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Pterosaur teeth from the Southern Neuquén Basin (Patagonia, Argentina): New insights on the reconstruction of ornithocheiriform dental anatomy

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The pterosaur fossil record of Argentina is increasing in recent times, both in the number of localities and their temporal range. The new materials are found in levels that span from the Late Triassic to the Late Cretaceous in age. In this contribution we describe twenty isolated pterosaur teeth from the Cerro de los Leones locality (Picún Leufú, Neuquén Province), where the Lohan Cura Formation (Albian) widely crops out. A new, detailed analysis of these remains allowed us to detect a set of morphological features, such as the enamel texture, cross-section shape, crown curvature, and absence of sharp carinae, which suggests close affinities with Ornithocheiriformes. Moreover, with the large number of tooth specimens, a discrimination of three morphotypes based on the crown curvature, the basal cross-section shape, and the presence of carinae was carried out. We performed extensive morphological comparisons between different members of Ornithocheiriformes with the aim to test the hypothesis that the presence of these different morphotypes reflects distinct anatomical positions of the teeth in the jaws . Thus, considering the heterodont dentition of ornithocheiriforms, the tooth morphological classification proposed here represents a new methodology, not only to identify isolated ornithocheiriform teeth, but also to assign them to the rostral, medial, or the posterior portion of the tooth row. Finally, the evidence of ornithocheiriform pterosaurs in Cerro de los Leones has paleobiogeographical implications, allowing us to correlate it with other Albian faunas from South America, expanding our knowledge of the distribution of Early Cretaceous pterosaurs across southwestern Gondwana.

Key words: Anhangueridae, Cretaceous, Gondwana, Neuquén Basin, tooth morphology, enamel, heterodonty.

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