TYRANNOSAUR CANNIBALISM: A CASE OF A TOOTH-TRACED TYRANNOSAUR BONE IN THE LANCE FORMATION OF EASTERN WYOMING

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A recently discovered tyrannosaur long bone (HRS13997) from the uppermost Cretaceous (Maastrichtian) Lance Formation is heavily marked with several long grooves on its cortical surface all concentrated on the bone's widest end. The bone was found at the surface near a thin bonebed within a sandstone unit. The grooves on the surface are interpreted as scores made by theropod teeth. At least ten separate grooves are visible, of varying width. The widest grooves are 5 mm at their widest points. The grooves have a long axis of greater than 3:1, have U-shaped cross-sections, possess greater widths than depths, and most are perpendicular to the long axis of the bone, fulfilling the characteristics listed in definitions of score tooth traces (Njau and Blumenschine, 2006; Pobiner et al., 2007; Pobiner, 2008). In addition, the tooth ichnospecies *Knethichnus parallelum* (Jacobsen and Bromley, 2009), which consists of a series of parallel grooves often leading away from an initial groove, is found at the end of the score nearest the widest end of the bone. *Knethichnus parallelum* is caused by denticles of a ziphodont tooth dragging along the surface of the bone. As crocodilians are not ziphodont, these scores were likely made by a theropod dinosaur, and the width of the larger grooves suggests the traces were made by a tyrannosaur. This suggests that a tyrannosaur fed upon another tyrannosaur, either *Tyrannosaurus rex* or *Nanotyrannus lancensis*. Tyrannosaur cannibalism has been previously noted in *Daspletosaurus* in the Dinosaur Park Formation (Campanian) in Alberta, Canada (Hone and Tanke, 2015). To our knowledge, this the first description of tyrannosaur cannibalism in the Lance Formation and the first *Knethichnus parallelum* found on a tyrannosaur bone.