IN MEMORIAM: JOSEPH GRINNELL

BY JEAN M. LINSDALE

Plate 9

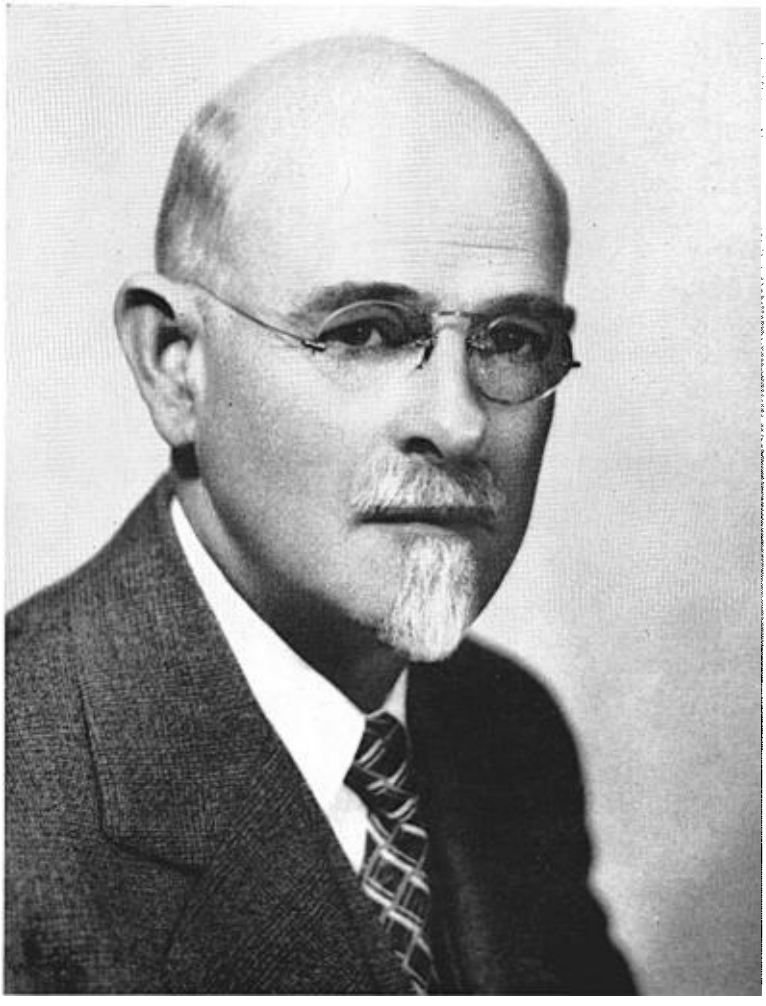
ORNITHOLOGY is essentially a study for amateurs, despite the widespread recent tendency to pursue it as a profession. Joseph Grinnell, one of the foremost of American amateurs, took a large part in bringing the study of birds to the level of importance such that many people thought of it as a prospective profession. It may yet turn out that he, of all ornithologists active in America in the first half of this century, exerted the greatest influence upon his fellow workers. It is partly in this light that we examine the activities and accomplishments of this man.

His ancestry and early life have been traced in authoritative detail by Mrs. Grinnell in the biography which appeared with a bibliography of his writings in 'The Condor' (42: 1–34, 1940). Both grandfathers were Quaker ministers, and they were members of families which came early from France and England to the New England of three centuries ago. Thus it was no great surprise to see expressed in Joseph Grinnell many of those traits which we expect in a resident of that section of the country.

After the birth of Joseph on February 27, 1877, in Indian Territory, the Grinnell family lived for brief periods at several widely separated places before coming to California to settle at Pasadena. His father's medical profession and his mother's interest in literary accomplishment provided likely incentive and solicitous encouragement for those leanings toward natural history already aroused by Joseph's early experiences on the frontier. His schooling through the college at Throop Polytechnic Institute was completed at Pasadena with only one two-year interruption when the family moved back to Carlisle, Pennsylvania.

