William L. Brown, Jr.

June 1, 1922 — March 30, 1997

In the early 1930s, when the summer weekend weather was clear, Bill and Beulah Brown liked to load their two sons into the car and drive from their Philadelphia home to the Jersey shore for a day at the beach. They made one stop along the way, however, so that their older boy, Bill Jr., could disembark at a familiar crossroads in the middle of the Jersey Pine Barrens. In accord with family custom, he would be picked up at the same location at the end of the day. In the meantime, equipped with collecting gear and a lunch packed by his mother, the young naturalist roamed the stark and beautiful solitude of the Barrens, observing and collecting ants and other insects. Bill Brown's first scientific paper, published in 1943, described a new ant species discovered during one of those boyhood treks, *Monomorium viride*. In years yet to come, he would likewise roam the forests and savannahs of six continents, reporting on what he learned in 273 scientific publications.

Bill Brown received a B.S. degree in Zoology and Entomology from Penn State in 1947 and a Ph.D. degree in Biology from Harvard in 1950. He interrupted his undergraduate studies from 1943-46 in order to serve with the USAAF 36th Malaria Survey Unit and in an air-ground rescue unit, primarily in western China, but with some malaria work in India. From 1950-52, Bill conducted research in Australia as a Harvard Parker Traveling Fellow and as the first Fulbright Research Scholar to Australia. From 1952-60, Bill served as an Assistant and Associate Curator of Entomology at the Museum of Comparative Zoology at Harvard, and in 1960, he assumed a professorship in the Department of Entomology at Cornell University, attaining emeritus status in 1991. In 1973, Bill received a Guggenheim fellowship. He maintained strong ties with Harvard as an Associate Curator of Entomology until the time of his death. At Cornell, Bill taught courses in evolution, insect systematics, insect physiology, systematic theory, and paleobiology. He mentored 21 graduate students.

Bill was the antithesis of the stereotypical ivory-tower stuffed-shirt academic. He arose from working-class origins and shot to the top of his field through sheer force of intellect and knowledge. A staunch but irreverent political liberal, he liked to poke fun at pomposity and self-importance whenever he saw the opportunity, and it has been said that he knew the word for "beer" in over fifty languages and dialects. Thankfully, some of the personal side of Bill's life in science has been recorded in the recent book, *The Earth Dwellers: Adventures in the Land of Ants*, by Erich Hoyt (1996).

Of Bill's 273 publications, 223 are about ants. Bill recorded discoveries in many aspects of ant biology, but his primary interest was ant systematics and his primary goal the clear and stable delineation of ant species and higher taxa. Since there are an estimated 15,000 species of ants, this represents a massive task. Bill made contributions to the systematics of most ant groups, but the two groups that received his greatest attention were the tribe Dacetini (subfamily Myrmicinae) and the subfamily Ponerinae. The Dacetini, a tribe of mostly minute, exquisitely sculptured ants, are speciose and worldwide in distribution, but because of their size they had been collected rarely and thus were very poorly known. Portions of Bill's dacetine revision appeared in 1948, during his first year as a graduate student. In all, he published 69 papers on dacetine ants over the course of four decades; 36 of those papers, published during a period spanning 20 years, constitute a revision of *Strumigenys*, the most speciose dacetine genus.

Bill's other primary focus was the ant subfamily Ponerinae, a heterogeneous group containing both "primitive" and highly derived ants. Bill's ponerine studies were reported in diverse publications, but were concentrated especially in a series entitled, "Contributions toward a reclassification of the Formicidae," which, in Bill's (unpublished) words, "was begun about 1951 in a hopeful but tentative way, and was aimed at revising to genus level the entire family. The 'Contributions to...' hedged the prospect of a task so huge and unmanageable that it might well never be completed as originally conceived, at least by this investigator." In all, there were seven publications in this series that spanned the years 1951-78 (Parts I-V, Parts VIA and VIB), that made important and lasting changes in our understanding of this fascinating group of ants. For the fifteen years prior to his death, Bill worked daily on Part VIIA, which was to treat the difficult genera *Diacamma* and *Pachycondyla*, and he had prepared extensive notes for VIIB and VIIC. Even in unpublished form, this work has had strong influence among ant biologists: many of the taxonomic implications are incorporated into the ponerine classification of Bolton's (1994) *Identification Guide to the Ant Genera of the World*, and "test versions" of Bill's keys have been circulating for two decades.

