

THE WILD LIFE OF TENNESSEE

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In surveying the subject assigned to me, "The Wild Life of Tennessee," I have been somewhat puzzled to know where I would be expected to begin. Geologists and paleontologists show us fossil remains of an aquatic type of wild life which thrived in this state millions of years ago, while the bones of the megalonyx, mastodon and other mammals of a later age are not infrequently unearthed in this area.

At just what period early man began to tread the soil of Tennessee, our anthropologists are unable to determine, but we may reasonably assume that his spear, his club and his crude bow and arrow found a far more formidable array of wild life in this state than did the civilized explorers who followed in the wake of Columbus. The first white men to penetrate the primeval forests of this state were Hernando De Soto and his splendidly equipped expedition, which landed in Florida in 1539 and after four years of wandering through the central south, including West Tennessee, emerged on the coast of Texas. DeSoto's men were so taken up with their thoughts of gold and self preservation, that they gave little attention to writing of the animals, the reptiles and the birds, as they found them before the hand of civilization had begun its deadly work of extermination.

In fact, so little heed was paid to natural history by the discoverers and early colonists that not until the beginning of the nineteenth century was the study of our wild life given any serious attention. Bartram, followed by Catesby, Alexander Wilson and finally that well equipped ornithologist, James John Audubon, blazed the way for the study and appreciation of the wild life of this country. Both Wilson and Audubon hunted in and studied the natural history of Tennessee and Kentucky approximately a century ago, and both made discoveries of note within these states. For centuries before their time, however, Middle Tennessee had been a favored hunting ground for several tribes of Indians, notably the Cherokees of the Alleghanies and the Chickasaws who lived in the western part of the state. No tribes were allowed to live within the central basin and so when the first white settlers and hunters came to this region they found game more abundant than at any place they had ever been. On the site of Nashville, and at other points in this area, were "licks" or springs from which flowed saline waters and to which such animals as buffalo, elk and deer came in great numbers. And so here, with meat assured them as well as furs and skins for their raiment, the earliest white trappers and hunters made their headquarters during the twenty years preceding the coming of James Robinson and his party, to found the present city of Nashville, in 1780. And so, before taking up the present status of our wild life,

it is perhaps not amiss that we have contemplated for a moment the hunter's paradise, which existed here a hundred and fifty years ago.

The term "wild life" is indeed a broad one, but in the minds of some is restricted to cover the game birds and animals. Such a restriction is obviously unfair, for the term covers all of our birds and animals as well as the fish, turtles, snakes, lizards, eels, amphibians, moluscs and other forms of animate life. And among each and every one of these divisions of our wild life are forms that are worthy to be included among the real and tangible resources of Tennessee. Taking up the animals, it is well within the facts to say that the furs taken yearly within the state bring in hundreds of thousands of dollars, while the meat value of the rabbit alone would total to a handsome figure. Our real game birds, while much decreased in numbers as well as species, still form an important source of food supply, particularly in the western part of the state where ducks are numerous. Aside from the food value of our game birds there is the pleasure and recreation to be obtained from hunting that cannot be measured in dollars. Economically, our insectivorous birds are practically the only barrier which lies between mankind and an insect host, which if unchecked would bare the face of the earth and thus cut off our food supply, bringing about our extinction as well.

The birds of prey and our snakes wage incessant warfare on a countless swarm of small rodents that would play havoc with not only our fruit trees but also our forests, not to mention the damage that they would do to cereal and root crops. In Tennessee, there are more than a dozen species of wild mice and other small rodents, and in grass-covered areas, where birds of prey have been killed out, there are at least 100 of these small and noxious animals per acre of ground.

