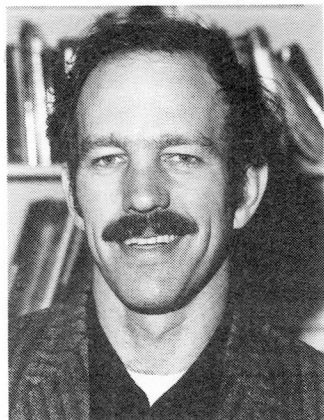


Memorial to Thomas Joseph Morton Schopf

1939–1984

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Thomas Schopf, founder of the highly influential journal *Paleobiology* and recipient of the prestigious Schuchert Award of the Paleontological Society, died suddenly on March 18, 1984, while leading University of Chicago paleobiology students on a field trip at the Texas coast. He was a distinguished scientist whose interests and scholarly research included paleontology, marine biology, oceanography, microbiology, and most recently, the history of science. Tom studied all these fields with deep commitment and seriousness of purpose, but at the same time with utter enjoyment in his chosen work. Certainly he was a leading evolutionary paleontologist whose contributions are all the more remarkable considering that his earliest publication was in 1966.

Tom was born in Urbana, Illinois, on August 26, 1939, the son of Esther J. Nissen and the late James M. Schopf, a renowned paleobotanist and coal geologist who had a distinguished career with the Illinois State and U.S. Geological Surveys. He is survived by his mother, of Columbus, Ohio; his young children, Kenneth, Carl, and Jennifer, who live with their mother in Cleveland; and his brother, J. William Schopf, a professor of geology at the University of California at Los Angeles and a leading authority on Precambrian paleobiology. Part of the information for this memorial was derived from remarks by David Raup, William Schopf, George Stocking, Leonard Radinsky, and James Hopson at a memorial service held on the University of Chicago campus on March 28, as well as from recollections of Walter Sweet.

Educated in the public school systems of Pittsburgh, Pennsylvania, and Columbus, Ohio, Tom's early interest in paleontology was kindled on weekly visits to the Carnegie Museum with his brother Bill. They were guided by their mother during a time when their father was on a six-month leave to the South African Geological Survey. Nonetheless, the father's example and personality were Tom's first major influences leading him into the field of paleontology.

Tom Schopf was an avid participant in all the major sports through his high school days, a Columbus high school tennis champion, and a successful intramural basketball player in college and throughout his later years. He was a great lover of jazz music and a habitue of Chicago South Side jazz clubs. An oft-repeated wish was fulfilled when Thelonius Monk's "Round Midnight" was played at the beginning and end of Tom's memorial service.

After finishing high school a year early with nearly a straight-A average, Tom received an A.B. in geology in 1960 from Oberlin College, where he also excelled in zoology, mathematics, French, and German. At Oberlin, he came under the influence of one of the outstanding teachers of paleontology, Larry DeMott, who recently retired after a distinguished career, first at Oberlin and later at Knox College. Tom went on to the Ohio State University, where he received a Ph.D. in geology in 1964, working under

the guidance of another outstanding teacher of geology and leading biostratigrapher, Walter Sweet. Among Tom's graduate student colleagues were Stig Bergström and Anita Epstein Harris. His Ph.D. dissertation was a comprehensive study of the biostratigraphy and multielement taxonomy of Ordovician conodonts from New York, Ontario, and Quebec. The work, published in 1966, together with the publication months later of research done by Gerry Webers on Ordovician conodonts of Minnesota, and a study by Sweet and Bergström of conodonts from equivalent-age strata in the Cincinnati Arch region, launched the initial acceptance of multielement taxonomy. The revolutionary impact of this change in taxonomic procedure in the study of conodonts was heralded at a Geological Society of America meeting in 1965 in a presentation by Webers of the independent results of the three investigations.

Upon completion of the Ph.D., Tom took the step that started his career in marine biology, oceanography, and later microbiology. From 1964 to 1967, he was a post-doctoral fellow at the Marine Biological Laboratory at Woods Hole where he began his investigations of the biology of the Bryozoa (Ectoprocta); his affiliation with Woods Hole continued during the 1970s where he lectured and did research in the Department of Experimental Invertebrate Zoology. In the late 1960s Tom became the first paleontologist to study gel electrophoresis and apply the results of this technique to the genetics of living organisms of paleontological importance. His studies of the genetic variation in the Bryozoa established his reputation among evolutionary biologists, a remarkable accomplishment considering that he was self-taught as a geneticist and biochemist. It was a leading characteristic of Tom Schopf that he continued his education long after the Ph.D.—near the end of his life he was teaching himself and doing research in DNA sequencing.

Tom taught as an assistant professor at Lehigh University from 1967 to 1969 in the Department of Geological Sciences and the Center for Marine and Environmental Studies. He joined the University of Chicago in 1969 where he became an associate professor in 1972 and a full professor in 1978. At Chicago he was associated with several departments, reflecting his interdisciplinary interests: the Geophysical Sciences, the Committee on Evolutionary Biology, and the Morris Fishbein Center for the Study of the History of Science and Medicine. In the Geophysical Sciences, his colleagues in the paleobiology section of the department were Ralph Johnson and Fred Ziegler, later Dave Raup, Jack Sepkoski, and Ziegler. To join an informal luncheon as I did in early 1984 with Tom, Dave, Jack, Fred, and their graduate students was to become immediately aware of an electrifying research environment represented by the group at Chicago.

