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EDWARD WILLIAM NELSON—NATURALIST,[1]

1855–1934.

BY EDWARD A. GOLDMAN.

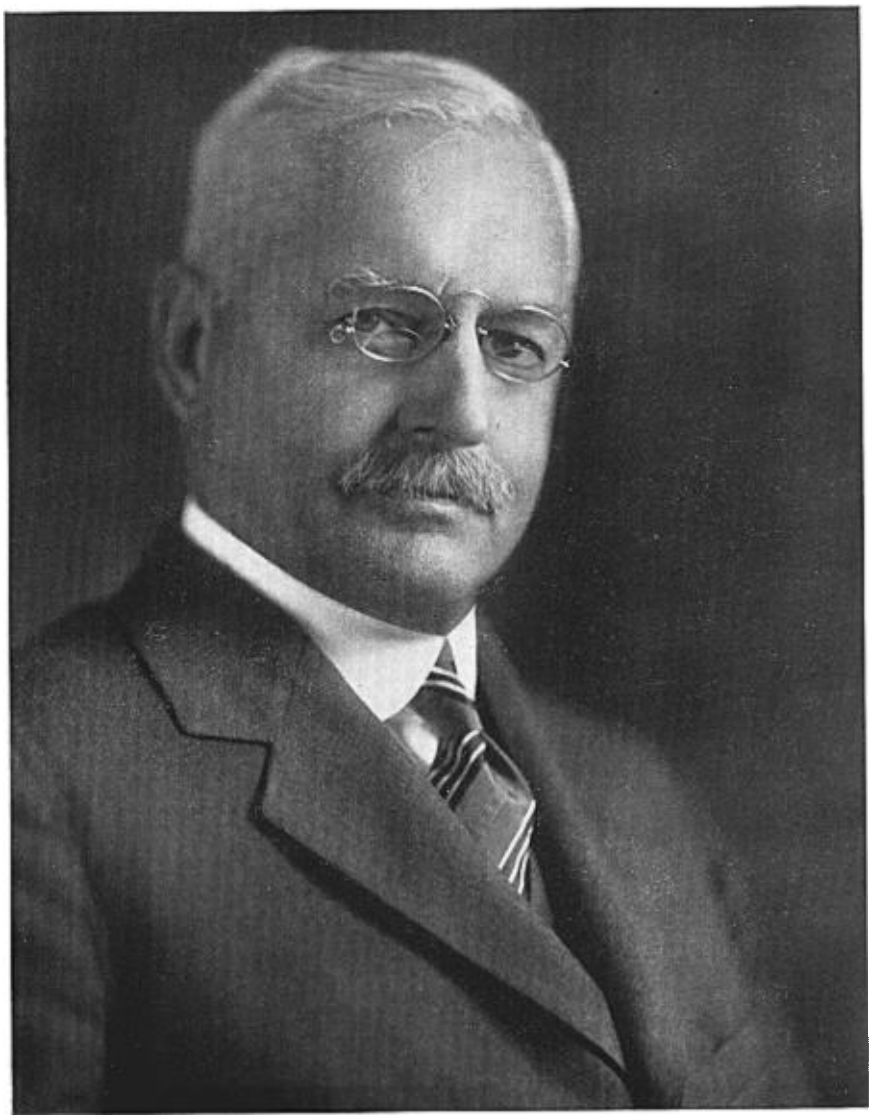
Plate VII.

EDWARD WILLIAM NELSON was an outstanding member of a distinguished pioneer group, one who lived to link the past with the present—a man who was not merely a specialist in ornithology or mammalogy, or completely classifiable as a zoologist, a botanist, or even as a biologist, but one who essentially combined all these branches—a naturalist in the widest sense. Living things and natural phenomena of all kinds held for him an absorbing interest that never flagged.

Endowed with a restless energy that scarcely permitted him to pause short of exhaustion, his greatest satisfaction was in achievement. Unfortunately, through failing health early in life, he became a victim of his own driving force. Through sheer determination, however, he was largely able to force physical handicaps into the background, until near the end, which came rather suddenly in his 80th year; and even then he was planning further work with the same enthusiasm and optimism as of old. Such qualities of mind, combined with unusual opportunities, made for an incomparably richer life in many directions, than falls to the lot of most men.

