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Editorial: African vertebrates through times

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Editorial on the Research Topic African vertebrates through times

The first record of vertebrate fossils from Africa can be traced back to the beginning of the nineteenth century, almost two centuries of paleontological discoveries. Today Africa is an important source of knowledge in regard to the evolution of vertebrates and plays a pivotal role in understanding the impact of geodynamic events in macroevolution (extinctions and succeeding recovery phases). It is a key continental theater for the study of endemic evolutionary radiations. This volume despite the small number of its items, covers the three geological eras since it presents the results of new research on Paleozoic, Mesozoic and Cenozoic vertebrates from Africa.

The placoderms also called “Armored fishes”, because of the heavily mineralized plates that protect their heads and thorax, are extinct early jawed vertebrates that lived from the Silurian to the end of the Devonian period. They were the dominant marine vertebrates during the Devonian being abundant, diversified and adapted to various environments and food strategies. As one of the first jawed vertebrates (or gnathostomes), their study is crucial to understand the origin and evolution of the gnathostome body plan. [Jobbins et al.](#) described an exquisitely well preserved articulated new selenosteoid placoderm from the Devonian of Morocco. They add to the biodiversity of Devonian placoderms from Morocco and thanks to the exceptional preservation of the body outline, they shed new lights on the body shape and ecomorphology of the selenosteoids.

During the last decades new paleontological findings have revealed exceptional mosasaur diversity from the Northern part of Africa. The mosasaurs were a specialized group of squamates that adapted to marine life in the mid-Cretaceous, before becoming the dominant marine predators in the latest Cretaceous. They were the most common reptiles and the dominant marine reptiles of the Late Cretaceous. [Woolley et al.](#) redescribed mosasaur remains collected at the beginning of the last century from the latest Cretaceous of South Africa. By the identification of at least three taxa, this study revealed an unsuspected mosasaur diversity in South Africa. It also underlines the potential of the Cretaceous outcrops in the east coast of South Africa for new finds and in the understanding of the diversity and dispersal of mosasaurs in and around Southern Africa.

The Cretaceous “Continental Intercalaire”, which extends across North Africa (the Kem beds of Morocco, Gara Samani in Algeria, Tataouine region in Tunisia, Mizdah Formation in Libya), and its contemporary Baharyia Formation of Egypt and Echkar Formation in Central Niger provides abundant data on vertebrate paleobiodiversity and evolutionary history from the Early to Late Cretaceous, and shows how dinosaurs evolved in the context of the continental

breakup. These localities raised particular interest among scientists aiming to get a good look at dinosaur life when the African continent drifted into isolated Isle. Noteworthy is the fact that the faunas from these formations are unbalanced by a predominance in number and diversity of the large bodied carnivorous over supplanting that of the herbivorous. A terrestrial ecosystem unparalleled in today's nature. In [Benyoucef et al.](#) the geological context of the "Continental Intercalaire" deposits occurring in the Gara Samani area, southern Algeria is provided. The faunal list yielded by this formation was supplemented thanks to new findings in this area. This study adds to our knowledge on the late Albian-Cenomanian terrestrial vertebrate biodiversity of Algeria.

In the last paper, [Murray](#) described a new species of cichlid « fishes » from Oligocene deposits of Somalia. Cichlids are an important component of the African freshwater ecosystem. This study offers the opportunity to discuss the biogeographic history of the group. Answers on the question if their modern distributions the result of a dispersal event or are they the result of a vicariant event after the break-up of the two continental masses in the mid-Cretaceous are possible. This sheds new lights on the early history of cichlids in Africa.

Author contributions

Original draft by N-EJ; EG and MR review and edit the original draft. All authors approved it for publication.

Conflict of interest

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