragment of what appeared to be the skull of a Red-tailed Hawk is not difficult to explain. There is no reason to believe that an Eagle would spare the Hawk because of their close relationship. Both birds are often found on the marsh in search of the same prey and a Hawk would offer a meal equal in size to a Duck. The colored people and some of the whites in the Blackwater region regularly eat both Hawks and Eagles and declare them equal in flavor to Ducks. There is no reason to suppose that the Eagle would not kill and eat the Hawk, something which its strength and speed would enable it to do with ease.

The second nest examined was located in a district known as Meekin's Neck. Mr. Harry Wallace, my trusty old assistant, helped with this examination. The tree had died and been cut two years before so that the nest was badly scattered. The nest had been very large but no one could tell me how old it was. The tree, which was of immense size, was over 175 years old and the nest had been located over one hundred feet above the ground. This nest was less than fifteen miles from the other and within half a mile of Chesapeake Bay. As would have been expected with the bay so near the Eagle had depended largely on water life for food. Water-fowl came in for a good share of attention with seven sterna and a few other assorted bones. Fish also were well represented with twenty-two head stones and some bones. There were seven pieces of oyster shells, half the shell of a small salt-water mussel, and a periwinkle shell. It is hard to believe that an Eagle could or would eat such shellfish. It seems probable that the oyster shells were brought to the nest attached to sticks which had been submerged, and that the other items were brought in other building material. A part of the lower jaw of a muskrat was also found as well as a small part of the skull of what might have been a mink. Numerous pieces of egg shell in various stages of decay probably represented the remains of the Eagle's own eggs over a period of years. Miscellaneous items included two furnace clinkers, probably carried there with drift from the bay used in nest building; a few small gravels, probably from water-fowl; and parts of three long copper-jacketed bullets, probably fired into the nest by some hunter.

Eagles are often blamed for carrying off lambs but these accusations are seldom well founded on facts. If true it is usually a crime of the individual Eagle rather than the species as a whole. Mr. Wallace told me that about forty years ago he saw an Eagle flying over a field where some sheep and

lambs were feeding. At first the Eagle was high up but it dropped down to some twenty feet above the ground where it made several circles. One lamb was lying down a little removed from the others and it was this animal that seemed to attract the bird. Suddenly the big bird made a swoop and without checking its flight or pausing for an instant, seized the lamb and continued its flight toward the woods. Mr. Wallace said that it had been many years since he had known them to carry off a lamb.

The incident of the lamb recalls a story, widely current in the Blackwater region. This story was related to me by several of the older residents but no one could vouch for its truth. Many years ago an Eagle caught a lamb on Hog Island and flew across Chesapeake Bay with it to a spot at the mouth of the Patuxent River. If this story be true, it gives a good example of the Eagle's strength for the Bay at this point is over ten miles wide.

*Fredericktown, Pennsylvania.*