Preservation and Erosion of Theropod Tracks in Eolian Deposits: Examples from the Middle Jurassic Entrada Sandstone, Utah, U.S.A.

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ABSTRACT

The Middle Jurassic Entrada Sandstone, exposed near the town of Escalante, southern Utah, consists of large-scale cross-bedded eolian deposits that are interbedded with horizontally laminated sand sheets and thin sets of eolian cross-strata, representing periods with a moister climate. The flat-bedded units contain numerous tracks and trackways from small to large-sized theropod dinosaurs. These tracks are today exposed in several distinct erosional states, allowing detailed studies of track and undertrack formation in eolian deposits. Tracks that originally were emplaced on sloping surfaces show, in their present-day erosional state, a morphology distinct from those originally emplaced on horizontal surfaces. Further, the range of eroded track morphologies can help identify badly eroded tracks from nonbiogenic structures in similar deposits.

No track begins or ends at the compression point. In other words, the track does not end at the floor, walls, horizons, and all the other visual places. Instead, the track is like the center of a concentric ring, a ring that ripples well beyond and under the existing track. (Tom Brown Jr., 1999)