

**Centennial Honors College Thomas E. Helm Undergraduate  
Research Day 2025**

**ABSTRACT**

Major: Geology

Poster

Faculty Mentor(s): Leslie Melim

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**Petrographic Comparison of Torosites with New Samples from  
Shoveleater Cave, WV**

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A torosite is a speleothem that grows down and outward from beneath crusts or off cave walls, as finger-like protrusions that thicken and thin to give an appearance of fingers with swollen knuckles. They are composed of bladed spar interrupted by micritic laminations much like stalactites but are unique in that they lack a central canal and only grow on the ends, not along the sides. Torosites were first recorded to be found in Sistema Los Toros, Nuevo León, Mexico. A potential second occurrence has been found in Shoveleater Cave, West Virginia where similar features are densely packed along the walls of the cave. This study will examine the petrography of two new samples to compare to the original sample.

Petrography reveals six fabrics, F1 through F6. F1 is bladed calcite spar forming most of the body, which nucleates and then radiates outward and downward until interrupted. F1 is interrupted by micritic laminations (F2). Interrupting F2 layers start new calcite blades that shift to F1. F3 is fine, elongate needle moulds within F1. F4 are dark, poorly defined bands within F1. F5 is a layer of thin, elongate bladed crystals with square terminations. F6 are bulbous growths of micritic fabric (like from F2).

The external morphology and petrographic fabrics are the same as the original description of a torosite and hence determined to be torosites. However, needle mould inclusions and square terminations indicate aragonite (confirmed by XRD) in the new samples, not seen before.