
NATIONAL ACADEMY OF SCIENCES

OF THE UNITED STATES OF AMERICA
BIOGRAPHICAL MEMOIRS
VOLUME XXIV—FIRST MEMOIR

BIOGRAPHICAL MEMOIR

OF

•
CLINTON HART MERRIAM

1855–1942

BY

WILFRED H. OSGOOD

PRESENTED TO THE ACADEMY AT THE AUTUMN MEETING, 1944



C. Hart American

CLINTON HART MERRIAM *

1855-1942

BY WILFRED H. OSGOOD

C. Hart Merriam, naturalist, zoologist, and leader for many years in a field of great activity, takes an honored place in the succession of such as Louis Agassiz, Asa Gray, and Spencer F. Baird. He was the central figure in a dynamic era connecting the pioneer period of exploration with the present time of experimentation and interpretation. To review his life is to recapitulate the events of this era and to indicate their far reaching effects not only in America but throughout the world.

Boyhood and Family History

He was born December 5, 1855 in New York City where his parents were then spending the winter. The family home, however, and the place of his boyhood days was in Locust Grove, Lewis County, New York. Here was the homestead with ample acres shadowed by the Adirondack Mountains and dating back to 1800. In such surroundings many a boy has a passion for the woods and fields even to the extent of beginning seriously to probe their secrets. Sometimes it may continue through life, but usually only as a pastime and a refuge from interests that are considered more practical. This boy, however, saw his career in it and from his early teens was engrossed with it. His parents encouraged rather than hindered it and the way opened up for him in a manner which probably even exceeded his boyhood dreams. That he had such dreams no one can doubt, for to the end of his days he continued to plan large undertakings.

He came of old and distinguished American stock, directly descended from Joseph Merriam who came with a brother from County Kent, England, and settled in 1638 in Concord, Massachusetts. Joseph's grandson moved from Massachusetts to

* For other biographical accounts of the same subject see Talbot and Talbot, *Science*, 95, pp. 45-46, 1942; Fisher, *Jour. Wash. Acad. Sci.*, 32, pp. 318-320, 1942; Camp, *Calif. Hist. Soc. Quart.*, 21, No. 3, pp. 284-286, 1942; Osgood, *Jour. Mamm.*, 24, pp. 421-436, Nov. 1943.

Meriden, Connecticut, and three generations later in 1800 a great-grandson Nathaniel moved to Leyden, New York, in the vicinity of which he bought a large farm and founded Locust Grove. Nathaniel Merriam was prominent and active in local affairs, becoming judge of the Circuit Court and for many years a member of the State Assembly. His son General Ela Merriam, Hart's grandfather, also was a substantial citizen and man of affairs. Hart's father, Clinton L. Merriam, was born at Locust Grove in 1824, one of fifteen children. The name Clinton, which he passed to his son, was in honor of DeWitt Clinton, the distinguished governor of New York in the first decades of the nineteenth century, with whom the family had had numerous contacts but no kinship.

Clinton L. Merriam was considerably more than a country gentleman—a man of ability and energy, a leader in his community and also active in national affairs. He left the farm as a young man to enter business in New York City, first as an employee and later as proprietor of a large wholesale house. Following this he engaged in the bond and brokerage business from which he retired to the farm at Locust Grove at a comparatively early age. Soon thereafter he was elected to the federal House of Representatives where he served two terms.

Hart's mother, for whom he was named, was Caroline Hart, daughter of Levi Hart of Collinsville, New York, who was Judge of the County Court and member of the State Assembly. She was a graduate of Rutgers Institute, one of the earliest of girls' colleges.

Hart had one older brother, Charles Collins Merriam, who was for a time associated with his father in Washington while he was a Member of Congress. Later he led an active life managing a large farm near Lyons Falls, Lewis Co., New York, and carrying on extensive lumber interests in the Adirondacks. Hart's sister, somewhat younger than himself, now best known as Florence Merriam Bailey, shared her brother's love of nature and never was far from him although following an independent career in which she became a charming writer and a distinguished observer of American birds.

When only fifteen years of age, young Merriam had already begun the formation of a private collection of bird skins and had gone through the patience-trying struggles involved in learning to prepare such specimens. In fact his father had provided him with a single-barreled shotgun when he was only thirteen or fourteen and, later, had taken him to a taxidermist (John Wallace) in New York City for instruction in the mysteries of skinning and mounting birds. This was at the instance of Prof. Baird to whom his father had taken the boy in Washington when he was only fifteen years old. With this foundation and burning with youthful ambition, at the age of seventeen he was attached to a government expedition, the Hayden Survey, through his father's influence, plus that of Prof. Baird, and went west to spend a summer collecting birds and eggs in the Yellowstone region. Methods of mammal collecting were then unknown to him and apparently he confined his efforts mainly to birds, acquiring 313 bird skins and 67 nests with eggs. For a boy of his age, this trip was doubtless full of high adventure, including a few Indian scares and numerous novel experiences. His report of some fifty pages which appeared in 1873 in the Sixth Annual Report of the U. S. Geological Survey of the Territories is his first contribution to zoological literature, a slightly annotated and largely tabular record of specimens collected. Significant is his acknowledgment of aid received from S. F. Baird and Robert Ridgway, indicating that he was already in touch with leaders in the subject that had fascinated him. Other young men on the survey included John M. Coulter, botanist, Henry Gannett, geologist and astronomer, and W. H. Holmes, artist, all of whom later attained national prominence and were his lifelong friends. At this time, also, he met others, including Henry W. Henshaw whose reminiscences, published in the *Condor* (vol. XXII, p. 4, 1919), refer to Merriam as follows: "It was in 1872 that I first met Dr. Merriam, then a boy of sixteen, just back from his first trip to the Yellowstone region with the Hayden Survey. He had much to tell of the wonders of the region, which then had been seen only by a

avored few, and where he had made a valuable collection of birds, which we examined together with mutual interest."

In later life, Merriam frequently referred to this trip and there can be little doubt it was a powerful influence in shaping his career. It gave him a taste of the great West which he subsequently quartered so thoroughly and it connected him directly with the era of its geographic exploration which was just closing. The Pacific Railroad surveys were not very far back, the men who participated in them were still living, and the spirit of discovery was still rife. Baird, especially, as Secretary of the Smithsonian Institution, had shown the possibilities of promoting zoological knowledge through the cooperation of governmental agencies and it is not unlikely that Baird, directly or indirectly, planted the seed in Merriam's mind that later bore so much fruit.

Education and Early Influences

In 1872 and 1873 he prepared for college, first at the Pingry Military School in Elizabeth, New Jersey, and later at Williston Seminary of Easthampton, Massachusetts. In 1874 he went to Yale where he spent three years in the Sheffield Scientific School with his interest in natural history getting stimulation from such men in the faculty as A. Hyatt Verrill, Sidney I. Smith and Daniel Cady Eaton. Among his classmates was the biologist Edmund B. Wilson. He developed an interest in anatomy and with his roommate began dissections of the human body using cadavers surreptitiously obtained through a morgue in New York. This interest was stimulated by a Dr. Bacon of New Haven for whom he frequently acted as assistant in surgical cases. This led to the desire to make medicine and surgery his career, so he went from Yale to the College of Physicians and Surgeons of Columbia, receiving his M.D. in 1879, at the age of twenty-four.

While in New Haven, his interest in birds continued and before he left there or shortly after, in 1877, he published an account of "The Birds of Connecticut," bringing down to date a previous list published by J. H. Linsley in 1843. In the intro-

duction to this work he makes the significant statement that "distribution . . . is unquestionably governed (as shown by Professor Verrill) by the temperature *during the breeding season*." Therefore, this thesis, which he later so abundantly elaborated, seems to have been derived from Verrill. In 1874, as indicated by a brief published paper "Notes from the South," he had an outing in Florida with his father and in 1875 he was temporarily employed at Woods Hole, Massachusetts, by the U. S. Fish Commission. Results of his observations of birds in the vicinity of Locust Grove were published in several short papers (1878-1881). On March 7, 1878, while a medical student in New York, he assisted in organizing the Linnaean Society of New York and was elected its first president. During these years he made many lifetime friendships and continued to expand his connections with young naturalists of the period.

At this time, ornithology was receiving much attention in various quarters and especially in Cambridge, Massachusetts, where a coterie of young men was actively engaged in forming private collections of bird skins. These included William Brewster, Henry Henshaw, Ruthven Deane, Henry Purdie, and Charles Batchelder. This group in 1871 organized the Nuttall Ornithological Club and Merriam was one of the early contributors to its "Bulletin," which began in 1876.

From 1879 to 1885 he followed the practice of medicine in Locust Grove, apparently with marked success, but the record shows that during this time he was also very active in studying the local fauna, in building up his collections, in correspondence and personal contact with others of similar taste, and in developing a growing interest in mammals as well as birds. In the spring of 1883 he went to Newfoundland and the Gulf of St. Lawrence as surgeon of the S. S. *Proteus*, engaged in a sealing expedition which gave him the opportunity to observe the great migration of seals and to collect many specimens. The series of skulls obtained, especially of the hooded seal, is still the finest in existence. On this trip he made the acquaintance of Napoleon A. Comeau of Godbout, Quebec, who thereafter sent him numerous specimens for many years.

In 1881 he published a "Preliminary List of the Birds of the Adirondacks" but, thereafter, although active in promoting ornithological work, his personal effort was devoted almost entirely to mammals. This effort began at home and the energy, patience and thoroughness he gave to it were evidenced by the appearance in 1884 of his "Mammals of the Adirondacks," a large comprehensive book almost exhaustive in character and setting a new standard for local studies. For its time, it was quite unusual, comparable in some respects to certain studies of birds, but surpassing anything of the kind relating to mammals. It gave little attention to description and classification, these at the time being taken for granted or regarded as closed subjects. It was rather a series of "life histories" giving every shred of information obtained through his own observations since boyhood and everything trustworthy he had been able to derive from others. It was a remarkable piece of work for one scarcely more than a beginner and it is still a valuable source of information not yet superseded. After issuance in parts in the Transactions of the Linnaean Society of New York, it appeared as a handsomely bound volume of small quarto size and dignified character. Possibly it was subsidized by his father whose interest was somewhat more than paternal. It is significant that it was an ambitious undertaking, planned on a comprehensive scale, and the forerunner of much that came later.

It is probable that the "Mammals of the Adirondacks" was only a part of a much larger plan, which even at this early date he had conceived. He had the works of DeKay on New York State and he had read Humboldt and Wallace and become greatly interested in the underlying problems of the geographic distribution of animals. He began to consider the idea of a general biological survey of New York State and went so far as to employ a clerk to search meteorological records and especially to compute mean temperatures for each month in the year. He obtained introductions to James Hall, C. D. Walcott, and others and interviewed them in Albany with the object of enlisting their aid in obtaining an appropriation for the proposed survey from the state legislature. Failing in this, he settled to the

practice of medicine and went on with his study of the mammals. Among various foreshadowings of his future which appeared when he was scarcely more than a youth, this effort to obtain state aid is perhaps one of the most significant.

American Ornithologists' Union

In 1883, such a great interest in ornithology had developed throughout the country and so many distinguished ornithologists were located outside New England that the Nuttall Club, although continuing as a local society, was subordinated by the formation of a larger, more truly national organization, The American Ornithologists' Union, modeled somewhat on the British Ornithologists' Union but inspired by the fellowship of a remarkable set of men. Its founders, who held their first meeting in New York, Sept. 26, 1883, formed a varied group, the like of which can never again be brought together. Their names, with few exceptions, are now on the honor roll of achievement in a subject that has numbered its followers by thousands with many fascinating ramifications extending to every state in the Union and beyond our borders to a great part of the world. Looking back at these men now, one finds it difficult to avoid the feeling that they measured to an average stature beyond that of any later period. Whether they were the products of their times or vice versa, at least it must be said that they and their opportunities were well met. The seniors in this group were such as Spencer F. Baird, George N. Lawrence, Charles E. Bendire, Elliot Coues, J. A. Allen, and Robert Ridgway. Merriam was one of the younger members and must have been greatly influenced by his associations. Nevertheless, he immediately made himself felt. He was elected secretary of the new organization and became chairman of its important Committee on Bird Migration, a subject on which preliminary work had been started by Prof. W. W. Cooke. The large-scale collection of factual data was almost a passion with him and this committee offered his first chance to exercise it in a broad way. He made elaborate plans (see the *Auk*, vol. 1, pp. 71-76, Jan. 1884), dividing the country into thirteen districts, each having a super-

intendent, and undertook correspondence with all of them and the collation of their data. It was a nationwide project which just suited him and which doubtless was suggestive of possibilities in other directions.

Growing Interest in Mammals

Meanwhile, notwithstanding the impetus given to ornithology by the organization of the A. O. U., Merriam's interest in mammals continued to grow and his private collection of them was enlarged to proportions which at that time were unprecedented. Private collections of birds were numerous, some of them even rivalling those of public institutions, but similar collections of mammals were practically non-existent. The readily obtainable mammals of any given locality were few in number and there was no general interest in them. Bird collectors and local taxidermists sometimes preserved them but in small numbers and mostly including only diurnal species, such as squirrels and rabbits which fell to their guns while afield with other objectives. It was from such sources that many of his specimens came and he carried on a large correspondence, promoting interest in mammals by purchasing specimens and, in some cases, by employing collectors or at least by placing standing orders. Among those with whom he was in touch, about 1883, was a farmer's boy of Elk River, Minnesota, Vernon Bailey by name. This boy's specimens included so many species thought to be difficult to obtain that Merriam gave him exceptional encouragement. It is related that he once asked Bailey for specimens of shrews, tiny mammals of nocturnal and secretive habits then supposed to be rare. Bailey replied, saying "How many do you want?" At that time specimens of shrews were derived mainly from something the cat brought in, something that fell in the well, or something found dead and decayed in the road, so Merriam then wrote Bailey "all you can get." Some time later, Bailey sent him no fewer than sixty shrews and it is not unlikely that then and there he envisioned the possibilities of a continental campaign of mammal collecting. Until then his formation of a mammal collection had been a dubious venture which probably would

have failed if undertaken ten years earlier. The time was exactly right for it not only because he had found a successful collector but because there had just been devised a small trap adapted for use in field and forest as well as on the pantry shelf. This trap, called the Cyclone, was an affair of tin and wire springs, only about two inches square when collapsed, cheap in cost, and easily portable in quantity. Also, high standards had just been reached in the preparation of mammal skins and skulls following the example set by the ornithologists who had carried the art of making study skins of birds to a high degree of perfection.

In the beginning, it is possible that Merriam's interest in mammals had been due partly to general interest in zoology and partly to a certain perversity or contrariness which followed him through life. Most of his contemporary associates were ornithologists only, with a large following of amateurs and a subject of established method and great popularity. It was not in his nature to follow the herd, however, and although birds were his earliest interest, never wholly relinquished, he probably began the special study of mammals before he fully realized its possibilities. Whether or not he was favored with something akin to the Midas touch, it is certain that he rose to every occasion with energy, determination, and a personal magnetism which carried him to success.

In the early eighties what was known of American mammals, to say nothing of the rest of the world, was pitifully little. Small and, from present standards, very scrappy collections were in the American Museum at New York and the National Museum at Washington. The specimens were poorly prepared, imperfect, and often lacking in data. One or two of a kind was the rule and the number of kinds was scarcely greater than had been known to Audubon and Bachman thirty years before. Mammalogists, as such, were practically unknown and the few studies that had been made were those of men who were primarily ornithologists, notably S. F. Baird, Elliot Coues, and J. A. Allen. The subject was not only neglected; it was thought to be unproductive and sufficiently canvassed. The larger mam-

mals were supposed to be of uniform character throughout the country and, with a few exceptions, the existence of the smaller ones was scarcely even suspected.

