Memorial to Charles W. Carlston
1912–1985

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Charles W. Carlston, son of Nina M. Smith Carlston and Charles Edgar Carlston, was born on July 15, 1912, in Kokomo, Indiana. He died at the age of 72 after a long and successful professional career with the U.S. Geological Survey and in the academic community.

Charles was a 1936 graduate of the University of Washington. He earned his doctorate in geology at Columbia University in 1946 where he specialized in graduate studies in geomorphology. He studied under two nationally renowned geomorphologists: Douglas Johnson and J. Hoover Mackin.

He was a Fellow of the Geological Society of America and the American Association for the Advancement of Science, and a member of the American Geophysical Union, the Association of American Geographers, and the Society of Sigma Xi.

Charles's father died of typhoid fever when Charles was an infant. His mother took her youngest son and his 8-year-old brother Kenneth west, first to Helena, Montana, then to Everett, Washington, and finally to Seattle, Washington, where Charles graduated from public school. His early childhood in the state of Washington provided his first experience with geology.

Charles went to the University of Washington in 1931 and initially was interested in history and English composition. This background was important to him later as he became a geologist, for it provided a much broader base of interest than science alone. His later years at the University of Washington included his basic geological course work, but interestingly, as he became a hydrogeologist, he also had extensive early training in climatology and meteorology.

In 1937, Charles went to Columbia University to study under Douglas Johnson, who with his mentor and previous professor, J. Hoover Mackin, provided interest, incentive, and respect for scientific accuracy, thus illustrating the importance of outstanding science professors in the early formative years for a young geologist. He remained at Columbia University for two years as a graduate resident scholar and for one year as a University Fellow, passing his orals in 1940, just prior to accepting employment with the U.S. Geological Survey at the University of Alabama.

Charles was a fine teacher and enjoyed his contact with his students, a responsibility that he took very seriously. However, research also intrigued him, and the opportunity to pursue research influenced his taking the position in Alabama.

He began his career with the U.S. Geological Survey in 1940 as a junior geologist and, in subsequent years, he worked for the Survey in Alabama, Ohio, New York, and West Virginia. Later, Charles moved to the headquarters office in Washington, D.C. He retired in 1971 as a research hydrologist in the Water Resources Division.

One of the most fascinating reports written by Charles was a definitive paper on the history of water-well drilling in the eastern United States from 1806 to 1900. The principal historic contributions were: (1) the history of the first commercial water-well driller, Levi Disbrow, who learned crude-tool drilling in the West Virginia salt-water well fields and drilled his first water in New Jersey in 1824, and (2) the history of the importation of auger boring from England into the Coastal Plain of the southeastern states in the early 1800s.
Charles's Survey career began under O. E. Meinzer, chief of the Ground Water Branch, who assigned him to establish a cooperative ground-water program in Alabama. Over the following five years, he developed a solid foundation for the ground-water studies that have persisted to date. Among his noteworthy publications during this period was a bulletin, *Ground Water Resources of the Cretaceous Area of Alabama*, and a shorter work comprising a description of the occurrence of fluoride in the ground water of the Cretaceous area of Alabama.

Charles requested w.a.e. (when actually employed) employment with the U.S. Geological Survey from 1945 to 1953 to allow him to serve successively as head of the Department of Geology and Geography at St. Lawrence University (1945–1947) in Canton, New York, and as assistant professor of geology at Oberlin College (1947–1953) in Ohio. He took leave from Oberlin College for a year (1951–1952) to serve as ground-water geologist and advisor to the government of Pakistan, through an arrangement by the Food and Agricultural Organization of the United Nations. On this assignment, he worked on waterlogging problems peculiar to the agricultural lands in Rechna Doab near Lahore, correctly diagnosing the problem as attributable to leakage from irrigation canals. He returned to full-time Survey employment as district geologist for the Ground Water Branch in Morgantown, West Virginia, in 1953. His four-year assignment to that post resulted in the trebling of funds for cooperative ground-water studies in that state. In 1954, he was elected a Fellow of the Geological Society of America.

Late in January, 1958, Charles was transferred to the headquarters office of the Ground Water Branch in Washington, D.C., to assume geological staff duties. Concurrently, he initiated and supervised a four-year program for evaluating the usefulness of the radioisotope tritium in hydrologic studies. Upon completing this evaluation, he devoted a year in the Hydrologic Studies Section of the Surface Water Branch to examining ways in which geomorphologic principles might be fruitfully applied to the enhancement of field studies in surface-water hydrology. This was followed by a year's staff assignment to the Ground Water Branch doing advance planning for the Saline Water Atlas. Upon completing this task in 1963, he transferred to the General Hydrology Branch to assume the responsibilities of a research project chief engaged in relating fundamental principles of geomorphology to the hydraulic geometry of meandering streams. He pursued this research until late in 1970 when illness forced his hospitalization. On June 10, 1971, Charles retired, after serving 24 years with the Water Resources Division.

During the period that Charles was district geologist for Alabama, he was headquartered in Smith Hall in offices adjacent to the geology department and the Geological Survey of Alabama. At that time, I became a junior geologist with the U.S. Geological Survey under Charles's supervision. We were fortunate to have as our immediate supervisor in Washington Victor T. Stringfield, a patient, extremely competent hydrogeologist with many years of experience in the Gulf Coastal plain. As a junior geologist, I could have had no better training than from these two tall, slender professional geologists with entirely different personalities, professional backgrounds, and experiences. Stringfield had an in-depth comprehension of the Survey's cooperative water resources programs as well as the scientific aspects of hydrogeology in the Southeast. Charles Carlston had a superior knowledge of geomorphology, stratigraphy, and sedimentation processes. It was through his guidance that I gained graduate-level experience in these fields.

Charles W. and Catherine B. Carlston were married in 1940. They have one child, Sarah, born in Canton, New York, in 1945. Catherine, also a professional geologist, has served with the U.S. Geological Survey.

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