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CLINTON HART MERRIAM—1855–1942*

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C. Hart Merriam was the first president of the American Society of Mammalogists. 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 preeminence 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. He was the central figure and the most dynamic in an era of very great activity and progress. To review his life is to recapitulate the events of this era and to indicate their far reaching effects not only in this country but throughout the world.

EARLY LIFE

He was born December 5, 1855, at Locust Grove, New York, where his parents lived in a rural mansion surrounded by ample acres and shadowed by the Adirondack Mountains. 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.

His father and mother were of old American stock, Merriam himself directly descended from one of two brothers who came from England to settle in Connecticut prior to 1830. Dewitt Clinton, the distinguished governor of New York in the first decades of the nineteenth century, was a family hero and his name was borne through several generations of Merriams. It was subordinated to an initial in our subject mainly to distinguish him, especially in family circles, from

* For other biographical sketches of the same subject see Talbot and Talbot, Science, **95**, pp. 45–46, 1942; Fisher, Jour. Wash. Acad. Sci., **32**, pp. 318–320, 1942.

C. Hart Merriam

his father Clinton L. Merriam. The name Hart was from his mother who was born Caroline Hart. His father was something more than a country gentleman —a man of ability and energy, a leader in his community, and for some time member for his district in the Federal House of Representatives. He had more than ordinary interest in natural history and it is recorded that he was in correspondence with John Muir as early as 1871, the subject being glaciation in Yosemite Valley.

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 in 1877. 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. On this trip he collected 313 bird skins and 67 nests and eggs. Methods of mammal collecting were then unknown to him and apparently he confined his efforts mainly to birds. 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 became 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 him 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 favored 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.

At seventeen years of age, however, a young man of good family could not be allowed to follow a supposed hobby exclusively. After a preparation at the Pingry Military School in Elizabeth, New Jersey, he was sent in 1874 to Yale, where he spent four years in the Sheffield Scientific School with medicine perforce as an objective, but with his interest in natural history getting stimulation and encouragement from such men in the faculty as A. Hyatt Verrill, Sidney I. Smith and Daniel Cady Eaton. Among his classmates was the biologist E. B. Wilson. While in New Haven, his interest in birds never flagged and before he left there or shortly after, in 1877, he published an account of "The Birds of Connecticut." Thence he went to Columbia to the College of Physicians and Surgeons, receiving his M.D. in 1879, at the age of twenty-four. During these student days he made lifetime friendships and continued to expand his connections with young naturalists of the period. In 1874, as indicated by a brief published paper "Notes from the South," he had an outing in Florida and in 1875 he was temporarily employed by the U. S. Fish Commission. Results of his observations of birds in the vicinity of his home were published in 1878 and 1879 under the title "Some Birds of Lewis County, New York." On March 7, 1878, while still a medical student in New York, he assisted in organizing the Linnaean Society of New York and was elected its first president.

At this time, ornithology was receiving much attention in various quarters and especially in Cambridge, Massachusetts, where a coterie of young men were actively engaged in forming private collections of bird skins. These included William Brewster, Henry Henshaw, Ruthven Deane, 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 on this trip, especially of the hooded seal, is still the finest in existence.

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 was 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 Adrondacks" 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 securing 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 is perhaps 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 was submerged in 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 superintendent, 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 objects. 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 were so well prepared and 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 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 mammals 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 Captain 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 Division of Entomology, then a branch of the office of the "Commissioner" 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 for a respite from medical practice which had become rather onerous. He had visited various naturalists, notably Blasius of Braunschweig and Graf von Berlepsch of Berlin, Germany, and after cabling his acceptance of the offer he 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 their thirtieth birthdays, 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 Ornithology and in 1888 this was expanded to 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 (1940) 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 Wild Life 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 Division of Entomology. 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, Merriam 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 the 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 faunal 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 geographic 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 large results. This was placed in charge of Dr. T. S. Palmer, since Merriam himself, after starting with the party, was 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. 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 Biologi-

cal Survey were not being 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 appropriations. 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. Merriam was dumfounded and at his wit's end. 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. 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 martialling 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. 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 the National Geographic, serving on the Board of Directors of the latter for many 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. 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 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 Department 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.

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 current affairs, music, art, or general literature. 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 historian, and William Keith, the artist, as well as John Muir, the literary natu-

ralist. His eschewal of general culture, therefore, did not extend to its creative personalities. During his travels in California he had many contacts with the numerous dwindling tribes of Indians in the state. Many of these were represented by only 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 interesting 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 some-

what 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 lifelong 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 first 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 the President bustled across the square from the White House 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 another 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 Cherry Kearton who showed a film of wild birds and other animals which for its time was unusual. When Roosevelt organized his famous 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.

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 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 martial his facts and label them without any effort to interpret them. This was characteristic, for he had never been given to theory. His attitude toward controversial subjects connected with the processes of evolution was usually that of suspended judgement 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, whom he had married in 1886. Their younger daughter, now Mrs. M. W. Talbot of Berkeley, California, for

some years before her marriage was also included. An elder daughter, Mrs. Henry Abbott 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, and in general the organization was a happy family, 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 were 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 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 time lay in his perfecting of methods, in the use of large series of specimens, in the persistent emphasis upon exactness of geographic data, in the demonstration of a 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 concrete production was very large and space does not permit its enumeration. His published writings include well over 600 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 in the British Museum. The collection of mammals which he started in his first years of government service was reported in 1940 to contain 136,613 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 preeminent. 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.

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BIBLIOGRAPHY OF CLINTON HART MERRIAM

By Hilda W. Grinnell

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.

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