

# **ELASMOBRANCH FISHES FROM THE CENOMANIAN (LATE CRETACEOUS) OF PATAGONIA, ARGENTINA DISPLAY AN IMPRESSIVE PALAEODIVERSITY IN HIGH LATITUDE DEPOSITS**

Begat, A.<sup>1</sup>, Kriwet, J.<sup>1</sup>, Goin, F.J.<sup>2</sup>, Gelfo, J.N.<sup>2</sup>, Gouiric-Cavalli, S.<sup>2</sup>, Schultz, J.A.<sup>3</sup> & Martin, T.<sup>3</sup>

<sup>1</sup>University of Vienna, Department of Palaeontology, Vienna, Austria, arnaud.begat221@yahoo.fr

<sup>2</sup>Rheinische-Friedrich-Wilhelms-Universität Bonn, Institute of Geosciences, Bonn, Germany

<sup>3</sup>Museo de La Plata, CONICET-División Paleontología Vertebrados, La Plata, Argentina

The Cretaceous was an important period in the evolution of vertebrates, both on land and in the oceans. This time coincides with the appearance of all modern elasmobranch clades (sharks, rays, skates) that also adapted to new environments (e.g., the open marine realm). Reconfiguration of landmasses resulting from the break-up of Gondwana during the Cretaceous opened new seaways enabling the establishment of new migration routes and also created wide, shallow epicontinental seas that are considered to shape diversity patterns of marine organisms positively. Here, we present an elasmobranch fauna from the Cenomanian Mata Amarilla Fm. in the Austral Basin of Argentine Patagonia (Santa Cruz Province) collected during an Argentine-German field project funded by the National Geographic Society and German Research Foundation (DFG). The Mata Amarilla Fm. is characterized by an alternating sequence of continental and marine strata that yielded different vertebrate assemblages. So far, at least ten different elasmobranch taxa including hitherto unknown species based isolated teeth from marine sediments have been identified. Isolated vertebral centra and dermal denticles of less taxonomic value additionally were recovered. This unique elasmobranch assemblage is the most diverse assemblage from Cretaceous deposits of South America up to now and contributes significantly to our still poor knowledge on elasmobranchs in early Late Cretaceous high latitudes and especially in South America. The strong taxonomic similarities of elasmobranch faunas between Patagonia, North America and Europe indicate migration patterns between the two hemispheres that most likely were enhanced by the opening of the Atlantic.