

William Rex Riedel Biography



William Rex Riedel was born in Tanunda, South Australia September 5, 1927. He was educated at the University of Adelaide majoring in geology and zoology and got a bachelor's degree with first class honors in 1947, a master's degree in 1952 and a Doctor of Science degree in 1976. As a young graduate student, Riedel was advised by his mentor, geologist Sir Douglas Mawson, to study paleontology as a means to combine his interests in biology and geology. When Riedel found the literature of paleontology too broad to read comprehensively, Mawson replied that J.D.H. Wiseman of the Natural History Museum in London had told him that radiolarians were a neglected group. While radiolarians had been collected on classic oceanographic expeditions including CHALLENGER, they were not considered important to stratigraphy at that time. Riedel's studies on radiolarians changed that perception.

From 1947-50 and again from 1954-55, Riedel served as assistant paleontologist at the South Australia Museum. There he investigated radiolarians in sediments collected by the British, Australian and New Zealand Antarctic Research Expedition. From 1950-51, Riedel was a research fellow at the Oceanografiska Institut at Goteborg, Sweden, working on deep sea sediments collected in the western Pacific by the Swedish Deep Sea Expedition. There he worked with Hans Pettersson and Borje Kullenberg, inventor of the piston corer. Riedel made his first advances in radiolarian stratigraphy in a series of papers published during the early 1950's. He authored two reports of the Swedish Deep-Sea Expedition, on radiolarians and sediment cores from the west Pacific. Riedel's work benefitted greatly from the increased use of the piston corer to acquire long columns of deep sea sediments. The Royal Society awarded Riedel the John Murray Traveling Studentship in Oceanography, which brought him to the Scripps Institution of Oceanography in La Jolla, California, in 1951. SIO Director Roger Revelle had a background in geology and had once been in charge of the SIO sediments

laboratory. Revelle had ships, piston corers and plans for a decade of expeditions to the Pacific. Riedel worked at SIO as a Graduate Research Geologist and co-authored a paper with Milton Nunn Bramlette in 1954 on the stratigraphic value of nannofossils. He became curator of the SIO collection of sea floor cores and dredged rocks in 1955 and eventually wrote the manual on curating marine geological specimens.

Riedel gained a great deal of experience at sea. Immediately after his arrival at Scripps in 1951, he participated in SIO Northern Holiday Expedition. He was scientific leader on R/V HORIZON during Capricorn Expedition in 1952-1953, and on many Scripps expeditions after that. Riedel was a member of the Argentine Antarctic Expedition organized by the Argentine Navy in 1955-1956 and spent three months in the Weddell Sea on the icebreaker GENERAL SAN MARTIN, and on the same ship in the Bellingshausen Sea during the following southern summer. In 1961, Riedel served as scientific leader for the Mohole test drilling undertaken on the drilling vessel CUSS I off Guadalupe Island. This test proved the feasibility of drilling in very deep water. Riedel wrote the summary of coring operations on that expedition, and he was a co-author with Tjeerd H. Van Andel of the proposal to the National Science Foundation for the establishment of Mohole's successor, the Deep Sea Drilling Program. The drilling program continues today as the Ocean Drilling Program.

Riedel returned to SIO in 1955 as a junior research geologist after spending a year in Australia. He was advanced to Assistant Research Geologist in 1958, Associate Research Geologist in 1962, and Research Geologist in 1968. Throughout this period, Riedel's work on radiolarians continued to advance. He developed a Cenozoic radiolarian stratigraphy and an encyclopedic catalog of radiolarian species with Annika Sanfilippo, and with Helen P. Foreman he compiled an encyclopedic catalog of radiolarian species. The movement of fossil radiolarians away from the East Pacific Rise documented by Riedel was cited as one of the proofs of sea floor spreading during the Continental Drift controversy of the 1960's. Riedel was editor with B.M. Funnell of the *Micropalaeontology of Oceans*, proceedings of the 1967 Cambridge symposium sponsored by SCOR. Most but not all of his work was on radiolarians. Beginning in 1970, Riedel became interested in using microscopic teeth and scales of fish ("ichthyoliths") to determine the age of unfossiliferous clays in collaboration with Patricia Doyle.

Riedel's work on stratigraphy and on the analysis of sediment cores was especially important to the Deep Sea Drilling Program, and he invested a significant amount of time on the JOIDES Planning Committee which oversaw DSDP. Riedel was named curator of DSDP cores and served on the JOIDES Information Handling Panel beginning in 1990. He also served as chair of the SIO Geological Research Division from 1978-1983. He was appointed Senior Lecturer at SIO in 1981. Throughout his career, Riedel worked with micropaleontologists throughout the world. He was a founder of EURORAD (later INTERRAD) the international community of radiolarian workers.

During the last decade of his career at the Scripps Institution of Oceanography, Riedel experimented with the use of computer-based technologies to create tools for paleontology and biostratigraphy. He and Linda Tway developed databases and expert systems to assist non-specialists in the identification of radiolarians and the interpretation of ocean sediments. Subsequently, he was one of the founders of the electronic journal *Palaeontologia Electronica*.

Riedel's expertise as a micropaleontologist was acknowledged worldwide, and his research in the field, especially in the area of radiolarian taxonomy and stratigraphy, contributed to the successful efforts of oceanographers during the second half of the 20th century to challenge a static view of the earth's geological history. Riedel retired to Marananga in Australia in June 2000.

References:

Sanfilippo, Annika. 1995. "Dedication." In: *Middle Jurassic to Lower Cretaceous Radiolaria of Tethys: Occurrences, Systematics, Biochronology*, edited by Peter O. Baumgarner, et. al. Lausanne, Switzerland: Section des Sciences de la Terre, Universite de Lausanne, ix-xxix. [This biography includes a full list of Riedel's published papers.]