The fish which inhabit our streams form a resource of no mean proportions. Reelfoot Lake alone, at times, ships out more than 5,000 pounds of fish a day. Our rivers and our smaller streams are the sources of a widely distributed food supply, while all fish whether game fish or not, are a vital factor in keeping streams free of much pollution and thus making potable the waters of many streams which would otherwise be unfit for domestic consumption. Even the lowliest form of our wild life affords an important resource in our state, for among the molusca, the muscle of our rivers yields the shells from which our pearl buttons are made. Fleets of small boats operate regularly on the Tennessee, the Cumberland and other rivers and thousands of dollars worth of shells are shipped from the state, by barge, to the St. Louis market. The above citations are made to show how our wild life may be figured as a resource in terms of dollars and cents. To the man or woman, however, who has lived in the country, or to the city dweller who has tramped much afield, through a love of nature, the birds, the animals, the fish and the lesser creatures hold a value which cannot be expressed by dollar marks, a value which may be expressed only in terms of

interest, sentiment and as a part of the great plan of nature, designed by the Creator for the enjoyment of man.

It is therefore apparent that we must bring ourselves face to face with the fact that it is high time we were doing more to conserve many of the forms of wild life that are each year becoming scarcer and even now are facing extinction. Among the animals, the larger species have practically all been exterminated or are facing extirpation; only the rabbit is holding its own, while the noxious rodents are on the increase. The same is true, for the most part, with the birds, our larger game birds being on the border of extinction. The names of many of Tennessee's most prominent rivers bear witness to the game which the early hunters found there; for instance, we have the rivers Buffalo, Elk, Deer, Wolf, Duck and Pigeon, while of creeks we have Beaver, Otter, Coon, Opossum, Eagle, Turkey, Goose, Swan, etc.

To be more specific I will take up briefly some of the animals and birds and give their past and present status within the State of Tennessee.

Perhaps the most spectacular of all the animals which the early settlers found in the state were the American Buffalo or Bison. It is an historical fact that vast herds of these splendid animals lived in western and central Kentucky and in middle Tennessee, as far south as the Tennessee River in northern Alabama. At that time much of the upland portion of this area was prairie and here the bison lived during the summer, descending into the wooded bottom lands with the coming of winter. The famous hunter, Daniel Boone, recounted the abundance of these animals in Tennessee and it is highly probable that Boone killed buffalo at the "French Lick" where Nashville now stands. The rapid colonization of this fertile area quickly brought about the extermination of the bison and the beginning of the eighteenth century probably saw only a scant remnant of the former great herds. In this connection it is of interest to note that the western herds held their own until the opening of the transcontinental railways in 1871 and within 7 years thereafter herds numbering 5,000,000 buffalo were slaughtered until there were less than 1,000 left.

Second only to the bison in point of interest is the Elk, which was at one time abundant throughout the state. Being well distributed and less disposed to congregate together than the bison, it was able to hold its own much better. We find many accounts of its abundance by the early settlers and probably it was found in Middle Tennessee as late as 1825. In the mountains of the east and in the swamps of the western part of the state it held out a bit longer, apparently the last one having been shot in 1849.

The Virginia Deer found the early environment of the state ideal for its mode of life and, as a result, it once formed a very substantial source of food supply, and was abundant everywhere. But where today can deer be found in the state of Tennessee? After a number

of trips to the Reelfoot Lake country I am told by the best hunters that the last of the deer in that region were killed more than ten years ago. In middle Tennessee there is no area in which deer can long survive. A pitiful little band which now lives in Cheatham County will doubtless be wiped out within a decade if steps are not taken to give them complete protection. Some deer are also reported from Perry County, from which area a few roam into Wayne and Humphries counties. Perry, heretofore the most inaccessible county in Middle Tennessee, is being opened up by good roads and these deer will soon be slaughtered. In the Cumberland mountains I have been unable to find record of deer during the past few years, and only in the Great Smoky and Unaka mountains on the east are a few occasionally to be seen.

Of no little interest are the accounts given of the methods by which the early hunters, and even the Indians with only their bows and arrows, managed to keep themselves plentifully provided with venison. Their plan was to provide themselves with a deer skin, containing the head and horns intact, which they would throw over their shoulders when a herd of deer was located. Then seeking the windward side, so that their human odor would be carried away, they advanced on all fours, emulating with the deer's head the unconcerned feeding habits of their quarry. In this way Indians were able to advance within easy bow shot, and that their method was successful is evidenced by the fact that DeSoto, and others who followed him, found their villages always well supplied with venison.

