

## **THE OCCURRENCE OF ELASMOSAURIDS (REPTILIA: PLESIOSAURIA) IN THE NIOBRARA CHALK OF WESTERN KANSAS**

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### **ABSTRACT**

The Niobrara Chalk, including the Fort Hays Limestone and Smoky Hill Chalk, was deposited during a period of high sea levels (Coniacian – Lower Campanian). Although the Fort Hays Limestone is relatively devoid of vertebrate remains, the Smoky Hill Chalk has produced a rich variety of well-preserved skeletons of fish, turtles, mosasaurs, pterosaurs, toothed birds and even a few dinosaurs. In the case of mosasaurs and pterosaurs, thousands of specimens have been collected in Kansas since the late 1860s. Elasmosaurids, however, are notable for their relative scarcity, especially when compared to the number of specimens collected from the underlying and the overlying strata when the sea was shallower and the eastern shore was closer. Nine partial specimens of elasmosaurids are documented from the upper (Lower Campanian) Smoky Hill Chalk and one is known from the Fort Hays Limestone (Lower Coniacian). Although the remains of polycotyloid plesiosaurs are present throughout the Niobrara, they also occur more frequently in the upper Smoky Hill Chalk. The low numbers of elasmosaurid remains in the Niobrara Chalk suggests a possible preference for shallower water, near-shore environments where larger quantities of small prey were more likely to be available, and where the threat of predation was lower.