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JOSEPH GRINNELL

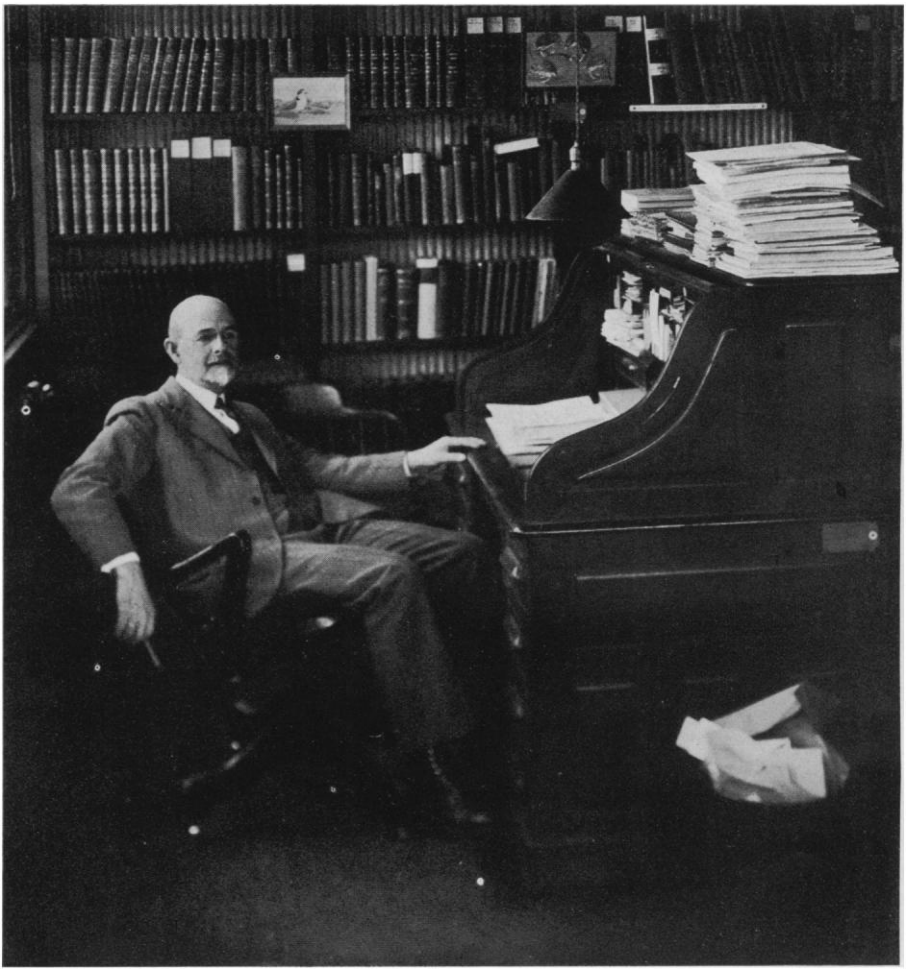
(1877 to 1939)

BY E. RAYMOND HALL

When Joseph Grinnell passed away in his 63rd year, vertebrate zoology lost one of its most distinguished and productive leaders, a man who until a few months before his death, was still in the full stride of accomplishment. He died May 29, 1939, at his home in Berkeley, California, of a coronary occlusion, following an earlier one late in August, 1938. He was born February 27, 1877, at old Fort Sill, Oklahoma (then Indian Territory) and is buried in California on a hill which overlooks Sausalito from the west. Through both his father, Dr. Fordyce Grinnell, and his mother, Sarah Elizabeth Pratt, his ancestry stems back to the Taber family of New England. His Quaker ancestors were predominantly English but had some French Huguenot blood. On June 22, 1906, at Glendora, California, he married Hilda Wood. Of this union there were born three sons, Willard Fordyce, Stuart Wood, Richard Austin, and a daughter, Mary Elizabeth. He is survived by these four children, his wife, and a younger brother, Fordyce.

