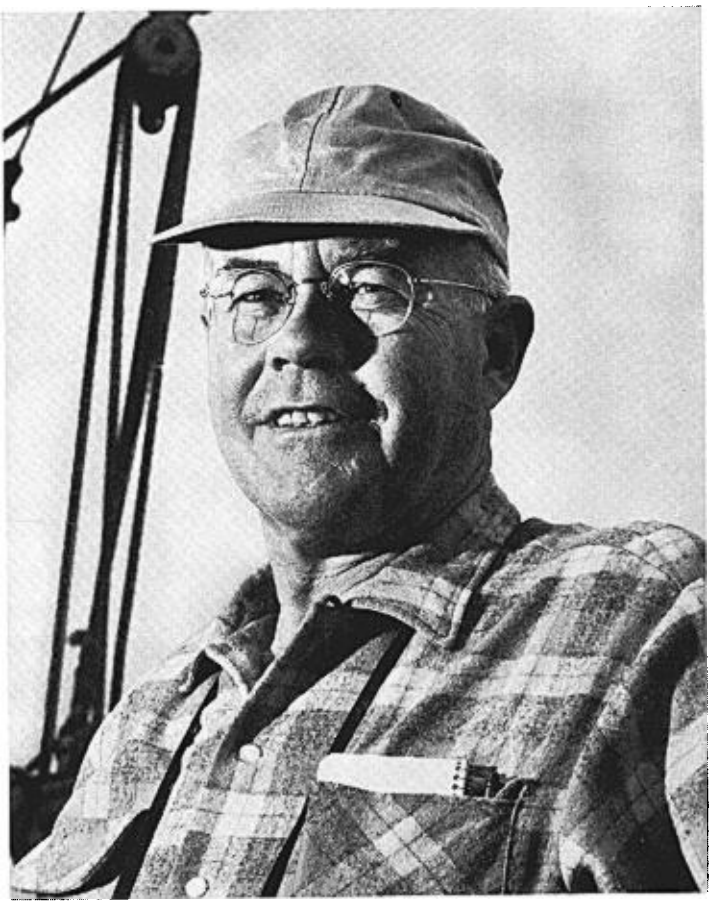

ALDEN HOLMES MILLER

1906–1965

Photograph taken by Dr. Nathan W. Cohen aboard the "Golden Bear"
en route to the Galápagos, January, 1964

IN MEMORIAM: ALDEN HOLMES MILLER

JOHN DAVIS

WITH the death of Alden Miller at Clear Lake, California, on 9 October 1965, ornithology lost one of its great leaders. So varied were his activities, and so much did he accomplish along so many lines, that it is almost impossible to write an adequate biography of him. A mere chronicling of dates and places, of titles and organizations, no matter how meticulously done, fails to reveal the nature of this remarkable man.

Alden Holmes Miller was born in Los Angeles, California, on 4 February 1906, the son of Loye Holmes Miller and Anne Holmes Miller. After local schooling, he received his higher education wholly within the University of California. He received his A. B. from the Los Angeles campus in 1927 and, after transferring to Berkeley, he accomplished his graduate work in characteristically efficient fashion, receiving his M. A. in zoology in 1928 and his Ph. D. in 1930. After graduation he joined the Department of Zoology at Berkeley as an Associate and moved rapidly up the academic ladder. He became an Instructor in 1931, Assistant Professor in 1934, Associate Professor in 1939, and Professor in 1945, at the age of 39. In 1940 he succeeded the late Joseph Grinnell as Director of the Museum of Vertebrate Zoology, a position which he held until his death. His other administrative appointments were far too numerous to list here, but his service to the University culminated in his serving as Vice-Chancellor, Academic Affairs, on the Berkeley campus from January 1961 to August 1962. He also served as Acting Chairman of the Department of Paleontology from 1959 to 1961 and as Curator of Birds in the Museum of Paleontology from 1961 until his death.

Important positions held and honors won outside the University are again far too numerous to list. In the American Ornithologists' Union he was elected a Fellow in 1939, served as Second Vice-President from 1948 to 1951, First Vice-President from 1951 to 1953, and President from 1953 to 1956. He served on the Council from 1939 to 1942, from 1943 to 1946, and from 1948 until his death. He was a member of the Committee on the Classification and Nomenclature of North American Birds (and its equivalents) from 1940 until his death, chairing it from 1960 to 1965. He received the Brewster Award in 1943.