A Fellow and Past President of the American Ornithologists' Union, Nelson was perhaps most widely known as an ornithologist, but was scarcely less noted for his field and published work on mammals and as a wild-life administrator. He also served as President of both the American Society of Mammalogists and the Biological Society of Washington. His scientific explorations during more than 20 years embraced a life of adventure in many regions, from the far North to Central America, and included ascents of the highest mountains of the continent south of Alaska. His very large

[1] Read at the Fifty-second Stated Meeting of the American Ornithologists' Union, Chicago, October 23, 1934.



E. W. Nelson

collections of birds and mammals, and his notable accumulations of specimens of fishes, reptiles, amphibians, insects, and plants, attest the wide range of his interest in natural history. From these collections, gathered for the most part in almost unknown territory, he and others described new genera and hundreds of species and subspecies new to science. He was also the author of monographs and many articles dealing with wild-life conservation.

Nelson was a man of strong convictions, with a somewhat brusque manner, and a simple directness sometimes disconcerting to his associates, and not always pleasing to others on short acquaintance. As a result of this unfortunate mannerism comparatively few really came to know him well, but those who did, became deeply appreciative of his essential kindliness, his peculiar genius, and the sterling qualities of his mind and heart. Enduring friendships were the natural result.

In appraisal of one of Nelson's books, 'Wild Animals of North America,' Theodore Roosevelt wrote that the author was "one of the keenest naturalists we have ever had and a man of singularly balanced development." Strongly imbued with an innate love of wild-life, he labored for its development and utilization as a great national resource.

Among Nelson's salient characteristics were tremendous energy, curbed only by ill health, which, however, was largely counteracted by a cheerful optimism; marvelous courage; and a tenacity and determination that carried him past death's door many times. In his passing we have lost one whose dynamic personality and record of achievement should always be an inspiration to other workers in Nature's laboratory.

Edward William Nelson was born in the small village of Amoskeag, near the Merrimac River, a short distance north of Manchester, New Hampshire, May 8, 1855. He was the eldest son of William and Nancy Martha (née Wells) Nelson. His parents were both of old English stock that came to New England before the Revolution.

He led the life of a normal boy, but was always interested in the out-of-doors. In unpublished reminiscences he recorded his earliest recollection as a vivid mental picture of sweeping green meadows leading down from his home to the bank of the river. Later the family, which included his parents and a younger brother, moved to Manchester. The greatest adventures of those days were on the occasions when a small boy friend produced a long bamboo pole with line and hook and a can of squirming fish worms. With an eager group of half a dozen other youngsters he would hurry to the bank of a reservoir to fish for the diminutive "bull pouts" inhabiting its placid waters. After much wrangling on the first trip the fishing was organized and the owner of the pole held it until he had a "bite." Then, regardless of whether any fish came out with the frenzied jerk that

threw the hook high in the air, the pole was surrendered to the next boy and so on around, each being given his opportunity. The privilege of re-baiting the hook with one of the worms was also given in rotation. The indescribable joyous excitement of those hours lingered in his memory and was quite out of proportion to the little victims captured.

Then came the beginning of the Civil War, and his father, swept away on the high tide of patriotic enthusiasm, departed with many others as a private in a local regiment. A year later, the desire of his mother to do her part in the War became so strong that Edward, then seven years of age, and his younger brother Fred were taken to live with her parents on a little farm in the northern Adirondacks, in Franklin County, New York. Leaving the boys with their devoted grandparents Mrs. Nelson went to a hospital in Baltimore, where she helped mend many shattered wrecks sent in from the battlefields.

Meanwhile the boys, with the usual adaptability of children, had fitted easily into the primitive life then current on the small, rock-studded farms of the region. In Edward's own words "We found ourselves transferred from the narrow confines of city streets to a delightful new world full of cattle, sheep, horses, and other living things, and surrounded on all sides by wide landscapes of field and forest, reaching to mysterious horizons that appeared limitless in extent." As the years passed he began to take part in the general work about the place. After the timber was removed came the hard task of gathering the granite boulders and smaller stones that glacial times had sowed too plentifully in and on the soil. The removal of the stones was a laborious process, and he says: "When I was about twelve years old it became one of my tasks to help in this, and many nights saw the tips of my fingers raw and oozing blood from the abrasion of the rough surfaces of stones that had to be pulled from their beds in the surface of the soil. Nothing was thought of this as it was one of the ordinary incidents to be expected in forcing these reluctant acres to provide for human needs." On this rocky New York farm he undoubtedly received training in hardihood of great value in preparation for the life he was to lead in after years. His recollections, however, were not of hardships but of incidents of particular interest.

