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Theropod tooth assemblages from the Late Cretaceous Maevarano Formation and the possible presence of dromaeosaurids in Madagascar

Federico Fanti and François Therrien
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The latest Cretaceous (Campanian?-Maastrichtian) Maevarano Formation of the Mahajanga Basin, Madagascar, preserves one of the most diverse fossil vertebrate faunas of the Gondwanan landmasses. Over 180 isolated theropod teeth recovered from that formation were studied in order to document theropod diversity in the Madagascar insular setting. Tooth morphology and characteristics of the Maevarano teeth were compared to those of known theropod teeth for identification, including the Malagasy non-avian theropods *Majungatholus atopus* and *Masiakasaurus knopfleri*. Tooth and denticle morphologies permit the recognition of five tooth morphotypes: three morphotypes are referable to *Majungatholus atopus* based on variation in tooth morphology observed in teeth preserved in situ in the jaws of two specimens, and one morphotype is ascribable to *Masiakasaurus knopfleri*. Teeth pertaining to the fifth morphotype differ from other morphotypes in the size and orientation of the denticles, shape and orientation of blood grooves, and in general tooth morphology. Statistical analyses reveal that the fifth Maevarano tooth morphotype is similar to dromaeosaurid teeth, suggesting that a yet unknown theropod taxon inhabited Madagascar during the latest Cretaceous. This morphotype represents the first evidence of the possible presence of a dromaeosaurid in Madagascar and supports the theory that dromaeosaurids were present throughout Pangaea before the break-up of the supercontinent during the Late Jurassic and had colonized Madagascar before its separation from Africa during the Early Cretaceous.

Key words: Dinosauria, Dromaeosauridae, Abelisauridae, theropod diversity, paleobiogeography, Campanian, Maastrichtian, Gondwana.

Federico Fanti fanti@geomin.unibo.it, Department of Earth and Geoenvironmental Sciences, University of Bologna, Via Zamboni 67, I-40127 Bologna, Italy; François Therrien francois.therrien@gov.ab.ca, Royal Tyrrell Museum of Palaeontology, P.O. Box 7500, Drumheller, Alberta, Canada, T0J 0Y0.


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