In the Cooper Ornithological Society he held many important positions, including President, President of the Board of Governors, and Editor of *The Condor* from 1939 to 1965. He was elected an Honorary Member of the Society in 1956. He served as Vice-President of the International

Ornithological Congress from 1951 to 1954, and again from 1962 to 1965, and he was a permanent member of the Executive Committee until his death. He was a Corresponding Member of the British Ornithologists' Union and of the Royal Zoological Society of London and an Honorary Member of the Deutsche Ornithologen-Gesellschaft. He served as a Vice-President of the Society for the Study of Evolution in 1957 and as President of the International Commission on Zoological Nomenclature from 1964 to 1965. He was awarded a Guggenheim Fellowship in 1957 and he was elected a member of the National Academy of Sciences in the same year.

This listing, partial though it may be, serves to indicate the position of leadership which Alden Miller attained in his University, in ornithology, and in the wider field of zoology. It is appropriate to ask, then, what factors lay behind such a high level of accomplishment. Certainly there are two major factors involved, first, a set of personality characteristics and second, a set of people who influenced him in various ways.

I think that four personal characteristics were of particular importance to Alden's career. First, he was completely devoted to all the tasks which he undertook. One always had the feeling that he was never very far from his work, no matter what the circumstances. Even at his cabin on Clear Lake, or in a social gathering, his conversation nearly always reflected his interest in University or scientific affairs. I believe that this intense preoccupation was in large part responsible for his success. Certainly it led at times to his expanding one activity without curtailing any other; he merely worked longer hours. For example, when he was made a member, and later Chairman, of the all-important Budget Committee on the Berkeley campus, with all the extremely time consuming work that this involved, he quietly shifted from an essentially six-day work week to an essentially seven-day week. He was determined that his research, professorial, and editorial activities would not suffer from the increased administrative work load.

Even serious physical difficulties could not bring about any significant decrease in activity for long. His reaction to a heart attack which he suffered in October, 1963, was characteristic. After a rather brief stay in the hospital he returned to his home for convalescence. Soon, he was working for an hour a day, gradually lengthening the work period until his return to the Museum. In January, 1964, barely three months after the attack, he went on the University of California Extension Division's expedition to the Galápagos; his chosen research problem was a detailed field study of the Flightless Cormorant (*Nannopterum harrisi*) to lay the basis for later correlation of ecology and behavior with anatomy. Despite Alden's relatively recent illness, Science Correspondent David

Perlman of the San Francisco *Chronicle,* who covered the expedition, could write:

> Miller is a prodigiously hardworking naturalist . . . . He pursues his science with the single-minded energy of a boy. I rode with him across bouncing surf in an outboard motorboat to a rocky cliff a mile from Punta Espinosa where Miller was eager to spend the morning watching a cormorant nest. He scaled the lava boulders like a Swiss guide, circled the guano-spattered, rocky nest site warily, and settled down for five hours of observation.

A second valuable personal asset was his ability to analyze rapidly, thoroughly, and accurately most of the problems which he faced, or situations in which he found himself. No one can analyze successfully all such problems and situations, but he came as near doing so as anyone I have known. Regardless of whether the problem was administrative or scientific, he showed an uncanny ability to dissect the matter rapidly into its component parts, relate them to both proximate and ultimate considerations, and come up with the best answer. This ability was, obviously, a most valuable asset.

A third characteristic was an incredibly efficient way of working, whether this involved field work or desk work. He made every minute of every day count, and this unostentatiously, and without any air of bustling activity. He always kept on his desk a manuscript or some proof so that if he had a spare minute or two, he could at once go to work and get a little something done. If he finished a major task a few minutes before noon he would not leave for lunch, as most of us would, but he would use the time to read through another page or so. He also had a great ability to turn from one matter to something entirely different without any carry-over.

Finally, he appeared to be virtually tireless, both mentally and physically. In the field he was an extremely hard worker and even when it was obvious that he was fatigued, he seemed to have the capacity to force himself just a bit more. In the museum, he arrived early, worked late, handled the varied daily tasks with maximum efficiency, and still brought home with him on most evenings some sort of work to do at night.

No one, no matter how self-contained he might appear, is able to remain uninfluenced by those around him. In Alden's case, three persons above all influenced his career profoundly. The first of these was his father, Loye. It was Loye who first interested his son in ornithology and introduced him to the prominent ornithologists of southern California, many of them early members of the Cooper Society. Through Loye, Alden met such workers, both amateur and professional, as Lee Chambers, George Willett, and Adriaan van Rossem. From Loye, Alden learned

his appreciation of nature, his love of outdoor biology, and his interest in music which led to his remarkable ear for bird vocalizations. More specifically, he developed his interests in avian anatomy and paleontology through Loye, whose specialties these are. The publications in these fields, scattered through Alden's bibliography right up to the time of his death, attest to his continuing interest in them.