Into this situation then came the combination of Merriam, Bailey, and the Cyclone trap, and of these no one will ever deny that Merriam was the greatest. He immediately gave Bailey further commissions and as soon as he was able kept him in the field almost continuously. In 1884 he described his first new species, *Atophyrax bendirii*, a small shrew obtained for him in Oregon by the ornithologist Major Charles E. Bendire. His collection of mammals had then reached a total of some seven thousand specimens and for working purposes was probably superior to any public collection.

Founding and Growth of Biological Survey

At this time, however, although carrying on the medical practice in Locust Grove, he was occupied with his plans for a broad study of bird migration through the committee of the Ornithologists' Union of which he was chairman. This work had grown to such proportions it was evident the A. O. U. could not carry it without help and the enlistment of the aid of the Federal government was considered with the result that in the spring of 1885 Congress authorized the establishment of a section of ornithology in the Entomological Division of the Department of Agriculture. The A. O. U. was consulted in the choice of a man to take charge of the work and through Professor Baird, whose influence doubtless weighed heavily in the whole matter, Merriam was invited to take the position with the title of Ornithologist. At the time, Merriam was in Europe where he had gone partly for a respite from medical practice, which had become rather onerous, and partly to promote his interest in migration studies. In 1884 he had been appointed with Elliot Coues to represent America on an international committee for the world wide establishment of bird observation stations.

He had visited various naturalists, notably Blasius of Braunschweig and Graf von Berlepsch of Gertenberg, near Kassel,

Germany, but after receiving the offer he cabled his acceptance and returned in time to take up the duties of the new office July 1, 1885. Meanwhile, for Assistant Ornithologist, he had invited Dr. Albert K. Fisher with whom he had developed a warm friendship while they were fellow students at the College of Physicians and Surgeons in New York—a friendship which lasted for more than sixty years. With one clerk, Merriam and Fisher, neither of whom had yet seen his thirtieth birthday, then started what has since become a bureau with hundreds of employees and millions of dollars in appropriations. Within a year, they obtained independent rank as the Division of Economic Ornithology and Mammalogy, a title which in later years was sometimes jestingly and perhaps a little maliciously changed colloquially to "Economic Ornithology and *Extravagant* Mammalogy." Later, the simpler title Division of Ornithology and Mammalogy was used. In the beginning, growth was not very rapid, but in the late nineties there was considerable expansion and on March 3, 1905, the title was again changed to Bureau of Biological Survey. Very recently (1939) and long after Merriam's retirement, the work was transferred to the Department of the Interior where it was joined with the former Fish Commission and the two now go on as the Fish and Wildlife Service.

A critical period for the young organization was passed in its first year when it succeeded in divorcing itself from the entomologists. This was done against the opposition of Dr. C. V. Riley, then head of the Entomological Division. Merriam's father at this time was retired from Congress, but he still had many influential friends, among them, especially, Senator Warner Miller, then Chairman of the Senate Committee on Agriculture. Fisher also had a friend in Representative Stuhlracker and by combined efforts, perhaps with the assistance of Baird and G. Brown Goode, who were very friendly to Merriam, Congress was induced to establish the independent division with a total appropriation of \$10,000 (raised from \$5,000 received the first year) as of July 1, 1886.

After this, it was plain sailing, at least for a number of years. As the chief of a growing scientific bureau in Washington, Mer-

riam soon became a national figure and for twenty-five years of his activity in this post his career was crowded with interest and accomplishment. During the first few years, work was mainly in the completion of projects previously outlined and perhaps designed to justify their federal support, since their bearing on agriculture and public welfare was obvious. Early additions to the staff were Walter B. Barrows, W. W. Cooke, and F. E. L. Beal, all of them so-called "economic" ornithologists. Very shortly (1888 and 1889) two exhaustive "Bulletins" were published, "Bird Migration in the Mississippi Valley" by Cooke and "The English Sparrow in America" by Barrows, the first especially being replete with evidences of Merriam's careful editing and supervision. Somewhat later (1892) came Fisher's "Hawks and Owls of the United States in their relation to Agriculture," a thorough study, handsomely illustrated, which was received with much acclaim and which is now a classic. These three excellent bulletins were widely circulated and established public esteem for the work of Merriam's division, doubtless contributing to its continued support and growth.

Exploration and Research

Meanwhile, Merriam had other and longer range plans, especially for himself. Vernon Bailey had been employed as field agent and was ranging the West, sending in previously unknown species of mammals with every shipment, and the study and description of these received Merriam's enthusiastic attention. He obtained authority for inauguration of a technical series of publications by the Department of Agriculture under the title "North American Fauna" and in the first number an announcement stated that "The Division of Ornithology and Mammalogy is engaged in mapping the geographical distribution of birds and mammals, *in addition* to a study of their economic relations. The purpose of this work is to ascertain the boundaries of the natural fauna areas of North America." Thus at an early date (1889) his broad plan was clearly envisioned and his future career outlined.

In the first four numbers of the North American Fauna and

within two years (1889 and 1890) he described no fewer than seventy-one new species as well as several new genera of mammals. To zoologists throughout the country this was startling, unprecedented, and to some who doubted his standards it even seemed preposterous. It was soon evident, however, that he was not splitting hairs unduly, but was announcing real discoveries. Others began to adopt his methods not only in America but abroad and an era of discovery in mammalian classification was started which even now has not fully run its course and which has provided a basis for innumerable studies and interpretations ramifying in many directions.

As soon as practical, he arranged for a personal expedition to the West, going with Vernon Bailey to the San Francisco Mountain region of Arizona and studying the distribution, not only of mammals, but also of birds, reptiles, and plants. The results of this expedition, published in August 1890, outlined much that was later built upon to establish his reputation as an authority on the subject of the geographical distribution of animals and plants. There was much discussion of life zones, of the origin of faunas, the causes determining distribution, and besides maps of the special area there was a large colored map of North America showing the principal life areas as he conceived them. In subsequent years he wrote and published various papers on distribution, and revised his maps from time to time, but all his fundamental ideas appear in this early report.

Thenceforward he became passionately interested in pursuing his studies of mammals and in carrying the distributional work to the whole of North America. He gathered around him a circle of naturalists and collectors and posted them out from season to season in all directions. In 1891, he organized a larger expedition, the Death Valley Expedition, which explored the mountains and deserts of southeastern California and Nevada with very good results. This expedition was placed in charge of Dr. T. S. Palmer, since Merriam himself, after starting with the party, had been invited by President Harrison to act as a Bering Sea Commissioner to study the fur seals and spent the summer on the Pribilof Islands in Alaska. While work was

going on in various parts of the United States, he also sent parties to Canada and to Mexico where E. W. Nelson and E. A. Goldman worked continuously for a number of years. Eyebrows in some quarters lifted at this spending of Federal funds in foreign countries but he justified it as part of a continental job basic to everything else. Although really a man very sensitive to criticism, he usually acted without regard to it, following his bent in spite of it.

From the beginning he made large plans for the study of mammals from all points of view. Not only classification and distribution, but anatomy, ecology, nomenclature, bibliography, and specialized regional studies were among them. Added to these were botanical and general zoological subjects. At first it seemed he was personally ambitious to conduct a whole legion of projects himself and in fact he made preliminary studies in nearly all of them, frequently accumulating considerable data which would be laid away to take up something new. One of his early plans was the compilation of the vernacular names of animals in which he enlisted the cooperation of the publisher, L. S. Foster of New York and L. O. Pindar of Kentucky. A list of the technical names, especially of mammals, was also on his agenda. In both cases his accumulated data were eventually turned over to others and at least some have been published. One of his later enthusiasms was botanical, a proposed monographic study of the manzanitas (*Arctostaphylos*), especially those of California and the western United States. For this he collected quantities of material, shelves and cabinets of his office for several years being crowded with carefully labeled bottles containing the dried fruits of these plants.

The result was that his subordinates who came to him with a bright idea usually found themselves anticipated and if rebuffed there was sometimes feeling. In such cases, those who knew him best were able to see that he was not acting from pure selfishness but because of a perfectionist complex which made him honestly feel that he not only had prior rights but that he could trust no one else to carry out the study in all the detail he had had in mind. The enormous collection of mammals that

accumulated under his direction was deposited in the National Museum but with the strict agreement that no one should have access to it except by his order. With minor exceptions, the first ten numbers of the North American Fauna were written by himself and it was inevitable that sly references to him as a czar or a dog in the manger should now and then be heard. In the late nineties, however, he evidently began to revise his all-embracing ambitions and thenceforward many projects were assigned to his staff or to others competent to carry them out. Once this was begun, he freely gave advice and assistance, spending many hours revising the manuscripts of younger men or carefully reviewing their material with them and discussing their conclusions. His standards were high and his methods were worked out with the utmost care. In effect, he founded a school and the output of "Merriam and Merriam's men" was generally admired and respected. From time to time young men of his staff were drawn to institutional positions in various parts of the country where his influence was continued. In certain centers, notably in California, his methods were applied to restricted areas with outstanding results and even in Europe, especially in the British Museum, he was something of an inspiration.

Political Difficulties

While he was so actively promoting the study of mammals and what was called life zone work, especially in the West, other lines of activity in the Biological Survey were not being wholly neglected, but they were left to subordinates. Food habits research went on effectively under such men as F. E. L. Beal, A. K. Fisher, S. D. Judd, and W. L. McAtee. Game preservation and conservation work began to be important in the late nineties and these were cared for largely by T. S. Palmer, who for many years was Merriam's principal administrative assistant. Although having some of the characteristics of a promoter and a reformer, Merriam was not very worldly and not very diplomatic. As a bureau chief it was his duty each year to go before congressional committees and defend his estimates for appro-

priations. This was very distasteful to him and whenever possible he sent one of his assistants. Such committees are notoriously overbearing and as Merriam was too independent to submit to grilling, he sometimes gave them rather sharp answers. Although his own career had a political foundation, he himself was not politically minded. His attitude toward certain types of short-sighted Congressmen was so transparent that their resentment was unnecessarily engendered and eventually (1908) the agricultural appropriation bill was reported out of committee with the section usually devoted to the Biological Survey entirely omitted. Rumors at once started to the effect that it was because of his disproportionate interest in research rather than directly practical work, but the real reason was probably involved in the personal antipathies of certain Congressmen, plus congressional opposition to President Roosevelt who was known to be friendly to the Biological Survey. Merriam was dumbfounded and at his wits end. By his own efforts it is doubtful if he could have extricated himself from the dilemma, which struck not only himself but his whole staff; others, however, had been forehanded in marshalling popular pressure against such an emergency and before the bill came to a vote the missing items were reinstated. Not long after this Merriam sent for his old friend Henry W. Henshaw, who was then in Hawaii, and brought him into the Biological Survey as Administrative Assistant with the rather obvious function of appeasing criticism.

Breadth of Interests

During his most active years, Merriam was interested in many things besides mammals and the Biological Survey. New and improved methods of doing things fascinated him and every forward looking movement in scientific circles had his active cooperation. A curious exception was his failure to appreciate the advantages of modern card systems for filing and classifying data. In his early work on migration he had devised systems of his own which were too cumbersome for the vast later accumulations of information and, although he must have seen

this, he continued to insist, with some truth to be sure, that card indexes were "an invention of the Devil to kill time."

He was a member and one time president of the Biological Society and of the Anthropological Society. He was also a member of the Philosophical Society and a founder of the National Geographic, serving on the Board of Directors of the latter for no less than 54 years. He was Chairman of the U. S. Board on Geographic Names for nine years (1917-1925) seldom missing a meeting. He was active in founding the Washington Academy of Sciences and was especially devoted to the launching of its publications. He was also one of those consulted in laying the original plans for the Carnegie Institution. When in 1919 the American Society of Mammalogists was founded he was elected its first president. In itself, this might not be significant, but to those familiar with the history of American mammalogy it marks the expression of a rarely equalled pre-eminence of one man in a given field of science. But for him a society of mammalogists might not have been possible and, although younger men were more active in promoting the organization, no other could have been thought of for the honor of presiding at its opening sessions. His position was unique and everyone recognized it.

On April 17, 1902, he was elected a member of the National Academy of Sciences and when its meetings were held in Washington several of its members were always billeted in his home. In 1899, he organized and directed the Harriman Alaska Expedition, a unique affair in which he took great delight. When Mr. Harriman, who had been advised that Merriam was the man to carry out his plan, called on him in his small office and announced his desire to take a vacation with his family and fifteen or twenty of the leading naturalists of the country, Merriam had never heard of him and at first thought he was being hoaxed. He was soon convinced, however, and agreed to select the galaxy which finally made up the party. On the return, he undertook the editing and publishing of the handsome series of twelve volumes reporting on the many-sided observations of the Alaskan cruise. This work he did at home in his spare time.

not only editing the manuscripts but giving meticulous care to every detail of typography, paper, format, and illustration.

Throughout his life he was given to enthusiasms which were not exactly hobbies, for they were usually constructive, but since he did everything with his might, they often led him away from his main course. Through his practice in supervising the publications of the Biological Survey he began to investigate the qualities of printing papers. Instead of accepting some authority, he undertook an exhaustive study of the entire problem, familiarizing himself with every detail and finally joining with H. W. Wiley, then chemist of the Département of Agriculture, in publishing an authoritative bulletin covering the subject. For several months, paper was constantly uppermost in his mind and for long after he seldom lost an opportunity to discourse on it. Surviving members of the old Biological Survey staff will recall the light-brown manuscript paper, thought to be easy on the eyes, which he prescribed for use by the entire personnel.

For many years he spent most of his summers in the West traveling with wagon or pack train, returning to Washington for the winter. When the automobile began to be generally used, it suddenly struck his fancy and he developed a strange enthusiasm for everything pertaining to motor cars. He made several transcontinental trips with his family at a time when roads and cars were far from perfect; he haunted salesrooms and repair shops and his house desk was filled with catalogues and circulars. He knew every make of car from its emblem to its horse power and he carefully weighed the relative merits of every detail. His own car he was convinced was the best and he was always ready with arguments to prove it. To his intimates, who knew he had neither training nor natural capacity for engineering and mechanics, this was little less than amusing, but they could also see in it an expression of his very unusual character. He cared little for politics, current affairs, or general literature, but for art, especially painting, he had considerable enthusiasm. He openly scorned orthodox religion, and society in the usual sense he regarded as pure waste of time. But wherever his interest was really roused his whole power went into

it with a tremendous urge to get at the facts and to take no one's word for them.

Interest in California

His field work in the West gradually concentrated on the great state of California not only because it offered many interesting problems but because more than anywhere else his passionate love for forests and mountains was gratified. He explored every nook and corner of it and finally built himself a home in the depths of the redwoods of Marin County near the village of Lagunitas. Everything pertaining to California then received his attention. He associated himself with the Sierra Club and his friendships extended to such as Carlos Hittell, the artist; his father Theodore Hittell, the historian; William Keith, another artist; and John Muir, the literary naturalist.

During his travels in California he had many contacts with the numerous dwindling tribes of Indians in the state. Many of these were represented only by a single family or in some cases by a single aged individual. Their pitiful economic condition excited his warm sympathy and he often befriended them. Inevitably his interest took the constructive turn when he realized that they possessed many important secrets which would die with them unless salvaged at once. Thereafter they became almost if not quite the leading interest of his life. At a fairly early date he had collected various examples of Indian handiwork, especially basketry, and eventually his collection of Indian baskets became a large and valuable one. It was kept in the spacious study of his home where it gradually dominated all ordinary furnishings from floor to ceiling and where individual pieces at gatherings of his friends often furnished the text for choice anecdotes or long fascinating folk tales which he never tired of repeating.

