Memorial to Bernhard Kummel
1919–1980

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Bernhard Kummel, professor of geology, Harvard University, died of cancer July 3, 1980, in Cambridge, Massachusetts.

His family, students, university colleagues, and many friends over the world feel a deep sense of loss at his untimely death. Bernie's achievements in science were diverse and impressive, earning for him a secure place among the world's leading historical geologists.

He was an effective teacher with a fine legacy of successful students, many of whom are national leaders in teaching, research, and industry. Through them his influence continues. Although he might easily have channeled his students in his own special interests, he preferred diversity and urged them to go their own way.

Bernhard Kummel was especially noted for the breadth and excellence of his research on the Early Triassic Epoch, a critical time in geologic history. His synthesis of Triassic ammonoids and nautiloid cephalopods of the Mesozoic and Cenozoic in the *Treatise on Invertebrate Paleontology* has provided an international standard for these fossils.

Kummel became interested in fossil cephalopods while still an undergraduate student, and he eventually became a close personal friend of the leading cephalopod authorities over the world: Arkell, Bando, Furnish, Glenister, Miller, Ruzhentsev, Spath, Teichert, Wright, and others. He liked to follow the path of the early ammonitologists of the Vienna school, especially the great Karl Diener, and he surpassed them.

Kummel's college textbook, *History of the Earth,* demonstrates his encyclopedic knowledge of world geology. For two decades this book has been a leading general source on world stratigraphy. Because of innate caution, Bernie was slow to accept the reality of plate tectonics, but he was preparing a thorough revision of his book at the time of his death, adopting plate tectonics as the most reasonable paradigm of world geology.

Bernie was strongly empirical in his research, convinced that the best science was to go straight to nature for his evidence before developing formal hypotheses. He felt that the history of life had to be read in the rocks and could not be found in man-made principles and hypotheses. His empiricism was orderly. He planned his projects carefully around limited objectives, and he knew when to summarize and publish his data.

His horizons knew no limits. He undertook arduous fieldwork in western America, Peru, Libya, Pakistan, Iran, Madagascar, Australia, and Greenland, always driven by the desire to see as much as possible of geologic field evidence. His observations were meticulous and are recorded in nearly a hundred published works.

From his undergraduate days he was fascinated by the problem of the causes of sweeping biologic changes that mark the Paleozoic-Mesozoic boundary, and he collected much pertinent evidence bearing on that enigma of geologic history.

Bernie's influence went far beyond his scholarly work. He was a catalyst, frequently

sweeping up associates with his infectious enthusiasm, good humor, dedication, and camaraderie. At times he was plagued by self-doubts, and he could be tough in pursuit of what he regarded as worthy goals.

Bernhard Kummel was born of Danish parents, Bernhard and Meta Kummel, August 13, 1919, in Racine, Wisconsin. He received B.A. and M.A. degrees in geology from the University of Wisconsin at Madison in 1941 and 1942, respectively, with the guidance of Twenhofel and Newell. Prevented from military service by marked astigmatism, he began his professional career in 1943 as chief of a topographic mapping party of the U.S. Coast and Geodetic Survey. Later in 1943, until 1946, he participated in petroleum surveys for the government of Peru in varied, poorly known terrain, ranging from tropical forest to the high Andes.

Then he returned to the United States, studied at Columbia University with Kay and Newell, and received his Ph.D. degree in one year, 1947. He worked for the Texas Bureau of Economic Geology during 1947–1948 and went on to become a member of the geology faculty at the University of Illinois at Urbana in 1948; he advanced to associate professor (1949–1952).

On leave from teaching duties for the last nine months of 1951, he studied Triassic ammonites at the British Museum, then accepted in 1952, an appointment as associate professor of geology at Harvard. In 1962 he was promoted to professor of geology and curator of invertebrate paleontology, titles that he held until his death. He served in 1974–1976 as chairman of the Department of Geological Sciences.

Bernie was a Fellow and member of several national societies: Geological Society of America, Paleontological Society, American Association of Petroleum Geologists, Society of Economic Paleontologists and Mineralogists, and American Academy for the Advancement of Science. From time to time he was employed by oil companies to conduct exploratory work in foreign fields. He was president of the Paleontological Society from 1970–1971, and he was made Patron of that society in 1980, an honor that he shared with only one other person in the history of the society.

An impressive memorial service was held at Harvard on September 12, 1980, attended by a large number of Bernie's friends. Moving tributes to Bernie's memory were given by several of his colleagues. Here are selected comments:

Raymond Siever, for the Department of Geological Sciences at Harvard, "We shall miss him just terribly in the Department. Bernie *was* Harvard to a great many people." Norman Sohl, U.S. Geological Survey, "Bernie brought welcome new approaches, ideas, and made a subject live." McLain Forman, consulting geologist of New Orleans, "He could laugh at many things, including himself. The Kummel stamp was enthusiasm, dedication, and just making going to school fun." David Raup, Chicago Natural History Museum, "He had a marvellous blend of toughness and friendly generosity. His first words to most new graduate students were 'call me Bernie'." Roger Thomas, Franklin and Marshall University, for the Paleontological Society, "Bernie expected his students to find their own vocations. To this end he gave us great freedom." Curt Teichert, University of Rochester, "Bernie was a scientist par excellence. He was a seeker of truth." Stephen J. Gould, Harvard, "Each fault was overbalanced by an immeasurably greater and complementary strength." Cornelius Hurlbut, Harvard, "He has left behind such a wealth of scholarly work on which others can build."

I was long a teacher and companion of Bernie, knew him well, and loved him dearly. Bernie was a complex person with a great zest for living. He was driven by an overpowering ambition that frequently led to self-doubts, frustration, and heartache. These very human

qualities were usually submerged by his sense of humor and outweighed by his rich contributions to society and science. His work is done and it is good.

Bernhard Kummel is survived by his wife Gilda of Belmont, Massachusetts; his son Alex of Houston, Texas; and his brother Robert and family of San Francisco, California.

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