Second, Alden was influenced by Joseph Grinnell, who was his major professor and later his superior in the Museum of Vertebrate Zoology. Grinnell, the field naturalist par excellence, reinforced in Alden the love for, and sense of importance of, field biology. The ability to analyze, and the ingrained habit of looking behind superficialities for deeper meaning, were undoubtedly in large part derived from Grinnell, as were the meticulous record keeping and curatorial practices. The example of hard work and long hours, both in the field and in the museum, was another legacy from Grinnell who was, without doubt, the single most important influence on Alden's career.

Finally, one person above all aided Alden constantly throughout his life. This was his wife, Virginia Dove Miller, whom he married in 1928. She was an unfailing source of help in many ways. She was a devoted homemaker who carried all domestic burdens cheerfully, freeing Alden completely from any responsibilities in this regard. She assisted him in major fashion on many of his field trips and, at home, gave valuable help with editorial and laboratory work. A typical example of her cooperation may be found in the invaluable work she did while in Colombia with Alden on his sabbatical in 1958. The great amount of work accomplished on the annual cycles of the Andean Sparrow, *Zonotrichia capensis,* in that year, and the remarkable series of papers which this supported, were due in large part to her continued help in the field, keeping records, watching nests, helping with trapping and banding, and in many other ways. She was responsible in no small measure for the great amount of work that Alden accomplished over his entire career.

Alden Miller's accomplishments may be divided among four general categories: administrative, editorial, teaching, and scientific. The first two of these are perhaps less important to us than the last two. The large number of responsible positions which he held in the University of California and in many outside organizations attests to his administrative talents and accomplishments. His lengthy tenure as Editor of *The Condor*, the excellence of this journal under his editorship, and his frequent and superior editorial service within the University, provide adequate evidence of his competence and scholarly attainments in this field. It is with the last two categories that we are most concerned.

As a teacher, Alden's courses were marked by depth, scholarliness,

modernity, and organization. His standards were the highest and his demands on students were great. The comparative anatomy course I took from him certainly deserved its reputation as a "workout" and it undoubtedly would have proved disastrous for many students had it not been so well organized. Not only was the material presented plentiful but it was basic, important, and up-to-date. He was a sound, but by no means brilliant, lecturer, and he was completely honest in this regard, resorting to no tricks, either mechanical or of personality, to "sell" his course. As far as amount of good material, well organized and well presented, was concerned, this was as good a course as I had in zoology at Berkeley. In the graduate seminar in speciation which he conducted jointly with Seth Benson, these same characteristics were also evident, although the nature of the course made it more personal, with ample opportunity for expression of ideas by students and professors alike.

It was as a producer of graduate students that Alden was preeminent. Between 1933 and 1965, 31 students received the Ph. D. with him as major professor; 30 of these students received their degrees between 1937 and 1965. Of the 31, 2 were herpetologists, 4 were mammalogists, and 1 whose emphasis was ornithology went into mammalogy soon after graduating. The remainder were ornithologists. I think that, as a group, these workers have been unusually productive. This is suggested by the fact that of the 24 graduates who have continued in ornithology, 11 have by now been elected Fellows of the American Ornithologists' Union. I cannot help but think that in part the relatively high productivity of this group was the result of the way in which the individuals comprising it were handled by their major professor. Each individual benefited greatly from Alden's ability to analyze, for, when a student finally decided on a research problem, and it was approved, he could feel sure that in Alden's mind the problem was feasible and could be completed in a reasonable amount of time. As a result, his students completed their research and received their degrees without the floundering and delays that too often result from the major professor's failure to analyze the student's research program thoroughly or accurately enough.

Once a student was well into his research, Alden never checked up on him and after the first semester or two, he never asked for the progress report which was demanded of their students by many members of the zoology faculty. On the other hand, he was as accessible to students as any member of the Museum staff despite the heavy work load that he carried. When a student discussed some aspect of research with him, the response was business-like and efficient; the problem would be analyzed rapidly and a brief suggestion made, not in detail, as this would have done too much for the student, but in enough detail so that a clue

was provided. With some further independent thought on the student's part, the problem was usually solved.