Friendships

Aside from his achievements as a naturalist, Merriam was distinctly a personality. Few who knew him failed to realize that he was something beyond the ordinary. He swept people

along with his own enthusiasms to such effect that only carping or jealous critics thought of him as egocentric. He was in fact very warm-hearted, very generous and very sympathetic, but without his respect these qualities were not too greatly exercised. He was not very tolerant of sloth, incompetence, or insubordination but where these did not exist he was warmth itself. In the Biological Survey he occupied a pedestal, but he did not pose, for he detested insincerity. There was a certain indefinable magnetism about him which caused men of his own or even greater stature to be drawn to him quickly. His friendships among the great and near great were remarkable. Washington in the nineties and for some years after was a delightful place. A charming social cohesion existed among the personnel of the various scientific bureaus and the national cultural institutions. The relations were simple and unconventional but full of warmth and affection. Merriam readily became a part of this and his enthusiasm for his friends was scarcely less than for some of his projects. Outside of Washington his personal relations extended to every important naturalist of his generation. Among those with whom he was especially intimate in Washington were the geographers Henry Gannett and Marcus Baker, the geologist Grove K. Gilbert, the botanist Frederick V. Coville, and the zoologists William H. Dall and Frederick A. Lucas. All these, it should be noted, were men of simple tastes and distinguished accomplishment in their respective fields. His admiration of and affection for G. K. Gilbert was especially significant, for in all the large circle of scientists in Washington at that time no man was more respected for both character and accomplishment than Gilbert. When Gilbert lost his wife, he accepted Merriam's invitation to occupy rooms in his house and literally to become a member of his family, an arrangement which was happily carried out for nineteen years until Gilbert's death in 1918. Merriam's tribute to him published shortly after (*Sierra Club Bull.*, vol. 10, no. 4, 1919) is somewhat revealing as to his own character since he emphasized his admiration for some of those qualities in the even-tempered and ever rational Gilbert which he obviously lacked himself.

A long continued friendship between Merriam and Theodore Roosevelt led to numerous contacts and interesting incidents. As a youth in New York, Roosevelt had greatly admired Merriam's book on "Mammals of the Adirondacks" and the two were soon brought together. At that time, Roosevelt had serious thoughts of a career as a naturalist and, although he soon gave them up, his interest was a very real one which always remained near to his heart. When he came to Washington as Assistant Secretary of the Navy he soon sought out Merriam and later when he became President the relations were continued. At one time the Biological Society of Washington was thrilled by the announcement of a program devoted to a sort of debate between Roosevelt and Merriam. At the appointed hour Roosevelt hustled to the Cosmos Club where the meeting was held with a record attendance. Merriam read a carefully prepared argument detailing results of his studies of variation in coyotes and wolves of the western United States and was followed by Roosevelt who spoke without notes at such length and with such an obvious grasp of the subject that many of his hearers were quite amazed. At a later time Merriam was invited to spend an evening at the White House and to bring with him all the local naturalists and their families to meet the British nature photographer Richard Kearton who showed a film of wild birds and other animals which for its time was unusual. When Roosevelt organized his noted African trip, after leaving the presidency, Merriam was one of his principal advisers and was responsible for the choice of a considerable proportion of the personnel of the expedition. Another association with Roosevelt was in connection with the famous discussion of "nature faking," highly publicized by Roosevelt but aided and abetted if not instigated by Merriam.

Endowment for Research

In 1910, fortune again favored Merriam and, with little or no effort on his own part, he was relieved of a situation under which he was obviously growing uneasy. The Biological Survey was gradually becoming more and more an administrative and

regulatory bureau with political angles for which he had no taste. Many of the projects which had fascinated him in early life had grown to such proportions that it was plain he could not control them. What he would have done if events had not conspired for him is conjectural, but it is safe to say he would not have been deflected from his personal desires for long. Not improbably he would have retired voluntarily, since he had a small private income and doubtless could have found means to increase it. However, at this time, certain of his friends and admirers thought to have him personally endowed for research with the hope and expectation that he would produce a great work on the mammals of North America. Among those promoting the idea were his very dynamic admirer the hunter-naturalist Charles Sheldon and very probably his still more influential friend Theodore Roosevelt. Mrs. E. H. Harriman, then widowed, was approached with the result that there was established the Harriman Trust to be administered by the Smithsonian Institution and to provide Merriam support for research of his own choosing to the end of his days. The terms were extraordinarily liberal, practically everything being left to his own decision. Unfortunately it had not been realized that the subject of this wonderful endowment had a tendency to go against the tide, in fact had almost never been known to do exactly what others expected of him. Moreover, his recently developed interest in ethnology was greater than supposed.

At the age of fifty-five, he found himself with a freedom of action beyond most men's dreams, but although he plunged into work with much fervor, it soon became evident that he had changed horses and instead of advancing toward the farther shore he was being carried downstream. He devoted himself almost entirely to field studies among the vanishing tribes of California Indians and to the accumulation of enormously detailed notes about them. This became a passion with him and there can be no doubt he sincerely believed it to be more important than anything else he could do. He particularly felt that he could apply the methods he had used in zoology to secure better results than those usually attained by ethnologists.

With one notable exception, however, mammals were neglected. This was his study of the American brown and grizzly bears, begun many years before, and only completed when he had amassed specimens (mainly skulls) to the amazing total of 1,864. His division of these into an incredible number of species and subspecies, although received with considerable skepticism, was known to be based on exceedingly careful and reliable studies and his reputation for accuracy of observation was such that no one made any serious attempt to gainsay him. What he had done, however, was to marshal his facts and label them without any effort to interpret them. This was characteristic, for he had never been much given to theory. His attitude toward controversial subjects connected with the processes of evolution was usually that of suspended judgment with the conviction in most cases that the facts were not all in. When the mutation theory of De Vries was first expounded he promptly took issue with it on the grounds that it failed to explain more than a very small part of the end results of natural evolution as he knew them. Its significance for the future and its other implications did not interest him since they were not in his field and since his own work seemed to him sufficiently engrossing and important. He never wholly relinquished a Lamarckian point of view, for his intimate knowledge of the details of adaptation and evolutionary change would not permit him to accept any experimental evidence which did not fully account for them. Most theories seemed to him premature and he did not indulge in them.

Later Life

His later years were spent in following his enthusiasm for California Indians. He maintained a home in Washington and another at Lagunitas, California, scarcely a year passing that did not see him making a westward transcontinental trip and another eastward. His constant companion was his wife, who was Miss Elizabeth Gosnell, of Martinsburg, West Virginia, formerly his secretary, whom he had married in 1886. Their younger daughter, now Mrs. M. W. Talbot of Berkeley, Cali-

fornia, for some years before her marriage was also included. An elder daughter, Mrs. Henry Abbot of Washington, remained at home, but family ties were strong and in his declining years grew stronger.

After his wife's death and after he had reached the age of 80, he remained in California most of the time and it may be assumed that his research was not very active. His death in his 87th year on March 19, 1942, followed several years in a nursing home in Berkeley, California, where he was near his daughter, Mrs. Talbot, and where he was able to walk in the sun, to receive visits from old friends and to have the care which his age and its infirmities demanded.

Conclusions

The writer of this sketch for some years stood in a relation to Merriam which was too much that of an apprentice or a valet to give him wholly heroic proportions or to fail to appreciate the warmer side of his nature. He was a most extraordinary character, dynamic, productive, and original; but he was full of contradictions. Despite his record of accomplishment and notwithstanding a certain hard-headedness, he was often impractical. When concentrated on a piece of detailed research, no one could have been more insistent on considering every shred of evidence, but in the larger affairs of his life, emotions and enthusiasms swayed him. Among those who were associated with him in subordinate positions in the Biological Survey there were some who fairly worshiped him but there were also those who could never understand him and who never ceased to be resentful of fancied or in some cases real injustices. On the other hand, his personal charm and originality, his whimsicality, and his forthrightness contributed much to his success. He could hardly be called well balanced, but his inconsistencies were to him at least always connected with the prodigious urge for the advancement of knowledge which never left him. It cannot be denied that the conduct of his later years under the Harriman Trust was a disappointment to his friends, especially among mammalogists. Nevertheless there is little doubt that

his intentions were of the best. An impression prevailed that he greatly magnified the importance of his ethnological studies and that he laid out a program for himself involving such detail that it was not humanly possible to finish it in his lifetime. He published a few papers in ethnological journals and two books of folk tales, but the bulk of his results was left in a tremendous mass of notes and manuscripts now deposited with the Smithsonian Institution.

His genius was of the kind that has the capacity for taking infinite pains. In his early work he was quick to see that his subject was shot through with false conclusions due primarily to insufficient or faulty material. It became his passion, therefore, to put it on a sound basis, to correct the errors of his predecessors, and to lay a foundation for all time. He did this and much more. Perhaps his greatest contribution to his period lay in his perfecting of methods, in the use of large series of well prepared specimens, in the persistent emphasis upon exactness of geographic data, in the demonstration of previously unsuspected importance of cranial characters in the finer divisions of mammalian classification, and in his steadfast belief in the combination of field and laboratory studies. His own production was very large and his published writings include nearly 500 titles. New mammals discovered and described by him number approximately 660. The types of 651 of these are in the U. S. National Museum; 8 are in other American museums, and one is in the British Museum. The collection of mammals which he started in his first years of government service now contains approximately 140,000 specimens, vastly more than any other collection, and all with full data and in prime condition. Contemporary opinion usually thought of him as most engrossed with studies of life-zones, laws of temperature control, and the general subject of geographic distribution, but his own secret pride was in his "Monographic Revision of the Pocket Gophers," a most exhaustive study which revealed him as a perfectionist. At the time it was published (1895), there is no doubt his intense desire was to go on with similar studies of other groups.

In the history of American mammalogy his place is a very large one; in fact, it can scarcely be judged as less than pre-eminent. What he did is scarcely less important than what he influenced others to do. He was a power in the land with a reach into posterity that will long be felt. His contemporaries familiar with his whole career are now few in number and need no reminder that his was a remarkably complicated personality. For others, his record stands, but it cannot reveal the nuances of his unique character nor the warmth of his personal relations.

KEY TO ABBREVIATIONS USED IN BIBLIOGRAPHY

- Amer. Angler = American Angler
 Amer. Anthrop. = American Anthropologist
 Amer. Field = The American Field
 Amer. Jour. Sci. = American Journal of Science
 Amer. Mus. Jour. = Journal, American Museum of Natural History
 Amer. Nat. = American Naturalist
 Ann. N. Y. Acad. Sci. = Annals, New York Academy of Sciences
 Ann. Rept. N. J. State Bd. Agri. = Annual Report, New Jersey State Board of Agriculture
 Ann. Rept. Smithson. Inst. = Annual Report, Smithsonian Institution
 Bull. Nat. Hist. Soc. N. B. = Bulletin, Natural History Society of New Brunswick
 Bull. Nutt. Ornith. Club = Bulletin, Nuttall Ornithological Club
 Bull. Phil. Soc. Wash. = Bulletin, Philosophical Society of Washington
 Bull. Torrey Bot. Club = Bulletin, Torrey Botanical Club
 Bull. U. S. Fish Comm. = Bulletin, United States Fish Commission
 Bull. U. S. Nat. Mus. = Bulletin, United States National Museum
 Calif. Hist. Soc. Quarterly = California Historical Society Quarterly
 Canadian Sci. Mo. = Canadian Science Monthly
 Carnegie Inst. Wash. = Carnegie Institution of Washington
 Jour. Amer. Folk-Lore = Journal of American Folk-Lore
 Jour. Cincinnati Soc. Nat. Hist. = Journal, Cincinnati Society of Natural History
 Jour. Mamm. = Journal of Mammalogy
 Jour. Wash. Acad. Sci. = Journal, Washington Academy of Sciences
 Med. Rec. = Medical Record
 Natl. Geogr. Mag. = National Geographic Magazine
 N. Amer. Fauna = North American Fauna
 Ornith. and Ool. = Ornithologist and Oologist
 Proc. Acad. Nat. Sci. Phila. = Proceedings, Academy of Natural Sciences, Philadelphia
 Proc. Amer. Assoc. Adv. Sci. = Proceedings, American Association for the Advancement of Science
 Proc. Biol. Soc. Wash. = Proceedings, Biological Society of Washington
 Proc. Calif. Acad. Sci. = Proceedings, California Academy of Sciences
 Proc. Wash. Acad. Sci. = Proceedings, Washington Academy of Sciences
 Rept. Comm. Agri. = Report of the Commissioner of Agriculture
 Rept. Natl. Acad. Sci. = Report, National Academy of Sciences
 Rept. Sec. Agri. = Report of the Secretary of the United States Department of Agriculture
 Sci. Amer. Sup. = Scientific American Supplement
 Sci. Mo. = Scientific Monthly

Smithson. Misc. Coll. = Smithsonian Miscellaneous Collections
Trans. Conn. Acad. Arts Sci. = Transactions, Connecticut Academy of
Arts and Sciences
Trans. Linn. Soc. N. Y. = Transactions, Linnæan Society of New York
Trans. Roy. Soc. Canada = Transactions, Royal Society of Canada
U. S. Dept. Agri. Div. Biol. Surv. Bull. = United States Department of
Agriculture, Division of Biological Survey, Bulletin
U. S. Dept. Agri. Div. Ent. Circ. = United States Department of Agricul-
ture, Division of Entomology, Circular
U. S. Dept. Agri. Div. Ornith. and Mamm. Circ. = United States De-
partment of Agriculture, Division of Ornithology and Mammalogy,
Circular
Yale Rev. = Yale Review

BIBLIOGRAPHY OF CLINTON HART MERRIAM *

BY HILDA W. GRINNELL

Museum of Vertebrate Zoology, University of California, Berkeley

In the following bibliography each title has been taken from the original publication, unless otherwise stated. "[C. H. M.]" after a title indicates that, although anonymous as printed, it appears over C. Hart Merriam's signature in his personal scrapbook.

Newspaper articles and all mimeographed materials are here excluded. A search through the Index Medicus has revealed but one title by Merriam (see year 1880). One of his two daughters, Mrs. M. W. Talbot of Berkeley, has told the writer that the notes on certain phases of her father's medical experiences were arranged by him for publication in book form, but that on its way to the printer the manuscript was lost in the mail and no duplicate copy had been kept.

Assistance in finding elusive titles has generously been given by Mrs. Talbot, her sister, Mrs. H. D. Abbot, of Washington, D. C., and by Miss Isabel H. Jackson of the United States Documents Division of the University of California Library.

To Dr. Alden H. Miller, Director of the Museum of Vertebrate Zoology, the writer is indebted for certain facilities, and to Dr. E. Raymond Hall and Mr. Donald F. Hoffmeister for much helpful criticism.

* Reprinted from *Journal of Mammalogy*, Vol. 24, No. 4, November, 1943, pp. 436-457, with permission.

1873

Report on the mammals and birds of the expedition (pp. 661-715, fig. 57).

In 6th ann. rept. U. S. Geol. Surv. of the Territories . . . 1872,
pp. xi + 844.

The olive-sided flycatcher. Amer. Nat., vol. 7, no. 12, p. 750.

1874

Ornithological notes from the south. Amer. Nat., vol. 8, no. 1, pp. 6-9.

(Continued in vol. 8, no. 2, pp. 85-89.)

The olive-sided flycatcher. Amer. Nat., vol. 8, no. 5, p. 309.

The chimney swift; change in place of nesting. Amer. Nat., vol. 8, no. 5,
pp. 367-368.

1876

Passerculus princeps and *Parus hudsonicus* in Connecticut. Bull. Nutt.
Ornith. Club, vol. 1, no. 2, p. 52.

1877

A review of the birds of Connecticut, with remarks on their habits. Trans.
Conn. Acad. Arts Sci., vol. 4, pp. 1-150. [Reprinted by Tuttle,
Morehouse and Taylor, New Haven, 1877.]

