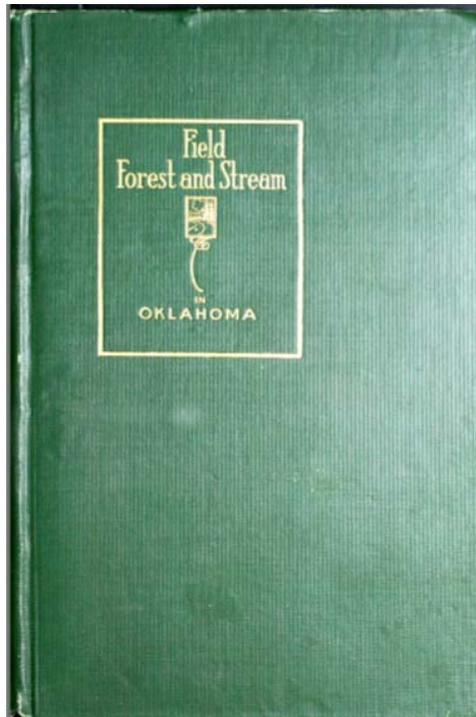


Field, Forest and Stream in Oklahoma
1912 Annual Report of the State Game and Fish Warden, John B. Doolin,
to the Governor of the State of Oklahoma, the Honorable Lee Cruce.



Introduction:

By Rich Fuller, Sr. Information & Education Specialist, ODWC

Unlike what its subtitle implies, Field, Forest and Stream in Oklahoma was not what many might expect to find in a governmental “report” from an agency head to the Governor. Field, Forest and Stream, was a 160-page hardbound book; a treatise on the natural wonder of Oklahoma’s diverse landscapes. Not only did the book eloquently describe many of Oklahoma’s wildlife and their habitats, but it also promoted the wise conservation and protection of several species, such as prairie chickens, which had declined from pre-settlement years. Throughout the book, references were made to promote conservation and to support the efforts of the newly established Oklahoma Game and Fish Department.

John B. Doolin- State Game Warden, is credited as the author of the book. A native of Alva, Doolin began his career in the clothing business, but at age 21 began a life-long career in politics and public service.



John B. Doolin

After assisting the unsuccessful gubernatorial campaign of Lee Cruce in 1907, Doolin again assisted Cruce's second attempt in 1910 which he won. Thereafter Cruce appointed Doolin as State Game Warden. While in office, Doolin began an active campaign for the conservation of wildlife, particularly birds.

Although Doolin is credited as the author of Field, Forest and Stream, the book was actually penned by Frederick Samuel Barde, an experienced newspaper writer who moved to Guthrie in 1898. It was Barde, a self-taught naturalist, who wrote the descriptive and eloquent prose found in both Field, Forest and Stream, and its 1914 sequel, Outdoor Oklahoma.

Barde an accomplished writer for the Kansas City Star and other newspapers had obviously been influenced by American naturalist and essayist, Henry David Thoreau. Like Thoreau, who found seclusion at Walden Pond in the wilds near Concord, Massachusetts, Barde found his own tranquility in a cabin made of stone he called "Doby Walls" a few miles outside of Guthrie.



"Doby Walls"



Fred Barde (1869-1916) at "Doby Walls"

In Field, Forest and Stream, Barde describes several unique ecosystems such as the Tallgrass Prairie and Wichita Mountains. Along with his photographs, Barde calls attention to species of birds or animals that have virtually disappeared in the few decades since the "Pioneer Days." He chastises the "game hog", and promotes fish and wildlife to be used for good "sportsmanship" rather than subsistence, which by the 1910s had become unnecessary due to improved farming and cattle ranching.

An article by Linda D. Wilson documenting the life and writings of Frederick Barde can be found on the Oklahoma Historical Society's Encyclopedia of Oklahoma History and Culture. See link below:

<http://digital.library.okstate.edu/encyclopedia/entries/b/ba019.html>

Additionally, an article about Barde by Larry Phipps ran in the 1965 spring edition of Oklahoma Today Magazine which can be accessed at the following link:

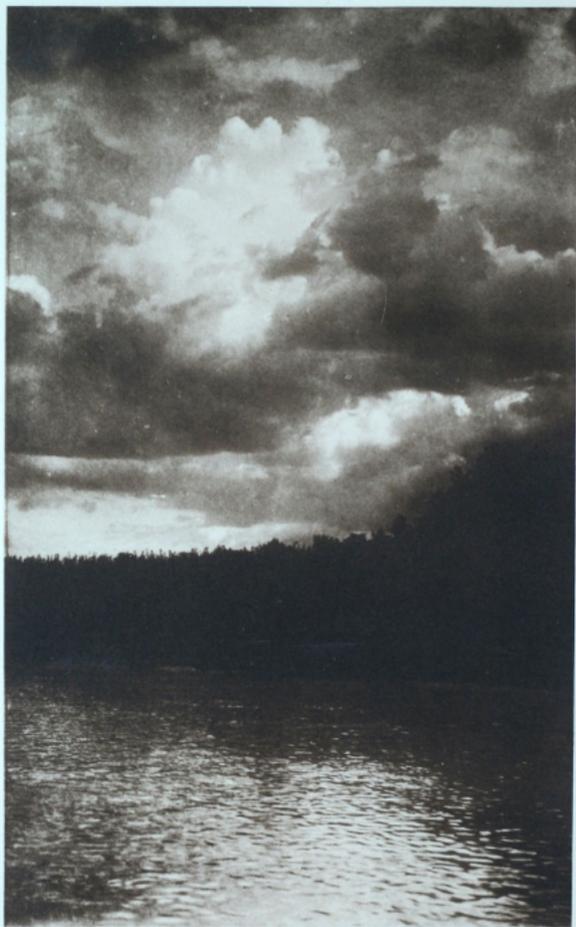
<http://digital.library.okstate.edu/oktoday/1960.html>

Largely due to the uniqueness of Barde's Field, Forest and Stream, the Oklahoma Historical Society created an exhibit to honor not only Barde's work, but also to celebrate the history of outdoor recreation in the state. On April 4, 2008 the Oklahoma History Center opened the "Field, Forest and Stream" Exhibit, which not only featured many artifacts from the Barde collection, but also other notable outdoor icons such as Don Wallace, popular host of "The Wallace Wildlife Show" (Aired on WKY TV 1965-1988), and famous flyer, Wylie Post who was an avid sportsman. The Field, Forest and Stream exhibit ran at the Oklahoma History Center for more than a year, and was later displayed at OHS's Cherokee Strip Regional Heritage Center in Enid.

Field
Forest and Stream



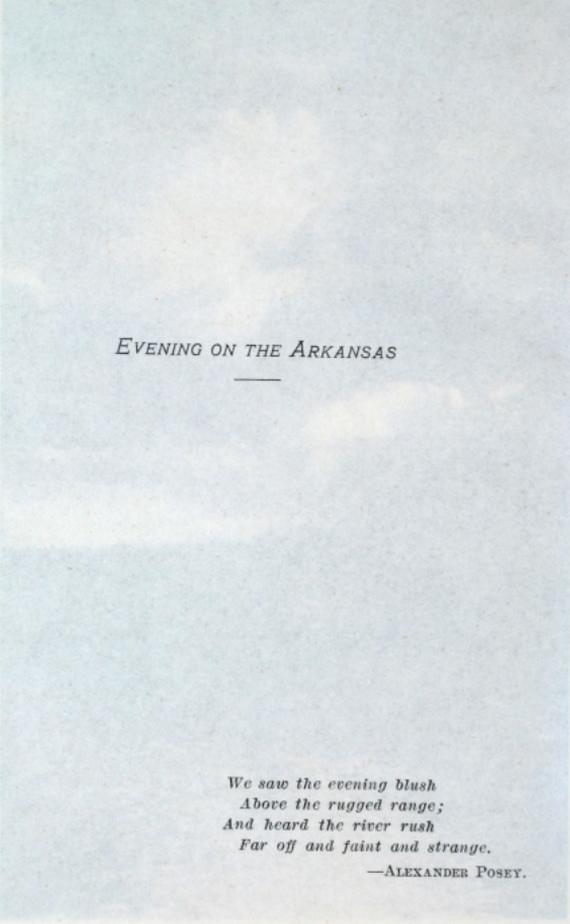
IN
OKLAHOMA



FOREST AND STREAM

IN THE
EVENING ON THE ARKANSAS

We saw the evening blush
I love the rugged range;
And heard the river rush
Far off and loud and strong.
—ALEXANDER POE



EVENING ON THE ARKANSAS

*We saw the evening blush
Above the rugged range;
And heard the river rush
Far off and faint and strange.*

—ALEXANDER POSEY.

FIELD
FOREST AND STREAM
IN OKLAHOMA

Being the 1912 Annual Report of the
State Game and Fish Warden, John B.
Doolin, to the Governor of the State of
Oklahoma, the Honorable Lee Cruce.

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Compiled by Frederick S. Barde.



CO-OPERATIVE PUBLISHING CO., GUTHRIE, OKLA.

FOREWORD

An annual report by this Department which recorded merely receipts and expenditures would convey no information such as might lead the public to an understanding of the problems and difficulties that confront those who are desirous of saving all useful forms of wild bird and animal life from extermination. It is especially the purpose of this Report to ask the people of Oklahoma for their fullest co-operation in the protection and conservation of disappearing wild life in this State. Effort has been made to give the contents attractive form, in the hope that public sentiment might be stimulated into meeting squarely and effectively a situation that should appeal to the conscience of every man and every woman who loves the beautiful things of nature that have been intrusted to their care and protection. There is widespread ignorance of the fact that in the United States song birds, as well as game birds and game animals, are at the point of early extinction. There never was a more pathetic tragedy than this slaughter of weak and helpless creatures. Oklahoma has a rich and varied wild life which it is possible to save.



The Cimarron

PERHAPS the greatest charm of nature is its wild life. Forests, streams, hills and mountains may be of surpassing beauty, yet they would be cold and forlorn without those furtive inhabitants that have given delight and adventure to men since the beginning of time. Natural things always are most wholesome. Under the open sky and in the silent places there is renewal of mental and physical vigor and loss of many a heartache. Along the old, primitive paths is found a finer vision of life and a deeper sympathy with living things—a sympathy too often dulled by alien pursuits. Society was never so conscious of the human enervation and weakness due to the fierce unimaginative commercialism in the modern struggle for contentment. Everywhere men and women are groping to find what has been lost; yearning for the grace and simplicity of other days. The cry of "back to the soil"

has a deeper meaning than more food at less cost—it is heart-hunger for greater moral and physical strength, the source of true happiness.

Oklahoma was a wilderness when its lands were opened to settlement in 1889, a time so recent that despite the wanton destruction of its wild life there yet remains enough for the perpetuation of the different species found here by the pioneers, if the people can be induced to manifest a humane interest in what should appeal to them in a thousand ways. When the impoverished settler was killing game for food, the problem was largely economic. The wild life of Oklahoma is rather to be considered from an ethical standpoint; as something that will draw men and women outdoors, not to kill, but to save—to save themselves, if need be. This does not mean an end of hunting, for good laws well enforced should provide sport in Oklahoma for many years.

All pursuits acquire heightened pleasure when accompanied by adventure, and in wilderness ways men quickly become hunters and fishermen. Under primitive conditions they were hunters of necessity, to get food and to protect themselves against savage beasts. In their forays they gained skill with weapons and a knowledge of the habits of game that won the admiration of their companions and gave renown to the most fearless and the most successful. The refining influences of civilization have failed to remove from most men the inclination to kill game beyond their needs. Moralists have attributed this gluttony to an innate tendency of the human race; others, to what has been called a natural law of the forest, common to most animal life. At best it is a survival of savagery.

The time has passed in the United States when game should be hunted for subsistence. Not only is the

game supply inadequate, but farm husbandry affords what the pioneers were unable to wrest from their first fields. Yet this passion for slaughter whenever wild life becomes a target seems undiminished in its intensity. Both Federal and State laws have been enacted to prevent this destruction. The preservation of wild life will be insured not so much by fear of punishment for violation of law as through popular education that will convince those who go afield that they should be the friends and guardians, rather than the enemies, of the timid inhabitants of wild places. It has been said with melancholy truthfulness that "a land without wild life would be like a forest without leaves."

We should abandon the mistaken idea that our wild life belongs to the man upon whose land it may be found, and that he may kill or destroy it at his pleasure. Nor may it longer be said that the man with a gun may range unrestrained as a hunter. The latter in this day and age is heir to no ancient privileges. Nor has the present generation exclusive rights over generations yet unborn. Enlightened conscience insists that our wild life is a gift to be enjoyed by all men and for all time. There should be no controversy over the respective rights of individuals or of classes of individuals who are heedlessly and mercilessly slaughtering our wild life—the rights of all the people are involved, and good government through good laws should protect those rights.



The Forest Path



In the Arbuckle Mountains

THE fauna of North America, even fifty years ago, was unsurpassed in the size, variety and abundance of its species by that of Europe when the Germans were bearded savages, battling against the Romans. Topography was highly favorable to the preservation of wild animal life on the North American continent when the great glacial walls began lifting themselves in northern latitudes, and moving southward. There

were no opposing chains of high mountains to impede the migration of the animals to more temperate zones, and when the glacial ice disappeared, the animals were free to return to the regions from which they had been driven; vegetation re-clothed the barren wastes, there was rich pasturage for the teeming millions of animal life, and until the advent of the white man there was little to disturb a happy existence.

The region now within the boundaries of the State of Oklahoma, since the day of recorded history, was remarkable for the quantity and variety of its game. Topography and latitude insured protection and feeding grounds that even at this late day, despite the years of merciless slaughter, and the settling of the country, afford delightful adventure to the hunter. The richness of the summer pasturage was diminished when frost sapped the bluestem, but in winter the buffalo grass offered an even more nutritious range for herbivorous animals. It should be of historical interest to know that the name, "short grass," by which the buffalo grass country is commonly described, was first applied by Jacob Fowler, the traveller and explorer, about 1821.

The mild winters and the long summers stimulated the propagation and growth, and prolonged the survival of all forms of animal and bird life. The geographical location of Oklahoma gave peculiar variety to its flora and its birds, if not to its four-footed inhabitants of forest and prairie. From east to west there was increasing change from the lower altitude of the moist, well-watered hill region of the Ozarks to the higher and dryer plains country that rose gradually to the foothills of the Rocky Mountains. The north boundary line of the State traverses more than eight degrees of longitude, and extends from about

ninety-four degrees and thirty minutes to one hundred and three degrees, West. The climatic conditions to be observed in Oklahoma's three and one-half degrees of latitude, extending to 37 degrees, North, are highly marked. This belt is the dividing line between the "southern north" and the "northern south," and though open to sudden rigors that may cover Oklahoma with snow and sleet, yet the influence of prevailing winds from the south gives to the southern, and especially to the southeastern part of the State a degree of balminess that causes the wood thrush and the mocking bird to linger there as late as December, if not throughout the year.

Beginning where the Black Mesa uplifts its rugged walls in northwestern Cimarron county, a majestic panorama rolls eastward down the vast watershed that finally empties its waters into the Arkansas or, further south, into Red River, for these two streams are the drainage outlets of Oklahoma. The treeless, undulating plains of old "No Man's Land," now embraced in the counties of Cimarron, Texas and Beaver, drop down in wide terraces until the confluence of Beaver and Wolf creeks, forming the North Canadian, is reached. Further east, the Cimarron, the Salt Fork of the Arkansas, the Chikaskia and numerous smaller streams flow in from Kansas on their way to the Arkansas, which pours its yellow flood across the north line of Kay county and sweeps onward past the hills of the Osage country down through the old Creek and Cherokee Nations into Arkansas, on its way to the Mississippi. Below the North Canadian, the South Canadian enters Oklahoma from the Panhandle of Texas and follows a winding course to the Arkansas, far to the east.

After the South Canadian has been passed, Red River claims tribute, and the watershed dips southward.

The Washita, also born of Panhandle waters, slips past the north side of the Wichita Mountains, and plunges headlong through the Arbuckles, a rugged and picturesque range, but of lower altitude than the Wichitas which rise abruptly a thousand feet above the surrounding level plains. South of the Wichitas, in southwestern Oklahoma, the most extensive tributary of Red



The Barron Fork

River is what is known as the Salt Fork of Red River. There are numerous smaller streams that run in deep, narrow channels to Red River. Medicine, Cache and Otter creeks are beautiful watercourses. The North Canadian is remarkable in the fact that it follows a groove along the summit of a ridge or "backbone" during the greater part of its way across Oklahoma, which divests this stream of tributaries. The Yukon is said to be the only other stream in the United States that bears a similar distinction.

Oklahoma's most beautiful streams, however, are found in what formerly were the Cherokee and Choctaw Nations, though in the Chickasaw country the Pennington, the Blue and Rock Creek should not be forgotten.

Of first importance in the northern part of the Cherokee country are Grand River and the Spavinaw, clear and swift; then come the Barron Fork and the Illinois, all reaching the Arkansas. South of the Arkansas, in the Choctaw country, is an uplift, bold and rugged, embracing the Winding Stair and the Kiamitia mountains, some of whose peaks have an altitude of more than 2,000 feet. The streams that flow southward in this region to Red River are unrivalled elsewhere in Oklahoma for their clearness, their purity and their swiftness. For long distances they traverse a practically uninhabited area, and in conjunction with their natural surroundings have caused this part of the State to be called the "Switzerland of Oklahoma." Little River, Glover, Mountain Fork, and the Kiamitia are among the notable and more southerly streams.

The lamented Alexander Lawrence Posey, the Creek Indian poet, whose lyric gift was true to every sight and sound of nature, loved the rivers of Oklahoma, especially the North Canadian, near which he was born, and on whose waters he made many a pleasant boating voyage after he had grown to manhood. These stanzas are from his "Song of the Oktahutchee," the Creek name for the North Canadian, Okta meaning sand, and Hutchee, river:

*Far, far, far are my silver waters drawn;
 The hills embrace me, loth to let me go;
 The maidens think me fair to look upon,
 And trees lean over, glad to hear me flow.
 Thro' field and valley, green because of me,
 I wander, wander to the distant sea.*

* * * * *

*O'er sandy reaches with rocks and musselshells,
 Blue over spacious beds of amber sand,
 By hanging cliffs, by glens where echo dwells—
 Elusive spirit of the shadow-land—
 Forever blest and blessing do I go,
 Awid'ning in the morning's roseate glow.*

*Tho' I sing my song in a minor key,
 Broad lands and fair attest the good I do;
 Tho' I carry no white sails to the sea,
 Towns nestle in the vales I wander thro';
 And quails are whistling in the waving grain,
 And herds are scattered o'er the verdant plain.*

The Creek poet was touched by the mystery as well as the beauty of his native streams. In Creek, Tulledega means "border line;" a range of high hills along the Oktahutchee, west of Posey's home, bears this name. "In Tulledega" reveals the scene:

*Where mountains lift their heads
 To clouds that nestle low;
 Where constant beauty spreads
 Sublimar scenes below;*

*Where gray and massive rocks
 O'erhang rough heights sublime;
 Where awful grandeur mocks
 The brush and poet's rhyme,*

*We saw the evening blush
 Above the rugged range;
 And heard the river rush
 Far off and faint and strange.*

The west half of Oklahoma belongs to the prairie or plains region, though in parts, particularly along the two Canadians, it is rough and broken. There are labyrinths of canyons, deep and difficult of access. There is a heavy growth of timber adjacent to many of the streams, and expanses of sandhills covered with shaggy black jacks. These rough, timbered localities alternate with level, rolling country, from Kansas to Texas. The forests are of wider expanse and the trees of greater size and variety as central Oklahoma is approached; a prairie region is encountered in what used to be northern and central Indian Territory, followed by eastward hills and a magnificent growth of hardwoods such as may be seen in southwestern Missouri and northwestern Arkansas; further south are the pine forests, containing billions of feet of commercial timber.

This description of the physical appearance of Oklahoma has been given to enable the reader the more easily to comprehend what a natural paradise was found here by wild animal life. Climate, shelter, food and water were in every way conducive to the welfare of bird and beast. Western Oklahoma lay in the path of the millions of buffalo that twice annually were moved by their instinct of migration to darken the earth with their shaggy, moving bodies and to shake it with the thunder of their myriad feet. Herds of elk roamed the country, and at a time so recent that their decayed and crumbling antlers occasionally may be found in remote places. "Aunt Jane" Appleby, whose first husband was "Ogeese" Captain, the Osage interpreter, said that when she went to the Osage country in the early 70's she frequently found elk antlers. Frank Rush, Supervisor of the Wichita National Forest Reserve, has an antler found by him on Elk Mountain, a peak of the Wichitas, where the hard, bare granite had

preserved it from fire. There are men now living who saw wild elk in Oklahoma.

Deer and antelope were found in countless numbers—the deer frequenting every part of the State, the antelope keeping to a treeless range. The opening of Oklahoma to homestead settlement was as if the lightnings of heaven had fallen upon its wild life. Fires swept the country in all directions; armies of horsemen penetrated to remote places; wagons rumbled over the hills and down the valleys; there was a tumult of shouting and the roar of guns, and violence reigned where until that day had been the peace of a primeval solitude. The slaughter had begun. Of that once vast multitude of deer and antelope there remains, phantom-like, only a fugitive remnant.

The Cherokee Strip, now an agricultural empire, was once the outlet or highway over which the Osages, the Pawnees and the Cherokees passed to their western hunting grounds, to gather their annual supply of buffalo meat. A former Indian trader said recently that in less than a week's hunt in the Osage country in the middle 70's he counted more than 700 deer.

The carnivorous animals were no less numerous. Most formidable was the cougar or mountain lion. Tawny and powerful, this superb animal often measured nine feet from tip to tip, and could bring down a horse at one stroke. Next in strength, and probably more ferocious, was the lobo wolf, an enemy with which the cattleman was always at war. The gray wolf, the timber wolf and the coyote were as the leaves of the forest, and in every covert the bob-cat lay in wait for its prey. Along the streams were beaver, otter, and mink, and of the smaller fur-bearing animals there were countless numbers. Black bear were numerous. It is not generally known that over-indulgence in fresh

bear meat and wild honey caused the death of the Cherokee trader, Jesse Chisholm, at his camp on the North Canadian.

Of the feathered hosts that lived in the Oklahoma wilderness frontiersmen have told marvellous tales. William Tilghman, who hunted for the market thirty-five years ago, relates that he saw a single drove of wild turkeys in the Glass Mountains in northwestern Oklahoma in which he is confident there were three thousand birds. Mast was abundant in fall and winter, and in summer grasshoppers and other insects afforded an inexhaustible food supply.

One of the largest roosts was on the upper waters of the North Canadian, and was long known as Sheridan's Roost, in commemoration of a hunt there by General Phil Sheridan in 1869, when he was returning from his punitive expedition against the southwestern plains Indians. General Sheridan asked Ben Clark, his chief scout, still living at Fort Reno, to conduct him to the best turkey grounds he knew. The hunt took place at night, with a bright moon in the wintry sky. The roost was on the north side of the Canadian, in a cottonwood grove, then about three miles in length. Thousands of turkeys were in the trees when the hunters arrived. General Sheridan used a rifle, and was satisfied after bagging seven or eight turkeys. More than two hundred turkeys were killed.

Prairie chickens were countless, multiplying year after year in ever increasing numbers, and were so tame that they could literally be "killed with a stick." The proximity of bigger and nobler game caused pioneer hunters to hold the prairie chicken in contempt. Quail came next as something to be ignored by the hunter provident of his ammunition. The passenger

pigeon frequented the timbered regions of the Cherokee, Creek, Choctaw and Chickasaw Nations.