It was about this time that young Nelson began to feel the impulses that started him on his long career as a naturalist. Fortunately, we have his own reminiscent portrayal of the setting: "I can never forget my first 'blueberrying' party. It was my first excursion into a great wilderness and gave me my first taste of camp life. The long drive took us through miles of beautiful, untouched forest of mixed hardwoods and conifers among which the majestic white pines in all their glory were dominant. Since those days the lumberman's axe has swept those beautiful conifers almost

clean except for a few poor individuals, unfit for lumber, and a host of young growth that is now coming forward.

"During our first day we entered a low, mountainous, upland country where we crossed many small streams, and had glimpses of beautiful, small lakes, embowered to the water's edge in the forest that clothes all the varying contours of the landscape. As evening approached we arrived on the uninhabited shores of Loon Lake, now a great summer resort famous for its picturesque beauty. All day I had been in an enchanting new world to which every fiber of my being responded. The exquisite beauty of the lake as the sun went down and night crept over the forest was beyond expression, and the wild, loud call of the Loon cleaving the twilight silence seemed to voice the spirit of this remote place.

"The next morning we moved on and passed the group of log buildings that made Paul Smith's primitive hunting camp, of which no trace can be found in the present-day elaborate resort. That afternoon we were on the open, treeless barrens where blueberry and other low bushes covered much of the ground, with scattered patches of poplars and other small trees here and there. Our party promptly erected a lean-to, covered on the back and sides with the tops of young poplars growing abundantly in a patch nearby. Beneath this shelter a springy couch of the same material was covered with our blankets and made a delightful resting place. No other tree in the north makes such a beautiful camp of this kind, the clean pale bark and the lovely mass of gracefully shaped leaves form a most attractive picture. That night I was thrilled with joy to hear the patter of raindrops on the leafy roof overhead as passing showers moved across the barrens.

"This first contact with the wilderness still remains among my most inspiring memories. I have always believed that my response to the wild surroundings on this little journey awakened in me a subconscious mental urge that in later years developed into a hunger to visit wild, unspoiled places both near and far."

For six or seven years Edward attended school in a one-room building at the cross-roads near his Adirondack home. His chief recollections of those early school days were of the incompetent teachers, despite whose shortcomings he learned to read, write, do simple arithmetic, and to know a little geography.

His father was killed at the end of the War and his mother opened a small dressmaking establishment in Chicago. Endowed with a pleasing personality, energy, and an artistic appreciation of color values, she soon became very successful. In the fall of 1868, when Nelson was thirteen years old he entered a public school on the "North Side." At that time Chicago was like a great sprawling country town, mainly of detached wooden buildings. There were rows of fine shade trees, small vegetable

gardens, and many flowers. Owing to its conspicuous greenery, Chicago was then called the "Garden City," in marked contrast with more modern appellations. The broad sandy shore of Lake Michigan lay only a few blocks from the boy's home and became one of his favorite haunts.

From the fall of 1868 to early 1871 Nelson often accompanied boy friends who possessed shot guns on Saturday hunting trips into areas now well within the city. Game-law enforcement was lax and he confessed that, in response to a keen hunting instinct, he and his companions killed everything wearing feathers above the size of Warblers. Among their victims were Bluebirds, Robins, Brown Thrashers, Flickers and other Woodpeckers, Nighthawks, Rose-breasted Grosbeaks, Scarlet Tanagers, and others. He thus developed an interest in birds, however, which became more definite when in 1870 he made the acquaintance of Robert P. Clarke, a school companion who had a collection of about twenty-five mounted specimens, and small editions of Nuttall's and Wilson's books on birds. These were the first bird books he had ever seen, and they gave a strong impetus to his desire to learn more about the creatures he had found so fascinating. He lost touch with Clarke, but always held him in high regard as being responsible for his making a beginning as a serious student of birds.

At that time he had an intense desire to learn how to skin and prepare birds for a collection. He tried to skin a Screech Owl, but at the end of about two hours it was such a featherless object that he gave up any further attempts until he could find a teacher.