Of less interest to the hunter but more to the teller of stories is the fact that the cougar or panther was at one time abundant in the state. The early settlers lost children to these marauding beasts on more occasions than one and their depredations upon sheep and pigs, their chase by packs of hounds, and finally the fight to the death, have furnished much material for hair-raising stories told by camp fire and hearth stone. Today the panther is extinct in Tennessee, save possibly a half dozen individuals in the Great Smokies.

The Bobcat or "Catamount," being a smaller animal than the panther, has been better able to hold its own but is no longer found in the well settled portions of the state. One caught in November, 1916, on Paradise Ridge, about 12 miles northwest of Nashville, created much local interest since it had been thought that these animals had all disappeared from this section years ago. More recently two were caught with young near McEwen in Humphries County; on April 2, 1924, and on January 5, 1927, two were sent from Perry County to Nashville, one of these having been mounted for the State Museum.

Wolves were at one time abundant throughout the state, but are now all killed except perhaps a few in the wilder mountainous sections. Near Allardt, in Fentress County, a big grey timber wolf appeared in 1921 and began to take its usual toll of hogs and calves. Dogs sent out to give chase returned with tails tucked between their legs and whiningly sought shelter under the houses.

Hunters unsuccessfully sought the beast for a week; it being finally trapped. Its scalp may be seen in the State Museum at Nashville. Allardt is on the southern edge of "The Wilderness"—a large unsettled area, heavily forested and so cut by deep gorges and rugged topography that it still retains many of the features of the early days of Tennessee.

Black Bear are still taken in "The Wilderness," though further south through the Cumberlands they are no longer to be found. In West Tennessee no bear have been reported in recent years, and it is unlikely that a single specimen is now living in this area where it was originally so abundant. Among the Great Smoky and other mountain chains along the eastern border bear are regularly reported and taken each season. The steady deforestation of this area by lumber interests, however, will no doubt bring about the end of bruin within a few decades, except those which will become semi-domesticated within the new Great Smoky Mountain National Park. It is to be regretted that bears have marauding and pig stealing proclivities which make it difficult to extend protection, for they have so many attractive characteristics, and such good dispositions generally that their ultimate final extinction is looked forward to with almost universal regret. A national movement to save the remnant of black bear throughout the land has gained much momentum, particularly in the West where they are a feature of the national parks. The passing of the panthers, the wolf, and the wild cat are not to be regretted, but other forms of game and fur-bearing animals are deserving of greater protection than they now receive.

So abundant were the Beaver and Otter in the early days that hardly is there a county in the state that does not have its "Otter" or "Beaver Dam" creek. Reelfoot Lake trappers told the writer, a few years ago, that beaver were formerly common in the Reelfoot and Obion River swamps, but now there are none. In the middle section no beaver have been reported in a generation, and if there is a remnant still left in the mountains east of the Tennessee river, they will no doubt answer to the final roll within a decade. Otter are still to be found in the swamps on the west but are very scarce, and even less frequently come reports of their occurrence in the upper Cumberland section and the mountain streams of the east, for, like the beaver, the otter makes it home only where water is at hand. On Reelfoot Lake several otter in the past few years have been found drowned in fish traps which they had entered.

The Mink, one of our most valued fur bearers, is still generally distributed, though now, due to trapping, is much scarcer than formerly. Muskrat, now much valued as a fur producer, are to be found along the streams throughout the state and hold their own fairly well. The former large muskrat population of the Reelfoot marshes, however, has been practically wiped out by indiscriminate trapping. The writer found several small young there in a muskrat house on May 21, 1922.

Raccoons have been thinned out in proportion to the clearing of the lands and the demands for its fur, but the Opossum, being very productive, holds its own.