The migratory waterfowl and shorebirds descended in clouds. This particular phase of natural history is not without a certain romantic interest. There can hardly be doubt of Oklahoma's being part of an ancient north and south fly-way, and it is pleasing to conjecture that ages ago in their migratory flights waterfowl followed the western shoreline of the inland sea—



Canvasbacks

of which only the Great Salt Lake remains—and that at this day their course is guided by an instinct formed in those prehistoric times. Of supplementary interest is the fact that the return flight of the golden plover to its northern nesting grounds, after its winter vacation in Patagonia—an annual journey of 20,000 miles—is along this same fly-way. In its departure for the south

in the fall, however, this frail, but fearless bird, goes east from the Arctic Region to Labrador, and thence down the Atlantic coast, less landward than when it returns in early spring.

Practically every species of waterfowl that nests in the north and goes south by a landward route in winter visits Oklahoma, choosing those localities best adapted to its habits. By far the heaviest flight is in western Oklahoma, at least in recent years. The mallard favors that part of eastern Oklahoma where prairie and wooded streams are intermingled. The canvasback is erratic in Oklahoma, appearing year after year in considerable numbers in certain localities, though practically absent elsewhere. Geese, brant and cranes keep well to the level region in the west.

Nature conspired for the hunter when the rivers of Oklahoma were fashioned and set running in their allotted courses. And peculiarly is this true in western Oklahoma. It may be observed that practically all western Oklahoma streams run from west to east, or at right angles to the fly-way of migrating waterfowl. Thus, they interpose their shining waters as a lure and a temptation to the weary migrant to descend from the sky. Each succeeding stream appeals in turn as the journey continues. Yielding to the invitation, the geese and ducks alight, and if the weather be seasonable they find it pleasant to linger. By flying up and down stream, they delay their southward progress and expose themselves to the strategy of the hunter to a degree that would be greatly diminished if the streams followed a north and south direction. The hunter is favored by the further fact that the larger streams, such as the Cimarron, the Salt Fork and the South Canadian are wide sandy wastes, with innumerable sandbars where geese and ducks may rest.

Sportsmen who were so fortunate as to frequent the streams of Oklahoma in earlier days are agreed that better fishing could not be found in inland waters. There were no mountain trout or muskalonge, to be sure, but that emperor of fins, the big-mouthed black bass, reigned unchallenged in his watery kingdom, multiplying like the ripples that dappled his pools. With him swam his exquisite neighbor, the crappie, in silvery schools, finning depths were rarely a lure had been cast. Sunfish, buffalo, redhorse, drum, and the various members of the catfish family common in this latitude abounded in all streams. First of his kind, the channel catfish—clean as a hound's tooth and lover of swift water—is entitled to recognition, despite all that may be said by critics against the scaleless fish. In certain Oklahoma streams the small-mouthed bass is present with its big-mouthed fellows. The sturgeon, the shovel-bill, and the big catfish from the Mississippi, found their way to these inland waters.

After the settlement of the country, in an unguarded moment, the artificial waters of Oklahoma were stocked with German carp. The carp has defenders in older States from whose streams the native fish have largely disappeared, but the carp should be looked upon as an outlaw in Oklahoma, where it is possible to fill the streams and private lakes with real fish. The carp has been praised for its rapid growth, resulting in an increased food supply. But it is a gluttonous and destructive enemy of game fish, a veritable hog in habits and appearance, and should have no place where game fish may be propagated. The carp has devastated lakes that once abounded in bass and crappie, destroying even the reeds and moss, so attractive to both fish and wildfowl.



Swan Lake

THE natural lakes of Oklahoma fall short of the streams in beauty. They are few in number, and may hardly be called lakes, in the sense that this term is used and understood in Colorado or Wisconsin. In most instances it is apparent that they have formed in places that once were claimed by adjacent streams. As a rule, these lakes are clear, many of them contain dense growths of moss, and most of them are bordered heavily by tall reeds and swamp grass, which make admirable blinds for shooting waterfowl.

Perhaps the largest of these natural bodies of water is Roebuck Lake, near the Choctaw country. Roebuck Lake is nearly an eighth of a mile wide and fully three miles long. It has been the resort of fishermen since earliest days. Long before the Civil War certain old Choctaw gentlemen cast in its waters, and white fishermen came annually from Texas to harvest its shining

treasures with rod and line. In Robuck Lake may be found practically all the different kinds of fish that live in still waters in Oklahoma. In later years the non-game fish were increasing to the detriment of the others, and this summer Mr. Julius Ward, of Hugo, district game warden, undertook the removal of as many of the inferior fish as might be possible with large seines. Tons of fish were caught, especially those belonging to the cat-fish family. Among his trophies was a ferocious alligator gar that measured seven feet and ten inches in length and weighed 196 pounds. In his time that old veteran undoubtedly had destroyed enough fine fish to stock the largest artificial body of water in Oklahoma. Roebuck Lake should become an angler's paradise, if proper protection is given to its game fish.

Vann's Lake, several miles north of Muskogee, is widely known in eastern Oklahoma for the size and abundance of its crappie. Like Roebuck Lake, it has been frequented by fishermen for many years. There are numerous fine lakes in the Cherokee country; and in southern and central Oklahoma, occupying sloughs and channels abandoned by wandering streams, are many small lakes, especially in the Chickasaw country. Lowrance Lake, near Platt National Park, at Sulphur, is often praised beyond others for its excellent bass fishing. One of the most devoted fishermen in Oklahoma declares that in no other Oklahoma lake are the bass so big, so prolific and so pugnacious. About fourteen miles west of Guthrie, on the north side of the Cimarron River, are Twin Lakes, lying hidden among sandhills. In recent years they have been heavily stocked with bass and crappie, and the fishing has been excellent. Twin Lakes were known to hunters and frontiersmen long before Oklahoma was opened to settlement. Its owners encountered an experience that should be of

value to fishermen everywhere in the State. Two or three years ago the growth of moss in the lakes and the reeds that thickly bordered their shores disappeared. Both bass and crappie refused to take the hook, however artful the lure, and it was feared that possibly most of them had died, though there was absence of their dead bodies. A shrewd fisherman suggested that carp were causing the trouble, arguing that they had eaten the moss and rooted out the reeds. A seining party was organized. At one haul a ton of fish was dragged ashore! Most of them were carp and hickory shad, but among them were enough crappie and bass, many of



Alligator Gar from Roebuck Lake

the latter weighing four and five pounds each, to show that game fish were still there in large numbers. More than 5,000 pounds of carp, hickory shad and bullheads were taken. The moss and the reeds are growing again, and the bass and crappie are thriving beyond local precedent.

The eyes of many a grizzled veteran in Oklahoma sparkle at mention of Swan Lake, not that Swan Lake is a considerable body of water, nor that Swan Lake has scenic beauty. This lake lies north of Fort Cobb, not far from the old home of the late "Doc" Sturm. Time was when Swan Lake lay shining at the very heart of the finest hunting region in what is now Oklahoma.

Its name is suggestive of a regal bird no longer to be seen in this region. The lake was west of the military trail that connected Fort Sill with Fort Reno and the railroads at Caldwell and Wichita, Kas. Within sight of its placid waters were deer, turkey, prairie chicken, antelope and smaller game in numbers that are yet the boast of United States Army officers who saw the wonderful sight. Ducks, geese and other waterfowl darkened the sky when they descended or rose from Swan Lake. For many years General Nelson A. Miles hunted there each fall. He travelled hundreds of miles to enjoy the sport. His hunting companion invariably was Colonel William F. Cody. It would be worth while to own Swan Lake, just for its memories.

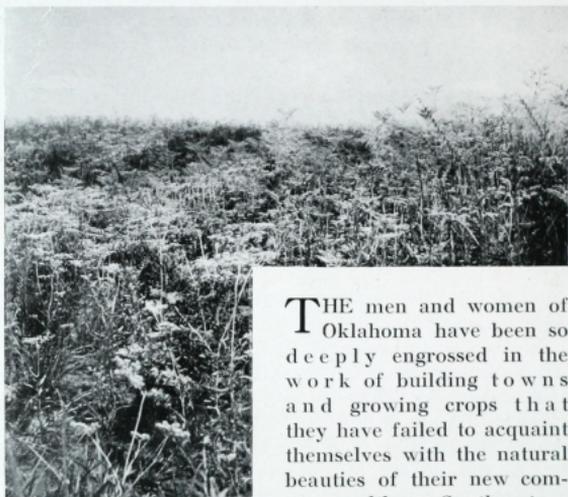
The artificial lakes in Oklahoma are superior in number and water acreage to the natural lakes, and are more accessible. They are substantial proof of how quickly and willingly nature yields to the kindly overtures of man to become his partner. They should be an inspiration to every city, to every community and to every sportsmen's club to beautify the landscape and increase the simple pleasures of life by conserving the life-giving waters that fall from the sky. The cost is small and the benefits perpetual—"as long as grass grows and water runs."

Lake Lawtona, from which the city of Lawton draws its municipal supply of water, is without a rival in Oklahoma. It was formed by the damming of Medicine Creek at a narrow pass in the Wichita Mountains. The body of water is about three miles in length and a mile in width; in many places its depth is forty feet. The supply of water is inexhaustible. The multitude of game fish that now inhabit this lake and the flight of waterfowl that frequent it are reminiscent of pioneer days.

Ardmore's municipal reservoir of perhaps 150 acres brings down the waterfowl on their way between the Washita and Red River, and in summer afternoons the same singing of reeds may be heard as is heard along the streams of the Kiamitia wilderness. At McAlester there is poetry in the very name of Lake Talawanda. At one time fishermen were forbidden its waters, but that merely increased the number of its bass and crappie.

For the pleasure of good sportsmanship, clubs have been formed in a number of the larger Oklahoma towns and artificial lakes constructed. Ardmore has led all others. The properties of the Chickasaw Club and the Ardmore Rod and Gun club are little kingdoms over which any red-blooded man might wish to rule.

The railroad companies of Oklahoma have rendered different communities a fine service by building storage reservoirs that primarily were intended for no other purpose than to secure an adequate and permanent supply of water for locomotives. Some of these reservoirs are fifty or sixty acres in extent, and have become beautiful lakes, where the hunter and the fisherman find delightful sport. Such lakes have been built at Newkirk, Yost, Meremac and Byars, and another is to be constructed at Guthrie. They have done much to encourage the flight of waterfowl in central Oklahoma.



THE men and women of Oklahoma have been so deeply engrossed in the work of building towns and growing crops that they have failed to acquaint themselves with the natural beauties of their new commonwealth. Southeastern

Oklahoma is not only the home of our remaining big game—deer, black bear and cougar—but its picturesque scenery is unrivalled elsewhere in the State. The region is still thinly settled. The cross-road postoffices are few and widely separated. The only highways are trails that have been followed by the fullblood Choctaws for more than half a century. There are no railroads, and life there is as primitive as it was before the Civil War. There has been invasion by lumbermen

who are devastating the magnificent pine and hardwood forests. Wild life has been greatly favored by the fact that nearly a million and a half acres of this timber land was reserved from allotment by Congress. It remains virgin wilderness and a place of refuge for bird and beast. The region is extremely rugged. Along the innumerable watercourses, precipices rise to a height of two or three hundred feet; through these deep canyons the swift streams plunge dashing and foaming among the boulders.

Whether the Kiamitia is more lovely in spring than in autumn or more lovely in autumn than in spring offers agreeable controversy. To contemplate the beauties of these delightful seasons in that region is to yield one's self to a charm known only to the lovers of the big outdoors. Spring comes early with her soft winds and odorous flowers, the songbirds are home again even before winter has passed from the prairies of the north, the streams flash in the sunshine, and the venturesome wild bee is abroad in quest of sweetness. The flowers of eastern Oklahoma, from Red River to Kansas, are astonishing in their variety and luxuriance. The violet, the columbine and the Dutchman's Breeches grow there, and the sarvice berry whitens rocky hillsides with its early bloom. The dogwood, the linden and the red-bud expand their dream-like clouds of pink and white from lowland to upland. Here are growths of holly a hundred acres in extent, with their perennial green. Some of these holly trees are of extraordinary size, being forty feet in height, with trunks as thick as a man's body.

The Kiamitia is an unknown land to the scientific botanist, and is believed to hold unexpected riches in native flora. At the time George Catlin, the traveler and painter, was at Fort Gibson, a German botanist,

commissioned by his Government, was studying the flora and silva of what is now eastern Oklahoma. He died of cholera shortly after Catlin arrived at the garrison. It would be interesting to know what became of his notes and his collection of plants. It is to be hoped that Mr. George W. Stevens, member of the faculty of the Northwestern Normal School at Alva, Okla., will include eastern Oklahoma in the survey to be made by him this year in his study of the ferns and flowers of Oklahoma. The field is virgin and alluring.



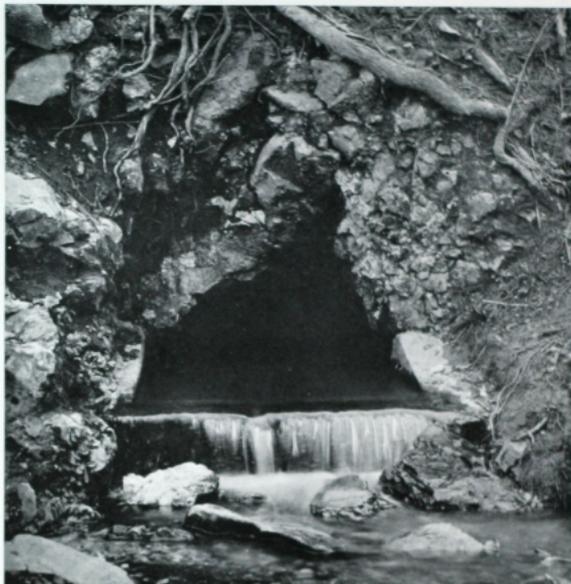
A Day in Autumn

Autumn is the season of ripe fruits, and autumn in the Kiamitia is such as to draw men from their hearthstones and their wives, and children, to linger in that enchanted region until empty grub-box and signs of falling weather drive them

homeward. The gorgeousness of autumn tints in the Kiamitia is beyond comparison, and the splendor of it was never greater than in 1912. All natural life produced in maximum abundance. Mast rattled down like hail, providing acorns for deer and turkey, and hickory nuts for the bear. A favorite food of the latter is the wild huckleberry which grows everywhere in the Kiamitia. The mountain sides are covered with muscadines, the juicy fruit often being as large as a Chickasaw plum. The seeds of the plant known as "beggar's lice" are greedily eaten by deer and turkey.

Further north lies the Cherokee country, less mountainous, but still wildly rugged. There are those who believe that in the land of the Cherokees the scenery is more idyllic than that in the land of the Choctaws. An endless delight of the Cherokee region is its inexhaustible supply of good water. Springs pour from every hillside and bubble up in every valley. The Illinois, the Barron Fork, the Spavinaw, including their innumerable small tributaries, have a certain natural beauty scarcely approached by streams elsewhere in Oklahoma. Grand River, larger and bolder than any of the others, gathers many a tender rivulet to its bosom on its way to the Arkansas.

Passing into the Osage country, the traveller finds nature less prodigal in her gifts of stream and forest. The yellower soil of central Oklahoma tinges the Osage waters long after there has been subsidence of floods, and such springs as are found at the heads of canyons scarcely fill their channels. Deer and turkey are now rarely found in the Osage, though in earlier days there were no better hunting grounds in Oklahoma. A few prairie chicken linger to remind the pioneer of the thousands that could be seen there twenty



A Spring in the Cherokee Hills

years ago. The Osage streams were long renowned for their bass and crappie.

Westward from the Kiamitia, the offshoots and then the main formation of the Arbuckle Mountains are encountered in the Chickasaw country, which for many years has been more thickly settled than the Choctaw country, with a proportionate decrease in its game. The Blue, the Pennington, and Rock Creek are first among Chickasaw streams. Further west, the Wichita Mountains, steel-like in the hardness of their gray granite,

embrace such clear and sparkling streams as Medicine Creek and Cache Creek.

In what formerly was the Wichita and Caddo Indian reservation a number of the streams have an interesting peculiarity. Sugar Creek will serve as an example. The summer had been hot and dry in the Southwest, and the smaller streams had shrivelled into pools, with yellowish heaps of sand and gravel between them. A cavalry expedition was leaving Fort Reno for a prolonged march through the Wichita and Caddo country. Water was essential for good camps, as there was a large number of horses. The commanding officer had been in the reservation in late summer and found many of the streams dry. The first week of December was at hand. Ben Clark, the celebrated scout and Indian fighter, then as now interpreter at Fort Reno, was to guide the expedition. No man knows the topography of Oklahoma more accurately than Clark.

"Give yourself no anxiety about water, Captain," said Clark; "we will find plenty of it. There has been no rain, not even a drop, since mid-summer, yet we will find Sugar Creek running like a mill-race."

True to the old scout's prediction, Sugar Creek on the riffles was knee deep to a cavalry horse. Cooler weather and the deadening of vegetation by frost, rendering it sapless, had permitted the dry streams to receive what summer heat and growing plants had been taking from the earth, and their channels were again musical with running water.

North of the present town of Fort Cobb are several little streams delightful to behold. One of them glides gently and noiselessly through beautiful meadow land. This little stream is scarcely more than eight feet wide from brink to brink, though its water may be from

three to four feet in depth. The grassy meadow stops only at the margin, and one's first impression is that a little canal has been built in this far-off place. At a distance of a hundred yards the stream may scarcely be observed.

At dusk one evening, in a camp beside this stream, Captain Fred Foster, U. S. A., said to a companion:



Beaver County Stream

"About 1884 I came here from Fort Reno to hunt, and reached this very spot at early twilight. I did something that I doubt was ever done by any other hunter. I was carrying a double-barrel shotgun. Right down there a big Canada goose swam into sight from behind a growth of reeds. I gave him my right barrel, and he went floating down stream. Instantly, there was a commotion in the reeds, and a wild turkey gobbler took wing. I brought him down with my left barrel. Without moving from my tracks I killed a goose and a turkey. Can you beat it?"

In the northwestern part of the State, particularly in what formerly was "No Man's Land," many of the streams have this same peculiarity, their flat banks being merely an abrupt breaking off of the level prairie.

It should be a matter of pride to everybody in Oklahoma that one man, W. F. ("Shorty") Adams, had the vision at an early day to foresee the extinction of the beaver and to provide for the preservation of a native colony. These beavers are in Ivanhoe Lake, owned by Mr. Adams, near the town of Shattuck, in Woodward county. Their number is not definitely known. They have built a large dam across Ivanhoe Creek.

In 1886 Adams was engaged in the cattle business, and had the headquarters of his ranch in "No Man's Land," now represented by the counties of Cimarron, Texas and Beaver. Beavers were found in all the streams in that part of Oklahoma. In 1893 Adams homesteaded the land on which Ivanhoe Lake is situated. Only a few beavers remained on Ivanhoe Creek, and many of these had lost a foot or two in traps. Adams resolved that these beavers should have a chance to make a last stand against the white man. There were only two dens in 1886; the number now is estimated at twenty. It is possible that there may be a few beavers in Ellis county. The ruins of several old dams may be seen on Blue River in the Chickasaw Nation.

The beaver dam in Ivanhoe Creek is about four hundred feet in length, with an average height of six feet. The back water runs from three to fifteen feet in depth for a mile or more, with a width of from fifty to one hundred and fifty yards. This dam was built in 1904, the beavers working all fall in constructing it. Though clever artisans, the beavers did not count upon unusual floods, and a year or two later a freshet of

extraordinary violence swept out a part of the dam, the beavers quickly restored.

Cottonwood bark is the principal food of the Ivanhoe Lake beavers. Adams is of the opinion that beavers prefer to make their home in the natural bank of a stream, and to build houses only when the banks are too low for comfortable dens. One of the houses is about eight feet in height, with a diameter of fifteen feet. Weeds cover it in summer; in the fall it is freshly plastered with mud. A hole knocked in the roof at night will be repaired by morning. A pair of beavers will rear a family of about five each year.

When cutting timber, the beavers at Ivanhoe have a run-way about eighteen inches wide leading from the water to the timber growth. Water stands in the run-way to a depth of eight or ten inches. To satisfy his curiosity as to how the beavers could protect themselves if attacked in their run-way, Adams waited until a run-way was dry and found that at intervals they had dug holes to a depth of five or six feet in which they could take refuge. These holes possibly may have led down to dens. These beavers control water with even more skill than the master of an irrigation plant. When water is needed for their run-way, they open their dam and close the opening when their needs have been satisfied.

At rare intervals otter are found along Oklahoma streams, even in the central part of the State. They are closely pursued by trappers, however, and in a little while will be gone.



A Canyon Stream

WHEN the redbud is in bloom and thickets are odorous with the fragrance of the wild grape, fishermen along Oklahoma streams, especially in the Kiamitias, may hear a musical murmuring among the blossoms. The wild bees have come from winter quarters and are garnering honey for next season. There is something about the wild bee that allures the most unimaginative person, something possibly that revives a latent instinct developed in the far off days of his ancestors when man was without weapons and gathered his food with his bare hands. In Oklahoma the fisherman of spring is the hunter of autumn, and the fisherman usually marks the bee tree for later emprise.

Down in the Kiamitia country the lazy hunter resorts to sharp practices in locating bee trees. Honey being desired, several lumps of loaf sugar are placed in a saucer into which has been poured a few spoonfuls of brandy. The wild bee is a natural tippler,

and soon the rusty-coated fellows have scented the sugar and brandy, and begin dropping down from the sky. Most of them are soon comfortably on their backs. Others, however, with more concern for the safety of their hive, start for home the moment they feel that they have indulged as far as discretion should permit. There is no hesitancy or wavering in this homeward flight, and its direct course enables even an amateur woodsman to locate the tree with reasonable certainty.

Wild bees are now more commonly found in many parts of Oklahoma than they were in earlier days. Bees that escape from domestic hives fill many a hollow tree with honey. The cutting of a bee tree is not to be lightly undertaken.

Bill and Jim, two bachelors who had followed the cattle herds in frontier days, found a bee tree in a canyon, a canyon so deep that a ghost of twilight lingered there at noon. Accompanied by neighbors and equipped with saws and axes, the ranchmen led the way. At the head of the canyon was a wall of mossy stone from which water fell splashing into a clear pool, a drinking place for bees, butterflies and birds.

On the brink of the canyon stood the bee tree, a tall cedar, its silver-crueted berries shining against its green foliage, aromatic and fragrant. The tree was of unusual size and in its topmost branches was a hawk's nest from which the young long since had soared away into airy depths.

Forty feet from the ground, looking toward the rising sun, was the entrance, formed by an ancient knot-hole, toward which were flashing little golden arrows of light. Again, these little arrows went flashing into the sky. The bees were at work. From a thousand flowery fields they were gathering honey, rich with the tang and sweetness of the wilderness. The portals of the

cedar doorway were brown and dark with the passing of myriad feet that for three summers had borne honey-laden and pollen-dusted bodies into the hive.

Jim seized his axe, and the sound of his blows echoed down the canyon. The axe sank nearly to its helve in the fragrant wood. There were anxious glances, to see if the bees were disturbed, as the raising of their anger might lead to trouble. Luckily, they were too far removed from the cutting to be annoyed. The felling of a tree not less than thirty inches in diameter on a summer day is a task for strong men. The chips flew right and left, and clattered over the edge of the precipice. Each bee-hunter took his turn at the axe, and at intervals there was a whanging of the cross-cut saw.

The sun was hanging on the horizon beyond the hills, ready for his plunge into the coming night, when the chopping and sawing ceased, and the bee hunters drew together in consultation. It was agreed that the first emergency work after the cedar fell would be the closing of the hive. This precaution would keep the lance-armed warriors shut in until they could be stupefied with smoke. But what if the tree, falling in daylight, should break asunder? No sensible man would have the temerity to risk himself among the infuriated bees. The thing to do was to cut the tree nearly down, and then after dusk a few well-directed blows would finish the work, and the bees could be easily controlled in the darkness, whatever happened to the tree.

The stars were breaking out in the sky when the bee-hunters returned. Jim swung the axe, and the big cedar trembled.

Whack! whack! the sound of the axe rang in the night. There was cracking and straining, as if a captive giant were snapping the cables that bound him.

"There she goes; watch out, watch out!" shouted Bill, and Jim dropped his axe and fled.

