

Memorial to Howard T. Anderson

1909–1981

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Howard T. Anderson, petroleum and environmental geologist, died May 14, 1981, in Riverside, California, of multiple myeloma. He was 72 years old.

Howard (some of his friends knew him as Andy) was born March 15, 1909, in La Center, Washington, the twelfth in a farm family of fourteen children. He spent his childhood in the La Center area and early developed his lifelong interest in natural history and interpretation of the landscape. Although life on a dairy farm was not always conducive to formal education, he persevered and traveled to Vancouver to finish high school. He began college in Bakersfield, California, where he lived with an older brother, Herbert, a teacher and botanist.

Howard completed an A.B. degree in zoology in 1931 at the University of California, Berkeley. He worked part time as a collector in the Museum of Vertebrate Zoology and during his graduate years as a teaching assistant. He studied with Charles L. Camp in the Museum of Paleontology at the University of California, Berkeley, and finished his M.A. degree in vertebrate paleontology in 1935; his thesis was based on studies of the anatomy of the phytosaur *Machaeropsopus*.

Among his tasks as a paleontologist was his work as consultant on the vertebrate paleontological exhibits at the Golden Gate Exposition in 1939. He held teaching positions in the earth sciences at Eastern Oregon Normal School, Los Angeles City College, and University of Arizona. During three summers he was a ranger naturalist for the U.S. Park Service at Grand Canyon National Park.

During these early years of his professional life his ambitions and aspirations were toward a career in teaching, and had World War II not set him on a different course, he undoubtedly would have followed an academic profession. He was strongly oriented toward teaching and gave many lectures to public and private organizations throughout his life. He influenced many young people toward education and careers in the natural sciences.

In 1935 he married Lois Patterson, and they resided in Berkeley during the first year of their life together. In 1936 their son was born while Howard was a naturalist at Grand Canyon. Their daughter was born in Hollywood in 1939 when Howard was teaching at Los Angeles City College.

In 1943 Howard joined Standard Oil of California and remained with that company until his retirement in 1971. Initially he worked as a micropaleontologist, subsequently as area geologist, district geologist, and senior geologist. The greatest part of his career with Standard Oil of California was spent in southern California, and he directed field work in the Los Angeles Basin and in the Coachella and Imperial Valleys. He derived great satisfaction both from the field work and the interpretive work based on the resulting

maps and profiles. At the same time he was increasing his knowledge of the geography, flora, and fauna of this region and was involved in community activities in Rosemead, where the family then resided.

From 1957 through 1964 Howard was on loan to the Iranian Oil Exploration and Producing Company, a consortium of American and European oil companies exploring and developing the petroleum resources of Iran. During this time he was chief geologist, located at Masjid-i-Suleiman, Khuzestan, in southwestern Iran, and then assistant head, Geological and Exploration Division in Tehran. In these positions he selected and scheduled order of drilling of several prospects that resulted in discovery and development of significant oil fields, including the Marun field. His duties included administration of personnel of the Geological and Exploration Division, including geological, geophysical, paleontological, and topographic survey organizations. It was his particular responsibility to requisition and develop the required staff to conduct the exploration program.

He derived some of his greatest satisfaction in recruiting young Iranian nationals and arranging for their further professional education in the United States and Europe. He insisted whenever possible that their families accompany them during these prolonged periods abroad, and he did everything possible to encourage them to return to participate in the economic development of their country.

During their seven-year sojourn in Iran the Andersons formed many lifelong friendships with Iranians, Europeans, and other Americans. Howard's continuing interests in geography and natural history were pursued on occasions of field trips in Iran, and his interest and knowledge of these subjects and geomorphology and paleogeography were the topics of many conversations with his son, whose research interests center on the biogeography of Southwest Asia. For the rest of his life he maintained an interest and concern for the cultural and political affairs of Iran and gave lectures to various groups back in the United States during the period of political and social upheaval in Iran.

Upon return from Iran, Howard spent his remaining years with Standard Oil of California as senior geologist in the La Habra office. He was involved with a number of projects, including prospective land utilization of company holdings, and was particularly interested in the possibilities for conservation and preservation for park and recreational use in the increasingly developed southern California landscape.