1878

Correction. Bull. Nutt. Ornith. Club, vol. 3, no. 1, p. 47.

Remarks on some of the birds of Lewis County, northern New York.

With remarks by A. J. Dayan. Bull. Nutt. Ornith. Club, vol. 3, no. 2,
pp. 52-56.

Recent lists of the birds of central New York. Bull. Nutt. Ornith. Club,
vol. 3, no. 2, pp. 83-86.

Early arrivals. Familiar Science and Fanciers' Journal, vol. 5, p. 72
[not seen by me].

Correction. The County, vol. 2, p. 25 [not seen by me].

Breeding of the pine linnnet in northern New York. Forest and Stream,
vol. 10, no. 24, p. 463.

Remarks on some of the birds of Lewis County, northern New York.

(Continued from p. 56.) Bull. Nutt. Ornith. Club, vol. 3, no. 3, pp.
123-128.

Nesting of the banded three-toed woodpecker (*Picoides americanus*) in
northern New York. Bull. Nutt. Ornith. Club, vol. 3, no. 4, p. 200.

Venomous serpents. Science News (N. Y.), p. 32 [not seen by me].

Milk-snake swallowing a striped-snake. Science News (N. Y.), p. 64
[not seen by me].

1879

- Remarks on some of the birds of Lewis County, northern New York.
(Continued from p. 128, vol. 3.) Bull. Nutt. Ornith. Club, vol. 4, no. 1,
pp. 1-7.
The birds of New York. Forest and Stream, vol. 12, no. 15, p. 285.
[Review of] A revised list of the birds of central New York. Bull. Nutt.
Ornith. Club, vol. 4, no. 3, pp. 172-175.

1880

- The hot water vaginal douche. Med. Rec., vol. 17, p. 722.
Fee bill of the Lewis County medical society . . . [C. H. Merriam and
J. H. Crosby] [Pamphlet], pp. 1-8.

1881

- Tree-climbing woodchucks. Forest and Stream, vol. 16, no. 23, p. 453.
Skunks and hydrophobia. Forest and Stream, vol. 16, no. 24, p. 473.
Preliminary list of birds ascertained to occur in the Adirondack region,
northeastern New York. Bull. Nutt. Ornith. Club, vol. 6, no. 4, pp.
225-235.
Xanthocephalus icterocephalus in lower Canada. Bull. Nutt. Ornith.
Club, vol. 6, no. 4, p. 246.
Breeding of Barrow's golden-eye in lower Canada. Bull. Nutt. Ornith.
Club, vol. 6, no. 4, p. 249.
Copperheads in New England. Forest and Stream, vol. 17, no. 13, p. 247.
Beechnuts and woodpeckers. Forest and Stream, vol. 17, no. 18, p. 347.

1882

- Another gannet (*Sula bassana*) from the interior of New York State.
Ornith. and Ool., vol. 6, no. 12, p. 96.
The winter of 1881-2 in Lewis County, northern New York. Forest and
Stream, vol. 18, no. 11, p. 207.
Breeding of the pine grosbeak (*Pinicola enucleator*) in lower Canada.
Bull. Nutt. Ornith. Club, vol. 7, no. 2, pp. 120-121.
Addenda to the preliminary list of birds ascertained to occur in the Adiron-
dack region, northeastern New York. Bull. Nutt. Ornith. Club,
vol. 7, no. 2, p. 128.
An audacious goshawk (*Astur atricapillus*). Forest and Stream, vol. 19,
no. 12, p. 225.
List of birds ascertained to occur within ten miles from Point de Monts,
Province of Quebec, Canada; based chiefly upon the notes of Napoleon
A. Comeau. Bull. Nutt. Ornith. Club, vol. 7, no. 4, pp. 233-242. [Re-
published in Life and Sport on . . . the lower St. Lawrence . . . By
Napoleon A. Comeau, pp. 417-436, 1909.]

- [Review of] Gentry's nests and eggs of birds of the United States. Bull. Nutt. Ornith. Club, vol. 7, no. 4, pp. 246-249.
- Second addendum to the preliminary list of birds ascertained to occur in the Adirondack region, northeastern New York. Bull. Nutt. Ornith. Club, vol. 7, no. 4, pp. 256-257.
- Birds of New York. Ornith. and Ool., vol. 7, no. 22, p. 171.
- Late breeding of the hermit thrush in northern New York. Ornith. and Ool., vol. 7, no. 22, p. 171.
- Early arrival of the pine grosbeak in northern New York. Forest and Stream, vol. 19, p. 306.
- The vertebrates of the Adirondack region, northeastern New York. Trans. Linn. Soc. N. Y., vol. 1, pp. 1-106. [Continued in vol. 2, pp. 1-214, Aug., 1884.]

1883

- Last moose in the Adirondacks. Forest and Stream, vol. 19, no. 23, p. 447.
- Ravages of a rare scolytid beetle in the sugar maples of northeastern New York. Amer. Nat., vol. 17, no. 1, pp. 84-86, 5 figs. in text.
- Illegal fishing in Lake Champlain—A hint to the Vermont fish commissioners. Forest and Stream, vol. 20, no. 4, pp. 71-72.
- The least bittern in Newfoundland. Science, vol. 1, no. 16, p. 457.
- [Extract from letter] In Dr. Merriam's return. Anon. Ornith. and Ool., vol. 8, no. 6, p. 42.
- Brief ornithological notes from Newfoundland. Ornith. and Ool., vol. 8, no. 6, p. 43.
- Pinus Banksiana*. Bull. Torrey Bot. Club, vol. 10, no. 8, pp. 93-94.
- Chipmunks and red squirrels. Forest and Stream, vol. 21, no. 6, p. 103.
- A chicken-chasing woodchuck. Amer. Field, vol. 20, no. 10, p. 225 [only clipping seen by me].
- American Ornithologists' Union. Forest and Stream, vol. 21, no. 10, p. 183. [C. H. M.].
- On a bird new to northern North America. Bull. Nutt. Ornith. Club, vol. 8, no. 4, p. 213.
- Breeding of the harlequin duck (*Histrionicus minutus*). Bull. Nutt. Ornith. Club, vol. 8, no. 4, p. 220.
- Addendum to list of birds ascertained to occur within ten miles from Point de Monts, Province of Quebec, Canada; based chiefly upon the notes of Napoleon A. Comeau. Bull. Nutt. Ornith. Club, vol. 8, no. 4, pp. 244-245.
- A swimming woodchuck *A. monax*. Amer. Field, vol. 20, no. 24, p. 561 [only clipping seen by me].

1884

- Bird migration. Forest and Stream, vol. 21, no. 26, pp. 514-515.

- Third addendum to the preliminary list of birds ascertained to occur in the Adirondack region, northeastern New York. *Auk*, vol. 1, no. 1, pp. 58-59.
- [Report of Chairman of Committee on] Bird migration. *Auk*, vol. 1, no. 1, pp. 71-76.
- The birds of Nova Scotia. *Acadian Scientist* (Wolfville, N. S.), vol. 2, pp. 27-28 [not seen by me].
- Seals in the upper St. Lawrence. *Forest and Stream*, vol. 22, no. 7, p. 124.
- The muskrat as a fish-eater. *Forest and Stream*, vol. 22, no. 9, p. 165.
- Migration of North American birds. *Amer. Nat.*, vol. 18, no. 3, pp. 310-313.
- [Review of] Stearns' natural history of Labrador. *Forest and Stream*, vol. 22, no. 10, p. 184.
- Gov. Clinton on the muskrat as a destroyer of fish. *Forest and Stream*, vol. 22, no. 10, p. 185.
- Deer in the Adirondacks. *Forest and Stream*, vol. 22, no. 13, pp. 243-244. [Continued in no. 14, pp. 264-265; no. 15, pp. 283-284; no. 16, pp. 302-303.]
- [Review of] Bulletin of the Buffalo Naturalists' Field Club. *Auk*, vol. 1, no. 2, pp. 184-185 [C. H. M.].
- A plea for the metric system in ornithology. *Auk*, vol. 1, no. 2, pp. 203-205.
- Superfetation in the deer. *Forest and Stream*, vol. 22, no. 16, p. 303.
- Another seal in Lake Ontario. *Forest and Stream*, vol. 22, no. 16, p. 303.
- Harbor seal. *Forest and Stream*, vol. 22, no. 17, p. 324.
- Hibernating mammals. *Science*, vol. 3, no. 68, p. 616.
- Dicentra* punctured by humble-bees. *Bull. Torrey Bot. Club*, vol. 11, no. 6, p. 66.
- On a bird new to Bermuda. . . . *In Contributions to the natural history of the Bermudas*. *Bull. U. S. Nat. Mus.*, no. 25, pp. 283-284.
- Vireo philadelphicus* in northern New York. *Auk*, vol. 1, no. 3, p. 291.
- Second addendum to list of birds ascertained to occur within ten miles from Point de Monts, Province of Quebec, Canada; based chiefly upon the notes of Napoleon A. Comeau. *Auk*, vol. 1, no. 3, p. 295.
- Strange antics of an owl. *Forest and Stream*, vol. 22, no. 26, p. 507.
- The fish of Lake Champlain. *Bull. U. S. Fish Comm.*, vol. 4, no. 18, art. 148, pp. 287-288.
- The musk-rat as a fish eater. *Bull. U. S. Fish Comm.*, vol. 4, no. 19, art. 158, pp. 297-298. [Reprinted in *American Angler*, vol. 6, no. 20, Nov., 1884.]
- A new genus and species of the Sorecidae. (*Atophyrax bendirii* Merriam.) *Trans. Linn. Soc. N. Y.*, vol. 2, pp. 215-225, frontispiece.
- The red squirrel in the Adirondacks. *Random Notes Nat. Hist.*, vol. 1, no. 8, pp. 5-6.

- American Ornithologists' Union. Report of Proceedings. Forest and Stream, vol. 23, no. 11, pp. 204-205. (Continued in vol. 23, no. 12, pp. 223-224.)
- The American Ornithologists' Union. Science, vol. 4, no. 89, pp. 374-376; Nature [London], vol. 30, pp. 616-618. [C. H. M.]
- Moose in the Adirondacks. Forest and Stream, vol. 23, no. 14, p. 264.
- Adirondack game protection. Forest and Stream, vol. 23, no. 14, p. 265.
- Breeding of *Passerculus princeps* on Sable Island. Auk, vol. 1, no. 4, p. 390.
- [Review of] Notes on the birds observed during a summer cruise in the Gulf of St. Lawrence. By William Brewster. Amer. Nat., vol. 18, no. 10, pp. 1014-1017.
- The varying hare. Amer. Nat., vol. 18, no. 10, pp. 1055-1056.
- The bear's pot. Forest and Stream, vol. 23, no. 15, p. 285.
- Eastward range of the moose north of the St. Lawrence. Forest and Stream, vol. 23, no. 15, p. 286.
- The star-nosed mole amphibious. Science, vol. 4, no. 92, p. 429.
- The great northern shrike a scavenger. Canadian Sci. Mo. (Wolfville, N. S.), vol. 2, p. 123 [not seen by me].
- The Labrador duck, *Camptolaemus labradorius*, long a rare bird in the Gulf of St. Lawrence. Canadian Sci. Mo. (Wolfville, N. S.), vol. 2, p. 123 [not seen by me].
- The 'hood' of the hooded seal, *Cystophora cristata*. Science, vol. 4, no. 96, pp. 514-516, 5 figs. in text.
- The coming of the robin and other spring birds. Science, vol. 4, no. 99, p. 571 [C. H. M.].
- The blue-backed trout (*Salvelinus oquassa*) in the Gulf of St. Lawrence. Amer. Angler, vol. 6, no. 25, p. 391 [only clipping seen by me].
- Remarks on the migration of birds in North America. Random Notes Nat. Hist., vol. 1, no. 12, pp. 3-5.
- The harp seal a permanent resident in the St. Lawrence. Amer. Nat., vol. 18, no. 12, pp. 1227-1231.
- The mammals of the Adirondack region, | northeastern New York. | . . . | by | Clinton Hart Merriam, M. D. | Published by the Author, September, 1884. | (Reprinted from Vols. I and II, Transactions Linnaean Society, New York.) | New York: | Press of L. S. Foster, 35 Pine Street. | MDCCCLXXXIV. | 316 pp. [Reprinted New York, H. Holt and Company, 1886.]
- A. O. U. Committee on Bird Migration. Circular to the Keepers of Lights [Pamphlet, 3 pp.].

1885

- Preliminary report of the Committee on Bird Migration. Auk, vol. 2, no. 1, pp. 53-65. [Included are reports by Cooke, W. W., pp. 58-59, and Murdoch, J., p. 63.]

- [Review of] Langille's 'Our birds in their haunts: a popular treatise on the birds of eastern North America.' Auk, vol. 2, no. 1, pp. 91-94.
- Nest and eggs of the Blackburnian warbler. Auk, vol. 2, no. 1, p. 103.
- Swainson's warbler off southern Florida. Auk, vol. 2, no. 1, p. 104.
- A remarkable migration of Canada jays. Auk, vol. 2, no. 1, p. 107.
- The white pelican on Lake Ontario. Auk, vol. 2, no. 1, p. 111.
- Third addendum to list of birds ascertained to occur within ten miles from Point des [*sic*] Monts, Province of Quebec, Canada; based chiefly on the notes of Napoleon A. Comeau. Auk, vol. 2, no. 1, p. 113.
- Supplement. Committee on the migration and geographical distribution of North American birds. Circular for 1885. Auk, vol. 2, no. 1, pp. 117-120.
- A late northern record of the hermit thrush, *Turdus pallasi*. Canadian Sci. Mo. (Wolfville, N. S.), vol. 2, p. 155 [not seen by me].
- Change of color in the wing-feathers of the willow grouse. Auk, vol. 2, no. 2, pp. 201-203.
- [Address of] Welcome to J. A. Allen. The dinner of the Linnæan Society, at Murray Hill Hotel, New York, May 5, 1885. Eastern State Journal Print: White Plains, N. Y., pp. 1-4 (May 1885). Abstracted under title "New York and Science" in Forest and Stream, vol. 24, no. 16, pp. 307-308 [C. H. M.].
- A tropical American turtle on Anticosti. Science, vol. 5, no. 123, p. 474.
- Probable breeding of the wheatear (*Saxicola oenanthe*) on the north shore of the Gulf of St. Lawrence. Auk, vol. 2, no. 3, p. 305.
- The eggs of the knot (*Tringa canutus*) found at last! Auk, vol. 2, no. 3, pp. 312-313.
- Fourth addendum to list of birds ascertained to occur within ten miles from Point de Monts, Province of Quebec, Canada; based chiefly upon the notes of Napoleon A. Comeau. Auk, vol. 2, no. 3, p. 315.
- [On the systematic investigation of the inter-relation of birds and agriculture, with questions and blanks for answers.] U. S. Dept. Agri. Div. Ent. Circ. no. 20 [4 pp.].
- Iridescence in the Oregon mole. Amer. Nat., vol. 19, no. 9, p. 895.
- The pine mouse in northern New York. Amer. Nat., vol. 19, no. 9, pp. 895-896.
- The colored patch in the crown of the kingbird. Forest and Stream, vol. 25, no. 8, p. 144.
- Kirtland's warbler from the Straits of Mackinac. Auk, vol. 2, no. 4, p. 376.
- Odd nesting habits of the blue yellow-backed warbler in Missouri. Auk, vol. 2, no. 4, p. 377.
- Swainson's warbler in Jamaica. Auk, vol. 2, no. 4, p. 377.
- An albino surf duck (*Edemia perspicillata*). Auk, vol. 2, no. 4, p. 386.