Gently at first, and then with increasing swiftness, the towering cedar leaned toward the earth. With a mighty rush it fell crashing upon its whispering companions whose limbs and trunks were broken and crushed.

Bill had closed the door to the hive. Inside the trunk the bees could be heard roaring, as one may hear the sound of the sea in a shell. The cedar did not split, nor was there injury to any of the choppers. Rosiny boughs were cut and set ablaze on the hillside. The flames lit up the surrounding forest wall. The gummy branches crackled and flamed and filled the canyon with fragrant smoke. The tree had fallen on the very verge of the precipice. Bill pounded on its trunk with his axe.

"She's got a big hollow, all right, and there's honey above and below the hole," he shouted.

Bill chopped until he was ready to use his wedge in splitting off the side of the tree. The bee-hunters were keen with expectancy.

"Wow!" exclaimed Jim; "look there. The bees are crawling out of holes we didn't see. There are hundreds of them."

Sticks were hastily thrust into the holes. But this put no bridle on the bees that had escaped, and they were charging like Ukraine coursers. Smoking boughs subdued them.

The axe rang on the steel wedge as the latter sank deeper and deeper into the cedar. Then there was loud popping and the slab began slipping from its place. Bill jumped to the ground and with a mighty pull laid bare the inside. Honey? Gallons of it, the color of old

ivory, or brown and yellow like oaken rafters above an ancient fire-place. Bill thrust a piece of the dripping comb into his mouth, and for a moment was past speech.

Then there was swinging and swishing of burning boughs, and the bees were soon drowsy with smoke.



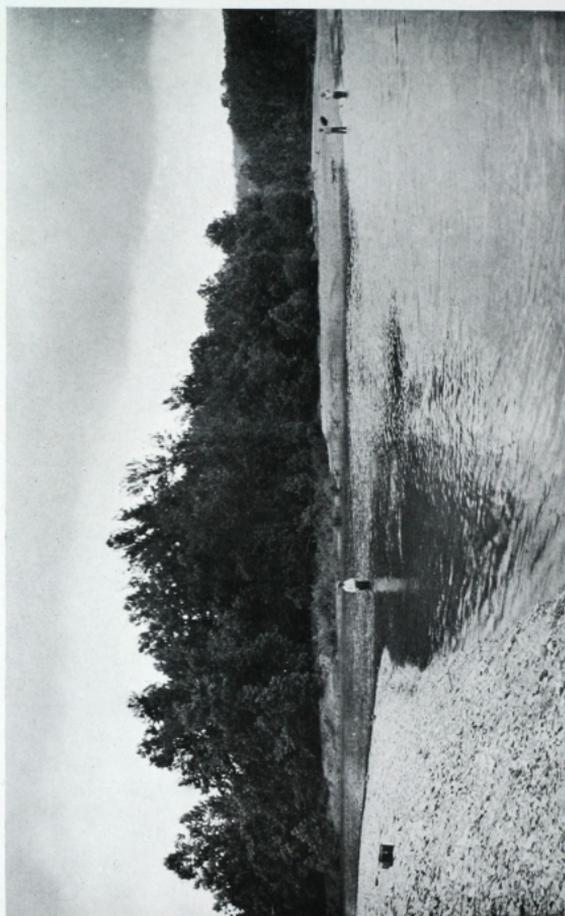
Wild Honey

Bill called for his pan and spoon; he said that some of the honey was two, possibly three years old. It tasted of the perfume of wild flowers that bloom in meadows, in valleys, on crags, and beside clear, swiftly-running water courses. And when the clammy sweetness had been sucked from the comb, there came from the latter, as it was pressed between the teeth, a delicate,

almost intangible flavor of cedar—from the fragrant house in which the honey had been stored.

The plaining bees were bewildered, and only a few deserted their fallen hive. Bill lifted the honey-comb, piece by piece, and laid it gently in the large pan which other bee hunters held at his side.

Earth was thrown on the fire, the woods darkened, and the canyon was again clothed in its old mystery. The bee hunters gathered their spoils and departed, taking turns at carrying the spoils.



Confluence of the Barron Fork and the Illinois



Catching the Real Bait

IF NEVER a fish were caught, there is so much to be said in behalf of fishing that every man who has even the slightest interest in making life worth living should demand that all streams and all other bodies of water in his State should be made to produce their maximum of fish. It is one of the fine enterprises of boyhood, and the exploits of youthful fishermen become the fond remembrances of men, to be magnified and extolled until truth smiles indulgently at the harmless prevarications. Unlike the fields and the woods, the streams with their silver-flashing inhabitants may be easily preserved and guarded, if proper laws for their control are enacted and enforced. The prairie chicken

and the wild turkey may be exterminated, but the bass, the crappie and the goggle-eye will respond year after year to intelligent care.

In the last two or three years better protection of streams against dynamiting and netting has been followed by a noticeable increase in the quantity of fish, especially the game varieties.

The streams of eastern Oklahoma have been less exposed than those of western Oklahoma to the deprivations of the dynamiter, and are maintaining their normal supply of fish with less difficulty. No violation of the game laws is more vicious than the dynamiting of streams, and in every instance the offense should be followed by maximum punishment. The dynamiter of a stream is an outlaw, destroying without mercy, and disregarding the rights of every other person in his community.

The people of Oklahoma should acquaint themselves with the economic possibilities offered by their streams, lakes and ponds. The black bass, for example, will thrive everywhere in Oklahoma, and in his wake are other varieties of edible fish that are easily propagated. If every stream, if every lake, if every farmer's pond were stocked with good fish, the food supply of the State would be measurably increased. In addition, it would be possible for the owners of private bodies of water to increase their income by the sale of fish. The parcel post offers opportunities that should appeal to persons who could raise fish near the larger centers of population. Many a townsman would be glad to know that by parcel post he could get for his dinner a bass or half a dozen crappie only three or four hours out of water. The raising of fish ought easily to be made a profitable business.

The revenues that come to the State Game Warden's department are the voluntary contributions of persons who are willing to pay a small sum annually for a license to hunt. Not a cent of these revenues comes from the taxpayers. It should be possible to use a large portion of the accumulated funds in stocking every available bit of water in Oklahoma with good fish, and



The Bloom of Redbud

in keeping them stocked to a maximum degree. A fish hatchery sufficient for every need could be established and easily maintained. It would be a public enterprise that could be made to declare dividends for every man, woman and child in Oklahoma.

The State of Kansas is now doing what should be done in Oklahoma. At Pratt, Kas., under the supervision of Professor L. L. Dyche, State Game Warden, a

fish hatchery composed of eighty-three ponds and covering 100 acres has been established. The first distribution of young fish will be made in the spring of 1913. The cost of operation will be paid from the sale of licenses to hunt, just as the cost could be paid in Oklahoma. Professor Dyche is quoted as saying:

"The State of Kansas is encouraging the building of ponds and stocking them with fish. The 1911 legislature passed a law exempting twenty acres of land in each farm from taxation each year if a pond covering one acre were built on the farm. The exemption is double if the pond is built of stone, brick or cement, while ordinary exemption runs if the pond has a dirt embankment. This is done for two purposes—to encourage the building of ponds to retain the surface waters from the adjoining lands and to encourage the growing of fish for home consumption.

"The fish business in Kansas is not worth more than \$100,000 a year at the present time. In four or five years the Kansas fish business ought to be worth from 2 to 3 million dollars, just for the fish sold from the Kansas farms. This does not take into consideration the fish consumed by the farmer and his family. An acre pond, if the farmer will give the fish careful attention, using just ordinary prudence in handling them, will produce a hundred dollars' worth of saleable fish a year, and fifteen minutes' time a day will be all the time required. That is as good, or better, than he could do with chickens or anything else on the same acre of ground.

"The State will furnish the young fish for the ponds free of charge. It has its own fish car and pays the railroad fare for hauling it around. All the farmer needs to do is to meet the car at a certain station when he is notified that it will be there and the fish will be

handed out to him. Last winter (1911-12) the owners of 1,728 farms built ponds and I have supplied them with fish. Each one got bass, crappie, perch or catfish, as he desired.

"Feeding the fish will be just the same as feeding and watering the chickens each day in Kansas from now on. All the fish we distribute, except the bass, will eat corn and wheat and bread. A cornfed catfish is a better fish, in taste and texture of the meat, than any other fish to be found in Kansas streams and better than the fish shipped into Kansas. Within two years I expect to see a pond of an acre or more on every Kansas farm."

A complete list of all fish native in Oklahoma is yet to be compiled by a competent observer. Oklahoma has been so recently transformed from wilderness that



Fishing in the Wichita Mountains

local naturalists have not closely surveyed its different localities. The statement is risked that Oklahoma has at least the same kinds of fish as may be found in Kansas. The following more important kinds have been caught in Oklahoma waters:

Large-mouth Black Bass (*Micropterus salmoides*); Small-mouth Black Bass (*Micropterus dolomieu*); Rock Bass (*Ambloplites rupestris*); White Crappie (*Pomoxys annularis*); Black Crappie (*Pomoxys sparoides*), which

is known as "calico" or "strawberry" bass; Pumpkin-seed Sunfish (*Eupomotis gibbosus*); Green Sunfish (*Lepomis cyanellus*); Bluegill (*Lepomis pallidus*); Yellow



"I Caught All of Them"

Cattfish (*Ictalurus punctatus*); Black Bullhead (*Ameiurus melas*); Brown Bullhead (*Ameiurus nebulosus*); Blue Cattfish (*Ictalurus furcatus*); Big Muddy catfish (*Leptops olivaris*).

This list by no means includes all the fish to be found in Oklahoma streams. Down in the Red River region the shovel catfish grows to large size. The sunfishes (*Centrarchidae*) represent between thirty and forty species and varieties, the names of which often vary, according to the locality in which they are

found. The Jack-salmon or, more accurately, the Pike Perch (*Stizostedion vitreum*), is taken in eastern Oklahoma streams. It is an excellent food fish, but so

destructive to other fish that Professor Dyche is unfriendly to its propagation in Kansas. To set at rest an argument among Oklahoma fishermen, it may be said that the Black Crappie and the Strawberry Bass are identical. A misleading name for bass in some parts of Oklahoma is "trout." The name seems to be of southern origin, and has perplexed fishermen who came to Oklahoma from Northern States. Buffalo, redhorse, suckers, drum, hickory shad and carp are commonly found, and in the larger streams the sturgeon is taken in nets.

Several miles west of Enid is the farm of "Cliff" Conway, all his life a hunter and fisherman. Conway calls his farm "The Jungles." On his farm Conway has a spring-fed pool about 100 yards long and forty feet wide, with a depth of eight feet. The water is soft, but not always clear, because of wind agitation. The pool has an elevation beyond the possibility of overflow from adjacent streams, and runs continually throughout the year, so bountiful are the springs that feed it. In summer the water at its spring sources has a temperature of about 58 degrees, the same temperature prevailing at the bottom of the pool in the deeper places. The surface temperature in summer runs about 85 degrees.

In 1908, Conway got a consignment of brook trout from the United States Fish Commission, and liberated the youngsters in his pool. His friends shook their heads and said that it was a waste of time to experiment with brook trout in Oklahoma waters. The fish began flourishing from the day they were given their freedom. On September 10, 1910, the trout had grown to a length of eleven inches, and lacked only a few ounces of weighing a pound apiece. Conway saw them daily springing hoop-shaped from the water.

Though these trout with their speckled bodies were typical in appearance and habits, in their new home their flesh had a faint salmon tinge, which led Conway to suspect that they were hybrids. He has been unable to ascertain why their flesh is not white. There is an



Sand Creek in the Osage

abundance of natural food in the pool. In summer Conway feeds his trout, giving them the chopped meat of rabbits and musk-rats, pancakes and the refuse from the family table. At first, when small, they fed freely in his presence, but later grew timid, and darted away at his appearance. They were most numerous where the spring water flows from the gravel bed.



Club House on the Salt Plains

THE Salt Plains in Alfalfa County, covering an area about eight by twelve miles in size, afford constant refuge for wild fowl. They are devoid of the slightest vegetation and as level as a floor. Winds sweep over them almost constantly, and when the sun shines and evaporation is rapid, their surface of sand is encrusted with glittering salt. The Salt Fork of the Arkansas flows along the northern edge of the Salt Plains, sinking under its sandy waste to vast deposits of rock salt. In damp weather the surface of the Plains has a rusty color.

A visit to the Salt Plains when waterfowl are migrating is long to be remembered. The town of Cherokee is a point of easy access. Three miles from Cherokee a line of low sand hills covered with bunches of stiff grass marks the beginning of the Plains.

The start was made late at night, with Ferguson driving. Three hundred yards brought the hunters through the sandhills onto the Plains. The moon was

floating high in a fleece of clouds, and a silvery mist sifted down; the dim, low Plains stretched magical and mysterious into the night. There was no horizon line. At times the wheels cut deep in the sand and the horses had hard pulling. Then firmer ground was struck and the wagon rolled forward as easily as if the Plains were floored with polished marble. But there was always more or less danger ahead. The rains had lifted the river water into the swales which were deep with quicksand. Such places were to be crossed hurriedly. Once bogged, a horse sinks quickly to his girth.

The night was vibrant with the noise of waterfowl. The splashing of ducks in the shallow pools came like the sound of waterfalls. Then a creaking as if a barn door were swinging lazily on its rusty hinges—the cry of sandhill cranes. Above all sounded the honking of geese, some at rest on the Plains, others arriving from their long flight from the Gulf region where they had passed the winter.

There are no trails or highways on the Plains. The marks of wheels are quickly obliterated by the wind that blows at times with startling violence. Ferguson said that the driver directed his course by the stars, and that finally a light would be seen glimmering in the silvery distance—a lantern hung on a tall staff at the club house, as a beacon for mariners on this sea of sand. Midnight had passed before the driver saw the light, which was several miles distant. The light would sparkle a moment and then disappear, only to emerge from the ghostly mist with added brilliancy.

Gould and Burroughes were in bed sound asleep when the travellers arrived. They had come in advance to build blinds and set out decoys for the morrow's hunt. The club house was an unpainted, weather-beaten affair of pine boards, but snug enough to afford

comfortable shelter when a blizzard comes howling from the north. A pan of potatoes, peeled and sliced, a stack of tender steak, and a capacious coffee pot, all ranged on the kitchen table, showed that there would be breakfast in the morning.

"They're sure here, boys," said Gould, rousing himself and yawning; "been coming in all afternoon. Guess they're getting ready for their final spring hike to the North Pole country."

The Salt Fork, then in flood, lay half a mile from the club house. Outside the house were the night sounds. Thousands of geese and ducks were on the river bars. All were moving and noisy, and the commotion blended in a steady monotone, as if the tide were coming in or a high wind were bending the branches of a forest. The sky had shaken off its snow-like film and in the west—companions of many a night vigil—Orion, the Ploughshare and the Pleiades were going down. Sandhill cranes called querulously, then became silent. Suddenly, far out in the night, a pack of coyotes broke forth into a pandemonium of chattering howls. The lantern was hauled down, the lamp extinguished and four tired men were soon in the land of dreams.

A steaming, savory breakfast, with the aroma of hot coffee filling the club house, followed by pipes and clouds of no less fragrant tobacco smoke, all long



Shooting from a Blind

before the sun had flashed a single streak of red across the eastern sky, put the hunters on sporting edge. And from the Plains in every direction came the same incessant call of waterfowl.

That morning and that day were so beautiful that no other morning and no other day approached their glory. Truly, they had slipped and fallen from the very walls of heaven itself. It was not a mist nor was it a fog that lay upon the Plains; it was something more luminous, more intangible, the ghost of white smoke, or the bloom of a wild crab apple thicket distilled into a fine elixir. It lay over the yellow river, yet the wide water could be seen running through it; it rested upon the low Plains, yet it did not shut out the dark blue ribbon of trees on the far horizon at the outer edge of the Plains, miles away.

The sun came suddenly into sight and hung for a moment, coppery and red, on the rim of the world. The yellow river was crinkled with little waves that danced in the light of the sun. But the pallid floor of the Plains took on no tints of the morning.

Up came the flight of wildfowl, mighty and strong and numberless. The Plains are surrounded by fertile farms, and in the fields of green wheat, alfalfa and fodder the ducks and geese feed at regular intervals. This is a burden to the farmer, but highly desirable from the standpoint of the ducks and geese and the men that hunt them. In this day of vanishing game, it is worth while in most States if a hunter see a dozen Canada geese in a flock or as many as forty or fifty ducks speeding overhead. And the hunter counts himself lucky in beholding this number four or five times in a day's hunt. But what a sight to see a single flight of wild geese a quarter of a mile in length and a hundred yards in width! And to see this many, many times between

sunrise and sunset! That is the way the wild geese came on the Salt Plains. Ducks were beyond computation, and of every kind and species, not excluding the noble canvasback and the black duck. To sit in a blind and be able to shoot at ducks as rapidly as one could load his gun and fire, hour after hour, should indicate an astonishing and phenomenal flight. Such an experience was possible on the Salt Plains. Fortunately, there is a limit to the bag in Oklahoma.

For several hours that morning the geese were heard approaching in this ghost of mist. Their bodies suddenly grew distinct as they crossed the pathway of the sun; then they disappeared in the dream-like abyss. Cranes, pelicans, gulls, white brant, plover and curlew, the latter whistling as they flew, were mingled with this storm of geese and ducks.

Had the making of a river been forgotten when the Salt Plains were turned from the hand of their creator, the hunter would have toiled over them in



Live Mallard Decoys

vain. The wildfowl find absolute safety in resting upon this level, floor-like expanse, as they may not be approached unawares. A thousand geese sit snoozing in the sunshine. The moment a hunter starts toward them they rise with a lazy, flopping motion and drop again, always out of gunshot. The Salt Fork, however, was laid across the north edge of the Plains, and the wild-



A Canadian Veteran

fowl delight to rest on its bars and disport themselves in its waters. As if to encourage the flight to the Salt Fork, Medicine Creek and Sand Creek flow straight south across the prairies of Kansas to this river of the Plains, and are followed instinctively by geese and ducks in their migration.

The Salt Fork seems to have great difficulty in finding a way across the Plains without falling off. Pour water on a smooth, flat board and compel it to run from one end to

the other without spilling and you will have a fair illustration of the tribulations of the Salt Fork. When the Salt Fork is bank full and 300 yards in width, it may be navigated in hip boots, if care be taken to avoid washouts. Normally, the stream is scarcely knee-deep, and for that reason is ideal from the viewpoint of the duck hunter. Within a defined area, the river changes its course with every flood.

There are no coverts along the Salt Fork, and hunters are forced to build artificial blinds. At places where hunting is good, permanent blinds of galvanized iron are sunk in the sand, forming a pit. They rest on quicksand, and the bottom undulates at every footstep. Shields are made of sagebrush brought from the edge of the Plains.

Live decoys are preferred by experienced hunters, and domestic kinsmen of the mallard or the wild mallard itself, caught after being crippled, are used. Several hunters that frequent the Plains have live wild goose decoys, and recruit their flock from time to time by "winging" a bird. The live decoys are hauled to the blinds in coops. In putting out the ducks, a leather collar is fastened round the necks of the drakes, and the latter staked individually on a bar or all fastened to a single line. The hens will not leave the drakes, and come fluttering and quacking to the coops when the drakes are taken in. The geese are fastened by the wing or by the leg; they never lose their wildness and struggle to escape when approached.

These live decoys, both geese and ducks, betray their kind in a heartless manner. Long before the man in the blind suspects the coming of ducks there is a quacking among the decoys whose keen eyes have detected voyagers far off in the sky. The travellers veer in their course and come straight toward the decoys, dropping among them or at a distance, according to whether the arrivals are mallards, sprigs or some other kind of duck.

When the sun is high a vitreous haze rests upon the Plains. The haze rises high enough to stand out as a low white band against the horizon, and above this band are lifted such trees or houses as may be seen on the farther side of the Plains. The effect is strange,

but without the inversion of the mirage. Penetrating this haze with powerful binoculars, the view affords the liveliest entertainment. The atmosphere is unreal, a whitish blue, as if one were gazing across a vast sandy plain at the bottom of the sea, with the sun shining down through the depths. Along the little runs of water, multitudes of ducks are gaily disporting them-

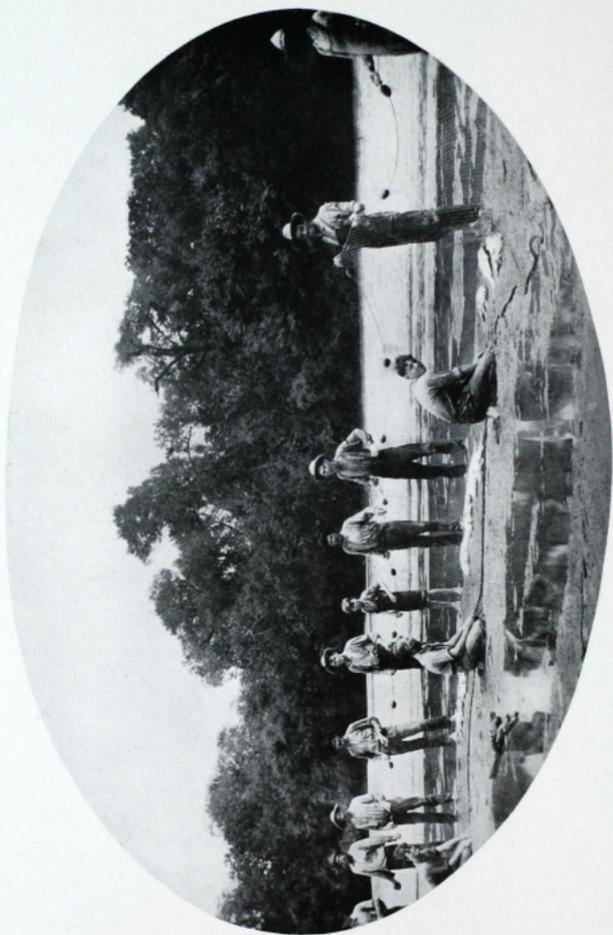


On the Salt Plains of the Cimarron

selves, some splashing and diving, others preening their ruffled feathers, and still others standing erect and flapping their wings. Geese stand stiffly with heads up-lifted or stalk leisurely to and fro on the sand. At intervals a whooping crane with its snow white plumage may be seen towering above the geese.

Further westward, in southwestern Woods County, are the Salt Plains of the Cimarron, irregular in shape,

caused by the windings of the river, but larger in extent than the Salt Plains in Alfalfa county. The lands of both are held by the United States for mineral entry. The Cimarron salt plains are also the resort of incredible numbers of waterfowl, and are situated in a more thinly settled region than those of the Salt Fork.



Scanning in the Arkansas.



Saturday Afternoon

PLEASANT VALLEY is the name of a real place that lies where the Cimarron River, most treacherous of streams, bends northward with a bold sweep and after hugging close to rocky hills turns eastward along its sands to reach the Arkansas. Pleasant Valley prettily describes the landscape and is suggestive of the happy lives of the farmers who abide there. There is fishing and hunting and the perennial delight of camping along the river.

There is a novelty and danger in the taking of fish in the Cimarron that makes the sport worth while. If bass are to be caught the man with rod and reel

must frequent the tributary streams, for bass will not make their home in the salty, yellow water of the Cimarron, whose bed of shifting sand is as clean as if swept hourly with a housewife's broom. But there are fine fish to be taken in the Cimarron—speckled channel catfish; black catfish, as the natives call them; yellow catfish which grow to a weight of a hundred pounds; untold numbers of drum, rock buffalo, carp, and hickory shad.

Let no man who has not enjoyed the sport sneer at the catching of catfish in the manner followed by the farmers of the Pleasant Valley neighborhood. There is keener zest if one has worked hard in the field until Saturday noon, at which time men and boys for several miles round gather at an appointed place on the river. The women also go to the river, generally as spectators, unless there is to be a "fish fry," when they become busiest of all, in their cooking.

