

IN MEMORIAM: A. STARKER LEOPOLD

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A. STARKER Leopold, conservationist, naturalist, wildlife biologist, and educator, died of a heart attack at his Berkeley, California, home on 23 August 1983. He was born in Burlington, Iowa, on 22 October 1913, to Aldo Leopold and Estella Bergere Leopold. His outstanding achievements in scholarship and conservation paralleled those of his eminent father, who was the dominant figure in the development of scientific wildlife management, a pioneer in the establishment of wilderness areas on U.S. public lands, and the author of "Sand County almanac" and other conservationist literature. This heritage was shared by Starker's younger brothers and sisters; three of them are natural scientists of high reputation; two, like Starker, have been honored by election to the National Academy of Sciences.

Part of Starker's youth was spent in New Mexico, where his father was employed by the U.S. Forest Service. More than once I heard him reminisce fondly about boyhood duck hunts along the Rio Grande. Later his father accepted a faculty position at the University of Wisconsin in Madison. Starker received his B.S. from the University of Wisconsin in 1936. After 2 yr of graduate study in the Yale School of Forestry he transferred to the University of California at Berkeley and received his Doctor of Philosophy in zoology in 1944. Alden H. Miller was his major professor, and his dissertation research was on the nature of heritable wildness in turkeys (see bibliography).

Predocctoral employment included positions as a junior biologist with the U.S. Soil Erosion Service in 1934-1935 and as a field biologist for the Missouri Conservation Commission, 1939-1944. After he received his Ph.D. he spent 1944-1946 in Mexico as Director of Field Research for the Conservation Section of the Pan American Union; his long-standing interest in Mexico culminated in 1959 in one of his most important books, "Wildlife of Mexico: the game birds and mammals."

In 1946, Starker joined the faculty of the University of California, Berkeley, as Assistant Professor of Zoology and Conservationist, Museum of Vertebrate Zoology. He was promoted

to Associate Professor in 1952 and to Professor in 1957. In 1958, he was appointed Associate Director of the Museum of Vertebrate Zoology and became acting director of M.V.Z. upon the death of Alden Miller in October 1965. Early in 1967, he changed his affiliation to the Department of Forestry and Conservation, where he was Professor of Zoology and Forestry until his retirement as Professor Emeritus in 1978. Other positions at Berkeley included a long tenure as Director of the Sagehen Creek Field Station (1965-1979) and a term as Assistant to the Chancellor (1960-1963).

In 1938 Starker married Elizabeth Weiskotten, when both were students at Berkeley. Elizabeth received her Master of Fine Arts in 1939 and continued to paint and teach painting to many students, in a studio in their Berkeley home. A son, Frederic S. Leopold, was born in 1941 and a daughter, Sarah Leopold Klock, in 1948.

Starker Leopold's many and varied professional contributions and accomplishments, and the resulting honors, seem naturally to divide themselves into three main categories: biological science, conservation, and education. Clearly, all three are interrelated, and Starker's contributions epitomize the interrelationships. In fact, a special talent for integrating the three was perhaps his greatest professional strength.

Even though publications reporting results of original ornithological research account for a relatively small percentage of the 115 or so titles in his bibliography, they constitute a substantial contribution to knowledge of avian biology, particularly of game birds. Three of those titles stand out as especially important: the 65-page 1944 *Condor* paper on turkeys, based on his dissertation; "Wildlife of Mexico," in which he reviewed literature and reported new findings in accounts of 69 bird species or species groups; and "The California Quail," a recent (1977) detailed treatment of the ecology and management of California's state bird, based on many years of study by himself and a series of his graduate students, one of whom I am proud to be. Each of the latter two works received the Wildlife Publication Award, given annually by



A. STARKER LEOPOLD, 1913-1983
(from a photograph taken in 1966)

the Wildlife Society to the book judged the best of the year. In addition to the three longer works, several other items in his bibliography are obviously original contributions to ornithological knowledge and are included in the selected bibliography at the end of this account.

His scientific interest in birds was accompanied by affiliation with ornithological organizations. He became a member of the A.O.U. in 1940, an Elective Member in 1946, and a Fellow in 1959. He joined the Wilson Ornithological Society in 1940 and the Cooper Ornithological Society in 1941; in the latter he served

terms as President of the Northern Division and President of the Board of Governors. He was a member of other scientific societies too, including the Wildlife Society, in which he remained particularly active, serving terms as President and member of the Council; he was made an honorary member in 1969.