Vogelwanderung in Amerika. *In* Bericht über das permanente internationale ornithologische Comité und ähnliche Einrichtungen in einzelnen Ländern. By Blasius, R. and von Hayek, G. *Ornis*, vol. 1, no. 1, pp. 55-67.

1886

The rabbits of Ontario, Canada. *Forest and Stream*, vol. 25, no. 24, p. 466.
Description of a new species of chipmunk from California (*Tamias macrorhabdotes* sp. nov.). *Proc. Biol. Soc. Wash.*, vol. 3, pp. 25-28, 1 fig. in text.

Circular to the keepers of lights. U. S. Dept. Agri. Div. Ent. Circ. no. 24, pp. 1-4.

Preliminary description of a new species of *Aplodontia* (*A. major* sp. nov., 'California show'tl,' 'mountain beaver'). *Science*, vol. 7, no. 161, p. 219.

Description of a new subspecies of the common eastern chipmunk. *Amer. Nat.*, vol. 20, no. 3, pp. 236-242.

Preliminary description of a new squirrel from Minnesota (*Sciurus carolinensis hypophaeus* sp. nov.). *Science*, vol. 7, no. 167, p. 351.

Description of a new species of *Aplodontia* from California. *Ann. N. Y. Acad. Sci.*, vol. 3, no. 10, pp. 312-328, pls. 19-20, 1 fig. in text.

Robins and cherries. *Forest and Stream*, vol. 26, no. 24, p. 468.

Circular on the food habits of birds. U. S. Dept. Agri. Div. Ornith. and Mamm. Circ. no. 1 [4 pp.].

Circular on the English sparrow (*Passer domesticus*). U. S. Dept. Agri. Div. Ornith. and Mamm. Circ. no. 2 [1 p.].

Early occurrence of the great white egret at Washington, D. C. *Forest and Stream*, vol. 26, no. 26, p. 508.

Circular on the economic relations of mammals. U. S. Dept. Agri. Div. Ornith. and Mamm. Circ. no. 3 [4 pp.].

Hibernation of bats. *Science*, vol. 8, no. 190, p. 281.

Description of a new species of bat from the western United States (*Vespertilio ciliolabrum* sp. nov.). *Proc. Biol. Soc. Wash.*, vol. 4, pp. 1-4.

[Letter.] *In* Papers on the destruction of native birds. *Jour. Cincinnati Soc. Nat. Hist.*, vol. 9, no. 3, pp. 217-219.

Circular to postmasters in relation to the English sparrow (request for information). U. S. Dept. Agri. Div. Econ. Ornith. and Mamm., Circ. no. 7, (1 p.) [not seen by me].

Preliminary description of a new pocket gopher from California. *Science*, vol. 8, no. 203, p. 588.

Circular on the geographical distribution and migration of North American birds for 1886. U. S. Dept. Agri. Div. Ent. Circ. no. 27, pp. 1-4.

Instructions for the collection of stomachs. U. S. Dept. Agric. Div. Econ. Ornith. and Mamm. Circ. no. 4 [1 p.]

- Circular to rice growers. U. S. Dept. Agri. Div. Ornith. and Mamm. Circ. no. 5 [1 p.].
- Description of a newly-born lynx. Bull. Nat. Hist. Soc. N. B., vol. 1, bull. no. 5, pp. 10-13, 1 pl.
- [Letters to Fred. Mather dated August 16 and August 22, 1882, identifying a small Adirondack fish and *Uranidea gracilis*.] In Fred. Mather's "Adirondack Fishes," 12th Rept. N. Y. State Adirondack Survey: Appendix (Zoology), pp. 8-9, 1886. "Printed in advance of the Report" [not seen by me].

1887

- The English sparrow.—(*Passer domesticus*). Amer. Field, p. 153 [Letter to editor] [only clipping seen by me].
- Circular on the geographical distribution and migration of North American birds for 1887. U. S. Dept. Agri. Div. Econ. Ornith. and Mamm. Circ. no. 8 [4 pp.].
- Description of a new species of wood-rat from Cerros Island, off Lower California (*Neotoma bryanti* sp. nov.). Amer. Nat., vol. 21, no. 2, pp. 191-193.
- Australian rabbits. Colman's Rural World, March 3, 1887. [C. H. M.] [only clipping seen by me].
- Description of a new mouse from New Mexico. *Hesperomys (Vesperimus) Anthonyi* sp. nov. Proc. Biol. Soc. Wash., vol. 4, pp. 5-7.
- Another specimen of Bachman's warbler. Auk, vol. 4, no. 3, p. 262.
- Animal life on the earth. Appleton's New Physical Geography, pp. 100-103, illus. [not seen by me].
- Geographical distribution of mammalia [with map showing distribution of animal life]. Appleton's New Physical Geography, pp. 103-106, illus. [not seen by me].
- Mammals of the United States. Appleton's New Physical Geography, pp. 134-137, illus. [not seen by me].
- [Letter.] In Tough luck in the Tuckisegee. Forest and Stream, vol. 29, no. 6, p. 104.
- Do any Canadian bats migrate? Evidence in the affirmative. Trans. Roy. Soc. Canada, vol. 5, section 4, pp. 85-87. [Abstract published in Proc. Amer. Assoc. Adv. Sci., vol. 35, p. 269.]
- Report of the Ornithologist and Mammalogist [for 1886]. In Rept. Comm. Agri., pp. 227-258, col. map, 2 figs. in text.

1888

- What birds indicate proximity to water, and at what distance? Auk, vol. 5, no. 1, p. 119.
- Economic ornithology. A Reply. Audubon Magazine, vol. 1, pp. 284-285 [not seen by me].

- Description of a new fox from southern California. *Vulpes macrotis* sp. nov. Proc. Biol. Soc. Wash., vol. 4, pp. 135-138.
- Eutheia canora* from Sombrero Key, Florida—a bird new to the United States. Auk, vol. 5, no. 3, p. 322.
- Description of a new prairie meadow mouse (*Arvicola austerus minor*) from Dakota and Minnesota. Amer. Nat., vol. 22, no. 259, pp. 598-601, 4 figs. in text.
- Description of a new red-backed mouse (*Evotomys dawsoni*) from the headwaters of Laird River, Northwest Territory. Amer. Nat., vol. 22, no. 259, pp. 649-651, 2 figs. in text.
- Description of a new species of field-mouse (*Arvicola pallidus*) from Dakota. Amer. Nat., vol. 22, no. 260, pp. 702-705, 4 figs. in text.
- Description of the breeding plumage of Chadbourne's field sparrow (*Spizella arenacea*), with evidence of its specific distinctness. Auk, vol. 5, no. 4, pp. 402-403.
- Description of a new species of meadow mouse from the Black Hills of Dakota. Amer. Nat., vol. 22, no. 262, pp. 934-935, 1 fig. in text.
- Species and subspecies: a reply to Mr. Conn. Science, vol. 12, no. 305, p. 279.
- Grasshoppers and hawks. Forest and Stream, vol. 31, no. 23, pp. 455-456.
- Description of a new spermophile from California. Ann. N. Y. Acad. Sci., vol. 4, pp. 317-321, 2 figs. in text.
- Remarks on the fauna of the Great Smoky Mountains; with description of a new species of red-backed mouse (*Evotomys carolinensis*). Amer. Jour. Sci., 3d ser., vol. 36, no. 216, pp. 458-460.
- Report on bird migration in the Mississippi Valley . . . by W. W. Cooke. Edited and revised by Dr. C. Hart Merriam. U. S. Dept. Agri. Div. Econ. Ornith. Bull. no. 2, 313 pp., 1 col. map.
- Report of the Ornithologist and Mammalogist [for 1887]. In Rept. Comm. Agri. Washington: Govt. Print. Off., pp. 399-456, 3 ills. [C. H. M.].
- Introduced pheasants. [see special reports, pp. 484-488, in Rept. Ornith. and Mamm. for 1887].
- The mink (*Lutreola vison*) [see special reports, pp. 488-490, 1 ill., in Rept. Ornith. and Mamm. for 1887].
- Mammals. In Professor Baird in science. By Wm. H. Dall. Bull. Phil. Soc. Wash., vol. 10, pp. 63-65 [see note in Merriam's personal scrap-book ascribing authorship to Merriam].

1889

- A correction: *Arvicola (Chilotus) pallidus*. Amer. Nat., vol. 23, no. 265, p. 60, 4 figs. in text.
- [Letter from on occurrence of *Cuterebrae* in squirrels.] In On the emascu-
lating bot-fly. Insect Life, vol. 1, no. 7, p. 215.

- Circular on killdeer plover. U. S. Dept. Agri. Div. Econ. Ornith. and Mamm., Circ. no. 10, (1 p.) [not seen by me].
- That new pika-rel. Amer. Angler, vol. 15, p. 211 [not seen by me].
- Brief directions for the measurement of small mammals and the preparation of museum skins. U. S. Dept. Agri. Div. Econ. Ornith. and Mamm., Circ. no. 11, pp. 1-4, 4 figs.
- Report of the Ornithologist and Mammalogist [for 1888]. *In* Rept. Comm. Agri., pp. 477-536, 3 figs. in text.
- A hawk bearing a legend. Auk, vol. 6, no. 3, p. 276.
- Revision of the North American pocket mice. N. Amer. Fauna no. 1, pp. vii + 36, pls. 1-4.
- Descriptions of fourteen new species and one new genus of North American mammals. N. Amer. Fauna no. 2, pp. v + 52, pls. 1-8, 7 figs in text.
- Who discovered the teeth in *Ornithorhynchus*? Nature [London], vol. 41, no. 1045, p. 11.
- Who discovered the teeth in *Ornithorhynchus*? Nature [London], vol. 41, no. 1051, p. 151.
- Report—Geography of life. Natl. Geogr. Mag., vol. 1, no. 2, pp. 160-162.
- Letter from [*In* Prospectus of Nehrling's North American Birds] [Pamphlet], p. [3].

1890

- Results of a biological survey of the San Francisco Mountain region and desert of the Little Colorado, Arizona. N. Amer. Fauna no. 3, pp. vii + 102, 119-136, frontispiece, pls. 1-11, 5 maps, 2 figs.
- Descriptions of twenty-six new species of North American mammals. N. Amer. Fauna no. 4, pp. v + 60, pls. 1-3, 3 figs. in text.
- Report of the Ornithologist and Mammalogist [for 1889]. *In* First Rept. Sec. Agri., pp. 363-376, 2 col. pls. [Included are 2 reports by Fisher, A. K.]
- L'Ornithologie et la Mammalogie Économiques. Commissariat Gen. des Etats-Unis d'Amerique a l'Expos. Univ. de 1889, a Paris. Productions Agricoles des Etats-Unis, pp. 39-46 (Paris, 1890). English edition (with slightly different title and form and condensation of tables) published in Rept. U. S. Commrs. Paris Expos. of 1889, vol. 5; Agriculture, pp. 779-781 (1891) [not seen by me].
- [Undesirability of bounty on English sparrows: Letter to Geo. B. Sennett.] Ann. Rept. Pa. State Board Agri., pp. 5-9, (1890) [not seen by me].

1891

- [Correspondence] The owl and the sparrow. Garden and Forest, no. 152, p. 35.
- Directions for collecting the stomachs of birds. U. S. Dept. Agri. Div. Econ. Ornith. and Mamm. Circ. no. 12 [4 pp.].

- Results of a biological reconnaissance of south-central Idaho. N. Amer. Fauna, no. 5, pp. vii + 108, 115-132, pls. 1 (col. frontispiece)-4, 4 figs. Report of the Ornithologist and Mammalogist [for 1890]. In Rept. Sec. Agri., pp. 277-285.
- Birds which feed on mulberries. In Rept. Sec. Agri. [for 1890], p. 285.

1892

- The zoology of the Snake Plains of Idaho. Amer. Nat., vol. 26, no. 303, pp. 218-222.
- The geographic distribution of life in North America with special reference to the mammalia. Proc. Biol. Soc. Wash., vol. 7, pp. 1-64, col. map. [Republished, without map, in Ann. Rept. Smithson. Inst. for 1891, pp. 365-415.]
- The dwarf screech owl (*Megascops flammeolus idahoensis* Merriam). Auk, vol. 9, no. 2, pp. 169-171.
- Plants of the Pribilof Islands, Bering Sea. Proc. Biol. Soc. Wash., vol. 7, pp. 133-150.
- Description of a new prairie dog (*Cynomys mexicanus*) from Mexico. Proc. Biol. Soc. Wash., vol. 7, pp. 157-158.
- The Carolina parakeet (*Conurus carolinensis*) in Missouri. Auk, vol. 9, no. 3, p. 301.
- Description of a new genus and species of murine rodent (*Xenomys nelsoni*) from the state of Colima, western Mexico. Proc. Biol. Soc. Wash., vol. 7, pp. 159-163.
- Descriptions of nine new mammals collected by E. W. Nelson in the states of Colima and Jalisco, Mexico. Proc. Biol. Soc. Wash., vol. 7, pp. 164-174.
- The occurrence of Cooper's lemming mouse (*Synaptomys cooperi*) in the Atlantic states. Proc. Biol. Soc. Wash., vol. 7, pp. 175-177.
- [With Allen, J. A., and Gill, Theo.] The fur seal of Guadalupe Island, off Lower California. In Fur-seal arbitration. Appendix to the case of the United States. . . . Washington, D. C.: Govt. Print. Off., vol. 1, p. 586.
- Circular letter of Dr. C. Hart Merriam. In Fur-seal arbitration. Appendix to the case of the United States. . . . Washington, D. C.: Govt. Print. Off., vol. 1, pp. 414-417. [Reprinted in Rept. U. S. Treasury, 54th Cong., 1st sess., doc. 137, part 1, pp. 83-86.]
- [With Mendenhall, T. C., et al.] Part First. Relating to historical and jurisdictional questions. Fur-seal arbitration. Case of the United States before the tribunal to convene at Paris. . . . vol. 2, pp. 9-310.
- [With Mendenhall, T. C., as sr. author.] Report of the United States Bering Sea commissioners. Fur-seal arbitration. Case of the United States before the tribunal to convene at Paris. . . . vol. 2, pp. 311-396, 2 pls. Reprinted in part in vol. 9, pp. 75-78, 1893.

- [With Mendenhall, T. C., *et al.*] Bering Sea commission joint report. U. S. no. 2 (1893). Behring Sea arbitration. Fur seal arbitration. Proceedings of the tribunal of arbitration, . . . vol. 6, pp. 11-12.
Report of the Ornithologist and Mammalogist [for 1891]. *In* Rept. Sec. Agri., pp. 267-271.
Ornithology, mammalogy and bird migration. 19th Ann. Rept. N. J. State Bd. Agri., pp. 145-152 [only separate seen by me].

