

Regular talk

**A BIZARRE STALKED CRINOID FROM COLD METHANE SEEPS
IN THE UPPER CRETACEOUS (CAMPANIAN) PIERRE SHALE,
SOUTH DAKOTA, USA**

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Despite a rich and varied record, Mesozoic stalked crinoids are relatively rare in the Western Interior Seaway of North America compared to those found in Northern Europe. A unique example of Mesozoic stalked crinoid is described from cold methane seeps (hydrocarbon seep mounds also called “tepee buttes”) from the Upper Cretaceous (upper Campanian) of the Northern Great Plains of the United States; the first crinoids to be described from such an environment. The Late Cretaceous Western Interior Seaway has never before yielded any identifiable stalked crinoid remains. Nevertheless, there have been significant studies on both free living and stalked crinoids from other locations in the Upper Cretaceous of North America that provide a good basis for comparison. This new species is characterized by a tapering homeomorphic column with through-going tubuli and lacks any attachment disc. The arms are unbranched and pinnulate, with muscular and syzygial articulations. The unique morphology of the column justifies the establishment of a separate family. A new suborder is also proposed as there exists no corresponding taxon within the Articulata that can accommodate all the characteristics of this new genus. This new crinoid shares many features with other members of the articulata, including bathyrcrinids, bourgueticrinids and guillecrinids within the order Comatulida, as currently defined in the revised Treatise of Invertebrate Paleontology. Reconstructing the entire crinoid using hundreds of semi-articulated and disarticulated fossils reveals a unique paleoecology and functional morphology specifically adapted to living within this hydrocarbon seep environment. However, the function of the most notable feature of this crinoid, the through-going tubuli, remains a mystery.

