A TRACE FOSSIL ASSEMBLAGE FROM THE LATE JURASSIC MORRISON FORMATION INTERPRETED TO BE PRODUCED BY SOCIAL INSECTS

Elliott Smith (Advisor: Mark Loewen)
Department of Geology and Geophysics

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Abstract

A trace fossil assemblage from the Brushy Basin Member of the Morrison Formation in Eastern Utah has been described with topographic, morphologic, sedimentological, and mineralogical features that support the interpretation it was created by the behavior of social insects. The trace fossil assemblage was interpreted within the context of its depositional environment, with consideration of the available body fossil record of insects, as well as previously documented trace fossil assemblages within the Morrison Formation. The trace fossil assemblage appears to have been extensively silicified, a diagenetic process conducive for its erosion and exhumation.

Figure 1. A field photograph of a weathered "nest" in the trace fossil assemblage.

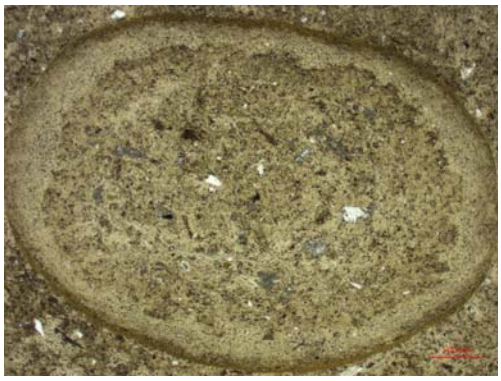
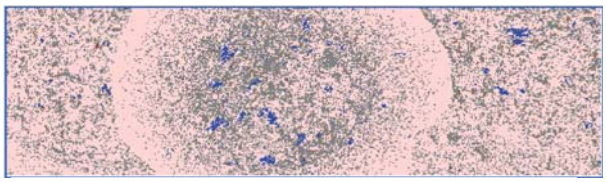


Figure 2. A photograph of a sphere-shaped structure interpreted to be biological in origin and silicified by diagenesis.



Mineral Name	Area%	Area
Quartz	65.47	45881
Plagioclase	31.49	22066
Barite	1.64	1146
Kaolinite I	0.85	598
Chlorite	0.34	240
Background	0.21	144

Figure 3. A QEMSCAN mineralogical map of a sphere-shaped structure, consistent with the interpretation it is biological in origin.