Thirty-two years after his graduation from Pasadena High School he recalled that *the* University of all California, in his school days, was Stanford; and Jordan was synonymous with Stanford. As far as he could recall, at that time he had barely heard of Berkeley. His story, written for a brief talk, but never printed, continues:

"Toward graduation time, in the spring of 1893, there was much talk, both at home and at school, of Stanford. In the fall, four out of my class of 16 left for Stanford. I think only one out of the class went to some other university. But my age was 16, bulk small, trousers short, and those about me were obsessed with the idea that



Yours,
Joseph Grinnell

I was distinctly too infantile to be permitted away from home. Perhaps *so;* at any rate, I had to be content with spending four years of so-called college tuition at the local Polytechnic Institute. With an A.B. from there, and after returning from a year and a half of adventure in Alaska, it was finally decided that I could be trusted to attend a real university; and in the middle of the spring semester of 1900 I reached Stanford, with certain personal handicaps which must have been distressingly outstanding, not only to my new instructors but to my fellow students at the tables in the zoology laboratory. I can recall with some clearness that one of the latter, Cloudsley Rutter, *told* me so!"

The trips to Alaska no doubt served better than could an equal amount of school to prepare Joe Grinnell for his future. Naturally they were not the well-scheduled routines of more recent, agency-conducted excursions. But the very uncertainties made these expeditions valuable for the bird collector. He could be most active when the normal program was most broken and uncertain. The first trip, in 1896, was made possible by the invitation of Captain Richard Henry Pratt, an official acquaintance of the family. As soon as Joe reached Alaska, he was determined to stay as long as possible. Besides some practice with meager subsistence and many unfamiliar situations, he was able to accumulate much new and exciting material for later study, and to encounter several new naturalist-friends. One of these, Mr. Joseph Mailliard, in autobiographical notes in 'The Condor,' later expressed his version of this new acquaintance in these words: "At that time, Grinnell struck me as being a bright, intelligent, and enterprising 'kid'—a bit 'fresh' perhaps—with lots of energy and possibilities. The tendency to 'freshness' soon fell away with maturing years, but time has proved the remainder of my diagnosis to have been correct, as all readers of 'The Condor,' and many others, know."

This trip turned out so well that in two years it was easy to get parental sponsorship in joining a group of twenty-two Alaska-bound, prospective gold miners. The group outfitted their own boat, and camp for the winter was established on the Kowak River. Although Joseph's membership in the company involved certain duties and responsibilities, abundant time remained for collecting birds and recording their activities in the region. Volunteer help, especially from Dr. William V. Coffin, made it possible to obtain and save an extra amount of material in the short rush season when it was most easily available. About seven hundred bird skins and as many eggs were preserved. The materials from the two trips extended Grinnell's scope of interest in bird systematics, provided adequate basis for an

imposing series of reports, and brought his work immediately and favorably to the attention of older ornithologists at eastern museums. His reputation as an alert yet careful worker grew rapidly in this period.

It was a fortunate circumstance, possibly, that Grinnell grew up in the far West where he was comparatively free to work out and develop his own type of approach to the bird problems presented by the region. In his early years nearly all of the bird work in this country, even that which concerned the West, was done by persons who lived along the Atlantic coast. He was not alone, however, in developing his bird studies, for there were many young Californians his own age or older who provided help, companionship, competition, and contagious enthusiasm, all important elements in the growth of an active naturalist. These made up for the lack of large museums, and each naturalist was thus encouraged to make his own museum.

Joseph's collection was begun before he was thirteen; the first specimen was a toad obtained in his last stay at Carlisle. His permanent catalogue, begun in 1894 (on January 1) when he was seventeen, started with specimen number 72, the skin of a Red-shafted Flicker. He had destroyed all specimens made earlier. By the time he entered Stanford University for graduate work, he had assembled nearly 4500 bird skins. Even at this early stage Grinnell's impressive ardor in the field was prophetic of the proficiency which made his expeditions so effective. He was impatient to start each trip. His headquarters in the field were not the nearest hotel, but a sequestered spot where he could set up his own tent, live with the simplest equipment and be able to get the full worth of out-door surroundings. Grinnell could be at the same time a strict adherent to custom and a zealous advocate of change. Thus he clung to simple, commonplace procedures and utensils in camp and in the handling of specimens, but he seemed to practice most unorthodox schemes for detecting animals and interpreting their lives. Possibly this was mainly the result of his increasing application to the problems and his continuously inquisitive thinking of them. He seemed to meet each individual animal as though he were encountering the species for the first time. His work in the field combined this restless enquiry with tireless physical activity. No question of enduring possible hardship occurred; he did not even recognize them. Rain, snow, cold, heat, dust, insects, mud, or wind might plague other workers to the point of inactivity, but Grinnell derived special pleasure in pretending not to be hindered by them, and thus he was able to overcome

the inconvenience. A few naturalists have traveled more miles in California than did Grinnell, but certainly none has gained so extensive a first-hand knowledge of its birds and mammals and of certain phases of its vegetation. His early trips on foot and by wagon or pack outfit were long and thorough. Later ones by automobile were shorter, but they served to fill gaps and to extend a vast experience with the animals and their environment.

