**UNEXPECTED DIVERSIFICATION OF PLIOSAURID MARINE REPTILES AFTER THE JURASSIC-CRETACEOUS BOUNDARY**

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Pliosaurids are iconic marine reptiles that dominated marine ecosystems during the Jurassic and the Cretaceous. These giant predators met their demise during the early Late Cretaceous but the final chapter of their long evolutionary history remains barely documented. Prompted by the discovery of a peculiar and very well preserved new taxon from Russia, we compute the evolution of pliosaurid disparity from their Early Jurassic radiation to their Late Cretaceous extinction. Despite a patchy Early Cretaceous fossil record, we show pliosaurids reached their maximal disparity during the Hauterivian-Barremian interval, suggesting a strong Early Cretaceous recovery from the apparently low phenotypic disparity of Late Jurassic pliosaurids. By using cladistic and ecomorphological data, we show that pliosaurids have repeatedly evolved slender-snouted polycotylid-like morphologies in each of their temporal radiations (Early Jurassic, Middle Jurassic and Early Cretaceous), demonstrating a more complex evolutionary history than their traditional representation as gigantic apex predators of Mesozoic marine ecosystems suggests. The extinction of pliosaurids during the Turonian (early Late Cretaceous) appears preceded by a late Early Cretaceous contraction of their disparity, the trajectory documented in ichthyosaurs, another successful marine reptile clade that disappeared during the Cenomanian-Turonian interval.