Resolution of Respect

Nelson George Hairston, Sr.
1917–2008

One of the great ecologists of the late 20th century passed away on 31 July 2008, at age 90, in Chapel Hill, North Carolina. Nelson George Hairston was born on 16 October 1917 and spent his childhood on his family's plantation, Cooleemee, on the banks of the Yadkin River in Davie County, North Carolina. Even after many years in the upper Midwest, Nelson never lost his genteel Piedmont North Carolina accent and story-telling ability.

He was educated at the Virginia Episcopal School, a boarding school in Lynchburg, followed by earning B.S. and M.S. degrees at The University of North Carolina. He enrolled for doctoral study at Northwestern University to study with the "Chicago School" of ecology, as represented by the foundational textbook authors Allee, Emerson, Park, Park, and Schmidt (1949). His doctoral advisor, Orlando Park, pioneered the study of ecological partitioning between nocturnal and diurnal animals. Nelson's work on niche partitioning in plethodontid salamanders in the Southern Appalachians appeared at nearly the same time (1949) as David Lack's classic on Darwin's Finches (1947), and nearly a decade before MacArthur's (1958) work on warblers .

Nelson's doctoral study was interrupted by military service during World War II, when he worked in the South Pacific on therapies for malaria. Upon completion of his doctoral studies in 1948, Nelson accepted a position as assistant professor of zoology at the University of Michigan. Despite his eventual fame as an experimental ecologist, he was originally hired as a parasitologist. Throughout his Michigan career, he maintained an active research program in parasitology and epidemiology, especially schistosomiasis on Leyte, the Philippines, and in Egypt for the World Health Organization (Hairston 1962, 1965*a*, *b*, 1973). Largely unknown to the academic community, this work includes some of his most brilliant conceptual and experimental contributions. From this experience Hairston pioneered the application of what we now call "systems ecology" to complex associations between parasites, their hosts, and the environment.

Nelson was the senior member of the dynamic trio of ecologists at Michigan with Fred Smith and Larry Slobodkin, who together spawned and cultivated for two decades a vibrant and productive cohort

of population and community ecologists. Ann Arbor was home to several other excellent ecologists and evolutionary biologists, but it was Hairston, Smith, and Slobodkin who excited and set the agenda for most of the graduate students. Their paper, HSS (American Naturalist 1960), known colloquially as "the Étude," a double entendre on the succinct, brilliant piano compositions of Chopin and the frequent designation of Ann Arbor as A^2, became a Citation Classic (Current Contents 12 (20):20) because it was an argument other ecologists love to hate and one Nelson never got tired of defending (Hairston 1991). The idea of trophic cascades lives on as a central concept in community ecology in part because of HSS and Hairston's other seminal papers on the patterns and processes that shape ecological communities (Hairston 1959, 1964, Hairston and Hairston 1993, 1997). Nelson especially delighted in his studies of microscopic soil arthropods (Hairston 1951, 1969, Hairston and Byers 1954), because they were animals invisible during sampling and therefore he could have no preconceived biases of their natural community structure.

After Smith left for Harvard and Slobodkin went to found a new department at Stony Brook, Hairston and Donald Tinkle partnered to run the ecology seminar, meeting at the Hairston's home every Tuesday evening. Nelson soon became the Director of the University of Michigan Museum of Zoology (UMMZ), a post that allowed him to foster research in systematics, evolution, and ecology through his recruitment of academic curators, his grants from NSF that provided seed money to many graduate projects, and, of course, his presence at tea. The director's conference room was the venue every weekday from 3:00 to 3:30, where faculty and graduate students met to gossip, discuss recent seminars and papers, exchange the buzz on jobs, and listen to the director quote scripture ("The first experimental ecologist was Gideon"), Shakespeare, and give his opinion (often with red-faced fury) on most any topic. Stevan Arnold even kept the "Little Red Book" of the sayings of Chairman Hairston.

"If p is less than 0.01, you worked too hard."

"If it's not worth doing; it's not worth doing well."

"Some ecologists find mathematics easier than useful scientific work."

"The world IS green."

"Education is the only business where customers want *less* for their money."

"The problem with a natural experiment is that you don't know what experiment nature ran."

"Reading Fisher is like reading the Book of Revelations."

"I may have been born in North Carolina, but I wasn't born yesterday."

The pedagogical impact of Nelson G. Hairston on dozens of students in that vibrant two decades of the 1960s and 1970s, whether they were formally his own graduate students or not, was immense.

In 1974 Hairston accepted the William R. Kenan Professorship in the Department of Zoology (later Biology) at the University of North Carolina. In 1975 this move returned him and Patty to their cultural roots, their summer home in Cashiers, and Highlands Biological Station. The now ready access to his beloved mountains of North Carolina gave Nelson the opportunity to finish his ambitious experiments on the ecological interaction between plethodontid salamander species. This study experimentally tested the hypotheses in his dissertation work of 25 years earlier that interspecific competition set the range limits of these salamander species at their contact zones and shaped the evolution of their competitive abilities (Hairston 1980*a*, *b*). In an unprecedented heuristic tour de force Hairston (1973) proudly published all possible outcomes of the planned experiments and their interpretations years *before* conducting the experiments. The broader implications of this remarkable, large-scale field experiment are nicely summarized in his book *Community Ecology and Salamander Guilds* (1987). Like Hurlburt (1984), Hairston became increasingly irritated at unsatisfactory experiments in ecological publications, and clarified more rigorous protocols in his powerful 1989 book *Ecological Experiments: Purpose, Design, and Execution,* a book that is essential reading for any experimentalist.

Nelson thrived at UNC, and extended his inspiration in experimental community ecology to another generation of productive students. He was best loved, however, for his tireless enthusiasm for teaching a vertebrate zoology course that at the time was a radical departure from laboratory-constrained courses in comparative vertebrate structure and function. His modern approach to vertebrate natural history, as presented in his 1994 textbook *Vertebrate Zoology: an Experimental Field Approach*, was dedicated to "the 520 students who, over thirteen years, made it a joy to teach vertebrate field zoology." These students (and many visiting faculty, including Nelson's enthusiastic successor R. Haven Wiley) traveled with him from Chapel Hill to the Outer Banks "not to bird watch but to study migration" and to the Nantahala and Great Smoky Mountains to experience the kind of fieldwork he did with salamanders.

Nelson retired at age 69, but continued to be active in the new Biology Department at UNC and to summer in Cashiers. He received the Eminent Ecologist Award from the Ecological Society of America in 1991 (ESA Bulletin 72(4):240).

Nelson is survived by his wife Martha (Patty), five grandchildren, his son Nelson Hairston, Jr., the Frank T. Rhodes Professor of Environmental Science and Senior Associate Dean of Arts and Sciences at Cornell, and Margaret Hairston Searcy, who is married to Bill Searcy, Maytag Professor of Ornithology at the University of Miami. His daughter Martha Hairston Weston predeceased him. He had two full academic careers, one in Ann Arbor, the other in Chapel Hill. In both places he greatly enriched the intellectual tone of his department and was a master model of rigorous science, thinking, careful observation, and field experimentation for hundreds of undergraduates and a long line of graduate students.

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