He attended Pasadena [California] High School, received the A.B. degree in 1897 from Throop Polytechnic Institute (College) [now California Institute of Technology], and from Leland Stanford Junior University he received the M.A. degree in 1901 and the Ph.D. degree in 1913.

The name Joseph Grinnell in the minds of most biologists is closely associated with the California Museum of Vertebrate Zoology, founded in 1908 by Miss Annie M. Alexander, of which Grinnell was Director from its beginning until the time of his death. Specimens gathered in the coastal region of Alaska in the summer of 1907 by an expedition headed by Miss Alexander formed the nucleus of the collection. To these and other materials, Grin-



Joseph Grinnell, March 14, 1930, in his office in the old "temporary" Museum of Vertebrate Zoology where he worked from 1909 to 1930.

nell's private collection of 2000 mammals was formally added by gift in 1909, and his 8000 birds ten years later. Although administratively separate from any other biological department of the University of California, the Museum of Vertebrate Zoology immediately established cordial relations with the Department of Zoology under the chairmanship of Professor William E. Ritter. These ties were progressively strengthened right up to the time of Dr. Grinnell's death, when Professor J. Frank Daniel held the chairmanship of the Department of Zoology. But, of all the persons who had a part in helping to realize the aims of the Museum, Dr. Grinnell had greatest regard and respect for Miss Alexander. The 31 years of cooperation between these two persons, so fortunate for natural history, continued right down to the day of Joseph Grinnell's death. In his last illness he continued to plan for a study of pocket gophers, specimens of which Miss Alexander was seeking in the field when news reached her of his passing.

In the Museum of Vertebrate Zoology he devised and maintained a curatorial system unexcelled; it assured safety of materials and rendered any particular specimen readily available. Order, accuracy, and simplicity were the essentials he stressed in making the collections of greatest scientific use.

In his systematic work with mammals he relied upon "mass effect," as he termed it, in making preliminary segregations of closely related kinds. This practice he applied to skulls as well as to skins. He had a quick eye. Often he would pass by when another person was comparing series of skulls and, in casual inspection, point out differences until then unperceived, but which mensuration later verified. Complete synonymies and bibliographies of California birds and mammals were notable features of his working system. The time required for keeping the synonymies up to date usually was found on week-ends when others were on holiday. This habit of continuously working as long as his senses were undulled by sleep, and the freedom from other distractions made possible by his wife's successful management of the family and home, account in part for his enormous published output.

In the field, Joseph Grinnell was acknowledged by all to be an energetic, rapid, persevering worker. His field numbers for vertebrates had reached 7520 at the time of his death, but this was a second series begun in 1910 after he had collected 12,761 specimens under three separate series: birds, 9784; mammals, 2398; reptiles and amphibians, 579. His grand total of vertebrate specimens, then, is in excess of 20,000. And to this should be added 3005 pages of field notes prepared after 1908. "Time in the field is limited and the most possible should be made of opportunity," was the way he once expressed himself when considering the case of a field assistant who complained of lack of time for relaxation. A student with an interest in the quantity output of collectors for the Museum of Vertebrate Zoology, compiled the average numbers of vertebrate specimens per day, obtained by workers who were absent from the Museum for periods of 30 days or more.

At the head of the list was Joseph Grinnell with an average of 14 skins per day, for a three-month period, along the Colorado River in the spring of 1910.

Joseph Grinnell began preparing specimens at an early age. On January 1, 1894, before his seventeenth birthday, a red-shafted flicker bore his field number 72. On his first visit to Alaska, in 1896, he collected specimens and ornithological information in the Sitkan District. His later trip to Alaska, from May, 1898, to October, 1899, in the Kotzebue Sound district and Bering Sea, although partly inspired by the chances of finding gold, was turned to zoological advantage. His travels otherwise were all in quest of specimens or of information about animals. Chief among his numerous field trips in California were the following: San Bernardino Mountains, summers of 1905, '06, '07; Salton Sea and San Jacinto Mountains, 1908; Colorado River, 1910; Mount Whitney region, 1911; Yosemite region, 1914, '15; Death Valley region, 1917, '20, '33; Lassen Peak region, 1924–29; Humboldt and Trinity counties, several trips beginning in 1929. In the autumn of 1925 he visited the San Pedro Mártir region of Lower California, Mexico. Ten trips were made to museums and meetings in the eastern United States, the first in 1907–08 and the last in 1935.