Joseph Grinnell in many ways exemplified the truth of the conclusion that persons who achieve greatly are characterized not only by superior intellectual ability but also by persistence of motive and effort, confidence in their abilities, and great strength or force of character. These traits made the results of favorable turns of chance always appear doubly impressive in his achievement. Ordinary persons had little prospect of keeping up with his rate of progress, and he had little need to be concerned over their possible encroachment upon his domain.

In its early years, the Cooper Ornithological Club published minutes of meetings in the 'Nidiologist.' In the report on the meeting at San Jose on January 6, 1894, is the announcement that "Jos. Grinnel" of Pasadena was elected to membership. At the April meeting, two skins of Pygmy Owls sent in by Mr. Grinnell from Pasadena were exhibited. Further evidence of ornithological activity in southern California came soon, for in the minutes of the December meeting is the announcement that "an Annex to the Club has been organized, the principal place of meeting being at Pasadena. It is intended for the benefit of Southern Californian members. The following officers of the Annex were elected: president, Ralph Arnold; vice-president, Jos. Grinnell; secretary-treasurer, H. A. Gaylord. It was decided to begin a club collection of specimens, for which space has been secured in the Throop Polytechnic Institute." As another item of business at this first meeting "a proposition to publish a list of Southern California birds was made by Mr. Grinnell. It was decided to call for notes from all Ornithologists." Grinnell made still further contribution to this first meeting by reading a paper, on sapsuckers.

In subsequent years, as many persons became devoted to the welfare of this bird club and pooled their ingenuities to keep it going, the necessity for some means of unifying its scattered membership and keeping it one organization became more and more evident. Whether he or the Club recognized the need or not, Grinnell seemed to be the person who contributed most to this unity and continuity. His alternating residence with northern and southern divisions at a

critical period made it possible for each to accept him as one of its own members. The Club supported 'The Condor,' 'The Condor' maintained the Club, and Joseph Grinnell sustained 'The Condor.'

After the first period when Chester Barlow *was* the Club, according to common testimony of its early members, the affairs of the journal were cared for by Walter K. Fisher, with Grinnell as an active apprentice. In 1906 Grinnell became Editor. Possibly his greatest gift to the venture was the talent for withholding his own personality until it was needed. In any undertaking of the group others came first, but he was always prepared to offer suggestions or to perform any chore. His explanation for taking initiative was that someone had to do it, but he knew also that the most certain way to strangle group endeavor would be to hinder the enterprise of others.

The facilities of contributors to the magazine and the desires of its subscribers required that continuous attention be given to its future. The numerous articles in it which now make pleasant or profitable reading did not come, ordinarily, without much urgence and planning on the part of the Editor. He not only supplied this encouragement as needed, but he repeatedly joined forces with the business managers of the Club. The skill of these officers was just as important as his own, and he was eager always to acknowledge debt to them. By this ideal organization much could be accomplished for bird study, with meager resources.

Besides numerous articles of his own in 'The Condor,' Grinnell was author of eight of the first twenty-six numbers of the 'Pacific Coast Avifauna,' and he edited most of the reports in the series. He contributed further to the interests of bird students by a long series of reviews for 'The Condor' and by writing numerous items of news or other editorial comment, some of which stirred lively reader-interest. These were prepared often on the occasion of some spirited debate, impetuous enquiry, jubilant discovery, or caustic comment by some worker. Anticipation of these provocative opinions made many 'Condor' readers turn first to its editorial page. Other editorial duties performed for the University of California Press, including part of its zoology series, and for the California Academy of Sciences, extended this type of service to a larger circle of workers. For years he offered special instruction at the University to persons preparing to publish concerning discoveries in natural history.

In his first years of bird study Joseph received help from other young naturalists in addition to encouragement from his parents and certain other adults. Dr. Hiram A. Reid singled him out for special mention by including with comment in his 'History of Pasadena' a

list of birds prepared by Grinnell. Two publications helpful to the ornithologist of half a century ago, as they would be at any time, were Coues's 'Key' which came as a Christmas present in 1893 and the magazine, 'The Oölogist,' which provided news and inspiration to all collectors of that time; the study of birds in the 'nineties meant the collecting of eggs and sometimes of skins. In this journal was printed Grinnell's second article, a notice of the Virginia Rail in California.