One day in the spring of 1871 he was attracted by the varied forms and colors of beetles that had fallen into the lake, the dead bodies of which, cast up by the waves, formed a dark line along the shore. With his characteristic interest in all forms of life he began to pick up one of each kind. An entomological collector, a Mr. Mead, of New York, happened to be working along the beach and stopped for a friendly talk. Before parting he gave the boy a small supply of insect pins and showed him how to use them. Young Nelson was delighted with the new subject of interest and during the next few months hundreds of beetles and other insects were pinned in orderly array in his boxes. Mr. Mead was to identify them, and the boy appeared to be on the way to become an entomologist. Fate, however, ordained otherwise.

The night of October 9, 1871, the boy, with his mother and brother were made homeless by the great Chicago Fire. With a few belongings, including his precious insect boxes, which he had tied together and carried in one hand, they were forced to leave the house hurriedly. Moving with a broad stream of refugees, he placed his package of boxes on the ground, only for a moment unguarded, but long enough for it to be stolen. This mishap cut short his development as an entomologist.

Nelson's mother had lost nearly everything in the fire, but a temporary home was found and with great courage and energy she soon managed to reëstablish her business. Learning of the boy's intense desire for a shot-gun a friend presented him with his first one, a muzzle loader, and his major interest turned again to birds.

About this time Nelson came to know Charles H. Holden, a young amateur ornithologist, who, with the assistance of Charles E. Aiken, had built up a collection of several hundred mounted birds. Aiken had moved to Colorado, where many years later Nelson was to meet him. At Nelson's urgent request, and for a monetary reward of ten dollars, Holden taught him to skin and, after a fashion, to mount birds. Holden married and became a Chicago business man, but his pupil immediately launched on his long and active career as an ornithologist.

In the spring of 1872 Nelson entered the Cook County Normal School, and regularly spent his Saturdays and holidays in the collection and study of birds. One day he shot some Wilson's Phalaropes in a marshy area on the prairie a short distance from Englewood. The weather was extremely warm and the birds began to decay before they could be skinned. Working to save them in a closed room he contracted a curious form of blood poisoning. The doctor thought his best chance of recovery lay in spending several months in the dry, elevated region of the Rocky Mountains. By an odd coincidence Samuel Garman, afterwards well known as an ichthyologist and herpetologist in the Museum of Comparative Zoölogy, Cambridge, Massachusetts, was on his way west to join Professor E. D. Cope for a field trip in search of fossils in the Badlands of Wyoming. The principal of the Normal School, W. W. Wentworth, had arranged for his son Will to accompany Garman, and Nelson was included in the party. The boys were each to pay their own way and were to profit by their association with the scientists.

The party joined Professor Cope at Fort Bridger, and Nelson began the varied field experiences that were to take him, during his maturer years, to many remote parts of the continent. He found Professor Cope friendly, possibly due in part to the fact that he exhibited a keen interest in assisting the latter in the collection of fossils. Cope was especially pleased one day when Nelson brought, in fragments, the carapaces of two extinct species of turtles, sketches and descriptions of which were promptly forwarded for publication.

Nelson's major interest, however, was in the new and strange birds of the region, and he regretted very much having left his gun behind. Professor Cope, who was interested in many branches of science, loaned him a cane gun that fired a percussion cap. He told Nelson that he had begun his scientific career as a bird student, and that he used this little gun in

collecting specimens in West Virginia. It proved to be a somewhat temperamental weapon, when fired, with a vicious recoil apt to result in a bloody nose. But with it a small collection of birds was accumulated.