His published works number more than 550. Most of these relate to birds and it is expected that a list of his published writings will appear in the next volume of "The Condor." The 76 publications which treat, wholly or in part, of mammals, include: A distributional list of the mammals of California, 1913; Natural history of the ground squirrels of California, 1917, with J. S. Dixon; A geographical study of the kangaroo rats of California, 1922; Animal life in the Yosemite, 1924, with T. I. Storer; Vertebrate natural history of a section of northern California through the Lassen Peak region, 1930, with J. S. Dixon and J. M. Linsdale; A review of the Recent mammal fauna of California, 1933; Fur-bearing mammals of California (July 22), 1937, with J. S. Dixon and J. M. Linsdale. Most of these works, and many of his bird papers, were of several hundred pages each. His first papers were on birds, and several of these papers were written in co-authorship with his mother, who was a prolific writer on several subjects. In 1907, with his brother, he published a paper on the butterflies of the San Bernardino Mountains; in 1908 with David Starr Jordan, an account of a new species of trout; and in 1917, with C. L. Camp, he published "A distributional list of the amphibians and reptiles of California."

These excursions into fields apart from his main interests, however, were not typical of his work, as is shown by his published research output, and by the whole development of the Museum of Vertebrate Zoology itself, both of which illustrate how success results from channeling of effort. In the first place he aimed to limit himself to California. In the second place he restricted his work to vertebrates, exclusive of fishes. In the third place he customarily selected a limited geographic area, even within California, and worked it

out to published stage of completion before undertaking another. He always had a *plan* and stuck to it! It is true that a certain geographic breadth was given to the work of the Museum of Vertebrate Zoology as a result of its investigations in Alaska, in British Columbia (reported on mostly by others than himself) in Lower California, Mexico, and later in states adjoining California, but these were undertaken at the suggestion of Miss Alexander, who, herself, with Miss Louise Kellogg, did a large share of the field work. Grinnell approved of this, but was not enthusiastic about personally working up the results. It was outside the political boundaries of California, which, in a way had, for him, more significance than the natural boundaries of a species or genus. Projects of his students which took in territory outside the state, in order thus to treat of a natural unit, he viewed with a jaundiced eye; and he almost always qualified his approval of them by suggesting a limitation of the geographic area to California or a part thereof. His reason for recommending thus was primarily because he regarded the chances of original findings in natural history as increased by concentration on a special area, and secondarily because he was interested in California. In contrast to this objective, which a few biologists regarded as too narrow, his viewpoint was remarkably broad in other ways. With birds, mammals, reptiles, or amphibians alone he was not so much concerned as with all of them, and he was even more concerned with their interrelationships and relations to the flora and even to inanimate parts of their environment. He preferred the term natural history to ecology; and all of his pupils, and certainly most of his readers, would agree that he abundantly deserves the name naturalist—the one above all others that he would have personally chosen. For him, the term carried high moral, as well as professional, connotations. The breadth of his interests, the depth of his knowledge of natural history, and his comprehension of ecological relationships probably were better known to his pupils than to his readers. To the suggestion that he put into book form the substance of his lectures in "Zoology 113" he always replied, "I will do so, in just one book, when I am an old man, retired." For him there still were too many other interesting things to do in natural history.

Writing was his method of expression and it was there that he occasionally gave play to his sense of humor, which reminded one of that of a boy, mischievous but never mean, who did things "to see what would happen." In letters to selected colleagues he would sometimes take a point of view, or carry an idea to such an extreme, in seeming earnestness, that the correspondent's fulminating reply would indicate his displeasure and consternation. This same trait, or one akin to it, led him to include in an occasional published paper some neat-sounding phrase or pat word which he knew would give pause to the editor or reader, or both. In our own journal (1934, pp. 210–220) he once wished to write of a large-gauged mouse's utilizing hidey-holes of correct caliber; but his purpose was thwarted by editorial deletion of the colloquialism

"hidey-holes." In another paper (1932, p. 320) he remarked, concerning the habitat of a *Dipodomys*, that the soil was "diggable . . . but not wind-driftable"!

