Early Permian vertebrate fossils from the Abo Formation at the Abo Mine, Abo Pass, New Mexico (abs.)

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The Abo Mine (Scholle Mine) is a red-bed copper deposit developed in the Scholle Member of the Lower Permian Abo Formation near Abo Pass in Torrance County, New Mexico. It was first worked from 1914 to 1919 and again during the mid 1940's for both WWI and WWII war efforts. Total production of copper, for both periods of operation, was approximately $250,000. The difficulty and cost associated with extracting the copper caused a discontinuation of mining efforts after WWII. However, the mine is an important fossil locality. Thus, Charles B. Read of the U. S. Geological Survey collected petrified wood and Calamites specimens from the mine area in the mid 1940's. One of us (KLM) visited the mine in April 2009 and collected the first vertebrate fossil from the area, a partial metatarsal. Additional field work identified highly fossiliferous sites at the Abo Mine, including a stream channel lag associated with an open pit mine. This lag consists of both consolidated sandstone, containing up to 50% or more bone, and an unconsolidated mudstone, with loose bone. The vertebrate fossils from the mine are dominated by bones of the pelycosaur-grade synapsid Sphenacodon. The most diagnostic elements are vertebrae with tall, blade-like neural spines. The presence of Sphenacodon within the assemblage indicates an Early Permian (Coyotean-Seymoran: Wolfcampian) age.

Keywords:
vertebrate paleontology, fossils, red-bed copper, Scholle Mine, Abo Mine

pp. 32, https://doi.org/10.56577/SM-2010.638
2010 New Mexico Geological Society Annual Spring Meeting
April 16, 2010, Macey Center, New Mexico Tech campus, Socorro, NM
Online ISSN: 2834-5800