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Description of a new species of *Sparassocynus* (Marsupialia: Didelphoidea: Sparassocynidae) from the late Miocene of Jujuy (Argentina) and taxonomic review of *Sparassocynus heterotopicus* from the Pliocene of Bolivia

MARÍA ALEJANDRA ABELLO¹, MARTÍN DE LOS REYES², ADRIANA MAGDALENA CANDELA², FRANCOIS PUJOS³, DAMIÁN VOGLINO⁴ & BERNARDINO MAMANI QUISPE⁵

¹Laboratorio de Sistemática y Biología Evolutiva (LASBE), Facultad de Ciencias Naturales y Museo, Universidad Nacional de La Plata. Paseo del Bosque s/n, B1900FWA, La Plata, Argentina. E-mail: mabello@fcnym.unlp.edu.ar

²División Paleontología Vertebrados, Facultad de Ciencias Naturales y Museo, Universidad Nacional de La Plata. Paseo del Bosque, B1900FWA La Plata, Argentina. E-mail: delossreyes@yahoo.com.ar; acandela@fcnym.unlp.edu.ar

³Dpto. de Paleontología, Instituto Argentino de Nivología, Glaciología y Ciencias Ambientales (IANIGLA), CCT-CONICET-Mendoza, Avda. Ruiz Leal s/n, Parque Gral. San Martín, 5500 Mendoza, Argentina. E-mail: fpujos@mendoza-conicet.gov.ar

⁴Museo de Ciencias Naturales "Rvdo. P. Antonio Scasso", Don Bosco 580, San Nicolás de los Arroyos, Buenos Aires, Argentina. E-mail: dvoglino@fundacionoga.org.ar

⁵Departamento de Paleontología, Museo Nacional de Historia Natural, Calle 26 s/n, Cota Cota, La Paz, Bolivia. E-mail: bmamaniq@hotmail.com

Abstract

A new species of sparassocynid marsupial, *Sparassocynus maimarai* n. sp. from the late Miocene of Maimará Formation (Jujuy Province, Argentina) is described from a left mandibular fragment with a complete p2–m4 series. It differs from the remaining species of the genus *S. bahiai* (Montehermosan—late Miocene/early Pliocene—of Buenos Aires Province, Argentina) and *S. derivatus* (Chapadmalalan and Marplatan—Pliocene of Buenos Aires Province) by its smaller size, the relatively longer m1 with respect to the m4, the presence of a lingual cingulum extended between para- and metaconid on the m1–3, and its more robust entoconids. As part of this study the taxonomic status of *Sparassocynus heterotopicus* (Montehermosan, Umala, Bolivia; Pliocene) was reviewed concluding that this taxon should be referred to as ‘*Sparassocynus*’ *heterotopicus* and considered a Didelphoidea of uncertain affinities. *Sparassocynus maimarai* n. sp. is the oldest records of the genus, adding new information to evaluate the origins and early diversification of sparassocynids. *Sparassocynus maimarai* n. sp. was recovered with precise stratigraphic control, highlighting its potential biostratigraphic significance to the temporal correlations between Maimará Formation and other Mio–Pliocene stratigraphic units from the northwestern Argentina.

Key words: Neogene, Metatheria, South America

Introduction

The Sparassocynidae are a lineage of South American extinct marsupials included in the Didelphimorphia (Aplin & Archer, 1987). More recently, this order has been considered a non-natural group (see e.g., Ladevèze & Muizon, 2010) within which were included several extinct and extant opossums (i.e., Didelphidae; Voss & Jansa, 2009) as well as stem-metatherians such as pucadelphids and herpetotheriids (Sánchez-Villagra *et al.*, 2007, Horovitz *et al.*, 2009). Among Didelphimorphia, sparassocynids were proposed as closely related to didelphids and caluromyids, forming a monophyletic group (i.e., Didelphoidea; Goin, 1991, 1995).

Within Sparassocynidae two genera are recognized: *Hesperocynus* Forasiepi, Goin & Martinelli, 2009 and *Sparassocynus* Mercerat, 1898. *Hesperocynus* includes only one species, *H. dolgopolae* (Reig, 1958a), while *Sparassocynus* includes, to date, three species *S. bahiai* Mercerat, 1898, *S. derivatus* Reig & Simpson, 1972, and *S. heterotopicus* Villarroel & Marshall, 1983. More recently, Forasiepi *et al.* (2009) pointed out that the validity of *S. heterotopicus* is yet under debate as it could be considered a possible didelphid or sparassocynid (the taxonomic status of this species is discussed below).

Sparassocynidae; thereby, the distribution of sparassocynids that previously included the Pliocene of Bolivia is now restricted, most certainly, to the late Miocene and Pliocene of central and NW of Argentina. *Sparassocynus maimarai* sp. nov. is one of the few mammals recovered from the Maimará Formation under precise stratigraphic control, which is fundamental for possible biostratigraphic correlations between Maimará Formation and the remaining late Miocene-Pliocene stratigraphic units of NWA. We expect that the joint study of the new species, the remaining fossil mammals recovered in the Maimará Formation, and their geological context will improve the knowledge of the paleobiogeographic and paleoenvironmental setting where mammal faunas of NWA evolved towards the end of the Neogene.

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