Preston Cloud: Peripatetic Paleontologist


Few scientists change the direction and focus of their entire discipline in a lifetime, let alone every few years. Even fewer make the transition from bench scientist to successful science manager and back again. Add a mission, in the waning stages of a career, to alert the public to the dual dangers of burgeoning population and steadily decreasing natural resources, and you have the peripatetic Preston Cloud (1912–1991).

Early Years

Preston Ercelle Cloud, Jr. was born in West Upton, Massachusetts, September 26, 1912; he was the third of seven children in a family headed by an itinerant engineer-draftsman. By the late 1920s, the family was in Waynesboro, Pennsylvania. Preston Cloud loved the outdoors life that led him to hunting and hiking and scouting. He became an Eagle scout, and he graduated from Waynesboro High School in 1929. Cloud escaped the early depression years by enlisting in the Navy in 1930. The feisty young sailor released some of his frustrations through boxing, and he soon became bantamweight champion of the Pacific Fleet Scouting Force. Discharged from the Navy in 1933 in California, he spent that summer hiking and working his way back east.

Becoming a Paleontologist

Cloud’s resourcefulness, drive, and abilities made him successful in college and graduate school. He took any odd job he could find in 1933, the depth of the Depression, and earned enough money for his first semester at George Washington University.

There, his mentor was Ray Bassler, a part-time professor and curator of paleontology at the National Museum. Bassler, impressed by Cloud’s enthusiasm and ability to absorb information rapidly, found work for him at the museum. By his second year, Cloud was working full time as a technician and attending classes at night. He also impressed G. Arthur Cooper, world-famous paleontologist and stratigrapher, and became a preparator in the paleontology laboratory; there he absorbed Cooper’s lore and skill in studying fossil brachiopods. Despite full employment at the museum, Cloud completed his B.Sc. and graduated in 1938. In that same year, he published his first paper on brachiopods with Cooper, beginning his career in paleontology.

Cooper had called Yale Professor Charles Schuchert’s attention to the hard-
of Percy Raymond. He resumed work on brachiopods and the Ellenberger manuscript, but was discouraged by the lack of support for expanding the teaching and research facilities in Cambridge. He resigned and returned to the USGS in 1949, to become chief of the Branch of Paleontology and Stratigraphy.

**Survey Years**
Cloud was the major influence in developing careers of many young paleontologists in the USGS for a quarter-century after World War II. A hard and exacting taskmaster, Cloud organized a paleontology and stratigraphy unit that acted as a ready-response team for inquiries about paleobiological and sedimentological problems. Burgeoning USGS activities, reflecting the increase in minerals exploration after 1949, required, in Cloud's view, an expanded cadre of specialists who could take on any and all challenges. He scoured the rosters of other USGS branches for people who could be useful for his new branch. With the full backing of Chief Geologist Bill Bradley, Cloud had these people transferred and, in some instances, retrained to fit into his organization. At the same time, he recruited more promising young graduates to fill gaps in his plan. With these swashbuckling tactics, he increased the size of the branch from about 15 to more than 60 in six years. Cloud's persistence built an internationally recognized paleontologic research organization that was the pride of the USGS for a quarter-century.

After a decade, Cloud decided to revitalize his research in carbonate rocks, particularly those of biogenic origin, including reefs, and he set to work completing studies begun in the late 1940s of Pacific atolls. This interest in marine carbonates led him to initiate and organize the first USGS programs in marine geology. Now, three decades and two reorganizations later, marine geology is a major program. But Cloud missed the USGS decision-making maestrom of the early 1960s. One morning at coffee in his lab, he suddenly interjected, "I just can’t get back to atoll problems; my telephone doesn’t ring anymore!" It was clear that he would soon leave the USGS.

**Off To Academe**
Cloud took an academic post about as far away from the oceans as he could get in North America. From 1961 to 1965, he was at the University of Minnesota as full professor of geology, chairman of the Department of Geology and Geophysics, and head of the School of Earth Sciences. The frigid weather, combined with his restlessness, led to another move—this time to California. After only three years as professor at the University of California, Los Angeles, Cloud finally settled into a permanent position at Santa Barbara. In 1968, as professor of biogeology, he resumed studies on the origin of life and Precambrian physico-chemical conditions that made organic evolution possible. By 1974, he had convinced the USGS director, his old friend Vince McKelvey, to build and equip a unique "clean laboratory" at Santa Barbara for the study of early microorganisms, and to rehire Cloud as the head of a project to carry out the research. Together with a long-held and expanding concern over population growth and natural resource conservation, this work filled his very active life until his death, in 1991, of amyotrophic lateral sclerosis ("Lou Gehrig’s disease.")

**Cloud and the Cosmos**
After leaving the USGS in the 1960s, Cloud focused his energy on developing hypotheses about the origin and evolution of life on Earth. Essential to this research were his paleontologic expertise and appreciation of geologic time. His work on carbonates had involved him in the study of the Precambrian, including the geochemistry of early oceans and atmospheres. Much of his work after 1974 centered on the pre-Phanerozoic Earth, and his conclusions are presented in Cosmost Earth, and Man published by Yale University Press in 1978.

Cloud’s realization of the vulnerability of life on Earth grew as he reflected on the human impact on the environment. He also knew, from his early work on mineral resources and later studies of energy sources and pollution, that sustainability was a major problem for the future if human tendencies to ravage Earth were not curbed. He had several projections of natural resource needs as related to the exponential population growth over the last decades of the 20th century, summarized in the chapters "Posterior’s World" and "Perchance to Dream" in his 1978 book.

Cloud summarized the dilemma as follows: "...the quantities involved have become so large and the doubling times [of population] so short that the lead time for action between general perception of a threatening situation and the onset of crisis or even catastrophe has become dangerously small." The world situation since 1978 has only become more threatening—not less so.

**Coda**
Preston Cloud’s research interests were kaleidoscopic—from invertebrate paleontology and brachiopod systematics to carbonate petrology and coral reef ecology, to marine geology and oceanography, to Precambrian stratigraphy and the origin of life, and finally, to concern for the whole Earth environment and our future relationship to it. He was a brilliant, energetic, and feisty researcher, teacher, leader, and friend.

**For Further Reading**