Membership as an Associate in the American Ornithologists' Union came in 1894, at the twelfth congress. At this time Elliott Coues was President, William Brewster and C. Hart Merriam, Vice-presidents, John H. Sage, Secretary, and William Dutcher, Treasurer. Other members of the Council were J. A. Allen, C. F. Batchelder, Frank M. Chapman, Charles B. Cory, D. G. Elliot, Robert Ridgway, and Leonhard Stejneger. Each of these leaders held the respect of our neophyte and some of them pointed the way by example for most of the work he later undertook. Grinnell's first communication to 'The Auk' appeared in 1897. Scarcely a year passed after that without an article from him or some notice of him or his work in this journal.

It was with unconcealed pride that announcement was made in 'The Condor' when Grinnell was elected to the class of Fellows in the A. O. U. in 1901 when he was twenty-four years old; he was thus the youngest member to receive such distinction. The difficulty of attending the meetings no doubt postponed his taking a prominent part in affairs of the Union. Nevertheless, he made up for this during his term as President (1929–1932) when he gave much thought and active ministration to the Union's problems. His contribution to this organization consisted mainly in supplying information, not always accepted, for the official check-lists, the bringing of representation, in official circles, from the West, and the emphasis of his repeatedly advocated thesis that young persons should have a part in management, even at the risk of bringing rapid changes in custom.

Also early in 1894, Joseph Grinnell began the long series of notebooks which he was to continue through his whole life and where the most important results of his work were to be recorded. Thus, in his seventeenth year the hobby of bird study changed quickly to a full-time undertaking in which all his talents and abilities were applied with marvelous effectiveness right from the first. From this time there could be no doubt about how Grinnell would respond to opportunity, but as yet there was no way to see how the opportunities would come. His concern, however, was for the fulfillment of

an immediate objective, the publication of a list of birds of his home area, the Pacific Slope of Los Angeles County. The appearance of this publication early in 1898 was an important event. The enthusiasm with which it was received and used by bird students no doubt determined the major trends of all its author's future bird work. He had demonstrated that he could complete a task involving the cooperative effort of many persons and at the same time make his own part in it the greatest. He had already demonstrated the knack of getting the results of his studies into print and ready for immediate use by others.

In a declaration of regards to Doctor Gilbert and Professor Price, prepared for the occasion of their retirement in 1925, Professor Grinnell spoke of his early training and of his great debt to those men. His own words are significant and authoritative as explaining some of the outstanding traits of his career. They also illustrate his own distinctive manner of expression. He wrote: "The course that I remember above any other, entered that first fragment of a semester, was Professor Price's course in embryology. I had had a bit of the subject before, but on no such standard of thoroughness as I now found; and I know I benefited markedly. I liked the subject; and Professor Price, in his usual thoughtful fashion, was good enough to remit some of the regular class routine in my case, in lieu of which I was to do a special problem. I studied developing feathers; and to this day, in my teaching, I dwell on that subject, of feather 'anlages,' with a satisfying feeling of familiarity and authority.

"Under Professor Price, both at Stanford and Pacific Grove, I had a period of training in laboratory technique and in teaching such as I never had before or since. Technique included practice in several of the then rather new methods of cytological preparation, staining, serial sectioning, and reconstruction—involving slow, careful, methodical procedure. The practice I had in preparing chick slides in quantity for class use certainly brought more benefit out of that course, to me as an assistant, than any registered student got by merely studying the slides furnished him ready for examination.

"Then there was the constant example before me of a real teacher, equally methodical in this function as in research, above all, clear and simple in his explanations. In my own teaching in subsequent years, I have again and again found myself not only recalling but using Professor Price's teaching methods, and even adopting his modes of expression. The most practical instruction in teaching I ever had, I thus received from Professor Price.

"The following fall, I had a better start in getting into the swing

of the work in the Zoology Department at Stanford. It was then that I entered Doctor Gilbert's seminar, having been admitted by that time to full graduate standing. That seminar, attended continuously for that and the following two years, served for me as the most disciplined mental training of my student experience anywhere. Indeed, I can say, with confidence of its truth, that of all seminars I have participated in or visited to this day, Dr. Gilbert's was by all odds the most ideally conducted.