First among the fishing equipment is the seine, often 300 feet in length, to the purchase of which each farmer in the neighborhood contributed his share. It is community property. Next are the various hooks and pikes and gigs, native inventions, for the free-hand capture of the big fish. If the fishermen are wise, there is a strong rope fifty or sixty feet in length, with knots and hand-holds at intervals. This rope is carried from place to place as the fisherman sweep along the river with their seine, in readiness to be cast into the water at the first signal of danger. For some who cannot swim venture into the water and get beyond their depth, and some who are expert swimmers are seized with cramp. By holding to this rope, with one end firmly held on shore, half a dozen men may safely plunge into deep water and rescue all who may be

struggling to escape drowning. Such a rope has saved many a life in the Pleasant Valley neighborhood.

The big catfish are peculiar in their habit of making their home in the cavernous recesses of overhanging ledges along the river shore or beneath the big boulders that lie at the bottom of the river, in mid-stream, where the current has scooped out chambers in the rock, with passage-ways leading from one to the other. There they lounge and snooze in the cool depths, and may be driven out only by the venturesome attack of the half-naked fisherman who has dived down into the cavern.

Rickstrew, Storm, Austin, Helf and Humble were the ring-leaders that loaded the seine into the wagon and drove away between the walls of corn, with green fields of cotton at intervals, toward the river, lined with its sentinel cottonwoods. There were oodles of small boys. Other farmers and other small boys were to meet them by appointment at the Rocky Hole. Dinner, of which fried chicken was the main feature, was carried in big baskets.

The long seine is unrolled on the sandy shore and the seiners shout in their enthusiasm at the prospect of adventure. The river ripples in the sunshine as the seine is hauled into the water and the wooden floats dance on the waves. The seine is soon stretched at full length and moving down stream, for it may not be pulled against the current, and, furthermore, fish move upstream and in that way strike against the oncoming seine and are entangled in its bellying depths.

The landing is to be made where a ledge of rock juts boldly from the shore. As quickly as possible the seine is drawn round the rock and the lead-line made to hug the bottom, that there may be no escape for the fish when driven from their hiding.

"Wow-ee!" shouts Humble, letting go all holds and dropping into the water with a mighty splash. "A big one hit me right square in the stomach."

"There he goes, look at him hit the seine and knock the floats under," sings out Rickstrew.

Helf knows the geography of the river bed and all the places where the fish run for hiding. His guess was that this fish had lodged under a certain rock. The water was perhaps five feet deep. Helf was a grandfather, but as hard and tough as a pine knot. He prepared to dive under the rock and capture or drive out the fish, a feat not without peril. Once a fisherman went down with a big barbed hook tied to a heavy cord, the latter fastened round his wrist. His plan was to locate the fish with his hands, jab the hook into its body, drag the fish to the surface and then ashore. This fisherman did not count upon the trap into which he was drawn. The catfish weighed more than twenty pounds, a size difficult to be handled by one man.

The fisherman located his fish and jabbed the hook into its body. Unluckily, the fish did not come out where the man had gone in, but took another passage, in an opposite direction. The fisherman's arm and cord-bound wrist were drawn into an opening through which his body could not pass, nor could his utmost strength pull back the struggling fish. Death by drowning was clutching at the fisherman's throat. He realized his danger and thought quickly. His right hand was free. Already he had swallowed a quantity of water. Desperately he reached into his pocket for his knife, and found it. Then, with a single stroke, he cut the cord and rose strangling to the surface. His companions pulled him ashore.

Since that day, seiners stand by when a diver goes

down for a fish, ready to lend assistance if he should remain too long under water.

Helf dived and came up with news of big fish. He had felt them dart past him to open water, and the jerking of the seine showed that they were trying to escape. The seine had been drawn closer and closer together. Austin raised his foot with a shout and then stood with both feet on a squirming catfish entangled in the meshes of the seine. Sinking into the water, he seized the fish in both hands, thrust his fingers through its gills, and the capture was complete. The fish weighed six pounds.

In the middle of the river was a long shelving slab of sandstone projecting downstream at an angle of forty-five degrees, its top barely above the swirling water. It resembled nothing so much as the roof of a house, with a smaller opening upstream, through which the current had washed for ages. From the lower side one could enter for a distance of eight or nine feet. The seine was drawn round this huge rock, forming a pen: Helf dived under from the lower side, while Storm entered from the upper side, both to meet in this dim, shadowy retreat and drive out the fish. Strong lungs and some courage were required for this enterprise. Those who remained on watch above fixed their eyes intently upon the water. There were no messages from below, and the watchers waited in silence. Then a dripping hand was thrust up, and a moment later Helf appeared, shaking his grizzled mane, like a veritable sea dog. With him was Storm who had navigated the passage.

"They are sure there, boys," said the two divers, "for we ran into them on all sides. The rascals know their country, however, and have plenty of room to dodge us. But we'll try again."

So once more Helf and Storm went under. A moment later the water began swirling, and then the surface of the river beside the big rock broke into a fountain of spray. Helf had seized a twelve-pound catfish by its gills. With his other arm he pressed the fish against his body. A dozen hands reached out to assist him in the capture, and the fish was conveyed safely ashore, to the delight of the small boys, the women and the girls.

And thus, the seiners ranged the river throughout the sunny afternoon. The feeding grounds of the scale fish were in the broader, deeper reaches, where there was a deposit of silt on the sand. The drum grow to a weight of five, six and even ten pounds, and are almost as broad as they are long. Here was easy seining, and at every drag there was a jumping, splashing mass of silver on the sand.

When the fish are running well a seining party in a single afternoon has caught half a wagon load of fish, some of the catfish weighing sixty pounds each. If the fish are to be taken home, the master of ceremonies distributes them in piles, one for each family, carefully adding to or taking from, to see that each has its fair share. Then the master of ceremonies will tell Bill or John to turn his back and shut his eyes.

"Whose pile is this?" asks the master of ceremonies.

"Well," begins Bill, gathering his wits, "that's Rickstrew's."

"And this pile?"

"Andy Stovall's."

The questions and answers run round until all the fish have found owners. The master of ceremonies, remembering that Bill has been handicapped in looking

after his own welfare, generously contrives to save the largest pile for the last, and says:

"Now, Bill, there's just one more pile. Whose is it?"

With a grin, Bill answers, "Well, I guess that's mine."

And so it was, with a prize fish as a mark of special favor.



The Turkey-Hunter



In the "Kiamish"

WILD TURKEYS are still fairly numerous in eastern and southeastern Oklahoma, despite the almost constant violation of law by hunters. Much of McCurtain county is so thinly inhabited and so mountainous that wild turkeys find an ideal range in that part of the State. They are mostly of the bronze species, though often are found what backwoods hunters call "moss heads," smaller in size and lighter in color than the others, and otherwise distinguished by a fuzz on their heads.

In the pine forest region of southeastern Oklahoma formerly a picturesque way of hunting wild turkeys by experienced woodsmen was shooting them by firelight. During the afternoon the turkeys have been ranging the hills and mountain sides. The hunters choose a place where a heavy growth of pine runs along the base of the mountain. As roosting time draws near, the turkeys launch from a jutting crag and drop with much fluttering and beating of wings among the branches of the lofty pines, some of which are more than a hundred feet tall. In the dusk the turkeys may not be discerned among the dark branches.

The hunter, however, has marked the trees where the turkeys roost, and loaded his gun with No. 2 or No. 4 shot. Stationing himself beneath the tree, he starts a fire by touching a match to the dry grass or to a heap of brush that has been placed at a point of vantage.

As the fire gains headway and the flames brighten the lower branches of the pines, from overhead comes the "putt, putt, putt-putt-putt," of the inquisitive turkeys. This locates the turkeys, and the hunter fires in the direction of the sound overhead. Down comes a turkey—sometimes two—crashing through the pine boughs, to drop at the hunter's feet with a resounding thud.

Oklahoma was peculiarly the home of the wild turkey. The insect life in summer, the mast in winter, the timber-fringed streams flowing from hill to prairie, and from prairie to hill, the mild climate, all these were adapted to its every need, and this magnificent bird ranged the country in untold numbers. The Osage was a delightful hunting ground. A citizen of Oklahoma who hunted there from his boyhood until its game was exterminated, told of a hunt on Rock Creek in the 80's of which the mere thought sets one's nerves tingling. He said:

"There is no hunter who does not hold in memory some particular experience or incident in the woods as surpassing all others in beauty and fascination. It may be a glimpse of water at sunrise, the prairie at sunset, or the moon coming over the eastern hills on a frosty night. Or it may be such a scene as lay before me one winter morning when I was hunting in the Osage country.

"I had gone to the Osage with an old hunter for deer and turkey. In those days every growth of timber

along every stream was a turkey roost. Turkeys ranged the country by thousands. And from every glade and from every thicket bounded a deer, often twenty-five or thirty. There was never a better deer and turkey country than the Osage. Prairie chickens were so plentiful that they ceased to give sport.

"My partner and I were camped on Rock Creek, late in November. He was an old Kentuckian, and believed that no hunter should use other than a rifle, whatever the game he was hunting. A 'norther' came while we were in camp, followed by a six inch fall of snow, with a mist of rain that left a light crust. Then the sky cleared, and the Osage lay white and still in the brilliant sunshine. There were no houses, no settlements; only a white solitude.

"It was our habit at home and in camp to rise just before daybreak. The snowstorm was at night, and when we rolled out of our blankets it was like waking up in a fresh, newly made world. 'Kentuck' stuffed his pipe with natural leaf, set her going with a coal from the ashes, piled wood on the fire, made the coffee and sat down to wait until I cooked breakfast. In every direction could be heard the calling of wild turkeys. The warmth of the sun set the big sycamores and cottonwoods popping and cracking all along the creek.

"I yielded as a younger and less experienced hunter to 'Kentuck's' suggestions, and when he said that we should hunt turkeys that day I at once agreed. We had gone scarcely three hundred yards from camp when we struck a turkey trail in the snow that instantly brought us to a halt. We talked in signs and whispers. That trail was as deep as if a flock of sheep had passed in single file.

"'Must be a million,' whispered Kentuck.

"The trail led in the direction of a little valley that extended V-like between two high hills on whose sides was an open growth of post oak and black jack whose acorns were buried under the snow. We agreed that it would be best to spy out the situation from the crest of the hill on the west side of the little valley, knowing that if the turkeys should become alarmed they would quickly out-distance us in running.

"Near the crest of the hills in the Osage is a tumult of big boulders caused by the breaking down of the exposed limestone cap-rock; lower down the hillside is smooth. In most places it is difficult to get a clear view of the lower reaches until the barricade of boulders has been passed. Kentuck carried his old 'squirrel' rifle, and I was armed with a double-barrelled shotgun, loaded with 'blue whistlers.'

"I crept forward cautiously to see what was going on in the valley below us, Kentuck being fifteen or twenty feet behind me. Peering round the corner of a boulder, I stiffened at the sight. I motioned to Kentuck not to move. I sat spellbound, fascinated and enraptured. The morning sun was shining full against the hillside, and everywhere the crusted snow sparkled in its rays. Within gunshot below me were the turkeys. I am sure there were five or six hundred. At the moment I was confident there were more than a thousand. They were scattered over about six acres of ground, all busily feeding and without the slightest suspicion of danger.

"That scene is my one great memory of the woods, dream-like and beautiful, that stands out beyond all other things that I ever beheld as a hunter. The turkeys easily scratched through the crusted snow in their search for the nut-like acorns. And as they scratched they brought up the red and yellow leaves of autumn,

still deeply tinted, until the white field of snow was stained with beautiful colors. The glossy, bronzed bodies of the feeding host glistened in the sunlight. So intent were the turkeys upon getting their breakfast



The Cook's Castle

that not one called to another. I crouched back to Kentuck.

“‘Turkeys,’ I whispered.

“Kentuck leaned his rifle against a tree, crept forward and peered round the boulder. The old man remained there a long time. Then he came back and for a little while was silent, as if lacking words to speak his mind. Finally, he said:

“‘As beautiful as flowers when spring comes on the prairies.’

"We had come to hunt. There was poetry in our souls, but not enough to subdue the primitive hunting instinct. It was agreed that Kentuck should take the first shot with his rifle, after which I would fire the two barrels of my shotgun. We took position as softly as possible behind the boulder, Kentuck resting his rifle in a notch. The old man sighted down the long barrel of his favorite weapon. Then he paused, suggesting that we wait until fifteen or twenty of the turkeys had drawn close together.

"At the report of our guns, the scene was at once thrilling, spectacular. Seven turkeys had fallen to the snow, some dead, some wounded and fluttering. The others by hundreds were rising upon rushing wings or running madly down the hillside to launch out a moment later and sail down to the valley, and thence to the banks of the stream and the hills beyond. Many, however, remained in the little valley, hiding and skulking in the tall bluestem grass, now dead and dry, that had grown to the height of a horse's back. The snow had pressed heavily upon the grass and bent it down until there were innumerable grassy tunnels where the frightened turkeys sought refuge, to regain their scattered wits and, one by one, make slyly away to a place of greater security.

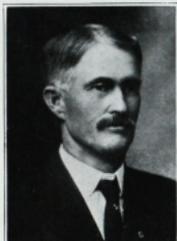
"I ran hastily down the hillside to the valley, telling Kentuck to follow me and pick up the turkeys. I had an abundant supply of ammunition. I startled the turkeys from their hiding, often three or half a dozen at a time. My firing increased their alarm, and I knew that they would escape as quickly as possible. I readily brought them down as they took wing. I picked them up as they fell, and carried them forward until I had six or seven in hand, whereupon I would pile them in a heap, and run forward at greater speed, startling more

turkeys and shooting them as I ran. Kentuck followed with one of the horses from our camp.

"I covered more than a mile in what I have long felt was the most genuinely exciting hunt of my life. Kentuck kept easily to my trail, finding each pile of turkeys and fastening them on the horse. Our total count for that morning's hunt, including the seven we got at our first broadside, was 43 turkeys. Some of the gobblers weighed 30 pounds each."



A Trapped Wolf Howling



Frank Rush

IT SHOULD be a matter of pride to the people of Oklahoma that the Wichita National Game Preserve is within the borders of their State. When it became known that the wild lands of the Kiowa and Comanche Indians were to be thrown open to homestead settlement, certain men who truly loved wild animal life and whose vision of the future was big and fine, straightway saw that it might be possible to preserve in its virgin state a limited area of this land as a perpetual home and refuge for birds and game animals that were native to this region. Here they could live and reproduce their kind as from the beginning, safe from the ruthless slaughter of careless and unthinking men. Their survival would preserve for future generations the pleasure and opportunity of at least the sight of what otherwise would be a matter of historical fact. For the initiative that brought about the establishment of this Preserve, perhaps most praise is deserved by Dr. William T. Hornaday, director of the New York Zoological Park, and renowned as a naturalist and as a hunter of big game.

On March 25, 1905, the New York Zoological Society offered its help to the National Government in the founding of a buffalo range in the Wichita Mountain region, with the further proposal of providing an initial herd that should be of national importance.

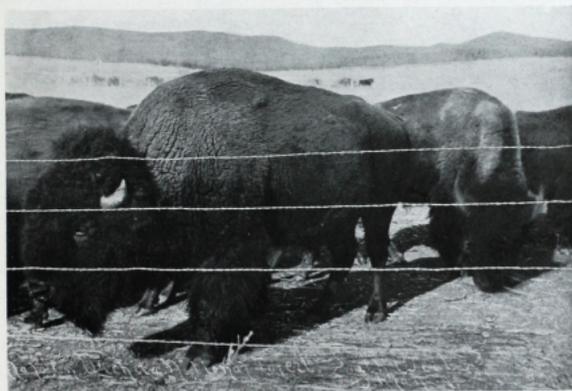
This range was to be inside the Wichita Forest Reserve which President Taft withheld from homestead settlement. The latter contains a total of 61,644 acres, and lies about fifteen miles northwest of Lawton, the town of Cache being near its main entrance. By act of Congress a buffalo range embracing twelve square miles, or 9,760 acres, was established, and surrounded with a woven wire fence ninety inches in height.

The Zoological Society selected fifteen of its finest specimens—nine females and six males—and shipped them to Oklahoma in October, 1908. Frank Rush, of Blackburn, Oklahoma, a plainsman who had been interested for many years in the preservation of wild animal life in the Southwest, was appointed Warden of the buffalo range, in addition to his other duties as Supervisor of the Forest Reserve. Warden Rush went to New York City and assisted Dr. Hornaday in loading the buffaloes for shipment, and accompanied them to Oklahoma. Warden Rush has devoted himself with unflagging enthusiasm to the duties imposed upon him. Dr. Hornaday, in his "Our Vanishing Wild Life," a recently published book that should be read by every American citizen, wrote of Warden Rush: "His management has been so successful that only two of the bison died of the (splenic) fever, the disease having been stamped out . . . The Wichita Bison Range is an unqualified success."

The Wichita Preserve is in the plains country. The mountain peaks pierce abruptly a smooth and undulating plain, and stand detached, their summits dimmed by a purple haze. Their elevation occasionally reaches 2,000 feet. Their summits are practically without vegetation. There are numerous streams of marked clearness and purity, notably West Cache, Panther,

Quanah, Turkey and Medicine. "Lost Lake," though small, is a beautiful body of water. Generally, the streams are fringed with a growth of timber. "Buffalo" grass is native and luxuriant, and provides a nutritious range in winter as well as in summer.

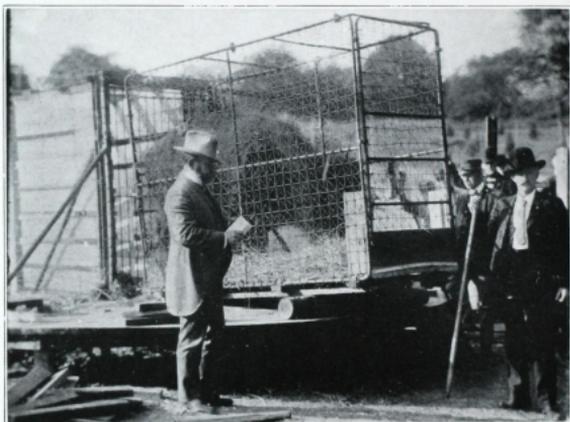
Looking northward from Elk Mountain, the buffalo range appears in the valley far below, in the depths of a



Master of the Wichita Herd

mountain cup whose sides are tinted with exquisite colors. There the buffalo grazed in countless thousands in early days, and there a remnant of that once mighty host has been given freedom and protection, in the hope that the buffalo may not wholly vanish from the earth. Inside the wire fence that encircles the range is Antelope Flats, a space of level prairie that once was a favorite feeding ground of wild antelope. Ten head were there as late as 1900. But the long-range rifle brought down all of them.

When it was planned to place buffalo in the Preserve, there was grave doubt of their being able to escape the infection of splenic or Texas cattle fever, which is transmitted by a tick. Warden Rush burned the grass and left the range untenanted for several months, hoping that the ticks would disappear. The



Dr. Hornaday and Warden Frank Rush Shipping Buffalo

disease appeared in September, following the arrival of the herd in October. A male and a female died, and the outlook was gloomy. Warden Rush employed all his veterinary skill. Crude oil was used as a spray, but the heavy coat of the buffalo made it difficult to reach the ticks. A week and then two weeks passed without further losses. At the end of the second year the absence of fever gave warrant for the belief that the herd was safe, and this proved to be true. The range is

now free of ticks, and there will be no fever so long as this situation prevails.

In the spring of 1911 the herd numbered twenty-three head, two adults having died of fever and three calves having been lost in different ways. In March, 1913, the herd had increased to thirty-eight, with a prospect of seven or eight calves in May. Dr. Hornaday is confident that there will be a hundred on the range in 1918. It may no longer be doubted that with proper care the buffalo can more than hold his own.

At this time the total number of buffalo in Oklahoma is 138, of which 8 are of mixed blood. "101" Ranch, at Bliss, has 25 fullbloods and one mixed blood and Major Gordon W. Lillie, on his ranch near Pawnee, has 67 fullbloods and 7 mixed bloods. Major Lillie has permanently abandoned the experiment of crossing buffalo and domestic cattle.



Antelope in Wichita Preserve

The breeding of buffalo is only one phase of the undertaking in the Wichita Preserve. The Boone and Crockett Club, in 1911, sent eleven prong-horned antelope from Yellowstone Park, defraying all the expense of capture and shipment. The antelope is a timid, nervous animal, and four died as the result of their long journey. In the last year five others died. The two that remain are strong animals, and Warden Rush is hopeful that they will grow into a herd. Like the

prairie chicken, antelope can scarcely withstand even the semblance of captivity, and require a range of rather wide extent. A herd of twelve elk is thriving and doubtless will continue to thrive, as the elk soon adapts itself to its surroundings. A baby elk was born last year.

The native white-tailed deer in time may become too numerous, if no effort should be made to diminish their number. Several years ago there were about forty deer inside the buffalo pasture, and as many outside. Their increase is noticeable throughout the Preserve.

Two years ago a gobbler and two or three wild turkey hens were trapped in southwestern Missouri and turned loose in the Preserve. All the native wild turkeys had been exterminated. Though young turkeys are raised with difficulty, yet Warden Rush has been able to increase his flock to thirteen birds and expects to multiply them four-fold in 1913.

The prairie chicken was seen everywhere in the Wichita Mountain region in pioneer days. It is doubtful if there is a single specimen in the Preserve. A flock was known to be in the western part when the Preserve was established, but it soon vanished. These birds occasionally ranged outside the boundaries, and doubtless fell victims to the gun of the hunter.

The liberation of English pheasants was not attended by encouraging results. It may well be doubted that these pheasants are adapted to climatic conditions in Oklahoma, if permitted to run wild. All attempts to propagate them in a wild state have failed. It is possible, however, that their striking plumage may have led to their being killed by ignorant hunters.

The trapping and killing of predatory wild animals in the Wichita Preserve is a matter of necessity, and

many pelts are taken each year. At the first there were a few small black bear, which were given asylum, as they were not destructive to protected game. They foraged to neighboring farms until they met the inevitable man with a gun. Coyotes are numerous, a swift is sometimes seen, and occasionally a gray wolf appears.



Buffalo Calves on Major Lillie's Ranch

Warden Rush caught one of the latter in a trap and photographed the marauder in the attitude of howling. Bob-cats are so plentiful that their depredations are a menace to bird life. More than a hundred have been killed in a single year.

A century hence the Wichita National Game Preserve may appeal to travellers as one of the natural wonders of our country. In topography, flora and fauna it will stand as it stood in the beginning, secure behind the barriers which civilization raised against itself. Its purpose may not be understood by those persons who are unmoved by the beauty of a sunset and for whom the romance of the frontier holds no fascination, yet men and women now unborn will behold with gratitude the unselfish work of those whose wisdom and whose love of nature lifted their voices in protest against the blind and heartless destruction of the helpless inhabitants of our fields and forests.



A Trophy of the Coyote Chase



An Old Scalawag

THE coyote finds life pleasant in Oklahoma, save when a pack of trail hounds is kept in the neighborhood where he lives. The average dog on the farm is no match for the coyote in either speed or fighting ability, and the coyote leads a comparatively happy existence. The coming of farmers has increased his food supply, and when the coyote is too lazy to

capture a rabbit he raids a poultry yard and dashes away with a fat chicken. The coyote is prolific and increases rapidly where there are no hounds to pursue him. Even in central Oklahoma the howling of coyotes at night is heard by most farmers. When the coyotes grow too bold and numerous, farmers join together and buy a pack of hounds. Hunting with hounds is not only fine sport, but soon rids a neighborhood of coyotes.

"You onery old chicken-thief and pig-stealer."

In this way "Granny" Miller reviled a sharp-nosed,

sharp-eared rogue, shaggy of coat and long of fang, that was leisurely loping across the meadow toward the head of a ravine, into which he disappeared at a bound, and with him one of "Granny" Miller's fat young turkey hens.

