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A new species of *Neosclerocalyptus* Paula Couto (Mammalia: Xenarthra: Cingulata): the oldest record of the genus and morphological and phylogenetic aspects

ALFREDO E. ZURITA¹, MATIAS TAGLIORETTI², MARTIN ZAMORANO³, GUSTAVO J. SCILLATO-YANÉ³, CARLOS LUNA⁴, DANIEL BOH⁵ & MARIANO MAGNUSSEN SAFFER⁵

¹Centro de Ecología Aplicada del Litoral (CECOAL-CONICET). Ruta 5, km. 2.5, 3400 (CC 128) Corrientes, Argentina. E-mail: azurita@cecoal.com.ar

²Instituto de Geología de Costas y del Cuaternario. Facultad de Ciencias Exactas y Naturales, Universidad Nacional de Mar del Plata, Buenos Aires, Argentina. E-mail: paleomat@yahoo.com.ar

³Departamento Científico de Paleontología de Vertebrados, Facultad de Ciencias Naturales y Museo, Universidad Nacional de La Plata. Paseo del Bosque s/n, 1900 La Plata. Argentina. CONICET. E-mail: marzamorano@fcnym.unlp.edu.ar, scillato@fcnym.unlp.edu.ar

⁴Museo de Paleontología, Facultad de Ciencias Exactas, Físicas y Naturales, Universidad Nacional de Córdoba, Avda. Vélez Sarsfield 249, 5000 Córdoba, Argentina. E-mail: carlosaluna@hotmail.com

⁵Museo Municipal Punta Hermengo, Miramar, provincia de Buenos Aires, Argentina. E-mail: museomiramar@gmail.com

Abstract

Among South American Quaternary Glyptodontidae (Mammalia, Cingulata), *Neosclerocalyptus* Paula Couto represents one of the best known genera. Prior to this contribution, four species were recognized. *N. pseudornatus* (Ameghino) and *N. ornatus* (Owen) (Ensenadan Age/Stage, early-middle Pleistocene); *N. gouldi* Zurita (Bonaerian Age/Stage, middle Pleistocene-late Pleistocene), and *N. paskoensis* (Zurita) (Lujanian Age/Stage, late Pleistocene-early Holocene). One of the most notable characters of the species of the genus is a modified area located in the distal part of the nasals, recently interpreted as a neomorphic structure derived from the ossification of the nasal cartilages. In this contribution, a new species of *Neosclerocalyptus* (*N. castellanosi* sp. nov.), which in turn represents the oldest record of the genus, is presented and described. In addition, a cladistic analysis is carried out to test the monophyly of *Neosclerocalyptus* and the phylogenetic position of this new species. The material comes from Vorohuean (late Pliocene) levels in the surroundings of Mar del Plata, Buenos Aires Province, Argentina. Among other morphological characters, this new species has ossified nasal cartilages restricted to the latero-dorsal area of the nasals, whereas in the remaining species these structures are more expanded and both sides contact in the midline of the skull. In turn, the phylogenetic analysis confirmed the monophyly of *Neosclerocalyptus*, whereas *N. castellanosi* sp. nov. appears closely related to *N. pseudornatus*, being *N. ornatus* the sister taxa of this clade. On the other hand, *N. gouldi* + *N. paskoensis* constitute the other clade. The clade constituted by *Hoplophorus euphractus* Lund + *Panochthus intermedius* Lydekker constitutes the sister taxa of *Neosclerocalyptus*.

Key words: Glyptodontidae, Southern South America, taxonomy, late Pliocene, phylogeny

Introduction

One of the most conspicuous clades of endemic Cenozoic South American mammals is represented by the Glyptodontidae Gray (Xenarthra, Cingulata) (late Eocene-early Holocene; Hoffstetter 1958; Paula Couto 1979). However, during most of the twentieth century, knowledge of these large armored herbivores remained very scarce because most of the contributions dated back to the nineteenth century and the first half of the twentieth century (see, among others, Burmeister 1874; Ameghino 1889; Lydekker 1895; Castellanos 1940, 1941, 1942; Cabrera 1944).

In recent times, taxonomic, anatomic and phylogenetic knowledge of this clade has been improved (Zurita *et al.* 2007; Fernicola 2008; Porpino *et al.* 2009, 2010; González Ruiz 2010; Fernicola & Porpino 2012; Zamorano