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Presentation Time: 8:30 AM-4:30 PM

LONG BONE HISTOLOGY OF THE LARGE PALEOGENE MAMMAL *CORYPHODON*

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Among the many strata present in Wyoming's Bighorn Basin, there is an extensive record of the transition between the Paleocene and Eocene epochs of the Paleogene period. During this transition, the climatic event known as the Paleocene–Eocene Thermal Maximum (PETM) had profound impacts on life on Earth. One organism affected was *Coryphodon*, one of the earliest known mammalian megaherbivores. Several previous publications suggest that *Coryphodon* abruptly shrunk in size following this period of higher temperatures, before returning to larger body sizes later in the Eocene. The abundance of *Coryphodon* fossils in the Bighorn Basin makes it an excellent case study for how body size can change within a lineage. In order to study how *Coryphodon* growth was modified to achieve dwarfing, a baseline description of its bone histology needs to be established. To accomplish this, we created thin sections of three femora, two tibiae, one fibula, and one rib of *Coryphodon*. The organization of the bone tissue itself is mostly woven. A myriad of radial, circumferential, and longitudinal blood canals can be seen, forming regions of plexiform and reticular bone. Decomposition has obscured the structure of each thin section to varying degrees, especially around the largest neurovascular canals, making the degree of remodeling unclear. The centers of the sections are comprised of varying amounts of spongy bone. Multiple lines of arrested growth can be seen in the best-preserved specimens, allowing minimum ages to be established. This study establishes the utility of *Coryphodon* bone histology for skeletochronology, facilitating future study of its growth and longevity during body size changes through the Paleogene.

Session No. 7--Booth# 41

T17. Undergraduate Research II (Posters)
Monday, 4 May 2020: 8:30 AM-4:30 PM

Ballroom A (Utah Valley Convention Center)

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