PALEOECOLOGICAL IMPLICATIONS OF THE FOX HILLS FORMATION (MAASTRICHTIAN) REPTILIAN AND AMPHIBIAN FAUNA FROM SOUTH-CENTRAL NORTH DAKOTA

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ABSTRACT

Fossil vertebrates of the Fox Hills Formation in the Missouri River valley of North Dakota play a singular role for interpretations of both paleoecology and paleogeography at the margin of the Western Interior Seaway (WIS). They link interpretations of terrestrial, estuarine, and marine ecosystems in a manner that invertebrates alone generally cannot. The Fox Hills Formation, which underlies and interfingers with the Hell Creek Formation, and associated marine tongues in the Hell Creek Formation indicate that the WIS persisted into the latest Cretaceous in North Dakota. Invertebrate fossils are common in the nearshore Fox Hills deposits consisting primarily of sandstone and siltstone. Deposition occurred during the Late Maastrichtian *Jeletzkytes nebrascensis* Western Interior ammonite Zone.

Remains of reptiles and amphibians in the Fox Hills Formation in North Dakota are not common and consist mostly of teeth and other isolated skeletal parts. Only partial skeletons of any reptiles have been found in the Fox Hills Formation. The meager reptilian and amphibian fauna, recovered from nearshore sandstone facies, consists of marine and terrestrial taxa. The marine taxa present include the mosasurs *Mosasaurus dekayi* and *Plioplatecarpus* sp. Terrestrial taxa represented are dinosaurs, Tyrannosauridae indet. and Theropoda indet.; turtles, the trionychid *Aspideretoides* sp. and the nanhsuingchelyid *Basilemys* sp.; the crocodile *Leidyosuchus* sp.; the Choristodera *Champsosaurus* sp. and the salamanders *Opisthotriton kayi* and an undetermined species.

This mixed fauna indicates that marine mosasurs frequented shallow water areas of the WIS. The occurrence of *Champsosaurus* with the horseshoe crab, *Casterolimulus kletti*, exemplifies faunal mixing in an estuarine habitat. Dinosaurs, crocodiles, turtles, and salamanders inhabited Late Maastrichtian shoreline areas.