

Biography: Prof. William J. Zinsmeister

William J. "Bill" Zinsmeister was a distinguished paleontologist and geologist known for his pioneering fieldwork in Antarctica. He was a faculty member at Purdue University in the Department of Earth Atmospheric and Planetary Sciences from 1983 until his retirement in 2018. Zinsmeister's career has been defined by his efforts to decode the biological history of the Southern Hemisphere, specifically during the volatile transition from the Age of Dinosaurs (Cretaceous) to the Age of Mammals (Paleogene). While



most paleontologists work in comfortable badlands or quarries, Zinsmeister made his name in one of the most hostile environments on Earth: Seymour Island, a small, ice-free island off the Antarctic Peninsula. Between 1975 and 1995, Zinsmeister led or participated in over ten major expeditions to the continent. Seymour Island is often called the "Rosetta Stone" of Antarctic paleontology because it contains a continuous fossil record of the time when the dinosaurs went extinct. Zinsmeister was among the first to realize the island's potential, braving freezing winds to collect thousands of pounds of fossils that had been locked under ice and snow for millions of years. In perhaps his most famous discovery, Zinsmeister's team found the fossilized jaw of a small marsupial (polydolopid) on Seymour Island. This was the first evidence that land mammals had ever lived in Antarctica. This discovery provided the "missing link" in biogeography, proving that marsupials migrated from South America to Australia by crossing a then-temperate Antarctica before the continents drifted apart. Prof. Zinsmeister is also famous for his analysis of *Diplomoceras maximum*, a giant squid-like creature with a shell that looked like a 12-foot-long paperclip. While previous theories suggested these uncoiled shells were evolutionary "failures," Zinsmeister argued they were highly successful adaptations. He famously described this awkward-looking creature as the "Forrest Gump of ammonites"—physically ungainly, yet surprisingly enduring, surviving until the very end of the Cretaceous period. Zinsmeister became a central figure in the "impact vs. gradualism" debate regarding the extinction of the dinosaurs. Most scientists believe an asteroid impact (Chicxulub) instantly wiped out 75% of life.

Zinsmeister's detailed sampling of Antarctic ammonites, however, suggested that many species were already in decline or had vanished *before* the asteroid hit. He argued that while the asteroid was likely the final nail in the coffin, the extinction was a complex, multi-stage event driven by changing climates and sea levels in the high southern latitudes. In honor of his contributions to polar science, the Zinsmeister Ridge in the Sentinel Range of Antarctica and Bill Hill on Seymour Island, have been named after him. At Purdue, he was known for teaching the popular "Dinosaurs" course, inspiring decades of undergraduates to look at rocks and see the history of life, and his course Great Issues course "Oil!". His massive collection of Antarctic fossils was eventually donated to the Paleontological Research Institution in 2009 where they were

catalogued and curated, and digital records and photographs of many have been posted online to be accessible to researchers and the collection has served as the basis for repeated scientific investigations as techniques and thinking changed. Had the fossils never been collected, or if the collections had not been kept and cared for, the opportunity for continuing research and advancing knowledge would have been lost. Some of the fossils, including the spectacular *Diplomoceras*, are on public exhibit in PRI's Museum of the Earth, where visitors from all walks of life, most of whom will never see Antarctica in person, can experience first-hand a journey to a very different place and time.