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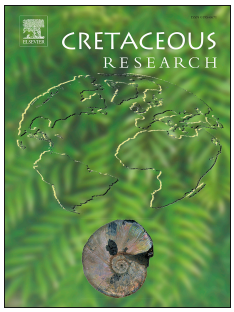

First reports of turtle tracks from the Williams Fork Formation ('Mesaverde' Group), Upper Cretaceous (Campanian) of western Colorado

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First reports of turtle tracks from the Williams Fork Formation ('Mesaverde' Group), Upper Cretaceous (Campanian) of western Colorado.

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Abstract:

Tetrapod footprints from the coal-bearing, Upper Cretaceous beds of Colorado, Wyoming and Utah, loosely known as the "Mesaverde" Group, have been reported and collected, mostly for Utah and Colorado institutions since the 1920s. However, it has only been in recent decades that the track assemblages have been reexamined in any detail. The results of such work indicate that the assemblages are more diverse than hitherto recognized. Here we report the first assemblages of turtle tracks that come from an important locality in the Williams Fork Formation in western Colorado, which also yields diverse dinosaur tracks. Collectively the turtle track-dominated assemblages reveal more than 150 swim tracks registered on a total surface area of ~ $3m^2$, indicating a density of ~ 50 tracks / $m^{2,}$ and a fauna in which turtles were a significant component. The swim tracks mostly show strong preferred orientations suggesting the influence of directional currents. The co-occurrence of turtle tracks swim tracks and dinosaur tracks in the local facies indicates a mosaic of subaqueous and emergent wetland substrates consistent with the interpretation of these track-rich, coal- and plant-rich sequences as swampy, coastal plain habitats. Current evidence suggests these Upper Cretaceous tracks are typically larger than those known from the 'mid' and Lower Cretaceous in North America and elsewhere. Thus, the Williams Fork paleoenvironements may have represented settings conducive to habitation by large turtles.