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

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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:

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