

DEDICATION

With great pleasure, I dedicate this book to one of the foremost students of the geology of west-central New Mexico, Orin .1. Anderson. Born in 1938 in Bakersfield, California, the key years of Orin's youth were spent on the family farm in North Dakota. Orin received a bachelor's degree in geology from the University of North Dakota in 1961, and then was employed as a geologist by the U. S. Bureau of Reclamation in Billings, Montana. His work focused on geological investigations of proposed dam and reservoir sites, power transmission corridors and irrigation facilities. Orin soon moved to Minneapolis-St. Paul, where he first spent two years working for Soil Exploration Company, mostly involved in drilling for foundations at proposed construction sites. He then worked for Litton Industries as a soil mineralogist and microbiologist. Further employment followed at the Limnological Research Center of the University of Minnesota, working on lake sediments and water geochemistry.

In 1970, Orin returned to school at the University of New Mexico, where he completed a masters degree in geology in 1973 (thesis topic: "Geology of the Seistan basin, southwestern Afghanistan"). He then took a position as a staff geologist in the Office of the State Geologist in Santa Fe, New Mexico. Here, Orin worked as an economic geologist focused on coal and uranium resources. In 1979, Orin moved to Socorro to the New Mexico Bureau of Mines and Mineral Resources, where he remained for 19 years until his retirement in 1998. Orin began work at the Bureau as a coal geologist, primarily evaluating coal resources and mapping coal-bearing strata in west-central New Mexico. He advanced to the position of Senior Geologist, and

from 1989 to 1995, devoted most of his effort to compiling a new, 1:500,000 scale geologic map of the state of New Mexico.

During his nearly two decades at the Bureau, Orin mapped (mostly singlehanded) the geology of fifteen 7.5-minute quadrangles in west-central New Mexico, from Zuni Salt Lake on the south, to Fort Wingate on the north. He also mapped the geology of the Fence Lake 1:100,000 sheet, and several of the quadrangles he mapped were combined for publication as the Atarque Lake 1:50,000 sheet. When Orin retired, much more mapping in west-central New Mexico was completed or underway.

But, beyond the coal geology and the geologic mapping, Orin Anderson solved major problems of the regional stratigraphy of west-central New Mexico, especially with regard to the Jurassic rocks. In particular, in two articles published in 1983, Orin redefined Dutton's 1885 term Zuni Sandstone and deftly solved a problem of Jurassic regional stratigraphy that had persisted for nearly a century.

I should also point out that Orin did yeoman service to the New Mexico Geological Society over many years. He served on the Society's Executive Committee, especially in publication sales. He co-organized two field conferences, in west-central New Mexico (1989) and in the Four Corners (1997), and he helped with many others. The Society elected him an Honorary Member in 1987.

I began to work with Orin in 1988 on that west-central New Mexico field conference. That conference ended at Dowa Yalannê, the sacred mountain of the Zuni people, and the type section of Dutton's Zuni Sandstone. Something was very wrong with how the U. S. Geological Survey interpreted the Jurassic strata on that sacred mountain, Orin and I realized it, and we set out to re-evaluate the Jurassic section on the southern Colorado Plateau. We spent the next decade working on various problems of Mesozoic (mostly Jurassic) stratigraphy in Utah, Arizona, Colorado, New Mexico and West Texas. What came out of it was a revised Jurassic regional stratigraphy and the new interpretations of Jurassic depositional history and paleogeography that the stratigraphy supports. Orin's firm grasp of basic stratigraphic principles, his willingness to question anything in print, his no nonsense approach to lithostratigraphy and his tirelessness on the outcrop were central to the work. I learned much from Orin, and I learned much about him, particularly the meaning of the phrase "you can tell a Swede, but you can't tell him much."

Orin's contributions to the geology of west-central New Mexico thus stand out as both extensive and incisive. In my mind, he joins that short list of the great students of the geology of west-central New Mexico, which now includes Clarence Dutton, Julian D. Sears, Charles Maxwell and Orin Anderson.

Spencer G. Lucas



Orin Anderson measuring a stratigraphic section in the Morrison Formation at Placitas, New Mexico in 2000.