As significant as were Starker's research contributions in ornithology, mammalogy, and wildlife ecology, they were more than matched by his contributions to conservation of animals and the ecosystems of which they are parts. Nearly all of his published writings include

reasoned, cogent arguments for wise human use of animal populations and their environments. He was an active member of many committees and organizations dedicated to conservation. He was on the governing board or an officer of the Nature Conservancy, Sierra Club, Wilderness Society, National Wildlife Federation, and California Academy of Sciences. He was a consultant to the California Water Quality Control Board, the Missouri Conservation Department, and the Tanzania National Parks, and a presidential appointee to the U.S. Marine Mammal Commission. Especially well known and influential was his service as chairman in the 1960's and 1970's of three committees of experts that made recommendations to the Secretary of the Interior on predator and rodent control, management of the national wildlife refuge system, and wildlife in national parks.

I believe that Starker's most exceptional and probably most valuable contribution was in education, in the broadest sense. Both orally and in his writings he had a remarkable ability to clarify complex natural interrelationships and entangled issues in conservation and to communicate his deep appreciation of nature and abhorrence of abuse of it. This ability stemmed from intellectual attributes of breadth and depth of knowledge and clear, logical thinking, and from the sincerity and depth of his feelings. His great personal charm obviously also contributed.

These qualities and others, such as absence of pedantry and an obvious interest in the welfare of his students, made him very popular as a professor, in large classes and small advanced ones (some held in his home where beer could be employed as a lubricant for discussion) and as a graduate advisor. In the latter capacity he guided about 20 ornithological students to advanced degrees. His style of guidance fostered independence on the part of his students; he customarily provided advice and encouragement only when they were sought, but unstintingly and effectively on those occasions. Under such treatment, I and others could feel confident that our accomplishments were mainly due to our own efforts but that if we needed help with a problem, Starker could be counted on to provide it.

Many professors perform well in the classroom, skillfully guide advanced students, and develop well-balanced curricula, but few communicate outside of the ivory tower of academ-

ic science as well as Starker did. He could effectively explain ecological principles to wildlife managers and bureaucrats, to sportsmen, to lovers of nature and protectionists, and to the public in general. Furthermore, he was able to explain the relevant interests of any one of those groups to members of the others. What made this versatility possible were the attributes cited above and Starker's breadth of interests: he himself was, after all, a "wildlifer," an avid hunter and fisherman, and truly a lover of nature, as well as an informed and active scientist.

Of many possible examples of his skill and versatility in communication I will mention three. In 1979, when he was a Distinguished Visiting Professor at New Mexico State University, he spoke on conservation of marine mammals to a weekly colloquium at the Department of Biology. The example that he stressed was a human ecological one: the tensions that had developed in a population of native Arctic hunters as their way of life became more technological and their long-standing balance with their marine mammal prey populations deteriorated. Starker's analysis was at once so insightful, ecologically sound, and sympathetic to the plight of both predator and prey that he held the undivided interest of his audience of biologists of many specialties.

Among his several books, probably the least familiar to his biological colleagues and most familiar to the public at large is the little volume "The desert," published by Time-Life Books in 1967. In highly readable, nontechnical prose with many interesting examples, this book presents authoritative accounts of the meteorology and geology of the world's deserts and of the plants, animals, and people that live in them; as usual, interactions between humans and natural environments are emphasized in cogent, persuasive discussion. Finally, the 15 chapters of "The California Quail" include some with a historical ecological perspective, others that are technical and of principal interest to the highly trained biologist, one of appeal mainly to the practical manager, and still others for the hunter and the person who simply likes to see and appreciate quail. Thus, he specifically addressed each group of readers with a particular interest in quail, but the style of exposition is such that all chapters are readable by all. In certain portions Starker exhibited sensitivity and eloquence reminiscent of those

of his father, as illustrated by these sentences from the final chapter: "The swelling tide of urbanized Americans, living like robots in the asphalt jungles of the city, has created a growing sensitivity toward things that are wild and free In my judgement, the creation of living space for a covey of California Quail would represent the gold standard of successful backyard management. What more pleasant sound could there be to awaken a jaded suburbanite than the morning call of the quail—'ca-ca-cow'?"

He was the recipient of many honors in addition to his election to the National Academy of Sciences (1970) and the Wildlife Society awards for his books. Others included the Department of the Interior Conservation Award (1964), the Aldo Leopold medal of the Wildlife Society for "Service to Wildlife Conservation" (1965), the Audubon Society Medal (1966), the California Academy of Sciences Fellows Medal (1970), the Winchester Award for Outstanding Accomplishment in Wildlife Management (1974), the Berkeley Citation, University of California (1978), a Distinguished Service Award from the American Institute of Biological Sciences (1980), and an honorary doctorate from Occidental College (1980).

The loss of an individual of such accomplishments is bound to be felt widely, even by those who knew him only through his writings or the effects that he had on conservation policy. The legion of us who knew him personally, at meetings, in the classroom, or in the field, can assuage a special loss by remembering the special rewards that came from knowing such a person.

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