The old lady plainly was upset, and she shook her clenched right hand in the direction the coyote had gone. One by one she had seen her turkeys, hens and ducks picked up and carried off by this daring prowler. He had grown so bold as to invade the very dooryard, always when nobody was on watch, seize a fowl and make away with it before its stifled squawking told the women folk that "old chicken-thief and pig-stealer" was again at his mischief. Once or twice on cold winter nights there had been squealing in the barnyard, and next morning a fat young pig was missing.

"Shep," the dog, was no match for this big coyote and the coyote knew it. He chased "Shep" across the yard and under the house any time the spirit moved him.

All last spring his mate had made her den in a sand-bank under the roots of an old tree at the rim of a canyon near the Cimarron River. The den was discovered by Perk Gifford and Al Tyler when they were running their trail hounds one night in May.

"Granny" Miller was not the only housewife that complained of the depredations of this coyote. He had wrought havoc in many a farmyard, and with chickens selling in town at 50 cents each, his robberies had grown in the aggregate to a large cash sum.

It was in the first week of December that "Granny" Miller shook her fist and exclaimed; "You onery old chicken-thief and pig-stealer," as he bounded away with her turkey hen. She would stand it no longer, so by

rural telephone she called up Gifford and Tyler, and told them she would cook them a good chicken dinner and provide a good feed of "cracklins" and corn meal mush for their hounds if they would come over and catch the coyote.

Gifford and Tyler told "Granny" Miller that they would get the coyote the next day after the first rain, and when rain fell Friday night the Gifford and Tyler hounds were heard coming across the prairie bright and early Saturday morning, Gifford sounding his horn at intervals to keep the pack together and prevent their breaking away before they got to the range of "old chicken-thief and pig-stealer."

There was Tuner, Spot, Mike, Fannie, Pat, Joe, Don, Colonel, Slim, and their like, all bearing short names. No dog in the pack was the equal of Tuner, the white and lemon bitch, in fighting a coyote at the death. She took a neck hold and held it to the end. Fannie was the fastest of all in running a trail, though in sight-running Tuner took the lead. The first to find a trail was Dinah. She had the bad habit of trailing jack rabbits as well as coyotes, yet the other dogs paid no attention to her noise until she sounded a certain note. Then they went to her in a body, knowing she said "coyote" as plainly as if "old chicken-thief and pig-stealer" stood before them in actual flesh and bone.

It is a beautiful country that spreads toward the horizon in that part of Oklahoma. On this particular morning the timbered bluffs of the Cimarron lay far to the north and east, under a blue sky, with here and there a white cloud sailing by. From the high uplands the hunters looked down upon the wide valley of the river, dotted with farmhouses and mystical orchards robbed of leaves, but with branches that were

reddening in the sunshine and holding the promise of far-off spring.

The hounds had disappeared into a wooded canyon when Gifford put spurs to his horse and with a shout pressed forward. A coyote had climbed out of the draw about three hundred yards ahead of the hounds and was going straight east as fast as his legs could carry him. The hounds broke into a wild clamor, having struck a fresh trail, and a moment later were scrambling up from the canyon in full cry. The coyote, as could be told by his unusual size, was undoubtedly the same rogue that had made away with "Granny" Miller's young turkey hen, and who was known miles around for his depredations. The hounds were so close at the start that Tyler guessed that the coyote had been asleep, snoozing in the sunshine.

On this crisp December morning the Gifford and Tyler hounds bayed in perfect tune, like a chime of bells, sonorous, silvery and golden. Farmers stopped and listened to the vibrant, musical clangor that rose and fell and died away, fainter and fainter across the hills.

"Old chicken-thief and pig-stealer" was fresh and strong, and he went like the wind. He felt doubtless that the chase for him would be merely a frolic. Had he not bantered and run away from those hounds all summer long? There was no fear in his thieving heart, fear of the hour when staggering, wet and muddy, he would be barely able to keep going. Nor did he hear, as had been heard at night on these same hills, the hoarse, wheezing, gulping sound—often heard as far away as fifty yards—of a coyote making his last struggle to escape from the long line of whining, crying, baying hounds behind him. This is one of the tragic sounds of the chase.

In thirty minutes the hounds were out of hearing.

The coyote had made a straightaway run and apparently had gone out of his country. The hunters rode to a hilltop and sat on their horses, waiting for a turn that would bring the hounds back within hearing.

"There they come; that's old Colonel in full cry," said Tyler. Faint and far off, but growing stronger and nearer, could be heard the sounding pack. Then they were lost again.

As the hunters waited they talked of other hunts, of their spring hunts, when the coyotes were breeding and when they had their families. A gallant mate is the male coyote. When the female is heavy with young, he will risk his life to save her, always and forever. The male will let the dogs get close to him when the female is near, and will circle nearer and nearer until the pack is on his trail and the female has a chance to escape. Then the male will lead the dogs out of the country.

If pushed too hard, the fugitive will run without hesitation into a farm yard among the farm dogs, to throw the hounds off his scent, or he will go in and out among a herd of cattle or sheep, to the confusion of the hounds. This gives the female time enough to make good her escape. In a straight hard run a coyote will keep going usually about four hours, but if he has time to maneuver and rest, the chase may continue eight or ten hours.

After the young are whelped, the vicinity of the den offers most opportunities for starting a coyote. The old coyotes are rarely taken in the den, as they are usually on watch outside to lead the enemy away from their young. The moment the hounds appear, the male sounds his "yah, yah, yah," challenging the enemy, to lead them away. If the female is the first to be started she may lead out for a short run, circling

and circling and knowing that her mate will cut in behind her and take the dogs in another direction. If he should become sorely pressed, he will return to the neighborhood of the den, where the female is waiting, and she will take his place and give him a resting spell. Because of this mutual help, the two coyotes sometimes are able to run down and exhaust a pack of hounds, if their masters do not know the ways and tricks of coyotes.

Once a den containing young pups has been located, the wise hunter takes his stand somewhere in the neighborhood of the den, and remains there, knowing that sooner or later both the male and the female will return. It is even true that if the male is put up miles and miles from the den he will go home as fast as his legs can carry him, possibly to see if his household is safe. When he makes up his mind that all is lost, the coyote dies near his home, if possible. He will not enter his den, as a rule, but will make his stand in a water hole or against a ledge of rock, with his face to the enemy, where he cannot be attacked from the rear.

"Them dogs must be way over yonder somewhere on Beaver," said Tyler, shifting in his saddle. "I'm going to locate 'em."

The conveniences of the rural telephone are many, but to nobody are they more helpful than to coyote-hunters. Tyler rode to a neighboring farmhouse and began calling up farmers ten and twelve miles to eastward.

"Yep," replied one, "your dogs passed here about five minutes ago going northwest to beat the band. Old Colonel was leading by 200 feet. When the coyote went across my meadow he was about a quarter of a mile ahead."

"Yes," said another farmer, farther northwest, "I

can see the dogs now going over the hill and pullin' southwest. The coyote is circling back to you."

More telephoning was unnecessary, for the running pack could be heard approaching from the northeast. More than two hours had passed since the coyote went up out of the canyon. Evidently he was growing weary as he was leading the hounds through the thick black jack timber, where he found opportunity to dodge and circle, and refresh himself. But the hounds kept coming like fate, and sooner or later, "old chicken thief and pig stealer" would be forced to a stand.

The hunters, shouting encouragement to the dogs, galloped toward the timber. The dogs had halted as if confused, but when they heard the shouting they began bellowing as if mad.

"Look at him; there he goes," shouted Gifford, pointing to the lowland,

where the prairie broke into a rocky canyon. The coyote was running at a wabbling gait, his brush dragging and leaving a scent that a blind hound could have followed. He was half a mile away.

From the black jack timber the dogs came, one or two at a time, their tongues hanging from their mouths. But they were still steady and going well. Over the brink of the canyon they went at headlong speed.



Enemies of the Coyote

Then from the canyon's depth a moment later came the cry of battle, but only the cry of the hounds. At close range one could have heard the snap, snap, snap of the trap-like jaws of the coyote; the folds of his mouth lifted and curled from his white teeth and his long, sharp fangs. At every snap there was a howl from a struck dog, as the pack pressed round the coyote, now fighting for its life. Blood was trickling from several of the younger dogs that in their rash inexperience had tried to close with the coyote. Now there was a hoarser sound, baying that was mumbled with hairy hide and flesh—the old hounds were upon the coyote and had borne him down, down to his death.

By the time the hunters had scrambled into the canyon and reached the place of combat the coyote was gasping in his last throes. He was the largest that had been caught in years in that neighborhood.

Gifford slung the coyote across his horse, and the hunters rode to "Granny" Miller's for their chicken dinner and the "cracklins" and corn-meal mush for the hounds. "Granny" Miller stood in the doorway, smiling and bantering the hunters. Then she shook her clenched right hand and exclaimed exultingly:

"You onery old chicken thief and pig stealer, I guess you won't be botherin' round here any more."



Curlew

IN OKLAHOMA the lover of bird life is rich beyond measure. Birds perennially resident are numerous, while the winter residents and the migrants add to the pleasure of going afield when summer fades and nature sleeps until chill days are banished by the coming of spring. One observer, at least, believes that the non-game birds of Oklahoma, barring eagles, hawks and owls, and the rare species of woodpecker, are increasing. This may be due to a variety of causes.

The protection of birds is taught in the public schools; newspapers and periodicals, more and more, have become champions of bird life; Audubon societies and kindred organizations have impressed upon boys and girls the wrongfulness and wastefulness of destroying these harmless and helpless creatures, and, above all, the economic value of insectivorous birds has been demonstrated, nationally and locally, by biologists. The building of homes and the cultivation of the land have been helpful in many ways. The farmer and his pigs have destroyed the snakes; the country boy with his dogs and steel-traps has exterminated large numbers of the smaller carnivorous animals, and the shotgun has been such a staunch ally of the poultry yard that harmful hawks and other undesirable predatory birds are rapidly disappearing.

A bird lover in one of the larger towns of Oklahoma recalls the time when the blue bird was not seen locally, and when the robin was rarely a visitor to his lawn. Last summer, in that same yard, two brown thrashers built nests; the wood thrush passed furtively among the grape vines; orioles, bobolinks, robins, bluebirds, jays and half a dozen different woodpeckers were present, while cardinals and mockingbirds filled the shrubbery with song. Among the hills and along the streams in the adjacent country there was an increase in numbers.

Among western birds, the meadow-lark holds the affection of those who go afield. Without fickleness or inconstancy, the meadow-lark remains throughout the winter, bravely warbling in gray meadows his half-forgotten songs of summer, with something of joy as well as melancholy in his plaintive notes. Alexander Posey, the Creek poet, loved the meadow-lark, and wrote:

*When other birds despairing southward fly,
In early autumn-time away;
When all the green leaves of the forest die,
How merry still art thou, and gay.
O! golden-breasted bird of dawn,
Through all the bleak days singing on,
Till winter, wooed a captive by thy strain,
Breaks into smiles, and spring is come again.*

The watcher of sky and woodland in Oklahoma finds endless fascination in the phenomena of migration. A company of cedar waxwings appears unexpectedly, stops to rest and feed, and then takes wing. Crows assemble by thousands and forage together for weeks. Clouds of blackbirds go swirling through the air. Hawks—hundreds of them in a body, veritable

Huns and Vandals of the sky—move steadily southward, often in the wake of garrulous jays, from which is drawn a convenient food supply. Swaying and bending like a ribbon of dark cloud in the far north, a flight of sandhill cranes moves majestically toward their winter home beside southern waters. Often, if twilight is at hand, the weary voyagers pause above the sandy rivers of central Oklahoma, circling in hesitation, and then descend slowly to a hospitable sandbar, beyond reach of enemies, to pass the night and recruit their strength. Day and night may be heard the honking of geese, as flock after flock harrows the blue sky. More swiftly, the ducks pass onward from their northern breeding grounds. Most constant



Pride and Admiration

of all is the cry of the plover. Through the long dark nights they may be heard calling to each other, both in spring and fall, but especially in fall, as they pursue their long journey. This continues for weeks, particularly in October, and suggests that they must pass over Oklahoma in amazing numbers.

The fall storms bring dismay and confusion, sometimes death, to the birds. Driven far inland from the Gulf region by the fury of West Indian hurricanes, many sea gulls reach Oklahoma. The glow of the electric lights draws them to the towns, and for hours they fly blindly to and fro, high in air, uttering a cry much like

that of a lost kitten. Geese and ducks fall into the same luminous trap, from which they seem unable to escape until the approach of dawn opens the gates of the sky. Frequently, both geese and ducks fly so low at such times as to be within range of shotguns, and sometimes they drop exhausted in the streets. By law they may not be hunted at night. It has been suggested that in the storm and mist, the geese and ducks mistake the luminous expanse for water.

Feathered wild life in Oklahoma, despite the slaughter of the last twenty years, remains in such abundance and vigor as to encourage confidence in the hope that it may gradually increase. Song birds and the insectivorous species appear to be more numerous than they were even ten years ago. The wanton killing of wild birds by boys does not seem to be so prevalent in Oklahoma as it was in other States fifteen or twenty years ago. Possibly boys everywhere are being taught in a convincing way that the destruction of innocent, companionable and helpful birds is something of which no brave, honorable boy would be guilty. It is deplorable, however, that parents still place in the hands of their boys that sinister weapon, the air gun, with which to maim and kill. Especially are these air guns to be found in the smaller towns, where their leaden bullets are a source of danger to citizens as well as to the songsters that come trustingly to range the gardens and shrubbery in search of insects that prey upon useful vegetation. The sale of these guns should be prohibited by law. In the days of our grandfathers it was regarded as manly for a boy to learn the proper use of a rifle or a shotgun. Undoubtedly it sharpened his wit, made him self-reliant and quick to act in emergencies, while the exercise of going afield gave strength and agility to his body. The air gun, however, serves no such purpose,

and its possession is a temptation to disregard both law and good morals.

Many persons seem unconvinced of the enormous utility of bird life in the destruction of insects that cause untold damage to all forms of plant life. They remain incredulous or obstinate in face of statistics compiled by competent investigators, just as there are persons who doubt the efficacy of the serum treatment in certain diseases. A recent writer made the striking statement that it costs more to feed insects in the United States than it does to educate our children. He was thinking of the estimate by the United States Department of Agriculture that in a single year the loss to farmers, caused by insects alone, was not far from \$800,000,000. In contrast to this destruction of natural wealth that should be available for hungry people are such known facts as that a yellow-throated warbler will consume ten thousand aphids in a day, and that a scarlet tanager has been seen to eat thirty-five gypsy moths a minute for eighteen minutes at a time. Another writer relates that an immense forest in Pomerania was saved from utter ruin by cuckoos. The latter were at the point of migration when they discovered that the forest trees were covered with injurious caterpillars. The cuckoos lingered for weeks, and cleared away the caterpillars.



Plover

The public is becoming strongly convinced that birds, especially migratory birds, should not be regarded as the property of a particular community or State, but rather that they belong to all the people of all the States.

There is such variance among the laws of the different States that even migrant non-game birds are beset by constant danger. It matters little if the robin should find protection in Oklahoma, and then a week later fall



Mississippi Kite

before the gun of a pot-hunter in a State further south where by law this lover of man's companionship may be shot. There is need of national uniformity—a kind of interstate fly-way commission—for the protection of bird life, just as the Federal government has seen fit to protect and conserve as an asset of all the people our forests, our coal deposits, and our waterpower.

A tentative list of the birds to be found in

Oklahoma, resident and transient, has been compiled by Mr. George W. Stevens, member of the faculty of the Northwest Normal School, and by the Oklahoma Geological Survey. Comprehensive field work has not been undertaken, and for that reason the list undoubtedly is incomplete. Bird-lovers will be interested in the statement that during the summer of 1913 members of the Oklahoma Academy of Science may attempt a survey of the birds of Oklahoma, accurately describing each bird that is found and making photographs of both the bird and its nest. The material may be utilized later in the publication of a book on birds in Oklahoma. It is to be hoped that the State will provide liberally for this

commendable undertaking. There is no book on birds that adequately describes the birds of Oklahoma from a sectional viewpoint.

According to Professor Stevens, the distribution of the birds of North America would indicate that the State of Oklahoma should have between three hundred and twenty and three hundred and fifty species. The birds that are named in the list have been reported by competent observers. The list is deficient in wrens, warblers, vireos, sparrows and fly-catchers. The use of "(G. S.)" indicates that the bird was reported by the Oklahoma Geological Survey; otherwise the record is that of Professor Stevens. The terms used to indicate the time a species is present in Oklahoma are:

Resident—found in the State the year round.

Summer Resident—coming to the State in the spring, nesting here during the summer, and leaving in the fall.

Winter Resident—spending the winter in the State.

Migrant—passing through during the fall and spring migrations, but spending neither summer nor winter here.

Visitant—occasionally and irregularly visiting the State, but not regularly here at any time during the year.

The list follows, the numbers being prefixed for convenience by Professor Stevens:

1. Wood Thrush, *Turdus mustelinus*. Summer resident.
2. American Robin, *Merula migratoria*. Winter resident, and resident in northern part.
3. Bluebird, *Sialia sialis*. Winter resident; resident in northern part.
4. Mountain Bluebird, *Sialia arctica*. Winter resident.

5. Golden-crowned Kinglet, *Regulus satrapa*. Winter resident.
6. Ruby-crowned Kinglet, *Regulus calendula*. Winter resident.
7. Blue-gray Gnatcatcher, *Poliophtila coerulea*. Summer resident.
8. Red-breasted Nuthatch, *Sitta canadensis*. Resident.
9. Tufted Titmouse, *Parus bicolor*. Winter resident.
10. Carolina Chickadee, *Parus carolinensis*. Resident.
11. Brown Creeper, *Certhia familiaris americana*. Winter resident.
12. Mockingbird, *Mimus polyglottis*. Summer resident.
13. Catbird, *Galeoscoptes carolinensis*. Summer resident.
14. Brown Thrasher, *Harporynchus rufus*. Summer resident.
15. Carolina Wren, *Thryothorus ludovicianus*. Resident.
16. Bewick's Wren, *Thryothorus bewickii*. Resident.
17. Rock Wren, *Salpinctes obsoletus*. Resident in rough western parts.
18. Short-billed Marsh-wren, *Cistothorus stellaris*. Summer resident.
19. American Pipit, *Anthus pensilvanicus*. Migrant in western part of State. (Woods County. April.)
20. Orange-crowned Warbler, *Helminthophila celata*. Migrant. (Woods County. April.)
21. Nashville Warbler, *Helminthophila ruficapilla*. Migrant. Probably summer resident.
22. Prairie Warbler, *Dendroica discolor*. (G. S.)
23. Blue-winged Yellow Warbler, *Helminthophila pinus*. (G. S.)

24. Prothonotary Warbler, *Protonotaria citrea*. (G. S.)
25. American Redstart, *Setophaga ruticilla*. (G. S.)
26. Yellow Warbler, *Dendroica aestiva*. Summer resident.
27. Kentucky Warbler, *Geothlypis formosa*. Summer resident.
28. Maryland Yellow-throat, *Geothlypis trichas*. Summer resident.
29. Myrtle Warbler, *Dendroica Coronata*.
30. Yellow-breasted Chat, *Icteria virens*. Summer resident.
31. Red-eyed Vireo, *Vireo olivaceus*. Summer resident in western part.
32. Bell's Vireo, *Vireo bellii*. Summer resident.
33. Black-capped Vireo, *Vireo atricapillus*. (G. S.)
34. White-eyed Vireo, *Vireo noveboracensis*. (G. S.)
35. Yellow-throated Vireo, *Vireo flavifrons*. (G. S.)
36. Northern Shrike, *Lanius borealis*. Winter resident in northern part.
37. Logger-head Shrike, *Lanius ludovicianus*. Resident.
38. Bohemian Waxwing, *Ampelis garrulus*. Migrant.
39. Cedar Waxwing, *Ampelis cedrorum*. Migrant.
40. Purple Martin, *Progne subis*. Summer resident.
41. Cliff Swallow, *Petrochelidon lunifrons*. Summer resident.
42. Barn Swallow, *Chelidon erythrogaster*. Summer resident.
43. Bank Swallow, *Clivicola reparia*. Summer resident.
44. Scarlet Tanager, *Piranga erythromelas*. Summer resident.

45. Louisiana Tanager, *Piranga ludoviciana*. Summer resident.
46. Summer Tanager, *Piranga rubra*. Summer resident.
47. American Goldfinch, *Spinus tristis*. Winter resident.
48. Pine Siskin, *Spinus pinus*. Winter resident.
49. European House Sparrow, or English Sparrow, *Passer domesticus*. Resident.
50. Lapland Longspur, *Calcarius lapponicus*. Winter resident.
51. Smith's Painted Longspur, *Calcarius pictus*. Winter resident.
52. Chestnut-sided Longspur, *Calcarius ornatus*. Winter resident.
53. McCown's Longspur, *Rhyncophanes mccownii*. Winter resident.
54. Lark Sparrow, *Chondestes grammacus*. Summer resident.
55. Harris' Sparrow, *Zonotrichia querula*. Winter resident.
56. White-crowned Sparrow, *Zonotrichia leucophrys*. Winter resident.
57. Tree Sparrow, *Spizella monticola*. Winter resident.
58. Song Sparrow, *Metospiza fasciata*. (G. S.)
59. Purple Finch, *Carpodacus purpureus*. (G. S.)
60. Grasshopper Sparrow, *Ammodramus sавanarum passerinus*. (G. S.)
61. Western Grasshopper Sparrow, *Ammodramus sавanarum perpallidus*. Summer resident in western part.
62. Western Field Sparrow, *Spizella pusilla avenacea*.
63. Baird's Sparrow, *Ammodramus bairdii*. (G. S.)

64. Vesper Sparrow, *Pooecetes gramineus*.
65. Chipping Sparrow, *Spizella socialis*.
66. Slate-colored Junco, *Junco hyemalis*. Winter resident.
67. Bachman's Sparrow, *Peucaea aestivalis bachmani*. Winter resident.
68. Cassin's Sparrow, *Peucaea cassini*. Winter resident.
69. Fox Sparrow, *Passerella ilica*. Migrant.
70. Tohee, *Pipilo erythrophthalmus*. Migrant; resident in northern part.
71. Cardinal, *Cardinalis cardinalis*. Winter resident.
72. Rose-breasted Grosbeak, *Zamelodia ludoviciana*. Winter resident.
73. Black-headed Grosbeak, *Zamelodia melanocephala*. Migrant.
74. Blue Grosbeak, *Guiraca coerulea*. Summer resident.
75. Indigo Bunting, *Passerina cyanea*. Summer resident.
76. Painted Bunting, *Passerina ciris*. Summer resident.
77. Dickcissel, *Spiza americana*. Summer resident.
78. Lark Bunting, *Calamospiza melanocorys*. Migrant.
79. Bobolink, *Dolichonyx oryzivorus*. Migrant.
80. Cowbird, *Melothrus ater*. Summer resident.
81. Yellow-headed Blackbird, *Xanthocephalus xanthocephalus*. Migrant.
82. Red-winged Blackbird, *Agelaius phoeniceus*. Resident.
83. Rusty Blackbird, *Scolecophagus carolinus*. (G. S.)
84. Brewer's Blackbird, *Scolecophagus cyanocephalus*. (G. S.)

85. Meadowlark, *Sturnella magna*. Resident in eastern part.
86. Western Meadowlark, *Sturnella neglecta*. Resident in western part.
87. Orchard Oriole, *Icterus spurius*. Summer resident.
88. Baltimore Oriole, *Icterus galbula*. Summer resident.
89. Bronzed Grackle, *Quiscalus quiscula aeneus*. Summer resident.
90. Blue Jay, *Cyanocitta cristata*. Resident.
91. White-necked Raven, *Corvus cryptoleucus*. Resident in western part.
92. American Crow, *Corvus Americanus*. Resident.
93. Pinyon Jay, *Cynocephalus cyanocephalus*. Winter resident.
94. Desert Horned Lark, *Otocoris alpestris*. Resident.
95. Scissor-tailed Flycatcher, *Milvulus forficatus*. Summer resident.
96. Kingbird, *Tyrannus tyrannus*. Summer resident.
97. Arkansas Kingbird, *Tyrannus verticalis*. Summer resident.
98. Traill's Flycatcher, *Empidonax trailii*. (G. S.)
99. Crested Flycatcher, *Myiarchus crinitus*. Summer resident.
100. Phoebe, *Sayornis phoebe*. Summer resident.
101. Say's Phoebe, *Sayornis saya*. Summer resident in western part.
102. Wood Pewee, *Contopus virens*. Summer resident.
103. Ruby-throated Hummingbird, *Trochilus colubris*. Summer resident.
104. Chuck-will's-widow, *Antrostomus carolinensis*. Summer resident.

