AN AFRICAN WORLD IN THE SHADOW OF GIANTS – MAMMALS AND OTHER MICROVERTEBRATES FROM THE JURASSIC–CRETACEOUS TRANSITION OF KSAR METLILI, MOROCCO

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The Jurassic–Cretaceous transition is a pivotal period: it is marked by the Pangea break-up, and witnessed the emergence or first diversification of most of the modern continental vertebrate groups. However, little is known about this time interval in the continental environments from Gondwana, especially in Africa. At the Ksar Metlili site (Tithonian–Berriasian, eastern Morocco), we identified about 40,000 vertebrate microremains, belonging to at least 53 species. It includes chondrichtyans, actinopterygians, non-tetrapod sarcopterygians, lissamphibians, chelonians, lepidosaurs, choristoderes, crocodyliforms, pterosaurs, dinosaurs, non-mammaliaform cynodonts and mammals. Thus, Ksar Metili delivered one of the richest and most diverse continental microvertebrate assemblages from the Jurassic–Cretaceous transition of Gondwana, and stands as an unrivalled window on the African continental ecosystems of this time. 'Dryolestoids' are the most abundant mammals from Ksar Metlili, but only one species, *Donodon perscriptoris*, was described on the basis of three specimens and referred to the monotypic Donodontidae. Our review of the mammalian remains from Ksar Metlili led to the discovery of 46 additional 'dryolestoidean' isolated teeth, referred to *D. perscriptoris* and to three new genera and four new species. Our morphological and phylogenetic analyses suggest that these five species form a clade, supported by ten synapomorphies, and can be grouped within Donodontidae, leading us to propose an emended diagnosis for donodontids. They appear to be more derived than meridiolestidans, a South American 'dryolestoidean' group that was previously thought to take its origin into donodontids. Our work also strongly suggests that donodontids are closer to Zatheria than to any other 'dryolestoideans'. This proximity renews the question of the origin of zatherians and opens up the possibility of an African or Gondwanan origin, instead of the Laurasian one currently widely accepted. It could have important implications for the understanding of the evolutionary and palaeobiogeographical history of modern mammals (Theria).