



## IN MEMORIAM

Herbert George Baker  
Professor of Integrative Biology, Emeritus  
Berkeley  
1920-2001

Herbert George Baker died July 2, 2001, at the age of 81 at Piedmont Gardens Nursing Facility, Oakland, after a long struggle with Parkinson's disease. He had devoted most of his last 44 years to exemplary teaching and research at the University of California, Berkeley, initially in its Department of Botany until it was disbanded on June 30, 1989 (it was founded in 1890), and then in the successor Department of Integrative Biology.

Born in Brighton, England, on February 23, 1920, Baker received his B.Sc. (First Class, Special Honours) and Ph.D. from the University of London in 1941 and 1945, respectively. From 1940 to 1945 he was a research chemist and assistant plant physiologist at Hosa (Cancer) Research Laboratories, London. On April 4, 1945, in Tredegar, Wales, he married Irene Williams. They had an exceptionally devoted marriage for 44 years until her death in November 1989, and for most of this time Irene was also Herbert's research partner. From 1945 onward Baker was engaged in teaching and research, initially at the University of Leeds, where he was lecturer, 1945-54, and at University College, Ghana, where he was senior lecturer and subsequently professor, 1954-57. In Ghana, Baker did significant work on bat pollination. His three years there also provided valuable experience in tropical botany, which became a lifelong interest. On March 6, 1957, Ghana (the former Gold Coast) achieved independence from Britain as a member state of the British Commonwealth, the first British colony to do so, and the first of the many new black African nations. On August 22, 1957, Baker and his family (wife Irene and young daughter Ruth) moved permanently to the United States to accept a tenured faculty appointment at UC Berkeley, where he was associate professor, 1957-60, and professor from 1960 on. Quintessentially English, the Bakers remained British citizens.

From 1957 to 1969 Baker was director, and from 1969 to 1974, associate director of the University of California Botanical Garden. He was a recipient of the Distinguished Teaching Award in 1971. On his retirement in 1990 at the age of 70, he received the Berkeley Citation.

Baker was trained as a "genecologist", although in later years he preferred to call himself an "evolutionary ecologist." Baker was an authority on the reproductive biology of flowering plants, especially on their pollination biology and breeding systems. He was also interested in the domestication of crops and in the evolution of colonizing species. Baker formulated the concept of "the ideal weed," which would exhibit collectively a dozen characteristics of weeds and "for which title, fortunately, there is no claimant at the present time" (H. G. Baker, "The Evolution of Weeds," *Ann. Rev. Ecol. Syst.* 5 [1974], 5). In the 1970s and 1980s he and Irene Baker, with whom he first co-published in 1971, did pioneering and detailed work on the chemical constituents of nectar, pollen, and other floral rewards.

As attested by the 1971 Distinguished Teaching Award, Baker was a stimulating teacher, both in the classroom and in the field. The three formal undergraduate courses he taught for several decades were, in the fall, Plants and Man (from 1983 on as the more politically correct Plants and Civilization), and in the spring, in alternate years, Plant Ecology and Evolutionary Ecology of Plants. For the first course Baker wrote a small, circa 200-page textbook, *Plants and Civilization* (1965, 1970, 1978), which was translated into Spanish, Ceylonese, Malay, and Japanese. The general subject area was "economic botany" and the course considered

such topics as: plants as stimuli of exploration and exploitation; rubber, drug plants, dye plants; necessities such as wheat, maize, legumes, and oils; and luxuries such as sugar and alcoholic and other beverages. Baker regaled students with various historical episodes and had a laboratory demonstrating the actual plants. Although a course for non-majors, the course was so popular that many biology undergraduates took it for credit and many graduate students audited the course. Baker's graduate course on Evolutionary Ecology of Plants was equally popular and renowned and, indeed, de rigueur for undergraduate and graduate students interested in ecology and evolution. This course addressed Baker's various research emphases outlined above. Several times Baker also offered a graduate course, Advanced Plant Ecology, and conducted frequent graduate seminars on evolutionary ecology.

Baker was instrumental in establishing the Organization for Tropical Studies (OTS) and conducted one of its early offerings in summer 1968 – Reproductive Biology in Tropical Plant Ecology. Centered in Costa Rica, OTS has greatly influenced research in tropical botany.

Baker had numerous graduate students, research associates, and postdoctoral workers. He and his wife Irene gave generously of their time to all. Departmental records indicate that Baker from 1968 to 1987 headed 24 doctoral committees, and from 1977 to 1988, served as second or third reader on 38 theses and participated in 99 doctoral and 15 master's examinations. There are no departmental records available for such activities in the earlier years dating back to 1957, when Baker arrived at Berkeley.

During Baker's active years of teaching and research, plant ecology (in a broad sense) blossomed at Berkeley. Baker's contributions to this development included his influential teaching and research; his many formal and informal seminars; his frequent presentations at scientific meetings and to the public (Baker avidly supported amateur botany); his extensive editorial and committee work; his ceaseless interaction with colleagues and students; Thanksgiving dinners at his house, and, on the last Sunday of each month, salons for ecologists and evolutionists, functions that also attracted many participants thanks to the excellent homemade trifle and Welsh cakes that Irene Baker prepared; his concern for conservation; and his enthusiasm in the field in California and abroad.

Baker's honors were many and include, in part (arrangement is chronological): research fellow, Carnegie Institute of Washington, 1948-49; president, California Botanical Society, 1960-61; Miller Professor, UC Berkeley, 1966-67; the genus *Bakerolimon* (Plumbaginaceae) named for him by I. Linczevsky in Leningrad, 1968; president, Society for the Study of Evolution, 1969; Distinguished Teaching Award, UC Berkeley, 1971; vice president, Botanical Society of America (BSA), 1977; president, BSA, 1979; BSA Merit Award, 1980; fellow, Association for Tropical Biology, 1982; president, American Association for the Advancement of Science (Pacific Division), 1982-83; fellow, American Academy of Arts and Sciences, 1984; Berkeley Citation, 1990.

The noted Berkeley- Davis geneticist and evolutionist G. Ledyard Stebbins formulated "Baker's Law". Finally, Baker was honored by a Festschrift, *The Evolutionary Ecology of Plants* (1989), which was edited by Jane H. Bock and Yan B. Linhart. The book contains 28 articles by Baker's colleagues and especially his former students. In one article, D. H. Janzen remarked that at about 1965, the Bakers "aggressively sought out the entomology department at the University of California at Berkeley, as a source of different thinking about plants. We all profited from that. We all played in Herbert and Irene's garden, and we still do. Their botany was user- friendly. There is a lesson there" (page 588).

Herbert Baker and his wife Irene played a pivotal role in transforming reproductive biology, especially pollination biology, from a mostly descriptive endeavor to a quantitative science. They have influenced countless colleagues and students. A renaissance botanist, a tireless and selfless individual, Herbert Baker was truly the dean of evolutionary biology.

The Bakers had one child, Ruth B. Grimes, who lives in Berkeley.

Rudolf Schmid  
Lewis J. Feldman  
Gordon W. Frankie