

# A New Tyrannosaurid Dinosaur From the De-Na-Zin Member of the Kirtland Formation (late Cretaceous, Campanian), Northwestern New Mexico

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We document a new tyrannosaurid dinosaur from the upper Cretaceous De-na-zin Member of the Kirtland Formation, New Mexico. The new tyrannosaurid is known from an isolated but diagnostic right anterior dentary collected by the 1924 Amherst College paleontological expedition led by Frederic Brewster Loomis. The dentary is differentiated from other tyrannosaurid by the following characters: two closely spaced foramina intermandibularis oralis situated in the vicinity of the weakly declined anterior terminus of the Meckelian groove, medial surface of the lingual bar at the level of the first and second alveoli directly dorsal to the interdentary symphysis bulges medially and has an ovoid shape, the anterior terminus of the Meckelian groove is weakly declined ventrally, and the posterior surface of the anterior step of the lingual bar is diminutive and situated at the level of the posterior end of the second alveolus/interdental plate. Overall proportions of the dentary fall in line with the "short-snouted" tyrannosaurids, such as *Lythronax argestes* and *Teratophoneus curriei* from the Campanian of Utah. Additionally, we describe two isolated dentaries and several axial and appendicular skeletal elements, including isolated teeth, of tyrannosaurids from the De-na-zin Member. The occurrence of an additional tyrannosaurid in the southern biome of the Western Interior Basin of North America during the late Campanian adds important new information about the morphologic and taxonomic diversity of Tyrannosauridae and the paleobiogeographic distribution of these iconic predators. Furthermore, the data presented here suggest that the new tyrannosaurid is a descendant of the tyrannosaurids that lived during the Campanian in what is now the San Juan Basin in northwestern New Mexico and not the result of paleobiogeographic isolation by a physical barrier such as a rise or fall of sea level or a mountain range.

pp. 22

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