MEMORIAL TO HARRY EUGENE WHEELER
1907-1987[1]

by

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Harry Eugene Wheeler died on January 26, 1987. Although much of his early work was paleontological, he attained international prominence as a physical stratigrapher. He pioneered the distinction between time-stratigraphy (shown on area-time diagrams) and lithostratigraphy (shown on area-depth, or fence, diagrams). Before the dawn of plate tectonics, he used unconformity-bounded sequences for regional, intracontinental, and even intercontinental correlations. In his view, contemporary stratigraphers were overly preoccupied with the depositional record, sedimentology, and paleontology. Not only should volcanic rocks be included, but more especially, when the effects of erosion and non-deposition were considered, the stratigraphic patterns were clearly preservational, not depositional. Thus, unconformity-bounded sequences and their associated periods of erosion and non-deposition demonstrated (1963b):

> ". . . a striking episodicity which is unrelated to and obscured by arbitrary time-stratigraphic subdivisions (systems, etc.) . . . Moreover, both physical and biostratigraphic patterns comprise . . . a simple order, which . . . tends to negate most of the previously envisioned 'persistent'. . . intracratonic tectonic features (such as domes and basins)."

Instead of stratigraphy, Harry practiced what he called "stratology", which stressed stratigraphic principles and concepts and their implications in regional and interregional analysis and historical interpretation.

Although he was born in Pipestone, Minnesota, most of Harry's boyhood was spent in Eugene, Oregon. Later he considered himself a virtual juvenile delinquent; then he discovered geology at the University of Oregon. While an undergraduate, he had the good fortune of being a summer field assistant for Professors Earl Packard and Arthur F. Buddington. He went to Stanford in 1930 for graduate work, where, in a competitive examination, he won a Jordan Fellowship. A fellow student and life-long friend was Lawrence L. Sloss; the two of them seemed to have been imbued with somewhat the same radical brand of stratigraphy by Hubert G. Schenk, Siemon E. Mueller, and Eliot Blackwelder. Harry's A.M. and Ph. D. (1934) theses were on the McCloud limestone of northern California.

In 1935 Harry became an assistant professor at the Mackay School of Mines, University of Nevada, Reno. He spent the next 13 years at Reno working on a wide variety of paleontologic and stratigraphic problems in the Paleozoic rocks of Nevada, eastern California, and northern Arizona. He was particularly interested in Cambrian stratigraphy (1940, 1942, 1943) and the Precambrian-Cambrian boundary problem (1947, 1958b). Yet, he and his colleagues (1940,1950) were the first to recognize that the Permian Tethyan fusulinid fauna in Cordilleran strata, which are now characterized as allochthonous or suspect terranes, are unlike the North American fauna to the east.

Eventually this competent paleontologist asked a faculty member in botany in Reno to identify some fossils for him. He married the botanist, Loretta Rose Miller, in 1938. Their children, Eugene Anthony Wheeler (1939), Carolyn Wheeler Van Wyck (1940), and David Beebe Wheeler (1942) still live in the Seattle area. Until the 1960s Harry was in the field every summer, and when he did return home, he usually presented Loretta another hungry geologist or two. His avocation, like his vocation, clearly was geology.

Due to his age and weak eyesight, Harry could have avoided service in WWII, but he finally convinced the U.S. Navy to accept him. He taught in the V-12 program at Nebraska and then worked in the Hydrographic Office in Washington, D.C.

In 1948 Harry was happy to leave Reno for the greener pastures of the Pacific Northwest. George E. Goodspeed recruited him for the University of Washington to fill the gap caused by the impending retirement of Charles E. Weaver, who had specialized in the Tertiary paleontology and stratigraphy of Washington for 43 years. Until the middle 1960s the Geology Department was small and tightly knit. Harry and Loretta became close friends with Howard A. Coombs,

[1] Completed by Eric S. Cheney from materials originally prepared by Julian D. Barksdale for the symposium.

Julian D. Barksdale, J. Hoover Mackin, V. Standish Mallory, and their respective wives. A good deal of the Department's business was settled at football games or around the bridge table.

In honoring Harry at the 1982 symposium discussed in the preface to this volume, Barksdale observed:

> "Harry is a mild-mannered, soft-spoken person with a very rough pen; so rough, in fact, that a close friend and fellow stratigrapher has been known to publish what he said was a paraphrase of an old Magyar proverb: 'With Wheeler as a friend, who needs enemies?' Rough, but without malice. . . . Wheeler's stratigraphy is not always orthodox, but it is provocative."

Provocative indeed! While on the American Stratigraphic Commission from 1957 to 1960, Harry commonly found himself in the minority. His papers on the principles of stratology included the classification of stratigraphic units (1953, 1959b) into lithostratigraphic (1956), biostratigraphic (1958a), and time-stratigraphic components (1958c), as well as cyclothems (1957), unconformity-bounded units (1959a), and the true nature of base-level (1964). The applications of these concepts were even more provocative: Whereas Sloss showed in 1963 that pre-Tertiary unconformity-bounded sequences could be traced across the North American craton, Harry (1960, 1963a) extended them into the miogeoclines. With Mallory (1963c) he defined a number of Tertiary sequences in the Cordillera that workers in the Pacific Northwest only began to rediscover two decades later. He and his colleagues asserted that both the middle Devonian Catskill delta (1963a, b) and the Illinois and other intracratonic basins and domes (1960, 1963b, 1965) are erroneous constructs. Likewise, deformation in the Pacific Northwest is younger than commonly supposed (1954, 1963c), and the Columbia River basalts once extended over (not below) the Cascade Range of Oregon (1970). He stirred other controversies (1965, 1967) as well. In each case, a tall and popular tree was felled to see the forest.

Harry excelled in graduate-level courses, seminars, and brainstorming with students and colleagues. His loquacious nature and the seemingly obvious logic, but abstract nature, of stratology tended to polarize undergraduates. A former liberal arts major reflected that in his subsequent business profession it was Harry's course that taught him the discipline and ability of recognizing and evaluating missing evidence.

Harry became an honored peripatetic. During the 1950s he was a research consultant for Gulf Oil Corporation throughout the western United States. He was a visiting professor at Indiana University (1956-1957), University of Texas (1961), and Southern Methodist University (1966). In 1957 he was a guest of the French National Center for Scientific Research and provided his insight on PreCambrian-Cambrian relations. In 1960 the Wheelers traveled extensively and examined field relations throughout Europe. His most memorable trip was from April to June 1963: he was selected to participate in an exchange between the National Academy of Science and the Soviet Academy of Science. The base was Moscow, but Harry was also able to visit Georgia, Armenia, and the Crimea and to discuss remarkably similar stratigraphic problems and patterns with the leading Soviet geologists. This trip also convinced him that the Russian people were more enlightened than the American government.

Harry retired in 1976. His concepts of time-stratigraphy, unconformity-bounded sequences, long distance correlation, and global changes of sealevel were not widely accepted until the work of Vail and others at Exxon was published from 1977 to 1987. Of course, the Exxon work was based largely upon worldwide (and proprietary) seismic reflection profiles; it also benefited from pre-existing plate tectonic concepts. Neither were available during most of Harry's career, but he enthusiastically utilized both in the North Sea while consulting for Mobil in 1973. The renewed interest in unconformity-bounded units prompted the International Subcommission on Stratigraphic Classification to define them in 1987 in the Geological Society of America Bulletin; a belated recognition of Harry's contributions is in the Subcommission's report (p. 233):

> "Wheeler (1958[c], 1959a, 1959b, 1960, 1963[b]) was probably the first to recognize unconformity-bounded units as clearly distinct from other kinds of stratigraphic units."

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