A New Dinosaur Ichnofauna from the Late Cretaceous of Wrangell-St. Elias National Park and Preserve, Alaska

Fiorillo, Anthony [*1]; Adams, Thomas [2]; Kobahyashi, Yoshitsugu [3]
(1) Museum of Nature and Science, Dallas, TX.
(2) Southern Methodist University, Dallas, TX.
(3) Hokkaido University Museum, Sapporo, Japan.

An unnamed nonmarine sedimentary package of rocks in southeastern Alaska in Wrangell-St. Elias National Park and Preserve, the largest national park unit in the United States, has provided the first evidence of dinosaurs for this vast region. The rock unit is contained within the Wrangellia Terrane and exposures are of limited geographic extent. Sections are overwhelmingly dominated by intraformational conglomerates. Fine to medium grained light colored sandstones are common and medium gray shales occur as minor components to the sections. Field parties found evidence of small theropods and ornithopods. Theropod impression is approximately 12 cm long and 10 cm wide. Attribution to the theropoda was based on the sinusoidal shape of the impression of the middle digit. Ornithopod impressions, identified by clearly blunt and rounded digit impressions, are approximately 21-28 cm long and 23-30 cm wide. All impressions were undertracks. Pollen samples failed to produce diagnostic pollen but kerogen and charcoal were abundant. The abundance of charcoal suggests that fire was prevalent in this ancient ecosystem. The abundance of conglomerate and sandstone in the sections, combined with the abundance of charcoal suggest that this area during deposition was tectonically dynamic and prone to ecological disturbance. Megafloral specimens indicate an abundance of horsetails, ferns and gymnosperm wood. The rock unit is mapped as Late Cretaceous in age, which ranges from approximately 99 Ma to 65 Ma. Structural relationships suggest that this rock unit is upper Campanian or lower Maastrichtian in age. The lack of angiosperm pollen and megafloral remains suggest that fossil flora composition is most consistent with the floral composition of the Campanian/Maastrichtian Prince Creek Formation of northern Alaska rather than the underlying, older Nanushuk Formation. The megafloral record also suggests that this unnamed rock unit may be of youngest Cretaceous age.