105. Whip-poor-will, *Antrostomus vociferus*. Summer resident.
106. Chimney Swift, *Chaetura pelagica*. (G. S.)
107. Nighthawk, *Chordeiles virginianus*. Summer resident.
108. Hairy Woodpecker, *Dryobates villosus*. Resident.
109. Downy Woodpecker. *Dryobates pubescens*. Resident.
110. Yellow-bellied Sapsucker, *Sphyrapicus varius*. Resident.
111. Pileated Woodpecker, *Ceophloeus pileatus*. Resident.
112. Red-headed Woodpecker, *Melanerpes erythrocephalus*. Resident.
113. Red-bellied Woodpecker, *Melanerpes carolinus*. Resident.
114. Yellow-shafted Flicker, *Colaptes auratus*. Resident.
115. Red-shafted Flicker, *Colaptes auratus cafer*. Resident.
116. Texan Woodpecker, *Dryobates bairdii*. (G. S.)
117. Hybird Flicker, *Colaptes auratus* and *cafer*. Resident western part.
118. Belted Kingfisher, *Ceryle alcyon*. Resident.
119. Road-runner, *Geococcyx californicus*. Resident in rough western part.
120. Yellow-billed Cuckoo, *Coccyzus americanus*. Summer resident.
121. American Long-eared Owl. *Asio wilsonianus*. Resident.
122. Short-eared Owl, *Asio accipitrinus*. Resident.
123. Barred Owl, *Syrnium nebulosum*. Resident.

124. Screech Owl, *Megascops asio*. Resident.
125. Great Horned Owl, *Bubo virginianus*. Resident.
126. Western Horned Owl, *Bubo virginianus subarcticus*. Resident.
127. Burrowing Owl, *Speotyto cunicularia hypogaea*. Resident.
128. American Barn Owl, *Strix pratincola*. Resident.
129. Swallow-tailed Kite, *Elanoides forficatus*. Summer resident; rare.
130. Mississippi Kite, *Ictines mississippiensis*. Summer resident.
131. Marsh Hawk, *Circus hudsonius*. Resident.
132. Sharp-shinned Hawk, *Accipiter velox*. Winter resident.
133. Cooper's Hawk, *Accipiter cooperii*. Resident.
134. American Goshawk, *Accipiter atricapillus*. Winter resident.
135. Red-tailed Hawk, *Buteo borealis*. Resident.
136. Harlan's Hawk, *Buteo borealis harlanii*. (G. S.)
137. Red-shouldered Hawk, *Buteo lineatus*. Resident eastern part.
138. Swainson's Hawk, *Buteo swainsoni*. Summer resident.
139. American Rough-legged Hawk, *Archibuteo lagopus santijohannis*. Winter resident.
140. Ferruginous Rough-legged Hawk, *Archibuteo ferruginous*. Winter resident.
141. Golden Eagle, *Aquila chryaetos*. Resident in western part.
142. Bald Eagle, (American Eagle,) *Haliaetus leucocephalus*. Resident.
143. Prairie Falcon, *Falco mexicanus*. Winter resident.

144. American Sparrow Hawk, *Falco sparverius*. Resident.
145. American Osprey, *Pandion haliaetus caroliensis*. Resident.
146. Turkey Vulture, *Cathartes aura*. Summer resident.
147. Black Vulture, *Catharista atrata*. Resident.
148. Passenger Pigeon, *Ectopistes migratorius*. Resident; probably extinct.
149. Band-tailed Pigeon, *Columba fasciata*. Visitant.
150. Mourning Dove, *Zenaidura macroura*. Resident.
151. Wild Turkey, *Meleagris gallopavo*. Resident.
152. Bob-white, *Colinus virginianus*. Resident.
153. Sealed Partridge, *Callipapla aquamata*. Resident in extreme western part.
154. Prairie Hen or Chicken, *Tympanuchus americana*. Resident.
155. Lesser Prairie Hen, *Tympanuchus pallidicinctus*. Resident.
156. Messena Partridge, *Cyrtonyx montezumae*. (G. S.)
157. Black-bellied Plover, *Squatarola squatarola*. Migrant; in western part.
158. Kildeer, *Aegialitis vocifera*. Resident.
159. Snowy Plover, *Aegialitis nivosa*. (G. S.)
160. Wilson's Snipe, *Gallinago delicata*. Migrant.
161. Pectoral Sandpiper, *Tringa maculata*. Migrant.
162. Least Sandpiper, *Tringa minutilla*. Migrant.
163. Marbled Godwit, *Limosa fedoa*. Migrant.
164. Yellow-legs, *Totanus flavipes*. Migrant.
165. Solitary Sandpiper, *Totanus solitarius*. Migrant.
166. Willet, *Symphemia semipalmata*. (G. S.)

167. Western Willet, *Symphemia semipalmata inornata*. Migrant.
168. Bartramian Sandpiper, (plover), *Bartramia longicauda*. Migrant. Resident near north line.
169. Baird's Sandpiper, *Tringa bairdii*. (G. S.)
170. Semipalmated Sandpiper, *Ereunetes pusillus*. (G. S.)
171. Spotted Sandpiper, *Actitis macularia*. Migrant.
172. Long-billed Curlew, *Numenius longirostris*. Migrant.
173. Eskimo Curlew, *Numenius borealis*. Migrant. Rare.
174. American Avocet, *Recurvirostra americana*. Migrant.
175. Black-necked Stilt, *Himantopus mexicanus*. Migrant.
176. Wilson's Phalarope, *Steganopus tricolor*. Migrant.
177. Sora, *Porzana carolina*. Migrant.
178. King Rail, *Rallus elegans*. Summer resident.
179. American Coot, *Fulica americana*. Resident in northern part.
180. Whooping Crane, *Grus americana*. Migrant.
181. Little Brown Crane, *Grus canadensis*. Migrant.
182. Sandhill Crane, *Grus Mexicana*. Migrant.
183. White-faced Glossy Ibis, *Plegadis guardana*.
184. American Bittern, *Botaurus lentiginosus*. Summer resident.
185. Least Bittern, *Ardetta exilis*. Summer resident.
186. Great Blue Heron, *Ardea herodias*. Summer resident.
187. American Egret, *Ardea egretta*. (G. S.)
188. Snowy Heron, *Ardea candidissima*. Migrant.

189. Little Blue Heron, *Ardea coerulea*. Summer resident.
190. Green Heron, *Ardea virescens*. Summer resident.
191. Black-crowned Night-heron, *Nycticorax nycticorax naevius*. Summer resident.
192. Yellow-crowned Night-heron, *Nycticorax violaceus*. Summer resident.
193. Whistling Swan, *Olor columbianus*. Winter resident.
194. Lesser Snow Goose, *Chen hyperborea*. Migrant.
195. Blue Goose, *Chen coerulescens*. (G. S.)
196. White-fronted Goose, *Anser albifrons gambeli*. Winter resident.
197. Canada Goose, *Branta canadensis*. Migrant. Possibly winter resident.
198. Hutchins' Goose, *Branta canadensis hutchinsii*. Migrant.
199. Redhead, *Aythya americana*. Winter resident.
200. Canvasback, *Aythya vallisneria*. Winter resident.
201. American Scaup Duck, *Aythya marila nearctica*. Migrant.
202. Lesser Scaup Duck, *Aythya affinis*. Winter resident.
203. Ring-neck Duck, *Aythya collaris*. Migrant.
204. American Golden-eye, *Clangula americana*. Migrant.
205. Bufflehead, *Charitonetta albeola*. Migrant.
206. Ruddy Duck, *Erismatura jamaicensis*. Migrant.
207. Black Duck, *Anas obscura*. Winter resident.
208. Mallard, *Anas boschas*. Winter resident.
209. Gadwall, *Anas strepera*. Migrant.

210. Baldpate, *Anas americana*. Migrant.
211. Green-winged Teal, *Anas carolinensis*. Migrant.
212. Blue-winged Teal, *Anas discors*. Migrant. Possibly summer resident.
213. Shoveller, *Spatula clypeata*. Migrant.
214. Pintail, *Dafila acuta*. Winter resident.
215. Wood Duck, *Aix sponsa*. Summer resident.
216. American Merganser, *Merganser americana*. Migrant.
217. Hooded Merganser, *Lyphodytes cuculiatu*s. Migrant.
218. White Pelican, *Pelicanus erythrorynchos*. Migrant.
219. Double-crested Cormorant, *Phalacrocorax dilophus*. Migrant.
220. Common Tern, *Sterna hirundo*. Migrant.
221. Least Tern, *Sterna antillarum*. Summer resident.
222. American Herring Gull, *Larus argentatus smithsonianus*. Migrant.
223. Ring-billed Gull, *Larus delawarensis*. Migrant.
224. Franklin's Gull, *Larus franklinii*. Migrant.
225. Skua, *Megalestris skua*. Visitant.
226. American Eared Grebe. *Colymbus nigricollis californicus*. Migrant.
227. Pied-billed Grebe, *Podilymbus podiceps*. Migrant. Probably summer resident.

The fact that this list contains scarcely more than two-thirds of the birds that should be found in Oklahoma leaves open an interesting field for further observation by bird-lovers. There is credible ground for adding two more birds to this list, the Ivory-billed Woodpecker, *Campephilus principalis*, and the Woodcock, *Philohela minor*.

This largest of woodpeckers has become so rare that it is seldom seen in any State. The opening of Oklahoma to settlement is so recent, however, that the naturalist may still enjoy the pleasing hope that in secluded and unsettled places he may find hidden treasures. It was the good fortune of Mr. Graham Burnham, of Tulsa, a competent observer, to discover and take on Shell Creek in the Osage Indian country in 1911 a male and a female Ivory-billed Woodpecker. The specimens were mounted and sent to the Smithsonian Institution. Mr. Burnham gave this account of his acquaintance with this bird:

"He not only strips dead trunks of bark, but invariably bores a hole in a solid live tree for his nest, in which from three to six glossy white eggs, each about an inch and a half long, are laid and hatched. Along Little River in the Seminole country; on Shell Creek in the Osage country; on Deep Fork in the Creek country, and along the big timber bends of the North Canadian River, near Henryetta, a few nests were observed this year."

The presence of woodcock in Oklahoma at this late day should be a matter of pride to all genuine sportsmen, and none should be killed. Years ago woodcock were abundant several miles east of Vinita, and even



White-fronted Goose

now occasionally one may be seen in their former haunts near that place. The woodcock, however, is making its last stand in southeastern Oklahoma. There is a marshy growth of grass along Onubbie Creek southeast of Talahina where certain Oklahoma hunters always find woodcock. This fine bird has been reported on Glover Creek, and possibly in limited numbers may be found in favored spots throughout the Kiamitia region. Woodcock are still fairly common in Arkansas, both in summer and winter. The sportsmen of that State do not give woodcock the protection of a closed season, and a few years undoubtedly will bring their extermination in that once hunter's paradise.

Is there still lingering somewhere in Oklahoma a living specimen of the passenger pigeon? There are persons who believe it to be possible, though hardly probable. As late as 1902 a game merchant in St. Louis is said to have received a shipment of twelve dozen of these birds from Rogers county, Ark.

One of the largest pigeon roosts in the Southwest in earlier days was in Going Snake District, in the Cherokee Nation, in a timbered canyon that debouched into Barron Fork, ten or twelve miles above the junction of that stream with the Illinois River. At the head of this canyon was a spring called Alum Spring. A Cherokee citizen who lived near this roost said that when he was a boy, fifty years ago, the number of pigeons that frequented the locality was beyond computation. They swept across the sky in clouds, darkening the sun. At night their chattering swelled into a roar. Struggling for a place to alight, the birds dropped onto each other's backs in the greatest confusion. As their number and weight increased, the branches would bend until finally they broke with a loud snapping, and the fluttering pigeons went whirling into the air. In

this manner trees frequently were stripped of their smaller boughs.

The pigeons grew fat upon acorns. At night this Cherokee boy went with companions to the roost, where they threw clubs and stones in the darkness until exhausted. Next morning the boys returned and picked up the dead and crippled birds, as they did after hunters had fired into the roosts with shotguns. When the pigeons passed in the early morning to their feeding grounds, they flew low over the surrounding ridges. Armed with stout hickory clubs about eighteen inches in length, these Cherokee boys hid themselves until the flight was close at hand. Then they threw their clubs with all their might. The pigeons nearest at hand, startled by the suddenness of the attack, sought to turn aside, which instantly caused a blockade, so swiftly were the other pigeons following. At this struggling mass of birds the boys hurled their clubs and brought down large numbers.

This roost on Barron Fork was most populous about the time of the Civil War. This Cherokee saw them there as late as 1873. In 1874 the main roost had shifted to what was known as "Hildebrand's Hill," on Flint Creek, a stream now known as Cow Creek. In that year one hunter hauled two wagonloads to Vinita and shipped them to market. This same observer saw a few wild pigeons near Stringtown in 1881.

Is there a surviving wild passenger pigeon in Oklahoma? About ten years ago a hunting party was in camp in November on Big Elk Creek in the Osage country. Several of the hunters had seen wild pigeons in their boyhood; two parties were afield one day, ranging a rugged hill country, and both returned to camp convinced that they had discovered wild pigeons. In one flight were three, and in another five or six birds.

The subject grows romantic, yet that portion of the old Cherokee Nation north of Talequah and east of Grand River might repay close scrutiny by hunters.

Most persons in Oklahoma would be inclined to doubt the statement that a brilliantly colored parakeet was once found here, yet there are persons still living who saw them. This bird was the Carolina Paroquet, *Conurus carolinensis*. They were seen on Hominy Creek, in the Osage country, as late as the early 70's. Like the passenger pigeon, they have disappeared, although stragglers were reported in Missouri and Kansas as late as 1905. Florida is said to be the present refuge of this parakeet. They disappear with the advance of civilization.

THE exact truth about the changes in growth, and the habits of birds, as the seasons run their course, is difficult to ascertain. Haphazard observation almost invariably produces inaccurate and misleading data. The physical appearance and the habitat of most birds have been fairly well described, yet writers of books on bird life freely confess that much remains to be done in the study of the intimate affairs of individual species. Patient, continuous observation from day to day, fortified by technical knowledge of high quality, is essential for even moderate success. The field of bird-life by no means has been fully explored, and holds secrets whose revelation should afford delight even to the amateur. Every boy and every girl should be given a working knowledge of ornithology and botany; they afford pleasures which age nor evil fortune can destroy. The paths that lead to birds and flowers reach divine places.

The popular mind perhaps is mostly deeply impressed by the phenomena of the annual migration of birds to their summer nesting grounds and to their winter homes. Even in this phase of bird life, however, common belief has been refuted by facts drawn from data recently furnished to the United States Biological Survey by 2,000 observers in the United States and Canada, aggregating more than 400,000 records covering the last twenty-five years. The substance of the statements that follow is drawn from these records.

Migration is not caused by weather conditions, as

is popularly supposed, but is undertaken in response to physiological changes in birds. By influencing food supply, weather, however, is the chief factor in determining the average date of arrival at the breeding grounds. In the case of most species of birds, the date of starting bears no relation whatever to local weather conditions in the winter home. The weather encountered in migration has only a subordinate influence, retarding or accelerating the bird's advance by only a few days, and has slight relation to the time of arrival at the nesting place.

The appearance of a bird in a given locality in bad weather is probably explainable by the supposition that the flight began in favorable weather, and that the weather changed during the night. Spring migration usually occurs with a rising temperature; autumn migration, with a falling temperature. In each case the mere change in the weather seems to be more potent than the absolute degree of cold. Wind, by reason of its direction and force, seems to have only a slight influence on migration, save as it is connected occasionally with extreme variations in temperature. A notable fact of migration is that each species of birds seems to be a law unto itself as to the time, route and speed of its migration.

It is commonly believed that birds can foretell weather changes, yet one morning in October the dead bodies of hundreds of birds were found on the base of the Statue of Liberty in New York Harbor, where during a storm at night, they had been lured to dash themselves against the light. Whirled by the tempest until they lose all sense of direction, with the landmarks hidden by enveloping clouds, the birds are easily drawn by a beacon light penetrating the mist. A continuous red light, or a flashing intermittent light of

any color, strange as it may seem, does not attract them; but a steady white light is irresistible. Man's beacons are not the only source of destruction. In a storm at night on Lake Huron, flocks of October migrants were caught by a snowstorm and forced into the waves. One observer found 5,000 dead birds to the mile strewn along the eastern shore, and this included only a part of those that perished.

The frequency of these disasters, according to Mr. Wells W. Cooke, of the Biological Survey, proves that birds cannot foretell weather. No bird, he says, starts on a migratory flight during a rain or in a dense fog or against a chilling blast, and yet thousands of birds each year are found near lighthouses and along the shores of large bodies of water, under just such weather conditions, showing that after starting they met or were overtaken by the storm. The early settlers in the Mississippi Valley so often noticed that an exceptionally heavy flight of ducks and geese moving straight south at a high altitude was soon followed by a severe storm, that they came to have great faith in these birds as weather prophets, and believed that they could actually foretell an approaching tempest. It is more probable that the birds began to migrate at the first signs of the storm and outstripped it in their southward flight.

This opinion is supported in an interesting way by observations in Oklahoma, a great highway for ducks and geese in their migrations. Their sojourn in Oklahoma usually is temporary, for feeding purposes, and for that reason hunters must be alert in going afield at the right time. In the fall, to wait until a cold wave arrives, brings disappointment. Discreet hunters consult telegraphic forecasts of the United States Weather Bureau, and when they learn that a cold wave has started southward from the Canadian

line, they go instantly afield and find geese and ducks in abundance. By the time the cold wave reaches Oklahoma, these waterfowl have gone further south.

It is difficult, if not impossible, to tell what bird movements will accompany any given set of weather conditions. One year it would appear that the birds have been held back by a certain storm, but another year under identically the same conditions, the birds continue northward in spite of a storm; they fail to arrive when circumstances seem propitious, and come in myriads when conditions seem adverse. An explanation possible may be found in the fact that migration does not progress uniformly, but in a series of advances interspersed with periods of rest or inactivity. In the Mississippi Valley the average daily advance in northward migration is 23 miles, or scarcely more than half an hour's flight; but since there are many stop-over nights on the migration journey, it follows that on each night of flight a correspondingly greater distance must be covered. Probably few night migrants make less than 100 miles at a flight, while spurts of 200 miles or more must be common.

The records of migration near the Mississippi River during one spring indicate that the purple martin made nearly the whole trip from southern Louisiana to southern Manitoba in 12 nights (120 miles a night), although seventy days were spent between the two places. During spring migration it is probable that birds do not start in the evening except under favorable conditions, and when these conditions hold throughout the night, the flight northward is greatly prolonged. Bird tragedies due to bad weather are appalling. On the night of March 13 and 14, 1904, an innumerable host of Lapland longspurs, migrating northward in southern Minnesota, encountered a heavy fall of soft,

damp snow. Weighted by the clinging flakes, the birds dropped to earth, and many perished. The death toll on the hard, icy surface of two small lakes was estimated at 750,000, while the number of lifeless bodies scattered over the 1,500 square miles of territory covered by the disaster was beyond computation.

Birds do not migrate by chance. The habit of migration has been evolved through countless generations, and during this time the physical structure and habits of birds have been undergoing a process of change to adapt them to the climatic conditions of their summer homes. In spring and early summer, the climatic conditions are decidedly variable, and yet there must be some period that has on the average the best weather conditions for the bird's arrival. During the ages, habits of migration have been developed until the bird so performs its migratory movements that on the average it arrives at the nesting site at the proper time.

In obedience to physiological promptings, the bird migrates at the usual average time and proceeds northward at the usual average speed, unless prevented by adverse weather. But, unfortunately for the birds, these average weather conditions are interspersed with occasional drops of temperature that reduce insect-eating birds to the verge of starvation. The purple martin, being an early immigrant, is peculiarly liable to such accidents. A storm in late June, 1903, in southern New Hampshire, swept the air of the birds' insect prey for so long that all the young birds starved in their nesting boxes and a large proportion of the old birds perished. Conversely the birds go south in fall until they reach a district where usually they can obtain sufficient food throughout the winter. But sometimes they do not go far enough to be out of reach of an exceptional blizzard. The coast of South Carolina was

visited in February, 1899, by a heavy snowstorm, with the severest cold known there in two hundred years. Thousand of fox sparrows, snowbirds, and woodcock starved, and probably nine-tenths of the bluebirds and pine warblers shared the same miserable fate.

The soundness in general of the birds' instincts is vindicated by the fact that all these catastrophes, appalling though they are, do not permanently diminish the bird population. Provided bad weather has not permanently reduced the food supply, the birds eventually regain their former numbers. Take the striking instance of the bluebird. The winter of 1894-95 killed so many of the bluebirds east of the Mississippi River that in the spring of 1895 not a bluebird warble was heard in many a town where the year before there had been a full chorus. Since then their numbers have gradually increased, until now, were it not for persecution by the English sparrow, the ever-welcome bluebirds would be as numerous as ever.

It is well known that migration is retarded by severe cold weather and is accelerated by unusually warm weather. A rise in temperature while birds are migrating is interpreted by the birds as a signal for further flight. At the end of a cold snap that has halted the advance, the birds do not wait until the temperature rises to normal, but start north as soon as there is a marked change for the better. The number of birds that migrate during cold weather, however, is surprisingly large.

It may be safely stated that the weather in the winter home has nothing to do with starting birds on the spring migration, except in the case of a few, like ducks and geese, that press northward as fast as open water appears. There is no appreciable change in temperature to warn the hundred or more species of our

birds which visit South America in winter that it is time to migrate. It must be a force from within that makes them spread their wings for the long flight. The most important duty of the individual bird is the perpetuation of the species, and the impulse which annually starts the bird northward toward its breeding grounds is physiological.

Almost without exception, the beginnings of fall migration have no relation whatever to the weather. Most species migrate as soon as the young are able to care for themselves; others begin moulting and start on their southward trip when their new fall suits are ready. Many species begin to go south in July and most of the others early in August, long before the fall storms have lessened their food supply, and, indeed, at the time when food is most plentiful.

After the tide of fall migration is in full swing, its advance is varied by alternating storms and fair weather, as in spring, but with exactly the opposite effects; instead of delaying migration, a fall storm cause the departing hosts to hasten their movements before the chilling northern blasts. In spring, the larger part of migration occurs with a rising temperature; in fall a still larger percentage occurs when the temperature is falling.

During spring migration the direction of the wind seems to have little, if any, effect on the movements of birds. Arrivals were noted at Lanesboro, Minn., 102 days when the wind was south, southeast, or southwest, as against 96 days when the wind was north, northeast, or northwest. Thus the birds migrated with the wind against them just about as frequently as with the wind in their favor.

THROUGH all the hill country of eastern Oklahoma there is an annual cutting of tough locust shoots of arrowy straightness, such as may be used as spears with a single tine in striking bass, and the no less gamy channel catfish, in the clear waters of the Spavinaw, the Barron Fork and the Illinois. Spearing fish is royal sport in eastern Oklahoma, as it has been since the Cherokee Indians first migrated to this western country. The locust spear shaft is preferred to all others, because of its toughness and straightness. Occasionally, may be found a fisherman who uses a pine shaft. Many of the old-time Cherokees show surprising skill in this sport.

