In Memoriam

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IN MEMORIAM: ROBERT T. ORR, 1908–1994

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ROBERT T. ORR, 1908–1994

(Photograph taken in 1960)

Robert Thomas Orr was born in San Francisco, California, on 17 August 1908 and died in nearby Larkspur on 23 June 1994. He received his B.S. from the University of San Francisco in 1929. His M.A. and Ph.D. degrees were from the University of California at Berkeley under the direction of Joseph Grinnell.

His academic accolades were many, including election to Fellow of the American Ornithologists' Union, Fellow of the California Academy of Sciences, Honorary Member of the Cooper Ornithological Society, and recipient of the Fellow's Medal of the California Academy of Sciences. He received a Doctor of Science, honoris

causa, from his alma mater, the University of San Francisco in 1976, in recognition of a long and distinguished career in teaching. He served at various times as President of the Cooper Ornithological Society, the Pacific Division of the AAAS, and the American Society of Mammalogists.

Bob taught at Stanford University, at the University of California at Berkeley, and at the University of San Francisco. His teaching career at USF spanned the years 1942 to 1964. Bob curated the ornithology and mammalogy collections of the California Academy of Sciences, San Francisco, from 1936 to 1963. Under his leadership, Academy scientists have built up one of the finest collections of marine mammals in North America. He also served as Associate Director of the California Academy of Sciences between 1964 and 1975.

Bob was a teacher par excellence. I have a fond recollection of a comparative anatomy laboratory when students were dissecting the domestic cat. One student found that his cat had no diaphragm. Bob immediately seized this opportunity to teach students to think for themselves and posed the question as to how a cat could breathe without a diaphragm. One student pointed out that pregnant women did not use their diaphragms. The class finally concluded that the cat and women in question probably used their intercostal muscles.

Bob's field trips in his natural history of the vertebrates classes always were memorable. As we moved along, he would identify plants as well as amphibians, reptiles and birds, and discourse on their life habits. Bob was an outstanding natural historian with an encyclopedic knowledge of many taxa.

Had you asked Bob to tell you what he did he probably would have answered that he was a mammalogist. Indeed, his Ph.D. dissertation was on the natural history of the rabbits of California. However, if you scan his 260 or so scientific and popular publications and 13 books, you will find, in addition to his mammal studies, 3 books on fungi and a book on wildflowers of western North America, as well as many papers on birds. Bob was one of the last of a vanishing breed, the generalist natural historian.

Bob was a firm believer in studies of captive animals as addenda to field studies. His monograph on the pallid bat (*Antrozous pallidus; Proc. Calif. Acad. Sci.* 28:165–246, 1954) is still one of the finest natural-history studies on Chiroptera to date. This was based in large part on a colony of bats raised in a "battery" built on the Academy's roof.

Good natural-history observations like good comparative anatomy provide the raw materials, as it were, for experimentation and hypothesis testing. In the 1940s, David Lack sent Bob pairs of several species of Darwin's finches (*Geospiza* spp.). These were housed in aviaries near Bob's battery and his observations on their behavior published in the *Condor* (47:177–201, 1945). Bob noted similarity in song among some of the species; he concluded that if two species overlapped greatly in their requirements then similarity in songs may serve "as warning to males of any of those species against encroaching upon an occupied territory." Twenty-eight years later Martin Cody (*Annu. Rev. Ecol. Syst.* 4:189–211, 1973) would independently discover Bob's ideas and formulate his character-convergence hypothesis. Cody stated that a product of interspecific territoriality is that "natural selection may favor the evolution of convergently similar signals so that the two respond to each other as they would normally respond only to conspecifics." Cody added that two species could learn each other's songs to be used in interspecific communication. With the advent of portable tape recorders, these ideas have been tested and confirmed in the field by a number of authors (e.g. review in Catchpole and Baptista, *Behaviour* 106:119–128, 1988).

Bob's textbook, *Vertebrate Zoology*, went on to five editions and was the window to generations of students into the world of natural history of vertebrate animals. In addition to being teacher and scholar, Bob was also active in the field of conservation. He fought hard to preserve the sea otters of the California Coast.

Bob was friend to many. His life was truly a celebration. We miss him, but we can never forget him.