Because of his attention to geographic variation, with the resultant naming of subspecies (geographic races), he was identified in some minds as a systematist; yet he gave but little time and scant interest to systematics which dealt with full species and none at all to phylogeny involving genera and higher systematic categories. As he himself emphasized, his interest was in the twigs and buds of the phylogenetic tree—geographic variants—close attention to which he thought might reveal Nature's means and methods in evolving kinds of animals. Here again his marked sensitiveness came into play; for pointed comments about "superficial systematics," that he was forced to hear from the lips of biologists ignorant of the aims of this work, penetrated deeply and, in the end, led him to pass on, or leave for others, some "new forms." Despite this "restraint" he named 69 kinds of mammals and 97 of birds. Of animals which bear his name I know of 2 insects, 7 birds, and the four mammals, *Scapanus latimanus grinnelli* Jackson (1914), *Procyon lotor grinnelli* Nelson and Goldman (1930), *Eutamias dorsalis grinnelli* Burt (1931), and *Microtus californicus grinnelli* Huey (1931).

"J. Grinnell" 's effectiveness as a conservationist, though well-known to a few persons, was much greater than was generally supposed. It is true that he published some articles on this subject and that in his course "Applied Vertebrate Zoology" he disseminated ideas; but his share in preserving and managing the native fauna and flora was largely accomplished by more indirect means. He liked to inspire the beginning of a movement, then sit back and watch it grow, fully content with, and even desirous of, anonymity for himself. As indicating the breadth of his fields of influence there may be mentioned Grinnell's part, along with Stephen T. Mather and C. M. Goethe, in inauguration of the nature guide-service in national parks; the impetus and direction (later changed) he gave to rodent control by publishing, with Joseph Dixon, the "Natural history of the ground squirrels of California" in 1917, and by serving as consulting zoologist for the horticultural commission in 1918; his influence in shaping the California Fish and Game Code; and the share he took in formulating the policy concerning California state parks. The backbone of his method was first the early presentation of biological facts which served as guide posts for administrative action and, second, commendation, in personal correspondence, of constructive action taken by officials. Only twice, so far as I know, did he take part in initiating opposition campaigns, and then only after he had exhausted other means of solving the problem. His first venture of this kind was in the period 1910–15 when, with Walter P. Taylor and Harold C. Bryant as associates, he actively opposed the inadequacy of the then existing California statutes protecting wild game. Although at first defeated in his efforts, and finally hampered by attempts of

opponents to exert political pressure, he lived to see the "no sale of game" concept, and other reforms espoused by him, enacted into law; and more than that, these concepts today are taken for granted as fundamentals in game legislation. The second venture was between 1930 and 1935, when, with Jean M. Linsdale and myself as assistants, he opposed the extension of control (reduction) of wild mammals to public and uncultivated lands, the use of the cumulative poison thallium, and the advertising of methods for killing small birds in the supposed interest of fruit and vegetable growers. If he won the last point, he had the same difficulties on the first two as he did with the "no sale of game" 15 years before; but he was optimistic. Only two days before his death he indicated his expectation that the then-pending transfer of the Bureau of Biological Survey to the Department of the Interior under Secretary Ickes, would effect some of the reforms he sought.

He was a member of at least 34 scientific societies, in many of which he occupied responsible offices. In addition to the Presidency of our own Society in the year 1937–38, he was a past President of the American Ornithologists' Union, Honorary Member of the Linnaean Society of New York, Fellow of the American Academy of Arts and Sciences, Correspondent of the Academy of Natural Sciences of Philadelphia, to mention only a few of his affiliations. His extreme modesty in certain directions prevented even most of his close associates from knowing anything of many honors and awards tendered him.