As is well known, Bill was an accomplished general naturalist, and was, as Ed Wilson has recently observed, arguably the most well-traveled field biologist in history. Based on years of careful observation, Bill possessed an intimate knowledge of the patterns of distribution of plants and animals. This knowledge formed the basis for his important contributions to evolutionary theory, and may be contrasted to the majority of the literature, which is typically based on abstract models or isolated studies of particular "model organisms." The vastly influential paper (co-authored with E.O. Wilson in 1956), "Character displacement," was honored in 1986 as a Science Citation Classic, i.e., as one of the most frequently cited scientific papers of all time. Bill's general theory of speciation was

described in two papers, "Centrifugal speciation" (Brown, 1957) and "Speciation: The center and the periphery" (Brown, 1958). His theory of the mechanisms that drive speciation and adaptive radiation was set forth in "General adaptation and evolution" (1959). Perhaps the premier example of the power of natural history-based reasoning is Bill's 1960 paper, "Ants, Acacias, and browsing mammals," a tour de force in which he assembles all of the evidence in support of the idea that plants benefit from ant-plant symbioses. This idea, which seems common-sensical today, was opposed for decades following the vigorous refutations of W.M. Wheeler and others in the first half of this century. Within a few years of the publication of Bill's paper, Dan Janzen and subsequently a host of other ecologists, had proven experimentally what Brown had demonstrated by deduction.

Ant systematics has had some truly great scientists, in particular Gustav Mayr and Carlo Emery, but it may be argued that Bill's constellation outshines them all. This is so for a number of reasons. First, Bill carried the evolutionary "Modern Synthesis" into ant systematics by emphasizing Mayrian population-level thinking in the critical process of delineating ant species. Inevitable by-products of this emphasis were Wilson and Brown's (1953) and Brown and Wilson's (1954) vigorous attacks on the taxonomic subspecies, which had a tremendous effect on zoological systematics in general. Second, Bill repeatedly emphasized that taxonomic revisions should be carried out on a world basis, rightly asserting that species and higher taxa can only be properly recognized and understood when their total diversity is surveyed. Third, Bill introduced the use of repeatable, quantitative measurements into ant systematics. Fourth, Bill maintained that his greatest contribution to science was the specimens that he had collected. These specimens, from remote locations all over the world, constitute an immensely important and in many cases unique source of biological information that will serve future generations in ways we have yet to imagine.

Bill is survived by his beloved wife, Doris, of Ithaca, New York; and by his son, Creighton Brown, of New York City. The tragic deaths of two daughters, Dorothy and Alison, preceded Bill's. Bill's five grandchildren include Creighton and wife Jennifer's children, Simon, Ezra, and Willa; and Dorothy and husband Richard Anderson's two children, Katherine and Stephen. In a fitting tribute to Bill's memory, Doris has established an endowment for training Latin American students in tropical ecology. Tax-deductible gifts may be sent to: O.T.S. William L. Brown Fellowship, P.O. Box 90630, Durham, NC 27708-0630.

When the time came to place Bill's body in the ground, his wife, Doris, and son, Creighton, wisely chose to dress him in his worn and weathered collecting clothes. When we think of Bill now, we think of the solitary boy in the Pine Barrens, shaded from the hot noonday sun under a pine tree, eating his lunch and watching *Monomorium*

viride workers come and go from their nest entrance. The wonder he experienced then, and the wonder he experienced subsequently in the wild places of the world, are generously shared with us in 273 publications and countless ant specimens that, together with the trajectories of the many lives he touched, constitute the unique and lasting legacy of Bill Brown.

Ted R. Schultz, Richard B. Root, Thomas Eisner