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by Frank E. Kottowski, Director, New Mexico Bureau of Mines & Mineral Resources, Socorro, NM

This Land of Enchantment, New Mexico, is blessed with almost every conceivable geologic feature ranging from the desert valleys and basins of the south to the bare-rock alpine slopes of Mount Wheeler and Truchas Peaks in the north. Rocks of every geologic period either crop out at the surface or occur in the subsurface.

Not only is the geology of New Mexico interesting scientifically, but it is also the source of the state's beauty and of much of its wealth. Outstanding attractions include the gypsum dunes of White Sands, the immense caves of Carlsbad Caverns, the picturesque badlands in the Santa Fe Formation near Santa Fe and Española, the Rio Grande gorge cut through the Taos Plateau basalts, the awesome size of Valle Grande (a barely extinct volcanic caldera), the stark rock spire of Shiprock, the symmetry of Capulin Mountain (a Recent volcano), salt-encrusted twigs in Zuni Salt Lake, and the gnarled, wrinkled Recent basalt flows near Carrizozo and McCarty.

Man has added other scenic attractions in his development of natural resources. These include the flow of water from an 8-inch pipe that sustains agricultural fields in the state's irrigated basins—water derived only from snow falling in the southern Rockies and the Sangre de Cristo Mountains, thence melting and flowing downstream to the river valleys and the alluvium along the Rio Grande, the Pecos, and other rivers. Many visitors enjoy the spectacular multi-colored beauty of the Santa Rita and Tyrone open-pit copper mines and the open-pit Questa molybdenum mine, as well as the more drab coloration of the Paguate open-pit uranium mine and the large open-pit coal mines. In the latter, the huge draglines towering more than 250 ft above the ground resemble the gigantic dinosaurs that once roamed these landscapes 70 million years ago. The night lights of petroleum drilling rigs in southeast and northwest New Mexico reflect development of natural resources, as do the windmills and waterpumps of the irrigated areas. The shafts of the present-day potash mines in the southeast, the uranium mines in the west-central area, and the base-metal mines in the southwest bustle with activity. Dotted throughout the mountainous areas are abandoned mine headframes that tell of riches won from the earth during the state's historic past.

If we had the forests primeval and untouched grasslands—without the production of metals, industrial rocks and minerals, and fuels—we would not have the brilliant spectacle of Albuquerque as seen at night from Sandia Crest, or the jewel of Santa Fe lit up at the foot of the Sangre de Cristo Mountains on a clear, crisp winter night.

Cities, people, everything concerned with the American-New Mexican way of life, even in the quiet isolated villages, is tied to the use of mineral and fuel resources abundantly available and abundantly produced in the Land of Enchantment. In 1978 the state's mineral production exceeded $3 billion, with about 15 percent accruing to the State and its political subdivisions in the form of taxes, bonuses, royalties, and rentals. Thus, the geology of the state—the rocks at the surface and in the subsurface—provide New Mexico with much of its wealth as well as its scenic beauty.

Much is known about the state's geology but much more awaits to be known, offering challenging problems that require the utmost in scientific investigation, the results of which provide a very necessary service to all of us. Scientific studies are worthwhile only when made available to other scientists and laymen. Too, the cataloging and storing of geologic specimens is important today as well as to future generations. These materials include cuttings from significant exploratory wells, fossils, mineral specimens, and rock samples that illustrate the complexity of New Mexico geology.

Much scientific and technical information on the geology and mineral resources of the state is being generated by and is available from a number of sources including the New Mexico Bureau of Mines and Mineral Resources, the U.S. Geological Survey, the University of New Mexico, New Mexico State University, the New Mexico Water Resources Division, the New Mexico Division of Mining and Minerals, the American Association of Petroleum Geologists, the Geological Society of America, the Society of Economic Geologists, the New Mexico Geological Society, the Four Corners Geological Society, and others.

The goal of *New Mexico Geology* is to inform geologists and all other interested persons of current geologic publications and conferences, and, on a regular basis, publish short articles that provide scientific insight on the various aspects of the state's geology and mineral technology. ■

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