Rocky Mountain Section - 72nd Annual Meeting - 2020

Paper No. 7-7
Presentation Time: 8:30 AM-4:30 PM

PALEOENVIRONMENTS CONTAINING *CORYPHODON* IN THE FORT UNION AND WILLWOOD FORMATIONS SPANNING THE PALEOCENE-EOCENE THERMAL MAXIMUM (PETM), BIGHORN BASIN, WYOMING

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Early Paleogene nonmarine strata are extensively exposed in the Bighorn Basin of northwestern Wyoming. The Fort Union and Willwood Formations represent alluvial deposition within a Laramide Basin formed from the Paleocene through early Eocene. Therefore, the basin is an ideal place to study the local effects of the Paleocene-Eocene Thermal Maximum (PETM), a rapid global warming event that occurred about 55.5 million years ago at the Paleocene–Eocene boundary. During this event, an initial decrease in rainfall was followed by wet and dry cycles with increased temperature and decreased precipitation. Some flora and fauna went extinct, but many others exhibited dwarfing during this interval. The response of the large mammal *Coryphodon* to the PETM is poorly understood, but is of special interest due to its inferred semiaquatic nature.

We collected 14 stratigraphic sections from 5 mammalian biozones within the Bighorn Basin, each centered around depositional units containing *Coryphodon*. The depositional environments of these units were evaluated by describing the grain size; matrix and mottling colors; mottling percent; abundance and type of nodules; shrink-swell features such as slickensides and clay cutans; and other interesting attributes such as organic matter, invertebrate fossils, sedimentary features, and mottling color or percentage stratigraphic changes. The depositional environments include ponds, swamps, fluvial deposits, soils with evidence of wet and dry cycles, and dry soils. Preliminary data point toward a hypothesis in which *Coryphodon* lived in wetter habitats before the PETM, but was able to adapt to drier habitats in order to survive post-PETM.

Session No. 7--Booth# 43

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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