

An enigmatic new archosauriform from the Carnian– Norian, Upper Triassic, Ischigualasto Formation of northwestern Argentina

Imanol Yáñez, Diego Pol, Juan Martín Leardi, Oscar A. Alcober, and Ricardo N. Martínez

Acta Palaeontologica Polonica 66 (3), 2021: 509-533 doi:<https://doi.org/10.4202/app.00806.2020>


In this contribution we introduce a new Late Triassic archosaur, *Incertovenator longicollum* gen. et sp. nov., with an unusual combination of character states that are present in certain early avemetatarsalian and pseudosuchian archosaur clades. The holotype consists of a partial postcranial skeleton, preserving most of the axial skeleton and displaying a marked anteroposterior elongation in the cervical vertebrae. We include *I. longicollum* gen. et sp. nov. into one of the most comprehensive early archosaur phylogenetic data sets available, and recover it as either an early diverging avemetatarsalian, closely associated with the clade Aphanosauria and Ornithodira, or as an early diverging loricatan closely related to *Mandasuchus tanyauchen* in the most parsimonious trees. We further evaluate which alternative phylogenetic positions can *I. longicollum* gen. et sp. nov. take in the suboptimal trees, and determined which character states support those alternative positions in comparison with those of the unconstrained analysis. The analyses recover the new taxon in three main general phylogenetic placements within Archosauria, as well as one position outside this clade, highlighting widespread morphological evolutionary convergence towards neck elongation in several clades of Triassic archosauriforms.

Key words: Archosauria, Archosauriformes, Ischigualasto, osteology, phylogeny, taxonomy, Triassic, Argentina.

Imanol Yáñez [iyanez@unsj.edu.ar], Instituto y Museo de Ciencias Naturales, Facultad de Ciencias Exactas, Físicas y Naturales, Universidad Nacional de San Juan, Av. España 400 (Norte), San Juan 5400, San Juan, Argentina; and Centro de Investigaciones de la Geósfera y Biosfera, CONICET-UNSJ, Av. Ignacio de la Roza 590, Rivadavia J5400DCS, San Juan, Argentina. Diego Pol [dpol@mef.org.ar], Museo Paleontológico Egidio Feruglio, CONICET, Av. Fontana 140, Trelew 9100, Chubut, Argentina. Juan Martín Leardi [jmleardi@gl.fcen.uba.ar], Universidad de Buenos Aires, CONICET, Instituto de Estudios Andinos “Don Pablo Groeber” (IDEAN), Facultad de Ciencias Exactas y Naturales, Departamento de Ciencias Geológicas, Intendente Güiraldes 2160, Ciudad Universitaria, Pabellón 2, Buenos Aires C1428EGBA, Argentina; and Universidad de Buenos Aires, Facultad de Ciencias Exactas y Naturales, Departamento de

Biodiversidad y Biología Experimental, Buenos Aires, Argentina. Oscar A. Alcober [oalcober@unsj.edu.ar] and Ricardo N. Martínez [martinez@unsj.edu.ar], Instituto y Museo de Ciencias Naturales, Facultad de Ciencias Exactas, Físicas y Naturales, Universidad Nacional de San Juan, Av. España 400 (Norte), San Juan 5400, San Juan, Argentina.

This is an open-access article distributed under the terms of the Creative Commons 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 \(1,750.0 kB\)](#) |

 [Supplementary file \(515.5 kB\)](#)