"I was at that time enthusiastically ambitious to launch into a research career. But there is testimony on record to the effect that I was rather superficial in my aims and mode of dealing with the problem I had undertaken; that, while I had plenty of initiative perhaps, I was inclined to be slap-dash. Indeed, the words 'cock-sure' and 'fresh,' with zoological connotation, were applied to my style of mental attitude and accomplishment. Dr. Gilbert's seminar proved a helpful antidote to those tendencies. While not conclusively effective, at least said tendencies were undoubtedly retarded, and I believe and hereby acknowledge that my prospects for research were immeasurably improved.

"One more point for comment may be appropriate to mention here. I do not recall having heard either Doctor Gilbert or Professor Price ever speak definitely upon the subject, but I learned by their example to abhor undue publicity. I retain to this day, and probably always will retain, a distaste for personal advertising, not only on the part of others but of myself. I know that it is current practice to carry the 'psychology of salesmanship,' as a current phrase has it, into education and even into the promulgation of science especially where the financial interests of a research institution are concerned. This is probably justified. But that the practice can be extended, on good ethical grounds, intentionally, to the career of an individual I cannot bring myself to grant. No doubt my conscience on this score now would have been decidedly less sensitive if I had *not* been a zoology major at Stanford."

This notion persisted, though it required constant vigilance to forestall the advances of certain resourceful reporters who understood the appeal of nature topics. Grinnell did not approve the sending out of elaborate notices of work to be undertaken or in progress, but when the work was completed and in print, he made effort to see that all persons seriously interested could get copies. He regularly refused to attend or give talks at meetings where the concern with animals was only casual or secondary, though he recognized a need for such work on occasion and encouraged others to engage in it.

Back at Pasadena, in 1903, after the sojourn at Stanford, Grinnell became an instructor and then Professor at Throop Polytechnic Institute. Activities in the field were resumed with more purpose than ever and several students were enlisted with such stimulative fervor that they became naturalists for life, and for long periods their association with Grinnell was continued. One of these students, Hilda Wood, during the school year 1905–06, made a special study of the 500 specimens of reptiles assembled in the previous three years from Los Angeles County. This material was the basis for Bulletin Number 1 in the science series of the Throop Institute. Hilda Wood continued to be Joseph Grinnell's most important helper. On June 22, 1906, in Glendora, they were married, and immediately they set out to continue in the field work already started in the San Bernardino Mountains.

Two years later the family home was moved to Berkeley, where the four children, Willard Fordyce, Stuart Wood, Mary Elizabeth, and Richard Austin grew, each to develop some special aptitude for interest in Nature. Mrs. Grinnell not only conducted important studies of her own in zoology, but she came to have so great a share in her husband's career as actually to share it jointly. The responsibilities she assumed were often essential to his progress.

A major accomplishment was the carrying out over a period of more than forty years, along with a continuously expanding field of activity, the program of study conceived and organized by a boy still in his 'teens. The prospectus, on page 83 of 'The Condor' for May, 1901, for prolonged study of bird occurrence in an area not only lays out unassumingly and incontestably a plan so inclusive and so flexible as to meet all developments in the life span of its originator, but it remains still a plan worthy of the best efforts of any naturalist. Other State lists had been and have been assembled, but none with greater thoroughness of preparation or with greater dependence on sound biological study, for the California list involved in striking amount the recognition and application of the general principles involved in the derivation and interrelations of the most nearly tangible units of the evolutionary system, the subspecies. In this region significant materials in large amount and of easy access invite attention and study. Joseph Grinnell's eager enthusiasm in other, more commonplace regions might have become dulled and turned into more exciting endeavors, but not in western North America where every mountain range and valley provokes new interest and effort on the part of the naturalist.

The ingenious plan for recording items in the synonymy and

bibliography made it possible to continue the compilation along with other duties, to carry the whole set of material from one library to another, and to use the information with minimum effort. These factors, then, made it possible to bring to published form the important content of the nearly seven thousand articles referring to birds in California and to keep the analysis up to date. The plan is marvelous for its effectiveness, and it was remarkable that other persons failed to use it in similar situations. As the annotated avian bibliography was made available to other workers in three conveniently usable sections, the accompanying synonymies provided the basis for exhaustive distributional summations of amphibians and reptiles, birds, and mammals in California, and of the birds in Lower California. Except for the list of amphibians and reptiles, these were prepared practically single-handed. For originality, adherence to one objective, completeness, and accuracy the last-named report probably will stand for a long time as an exemplary study of avian geography worthy to be followed. With all its completeness this library work was only a minor part of Grinnell's program. In building the distributional works it became necessary first to do a vast amount of analysis of variation in specimens. This would have led naturally to the preparation of systematic monographs, and he became familiar with the characters and history of nearly every variable species of western bird and mammal, but he left the extensive reports mainly to associated workers. An exception was the revision of kangaroo rats published in 1922. Two highly variable groups, the song sparrows and pocket gophers, attracted his attention, and Grinnell often dreamed of the time to come when he could spend all his time collecting and studying these animals. He made much progress in each endeavor, but was never able to devote the desired application to them. Materials for this work he accumulated, first in his own private collection and later in the museum.