Red and Grey Foxes are well distributed throughout the state, and the sport of hunting them has been much revived during the past few years. Both species are now protected by state laws but due to the toll they take of rabbits and game birds the wisdom of this law is being questioned. Of the two the grey species is most common.

The Swamp Rabbit of the western bottoms, and the "Molly Cottontail" throughout the state, hold their own and afford hunters more sport than any of our other game animals at the present time. Tularemia, the disease which has decimated jack rabbits in some Western states, has made its appearance in Tennessee, but little is known so far of its effect upon our rabbits. Due to the susceptibility of humans to the disease, some decrease in rabbit hunting may be expected, for a time at least.

Other quadrupeds to be found, are listed below and most of these are holding their own and are not in danger of extermination: skunk, woodchuck or ground hog, fox, grey and red; flying and ground squirrels, weasel, mole, shrews (2 species), cliff and cotton rats, mice (about 7 species) and bats (about 12 species).

Passing by the animals of the state we come to the birds, which by reason of their diurnal habits are much better known to most people than the animals. No form of nature is as attractive as its bird life, since most of the feathered creatures by reason of their animated and usually cheerful dispositions, their plumage, and their call notes or song, have gathered to themselves a legion of friends and protectors. As among the animals, however, some of Tennessee's former conspicuous and attractive feathered inhabitants have fallen before the march of civilization and are long since extinct, while others are even now on the border of that condition or are surely and certainly approaching it. As an example of birds which we no longer have, it would be of interest to recount the experiences of Alexander Wilson, the pioneer ornithologist near Nashville in 1810. As he journeyed south into Tennessee on horseback he was attracted by a large flock of birds in a cockle-bur field near the banks of the Cumberland River on Manskers Creek. On closer approach the birds were observed to be the Carolina Parokeet, a species then not uncommon all over the Southern States. These little green parrots with long tails and yellow heads were dining off the cockle-burs, which was with them a favorite food. Wilson recounts seeing other flocks during his sojourn near Nashville, but no parokeets have been seen in Tennessee in more than 50 years, and unless perhaps a score may still exist in the Florida everglades, this species, once common, is now extinct. Wilson also observed the Swallow-tailed Kite, a large forked-tailed bird of prey, near Nashville, but this bird is no longer to be found in Tennessee. Both he and Audubon recount the vast

number of Passenger Pigeons that formerly were to be found in this area. It is well known that these pigeons are now entirely extinct and it has been more than 35 years since the last stragglers were seen within the state. As late as the Civil War they were still counted as abundant but by 1875 their numbers had greatly decreased and within ten years thereafter they had become rare. In the Nashville *Union and American* for January 1, 1870, we find this reference to the Passenger Pigeon at Nashville: "For several mornings past, wild pigeons have made their appearance here by the thousands and the heavens are clouded with these annual visitors. In the suburbs, the roosts have been surprised by the youngsters and gunning has been brisk." Three weeks later the pigeons were still here—some of them—for the reporter on January 23rd, records: "One night last week Mr. Peter Ladd, who is about 70 years old, and his two sons, killed 1,500 pigeons at the roost, and the next night the same party bagged 1,000." It is of interest to note that there was no editorial condemnation of this slaughter and if this was typical of conservation ideas of that day, there is little mystery as to the final and total extinction of this splendid bird.

At one time the rolling prairies of western Kentucky and Tennessee were abundantly populated with Prairie Chickens, but these birds did not long survive the coming of the white man and the shot gun. The stream which flows into the upper end of Reelfoot Lake is called Bayon du Chien, meaning Bayon of the chickens, in French, a name the origin of which may be easily guessed.