Grinnell's mature wisdom, keen insight into future possibilities, fairness, and application of the scientific method to administrative problems was recognized at Berkeley. He was called upon, therefore, to serve on many important University committees.

Professor Grinnell was deservedly known as an eminent teacher. He was Assistant Instructor in Zoology, Throop Polytechnic Institute, 1897–98; Assistant in Embryology, Hopkins Laboratory, Stanford University, summer of 1900; Instructor in Botany and Zoology, Palo Alto, California, High School, 1901–03; Instructor in Ornithology, Hopkins Laboratory, Stanford University, summers of 1901 and 1902; at Throop Polytechnic Institute, Instructor in Biology, 1903–05, and Professor of Biology, 1905–08; at the University of California, at Berkeley, in Zoology, Assistant Professor, 1913–17, Associate Professor, 1917–20, Professor, 1920 until the time of his death.

As I knew him (from January, 1924, until his death) his lectures to undergraduates were characterized by lucidity, explicitness, enthusiasm and meticulously perfect diction, except for not infrequent use of the phrase "it don't." As a few persons knew, he consciously clung to this as forming one remaining link with the simplified English and phonetic spelling that he once espoused. The laboratory exercises he set up were designed to be, he once said, as different as he could make them from the sort inflicted upon him when he was an undergraduate. The principal advantage to the student of these laboratory periods was the opportunity to discuss with Grinnell some problem

of zoological interest, more often than not unrelated to the laboratory exercise in hand. Often the discussion hinged on means of carrying forward out-of-doors some set of observations that the student had under way. In later years, when the increasing numbers of students in these classes precluded his sharing with each pupil as much of the laboratory time as formerly in this fashion, he reluctantly permitted, or more often posed as being unaware of, the more conventional laboratory exercises which were substituted by his assistants. At about this same time he inaugurated, as a kind of substitute, the assignment to each student of some field study on which he must make a written report, without recourse to published literature. There were thus fostered many unique ideas and highly original interpretations of the behavior of animals. This result, in itself, went far in Grinnell's mind to justify the system. In any event, it departed significantly from a kind of laboratory teaching that he held in low esteem; and his reduction of the laboratory time indoors to a minimum, in favor of supervised observation of animals out-of-doors, was to be expected. Afield, rain or shine, with a group of twenty-odd students was where he taught most effectively. Every movement, note, and structural part of a bird or mammal he at one period maintained had a use; and certainly each one of a great number of any animal's attributes had for him a definite significance. This was his "laboratory," and here he made sure, often by indirect pedagogy, that the students found out for themselves many of the things he knew, and that they learned how to record what they saw. Of the final mark in the course, one-fourth rested on the field notebook alone! The lucidity, explicitness, and enthusiasm of his lectures were in a way reversed on these field trips; the order was enthusiasm, explicitness and lucidity, tempered always with a scholarly dignity.

In teaching graduate students, he theoretically followed what he maintained was the system of his own favorite major professor, Charles Henry Gilbert. This comprised two things, only: acceptance of the student's enrollment card at the beginning of the term and appraisal of the manuscript report at the end of the term. Practically, even as early as 1924, he did much more. Anyone, graduate student or otherwise, working within the radius of Grinnell's normal "territory" was visited often, particularly if zoological specimens were in evidence. His obvious interest in the specimens and in the results of one's study of them was so genuine that most persons readily talked to him about their findings. His genuine interest and his questions made one's problem seem more important and generally left the student with a fair outline for carrying his investigation forward. The discussion more often than not was terminated by Grinnell's suddenly darting away, back to his own work, in a fashion which those who knew him took for granted, but which invariably impressed strangers because his departure was so abrupt and so entirely without warning or apology. Whether or not the student got his material into manuscript form was his own affair. If and when he did, a

session with Professor Grinnell in editing the first two or three pages ended with the admonition to "go over the remainder and fix it up the same way." Not only was the form of expression subjected to critical examination from many angles, but the ideas themselves were examined in the same way. "How do you know that?" was a query of his which led many aspiring authors to rewrite large sections of their manuscripts. Those who persisted to the third or fourth writing might earn moderate praise, for what Professor Grinnell was more apt to term the "passableness" than the "excellence" of the final draft. It was his habit to submit selected manuscripts of his own for criticism to his pupils, who often were impressed at his ready willingness to acknowledge imperfections. Then it was that he would make the point that any statement of which the meaning is not clear, even to one person, should be reworded, because there is a way of stating the thought so that everyone will understand it. By this pedagogical device he rendered opinionated pupils more tractable when he next corrected their manuscripts. In later years he offered each spring a non-credit course, "Scientific Writing," which was attended by graduate students other than his own and even by faculty members.