Owing to some disagreement between Cope and Garman the latter announced that he would leave at once and go on to Salt Lake. Young Wentworth had left home in company with Garman and felt impelled to continue with him. Professor Cope urged Nelson to remain with him, making various offers of assistance in his future career as a naturalist, but Nelson felt bound to go with his friend. From Fort Bridger they proceeded to Salt Lake Valley, where they found a stopping place with a Mr. Sessions, one of the Mormon pioneers, and remained there from July 27 to August 8, 1872. The place known at that time as "Sessions Settlement" was on the highway from Salt Lake City to Ogden. Obtaining a second-hand shot gun, Nelson continued the collection of birds. While there he visited the shore of Great Salt Lake, where great numbers of White Pelicans, Gulls, Avocets, and other birds new to him, presented a very wonderful sight to his inexperienced eyes. From Salt Lake Valley the party proceeded to Elko, Nevada. Here a few days were spent by Nelson in collecting birds along the Humboldt River; and near here for the first time he witnessed birds congregating at the watering places, so characteristic of such locations in the desert. Hundreds of Mourning Doves came in from all directions and joined with the other birds of the surrounding sage-brush, forming a most animated scene. About August 15 the party proceeded westward to Nevada City, California, where an uncle of young Wentworth had a ranch. Here Nelson and his friend Wentworth remained for some time while Garman continued to San Francisco. The Wentworth ranch among the oaks near the lower border of the yellow-pine and sugar-pine belt gave excellent opportunities to study the birds of the middle slopes of the Sierra Nevada. There Nelson became acquainted with the acorn-storing habits of the California Woodpecker and the California Jay, and among other birds he found noteworthy was the White-headed Woodpecker. While his interest was at this time centered in birds, his attention was attracted by the rock squirrels (*Citellus beecheyi*), which abounded on the hillsides, and the large gray pine squirrel (*Sciurus griseus*). He also learned of the abundance of tree foxes (now *Urocyon californicus*), as they were called, owing to their habit of taking refuge in trees when hunted with dogs. But he had not yet begun the collection of mammals, which were to become one of his major interests later in life, and thus the gray fox remained unknown to science for many years.

In December Nelson and Wentworth made a short visit to an uncle of the latter in Oakland, where Nelson had an opportunity to see the bird life on the marshes about the eastern shore of San Francisco Bay and at Lake

Merritt. Oakland was at that time a small suburban place, and Lake Merritt was virtually in the country. In passing through the marshy sections and wheat fields of the Sacramento Valley he was thrilled by the sight of what appeared to be millions of Snow, White-fronted and Canada Geese.

Early in January of the next year (1873), Nelson returned to Chicago and resumed his studies at the Cook County Normal School. The collections made during his western trip were purchased, and formed the beginning of the Normal School Museum. Professor W. W. Wentworth, the Principal of the School, encouraged Nelson's interest in natural history and he continued to devote most of his spare time to collecting and studying birds. At the suggestion of Professor Garman, Nelson wrote to Dr. J. A. Allen, then of the Museum of Comparative Zoölogy, and the correspondence was the beginning of a life-long friendship between the two men, both of whom for many years were to enrich the sciences of ornithology and mammalogy. Allen identified many of his birds and named the first new species taken by him *Ammodramus nelsoni*. The specimens of this Sparrow were taken in the marshes bordering the Calumet River in what is now South Chicago.

During this period Nelson accumulated the information that appeared in some of his earliest papers. One of these, 'Additions to the Avifauna of Illinois,' was published in the 'Bulletin of the Nuttall Ornithological Club' in July, 1876, when he was 21 years of age. This was followed by his 'Birds of Northeastern Illinois,' which appeared in the 'Bulletin of the Essex Institute' in April, 1877.

While walking along the lake shore one day in the summer of 1874 Nelson met Dr. Stephen A. Forbes, of the State University Museum, Urbana, Illinois. Forbes was collecting fishes, and he and Dr. David Starr Jordan for a time succeeded in interesting Nelson in these aquatic creatures. As a result of this digression he published a partial list of the fishes of Illinois and described several new species.

Birds, however, were not long neglected. After graduation from the Normal School, Nelson was joined by a youth of his own age, Fred T. Jencks, of Providence, Rhode Island, and they spent most of the summer of 1875 on collecting trips. As a result of correspondence with Robert Ridgway, they visited Mount Carmel, Ridgway's birthplace, where the boys were hospitably received by his parents and spent more than a month exploring the wonderfully wooded bottom lands along the Wabash River.

In the autumn of 1875 Nelson attempted to obtain a position as a school teacher. While awaiting the results of various applications he entered Northwestern University at the opening of the fall term. Before the expiration of the term, however, he accepted a position as teacher of a

school at Dalton, on the Calumet River, south of Chicago. While teaching, his spare time was devoted to collecting and studying birds. He drew no inspiration from his experience as a teacher, however, and at the end of the school year decided to seek an opportunity to do field work as a naturalist.