The Ruffed Grouse or "Pheasant" was formerly abundant throughout Middle and East Tennessee. Now these birds have disappeared almost completely from Middle Tennessee, have become rare in the extensive wooded areas of the Cumberland Mountains, and are scarce even in the high mountains on our eastern border. Bob-White alone, of the breeding game birds, manages to hold his own, by dint of his hardiness, his strategy and by reason of bringing forth from a dozen to eighteen chicks at a hatching. The shortened hunting season on quail, particularly the curtailing of spring shooting, will preserve this species for many years to come. But with reference to spring shooting, no bird has been so much aided by its abolition as has the Woodcock. A decade ago the woodcock was on the verge of extinction, but now the species is increasing and bids fair to survive. These birds return and mate in February and lay their eggs in early March. As long as quail hunting was allowed in the early spring the woodcock fell easy victims, and being paired and perhaps nesting, the killing of one at that time meant the loss of a whole brood for the year. Since these birds raise but one brood of four in a season, it may easily be conceived how near they were brought to extermination. Hunters in the early days recount having killed hundreds of woodcock per gun each day.

Sportsmen of a past generation were afforded an excellent season of spring shooting by the Wilson's Snipe or "Jack-snipe," a bird which could be found among the flooded fields and lowlands in March

and early April. Too persistent shooting and the breaking up of a large amount of its breeding grounds brought the species to a point where Federal legislation prohibited spring shooting of this and other shorebirds. Another factor in the decrease of our shorebirds is the fact that many of them spend the winters in southern South America where they are slaughtered in vast numbers without benefit of legal regulation. Our government is now negotiating with these southern governments, hoping to secure their cooperation toward the enactment of protective laws, but at best such laws will be difficult to enforce. All of our shorebirds, such as snipe, yellowlegs, and the various plovers breed from the northern United States into Canada and the rapid colonization of this area renders most of their former summer haunts unfit for nesting. Birds are very diffident about finding new breeding areas and usually return to the old haunts year after year to fight a losing battle.

This observation applies quite aptly to the ducks, geese and swans. For instance, Illinois and Iowa as late as sixty-five years ago were the breeding grounds of vast numbers of these game birds. The complete settling of these states resulted in almost completely wiping out this contingent of breeding birds. Nebraska, eastern Colorado, the Dakotas, Montana and the West Canadian provinces, were all favored breeding grounds for the ducks and geese but with the rapid settling of these states there has resulted a steady diminution in the production of these birds. Formerly there were several varieties of geese which came to the state in great abundance, but the Canada Goose is now the only species which is at all regular in its visitations. This hardy goose is often heard during its migrations and seems to be attracted by the lights of cities when flying nocturnally. It is most often heard during November but rarely ever stops and such stops are usually brief. On the Mississippi River, however, it finds conditions more to its liking and tarries leisurely. One of its favorite foods is the leaves of young willows which sometimes spring up on the sandbars like weeds. I have seen dozens of acres of such willow growth completely denuded by the geese. Hunters frequently locate their blinds on the willow flats or lay in wait in their midst. There are some 20 varieties of ducks which visit the state and of these only the Wood Duck may be classed as a regular summer breeder. This species was formerly common along all of the major streams of the state, nesting in hollow trees, chiefly sycamores above the water. It is now extremely rare except on Reelfoot Lake and among some of the swamps, near the Mississippi River. A few years ago the writer made a three-day trip on the Cumberland River, eastward to the Kentucky line and, although he kept a sharp lookout, he did not see a single Wood Duck on the stream. A few other ducks breed on Reelfoot Lake, chiefly the tree-nesting Mergansers or Fish Ducks and a few pairs of Mallards. Practically all species of ducks require grass-grown areas adjacent to the water and free from intermittent flood water, in which to hide their nests,

and since such conditions are not to be had on Reelfoot Lake it will never become an important breeding ground.

The elimination of spring shooting of ducks has done much to enable them to hold their own. A few ducks may be found on our rivers all winter, chiefly the Lesser Scaup (Blue-bill), Ring-neck (Black-jack), Mallard, Black Mallard, Pintail and Butterball. The Teals are early to arrive and do not ordinarily remain during the winter. Near and on the Mississippi there is usually a goodly duck population from early November to late March; at times vast "rafts" of ducks may be seen on the great river itself. They are whimsical as to their feeding grounds, at times swarming over Reelfoot Lake and perhaps as likely, repairing to the Arkansas Swamps for a change of bill of fare. On very rare occasions in recent years surprisingly large flocks of ducks have visited Reelfoot, such flocks numbering tens of thousands.