1893

- [Field notes by C. H. M. *in* Stejneger's report on the reptiles and batrachians] *In* The Death Valley expedition. . . . N. Amer. Fauna no. 7, part 2, pp. 159-228.
Notes on the distribution of trees and shrubs. . . . *In* The Death Valley expedition. . . . N. Amer. Fauna no. 7, part 2, pp. 285-343.
Notes on the geographic and vertical distribution of cactuses, yuccas, and agave. . . . *In* The Death Valley expedition. . . . N. Amer. Fauna no. 7, part 2, pp. 345-359, pls. 7-14.
Description of a new kangaroo rat from Lower California (*Dipodomys merriami melanurus* subsp. nov.) collected by Walter E. Bryant. Proc. Calif. Acad. Sci., 2d ser., vol. 3, pp. 345-346.
Biology in our colleges: a plea for a broader and more liberal biology. Science, vol. 21, no. 543, pp. 352-355.
Rediscovery of the Mexican kangaroo rat, *Dipodomys phillipsi* Gray. Proc. Biol. Soc. Wash., vol. 8, pp. 83-96.
The faunal position of Lower California. Auk, vol. 10, no. 3, pp. 305-306.
Two new wood rats from the plateau region of Arizona (*Neotoma pine-torum* and *N. arizonæ*) with remarks on the validity of the genus *Teonoma* of Gray. Proc. Biol. Soc. Wash., vol. 8, pp. 109-112.
Descriptions of eight new ground squirrels of the genera *Spermophilus* and *Tamias* from California, Texas, and Mexico. Proc. Biol. Soc. Wash., vol. 8, pp. 129-138.
Preliminary descriptions of four new mammals from southern Mexico, collected by E. W. Nelson. Proc. Biol. Soc. Wash., vol. 8, pp. 143-146.
The yellow bear of Louisiana, *Ursus luteolus* Griffith. Proc. Biol. Soc. Wash., vol. 8, pp. 147-151.
Report of the Ornithologist and Mammalogist [for 1892]. *In* Rept. Sec. Agri., pp. 181-200.

1894

- Preliminary descriptions of eleven new kangaroo rats of the genera *Dipodomys* and *Perodipus*. Proc. Biol. Soc. Wash., vol. 9, pp. 109-115.
Abstract of a study of the American wood rats, with descriptions of fourteen new species and subspecies of the genus *Neotoma*. Proc. Biol. Soc. Wash., vol. 9, pp. 117-128.

- The water ouzel in the Coast Range south of Monterey, California. *Auk*, vol. 11, no. 3, p. 258.
- Descriptions of four new pocket mice from Lower California, collected by Walter E. Bryant. *Proc. Calif. Acad. Sci.*, 2d ser., vol. 4, pp. 457-462.
- A new subfamily of murine rodents—the Neotominae—with description of a new genus and species and a synopsis of the known forms. *Proc. Acad. Nat. Sci. Phila.*, vol. 46, pp. 225-252, pl. 9, 5 figs.
- Description of eight new pocket mice (genus *Perognathus*). *Proc. Acad. Nat. Sci. Phila.*, vol. 46, pp. 262-268, 7 figs.
- Laws of temperature control of the geographic distribution of terrestrial animals and plants. *Natl. Geogr. Mag.*, vol. 6, pp. 229-238, pls. 12-14.
- Report of the Ornithologist and Mammalogist [for 1893]. *In Rept. Sec. Agri.*, pp. 227-234, col. map.

1895

- Zoölogical nomenclature. *Science*, n. s., vol. 1, no. 1, pp. 18-19.
- Laws of temperature control of the geographic distribution of life. *Science*, n. s., vol. 1, no. 2, pp. 54-56. [C. H. M.].
- The LeConte thrasher, *Harporhynchus lecontei*. *Auk*, vol. 12, no. 1, pp. 54-60, 2 ills.
- Monographic revision of the pocket gophers family Geomyidae (exclusive of the species of *Thomomys*). *N. Amer. Fauna* no. 8, pp. 1-258, frontispiece, pls. 1-19, 4 col. maps, 71 figs.
- Unity of nomenclature in zoölogy and botany. *Science*, n. s., vol. 1, no. 6, pp. 161-162.
- [Review of] The birds of eastern Pennsylvania and New Jersey. . . . By Witmer Stone. . . . *Science*, n. s., vol. 1, no. 7, pp. 187-188.
- [Review of] Visitor's guide to the local collection of birds in the Museum of Natural History, New York City. By Frank M. Chapman. . . . *Science*, n. s., vol. 1, no. 7, p. 189.
- The earliest generic name of an American deer. *Science*, n. s., vol. 1, no. 8, p. 208.
- Death of George N. Lawrence. *Science*, n. s., vol. 1, no. 10, pp. 268-269.
- Brisson's genera of mammals, 1762. *Science*, n. s., vol. 1, no. 14, pp. 375-376.
- [Review of vol. 2] The royal natural history. Edited by Richard Lydekker. . . . *Science*, n. s., vol. 1, no. 14, pp. 387-389.
- [Review of parts one and two] The book of antelopes. By P. L. Sclater and Oldfield Thomas. . . . *Science*, n. s., vol. 1, no. 14, pp. 389-390 [C. H. M.].
- [Review of] A handbook of the birds of eastern North America. By Frank M. Chapman. . . . *Science*, n. s., vol. 1, no. 16, pp. 437-439.
- [Review of] The land-birds and game-birds of New England. By H. D. Minot. . . . *Science*, n. s., vol. 1, no. 18, pp. 495-496.

- [Review of] The central nervous system of *Desmognathus fusca*. By Pierre A. Fish. . . . Science, n. s., vol. 1, no. 18, p. 496.
- [Review of part eleven] Our native birds of song and beauty. By H. Nehrling. . . . Science, n. s., vol. 1, no. 21, pp. 577-578.
- [Review of] Birdcraft, a field book of two hundred song, game and water birds. By Mabel Osgood Wright. . . . Science, n. s., vol. 1, no. 23, p. 635.
- [Review of] The ornithology of Illinois; descriptive catalogue. By Robert Ridgway. . . . Science, n. s., vol. 1, no. 24, pp. 661-662.
- [Reply to Elliot Coues] In The illustrations in the Standard Natural History. Science, n. s., vol. 1, no. 25, pp. 682-684.
- [Review of] [The Norway lemming] *Myodes lemmus*, its habits and migrations in Norway. By R. Collett. . . . Science, n. s., vol. 1, no. 25, pp. 690-692.
- [Review of] On the [harvest mice] species of the genus *Reithrodontomys*. By J. A. Allen. . . . Science, n. s., vol. 1, no. 26, pp. 720-721.
- [Review of] The royal natural history. Edited by Richard Lydekker. Vol. III. . . . Science, n. s., vol. 2, no. 27, pp. 18-21.
- The generic name *Anisonyx* pre-occupied. Science, n. s., vol. 2, no. 30, p. 107.
- Occurrence of the Siberian lemming-vole (*Lagurus*) in the United States. Amer. Nat., vol. 29, no. 344, pp. 758-759.
- [Review of part twelve] North American birds: By H. Nehrling. . . . Science, n. s., vol. 2, no. 38, pp. 382-383.
- [Review of] On a collection of mammals from Arizona and Mexico. . . . By J. A. Allen. . . . Science, n. s., vol. 2, no. 39, pp. 417-418.
- Bats of Queen Charlotte Islands, British Columbia. Amer. Nat., vol. 29, no. 345, pp. 860-861.
- [Review of] List of mammals collected in the Black Hills region of South Dakota and in western Kansas. . . . By J. A. Allen. . . . Science, n. s., vol. 2, no. 41, p. 490.
- Revision of the shrews of the American genera *Blarina* and *Notiosorex*. N. Amer. Fauna no. 10, pp. 5-34, pls. 1-3, 2 figs.
- Synopsis of the American shrews of the genus *Sorex*. N. Amer. Fauna no. 10, pp. 57-124, pls. 4, 7-12.
- Report of the chief of the Division of Ornithology and Mammalogy [to June 30, 1894]. In Rept. Sec. Agri., pp. 167-169.
- The geographic distribution of animals and plants in North America. In Yearbook U. S. Dept. Agri. [for] 1894, pp. 203-214, fig. 20.
- Report of the chief of the Division of Ornithology and Mammalogy [to June 30, 1895]. In Rept. Sec. Agri., pp. 175-178.

1896

- [Review of] Hunting in many lands . . . Boone and Crockett Club. . . . Science, n. s., vol. 3, no. 59, p. 246.

- [In scientific notes and news.] A permanent scientific head for the U. S. Department of Agriculture. *Science*, n. s., vol. 3, no. 60, pp. 278-279 [C. H. M.].
- [Review of] A handbook to the British mammalia. By R. Lydekker. . . . *Science*, n. s., vol. 3, no. 61, pp. 325-326.
- Revision of the lemmings of the genus *Synaptomys*, with descriptions of new species. *Proc. Biol. Soc. Wash.*, vol. 10, pp. 55-64, 5 figs.
- [Review of] A review of the weasels of eastern North America. By Outram Bangs. . . . *Science*, n. s., vol. 3, no. 66, p. 525.
- [Review of] The polar hares of eastern North America. . . . By Samuel N. Rhoads. . . . *Science*, n. s., vol. 3, no. 67, pp. 564-565.
- [Review of part thirteen] North American birds. By H. Nehrling. . . . *Science*, n. s., vol. 3, no. 67, pp. 565-566.
- [Review of parts three, four and five] The book of antelopes. By P. L. Sclater and Oldfield Thomas. . . . *Science*, n. s., vol. 3, no. 67, p. 566.
- Preliminary synopsis of the American bears. *Proc. Biol. Soc. Wash.*, vol. 10, pp. 65-83, pls. 4-6, figs. 6-17.
- American polar hares: a reply to Mr. Rhoads. *Science*, n. s., vol. 3, no. 75, p. 845.
- [Review of part fourteen] Our native birds of song and beauty. By H. Nehrling. . . . *Science*, n. s., vol. 3, no. 78, p. 932.
- [Review of] Die Haustierte und ihre beziehungen zur Wirtschaft des Menschen. Eine geographische Studie, von Eduard Hahn. . . . *Science*, n. s., vol. 3, no. 78, p. 932.
- Synopsis of the weasels of North America. *N. Amer. Fauna* no. 11, pp. 1-44, frontispiece, pls. 1-5, 16 figs. in text.
- [Review of] The royal natural history: mammals. By Richard Lydekker. . . . *Science*, n. s., vol. 4, no. 82, p. 116.
- Meeting of the mazamas at Crater Lake, Oregon. *Science*, n. s., vol. 4, no. 91, pp. 446-448.
- [Review of] Life histories of North American birds. . . . By Charles Bendire. . . . *Science*, n. s., vol. 4, no. 96, pp. 657-658.
- A new fir from Arizona, *Abies arizonica*. *Proc. Biol. Soc. Wash.*, vol. 10, pp. 115-118, figs. 24-25, in text.
- Romerolagus nelsoni*, a new genus and species of rabbit from Mt. Popocatepetl, Mexico. *Proc. Biol. Soc. Wash.*, vol. 10, pp. 169-174, figs. 33-34.
- Report of the Division of Ornithology and Mammalogy [to June 30, 1896]. *In* Rept. Sec. Agri., pp. 23-25.
- Circular in relation to bounties on mammals and birds. U. S. Dept. Agri. Div. Econ. Ornith. and Mamm., Circ. no. 19. (1 p.) [not seen by me].

1897

- [Review of] A geographical history of mammals. [By] R. Lydekker. . . .
Science, n. s., vol. 5, no. 105, pp. 26-32.
- Range of the pronghorn antelope in 1896. Forest and Stream, vol. 48, no. 1, p. 6 [only separate seen by me].
- [Review of] A popular handbook of the ornithology of eastern North America. By Thomas Nuttall. . . . Science, n. s., vol. 5, no. 107, pp. 110-111.
- Henrich Gätke. Science, n. s., vol. 5, no. 109, p. 181 [C. H. M.].
- [Obituary of] Charles E. Bendire. Science, n. s., vol. 5, no. 111, pp. 261-262.
- The generic names *Ictis*, *Arctogale* and *Arctogalidia*. Science, n. s., vol. 5, no. 112, p. 302.
- Revision of the coyotes or prairie wolves, with descriptions of new forms. Proc. Biol. Soc. Wash., vol. 11, pp. 19-33.
- Fitness of South Bronx Park for the New York Zoological Park: Report to H. F. Osborn, Chairman Executive Committee, New York Zoological Society, April 15, 1897. Full report, News Bull. (N. Y.) Zoological Soc., No. 2, p. 7; 2nd Ann. Rept. N. Y. Zoological Soc., pp. 26-27 [not seen by me].
- Descriptions of two new murine opossums from Mexico. Proc. Biol. Soc. Wash., vol. 11, pp. 43-44.
- Phenacomys preblei*, a new vole from the mountains of Colorado. Proc. Biol. Soc. Wash., vol. 11, p. 45.
- Descriptions of two new red backed mice (*Evotomys*) from Oregon. Proc. Biol. Soc. Wash., vol. 11, pp. 71-72.
- The voles of the subgenus *Chilotus*, with descriptions of new species. Proc. Biol. Soc. Wash., vol. 11, pp. 73-75.
- Two new moles from California and Oregon. Proc. Biol. Soc. Wash., vol. 11, pp. 101-102.
- Three new jumping mice (*Zapus*) from the northwest. Proc. Biol. Soc. Wash., vol. 11, pp. 103-104.
- Type specimens in natural history. Science, n. s., vol. 5, no. 123, pp. 731-732.
- Description of a new muskrat from the Great Dismal Swamp, Virginia. Proc. Biol. Soc. Wash., vol. 11, p. 143.
- Suggestions for a new method of discriminating between species and sub-species. Science, n. s., vol. 5, no. 124, pp. 753-758.
- [Review of] Birds of the Galapagos Archipelago. By Robert Ridgway. . . . Science, n. s., vol. 5, no. 124, pp. 770-773.
- Earliest published note of the late Charles E. Bendire. Science, n. s., vol. 5, no. 125, p. 805.
- Lepus baileyi*, a new cottontail rabbit from Wyoming. Proc. Biol. Soc. Wash., vol. 11, pp. 147-148.

- A new fur-seal or sea-bear (*Arctocephalus townsendi*) from Guadalupe Island, off Lower California. Proc. Biol. Soc. Wash., vol. 11, pp. 175-178.
- A new bat of the genus *Antrozous* from California. Proc. Biol. Soc. Wash., vol. 11, pp. 179-180.
- Description of a new *Bassariscus* from Lower California, with remarks on '*Bassariscus raptor*' Baird. Proc. Biol. Soc. Wash., vol. 11, pp. 185-187.
- Notes on the chipmunks of the genus *Eutamias* occurring west of the east base of the Cascade-Sierra system, with descriptions of new forms. Proc. Biol. Soc. Wash., vol. 11, pp. 189-212.
- [Review of vol. 2] Our native birds of song and beauty. By Henry Nehrling. . . . Science, n. s., vol. 6, no. 131, pp. 32-33.
- [Review of 2d ed., fascicle 1] Catalogus mammalium tam viventium quam fossilium. By Dr. E. L. Trouessart. . . . Science, n. s., vol. 6, no. 132, pp. 68-69.
- Descriptions of eight new pocket gophers of the genus *Thomomys*, from Oregon, California, and Nevada. Proc. Biol. Soc. Wash., vol. 11, pp. 213-216.
- Ovis nelsoni*, a new mountain sheep from the desert region of southern California. Proc. Biol. Soc. Wash., vol. 11, pp. 217-218.
- Descriptions of two new pumas from the northwestern United States. Proc. Biol. Soc. Wash., vol. 11, pp. 219-220.
- Descriptions of five new rodents from the coast region of Alaska. Proc. Biol. Soc. Wash., vol. 11, pp. 221-223.
- Description of a new flying squirrel from Ft. Klamath, Oregon. Proc. Biol. Soc. Wash., vol. 11, p. 225.
- Descriptions of five new shrews from Mexico, Guatemala, and Colombia. Proc. Biol. Soc. Wash., vol. 11, pp. 227-230.
- Correction concerning Mr. Rhoads' use of the name *Bassariscus raptor* (Baird). Science, n. s., vol. 6, no. 135, p. 174.
- The mammals of Mount Mazama, Oregon. Mazama, vol. 1, no. 2, pp. 204-230.
- [Synonymy of the mountain goat. In letter to E. M. Wilbur, Secretary.] Mazama, vol. 1, no. 2, pp. 288-289.
- The field of the mazamas [Abstract of address, see p. 289]. Mazama, vol. 1, no. 2, pp. 290-291.
- [Review of] The concise knowledge library: natural history. By R. Lydekker. . . . Science, n. s., vol. 6, no. 149, pp. 705-706.
- [Review of] Citizen bird. . . . By Mabel Osgood Wright. . . . Science, n. s., vol. 6, no. 149, pp. 706-707.
- [Review of 2 books by C. B. Cory] How to know the shorebirds. . . . ; How to know the ducks, geese and swans of North America. Science, n. s., vol. 6, no. 150, pp. 742-743.