A second major phase of his studies involved the preparation of monographic treatments of areas—no doubt a most effective way of preserving and presenting results of field surveys in natural history. The aim was much like that represented in countless annotated lists, but by the concentration of enormous effort the results became more permanently significant. They represented the combined activities of many persons in the field and indoors. Areas so treated in California include San Bernardino Mountains (1908), San Jacinto Mountains (1913), Lower Colorado Valley (1914), Yosemite (1924), Lassen Peak (1930), and Point Lobos (1936). Of these, the account of mammals and birds of the Lower Colorado Valley, prepared as a

graduate thesis and presented in 1913 at Stanford University, for the degree of Doctor of Philosophy, was probably his most important publication. The volume on 'Animal Life in the Yosemite' was most widely read and it contained much information not strictly dependent on the locality treated.

Another related undertaking was the assembly of monographs to include all that could be learned concerning certain groups of animals in California. The book on the 'Game Birds of California' (1919) and the two volumes on the 'Fur-bearing Mammals of California' (1937) required long preparation and they brought together for those types of animals much information on the natural history, systematic status, and relations to man which could not have been assembled at any other time. In fact, a great deal of it could not now be obtained from the original sources, so quickly and so imperceptibly do conditions change. But Joseph Grinnell knew the necessity for recording history as it is being made and he knew how to make and preserve those records.

The outstanding, conspicuous examples mentioned are but samples of permanent results achieved through the irrepressible pursuit of a problem—the analysis of avian distribution in California. It was characteristic not to plan too definitely, but to be able to take advantage of whatever opportunity came his way and to accept and be unhindered by whatever obstacle might be encountered. Thus it was necessary always to keep the plan of work adaptable. Not many of the projects outlined for study within the general program adopted were completed in the form at first anticipated, but regularly they were completed, usually without loss from the modification. Time after time a study was finished by a group of persons different from the one that undertook it. In each instance, however, Joseph Grinnell provided the greatest share of the enthusiasm and energy which brought the task to completion.

Writing was a difficult task for Dr. Grinnell, but he was nearly always at it. Whether for publication, or as a part of the permanent record to be preserved in the museum, or one of a host of letters, his best effort went into the preparation of anything he wrote. Among other qualities aimed for in his writing, he exercised special effort to make it factual, precise, and varied in expression. Many of his associates marveled at the extent of his vocabulary. He was deliberate and careful in the selection of just the right terms to express the desired meaning. He cultivated discerning powers of analysis and admired exact expression, well-weighed statement. Always he entered

upon any piece of writing with lively anticipation of the result likely to be obtained.

Persons familiar with the work of William Leon Dawson will appreciate his evaluation of Grinnell's writing, expressed in a review: "This San Jacinto bird-book, as it deserves to be called, is a mine of information for the bird student, from whatever angle it is viewed. It is so good, that one who loves *birds* better than he does bird-skins cannot help wishing that half as many bird-skins might have served these insatiable scientists, so that there would have been time left to observe and to record more life-histories. It is not enough to say, 'Let others do that,' for there are not in the West two other more gifted observers of birds than Messrs. Swarth and Grinnell. Of Mr. Grinnell, especially, I cannot forbear to say that some of his recent biographical sketches evince a keenness of insight, and bring out a wealth of first-hand information which mark him as potentially the foremost biographer of Western birds."

Casual examination of the works mentioned above might lead to the hasty conclusion that they resulted from industrious application of a routine sort with a lesser amount of originality. A closer appraisal would dispel this notion, but if any traces of it remained, they would be cancelled by familiarity with some of the essays prepared by Grinnell in the span of his studies. The chronological listing of a few of these shows the trend and scope of his thought as applied to some specially attractive problems, as follows: methods and uses of a research museum (1910), barriers to distribution as regards birds and mammals (1914), conserve the collector (1915), field tests of theories concerning distributional control (1917), sequestration notes (1920), principle of rapid peering in birds (1921), museum conscience (1922), rôle of the "accidental" (1922), trend of avian population in California (1922), burrowing rodents of California as agents in soil formation (1923), conservationists' creed as to wildlife administration (1925), geography and evolution in the pocket gopher (1926), tree surgery and the birds (1927), presence and absence of animals (1928), revised life-zone map of California (1935), and up-hill planters (1936).

