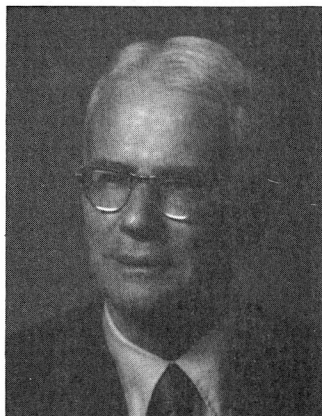


# Memorial to William Low Russell

## 1897-1976

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William L. Russell was born in New Haven, Connecticut, on December 20, 1897. He died in Bryan, Texas, on December 17, 1976. He is survived by his wife, Leonore, and by two sons, William and Phillip.

Bill spent his childhood years in the New Haven area and attended Yale University, from which he received his B.A. degree in 1920, M.S. in 1922, and Ph.D. in 1927.

Bill's major interest was in petroleum geology. His contributions to our science are represented by two books, forty-five journal publications, numerous patents dealing with logging instrumentation and methods of petroleum production, and unpublished industrial reports. His first publication was in 1922, while still a student; his last, fifty years later in 1972,

on pressure-depth relations in the Appalachian region, was selected for reprinting in 1974 in the American Association of Petroleum Geologists Reprint Series volume on Abnormal Surface Pressures.

Bill's career began while he was still a student, with employment as a Geologic Aide for the U.S. Geological Survey in 1920, and as an employee with the New York State Geological Survey during the following three summers. One result of this latter summer job was a major report, with C. A. Hartnagel, on the oil fields of New York State, that was published originally in the *AAPG Bulletin* and subsequently, in revised form, in volume two of *Structure of Typical American Oil Fields*. During 1924 Bill was Chief Geologist of the East Ohio Gas Company.

Bill spent the next two years, from 1924 to 1926, as an assistant professor at the University of South Dakota and as a Petroleum Geologist with the South Dakota Geological and Natural History Survey. One of Bill's research projects there was to study the correlation and direction of source of the Dakota Sandstone in South Dakota. At that time the consensus was that the sandstones referred to as Dakota in the Black Hills and in the eastern part of the state were correlated and were derived from the west. Bill showed that the sandstone in the Black Hills was in fact older than that in eastern South Dakota, and was derived from the east; he named the Black Hills unit the Fall River Sandstone. In this same article, "The Origin of Artesian Pressure," he proposed that the high fluid pressure in lenticular aquifers is caused by compaction in the aquifer and in adjacent strata, which makes it difficult for the excess water to escape from the aquifer. This was apparently the first statement of the now generally accepted explanation for abnormally high subsurface fluid pressures.

From 1927 to 1940 Bill was active in the petroleum business as a consultant, and with several oil companies, including Tidewater and Standard Vacuum. He traveled widely in the United States, spent some time in Venezuela, and two years in South Africa exploring the oil possibilities of Karroo Basin. His publications during this

period dealt largely with the petroleum geology of specific areas, but an underlying pervasive interest in the fundamental aspects of petroleum was also reflected in pioneering papers on subsurface brines, the organic content of rocks, and on the origins of oil deposits.

Perhaps Bill's most significant contributions to geology were made during the period of 1940 to 1946 in his research in nuclear well logging. Serge Scherbatskoy, Bill's colleague in those years, describes those contributions:

"In the late thirties, a new industry was created in nuclear well logging and *all* pioneer work for the geologic interpretation of the data supplied by the instruments was done by Bill. It isn't often that one man could make such a large contribution to the understanding of entirely new data. Before Bill's work, nobody knew that shales were more radioactive than sandstones or even that potassium emitted gamma rays, or even that shales were more hydrogenate than porous rocks, etc.

"When I say *all*, I mean exactly that. Since Bill's work, nothing of any fundamental importance in the interpretation of nuclear geophysical data has been done. In the latest publications today, they still reproduce the little sketches that Bill made in his work almost forty years ago. Bill's work was done primarily in Tulsa while in charge of the geological section of Well Surveys, Inc., a subsidiary of Standard Oil of New York. Later, during World War II, he voyaged to the Arctic where he was in charge of the geological interpretation of the results obtained from a pioneer radiolog survey on the shores of Great Bear Lake, for uranium. Some people may say it was luck, but I believe it was deep understanding of fundamentals that make me say Bill discovered more rich uranium deposits in the Western Hemisphere than anybody else."

In 1946 Bill joined the Geology Department of Texas A&M University. He retired in 1963 to become professor emeritus and remained a familiar and valued member of the department as he participated in its activities. During his academic years he worked and wrote on a variety of topics, but his major efforts were two textbooks, *Principles of Petroleum Geology*, in 1951 (second edition in 1960), and *Structural Geology for Petroleum Geologists*, in 1955. He was a Fulbright Exchange Lecturer during the academic year 1961-1962 at the University of Cairo, Egypt.

Bill had an amazingly diverse career. Although much of his work was concerned with the practical applications of geology, he maintained a constant interest in the underlying fundamentals of the science, and as he published on both aspects, established a rare balance throughout his life between field and laboratory, theory and practice. As I knew Bill during the past fifteen years, he was quiet and unassuming, enthusiastic about his science, a gentleman.

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