During the heat of summer, the fullblood Cherokee does not eat fish, however tempting it may appear. Holding the body of a fish against the light, they will point out minute bodies moving in the tissue, which they say are not removed until the frost begins reddening the sumach and giving a sweeter taste to the fox grape. When cool weather comes, and the bass grow livelier and more pugnacious, the Cherokee fisherman assembles his spears, sharpens the blade with its single barb, and greases the shaft, that it may be impervious to water, and the more quickly pass through the hand. Then he caulks his skiff or his canoe, according to his preference in craft. Fishermen with old-fashioned ways hold that the only sportsmanlike craft is a dugout canoe, from sixteen to twenty feet in length, made from a pine log. Some choose the sycamore.

An acknowledged champion spear-fisherman is Cale Starr, a Cherokee of mixed blood. Starr has spent all

his life in the woods, whose secrets he knows and whose freedom to him is the breath of life.

Spear-fishing may be enjoyed night or day, though night fishing is the more picturesque. Fishing improves as the water grows clearer, and the ideal months are November and December. In Cherokee waters the movements of the smallest fish are easily seen. Black bass grow to a size of six and seven pounds, and, like jack salmon, crappie and channel catfish, are found in great numbers. The fishermen stand erect in their boats or dugout canoes and kill their fish often at a depth of eight or ten feet. The gⁱg is not used on the spear shaft, as its wider spread retards the movement of the spear through the water—and it is well to lose no speed in throwing at a bass.

A fire of pine knots is carried in a wire basket at the prow in night-fishing. If a flat-bottomed boat is used, the fire is built on a deck covered with earth in the middle of the boat. Starr prefers a dugout. In darting under a dugout, a fish quickly appears on the other side, so short is the distance, and the spearman may strike simply by turning. When a fish passes under a broad punt, however, it is sometimes out of striking distance before it can be located. Starr prefers the platform fire, even in a dugout, as this brings the fire closer to the water. Starr uses a spear about fifteen feet in length.

"The best target," he said, "is when a fish presents its side. It doesn't make much difference to a good spearman which way a fish is moving. I would rather throw at a moving fish than at one finning itself. That's because of my years of practice, and probably is for the same reason that an experienced hunter prefers to shoot at his birds on the wing—the chances are that

with a quick shot he would miss the bird on the ground."

The night brings beautiful scenes of light and shadow in the eastern Oklahoma hills when a party of boatmen appear suddenly round the bend of a river, flowing past precipitous bluffs, shaggy with pine. The flaring torches, showering their sparks, light up closer objects with a dull radiance and silver the swiftly moving water, as it swirls round the boat. The boatmen call to each other, and the sound goes echoing down the river. Owls hoot at them from the black forest. A spearman stands poised, ready to strike, his face shining in the firelight. He bends and sways his body with a mighty effort and the spear goes down. Instantly, there is a tumult of breaking water, then a dashing of spray and a shimmer of scales as a bass fights for his life. But the bass has seized his last minnow, caught his last grasshopper, and is soon flapping inside the boat. These Cherokee fishermen fasten no cord to their spear, but let it go free of their hand—a cord might foul and cause the dugout to turn turtle.

MARVELLOUS tales are told by fishermen who range the Kiamitia country. Especially do they hint at knowledge of hidden lakes and bayous, unknown save to a chosen few, in whose mysterious depths bass and crappie of incredible size lie in wait for the fisherman's bait. Such a lake shimmers somewhere near the mouth of Onubbie, southwest of Talahina, where Judge Chas. Stuart and Dr. W. C. Graves of McAlester, once had their camp in early spring, when the forest was fragrant with the linden.

They were passing through unfrequented woods to find a short way to Little River when to their surprise they came to a lake closely surrounded by heavy timber. The forest was filled with the dimness of twilight, even at noon, and not a sound disturbed the stillness of the solitude. This "lost" lake was about three hundred yards in length, ninety feet in width and perhaps ten feet in depth, its waters beautifully clear.

Peering over the bank, the two fishermen felt their muscles harden at what they saw. The lake was alive with black bass, bigger ones than they had ever seen in surrounding streams. Plainly, these waters had never been fished, and in them dwelt the ancestors of the bass family. Neither Stuart nor Graves was prepared for bass fishing, as they had started to set lines in Little River for turtles. Graves, however, had a small rod that had been broken in the middle and then wrapped with cord. In the minnow bucket were three small sunfish.

"I baited the broken rod with one of the minnows," said Stuart, "and threw in. The moment the bait struck the water I knew I had hooked a big one. For seven or eight minutes, fearful all the time of the broken rod, I fought and played with the bass before he broke water. Then I saw that I was battling with the largest bass I had ever seen. He started for the bank the moment he went down after his first leap, and I knew that I should lose him, because of the rod, unless I acted quickly. I shouted to Graves to help me, and without a word he plunged headlong into the lake. He reached the spot where the bass was fighting, and found the line by groping for it under water. Graves drew the fish toward him by main strength, and seized it by the gills. At that very moment the fish had made a mighty leap that pulled the rod in two. We hauled the bass ashore, and at camp found that it weighed eight pounds.

"We repaired the rod, and with our three minnows caught nine more bass, all big ones. Hanging from Graves' shoulder, that string of fish swept the ground, and by long odds was the finest single catch of bass I ever saw. This lake was not far from our camp, and every day we went to its shady banks and rioted in the joy of fighting those big fellows with our best rods and reels.

IN most farmyards the appearance of a hawk, whatever its species and feeding habits, brings out the old muzzle-loader. Few hunters, boy or man, neglect the opportunity to shoot a hawk at sight, and hang his feathered carcass in a tree or on a fence-post as a warning to other hawks. As a matter of fact, a majority of the hawks in the Southwest are no less helpful to farmers than are insectivorous birds. The destruction of hawks has been followed in Oklahoma by a heavy increase in grain-destroying rodents, notably field-mice, kangaroo-mice, cotton-rats, rabbits, barn-rats and house-mice, which cause far greater damage than insect pests. Grain not only in granaries, but in the field, is being attacked. Barn-rats are becoming common in the fields.

About eighteen species of hawks are found in Oklahoma, and of this number eight are commonly distributed. The natural and almost exclusive food of most of these hawks is small rodents up to the size of rabbits. Two of the commoner hawks destroy birds and occasionally poultry, but the larger number rarely prey upon bird life, and are among the most beneficial birds in the State to farmers.

Professor George W. Stevens has made an intimate study of Oklahoma birds and their habits. He deprecates the wilful and stupid destruction of hawks. "Let the beneficial hawks be treated as friends," said Professor Stevens, "as we treat the wren, the oriole or the mocking-bird, for most of our hawks render actually more benefit to agriculture than any of these. Let us get acquainted

with the common hawk, and demand of our legislature that our strictly beneficial hawks be protected."

In his defense of hawks, Professor Stevens draws upon his experience and observations in field and laboratory, covering a period of years. Of the common hawks, he says that the Cooper's and the sharp-shinned hawk are the only species whose depredations on poultry overbalance their services in destroying rodents. The sharp-shinned hawk is in the Southwest only during winter, and for that reason finds few chickens small enough for it to attack and kill. The American goshawk is a tiger among poultry, but its extreme rarity in Oklahoma makes it of little concern.

The red-shouldered hawk is common in the eastern, but rare in the western portion of the State. It is a medium-sized hawk of brown color, with no bright streaks or spots, except in old birds there is a rusty wash on the shoulders. It is found in or near timber, and its food is rabbits, gophers, mice, lizards and grasshoppers. It sometimes gets a quail or a duck, but usually only sick birds or cripples left by hunters. It is not active enough to catch small birds or grown poultry; it sometimes gets a young chicken that strays near the timber. This hawk stays in Oklahoma the year round.

Swainson's hawk is a larger hawk, having a spread of wing of about four feet. It is dark brownish or slightly grayish, with dark breast and white throat. Its shanks are naked, and the three front feathers in each wing are much narrowed for the outer half of their length. This hawk, according to Professor Stevens, whose observations are here recorded, leaves Oklahoma in September and returns in April. It nests in trees, and is generally common in summer throughout the State. Its food is rats, mice, gophers and rabbits. They are too slow to capture poultry, and are so shy that they rarely come

near a house. In the western part of the State they are the commonest summer hawk. Professor Stevens examined thirty stomachs of this hawk without finding a feather or other evidence that birds or poultry had been taken as food.

The American rough-legged hawk arrives in November and leaves in March. It is common in the western part of the State, but rarer further east. It is a large hawk, usually about four feet in spread, and is frequently seen perched on trees, fence-posts or strawstacks. It is stoutly built, usually dark, and sometimes almost black. Feathers extend down its legs to its toes, like the golden eagle. They seldom attempt to capture birds, and live on rabbits, squirrels, gophers, rats and mice. They are entirely beneficial, and render much assistance to farmers, particularly where rabbits destroy crops and young orchards.

The ferruginous rough-leg is much like the American rough-legged hawk, but is larger and usually much lighter in color. It generally has a rusty wash on top of the wings and on the feathers of the legs. Its food habits are much like those of the American rough-legged hawk. It inhabits regions having little or no timber, and in the western part of Oklahoma its almost sole diet is jack-rabbit. Few birds in Oklahoma render so much valuable service to the farmer as does this hawk, and it should be protected by law. In winter it pushes far eastward in the State; in summer, it goes north and west, and is found nesting only in the extreme western parts of Oklahoma.

The Mississippi kite is very common in summer in western Oklahoma, and may be found everywhere in the State. It arrives in May and leaves in September. This kite is a small bluish hawk about the size of a pigeon; it has a rather long tail, and its head is lighter

than its general color, appearing sometimes to be nearly white. The young, until about a year old, is much streaked, and looks unlike the adult. This bird is the tamest and gentlest of all hawks in Oklahoma, and is perhaps the handsomest. They seem to prefer living in small flocks, and their nests are often found in trees rather close together—sometimes within a few hundred feet of each other—a habit not common with hawks. Where they occur, the farmers usually consider them not only harmless, and rightly, but look upon them as a desirable bird to have about them. Their food is almost entirely grasshoppers and cicadas (so-called locusts). The examination of more than fifty of their stomachs by Professor Stevens did not reveal a sign of a bird having been eaten. They occasionally get a lizard, but regularly seize grasshoppers and cicadas, on the wing.

The marsh hawk is quite common in those parts of the State having little timber, and is common the year round. It is the only local hawk which nests on the ground (not in cliffs), and is easily recognized by the white spot on its back at the base of the tail. It is of medium size, but because of its long wings, appears at a distance to be nearly as large as some of the big hawks. They may often be seen sailing low over fields, pastures or thickets; they sometimes get a hen that has strayed from home, but they are too shy to enter a barnyard. They capture crippled quails and ducks, and get some mice, rats and ground-squirrels, but their main diet is cotton-tail rabbits—a many-sided hawk as far as its diet is concerned, but with the balance much in its favor.

The American sparrow hawk is the smallest, and in some respects the most interesting member of the hawk family. It is a true falcon, and is closely related to the falcon used in other countries to hunt birds in flight, as

greyhounds are used in this country to hunt rabbits. They stay in Oklahoma the year round and consume large numbers of mice, rats, grasshoppers, crickets and lizards. In winter, in the absence of the insects it relishes, it catches horned larks and longspurs—birds that are of indifferent value to the agriculturist. Both of these are "snow-birds" that come here in large flocks in winter, and never frequent timber or brush.

The sharp-shinned hawk is next to the smallest hawk in this region, and beyond question the most undesirable. It has short, rounded wings which it can handle with great dexterity; it is sometimes called the darter. It is a brownish, streaked bird, with sometimes a frosty wash. It eats mice, insects and birds, and is so swift and accurate on wing that it often captures small birds in flight and—what is not true of other hawks—often kills more birds than it eats, appearing to do so merely from "pure cussedness." It is here only in winter, when young poultry is too large to be killed by this little savage. It should be an outlawed bird.

The Cooper's hawk is a close kinsman of the darter, but is much larger, appearing to be about the size of a pigeon. Its spread of wing is about thirty-two inches. It lives all the year in Oklahoma, and does much damage to birds and poultry. It has been known to kill a full-grown chicken by striking when in full flight. It will often strike a hen with chicks, and while the hen is recovering herself, the hawk will dart off with one of the young. Professor Stevens has tamed a number of these hawks, and found that they will rarely miss catching a small piece of meat in its talons, though the meat is thrown swiftly at a distance of fifteen feet from the perch.

The red-tailed hawk is one of the largest in Oklahoma. It lives here and is found in timbered or partly

timbered regions. It is a brownish, light-breasted bird, with a brick-colored tail, and has four front wing feathers narrowed for about half their length. The adults have brown eyes, but for the first year the young have yellow eyes, and their tails are not red, but light gray, with several dark cross-bands. This bird devours large numbers of rabbits, rats, mice and moles; it sometimes gets a quail or a stray fowl. Naturalists are of the opinion that this hawk is more beneficial than injurious to the farmer; in fact, one of his best bird friends. It lives almost exclusively on grasshoppers when these insects are abundant.

In addition to these ten species that have been described, at least six, and possibly eight, others occur, but are not common. One of these, the American goshawk, is the most destructive of all. A farmer near Alva caught one of these hawks with his hands, so deeply engrossed was the bird in its tigerish attack upon a hen. The prairie falcon destroys many rats and rabbits, and also many birds. Its good qualities probably warrant its protection. Another hawk of indifferent value to the farmer is the osprey or fish hawk; it does neither good nor harm.

THE softshell and the loggerhead turtle to be found in most Oklahoma streams are sadly lacking in natural beauty. The turtle is practically without friends. He stealthily devours and makes away with the biggest and finest of the catch that the fisherman has moored at the water's edge. He steals bait voraciously at that critical moment when the minnow bucket is running low and fish are beginning to bite. The edibility of the turtle provokes only the feeblest enthusiasm among most native anglers, yet there are men wise in wilderness lore who insist that no frequenter of wild places may boast of having experienced their highest pleasure unless he has eaten turtle soup, made by a master hand.

Down in the Kiamitia streams the loggerhead sometimes grows to a weight of 75 pounds, the softshell reaching a maximum of about 25 pounds. It was there that General Albert Pike used to go camping with Major Elias Rector of Fort Smith, celebrated by Pike in his poem, "A Fine Old Gentleman Living Close to the Choctaw Line." General Pike was unrivalled in the making of turtle soup. Along those same streams in later days passed another fisherman, Judge Chas. B. Stuart, whose fondness for turtle soup is known from the Maline Fourche to Red River.

Judge Stuart's directions are given herewith, that they may not be lost to future generations: A loggerhead or a softshell may be most easily taken on a trot line at night. The head is removed, the shell split apart and the top lifted off, which exposes the red, black and white meat. The meat is chopped fine and put into a

large iron kettle, to boil and simmer and steam with a large piece of bacon for eight or ten hours. A few handfuls of rice or barley are now added, with just enough Irish potato to thicken. Next comes erbwurst, a powdered combination of choice bacon, marrow fat peas, etc., sausage-shaped, and to be dropped into the pot a link at a time. Erbwurst gives a delicious flavor to the soup. The mixture is now ripe for some Julienne, the latter being herbs and desiccated vegetables. Worcester and Tobasco sauce are added with much care as to the right quantity. This soup should never be removed from the pot, save when served, and always kept hot; if the contents diminish, add more turtle meat, etc.

Men who have eaten turtle soup prepared in this manner are said ever afterward to be able to recognize each other by some ineffable expression of grace that brightens their countenance. Any man proficient in the making of this soup becomes privileged in the society of turtle soup eaters, and is looked upon as practicing certain sacred functions. He may grow wild and wayward in the remoteness of forest camps; he may spurn little offerings of friendship tendered in appreciation of his skill, or he may refuse to chop wood, to carry water, or to help wash dishes, yet all these things are forgiven him, and there are those who will run to fill his pipe or give him an extra blanket on a chilly night, if he will but continue his ministrations at the kettle. A turtle soup maker grown gray in his calling is said to be a person of most venerable appearance.

LOOKING back at days that are no more, when hunting was good in the prairie chicken country in Western Oklahoma, brings regret—regret that they passed so swiftly, and that the hour of the final departure of this beautiful game bird is near at hand.

But these were glorious days. Blue sky and a treeless expanse of rolling sandhills made the scenery. The hunter was steeped in the mystery and bound by the fascination of the plains.

Night, with its stars and silence, revealed another world, and no man could resist its subtle influence. The crystalline air seemed too thin and rare to sustain the constellations that burned and glittered in surpassing brilliancy. The bow of Orion hung almost within reach of one's hand, and the stars so low that the hunter was tempted to take them by the armful, and carry them to camp. The stillness seemed audible, and one's ears tingled with a strange sensation, not unlike that felt in high latitudes when the "northern light" flames softly in the sky.

It would be hard to forget the hospitable owner and the ranch house on Corral Creek; the house was built nearly thirty years ago by Ben Masterson of Mobeetie. A hot supper awaited the arrival of the hunters. There were a dozen men, but not a woman, in the house. The angel of the ranch was Walker, the cook. He had mountains of fried spare ribs, home-made sausage, and sour dough biscuit, while more could be heard cooking in the kitchen. Walker wore a high-crowned, broad-brimmed

white hat, high-heeled boots with his trousers inside, and cart-wheel spurs that rattled and jingled like a wagon chain when he walked across the bare floor. It was Walker's duty to cook all the grub a man could hold, and to see that he ate it. He did his work like a professional.

Early morning found the expectant hunters in a big kafir field flanked on the west by long sandy ridges. A faint metallic "click, click" in the distance made every man's muscles stiffen, and a moment later brown bodies could be seen coming swiftly on distended wings, following the line of a half strung bow. Prairie chickens! Bang! bang! bang! The kafir field was acrid with the smell of burnt powder. The miniature express trains that faded into mere specks and disappeared beyond the sand ridges undoubtedly were prairie chickens, but they did not lose a single speckled feather. The ranchman, who knew how to shoot prairie chickens, and had withheld his fire in compliment to his guests, chuckled, and said, "Well, boys, don't swear about it; they will come again, but don't forget that the way to shoot a prairie chicken is to p'int your gun at it."

And they did come, one, two, three and a dozen at a time, cackling with joy in the morning sunshine, apparently unmindful of the death and destruction that awaited them. The ranchman brought down a big, lusty cock with a thud that went to the very marrow of a tenderfoot's bones. The sensual delight of that thudding sound was so absorbing that the ranchman was the only one who fired a gun. He laughed again, and said that in a timbered country it was called "buck ague," but in a chicken country it was nothing less than ordinary "damfoolishness."

Better luck came later, and the bag grew heavy. By 9 o'clock the chickens had left the fields for the high ridges, where they spent the day frolicking on smooth

places, and pulling off rooster fights. As the day declined, they grew hungry and prepared for their second flight to the kafir fields. They began arriving about half an hour before sundown, and were less wary than at morning. At evening they flew from place to place in the fields when shot at, and if properly stationed a hunting party could get several shots at the same flock of birds.

In earlier years it was not an uncommon sight in late fall to see five or six hundred prairie chickens in a single flight pass over the little town of Grand, in what used to be Day county, on the South Canadian river, several miles north of the Antelope Hills.



"Steady!"

THE problem of protecting wild life in Oklahoma or elsewhere is made easier or more difficult in accordance with the degree of intelligence and morality of those who may destroy or save it. The customs of hunting and the former abundance of game are responsible in large measure for much of the slaughter which most States and the Federal government are trying to prevent by the enactment of laws that year after year are becoming more rigid and inflexible.

The average hunter does not know or realize what is happening to bird and wild animal life, not only in the United States, but throughout the world. The fauna of Africa has ranged an almost measureless region since the beginning of time, seemingly secure in the vast wastes which civilization has not penetrated. That any species of animal in the African jungles

should perish from the earth because of the hunter seems incredible, yet a noted African hunter, Mr. Arthur Jordan, is authority for the statement that the big game of British East Africa, the world's greatest game region, will last about fifteen years. The true Burchell's zebra is now thought to be extinct. The bag limit in this part of Africa gives the hunter permission to engage in what is hardly less than bloodiest butchery. The payment of \$250 for a license allows a hunter to run amuck and kill 300 large hoofed and horned animals, representing 44 species.

The pitiable remnant of game in the United States is being as mercilessly pursued and killed. Nothing that flies or runs escapes. From a newspaper published in Oklahoma is taken this item of "sporting" news, the incident having occurred in 1913: "Local sportsmen got into a large flock of pelicans last week and when the bombardment ceased they had nineteen laid out. The flock was an unusually large one, containing probably a hundred birds." Could anything be more abjectly cruel and wanton?

There are hundreds of men in Oklahoma who hunt regularly and profess to be sportsmen—the kind that would scorn to take other than wing shots—who "practice" by shooting every harmless and inedible bird of unusual size or appearance, leaving the torn and broken bodies of these delightful frequenters of our wild places to rot in the reeds. Herons are prized targets. The fish-hawk, soaring cloudward, rushes to his death when he plunges downward like an arrow to strike his prey. Many a lake in late afternoon is no longer marked by the silvery triangle of the muskrat swimming in search of his evening meal, nor may his reed-covered house be found beside the water. Even this harmless and interesting creature has paid the penalty that befalls

the weak and helpless things of nature when man goes marauding with a gun. Harmless and beneficial hawks and owls are eagerly killed. Truly, the homes of wild life are becoming as "a forest without leaves" or a brook without water.

What should be the motive and conduct of a self-respecting, patriotic man who goes hunting? Here is Dr. Hornaday's answer: "A sportsman is a man who loves Nature, and who in the enjoyment of the outdoor life and exploration takes a reasonable toll of Nature's wild animals, but not for commercial profit, and only so long as his hunting does not promote the extermination of species." The Boone and Crockett Club has this article in its constitution: "The use of steel traps, the making of large bags, the killing of game while swimming in water, or helpless in deep snow, and the unnecessary killing of females or young of any species of ruminant, shall be deemed offenses. Any member who shall commit such offenses may be suspended, or expelled from the Club by unanimous vote of the Executive Committee." The Camp-Fire Club of America gives expression to this fine ideal in its code of ethics: "A game-butcher or a market-hunter is an undesirable citizen, and should be treated as such. The highest purpose which the killing of wild game and game fishes can hereafter be made to serve is in furnishing objects to overworked men for tramping and camping trips in the wilds; and the value of wild game as human food should no longer be regarded as an important factor in its pursuit. If rightly conserved, wild game constitutes a valuable asset to any country which possesses it; and it is good statesmanship to protect it. An ideal hunting trip consists of a good comrade, fine country, and a *very few* trophies per hunter. In an ideal hunting trip, the death of the game is only an

incident; and by no means is it really necessary to a successful outing. *The best hunter is the man who finds the most game, kills the least, and leaves behind him no wounded animals.* The killing of an animal means the end of its most interesting period. When the country is fine, pursuit is more interesting than possession. The killing of a female hoofed animal, save for special preservation, is to be regarded as incompatible with the highest sportsmanship; and it should everywhere be prohibited by stringent laws. A particularly fine photograph of a large wild animal in its haunts is entitled to more credit than the dead trophy of a similar animal. An animal that has been photographed should never be killed, unless previously wounded in the chase."

The Shikar Club of London, composed of many of the world's noted hunters, discusses sportsmanship in these words: "It is not squandered bullets and swollen bags which appeal to us. The test is rather in a love of forest, mountains and deserts; in acquired knowledge of the habits of animals; in the strenuous pursuit of a wary and dangerous quarry; in the instinct for a well-devised approach to a fair shooting distance; and in the patient retrieve of a wounded animal."

Rather strong medicine for the stomachs of those hunters who range the fields and streams with automatic "machinery," and abandon themselves to the gluttony of trying to kill or maim every wild bird or wild animal that cannot hide itself.