Whistling and Whooping Swans were formerly common migrant visitors but they had become rare as far back as 40 years ago. The Whooping species is now practically extinct and the same is nearly true of the contingent of Whistling Swans which formerly migrated through the Mississippi Valley. A number of flocks winter regularly in Chesapeake Bay and the Carolina sounds, likewise on the Pacific coast, at which points they are as carefully protected as possible. The Mississippi valley contingent having been about wiped out, this bird is now very rare on the Gulf of Mexico. A few scattered records have been made in Tennessee within the past ten years, at Knoxville on the river, at Manchester on a small lake, and on Reelfoot Lake.

Close akin to the duck family is the Coot, a bird which has managed to survive for a number of reasons. On the rivers and the few small lakes scattered about the state it occurs regularly during the migration season, a few wintering. On Reelfoot Lake, however, the Coot is quite abundant during migrations and quite a few winter there, too. I recall that a former state game warden, in describing the abundance of Coots on the Lake, said that he did not estimate them by the thousands but by the acre and quite true it is that a large "raft" of these birds will sometimes cover several acres. Only a very few Coots nest on Reelfoot, laying their eggs during late June on floating nests in the waving sawgrass. The bulk of these birds nest from Iowa northward wherever prairie marshes are available, and their abundance is partially due to the fact that they lay from 12 to 16 eggs at a sitting. Purple and Florida Gallinules also nest on Reelfoot, along with the Coots, but are not common. The King Rail, an excellent game bird but one which is rarely shot, breeds on small marshes all through West Tennessee and its numbers are heavily augmented during the fall and early spring by migrants from the North. Sora and Virginia Rail, neither of which nest in the state, sometimes offer good shooting during late August and September. They are small birds, however, being little larger than a dove. Sandhill and Whooping Cranes, rated as excellent for

culinary purposes, were long ago completely wiped out so far as birds migrating through the Mississippi valley are concerned. A few Sandhills are still in existence in the Florida everglades and the far Northwest, and quite a few breed in Alaska but none of these visit Tennessee. The magnificent Whooping Crane, standing as high as a man's shoulder and the most splendid representative of the crane family in the Western Hemisphere, is so decimated that it is doubtful if the few left in Northwest Canada number a dozen pair. Both of these fine birds were fairly common in the state in early days.

Other members of the crane and heron families have never been considered fit for food but are among Tennessee's most interesting forms of wild life. The Great Blue Heron, while scarce, is found along our rivers throughout the state during the late summer and fall and a few winter in suitable localities, particularly on Reelfoot Lake. On Radnor Lake, near Nashville, several of these birds are noted regularly during the winter, dividing their time between that body of water and the Cumberland River, a few miles away. In early spring the Great Blues gather at long established heronries where they rear their broods in large nests built in the tallest cypress trees they can find. These nests are as big as a wash tub, and being composed chiefly of dead cypress twigs, they last and are used for many years. In a heronry visited in 1926, near Shiloh National Military Park, there were about two dozen nests, of which 18 were built in one immense cypress tree. There are doubtless several other heronries within the state in the Tennessee River valley. On Reelfoot Lake, there are two very large heronries, both located in the wooded swamp a short distance from the open water. A few years ago I counted approximately 125 nests in one of these and 250 in the other. They were built as usual, in the tops of the highest cypress trees, some more than a hundred feet from the ground. The Double-Crested Cormorant, called "Water Turkey" on the Lake, had its nests also among those of the herons in the tops of the tall cypress. Other herons within the state are the Little Blue, the Little Green, the Black and the Yellow-crowned Night Herons, the Snowy Heron and the American Egret. The Night Herons are rare and the Snowy Heron has not been recorded in the state in many years. The Little Blues are white during their first year's plumage and when seen feeding along our streams are usually mistaken for the Egret. The Egret and the Snowy Heron are the species which yielded the Aigrettes of fashion, the plumes growing in a patch on the back of the bird and flowing over the tail. A few Egrets are supposed to breed on Reelfoot but their nesting place has not been found. During recent years some fine flocks on this lake in late summer, and others in small flocks from other parts of the state have been reported, so it would appear that the strict laws against their killing has enabled them to effect at least a partial "come-back."