In the fall of 1876, Henry W. Henshaw, with whom he had been corresponding, stopped over in Chicago on his way to Washington from a field trip on one of the Wheeler expeditions. Henshaw's visit, and the encouragement he gave, intensified Nelson's desire to become a field naturalist. Henshaw suggested that he go to Washington, and offered to try to enlist the interest of Spencer F. Baird, Assistant Secretary of the Smithsonian Institution, in his behalf. Accordingly, in December he went to Washington, where he met Professor Baird and found him most friendly and sympathetic. Though he could offer no immediate employment, Baird expressed the hope that there might be an opportunity for him to go into the field in the near future. He also met Robert Ridgway, whom he found a delightful companion, and these two immediately became life-long friends.

To improve his time while waiting for an opening, he entered Johns Hopkins University, Baltimore, for a special course in biology under Professor W. K. Brooks. In March he learned of an opportunity to go to Alaska. Professor Baird informed him that L. M. Turner, who for nearly five years had been weather observer in the Signal Corps of the U. S. Army, was to return at the end of his period of enlistment. Turner had been able, in spare time, to make natural history collections, and Baird offered to recommend Nelson to Gen. W. B. Hazen, Chief of the Signal Corps, for the post. It would require enlistment as a private in the Corps, but so eager was he to get into the field in some remote region that he readily agreed. Accordingly he was enlisted and ordered to Fort Myer, Virginia, for training. There for a month he received instructions in reading instruments and recording weather observations. When he first arrived his status was that of an ordinary recruit, and besides the regular drill he was required to do guard duty and other routine work. On his first Sunday he was detailed as one of the kitchen police. While busily engaged in the latter duty he was surprised to see Henshaw, Ridgway, and another friend walk in. Their amusement was unbounded as they congratulated him, effusively, on the high position he had attained. But Nelson lacked enthusiasm for the school of the soldier and was soon excused from military duty.

On April 25, 1877, Nelson sailed from San Francisco on the Alaska Commercial Company's steamer *St. Paul.* As the ship passed out of the Golden Gate he looked forward with eager and romantic anticipation to the mysterious land in the far North. He had a stormy voyage to the Aleutian Islands, but saw many sea birds, including the Albatross, and other marine life of great interest to him. At Unalaska there was delay of

several weeks and he was transferred to a schooner. Meanwhile he took advantage of an opportunity to visit Sanak Island on a small vessel carrying Alieut hunters to the island, which was a favorite hunting ground for sea-otter. This trip narrowly missed ending in shipwreck. Arriving at St. Michael, Alaska, on June 17, 1877, he remained there until the end of June, 1881, except for excursions to various parts of the surrounding country, mainly with dog sledges, in winter. Always keenly observant of everything about him, Nelson became interested in the life and customs of the Eskimos, and it was mainly during these winter journeys that he collected ethnological data unsurpassed in richness and variety, which he embodied in his published work, 'The Eskimo about Bering Strait.'

At the close of June, 1881, the revenue steamer *Corwin*, under the command of Captain C. L. Hooper, called at St. Michael on her way north in search of the missing arctic exploring ship *Jeannette*. By special arrangement Nelson was taken on board as naturalist of the expedition. The coast of Siberia was skirted from Plover Bay to North Cape, and a stranded party was rescued. The captain had been instructed to land Nelson on St. Lawrence Island in order that he might investigate the depopulation of the native villages by disease and famine during the two preceding winters. Much data and a valuable series of ethnological specimens were obtained there. During the remainder of the season he visited all the Arctic coast of Alaska from Bering Strait to Point Barrow, including Kotzebue Sound. The expedition was the first to scale the cliffs of Herald Island, and the first to reach the ice-bound shores of Wrangell Island, so long discussed by geographers as a probable southern extension of an Arctic continent. Nelson returned to San Francisco on the *Corwin* at the end of October.

While for the time spent in the North, Nelson's ethnological work alone would have been a notable contribution to science, his activities covered a wide range, as attested by his reports on the natural history collections he made, published as No. 3 of the 'Arctic Series of Publications,' issued in connection with the Signal Service, U. S. Army, in 1887. The reports, prepared in collaboration with others, covered birds, mammals, fishes, and diurnal Lepidoptera.

The years spent in the far North were crowded with novel experiences, and Nelson always regarded them as among the most interesting of his long life. He experienced almost incredible hardships, and several times narrowly escaped losing his life. His life in Alaska marked a period when he was approaching his full intellectual powers, with robust health and boundless energy.