The ethics of real sportsmanship as well as the economic necessity of taking every precaution that will shield game from heartless slaughter forbids that there should be dodging of the question as to the use of proper guns and the proper use of guns in hunting. The deadliness of the 5-shot automatic is 100 per cent. as against

fifty per cent. for the double-barrel breech-loader. Notwithstanding the rapid decrease in game birds and game animals during the last twenty-five or thirty years, manufacturers have worked constantly to increase the killing power of weapons. Their most perfect achievement has been the automatic which may be fired five times in four seconds. Practically every hunter in Oklahoma who can raise the money buys an automatic. There are owners of automatics in Oklahoma who go afield apologetically and with a conscience that stings, yet they are unwilling to lay aside this most destructive of weapons, saying that if the "other fellow" may use them there is no sufficient reason why



A Fine Buck

they should not enjoy the same advantage. It should be possible to prohibit by legislation the hunting of game with automatics. Their manufacturers, however, are thoroughly organized for offensive and defensive purposes, which is rarely true of the friends of wild life, and usually are powerful enough to defeat any bill that might be injurious to their business. Any observing man who has frequented the lobbies of a legislature when such bills were pending knows how the trick is turned. Nor should it be said that the methods are corrupt—influence is what counts, and there are many ways of controlling influence.

A model law to prohibit the use of automatic and repeating shotguns in hunting has been drawn in these words:

"It shall be unlawful to use in hunting or shooting birds or animals of any kind, any automatic or repeating shot-gun or pump-gun, or any shot-gun holding more than two cartridges at one time, or that may be fired more than twice without removal from the shoulder for reloading. Violation of any provision of this act shall be punished by a fine of not less than twenty-five nor more than one hundred dollars for each offense; and the carrying, or possession in the woods, or in any field, or upon any water of any gun or other weapon the use of which is prohibited, as aforesaid, shall be prima facie evidence of the violation of this act."

The use of automatic guns is barred in Pennsylvania, New Jersey, Saskatchewan, New Brunswick, British Columbia, Ontario, Manitoba, Alberta, and Prince Edward Island. The automatic has been condemned by these organizations, composed of the finest type of sportsmen in the world: New York Zoological Society, The Camp-Fire Club of America, Boone and Crockett Club, New York State Fish, Game and Forest League, New York Association for the Protection of Fish and Game, Lewis and Clark Club, League of American Sportsmen, and Wild Life Protective Association.

The time is not far distant when the hunter who has learned to love nature and its wild creatures, rejoicing in their life more than in their death, will go to the woods equipped with a camera instead of a rifle or a shotgun. He will find the spirit of adventure keen, and his triumphs as worthy. Best of all, his prowess will have visible and durable form, and his photographic prints will give pleasure to thousands to

whom the freedom of outdoors is denied. Real "hunting" with the camera can be as perilous and as strenuous as a man may wish to make it. He can exhaust all his knowledge of woodcraft, consume all his perseverance, and let out his physical exertion to the last notch, and still fail at the final and supreme moment. The camera-hunter becomes the friend and guardian of wild life, the revealer of woodland secrets, and the preserver of beautiful objects and beautiful scenes. In the last ten years many a hunter has laid aside his gun for the camera. May his tribe increase.

The protection of wild life in Oklahoma cannot be secured by following a haphazard course. The method must be direct and positive, until by actual and continued enforcement of the best game laws that can be enacted the people will yield to them the same obedience and respect that they give to laws that protect other forms of property. Incidentally, let it be remembered that our wild life is property—property of the highest value and the most delightful kind. It is imperative that the enforcement of the game laws should be directed by a State game warden and that his assistants should be regularly employed in their work. To relinquish enforcement to county and township officials will bring failure as it has brought failure wherever tried. An officer must be in sympathy with the law he is enforcing as well as bound by his sense of duty to enforce it. This is rarely possible where enforcement is given over to local officers. Many of them may be opposed to the law and others indifferent to their duty. Worst of all is the reluctance of local officers to make arrests that frequently stir up neighborhood strife, strife that finds its way into local politics. Enforcement of game laws is peculiarly susceptible to local sentiment, and if the latter does not firmly demand

obedience to law, local officers are practically powerless, however sincere they may be.

Only centralized authority will make it possible to administer the State's game laws with increasing success; otherwise, everybody's business will be nobody's business. But the arrest and punishment of violators of the game laws is scarcely of more importance than knowledge of how fish and game may best be propagated, and the State Game Warden should be qualified to serve in both capacities.

If protection of wild-life in Oklahoma is to become an established policy of government, the people must speedily realize that funds brought together for this purpose must not be hypothecated and used in the promotion of schemes that are foreign to filling our streams, lakes and ponds with fish, to giving our game and non-game birds a chance to survive man's cruelty and indifference, and to perpetuating as far as possible our disappearing wild animal life. The revenue of this Department is not derived in the slightest way from ad valorem taxation; it imposes no burden upon the owner of property, but comes from the voluntary contributions of those who are willing to pay annually a small amount for the privilege of hunting, and from fines and penalties imposed upon those who violate the fish and game laws of Oklahoma. To divert any portion of this money to other uses is unfair and unjust; an offense against the future generations of boys and girls of this State, and a mistaken and mischievous method of doing what greed and selfishness would not attempt if the rights of taxpayers were involved.

This Department regrets that possession of a license to hunt is too often regarded as authority to kill, rather than to protect and conserve. The purpose of the license system is to save, not to destroy.



In the Kiamitia Mountains

OKLAHOMA is fortunate in having laws for the protection of its birds and wild animal life that are fairly in keeping with the views of the constantly increasing number of American citizens who are learning to be moved as ardently by the esthetic pleasures of



John B. Doolin

outdoors as by the purely economic necessity of saving its resources from its destroyers. There is urgent need of further restrictions, however, for the better protection of certain species."

"For a State so young," writes Dr. Hornaday, "the wild-life laws of Oklahoma are in admirable shape; but it is reasonably certain that there as elsewhere, the game is being killed much faster than it is breeding. The new

commonwealth must arouse, and screw up the brakes much tighter. Oklahoma must stop all spring shooting. The prairie chicken must have a ten-year close season, immediately. Next time, her Legislature will pass the automatic gun bill that failed last year only because the session closed too soon for its consideration. Oklahoma is wise in giving long protection to her quail, and wild pigeon, and such protection should be made equally effective in the case of the dove. She is wise in rigidly enforcing her law against the exportation of game."

The people of Oklahoma declared early that all wild animals and wild birds, resident or migratory, found in this State are the property of the State. This is in the first section of the game law enacted in 1909, and dove-tails with what is known as the McLean law, recently enacted by Congress, for the protection of all migratory birds. Those birds which do not remain permanently within the borders of any State are now within the custody and protection of the Government of the United States, and may not be killed contrary to regulations that are being prepared by the United States Biological Survey. Hereafter, migratory birds of all kinds will be given uniform protection in every State. A conference of representatives of the United States, Canada, and the Republics of the South will be held in Washington in the summer of 1913 to perfect treaties by which birds of passage in all these countries may be protected from indiscriminate slaughter. The passage of the McLean bill was the longest step on the highest ground ever taken for the conservation of wild bird life.

The non-game birds of Oklahoma are given ample protection by law, save that English sparrows, hawks, owls, crows, buzzards, jaybirds and blackbirds may be killed at any season. Mistaken prejudice, due to lack of exact knowledge of the habits of hawks and owls, has left the latter without protection. Mr. C. E. Brewster, Game Law Expert of the United States Bureau of Biological Survey, commenting upon this feature of the Oklahoma game laws, said: "It is generally conceded by scientists who have made a study of this subject that a number of species of hawks are not only not injurious but are a positive benefit to agriculturists, while most of the States where they are found consider the buzzard of real value as a scavenger, and protect him accordingly." This further statement was made by Mr. A. K. Fisher, in charge of economic

investigations for the Biological Survey: "Crops and orchards in many of the States are being seriously damaged by rodents which have unduly increased on account of the slaughter of their natural enemies. Within the boundaries of the United States we have over fifty species of hawks and owls, which, with the exception of a half a dozen species, are the most useful birds to the ranchman and horticulturist. Their food consists almost exclusively of rodents and insects. I would suggest that instead of putting the hawk and the owl on the unprotected list, that you include only the Cooper hawk and the Sharp-shinned hawk and Great Horned Owl. These birds feed exclusively on poultry and wild game."

In Oklahoma the eggs of no bird may be taken or destroyed, except for scientific purposes, and in this case authority may be obtained only from the State Warden.

The educational and protective work in behalf of birds in this State has been promoted in an admirable manner by the Oklahoma State Audubon Society, organized in 1905. Its founder, General J. C. Jamison, of Guthrie, Oklahoma, now well advanced in years, is a fine type of the old-time gentlemen who found leisure in an active career to befriend timid and lovable creatures and to devote a part of each day to the contemplation and enjoyment of the beauties of nature. Though capable of tears at the sight of a wounded songbird, General Jamison has drawn his sword in many a battle and found adventure where men's lives were lightly taken. He was one of the argonauts who crossed the Plains to the gold fields of California in 1849, and later was a captain under General William Walker in Nicaragua.

The Oklahoma State Game and Fish Protective Association, of which Mr. Samuel H. Harris has long

been president, has been vigilant and effective in the protection of game and in its support of better laws for that purpose. To this Association, more than to any other agency, may be attributed Oklahoma's present system of fish and game laws.

A synopsis of the game laws shows that it is unlawful to sell or to expose for sale at any time, or to transport or to have in one's possession with intent to transport from the State of Oklahoma, or to any point within the State, any of the following animals or birds: Deer, antelope, quail, Mexican or blue quail, wild turkey, prairie chicken, snipe, plover, woodcock, sandpiper, tattler, curlew, or other shore bird, duck, goose, brant, crane, swan, Mongolian, Chinese, English ring-neck or other pheasant, grouse, wild pigeon or turtle dove.

It is unlawful to use for killing or capturing any game animal or game or non-game bird, any trap, net, snare, cage, pitfall, baited hook or similar device, or any drug, poison, narcotic or explosive, or similar substance, or any swivel or punt gun, or any other gun of greater caliber than ten-gauge.

It is unlawful to kill or capture or attempt to kill or capture any game animal or bird between one-half hour after sunset and one-half hour before sunrise.

It is unlawful to hunt at any time without license, except that no license is required for hunting on one's own premises. A hunting license may be obtained by any citizen of the State, over fourteen years old, who has resided therein for sixty days, from the State Game and Fish Warden or from one of his bonded Deputy Wardens or from the County Clerk of the county of his residence. Non-residents may obtain a license in the same manner. The license, when its holder is hunting, shall be produced for inspection upon the

demand of any officer or citizen. It is not transferable and cannot be lent or altered. For citizens of Oklahoma, the fee for a license is \$1.25; for citizens of the United States who do not reside in Oklahoma, \$15; for aliens, \$25.

It is unlawful to hunt, capture or kill any game animal or bird except during the open season in which they may be hunted, or to have the same in one's possession, except during the open season or the first ten days thereafter. Hunting on Sunday is prohibited at all times, which has the effect of making Sunday permanently a closed season. This is one of the strongest elements of conservation in the law, as it makes possible the restraint of irresponsible boys and others who go abroad on Sundays for the sole purpose of killing every kind of bird or wild animal within their reach. Song and insectivorous birds are their especial prey. It is unlawful to kill game at any time without a present purpose immediately to gather and use it as food.

It is unlawful to shoot at game on, from or across any public highway or railroad right of way. It is permissible to hunt on one's own premises; on the lands of another when the owner has given his express consent; on unoccupied lands, except where notice of objection is conspicuously posted by the owner or his agent; and on lands of the State not leased or occupied.

The penalty for the violation of any provision of the game laws may be a fine of not less than \$50 nor more than \$100, or by imprisonment in the county jail for not less than ten days nor more than thirty days, or by both such fine and imprisonment. For the use of poison or dynamite in fish streams, lakes or ponds, the fine may be not less than \$100 nor more than \$500, and the imprisonment may be for any period not exceeding one year.

Save in excepted streams, fish may be caught only with hook and line, or with a spear, snare or gig, though small minnows for bait may be taken with a trap or with a seine not more than ten feet in length. Fishing with a net, a trammel net, a seine, a gun or a trap of any kind, or with a net weir or pot, or having any such appliances in one's possession for the purpose of violating the law, are expressly prohibited, as well as the placing or the using of poisons, drugs or explosives. Under no circumstances may bass be taken in any other way than by hook and line. A seine, a trammel net, a gun, a trap of any kind, or a net weir or pot may be lawfully used in these waters: the Arkansas, Cimarron, South Canadian, Muddy Boggy, Clear Boggy, Poteau, Washita, and Kiamitia rivers, the North Fork of Red River, the Salt Fork of the Arkansas, the North Fork of Muddy Boggy, Gaines Creek and Red Rock Creek.

The seasons in which game animals and game birds may be hunted are:

Deer—From November 15 to December 15 of each year, one buck with horns; females and young males without horns may not be taken at any time, nor may deer or antelope be hunted or chased with dogs. There is no open season for deer in the counties of Comanche, Caddo, Kiowa, and Delaware.

Antelope—The antelope has been given the protection of a closed season until November 15, 1914, and at that time the closed season should be made perpetual.

Water Fowl—Goose or brant, ten in one day; swan, one in a season; duck, 25 in a day, 150 in a season; crane, (bag limit omitted, by mistake;) open season, August 15 to May 1.

Shore Birds—Snipe, plover, curlew, or other shore birds, August 15 to May 1; 25 in a day, or 150 in a season.

Upland Birds—Pheasant, no open season until November 1, 1914; passenger pigeon, no open season; quail November 15 to February 1, for all varieties, with a bag limit of 25 in one day, or 150 in one season; wild turkey, November 15 to January 1, and, for one gobbler, March 15 to April 15, with a total bag of three for the two open seasons; prairie chicken, September 1 to November 1, 15 in a day, or 100 in a season; doves, August 15 to May 1, 15 in a day, or 150 in a season.

In time there probably will be no open season in Oklahoma for the killing of doves. Public sentiment, especially in rural communities, is against the hunting of this gentle bird whose melancholy note in the long summer afternoons appeals with tenderness to most persons. From a practical standpoint, however, there seems to be no sufficient reason for distinguishing between the dove and the quail. Because of its frequenting water-holes, the dove is the more easily encountered, yet in the open fields the quail is not a more difficult wing-shot. The tragedy of dove-hunting in Oklahoma is that the open season begins too early and closes too late. Unfledged young may be found in the nests in September, three weeks after the opening of the season.

The quail should be given longer protection, notwithstanding the fact that often two broods are hatched in one season in Oklahoma. The climate and the vegetation are peculiarly adapted to this fine game bird, yet incessant hunting and an occasional unfavorable season quickly diminish its numbers. The passing of the quail is noticeable everywhere in Oklahoma, especially by persons who hunted here when the fields and coverts were literally alive with them. The Oklahoma quail is a thrifty, vigorous bird and quickly responds to protection. There has been no menace of

disease such as has destroyed countless birds in other States and brought numerous requests for Oklahoma birds with which to restock depleted localities. The Oklahoma quail has maintained itself surprisingly well, despite hunting, spring floods and prolonged dry weather. If nature has been harsh on the one hand, yet on the other there has been a measure of compensation. The quail season begins in November. Frost has not cut down the weeds and tall grass nor shorn the trees and thickets of their foliage; the sun still sends



An Oklahoma Bob-cat

its fire down through the dry, thin air, and the hunter finds himself at a disadvantage until the coming of December snows. The vegetation is so r a n k t h a t the quail finds ample cover, but if put up an instant's flight will quickly secure refuge in thickets. The hunter's dog has a sorry time in these first weeks of the season. Like his master, he is soon oppressed by the heat. Again, the vegetation is heavily laden with dust—the time being too early for the fall rains—and the cleverest dog soon finds that his nose has "gone wrong." Later in the year, however, the

odds are against the quail—only the law protects him.

At best, migratory waterfowl are transient in Oklahoma, yet it is apparent that even the slightest understanding of the "square deal" should convince every sportsman that spring hunting should no longer be

permitted. The sport is not genuine. The nipping days of fall and winter have passed, and the moving call of the "red gods" has grown faint in the ears of the hunter who finds joy in breasting the winter storms that fall booming upon his hunting grounds. The ducks and geese are shortly to begin their house-keeping, and if unmolested will bring from their northern home a squawking, splashing progeny, multiplying the hunter's pleasures. In this northward flight, the ducks and geese are without the tenderness and the delicious flavor of fall. There should be no delay by the State Legislature in forbidding spring shooting. Only the selfish hunter and the game-hog would oppose the change.

The State Game Warden is a staunch supporter of the assertion that a hungry hunter may find nothing better in camp about the time the first stars begin shining than a squirrel pot pie made according to the ancient custom of those who roam the big woods. In Oklahoma there may be found the fox, the gray, and the black squirrel; occasionally a snow-white albino, and more frequently a cross between the gray and the fox. The latter is an especially pretty little animal, with delicate markings. Once plentiful throughout the State, squirrels have been so closely hunted that they are rapidly disappearing. They should be given the protection of a closed season from January 1 to July 1.

It may be futile to hope that the wild turkey will survive his enemies. Even in primitive surroundings his fight was not without odds against him. The hen on the nest was the prey of every mink, skunk, bobcat, wolf and coyote in search of food. The young birds were exposed to the same danger. Only remarkable wariness and vitality have enabled this feathered lord of the forest to linger in a land that is but the shadow of what he once knew. It is an irrelevant, yet unique,

fact that the first regular passenger train that ever passed southward over the Santa Fe railroad in Oklahoma ran into a flock of wild turkeys in a "cut" between Guthrie and Oklahoma City and killed six or seven birds before the others could gather wit enough to escape. Only the severest punishment of offenders will lengthen the survival of the wild turkey in Oklahoma. Frequenting the wildest and most rugged sections, the wild turkey may be killed out of season with



A 'Possum

slight danger of detection and arrest. If only the adult birds were killed the offense might have some mitigation; but the hard fact is that regularly each spring fishermen in the Kiamitia country shoot young

turkeys of frying size, often killing a whole flock that in November and December would have offered the finest sport; and merely because they relish fried young turkey. The law should be amended to permit the killing of wild turkeys during only the month of December, with a bag limit of two gobblers or one gobbler and one hen in a season.

Oklahoma's white-tailed deer will multiply and sustain themselves if given protection. Unlike the prairie chicken and the antelope, the white-tailed deer easily adapts itself to civilization, and may be raised in captivity at a commercial profit. This has been done on tracts of rough, timbered land ranging from 100 to 1,000 acres in size. In fall and winter all adult

white-tailed bucks are dangerous to man, and this fact makes it necessary for the breeder to exercise the utmost caution in handling them. No "pets" should be made and at this season the bucks should never be approached at close range. A competent writer gives this advice: "Bucks in the rutting season seem to go crazy

* * * The method of attack is to an unarmed man almost irresistible. The animal lowers his head, stiffens his neck and with terrible force drives straight forward for your stomach and bowels. Usually there are eight sharp spears of bone to impale you. The best defense of an unarmed man is to seize the left antler with the left hand, and with the right hand push the deer's right foot from under him. Merely holding to the horns makes great sport for the deer. He loves that unequal combat. The great desideratum is to put his forelegs out of commission, and get him down on his knees. Does are sometimes dangerous, and inflict serious damage by rising on their hind feet and viciously striking with their sharp front hoofs."

The last stand of Oklahoma deer will be in the Kiamitia Mountain region, where there are large areas of broken country not adapted to agriculture, and which will long be thinly settled. The second growth of pine that is to follow the removal of the virgin pine forests, now under way, will provide excellent cover, not only for deer, but for wild turkeys. To insure the survival of these two fine specimens of game until that condition has arrived, it would be best to give them a closed season every other year.

This Department has made continuous effort to give the different varieties of pheasant a local habitat in this State, and for that purpose has distributed thousands of eggs and a considerable number of adult males and females among farmers and sportsmen who were

willing to attempt their breeding. The experiment has met with doubtful success. The eggs were surprisingly fertile and the hatchings large. Persons acquainted with the peculiarities of the pheasant were able to raise many of the young to maturity in inclosures; the pheasant chick is susceptible to so many ills, however, that few persons are qualified to carry them through their infancy, with the result that most of the young birds in Oklahoma soon died. Both adult pheasant and Hungarian partridges have been released on open ranges during the last four or five years. If a single one has survived, there is no record of the fact. It is possible that a carefully conducted experiment might stock the Kiamitia region with pheasants. The effort undoubtedly would be worth while, but this Department has not deemed it wise to make the necessary expenditures, so long as there was opportunity to conserve native game birds and animals. If the latter cannot be saved, it would seem useless to experiment with non-natives that are without the natural advantages of acclimatization.

The passing of the antelope in Oklahoma has been almost with the speed of this swift, graceful creature. It seems scarcely the length of a summer or a winter since their bands dotted the prairies, to turn suddenly and dash away at the approach of horsemen. But the "white flag" of the antelope is seen no more, and grazing Herefords and waving wheat possess their old dominion. It is perhaps useless and hopeless to expect the antelope to survive in a settled country. It was possible as late as 1900 to see them from passing railroad trains in the Kiowa and Comanche country.

A small band of antelope is still living on its old range in one of the western counties where there is yet more or less freedom for wild creatures. About four years ago three adults were reported to be in this

band. Then, later, came news of three adults and a fawn. In the fall of 1912 this band was said to have grown to seven. They enjoy the jealous and vigilant protection of the homesteaders in the locality where they range, and any man foolish enough to attempt to shoot one of them would have to settle with the farmers first and then with the courts. There may be a few antelope in Cimarron county.

The genuine prairie chicken in Oklahoma, known scientifically as Prairie Hen, *Tympanuchus americana*, is almost extinct, according to Professor Stevens. Specimens are found occasionally in northwestern Oklahoma. The *Tympanuchus americana* is a larger and more beautifully feathered bird than the Lesser Prairie Hen, *Tympanuchus pallidicinctus*, now the more numerous.

The preservation of the prairie chicken in Oklahoma is a forlorn prospect. It is probably true that this admirable game bird cannot adapt itself to civilized surroundings, and will vanish like the buffalo and the antelope. It seems as if only yesterday the prairies of Oklahoma—from Arkansas to the Texas Panhandle—were resounding to the cackle of the hosts of prairie chickens that invaded the very dooryard of the settler. But they have disappeared as if by magic. There is a flock or two in the Osage country, and an occasional straggler in the Cherokee country. In extreme western Oklahoma, however, the prairie chicken (Lesser Prairie Hen) affords fairly good hunting in season. They may be found in varying numbers from the North Fork of Red River northward to the Kansas line, in a strip about forty miles wide, bordering the Texas Panhandle. They are most numerous in Ellis and Woodward counties. Across the line, in Texas, they are more plentiful than they have been in several years.

The prairie chicken should be given the advantage of a long closed season, say four or five years, as an experiment to determine whether or not it is possible for this bird to increase in numbers, or even survive in a settled country. The time will soon pass in Oklahoma when such a test can be made. The prairie



"Chuck" Outfit on the Plains

chicken has become too rare for the open season to begin in either August or September. The young birds are at the mercy of the man with the automatic, and they are ruthlessly slaughtered, despite the bag limit. At this late day, the privilege of killing two old birds, when the latter are wild and much strategy is required to approach them, should satisfy any hunter other than a game-hog.

It is unfortunate that the hunting of the prairie chicken is heaviest when the days are still hot. Their range is remote from railroads and transportation, and without ice it is impossible to preserve the game. Yet hunters who call themselves sportsmen stuff their bags with birds that next day become tainted and are thrown away, a shameful and a shameless waste.

It is imperative that authority should be given for the establishment of a State fish hatchery if there is to be any progress in that direction. Such hatcheries have been made successful in other States; the expense of their maintenance is comparatively small, and the benefits to be enjoyed are large, measured by dollars and cents, without counting the higher value that may not be even approximated. The sportsmen of Oklahoma have demonstrated that they are willing to provide sufficient funds for this purpose, and without imposing the slightest burden upon the taxpayers.

Since the adoption of the license system, January 9, 1909, the total receipts of this Department, to May 1, 1912, were \$203,412.70. During the incumbency of the present Warden, from January 31, 1911, to May 1, 1912, the receipts were \$73,987.40, and the total expenditures for all purposes, including the propagation of game birds, \$34,339.24.

THE END.