Resourcefulness in getting his work published was an important part of procedure in the continuous progress of Grinnell's study. He developed an extensive acquaintance with the possible ways to get into available form the monographic, and therefore useful, reports prepared by himself and others. His opinion as to the proper time to offer a manuscript and the prospects for its acceptance was nearly always right. Moreover, much of his energy went into the provision

of new means of publishing natural history. His own work appeared many times as number 1 in a series.

Grinnell came to occupy a special place which made his influence greatly more effective in affairs of naturalists than could have been possible under other circumstances. He was able to bridge the gap between the interests of amateurs and the duties of professional scientists. He guided the affairs of such informal organizations as the Cooper Ornithological Club and in later years contributed toward the solution of more formal problems of a huge university. He traced the results of much theoretical discussion of wild animals to the hesitant steps toward application of it in nature. And he had opportunity to see the fruits of his many studies supplied to numerous classes of students by his own methods of teaching. All of these privileges and duties he met and exercised with such relish and determination as to gain the respect and admiration of all his associates.

This continuous series of accomplishments was made possible by the development of the Museum of Vertebrate Zoology, established in 1908 at the University of California by Miss Annie M. Alexander. Experience already gained by Miss Alexander in the organization of zoological exploration, especially in Alaska, the site of Grinnell's main previous field experiences, made it natural that the plans of these two would mature so as to meet the preferences of both. Thus was established not a rigidly designed and prescriptively controlled storehouse of miscellaneous materials assembled by chance, but a flexible working procedure which made possible quickened realization of the plans of the Founder and the Director. Each could have made important discoveries alone, but their combined resources brought exceptional results.

The new arrangement came at a critical time in Grinnell's studies, for already the forced requirement to make a living by the conventional duties of teaching was threatening to absorb his energies. His proposed work on mammals of the Pacific Slope of Los Angeles County had to be given up on this account. By 1908, however, his acquaintance with the West and its fauna and with zoological workers in his region and elsewhere had so provided him with sufficient knowledge of the needs and aim of a research museum that only a short tour of eastern museums was needed to allow an expansion of his own plan for study and to put it into operation at once. He was enabled to invite several naturalists to join in the new undertaking and thus to speed up the assembly of its products. A possible secret of his successful management was his practice of taking the major part of responsibility, troubles, or punishment whenever they came to the

group, and a minor part of resources, rewards, or favorable opportunities if they came. He insisted that others in the Museum worked *with* him, not *for* him. Each worker, moreover, shared sufficient responsibility to make it seem an appreciable part of the burden. This was truly a group enterprise.

Grinnell brought to the new museum the notion that research warranted emphasis over exhibition in such an institution as a part of a large university. Energies then were directed to accumulation of specimens of terrestrial vertebrates in the region immediately about him, that is, along the Pacific coast. Innovations were the supplying of field collectors with materials for making extensive records, including photographs, in the field, to supplement the many items placed on the labels of specimens. A special aim was to make accurate and full record of faunal conditions for use after lapse of many years, possibly a century. Deliberate choice was made to study animals in the wild state, under natural conditions, rather than to adopt prevalent experimental methods, under artificially imposed conditions. This was to gather evidence as to the causes and methods of evolution. He deplored the too eager search for generalizations on insufficient basis of fact and set out to make the museum a repository of facts with full realization that the ultimate value of the facts lies in their service as indicators of general truths.

Another intention was to make the museum a popular bureau of information as regards the higher vertebrate animals of the region. This function developed to such a degree that great numbers of naturalists came to visit Professor Grinnell. The line which came to his door included all ranks of professional and amateur workers, from local and distant places. Reasons for coming were many and varied. But always they found easy access to the place, a genuine greeting of welcome, and willing help or a sympathetic ear for whatever problems seemed important. These visits could be made at any hour, despite recurrent resolves to set up a more rigid program of working time. The appearance at the door of some birdman was sufficient to bring immediate postponement of any normal task. And hundreds of holidays and Sundays were given to this part of the anticipated work of the museum.

