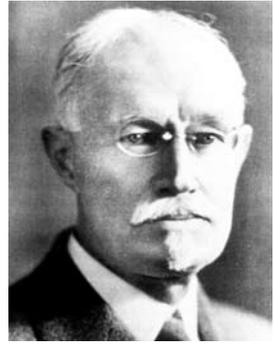

Arthur Gray Leonard (*North Dakota*)

Edward C. Murphy (*North Dakota Geological Survey*)

Arthur Gray Leonard was born on March 15, 1865, in Clinton, N.Y. His father was a Congregational minister, which resulted in the family moving several times while Leonard was a boy. He graduated from Salt Lake Academy in Utah and from Oberlin College in 1889. Leonard returned to Oberlin College and obtained his master's degree in 1895. He worked on and off for the Iowa Geological Survey between 1893 and 1903. The Iowa survey



provided him with valuable field experience and training that he applied later in his career. He taught geology in Western Toledo, Iowa, during the winter months of 1894–96. In 1896, he became assistant state geologist of the Iowa Geological Survey. Shortly thereafter, he went to Johns Hopkins University in Baltimore, Md., obtaining his Ph.D. in 1898. He returned to the Iowa Geological Survey as assistant state geologist and remained there until 1903, except for 1 year's leave of absence to teach at the University of Missouri.

Dr. Leonard became state geologist of North Dakota and a professor of geology at the University of North Dakota in 1903. North Dakota had become a state in 1889. The North Dakota Geological Survey was formed in 1895, and had been under the direction of two previous state geologists (Earle Babcock, 1895–1902; Frank Wilder, 1902–03) prior to Leonard. He was to hold that position until his death on December 17, 1932. Leonard's 29-year tenure as North Dakota state geologist is the longest in state history, although Dr. Wilson M. Laird, state geologist from 1941–69, comes very close with 28 years.

Much of Dr. Leonard's early career in North Dakota was spent mapping the coal-bearing rocks of the Fort Union Group (Paleocene) in the badlands of western North Dakota. He typically traveled from Grand Forks to Dickinson, Williston, Minot, or Bismarck by train and then rented or purchased horses and a wagon for the summer field season. From 1904 to 1923, his field seasons typically began as soon as classes ended in the spring and ended in mid-September when he returned to resume teaching. He neatly filled 19 field notebooks with his insightful scientific observations. Although he did not complain about hardships in the field, these notebooks document the difficulty of finding spring water fit for drinking and the skill that was required to cross deep, narrow coulees and ravines without high-centering the wagon at the base of the draw. The North Dakota Geological Survey still retains his cumbersome, but portable, dark room and numerous glass negatives that he took in the field.

Forty-eight articles on the geology of North Dakota were published by Leonard. Most of the articles appeared in North Dakota Geological Survey bulletins and biennial reports, roughly half focused on the coal resources of western and central North Dakota. The subjects of his other articles were wide-ranging and included such things as the purpose and value of a state geological survey, the gravel and clay resources of North Dakota, a geological history of the state that was written to be used in schools, Pleistocene drainage changes in western North Dakota, the first geologic map of the state, natural gas resources of the area, the state's landforms, and the oil and gas potential of North Dakota.

By all accounts, Leonard was a well-respected scientist, administrator, and teacher. His long tenure in the Survey provided much needed stability for the new agency. His time as state geologist was not without its difficulties, however. The state legislature did not provide funding for the geological survey for 9 of those years and appropriated only \$1,000 per year for another 14. Perhaps his greatest contribution, beyond his advancement of the science of geology in North Dakota, was to keep the state survey operating under such deplorable funding conditions.

The University of North Dakota Department of Geology and Geological Engineering is housed in Leonard Hall, named in honor of his many accomplishments. That building, constructed in 1964, also housed the North Dakota Geological Survey until the agency was moved to Bismarck in 1989. In 1991, the Department of Geology and Geological Engineering began awarding the A.G. Leonard Award in recognition of outstanding contributions to the field of geology by department alumni.