It is said that when our forefathers were debating which of our birds would be chosen for the national emblem, there were not a

few who vigorously put forward the claims of the Wild Turkey for the honor. Had he, said they, not saved the early colonists from many pangs of hunger during the bitter winters of those early days; was he not arrayed in robes of royal purple; and did he not deport himself with dignified and even regal carriage? Tennessee of the early days had its full quota of turkey, and here as elsewhere he helped pave the way for civilization in an untamed land by providing food when food was sorely needed. It is not to be wondered that such a splendid fowl was eagerly hunted through the years and to the point where there are perhaps but a few hundred turkeys left within the commonwealth. The writer has visited all of the so-called "wilder sections" of the state and made numerous inquiries regarding this bird among the natives and the answer has been monotonously uniform, "there used to be some but they've all been shot out now." After persistent inquiry and reports of illegal "killings," since it is now protected, it would seem that the turkey population is confined to a few in and about Lauderdale County near the Mississippi River, a small flock on Reelfoot Lake (not heard from recently), scattered flocks in the tier of counties bordering the east side of the Tennessee River, a few in the upper Cumberland Mountains in and north of White County and a remnant among the Great Smoky Mountains along the Carolina line. Complete protection given to this fine bird during the past few years, however, has produced a tangible increase but by no means to the point where an open season should be provided.

Having chronicled the decimation of so many of our game birds, it is a pleasure to be able to call attention to one which has held its own and perhaps even increased with the tillage of the land. I refer to the Mourning Dove, comparatively small of body but a tempting mark for the gunner and one still numerous enough to keep the hunter reasonably busy. The tenacity of the dove is due to its persistent breeding habits, for while they lay but two eggs at a sitting, they raise on an average of three broods a year, beginning in March and continuing through August. In winter, our doves gather in flocks sometimes to the number of several hundred and resort to regular roosts at night.

Another pointed example of Tennessee's former wild life which has been brought to a point of near extinction is the Eagle, two species of which were formerly numerous within the state. The Bald or White-headed Eagle was at one time found along all of our large rivers, nesting in the tallest available trees or on some precipitous cliff nearby. The Golden Eagle inhabited the mountainous regions, building its bulky nest on the face of escarpments jutting from the mountainsides. The first mentioned species has practically been eliminated from Tennessee as a breeding bird, three or four nests on Reelfoot Lake being the only ones known to exist within our confines. These few pairs of Bald Eagles should be carefully protected for the sake of posterity. The Golden Eagle, too, has been reduced to perhaps a few dozen pair, which still nest in the wildest

sections of the upper Cumberlands and among the mountain escarpments along our eastern border. This species is a frequent visitor, in early spring, principally to the counties along the Cumberland just east of Nashville, where it takes some toll of lambs and pigs.

The Raven was at one time not uncommon through Tennessee, and during May, 1810, Alexander Wilson mentions seeing many of them between Nashville and Muscle Shoals. This is one of the birds that cannot stand civilization, and today it is perhaps the rarest of the large breeding birds of the state. The writer has definite information regarding a few in Fentress and in Sevier Counties, but after many exploratory trips in its supposed haunts has seen it on but one occasion. The largest of our Woodpeckers, the Pileated or "Log-cock," still holds its own pretty well wherever there are large wooded tracts, and is a bird which never fails to excite interest. As large as a pigeon, nearly black but with long red crest, he looks quite unlike the woodpeckers with which we are familiar. Being entirely beneficial and a bird of high ornamental value, it should be carefully protected.