He was registered geologist, state of California, a certified professional geologist, and a member of many professional organizations and active in several. He felt particularly honored to be president of the California section, Association of Professional Geological Scientists in 1978. He was a Fellow of the Geological Society of America and a member of the American Association of Petroleum Geologists, Iranian Institute of Petroleum, Society of Economic Paleontologists and Mineralogists, Paleontological Society, Society of Vertebrate Paleontology, and American Association for the Advancement of Science.

During his ten years of retirement he increased his activity in civic affairs, and this activity found its focus in concern with both the social and biophysical environment. As a consulting geologist most of his work was voluntary; he advised public agencies and testified at hearings on issues involving environmental geology. He contributed to many environmental organizations and was president of the Tri-County Conservation League, an organization concerned with conservation of the environment along the Santa Ana River. He was instrumental in the establishment of the Santa Ana River Regional Park and led a number of nature walks there. The Howard Anderson Memorial Grove has been established in the park as a tribute to him. With his involvement in environmental issues, his scientific progression had come full circle: natural history and geography to zoology and anatomy to paleontology to stratigraphy and back to natural history and geography.

Howard felt passionately about environmental issues, and he wrote innumerable letters to representatives in government at all levels regarding these issues from his perspective as an earth scientist. He was politically active all his life and worked hard to elect and influence those politicians he thought sympathetic to his concerns. He always approached environmental issues from the perspective of his scientific training. He had little patience with those on any side of an issue who were irrational, engaged in mere sloganeering and empty rhetoric, or who were more interested in assigning blame than in seeking solutions.

He avidly followed his eclectic intellectual interests, among which were both physical and cultural anthropology, and during the later years of his life was especially interested in the ways in which paleogeography and paleoclimatology were related to scenarios of early man's entry into the New World. He was not among the earliest converts to the new paradigm of earth history, always cautioning that any new model must explain all the data, not merely the incongruities in the previous model. We had many long conversations during the late 1950s and early 1960s about continental drift versus stability and the implications of these models for biogeography. When the weight of the evidence satisfied him that the theory of plate tectonics was confirmed and had great predictive value, he was excited about it and enthusiastic about discussing its applications.

Howard Anderson's tangible contributions to the profession of geology are not to be found in the published literature. Most of his written scientific contributions reside in the confidential files of his company, and many of those who best knew his geological work are now retired or deceased. Howard would probably feel that his most lasting contributions live on in the work of the many younger people he helped to train and influence.

It may seem self-indulgent for me to pay tribute to his role as a father, but his family interests superceded everything else in his life (when asked why he didn't return to academic life at the end of the war, he remarked that his children had grown accustomed to wearing shoes). He was as supportive of his children's interests and aspirations as anyone could be. His daughter became an active participant in the civil rights movement in the South in 1960, while he and Lois were in Iran. She was arrested for civil disobedience, and concern for her safety must have caused him great anxiety, particularly since his only information about events came by overseas mail. Yet he was unfailingly supportive and took great pride in her involvement.

He not only provided financial and emotional support for his children, he also served as an intellectual colleague in their enterprises. He made the effort to become informed on the issues so that he could engage in conversations and often arguments with us. During the last year and a half of his life when his physical condition was deteriorating and he lived with chronic discomfort, he still read as much as he could of the current literature in several fields, and we had many conversations about subjects as diverse as the Mt. St. Helens eruptions (about which he was excited, since he had spent his boyhood in proximity to this landmark), the history and philosophy of science, and contemporary political events in Iran. Always a teacher at the core, at last he taught us something about dying, too—he finally gave out, but he never gave in.

He is survived by his wife, Lois B. Anderson, his daughter, Carolanne Marie Carawan, and his son, Steven C. Anderson. He also leaves three grandchildren, two sisters, two brothers, and many nieces and nephews.

SELECTED BIBLIOGRAPHY OF H. T. ANDERSON

1936 The jaw musculature of the phytosaur, *Machaeropsopus*: *Journal of Morphology* v. 59, p. 549-587.