ACTA PALAEONTOLOGICA POLONICA

Isolated theropod teeth associated with a sauropod skeleton from the Late Cretaceous Allen Formation of Río Negro, Patagonia, Argentina

Jorge G. Meso, Christophe Hendrickx, Mattia A. Baiano, Juan I. Canale, Leonardo Salgado, and Ignacio Diaz Martinez
Acta Palaeontologica Polonica 66 (2), 2021: 409-423 doi:https://doi.org/10.4202/app.00847.2020

The discovery of theropod shed teeth associated with sauropod remains is relatively common in Cretaceous deposits of Patagonia. However, only a handful of studies have thoroughly explored the phylogenetic affinities of the theropod dental material. Here, we describe and identify twelve theropod shed teeth associated with a partially complete skeleton of a titanosaur sauropod from the Allen Formation (middle Campanian–lower Maastrichtian; Upper Cretaceous) of Paso Córdoba, Río Negro, Argentina. Using three methods, namely a cladistic analysis performed on a dentition-based data matrix, and a discriminant and cluster analyses conducted on a large dataset of theropod teeth measurements, we identify three dental morphotypes which are confidently referred to abelisaurid theropods. Whether the morphotypes represent different abelisaurid subclades or different positional entities within the jaw of the same abelisaurid species, is unknown. Such an identification, nevertheless, provides additional evidence of abelisaurids feeding on sauropod carcasses. This study highlights the importance of using combined qualitative and quantitative methodologies to identify isolated theropod teeth, especially those that can provide direct information on feeding ecology.

Key words: Dinosauria, Abelisauridae, shed teeth, morphotypes, Cretaceous, Patagonia.

Jorge G. Meso [jgmeso@unrn.edu.ar; ORCID ID: https://orcid.org/0000-0002-5522-8569] (corresponding author), Leonardo Salgado [lsalgado@unrn.edu.ar], and I. Diaz Martinez [idiaz@unrn.edu.ar ; ORCID ID: https://orcid.org/ 0000-0001-5301-8384], Universidad Nacional de Río Negro, Instituto de Investigación en Paleobiología y Geología, 8332 Río Negro, Argentina; IIPG, UNRN, Consejo Nacional de Investigaciones científicas y Tecnológicas (CONICET), Av. Roca 1242, General Roca R8332EXZ, Río Negro, Argentina. Christophe Hendrickx [christophendrickx@gmail.com , ORCID ID: https://orcid.org/0000-0002-8500-2405] (corresponding author), Unidad Ejecutora Lillo, CONICET-Fundación Miguel Lillo, Miguel Lillo 251, San Miguel de Tucumán 4000, Tucumán, Argentina. Mattia A. Baiano [mbaiano@unrn.edu.ar , ORCID ID: https://orcid.org/0000-0003-0121-2139], Universidad Nacional de Río Negro, Instituto de Investigación en Paleobiología y Geología, 8332 Río

Negro, Argentina; IIPG, UNRN, Consejo Nacional de Investigaciones científicas y Tecnológicas (CONICET), Av. Roca 1242, General Roca R8332EXZ, Río Negro, Argentina; Museo “Carmen Funes”, Av. Córdoba 55, Plaza Huincul 8318, Neuquén, Argentina. Juan I. Canale [jicanale@unrn.edu.ar], Universidad Nacional de Río Negro, Instituto de Investigación en Paleobiología y Geología, 8332 Río Negro, Argentina; IIPG, UNRN, Consejo Nacional de Investigaciones científicas y Tecnológicas (CONICET), Av. Roca 1242, General Roca R8332EXZ, Río Negro, Argentina; Museo Paleontológico “Ernesto Bachmann”, Villa El Chocón, Neuquén, Argentina.