**Vertebrate Micro-Faunal Assemblages of *Pogonomyrmex rugosus* (Harvester Ant) Hills in the Tocito Sandstone (Late Cretaceous, Coniacian) of Sandoval County, New Mexico**

Paul May¹, Randy Pence and Spencer G. Lucas¹

¹New Mexico Museum of Natural History, 1801 Mountain Road N.W., Albuquerque, NM, 87104, massagepaul@gmail.com

Near Cabezon in Sandoval County, two prolific shark-tooth-dominated vertebrate fossil assemblages are present in the Upper Cretaceous (Coniacian) Tocito Sandstone, New Mexico Museum of Natural History (NMMNH) locality 2606 and NMMNH locality 10175. Both assemblages are in the topmost sandstone bed of the Tocito Sandstone, which is 0.2-0.4 m thick and consists of trough cross bedded, very coarse grained, pebbly quartz sandstone. The two fossil sites are about 250 m apart north-south, and the teeth can be directly collected from the sandstone bed and from nearby anthills where the ants have concentrated them.

Anthills have long been a treasure trove for paleontologists and archeologists, and call attention to fossil sites of interest. The Harvester Ant, *Pogonomyrmex rugosus* (Emery) is a common high desert denizen. Their telltale discs made of large sand grains blanket the southwestern USA and northern Mexico. These diligent diggers can carry up to twice their body weight alone and work together on large objects. The nest architecture of *P. rugosus* conveniently places the food/trash storage chambers just under the surface debris disc, created by seasonal excavations and foraging. The chambers may be sealed off or periodically emptied of their contents, which expand the debris disc. At these two Tocito Sandstone fossil localities, some of these chambers contain small teeth from inhabitants of the Western Interior Seaway (mostly sharks), ~ 85 Ma. The NMMNH L-2606 anthill is located on an erosion slope 3 meters below the topmost bed of the Tocito Sandstone. The debris disc is small and washing downslope, with a thin crust that has a few small teeth on the surface. The NMMNH L-10175 anthill is located on the very top of a bluff, self-contained in a depression within the topmost bed of the Tocito Sandstone. The debris disc is huge, with a thick crust and numerous small teeth present on the surface. Our work suggests that *P. rugosus* anthills, in the right place, will yield a more extensive and more complete micro-fossil assemblage than a random sampling of the matrix of that site.

pp. 43

2021 New Mexico Geological Society Annual Spring Meeting
April 15-16, 2021, Virtual Meeting