



## IN MEMORIAM

Arnold M. Schultz

Professor of Forestry and Resource Management, Emeritus

UC Berkeley

1920-2013

Arnold Schultz coined the term “Ecosystemology” for a new course he introduced at Berkeley in the 1970s. It was a unique course that brought together Arnold’s classical training in ecology with his emerging interests in cybernetics, system theory, social science, business, culture, and philosophy. His capacity to integrate concepts from all of these fields made ecosystemology an instantly popular course. For more than 25 years his lectures filled the auditorium in Mulford Hall with eager students. In this new course Arnold incorporated poetry, dramatic art, parables, cooking, and hard science in an ever- evolving format aimed at stimulating thinking on the part of his students. They loved his teaching style, the annual field trip to the pygmy forest in Mendocino County, and most of all they loved Arnold.

Arnold Schultz was appointed as an Assistant Specialist in the California Agricultural Experiment Station at Berkeley in 1949 after having completed his Ph.D. in Botany under the famous plant ecologist John Weaver at the University of Nebraska. Arnold moved up the ranks to become a Specialist in the California Agricultural Experiment Station in 1963. His work as an Extension Specialist was focused on studies of range management and prescribed burning. He served as Lecturer in the School of Forestry from 1958 to 1965. In that capacity he taught courses in range management at both Berkeley and UC Davis. He was particularly interested in range sampling techniques and invented and patented the Artificial Population Sampler. He formed his own company to make and market the instrument, which has been purchased and used in many universities in the U.S. and abroad.

In 1966 Arnold was appointed Professor in the Department of Forestry and Resource Management. His initial teaching responsibility was the undergraduate course in Range Management. He was fundamental in the development of the Conservation and Resource Studies major in 1969. He shaped his ecosystemology course for the new major as well as a course entitled Environmental Problems: Principles and Methods of Analysis. These courses helped to define the Conservation and Resource Studies major. They guided students into the major and inspired them to become active in conservation of natural resources. In 1991 Arnold was awarded the Distinguished Teaching Award by the College of Natural Resources and in 1992 he received the Distinguished Teaching Award at Berkeley. Recalled after formal retirement, he continued teaching ecosystemology yearly well into his 80s.

Throughout his career his research was located in rangeland environments from the grasslands of Nebraska as a graduate student to California annual grasslands, Arctic tundra, and the desert grasslands of Israel. His research at Barrow, Alaska, was done in collaboration with Frank A. Pitelka. He also worked with Hans Jenny and Rod Arkley on studies of the pygmy forest in Northern California. His body of work was focused on understanding ecosystem processes as a basis for the development of conservation strategies for the management of grassland ecosystems. He discovered that the lemming cycle in the arctic tundra, which was often caricatured by stampedes of lemmings rushing over cliffs into the sea, was influenced by the cycling of phosphorus. The limited available phosphorus became tied up in the bodies of the lemmings resulting in their stampede to find new grazing areas high in phosphorus. It was only inadvertent that some lemming populations ran into the sea. Most, as Arnold pointed out, dispersed inland to areas of better foraging. This

idea became known as the nutrient recovery hypothesis and was an important contribution to the literature on lemming density cycles.

His expertise in grassland ecology was the basis for consulting assignments in Greece, Ladakh, Israel, Czechoslovakia, Wales, and the Arctic. His leadership in new approaches to environmental education resulted in an assignment with the United Nations Environmental Program on Environmental Education in Kenya. These assignments enriched his teaching and widened his circle of colleagues and friends.

A polymath with a life-long interest in the philosophy of science, Arnold had the capacity to surprise us in the weekly meeting of the faculty of the Forest and Resource Management Department with his novel ways of thinking about and solving problems.

At a faculty meeting to discuss newly emerging rules for student/ faculty conduct in the 1980s Arnold said, "I don't know how to take this, I've loved all of my students."

He also surprised the students in his Ecosystemology class one year by taking them to the Hoffman Marsh along the San Francisco Bay for their final examination. There he passed out 5 sheets of paper to each student. One asked, "What is this?" Arnold replied, "It is the final exam, you have 3 hours to complete it."

Arnold always took a personal interest in his students and passionately believed in their potential to change the world for the better. One of his students, Norman Myers, author of *The Sinking Ark* and eleven other environmental books, is a leader in international efforts to protect tropical habitats. Other students have formed their own environmental organizations, serve as conservation biologists and resource managers, provide consulting services to nonprofits, engage in environmental education and lead governmental agencies.

Joe R. McBride

James W. Bartolome