Too closely following an attack of pneumonia, however, on returning to Washington he applied himself with characteristic zeal to the preparation

of his report on the birds of Alaska. The sudden change to a sedentary life and long hours of close application in the climate of Washington, together with his impaired condition, gave the great white plague its opportunity. When the report was nearly finished pulmonary tuberculosis developed so rapidly that he was not expected to live. His mother took him to the White Mountains, Arizona, where at that time Apache Indian raids were still a hazard. They lived in a tent, and Nelson always attributed his final recovery to his mother's devotion and the curative skill she acquired as a Civil War nurse. But recovery was an exceedingly slow process and required years of extreme care. With slowly returning strength he began to walk a few steps and would shoot and prepare one or two bird specimens each day. Then he began to ride a horse short distances into the forest. Mule deer were numerous, but at first he was too weak to hold his rifle steadily. On a gentle horse he would raise the weapon to his shoulder, with considerable effort, and fire it in the direction of the deer without sighting. Most of the deer escaped, but occasionally one was killed. Meanwhile he and his brother had located homesteads in Milligan Valley in the White Mountains, northeast of Springerville, Arizona, where they established a cattle ranch. Eventually he was pronounced by physicians entirely free from tuberculosis, but due perhaps to overtaxing restricted lung space he later developed a functional heart ailment from which at times he suffered stoically for the remainder of his life. During this period he served a term as County Clerk of Apache County, Arizona. Owing to very limited financial resources, as well as uncertain health, his natural history studies were, for a time, much restricted in scope.

By 1890, however, he had recovered sufficiently to engage in general field work and received an appointment as Special Field Agent on the Death Valley Expedition under Dr. C. Hart Merriam, Chief of the Division of Ornithology and Mammalogy, U. S. Department of Agriculture. On this expedition the emphasis was on mammals, but birds, reptiles, amphibians, and plants also were collected. Nelson joined Vernon Bailey and began work at Keeler, California, on November 29, 1890. This was the beginning of the service that was to extend through the final stages of his career. Other members of the expedition with whom he became associated were Dr. A. K. Fisher, Dr. T. S. Palmer, Frank Stephens, B. H. Dutcher, Dr. Frederick V. Coville, and Frederick Funston (later Brigadier-General, U. S. Army). After spending some months in the desert region to the east, accompanied by Funston, Nelson crossed the Sierra Nevada with a pack outfit over a route on which there was no trail, descending to the floor of the Yosemite Valley. He proceeded to Visalia, California, where the Death Valley Expedition was disbanded on September 19, 1891. Nelson, however, was directed to continue on field work in California.

Purchasing a buckboard for hauling equipment including two 42-pound bear traps left over from the Death Valley Expedition, Nelson proceeded southward through the San Joaquin Valley, alone. At Alila (now Earlimart) he stopped for the night at a ranch belonging to the writer's father, with whom he talked of his desire to employ a teamster and camp man as soon as one suitable for this work could be found. Remembering my general interest in natural history father decided that this would be a fine opportunity for me to become associated with a man of such experience. Accordingly, he took the train to Fresno where I was employed in a large vineyard and persuaded me to return with him, although I was at first somewhat reluctant to do so as the prospect for advancement was good where I was, and my remuneration was to be considerably less. I had never seen specimens of mammals and birds prepared, however, and at once became keenly interested.

As a result of father's intercession I accompanied Nelson, starting southward from our ranch October 10, 1891. At this time Nelson was a black bearded young man of 36 and I a boy of 18. I was familiar with the use of traps and guns and immediately began collecting and assisting in the preparation of specimens. By mutual understanding the camp work was simplified as much as possible and collecting often took precedence over dish washing. Thus began a friendship and close association with Nelson that was to endure until his death.

About two months had been spent in field work mainly in the coast region in California when Nelson received instructions to proceed to Mexico for a trip of about three months. He offered to pay my expenses if I would accompany him. Anticipating wonderful experiences I readily agreed. We sailed from San Francisco on the Pacific Mail Steamer, *Acapulco*, and arrived at Manzanillo, Colima, on January 24, 1892. On Nelson's representations and Dr. Merriam's recommendation to the Secretary of Agriculture, I received my first appointment in the civil service as an assistant field agent on March 1 of the same year. The salary was small, but it relieved Nelson of the financial strain of my employment. The three months' trip was lengthened to an indefinite period. Our joint operations during 14 years in Mexico, interrupted from time to time by return trips to the United States, took us by rail, stage, steamer, or on horseback into every State and Territory in that Republic. Many adventures, and some hardships, were endured together, but they do not seem hard in retrospect. Our last field expedition together was through Lower California in 1905–6, a part of the results, of which were embodied in Nelson's 'Lower California and its Natural Resources,' published in 1921 as a memoir of the National Academy of Sciences.