He was editor of the ornithological magazine, "The Condor," from 1906 until his death; and service on the Editorial Committee of the University of California Press and the Editorial Committee of the Department of Zoology occupied a large share of his time. This experience, and a natural aptitude in precise expression, contributed much to his success in graduate teaching.

Other modifications of his theoretically simple system for offering graduate instruction were the addition of "Vertebrate Review," a weekly seminar on current literature in the field of vertebrate zoology, and also the requirement that each student who undertook a problem of investigation should present at the beginning of his work a full outline and at the end of each semester a written report of progress. As the number of students increased he divided their supervision with, or delegated it outright to, one or another of his younger associates. More than twenty graduate students were working under the direction of Professor Grinnell and his associates at the time he was taken ill.

Dr. Grinnell's attention to details of geographic distribution, in an area which was highly varied topographically and climatically, inspired similar work among contemporary West Coast naturalists as well as among his students. The publication in 1919, with Harvey M. Hall, of "Life-zone Indicators in California" and the demonstration in published works like "Animal Life in the Yosemite" of the usefulness of the life-zone concept as enunciated by C. Hart Merriam, brought wider recognition of the worth of this concept at a time when biologists in less diversified regions were questioning its value. This feature and other things emphasized by Grinnell gave direction to studies in natural history which greatly influenced the work of western naturalists in the past thirty-five years.

Joseph Grinnell was a man of fine sensibilities and in his later years was progressively more retiring in nature. For example, he never would permit the binding for reference in the Museum of a set of his papers as nearly complete as could be assembled. Their presence in that form would have embarrassed him. It was unthinkable that anyone on his staff should name a new animal in his honor. More understandable was his positive refusal to allow an artist's portrait of him to be hung in the Museum after all of the staff members had joined in presenting it. Of course the portrait had to be made without his knowledge, and he was lured to its presentation by the crassest of duplicity. He refused to give public lectures; and even before his classes he at times suffered from stage fright. A few persons possessed of a certain dominating manner of speech and greeting, he truly dreaded. An aversion to shaking hands he gradually overcame, at least in part, although in the years which marked the conditioning stage, a too abrupt extension of a visitor's hand might cause Professor Grinnell to jerk his own hand behind his back. If these traits sometimes were disconcerting to strangers, they made him more human to his close associates. From what has been said it must not be inferred that he disliked members of his own species; on the contrary they interested him, and he had many genuine friends. He was generous of his time, especially with persons younger than himself, and had the happy faculty without overt expression, of eliciting the friendship of others.

He was insistent on thoroughness, accuracy, and excellence in tasks undertaken, and unwavering in his demand for strict observance of the proprieties and regulations governing Museum property—not even a screwdriver or a typewriter could be put to private use—and under his moral code in scientific matters no Museum publication, small or large, could be traded for a specimen or a favor to the institution; a scientific paper was issued solely for the distribution of knowledge to man. Naturally these attributes earned him the respect of his staff and of the University administrators.

With his personal resources and influence he was generous. The inability of a needy student to acquire a loan from a University assistance fund was the sort of thing Grinnell could correct without the student's ever suspecting that the professor dug into his own pocket for the money. Unexpected emoluments and cherished opportunities which came to Grinnell's junior associates seldom could be traced to him because of the misleading clues he planted along the route. Thanks would have been embarrassing. It is understandable, then, that his associates not only found him human but that they respected and loved him as well.

University of California Museum of Vertebrate Zoology, Berkeley, California.