- Results of the Bering Sea conferences. *Science*, n. s., vol. 6, no. 152, pp. 781-794. [Unsigned in *Science*, but a note in Merriam's handwriting in his scrapbook indicates that through paragraph ending "as a triumph for science" was of his own authorship and the remainder "condensed by F. A. Lucas."]
- [Review of] *Songbirds and water fowl*. By H. E. Parkhurst. . . . *Science*, n. s., vol. 6, no. 153, p. 850.
- [Review of 2d ed.] *Birdcraft*. . . . By Mabel Osgood Wright. . . . *Science*, n. s., vol. 6, no. 153, p. 850.
- Cercus roosevelti*, a new elk from the Olympics. *Proc. Biol. Soc. Wash.*, vol. 11, pp. 271-275.
- Nelsonia neotomodon*, a new genus and species of murine rodent from Mexico. *Proc. Biol. Soc. Wash.*, vol. 11, pp. 277-279, figs. 14-15.
- Report of the chief of the Division of Biological Survey [to June 30, 1897]. *In Ann. Rept. Dept. Agri.*, pp. 15-20.

1898

- [Review of fascicles 2 and 3] *Catalogus mammalium tam viventium quam fossilium*. [By] Dr. E. L. Trouessart. . . . *Science*, n. s., vol. 7, no. 158, pp. 30-33.
- Syrnium occidentale caurinum*, a new owl from the Puget Sound region. *Auk*, vol. 15, no. 1, pp. 39-40.
- Mammals of Tres Marias Islands, off western Mexico. *Proc. Biol. Soc. Wash.*, vol. 12, pp. 13-19.
- [Review of] *Audubon and his journals*. By Marie Audubon. . . . *The Nation*, vol. 66, no. 1704, pp. 151-152. [C. H. M.].
- Audubon and his journals*. *Science*, n. s., vol. 7, no. 166, pp. 289-296, 1 pl.
- [Review of] *Trail and camp fire*. . . . Boone and Crockett Club. . . . *Science*, n. s. vol. 7, no. 166, pp. 320-321.
- Descriptions of six new ground squirrels from the western United States. *Proc. Biol. Soc. Wash.*, vol. 12, pp. 69-71.
- The earliest generic name for the North American deer, with descriptions of five new species and subspecies. *Proc. Biol. Soc. Wash.*, vol. 12, pp. 99-104.
- Descriptions of two new subgenera and three new species of *Microtus* from Mexico and Guatemala. *Proc. Biol. Soc. Wash.*, vol. 12, pp. 105-108.
- Descriptions of twenty new species and a new subgenus of *Peromyscus* from Mexico and Guatemala. *Proc. Biol. Soc. Wash.*, vol. 12, pp. 115-125, fig. 20.
- A new genus (*Neotomodon*) and three new species of murine rodents from the mountains of southern Mexico. *Proc. Biol. Soc. Wash.*, vol. 12, pp. 127-129.
- Life zones and crop zones of the United States. U. S. Dept. Agri. Div. Biol. Surv. Bull. no. 10, 79 pp., col. map.

- Descriptions of three new rodents from the Olympic Mountains, Washington. *Proc. Acad. Nat. Sci. Phila.*, vol. 50, pp. 352-353.
 [Reply to Mr. Cockerell] *In* Life-zones in New Mexico. *Science*, n. s., vol. 8, no. 201, pp. 636-637.
 New names for *Spermophilus brevicaudus*, *Canis pallidus* and *Sorex caudatus* Merriam. *Science*, n. s., vol. 8, no. 205, pp. 782-783.
 Biological Survey. *In* Yearbook U. S. Dept. Agri. [for] 1897, pp. 115-122.
 What is a "calf moose?" Shooting and Fishing (N. Y.), vol. 25, p. 145 [only clipping seen by me].

1899

- Zone temperatures. *Science*, n. s., vol. 9, no. 212, p. 116.
 Descriptions of six new rodents of the genera *Aplodontia* and *Thomomys*. *Proc. Biol. Soc. Wash.*, vol. 13, pp. 19-21.
 Results of a biological survey of Mount Shasta, northern California. *N. Amer. Fauna* no. 16, 179 pp., pls. 1 (frontispiece)-5, 46 figs.

1900

- Descriptions of twenty-six new mammals from Alaska and British North America. *Proc. Wash. Acad. Sci.*, vol. 2, pp. 13-30.
 Descriptions of two new mammals from California. *Proc. Biol. Soc. Wash.*, vol. 13, pp. 151-152.
 Description of a new harvest mouse (*Reithrodontomys*) from Mexico. *Proc. Biol. Soc. Wash.*, vol. 13, p. 152.
 [Killing of predatory animals in Yellowstone National Park. Letter to Secy. Interior.] *Recreation*, p. 40, for July [not seen by me].
 Preliminary revision of the North American red foxes. *Proc. Wash. Acad. Sci.*, vol. 2, pp. 661-676, pls. 36-37.
 The life zones and areas of Allegany County. *In* The fauna and flora. Maryland Geological Survey. . . . Baltimore. Johns Hopkins Press, pp. 291-293.

1901

- Directions for the destruction of prairie dogs. U. S. Dept. Agri. Div. Biol. Surv. Circ. no. 32 [2 pp.]. [Revised editions issued 1902, 1908.]
 Two new bighorns and a new antelope from Mexico and the United States. *Proc. Biol. Soc. Wash.*, vol. 14, pp. 29-32.
 Food of sea lions. *Science*, n. s., vol. 13, no. 333, pp. 777-779. [Reprinted in *Sci. Amer. Sup.*, vol. 52, no. 1313, pp. 21335-21336.]
 Six new mammals from Cozumel Island, Yucatan. *Proc. Biol. Soc. Wash.*, vol. 14, pp. 99-104.
 A new brocket from Yucatan. *Proc. Biol. Soc. Wash.*, vol. 14, pp. 105-106.
 Descriptions of twenty-three new pocket gophers of the genus *Thomomys*. *Proc. Biol. Soc. Wash.*, vol. 14, pp. 107-117.

- Descriptions of four new peccaries from Mexico. Proc. Biol. Soc. Wash., vol. 14, pp. 119-124.
- Two new rodents from northwestern California. Proc. Biol. Soc. Wash., vol. 14, pp. 125-126.
- Descriptions of three new kangaroo mice of the genus *Microdipodops*. Proc. Biol. Soc. Wash., vol. 14, pp. 127-128.
- Synopsis of the rice rats (genus *Oryzomys*) of the United States and Mexico. Proc. Wash. Acad. Sci., vol. 3, pp. 273-295.
- The birth of an American volcano, Bogoslof in Bering Sea. Everybody's Magazine, vol. 5, no. 25, pp. 293-301, many ill. in text.
- Descriptions of 23 new harvest mice (genus *Reithrodontomys*). Proc. Wash. Acad. Sci., vol. 3, pp. 547-558.
- Seven new mammals from Mexico, including a new genus of rodents. Proc. Wash. Acad. Sci., vol. 3, pp. 559-563.
- Preliminary revision of the pumas (*Felis concolor* group). Proc. Wash. Acad. Sci., vol. 3, pp. 577-600.
- Harriman Alaska Expedition. Edited by C. Hart Merriam, who wrote the introduction to the first volume and the preface to each succeeding one [6 and 7 never published]. Vols. 1-5 and 8-13 originally issued by Doubleday Page and Company, New York. Remainder of edition issued as special Smithsonian publications. Last volume, no. 14, issued in 1914 as Smithsonian Inst. Publ. 2140. Washington.

1902

- The Virginia opossum. Country Life in America, n. s., vol. 1, no. 4, p. 127, 1 ill.
- Twenty new pocket mice (*Heteromys* and *Liomys*) from Mexico. Proc. Biol. Soc. Wash., vol. 15, pp. 41-50.
- Five new mammals from Mexico. Proc. Biol. Soc. Wash., vol. 15, pp. 67-69.
- A new bobcat (*Lynx uinta*) from the Rocky Mountains. Proc. Biol. Soc. Wash., vol. 15, pp. 71-72.
- Three new foxes of the kit and desert fox groups. Proc. Biol. Soc. Wash., vol. 15, pp. 73-74.
- Two new shrews of the *Sorex tenellus* group from California. Proc. Biol. Soc. Wash., vol. 15, pp. 75-76.
- Two new bears from the Alaska peninsula. Proc. Biol. Soc. Wash., vol. 15, pp. 77-79.
- [Letter from] [On impossibility of basing rainfall maps on distribution of forests and animals.] United States Monthly Weather Rev., vol. 30, no. 4, p. 229.
- The mountain goat. Country Life in America, n. s., vol. 2, no. 1, p. 32, 1 ill.
- Six new skunks of the genus *Conepatus*. Proc. Biol. Soc. Wash., vol. 15, pp. 161-165.

- Four new Arctic foxes. *Proc. Biol. Soc. Wash.*, vol. 15, pp. 167-172.
- The prairie dog of the Great Plains. *In Yearbook U. S. Dept. Agri.* [for 1901], pp. 257-270, pls. 22-24, figs. 24-25.
- Report of the chief of the Division of Biological Survey [to June 30, 1902]. *In Ann. Rept. Dept. Agri.*, pp. 209-218.
- Prefatory note. *In A biological investigation of the Hudson Bay region.* By Edward A. Preble. *N. Amer. Fauna* no. 22, p. 5.
- [Five maps of ranges of deer in North America] *In The Deer Family.* By Roosevelt, T., *et al.* New York: Macmillan, facing pp. 32, 68, 100, 134, 196.
- Forest destruction. . . . B.—Destruction of the forest means destruction of the fauna and flora. *Ann. Rept. Smithson. Inst. to June 30, 1901*, pp. 404-405.
- Bogoslof, our newest volcano. *In Alaska*, vol. 2 [of Harriman Alaska Expedition], pp. 291-336, 6 pls., 39 figs. in text. [Abstract by C. H. M. in *Ann. Rept. Smithson. Inst. to June 30, 1901*, pp. 367-375, 3 pls., 12 figs.]
- 1903
- [Extract from letter by] *In Supplementary notes.* Carnegie Inst. Wash., year book no. 1 [for 1902], pp. 170-171.
- Plan for a biological survey of South and Central America. Carnegie Inst. Wash., year book no. 1 [for 1902], pp. 267-269.
- Plan for a scientific survey of the Philippine Islands, by a committee of the National Academy of Sciences. Printed as a confidential document, Feb. 7, 1903. (Parts of the general plan and Section 8 on Zoology and Botany (pp. 11-12) by C. H. M.) Reprinted in *Rept. Natl. Acad. Sci.* for 1904, pp. 21-33; Senate Document no. 145, p. 22 [not seen by me].
- Two new wood rats (genus *Neotoma*) from [the] state of Coahuila, Mexico. *Proc. Biol. Soc. Wash.*, vol. 16, pp. 47-48.
- Timberline. *Natl. Geogr. Mag.*, vol. 14, no. 3, pp. 114-115.
- Some little-known basket materials. *Science*, n. s., vol. 17, no. 438, p. 826.
- Eight new mammals from the United States. *Proc. Biol. Soc. Wash.*, vol. 16, pp. 73-77.
- Four new mammals, including a new genus (*Teanopus*), from Mexico. *Proc. Biol. Soc. Wash.*, vol. 16, pp. 79-82.
- [Letter on the pica or coney (*Ochotona*) and the sewellel (*Apodontia*)]. *In Flower-gathering animals*, by Frank Yeigh. East and West (Toronto, Canada), p. 211, July 4 [not seen by me].
- Distribution of animals in North America. *Encyclopedia Americana*, vol. 6, figs. 21-22, text map [not seen by me].
- Report of the chief of the Division of Biological Survey [to June 30, 1903]. *Ann. Rept. Dept. Agri.*, pp. 483-495.

1904

- [Letter requesting data on five certain species of migratory birds.] U. S. Dept. Agri. Div. Biol. Surv. Circ. no. 41 [1 p].
- Four new grasshopper mice, genus *Onychomys*. Proc. Biol. Soc. Wash., vol. 17, pp. 123-125.
- Two new squirrels of the *aberti* group. Proc. Biol. Soc. Wash., vol. 17, pp. 129-130.
- Distribution of Indian tribes in the southern Sierra and adjacent parts of the San Joaquin Valley, California. Science, n. s., vol. 19, no. 494, pp. 912-917.
- Jack rabbits of the *Lepus campestris* group. Proc. Biol. Soc. Wash., vol. 17, pp. 131-133.
- Unrecognized jack rabbits of the *Lepus texianus* group. Proc. Biol. Soc. Wash., vol. 17, pp. 135-137.
- New and little known kangaroo rats of the genus *Perodipus*. Proc. Biol. Soc. Wash., vol. 17, pp. 139-145.
- Four new bears from North America. Proc. Biol. Soc. Wash., vol. 17, pp. 153-155.
- A new coyote from southern Mexico. Proc. Biol. Soc. Wash., vol. 17, p. 157.
- A new sea otter from southern California. Proc. Biol. Soc. Wash., vol. 17, p. 159.
- Report of the chief of the Division of Biological Survey [to June 30, 1904]. In Ann. Rept. Dept. Agri., pp. 291-305.

1905

- A new elk from California, *Cervus nannodes*. Proc. Biol. Soc. Wash., vol. 18, pp. 23-25, 1 fig.
- Directions for collecting birds' stomachs. U. S. Dept. Agri. Div. Biol. Surv. Circ. no. 46 [1 p].
- Two new chipmunks from Colorado and Arizona. Proc. Biol. Soc. Wash., vol. 18, pp. 163-165.
- Directions for preparing specimens of large mammals in the field. U. S. Dept. Agri. Div. Biol. Surv. Circ. no. 49, pp. 1-4, 6 figs.
- The Indian population of California. Amer. Anthropol., n. s., vol. 7, no. 4, pp. 594-606.
- Report of the chief of the Division of Biological Survey [to June 30, 1905]. In Ann. Rept. Dept. Agri., pp. 303-315.

1906

- Is mutation a factor in the evolution of the higher vertebrates? Science, n. s., vol. 23, no. 581, pp. 241-257, 3 figs. in text. [Reprinted in Proc. Amer. Assoc. Adv. Sci., vol. 55, pp. 383-408, 3 figs.]

Damages to nurseries and orchards by field mice (Circular of inquiry).
Form no. 47, U. S. Biol. Surv., (1 p.) [not seen by me].

1907

John James Audubon. Bird-Lore, vol. 9, no. 1, pp. 3-5, 1 ill. [frontispiece].
[Reprinted in *Pioneers of North American Science* [= guide leaflet
no. 25, Amer. Mus. Nat. Hist.], April, 1907, pp. 11-13.]
Distribution and classification of the Mewan stock of California. Amer.
Anthrop., n. s., vol. 9, no. 2, pp. 338-357, map facing p. 338.
Descriptions of ten new kangaroo rats. Proc. Biol. Soc. Wash., vol. 20,
pp. 75-79.