Tom Schopf published more than 150 titles from 1966 to early 1984; at the time of his death, several more papers were submitted as well as a book-length manuscript on the history of science, based on the Arnold Raven Memorial lectures that he had presented at Chicago in the autumn of 1983. Tom was the fourth recipient of the Schuchert Award, given by the Paleontological Society in November 1976 (his three predecessors were David Raup, William Schopf, and Stephen Jay Gould). He also received a Guggenheim Fellowship in 1981; was a visiting professor at the University of Hamburg, West Germany, 1978–79; and was a visiting research associate at Cal Tech, 1981–82; at various times he was associated with the Field Museum of Natural History and the Friday Harbor Laboratories of the University of Washington. Tom received a total of nine National Science Foundation grants in support of his diverse investigations from four different sections of the foundation: Earth Sciences, Systematic Biology, Biological Oceanography, and the Antarctic Program. He was a member of 21 professional societies, was a Fellow of the Geological Society of America, and at the time of his death, was president elect of the Society for the Study of Evolution.

As a logical outgrowth of his desire to effect an interaction between research in paleontology and evolutionary biology, in 1975 he founded with Ralph Johnson the journal *Paleobiology* published under the auspices of the Paleontological Society. Tom's proposals for this new journal were initially rejected by the Council of the society, largely for financial considerations and the unwarranted fear that such a publication would seriously overlap with the *Journal of Paleontology*. He walked dejectedly from that meeting, but was charged by Walt Sweet of the Council to demonstrate the error in the Council's thinking. Thus, he prepared a questionnaire that was circulated to the membership of the Paleontological Society, which proved the widespread interest in such a journal. Furthermore, Tom spent part of the next summer at Woods Hole writing over 250 letters to libraries around the world, establishing a potential list of institutional subscribers. He wrote all the letters in longhand, for he believed that a form letter would not suffice. When he returned to the next Council meeting, Tom had not only established the economic feasibility of the journal, but he also had a list of firm contributors for the first volume. *Paleobiology* has always operated in the black and is perhaps unique among international paleontological journals in its rigorous reviewing standards, resulting in an extremely high rejection rate and lack of a backlog of manuscripts.

Tom was coeditor of *Paleobiology* with Ralph Johnson from 1975 to 1976 and with James Hopson from 1977 to 1980. His editorial imprint on the journal, not to mention his own research papers and numerous reviews, will have a lasting impact. The first number of 1985 will be an anniversary issue dedicated to Tom Schopf.

As an organizer of a Paleontological Society symposium, Tom played a crucial role at a historical moment in the study of evolutionary paleontology. Tom organized the symposium titled "Models in Paleontology," held at the annual meetings of the Paleontological Society and the Geological Society of America in November 1971. The manuscripts for the symposium were submitted in March 1971, edited by Tom and published as *Models in Paleobiology* by Freeman, Cooper and Co. in 1972. In March 1970, Tom had invited Stephen Gould to present a paper on "Models of Speciation" at this symposium. Gould joined Niles Eldredge to deliver and write "Punctuated Equilibria: An Alternative to Phyletic Gradualism," unquestionably one of the most influential papers ever published in paleontology and one that has inspired much of the research in the field throughout the subsequent years. It is perhaps ironical that Tom Schopf was one of the leading opponents of punctuated equilibria, a dominant theory held by many of the paleobiologists who publish in the journal Tom founded.

Tom no doubt made some potential contributors to *Paleobiology* upset—how could he not have with the high rejection rate. But as an aspiring contributor who once had a manuscript rejected after four reviews, two of which were negative, I believe that Tom was extremely fair in his editorial dealings. In his kind letter of rejection, he mainly addressed how my co-author and I could revise the manuscript along lines that would justify its resubmission, which he invited. At a Geological Society of America meeting a year later he inquired about the manuscript and expressed great pleasure that it had been accepted for publication in *Lethaia*.

The following is an extract from a letter by Walt Sweet (dated September 13, 1984).

My principal characterization of Tom would probably be that he was never *superficially* interested in anything. If he was interested at all, he went whole hog—and he had little patience with, or understanding of, anyone who didn't. He was one with whom I could (and did) discuss outrageous ideas with the assurance that I'd get a studied, and usually enthusiastic, response. He had no use for conventions, other than those imposed by law, and was always both blunt and direct in dealing with others. This probably got him in trouble with as many folks as it pleased. He was immensely

loyal to his friends, and almost incredibly generous with his time, advice, and even his money. Tom and I didn't agree about a lot of things, but I think we shared a respect for honest, if unacceptable, opinions and thus managed a close friendship for many years. In personality and intensity and breadth of interest, Tom and his dad were much alike, and to those of us who were close to the two of them, it is clear that Jim was Tom's model in virtually everything, from speech patterns to research methodology to bluntness.

Tom was a lucid writer in his scientific papers, but as Leonard Radinsky has observed, he struggled to present his ideas at seminars on evolutionary morphology in the Department of Anatomy at Chicago, even though his topic was the Bryozoa on which he was an international authority. He seemed to Radinsky almost as unsure and nervous as a first-year graduate student. With his colleagues in paleontology, as well as other disciplines, he was unusually open and receptive to criticism, eager to discuss contrary views.

I first met Tom in 1963 when he was a graduate student at Ohio State but spending his summer working as John Huddle's assistant on conodonts at the U.S. National Museum and living at the Huddle's home near Rock Creek Park in Washington. Tom had an engaging smile, was over 6 feet tall, and had an athletic physique that he maintained to the end. He was always eager to learn the results of my research, even though our interests diverged greatly after he finished his Ph.D. I visited him twice in early 1984, the second time about two weeks before his death. My last memory of Tom was of a late Friday afternoon on the beautiful Chicago campus where, after discussing current research, we spent an hour together at the Seminary Bookstore. He then directed me to a used bookstore down the street and went the opposite direction with two new books on history under his arm.

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