On the other hand, the fact that he seldom chose to discuss his students' work in detail forced most of us to rely on our fellow students for such discussion. The result, whether achieved purposely or unwittingly by Alden, was that we were more or less immersed in the work being carried on by the graduate students as a group. The frequency of discussion and the fact that we lived in a saturated atmosphere of vertebrate zoology must have contributed in great measure to our development as workers in that field.

Finally, we may consider the record of scientific achievement left by this prodigious worker. Considering Alden's great skill as a collector, the great amount of time that he spent in the field, and the importance of the material which he obtained, it is not amiss to make some mention of this activity here. The last entry in his specimen register, a Song Sparrow collected in Mendocino County, California, was his number 12,564. He collected not only over nearly all the western United States and in British Columbia but in such diverse places as Mexico, El Salvador, Panamá, Colombia, Péru, the Galápagos, Jamaica, Australia, and New Guinea. Some who had been with him in the field termed him a "lucky" collector, and his discovery of a new warbler (*Sericornis nigroviridis*) while on a five-week collecting trip to New Guinea suggests this. However, he was exceptionally observant, had an excellent ear for the slightest sounds, worked tirelessly, and was a fine shot. Above all, his truly impressive general knowledge of birds and their habits gave him an advantage even when he was collecting for the first time in unfamiliar surroundings. If he was a "lucky" collector, he certainly made his own luck.

The great contribution he made to science is, of course, contained in his bibliography of 255 published papers and books, with perhaps 3 or 4 more papers to follow posthumously. I shall not present a full bibliography here, since this will be published in the *Biographical Memoirs of the National Academy of Sciences* and may be consulted there.

In looking over the list of his publications one is immediately impressed with three things. First is the wide variety of fields represented. One finds basic and highly significant work in systematics, faunistics, paleornithology, functional anatomy, molt and pterylography, reproductive physiology, and ecology, with the central theme of evolution running through all. Second is the small percentage of co-authored papers. Since Alden was eminently fair in admitting junior workers to co-authorship, the small proportion of jointly authored papers reflects the well-developed independence of others that was a basic part of his personality. Finally, one is struck with the small number of general synthetic papers repre-

sented. Although the few papers of this nature which he wrote are of considerable importance, it is evident that he was primarily concerned with the introduction of new ideas based on his own research rather than the formulation of new concepts based on his interpretation of the work of others.

There appear to be three main periods represented in his research, although none is clearly separated from the others. From 1924, when his first paper appeared, to 1941, his titles clearly reflect a combination of the influences of Loye Miller and Joseph Grinnell. Papers on natural history, paleornithology, and anatomy are relatively frequent in this period, but the larger number of publications on systematics and faunistics clearly reflects the influence of Grinnell. From 1941 through 1947 the interest is mainly in systematics and faunistics. In 1947 the first of his many papers on avian reproductive physiology appeared, and from this time on considerable effort was devoted to research in this field. This work represented a major departure from earlier emphases and was a broadening of interest that may have been stimulated by the research of his student, Albert Wolfson. As suggested previously, no line of research was ever completely dropped, so that the total output within each period is a composite. From 1961 on there was a notable resurgence of interest in paleornithology. This centered on his work in Australia and New Guinea as a member of expeditions headed by the late R. A. Stirton, the paleomammalogist, his close friend of long standing.

One may select certain papers and monographs to indicate something of the profound contributions made by Miller to his field. His systematic revision and natural history of the American shrikes (*Lanius*), published in 1931, was a model of careful and penetrating work in the analysis of geographic variation in birds. His segregation of available specimens into age classes for the purpose of variational analysis, use of statistical methods, analysis of pterylography and molt and the geographic variation therein, and the correlation of morphological variation with natural history made up a combination which set new standards in avian systematics. His longer paleontological papers invariably transcend mere description and faunal reporting and attempt to analyze environmental background on the basis of avifaunal composition and known floral histories. Good examples of this technique may be found in his papers on Pleistocene birds from Carpinteria, California (1932), and biotic associations and life zones in relation to the Pleistocene birds of California (1937). In the field of anatomy, the meticulously done monograph on the Hawaiian Goose (1937) remains a classic piece of work.

