

Comparative bone microstructure of three archosauromorphs from the Carnian, Late Triassic Chañares Formation of Argentina

Jordi Alexis Garcia Marsà, Federico L. Agnolín, and Fernando E. Novas

Acta Palaeontologica Polonica 65 (2), 2020: 387-398 doi:<https://doi.org/10.4202/app.00644.2019>

The Chañares Formation exhibits one of the most important archosauriform records of early Carnian ecosystems. Here we present new data on the palaeohistology of Chañares archosauriforms and provide new insights into their paleobiology, as well as possible phylogenetically informative traits. Bone microstructure of *Lagerpeton chanarensis* and *Tropidosuchus romeri* is dominated by fibro-lamellar tissue and dense vascularization. On the other hand, *Chanaresuchus bonapartei* is more densely vascularized, but with cyclical growth characterized by alternate fibro-lamellar, parallel-fibered and lamellar-zonal tissues. Dense vascularization and fibro-lamellar tissue imply fast growth and high metabolic rates for all these taxa. These histological traits may be tentatively interpreted as a possible adaptative advantage in front of Chañares Formation environmental conditions.

Key words: Archosauromorpha, *Lagerpeton*, *Tropidosuchus*, paleobiology, paleohistology, Mesozoic, South America.

Jordi Alexis Garcia Marsà [jagmdarwinista@gmail.com](corresponding author) and Fernando E. Novas [fernovas@yahoo.com.ar], Laboratorio de Anatomía Comparada y Evolución de los Vertebrados, Museo Argentino de Ciencias Naturales “Bernardino Rivadavia”, 470 Ángel Gallardo, 1405DJR, Buenos Aires, Argentina; CONICET, Av. Ángel Gallardo, 470, 1405DJR, Buenos Aires, Argentina. Federico L. Agnolín [fedeagnolin@yahoo.com.ar], Laboratorio de Anatomía Comparada y Evolución de los Vertebrados, Museo Argentino de Ciencias Naturales “Bernardino Rivadavia”, 470 Ángel Gallardo, 1405DJR, Buenos Aires, Argentina; Área de Paleontología, Fundación de Historia Natural “Félix de Azara”, Departamento de Ciencias Naturales y Antropología, Universidad Maimónides, 775 Hidalgo piso 7, 1405BDB, Buenos Aires, Argentina.

Attribution License (for details please see creativecommons.org), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

 [Full text \(900.3 kB\)](#)