THE LARGEST MOSASAUR (SQUAMATA; REPTILIA) FROM THE MISSOURI RIVER AREA (LATE CRETACEOUS; PIERRE SHALE) OF SOUTH DAKOTA

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ABSTRACT

The Cretaceous Pierre Shale along the Missouri River is extremely fossiliferous and has produced numerous mosasaur specimens since the western fossil discoveries of Lewis and Clark. Many of these marine reptile specimens represent the largest of mosasaur, the tylosaurines, and in 1990, the Jim Wilkens family, discovered the largest heretofore recorded along the Missouri River near Nicholas Creek, Lyman County, central South Dakota. Unfortunately, high water prevented collection of the specimen; finally, in 2000, water levels dropped, and the specimen was collected and found to consist of vertebrae, ribs, paddle elements, and a partial skull. Skull elements consist of anterior cranial and jaw elements, including a nearly complete right lower jaw measuring 1.53 meters, making it the largest mosasaur ever collected from the Missouri River. The partial skeleton is referable to the subfamily Tylosaurinae based on large size, tooth structure, and long predental rostrum. Further identification must await resolution of the taxonomy of the Tylosaurinae, a project currently underway. The specimen was recovered from a lag deposit representing an unconformity at the middle portion of the Campanian Sharon Springs Member of the Pierre Shale along the Missouri River.