Among the smaller birds, with which the reader may be more familiar, are a number which appear to have actually increased with the advent of civilization. An excellent example of this is the Robin, which is able to find food more readily about the garden, lawn and orchard than in forested lands. Protection during the past generation has eliminated this bird as an ingredient of pot-pies and elevated it to the position of being recognized as one of the chief enemies of insect pests. On its northward migration during January and February the robins are sometimes present with us in almost incredible numbers, and a visit to the roosts is a sight not soon forgotten. These roosts are sometimes in canebrakes and low thickets but more often among cedar or other evergreens. The pine and spruce grove in Mt. Olivet Cemetery at Nashville is one of the favored roosts, and they are frequently joined there by immense numbers of Grackles (Crow, Blackbirds), Redwings, Cowbirds, Starlings and other species. At times such a roosting aggregation will number more than half a million birds.

Not infrequently we hear the remark, "Where have the Bluebirds gone?" or, "What has become of the old-fashioned Snowbird?" The explanation of these queries is usually traceable to the fact that the questioner does not get afield as of yore, for these birds are still with us in abundance. A sharp lookout along our highways during spring or summer will reveal a pair of Bluebirds about every half mile, and they remain with us in winter as well. As to the "Snowbird," more properly called Slate-colored Junco, this is one of our most abundant winter birds, and flocks of them may be seen in the rural thickets on any winter's day. They may be identified at a glance by their white outer tail feathers. It is not generally known that while the bulk of our Snowbirds go to Canada to breed, that on the tops of Tennessee's Great Smoky Mountains the conditions are such that many of them remain there during the summer to nest. Of

last but not least mention is perhaps the South's most loved and most famous feathered citizen, the Mockingbird. Although gifted with most pleasing song this bird is also physically equipped to hold its own under the most trying conditions. No bird is more courageous in battle nor more persistent in its determination to raise at least two broods a year. Although largely insectivorous it withstands readily our severest winter weather and turns to hackberries, chiefly, for subsistence at that season. As a result of its hardy characteristics, the Mockingbird may be said to be as numerous as it ever was.

Thus, one might describe with unending detail all of the 60 species of Tennessee's wild animals, the 280 species of birds, more than a hundred varieties of fish, the numerous turtles, reptiles, amphibians, molusca, etc.; but perhaps enough has been said to kindle interest and to bring home to the reader the fact that the number of our larger forms of wild life are rapidly dwindling. Now, what is there that can be done to save for posterity these creatures that have aroused within us so much interest and that for unending ages have been the subject of stories, legends and folklore. Are we, as highly enlightened creatures, equipped with every device for extermination, to continue to wage war upon them, as did the sorely tried and hunger pressed settlers of early days? Is the small bit of edible meat or the trivial bit of hide or fur so important to us that we would send the last remnant of our wild life in the wake of the bison, the deer, the elk, the passenger pigeon, the ruffed grouse and the wild turkey? I believe you will join me in voicing an emphatic no! I believe you will join me in advocating that our game laws be made even more strict, that the open-season be further shortened, and that indefinite protection be given to all birds and animals that are becoming scarce. Do you not feel that the time has arrived when all of our game birds should be placed on the protected list, except perhaps the Dove, the Bob-white, the Jack-snipe, the Coot and the Ducks. Our sorely pressed native Wood Duck, however, should have protection. I would further advocate the expansion of our State Department of Fish and Game so as to not only provide for the adequate protection of our wild life but also to provide for the education of our people to an appreciation of our wild creatures and of all nature. To this end every dollar of revenue paid in by hunters for licenses should be used by this department for the above purposes and toward the purchase of lands for wild life reservations and for state parks.

Our larger animals have already been practically wiped out and our larger birds are rapidly disappearing, due chiefly to the tendency of our people to "run for the gun" every time a large or strange bird makes its appearance, so that the victim may be examined in hand, shown about as a trophy and perhaps written up in the village paper. If this attitude of destruction is not replaced by a general appreciation of conservation, the complete extermination of all of our large birds is not far distant.

Nashville, Tenn., February, 1928.