Of the great monograph on the genus *Junco*, for which the author was awarded the Brewster Medal in 1943, a contemporary comment by Ernst

Mayr (*Systematics and the origin of species*, 1942) noted: "In birds only few good studies have been made on population differences within subspecies and on the variation in the zone of contact between two subspecies. A. H. Miller's study of *Junco* populations (1941) is, perhaps, the finest study of this sort in ornithological literature . . . ." Despite the controversial nature of Miller's delineation of species limits in *Junco*, the monograph sets forth many pioneering ideas that have stood the test of time. The almost routine citing of this paper in modern works on evolution and speciation indicates its continuing importance.

His monograph on the distribution of the birds of California (1951) was notable for comparing the relative efficacy of three different systems (Life Zones, ecological formations, and faunal groups) in accounting for the distribution of a major Recent avifauna. The long series of papers on reproductive physiology (1947–1965) represents a major contribution to that important field and the remarkable series of papers dealing with his field and laboratory research on the reproductive cycles of the Andean Sparrow is of critical importance in demonstrating the degree of modification of reproductive cycles resulting from the selective pressures exerted by local environments.

These are but some of the contributions to ornithology made by Alden Miller. But some of his shorter papers reveal, perhaps even more vividly, various characteristics of his work. Three may be mentioned. "A review of centers of differentiation for birds in the western Great Basin region" (1941) represents the coldly logical destruction of a faulty concept based on faulty interpretation of data. "Census of a colony of Caspian Terns" (1943) illustrates again how careful analysis of information derived from painstaking field work, backed by a well-developed sense of the relative importance of data, transformed what might have been a prosaic report into a stimulating paper. And finally, "Endemic birds of the Little San Bernardino Mountains, California" (1946) exemplifies the manner in which critical analysis of underlying causal factors produced a thoughtful and significant paper on subspeciation from material which, in the hands of many authors, would have resulted in superficial descriptive taxonomy.

The over-all position of Alden Miller in ornithology is difficult to assess. His primary contribution, it seems to me, was as a leader in a transitional period in American ornithology between the older school, mainly preoccupied with systematics and faunistics, and a newer school, largely working in functional anatomy, ethology, ecology, physiology, and new analytical systematic techniques. Going back some years, one might say that Joseph Grinnell, at the time of his death, represented the best of the older school, much interested in the "why" as well as in the "what."

Miller carried on in this tradition, combining the interests which he carried over from the older school with more modern pursuits and approaches. Very largely, then, he functioned as a leader of ornithology from the old to the new, both through his own research and the work of his students. In a sense, he led the way from the "Old Systematics" to the "New Systematics" without reaching the "Newest Systematics." In the latter part of his career, his most important work was without doubt his research in avian reproductive physiology. His pioneering work in this field would be enough to secure for him an enviable position in biology, and when one adds to this his other accomplishments, it is evident that his was a giant contribution indeed. Yet, one has the feeling that he did not play a role as full as that of which he was capable. I think that this feeling stems from two considerations.

First, he adhered to formats of presentation which he had learned from Grinnell, and these formats were not suited to the clearest expression of some of his most important ideas. Many of the important contributions of the *Junco* monograph, for example, are buried in the routine taxonomic format which characterized the better systematic work of Grinnell's day. The detailed factual material is so much in evidence that somehow the birds themselves become too much of a focal point rather than the ideas and concepts which they supported. The same tendencies are evident in his last major work, written in collaboration with Robert C. Stebbins on the animals of the Joshua Tree National Monument (1964). Here, the major emphasis was the preparation of a formal faunal report similar to those produced by Grinnell and his school (Colorado River, Yosemite, Lassen Peak region, and many others). As a result, much important material on the ecology of desert vertebrates is buried in the series of species accounts which makes up by far the greater part of the book.

Second, he was reluctant to write synthetic papers and preferred by far to do original research rather than conceptualize on the work of others. As a result, his major ideas were expressed less often, and less clearly, than they should have been. And it seems a great tragedy that he did not write a textbook in ornithology. I cannot imagine anyone in the field as well qualified for this. His enormous knowledge of birds, his actual participation in so many fields of ornithological research at the highest level, and his remarkable ability to organize material, all would have contributed to a definitive text. Yet, he steadfastly refused to do this, although opportunities were offered, preferring, again, to produce new facts rather than deal with old ones, and it is ornithology's great loss that he did not pass his knowledge on to future generations of students.

The passing of an individual who was a leader in so many fields affects

many people. Alden's fellow scientists, his colleagues at Berkeley, and his personal friends have all suffered a truly great loss, and one that will be felt very deeply for a long time to come.

Alden Miller's survivors include his wife, Virginia, his father, Loye, his brother, Holmes, and three children, Daniel, Barbara, and Patricia.

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