He did not wait always for naturalists to find him, but on ten trips to eastern United States, and in the West whenever opportunity came, he hunted up persons of all sorts who had interest in or concern with the outdoors. Visits to museum curators, teachers, taxidermists, fur buyers, hunters, trappers, game wardens, and collectors brought lasting friendships. His activity in tracing the changes in animal popula-

tions led him to enquire searchingly into the history of California and he enjoyed every opportunity to discuss with old-timers their recollections of early conditions. These friendships were kept alive by the practice of writing letters on occasions other than when they were required. These were greatly appreciated by the recipients.

In his regular annual report to the President of the University, on July 1, 1930, Professor Grinnell began with the statement that, "since the founding of the Museum of Vertebrate Zoology by Miss Annie M. Alexander, in 1908, there have been two further occasions of superlative importance in its history. I refer, first, to the endowment in 1920 of the Museum by Miss Alexander; and second, to the transfer during the past year, of the Museum into the new, admirably safe quarters in the Life Sciences Building provided through State appropriation." These events greatly accelerated the progress toward realization of the functions as outlined at the start of the institution. They made possible an added responsibility, that of offering more effective instruction in regular classes and courses in the university. For ten years the demand for guidance in graduate studies increased until it came to take an unduly large part of the resources of the museum. Most important of these resources was the vitality of its Director. He continued to give more and more energy to the needs and problems of his students without slighting appreciably the vigorous pursuit of his own study. These problems were not settled with the departure of the student, but became then more complicated and more urgent.

So generally acknowledged and valued were Professor Grinnell's experience and his faculty for applying it, that his opinion was sought widely by persons with biological problems. His desk usually held a stack of requests for references from applicants seeking jobs, grants, or permits. These came even from persons he had never seen! His identification of a specimen was greatly treasured by some collectors. Numerous workers undertaking new studies in the field asked his help in selecting suitable areas, equipment, and procedures. The nature of his aid in editorial matters, already indicated, was considerably more important than is apparent from the printed record, even though recipients were thankful in acknowledgment.

The problem of how much to enter into questions of human interference with wild animals and their environments was a difficult one, for such activity meant postponement of more exciting, if not more important, work. In a few instances, however, the need seemed to be greater than the required sacrifices, and facilities of the museum were used to make available facts of critical significance in some cur-

rently pressing conservation topic. Always it was his aim, however, to refrain from needless debate and to return to normal studies as soon as possible. For this reason Grinnell avoided service on committees where prolonged discussion of controversial topics would produce little of permanent worth. He made it a practice, when it seemed desirable to attend such a meeting, to read his contribution, prepared as concisely as possible. And on a surprising number of occasions his conclusions prevailed.

When Grinnell indicated in the early days of the Museum that the facts he would assemble in it would come to have special value at the end of a century, he had no way of knowing how great the changes would be in his own lifetime or what progress he could make toward fulfilling that aim. Although he frequently recalled examples of opportunities that had slipped by without the saving of some materials or information no longer obtainable, these were insignificant when compared with the accomplishment during the thirty years of his guidance. In that time, surely, enough facts were gathered by the museum and enough use was made of them to justify all the support of its Founder, the efforts of its Director, and the encouragement by the University authorities who helped in its development.

In writing of his close friend Richard C. McGregor, Grinnell ended his account with a series of sentences which require almost no modification to describe the most productive period of his own life. With minor deletion and substitution of proper names, the selection, as follows, becomes particularly apt here: It is clear that his college training at Stanford where systematic zoology was then fostered, and his years of field work and writing concerning west-American birds in an area where rivalries were keen and wits thereby sharpened, all together gave him the best possible background from which to launch work. Arriving in Berkeley, with then modern methods and ideas at his command, with ability to plan long-time productive programs of exploration, and with tireless resolve to put these programs through to completion, Grinnell found his niche and occupied it with almost unique success. From first to last, Joseph Grinnell was consistently an ornithologist. And the essential segment of world ornithology which he contributed pertained to the Californias. Ever will his name and that of this region be associated in the annals of natural science.

Joseph Grinnell was never especially strong or robust physically, and his remarkable stamina and energy were dependent on careful use of his strength. He religiously avoided overtaxing himself and

thus was able to keep active with no serious interruption until the fall of 1938. Then, as he was beginning a year of leave from his normal schedule of duties at the University, a coronary occlusion demanded a long period of convalescence. Through most of the winter he did an extra amount of reading, continued his program of 'avian bookkeeping,' and drew up many plans for the future. But a second occlusion on May 29, 1939, in Berkeley, terminated the era of Grinnell in Californian natural history.

Frances Simes Hastings Natural History Reservation
Monterey, California