An update on the Microbially-Induced Sedimentary Structures (MISS) of the Precambrian (Stenian) Castner Formation, Northern Franklin Mountains, El Paso, Texas

Eric J. Kappus¹, Anthony Alvarez², Joe Cancellare³ and Spencer G. Lucas⁴

¹The University of Texas at El Paso, 5823 N Mesa, #707, El Paso, TX, Texas, 79912, USA, eric_kappus@hotmail.com
²El Paso Community College, 5823 N Mesa, #707
³New Mexico Museum of Natural History and Science
⁴New Mexico Museum of Natural History and Science

The Castner Formation of El Paso, Texas is the oldest Precambrian rock unit (Stenian, ~1260Ma) exposed in the Franklin Mountains of West Texas. This unit is now marble, but was initially a carbonate/clastic sedimentary succession and has been metamorphosed to hornblende-hornfels facies. Originally named by Harbour (1960) as the “Castner Limestone,” it contains exquisitely preserved bedding structures, including soft sediment deformation, imbricated edgewise conglomerates, and two types of stromatolites. Microbial Induced Sedimentary Structures (MISS) were first recognized in the Castner Formation by Pittenger (1994), who reported cryptalgal laminites. We describe several other MISS not associated with the previously described stromatolites. These MISS include gas domes, syneresis cracks, and possible discoidal microbial communities. In addition, we also offer an alternative hypothesis for the formation of edgewise conglomerates, namely that they may have formed due to microbial binding of individual beds, which has been reported elsewhere (i.e., Van Kranendonk et al., 2003).

References:


Keywords:

MISS, Proterozoic, Castner


2019 New Mexico Geological Society Annual Spring Meeting
April 12, 2019, Macey Center, New Mexico Tech campus, Socorro, NM
Online ISSN: 2834-5800