With the passing of years Nelson's major activities gradually turned

from scientific research in field and laboratory to administrative duties. He was placed in charge of the Division of Biological Investigations, was promoted to Assistant Chief, and then to Chief of the Bureau of Biological Survey, from 1916 to 1927 when he retired from administrative duties and two years later at the age of 74 he retired from active work with the Bureau.

While so well known as an explorer and in the field of wild-life research, perhaps Nelson's greatest service was in promoting the administration of wild-life. As Chief of the Biological Survey he initiated and fostered the development of new lines of activity and many measures bearing upon the conservation and general administration of wild-life from a national standpoint. With his background of knowledge of the past he became much impressed with the evidence of the disastrous effect of drainage activities on wild-life, especially on the Ducks and Geese of North America, and urged restoration measures.

He was actively instrumental in the negotiation of the Migratory Bird Treaty with Great Britain, to protect the birds, especially the water-fowl extensively shot as game, that migrate to and from Canada. This treaty constitutes a landmark in the history of wild-fowl conservation in North America, one that will long be remembered. Believing in the traditional American system of hunting for sport, regardless of social position, he was an ardent advocate of the Public-Shooting-Grounds-Game-Refuge Bill, including a one dollar license tax feature, which was before the Congress for years, passing the Senate at one session, and the House at another; but bitter opposition developed and it could not be brought to a vote in both chambers during the same session. Another bill, the Migratory Bird Conservation Act, passed shortly before he retired, authorized direct appropriations by the Congress to provide for the establishment of refuges, but only relatively small amounts have thus far been made available under its terms. That the original bill was meritorious in principle is shown by the passage just before his death of the Migratory Bird Hunting Stamp Act, which is essentially an outgrowth of that discredited measure. Nelson was also instrumental in securing the enactment of the Alaska Game Law of 1925, in establishing the Bureau's work for the improvement of the reindeer herds in Alaska, and in fostering bird banding as a method of ornithological research. Under his administration of the Biological Survey, and policy of coördinating the efforts of individuals and all other organizations, signal advances were made in wild-life conservation in America.

The consummation of important conservation measures is usually the result of teamwork on the part of a group of interested leaders. Nelson seemed to be content to coördinate and direct operations from a position somewhat in the background, leaving publicity and the more conspicuous rôles largely to others. For this reason the active part he took in the con-

servation movement is apt to be overlooked and submerged in the cross currents of clamor for credit, reflecting the rather sordid human trait commonly displayed both by individuals and organizations, and one he decried. This should not, however, be construed to mean that he stood alone in this category, or that there was any lack of prominent leaders who were praise-worthy in their attitude. Notable among others who were also retiring in disposition, but active in the promotion of wild-life conservation measures was his friend Charles Sheldon. He and Nelson shared many interests in common, and their intimate friendship approached brotherly affection.

Nelson's published works include more than 200 titles, covering a wide variety of subjects, mainly scientific in character. In recognition of his scientific work, both in the field and the laboratory, many species of various kinds of animals and plants have been named in his honor. These include 1 genus and 19 species and subspecies of mammals, 18 species and subspecies of birds, 2 species of reptiles, 1 amphibian, 5 species of fishes, 4 species of land shells, and 1 butterfly; also, 1 genus and 55 species and subspecies of plants. In recognition of his geographic work, Nelson Island and Nelson Lagoon, on the coast of Bering Sea, and Nelson Range, a short mountain range in southern California, have been named in his honor. In recognition of his accomplishment in the field of science, Yale University conferred upon him the honorary degree of Master of Arts, and George Washington University that of Doctor of Science, both in 1920. He was a member of numerous scientific and conservation organizations.

Nelson never married, although he expressed admiration for many women, some of whom were numbered among his valued friends. He regarded his uncertain health as a bar to successful matrimony. His nearest surviving relatives are two nephews, Harry Buchanan Nelson and Robert Leiland Nelson, of Oakland, California. He was able to continue his literary work until very near the end, which came suddenly, but without great suffering, on May 19, 1934, in Garfield Hospital, in Washington.

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