1908

Report of the chief of the Bureau of Biological Survey [to June 30, 1907].
In Ann. Rept. Dept. Agri., pp. 485-505.
Corrections concerning California Indians. Amer. Anthrop., n. s., vol. 10,
no. 2, pp. 356-357.
Three new rodents from Colorado. Proc. Biol. Soc. Wash., vol. 21,
pp. 143-144.
Four new rodents from California. Proc. Biol. Soc. Wash., vol. 21,
pp. 145-147.
Meaning of the Spanish word *gavilan*. Science, n. s., vol. 28, no. 709, p. 147.
The King cameos of Audubon. Auk, vol. 45, no. 4, pp. 448-450, pl. 7.
Totemism in California. Amer. Anthrop., n. s., vol. 10, no. 4, pp. 558-562,
fig. 122.
Indians killed by a game warden. Forest and Stream, vol. 71, no. 21,
p. 816.
California ground squirrels. *In* Plague infection in squirrels. Public
Health Reports. Washington, vol. 23, part 2, pp. 1861-1864.
Work of the Biological Survey in the interests of agriculture and game
protection. *In* Message from the President of the United States . . .
60th Cong. 1st sess., Senate doc. no. 132, pp. 2-29, col. pls. 4-6.
[C. H. M.].

1909

Relations of birds and mammals to the national resources. *In* Report of
the National Conservation Committee, vol. 3, 60th Cong., 2d sess.,
Senate doc. no. 676, vol. 12, pp. 316-340.
Report of the chief of the Bureau of Biological Survey [to June 30,
1908]. *In* Ann. Rept. Dept. Agri., pp. 571-590.
Notes on injuries inflicted by lynxes on two skulls of mountain sheep from
the Mt. McKinley Region, Alaska, obtained by Charles Sheldon dur-
ing the winter of 1907-1908. Forest and Stream, vol. 72, p. 491, 1 fig.
in text.

"Two Important Letters": [Letters dated Feb. 18 and Feb. 23, 1909, advocating the establishment of game breeding farms.] *Amateur Sportsman*, vol. 40, p. 6. Extract reprinted in the same periodical as a front cover "Target", Oct. 1910, Sept. 1911, etc.; *Game Breeder*, vol. 2, p. 37 [not seen by me].

Recommendations of the committee [H. W. Wiley and C. Hart Merriam].
In *Durability and economy in papers for permanent records*. U. S. Dept. Agri. rept. no. 89, pp. 9-12.

Ethnological evidence that the California cave specimens are not recent. *Science*, n. s., vol. 29, no. 751, pp. 805-806.

Transmigration in California. *Jour. Amer. Folk-Lore*, vol. 22, no. 86, pp. 433-434, 1 fig.

Report of the chief of the Bureau of Biological Survey [to June 30, 1909].
In *Ann. Rept. Dept. Agri.*, pp. 533-551.

1910

The Dawn of the World | Myths and weird Tales told by the | Mewan Indians of California | Collected and Edited by | C. Hart Merriam | vignette | Cleveland | The Arthur H. Clark company | 1910. 273 pp., col. frontispiece, 13 ills. [2 col.], map.

Ursus sheldoni, a new bear from Montague Island, Alaska. *Proc. Biol. Soc. Wash.*, vol. 23, pp. 127-130. [Republished in *The Wilderness of the North Pacific Coast Island*. . . . By Charles Sheldon, 1912. Appendix A, pp. 223-227.]

The California ground squirrel. U. S. Dept. Agri. Div. Biol. Surv. Circ. no. 76, pp. 1-15, figs. 1-4 in text.

Fourth Provisional Zone Map of North America [U. S. Biol. Surv., Merriam, C. H.; Bailey, V.; Nelson, E. W.; Preble, E. A.]. In *American Ornithologists' Union Check-list*, 3d ed., frontispiece [col.]. Reprinted, 1923.

[1911 no titles]

1912

[Killing of bachelor fur-seals on Pribilof Islands, Bering Sea.] Letter dated Feb. 13, 1912, embodied in Speech of Hon. Wm. Sulzer before House of Representatives, Feb. 14, 1912. *Congressional Record*, 62d Cong., 1st sess., vol. 48, part 2, p. 2067 (pp. 2171-2172 of original daily edition) [not seen by me].

The Queen Charlotte Islands caribou, *Rangifer dawsoni*. In *The Wilderness of the Pacific Coast Islands*. . . . By Charles Sheldon, 1912. Appendix C, pp. 233-235, 1 pl.

[Testimony of] In U. S. Congress. House Committee on Expenditures in Department of Commerce and Labor. To investigate the fur-seal industry of Alaska, Hearings, 62d Cong., 1st sess., on H. R. 73. Washington: Govt. Print. Off., pp. 692-699.

1913

Six new ground squirrels of the *Citellus mollis* group from Idaho, Oregon, and Nevada. Proc. Biol. Soc. Wash., vol. 26, pp. 135-138.

1914

[Letter to Editor] Comments on an Ontario pioneer lady's story. Rod and Gun in Canada, p. 973 [not seen by me].

Grizzly bears: skulls wanted. Science, n. s., vol. 39, no. 1003, p. 424.

Descriptions of thirty apparently new grizzly and brown bears from North America. Proc. Biol. Soc. Wash., vol. 27, pp. 173-196.

The Museum of Vertebrate Zoology of the University of California. Science, n. s., vol. 40, no. 1037, pp. 703-704.

1915

[Letter to Mr. McGuire] In Let us protect our bears. Outdoor Life, vol. 35, no. 1, pp. 64-65.

Localities from which big bears are needed. Boone and Crockett Club, Report of the Game Preservation Committee, 1915, pp. 45-47.

The big bears of western North America, with special reference to their distribution. Science, n. s., vol. 42, pp. 659-660.

1916

East Africa—game garden of the world. A review of Roosevelt and Heller's life histories of African game animals. Amer. Mus. Jour., vol. 16, no. 3, pp. 145-153, 8 ills.

[Review of] Spencer Fullerton Baird. . . . By W. H. Dall. Geogr. Rev., vol. 1, no. 3, p. 247.

Indian names in the Tamalpais region. California Out-of-doors, April, p. 118.

Ovis sheldoni, a new mountain sheep from Sierra del Rosario, Sonora, Mexico. Proc. Biol. Soc. Wash., vol. 29, pp. 129-132.

Nineteen apparently new grizzly and brown bears from western America. Proc. Biol. Soc. Wash., vol. 29, pp. 133-154.

A defense of the Indian [Review of The fighting Cheyennes, by G. B. Grinnell]. Yale Rev., n. s., vol. 6, no. 1, pp. 199-201.

1917

To the memory of John Muir. Sierra Club Bull., vol. 10, no. 2, pp. 146-151.

Indian village and camp sites in Yosemite Valley. Sierra Club Bull., vol. 10, no. 2, pp. 202-209.

Was that bear clipped? Recreation, vol. 56, no. 3, p. 129.

- The giant manzanitas of Clear Lake, California. Amer. Mus. Jour., vol. 17, no. 6, pp. 398-402, with 5 ills. from photographs by author.
 [Statement by, before U. S. Geographic Board] Shall the name of Mount Rainier be changed? Washington, Govt. Print. Off., 10 pp.
 How Mah'-tah, the turkey buzzard, lost his speech. Amer. Mus. Jour., vol. 17, no. 8, p. 557, 1 ill.

1918

- Review of the grizzly and big brown bears of North America (genus *Ursus*) with description of a new genus, *Vetularctos*. N. Amer. Fauna no. 41, 136 pp., pls. 1 (frontispiece)—16.
 John Muir misquoted. The Outlook, vol. 118, April 24, p. 678.
 Two new manzanitas from the Sierra Nevada of California. Proc. Biol. Soc. Wash., vol. 31, pp. 101-103, pls. 1-5.
 The acorn, a possibly neglected source of food. Natl. Geogr. Mag., vol. 34, no. 2, pp. 129-137, 8 ills. in text.

1919

- Grove Karl Gilbert, the man. Sierra Club Bull., vol. 10, no. 4, pp. 391-396, pls. 220 (frontispiece), 221.
 The sandhill crane in northeastern California. Condor, vol. 21, no. 2, p. 87.
 Criteria for the recognition of species and genera. Jour. Mamm., vol. 1, no. 1, pp. 6-9.
 Is the jaguar entitled to a place in the California fauna? Jour. Mamm., vol. 1, no. 1, pp. 38-40.
 Why should every specimen be named? Jour. Mamm., vol. 1, no. 1, pp. 41-42.

1920

- Death of James M. Macoun. Jour. Mamm., vol. 1, no. 4, p. 187.

1921

- A California elk drive. Sci. Mo., vol. 13, pp. 465-475, 5 ills. in text.
 Former range of mountain sheep in northern California. Jour. Mamm., vol. 2, no. 4, p. 239.
 Our largest bears as shown in skulls. Outdoor Life, vol. 48, no. 6, pp. 388-390, 8 ills.

1922

- The unforeseen in Indian vocabulary work. Nat. Hist., vol. 22, no. 1, p. 82.
 Early records of buffalo in "California" [= Nevada, Utah and southwestern Wyoming]. Jour. Mamm., vol. 3, no. 1, pp. 54-55. [Brackets in title placed by C. H. M.].
 Distribution of grizzly bears in U. S. with map by C. H. M. Outdoor Life, vol. 50, no. 6, p. 405 [not seen by me].

1923

- Application of the Athapaskan term Nung-kahhl. *Amer. Anthropol.*, n. s., vol. 25, no. 2, pp. 276-277.
- Misuse of the word "creation" by naturalists. *Science*, n. s., vol. 57, no. 1487, p. 742.
- Earliest crossing of the deserts of Utah and Nevada to southern California: Route of Jedediah S. Smith in 1826. *Calif. Hist. Soc. Quarterly*, vol. 2, no. 3, pp. 228-236, 1 ill. (map).
- First crossing of the Sierra Nevada: Jedediah Smith's trip from California to Salt Lake in 1827. *Sierra Club Bull.*, vol. 11, no. 4, pp. 375-379.
- Erroneous identifications of "copper effigies" from the Mound City group. *Amer. Anthropol.*, n. s., vol. 25, no. 3, pp. 424-425.

1924

- Jedediah Smith's route across the Sierra in 1827. *Calif. Hist. Soc. Quarterly*, vol. 3, no. 1, pp. 25-29.
- Baird the naturalist. *Sci. Mo.*, vol. 18, pp. 588-595.
- Forced allotments. *In* A cycle on the American Indian. *The Forum*, N. Y., vol. 72, no. 5, pp. 712-713.
- Cotton tails. Letter to Editor of Game Breeder on use of word "Rabbit." *Game Breeder*, N. Y., pp. 54 and 56 [not seen by me].
- Statement of the chairman of the United States Geographic Board. *In* [pamphlet] The great myth—"Mount Tacoma" . . . Olympia Chamber of Commerce. . . Olympia, Washington, pp. 27-28.
- Shall the name of Mount Rainier be changed? *In* [pamphlet] . . . Proposal to change the name of Mount Rainier. . . Lowman and Hanford Company, Seattle.
- [Report of Chairman] Report of United States Geographic Board on S. J. R. 64 . . . to change the name of "Mount Rainier." . . . Washington: Govt. Print. Off., pp. v + 8.

1925

- Why misuse the name "Kadiak Bear"? Letter to Editor *Outdoor Life*. *Outdoor Life*, p. 62, Jan. 1925 [not seen by me].
- [Two letters *in*] Recent evidence of grizzly bear in the Sierra. *Sierra Club Circ.*, no. 12 [pp. 2-4].
- [Letter of transmittal, pp. 3-4; report of U. S. Geographic Board, pp. 4-9; testimony of C. Hart Merriam, pp. 21-27] *In* U. S. Congress. House Committee on Public Lands. Changing name of Mount Rainier. Hearings, 68th Cong., 2d sess., on S. J. R. 64. Washington: Govt. Print. Off.

1926

- The buffalo in northeastern California. Jour. Mamm., vol. 7, no. 3, pp. 211-214.
- Source of the name Shasta. Jour. Wash. Acad. Sci., vol. 16, no. 19, pp. 522-525.
- [Testimony of] In U. S. Congress. House Committee on Indian Affairs. Indian tribes of California. Hearings, 69th Cong., 1st sess., on H. R. 8036 and H. R. 9497. Washington: Govt. Print. Off., pp. 50-63.
- [Testimony of] In U. S. Congress. House Committee on Indian Affairs. Reservation courts of Indian offenses. Hearings, 69th Cong., 1st sess., on H. R. 7826. Washington: Govt. Print. Off., pp. 6-18.
- Measurement of bears' skulls. Outdoor Life (2 figs.) [not seen by me].
- The classification and distribution of the Pit River Indian tribes of California. Smithson. Misc. Coll. (publication 2874), vol. 78, no. 3, pp. 1-52, frontispiece [col. map], pls. 1-27.

1927

- [Obituary] William Healey Dall. Science, vol. 65, no. 1684, pp. 345-347. [Reprinted in Smithson. Rept., 1927, pp. 563-566, pl. 1.]
- [Testimony of] In U. S. Congress. Senate . . . Committee on Indian Affairs. . . Care and relief of Indians . . . Hearing, 69th Cong., 2d sess., on S. 3020. . . Washington: Govt. Print. Off., pp. 33-34.

1928

- Why not more care in identifying animal remains? Amer. Anthropol., n. s., vol. 30, no. 4, pp. 731-732.
- An-nik-a-del | the History of the Universe | as told by the Mo-deś-se | Indians of California | Recorded and Edited by | C. Hart Merriam, M. D. | seal | 1928 | The Stratford company, Publishers | Boston, Massachusetts. Pp. xi + 166, frontispiece, 6 ills.

1929

- The Cop-éh of Gibbs. Amer. Anthropol., n. s., vol. 31, no. 1, pp. 136-137.
- Additional information on the range of *Ursus planiceps*, a Colorado grizzly. Proc. Biol. Soc. Wash., vol. 42, pp. 171-172.
- Ursus holzworthi*, a new grizzly from the Talkeetna Mountains, Alaska. Proc. Biol. Soc. Wash., vol. 42, pp. 173-174, pls. 4-7.

1930

- Little-known tribes of the Salmon, New, and Trinity rivers in northwestern California. Jour. Wash. Acad. Sci., vol. 20, no. 8, pp. 148-149.

CLINTON HART MERRIAM—OSGOOD

- The New River Indians Tlô-hôm-tah-hoi. Amer. Anthropol., n. s., vol. 32, no. 2, pp. 280-293, pl. 7, col. map facing p. 293.
- Concentrations of remnants of Indian tribes in northwestern California. Science, vol. 71, no. 1847, p. 546.
- A remarkable case of word borrowing among California Indians. Science, vol. 71, no. 1847, p. 546.
- The Em'-tim'-bitch, a Shoshonean tribe. Amer. Anthropol., n. s., vol. 32, no. 3, part 1, pp. 496-499.
- A nest of the California gray squirrel (*Sciurus griseus*). Jour. Mamm., vol. 11, no. 4, p. 494, pl. 25.
- The white-tailed kite in Marin County, California. Condor, vol. 32, no. 6, p. 301.
- [Introduction to] The Wilderness of Denali. By Charles Sheldon. Pp. xvii-xxv. [Whole book edited by C. Hart Merriam and E. W. Nelson.]

1931

- [Letter to the editor on] Henry Wetherbee Henshaw. Amer. Anthropol., n. s., vol. 33, no. 1, pp. 103-105.

1932

- [Letter to Dr. M. W. Lyon, Jr.] In Comment and news. Jour. Mamm., vol. 13, no. 1, pp. 97-98.
- Roosevelt, the naturalist. Science, vol. 75, no. 1937, pp. 181-183.
- [The bears of America] In Records of North American big game. . . . Boone and Crockett Club. New York. The Derrydale Press, pp. 135-145, 6 ill.

[1933 no titles]

1934

- A hypothetical "sanctuary" for ocean-dwelling seals. Science, vol. 80, no. 2069, pp. 186-187.